

AAOS

AMERICAN ACADEMY OF
ORTHOPAEDIC SURGEONS

CONNECT

with the latest thinking and discoveries



RECONNECT

with your colleagues, your mission, your passion

AAOS 2014

Annual Meeting

Meeting Dates: March 11-15

Exhibit Dates: March 12-14

New Orleans, Louisiana

FINAL PROGRAM

People inspired solutions.

Every step of the way.

At *DePuy Synthes Companies*, our solutions are defined by the people who inspire them. Along with a broad range of high-quality products, we are committed to providing the procedural support and services to help deliver more efficient outcomes. When it comes to orthopaedic solutions, we're with you every step of the way.



People inspired solutions.



Hip solutions every step of the way.

Whether you are an experienced clinician or just beginning to explore the Anterior Approach technique, *DePuy Synthes Joint Reconstruction's** Anterior Approach educational programs are facilitated by globally recognized surgeon educators with a clear focus on helping you deliver positive, reproducible results. When it comes to professional education, we're with you every step of the way.

2014 Hip Professional Education Opportunities

Anterior Approach

Feb 7	Std. Anterior Approach for THA Course	Orlando, FL
March 20	Std. Anterior Approach for THA Course	Henderson, NV
March 21	Std. Anterior Approach for THA Course	Henderson, NV
Apr 4	Anterior Approach for Revisions Course	Long Beach, CA
May 8	Fellows Std. Anterior Approach for THA Course (INVITATION ONLY)	Chicago, IL
May 9	Std. Anterior Approach for THA Course	Chicago, IL
June 13	Advanced Anterior Approach Course	Atlanta, GA
Sep 19	Std. Anterior Approach for THA Course	Denver, CO
Oct 17	Anterior Approach for Revisions Course	Atlanta, GA
Nov 14	Std. Anterior Approach for THA Course	Henderson, NV

CORAIL[®] Learning Center

Apr 2–4	CORAIL [®] Hip Anney International Symposium	Anney, France
June 25–27	CORAIL Hip Anney International Symposium	Anney, France
Oct 8–10	CORAIL Hip Anney International Symposium	Anney, France
Q4 TBD	CORAIL Hip Anney International Symposium	Anney, France

Additional Professional Education Programs

Apr 24–25	WW Current Advancements Symposium	Chicago, IL
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To register for a course contact your *Joint Reconstruction* Sales Consultant or send an email to the Professional Education Team at profed@its.jnj.com

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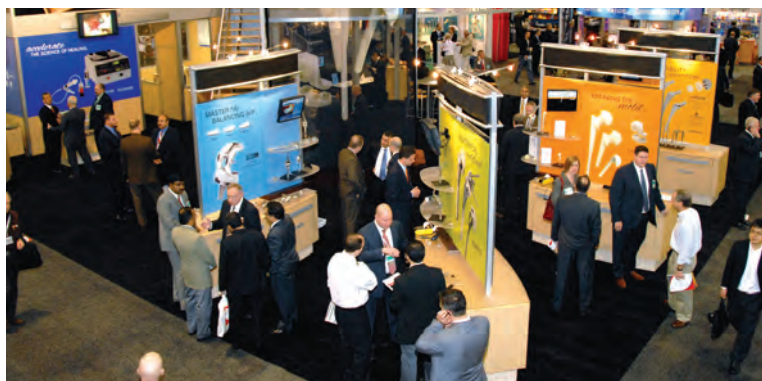
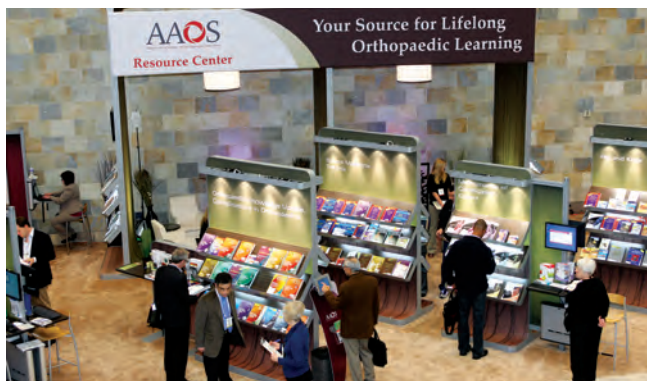
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AAOS

AMERICAN ACADEMY OF
ORTHOPAEDIC SURGEONS

General

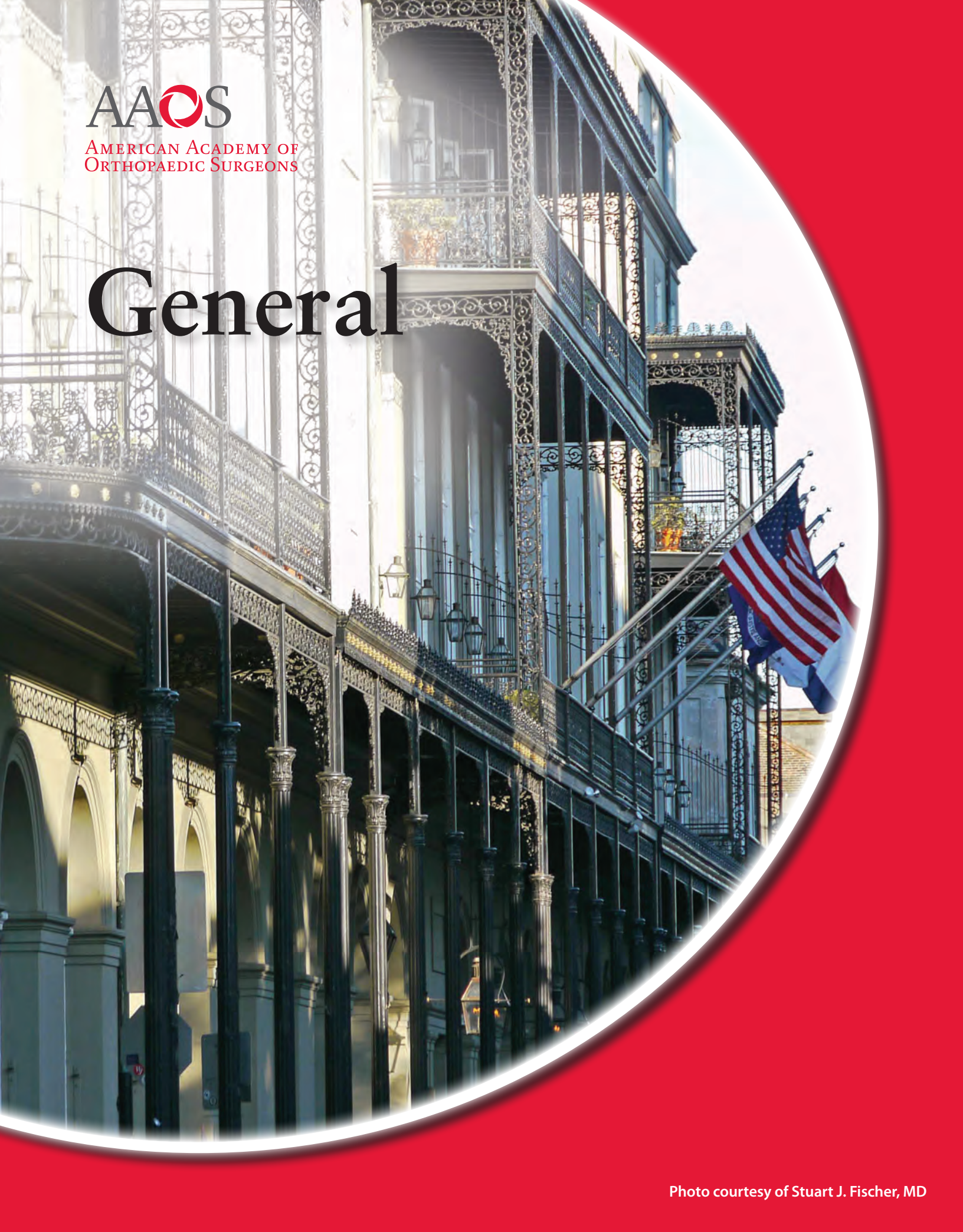


Photo courtesy of Stuart J. Fischer, MD

Special Events

Morial Convention Center, La Nouvelle Ballroom

Opening Ceremony

Wednesday, March 12
4:00 – 5:30 PM



Joshua J. Jacobs, MD
Presidential Remarks
“The Three Curses Redux”

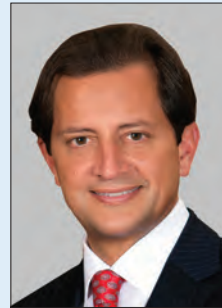
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- Recognition of Industry Donors
- Chief Executive Officer Report
- Kappa Delta & OREF Awards

Business Meetings

Thursday, March 13, 9:00 AM

Ceremonial Meeting

Thursday, March 13, 10:00 AM



Frederick M. Azar, MD
Incoming Presidential
Address
“Building A Bigger Box”



David D. Teuscher, MD
Incoming First Vice
Presidential Remarks
“Relationships that Matter Most”

- Humanitarian Award
- Diversity Award
- William W. Tipton, Jr, MD, Leadership Award

AAOS Presidential Guest Speakers Steven and Cokie Roberts

Thursday, March 13, 11:00 AM

A View from Washington

Join us Thursday, March 13 at the Morial Convention Center in New Orleans to hear Presidential Guest Speakers Steven and Cokie Roberts.

Veterans of the Washington political scene, Steven and Cokie are consummate political analysts and are well placed to explain the politics that dominate the news and affect the lives of all Americans.

Cokie is the chief political analyst for ABC News and served as the co-anchor of This Week with Sam Donaldson & Cokie Roberts for eight years. She also serves as a news analyst for National Public Radio.

Steve, an award-winning journalist for more than 40 years, appears regularly on National Public Radio, CNN's Reliable Sources and the ABC radio network. He is also a chaired professor of Media and Public Affairs at George Washington University.

Not only are they partners at home, they are also professional partners. Steve and Cokie find one voice in their nationally syndicated newspaper column focused on political and governmental issues.



Welcome to New Orleans



Welcome to New Orleans for the American Academy of Orthopaedic Surgeons' 2014 Annual Meeting! We are glad you're here to experience the new ideas and discoveries – the very best in orthopaedic education, research and technology. Your participation and support is essential to the Academy's success.

Whether you need to *Connect* or *ReConnect* it's all here with new vitality and better connections to your colleagues and faculty. Annual Meeting Committee Chair Paul Tornetta III, MD, and his team have created an exceptional program. Along with their respective committees, Central Program Committee Chair Brian Cole, MD, MBA, Central Instructional Course Committee Chair Craig Della Valle, MD, and Exhibits Committee Chair Joe Moskal, MD, have produced an exciting selection of educational opportunities—a commitment to education that includes 30 symposia by the world's experts on exciting and timely topics, 825 papers and 569 posters on the latest scientific and clinical studies, 217 instructional courses presented by world-renowned faculty, more than 88 scientific exhibits on extended studies or complex procedures and to conclude the meeting on Saturday, Specialty Day offers 12 Specialty Society sessions covering the latest news in their area of expertise.

Be sure to visit over 600 technical exhibits displaying the “latest and greatest” in orthopaedic products and services.

Other important Annual Meeting events include the Opening Ceremony on Wednesday, at 4:00 PM, where we kick off the meeting and recognize France as this year's Guest Nation. On Thursday, the Ceremonial Meeting incorporates the presentations of the Humanitarian and Diversity Awards, Frederick M. Azar, MD incoming president's address, and the presidential guest speakers, Cokie and Steve Roberts.

On behalf of the Board of Directors, I sincerely want to thank all the supportive volunteers and staff for their continued time and efforts that make this meeting the foremost orthopaedic educational experience.

Enjoy the meeting!

Joshua J. Jacobs, MD
President



Welcome to New Orleans!

Birthplace of jazz, food & fun; New Orleans, “The Big Easy”, is one of the truly unique cities in the world. Plan to relax and have fun outside the meeting, while still learning inside.

New Orleans has been under French, Spanish and US rule in its history, and its style, flavor, architecture, and social life have always reflected this varied heritage. Take a streetcar from downtown to Audubon Park to visit the zoo, and along the way you will see homes and buildings of almost any architectural style and color. A carriage ride in the French Quarter will take you back in time, while NASA's Michoud Facility prepares to blast us into the future.

New Orleans is, of course, famous for food and fun. It has been said you could eat at a different restaurant every night for three years, never have the same meal, and every bite would be awesome. From café au lait and beignets for breakfast, po-boys and muffulettas for lunch, to our own delicious creole cuisine for dinner (gumbo, anyone?), New Orleans food is an epicurean's delight.

For the music lover in you, music of all genres is available. It is true that jazz started in New Orleans (after all, you most likely flew into “Louis Armstrong” International airport), but many different sounds and talented musicians originated in our city; Clubs throughout the French Quarter, Frenchmen Street and Treme offer live music of undeniable quality, each with its own, original sound. Jazz, progressive, bluegrass, or whatever your ears desire is available on most street corners in the city.

Whether you visit one of our more than 40 museums dedicated to art, music, sculpture, or history you can find something to satisfy your taste in this great city. The National WWII Museum, built to honor the Higgins boats that allowed our troops to land on the beaches of Normandy and expanded to encompass the entire conflict - is a treasure. We even have museums dedicated to wine (WINO [Wine Institute of New Orleans]) and food (SoFAB: The Southern Food and Beverage Museum), not to mention vampire, voodoo, haunted house and cemetery tours, and of course, one of my favorites, the swamp tours showing off the nation's largest wetlands. In and around the Crescent City, you can see the uniqueness of Louisiana. We would love for you to visit some of our antebellum homes along the river, bike or jog along the world's longest levee system beside the mighty Mississippi River, golf on one of our many courses, sample the best food and beverages in the world, or just kick back and unwind to some of the best musicians in the world – New Orleans and all of us here welcome you to our home. We are glad you are here! In local parlance, I hope you “pass a good time”!

Have a great time in the best city in the world!

Felix H. Savoie III, MD
Local Chairman



Joshua J. Jacobs, MD
President
Chicago, Illinois



Frederick M. Azar, MD
First Vice-President
Memphis, Tennessee



David D. Teuscher, MD
Second Vice-President
Beaumont, Texas



Andrew N. Pollak, MD
Treasurer
Baltimore, Maryland



John R. Tongue, MD
Past-President
Tualatin, Oregon



Wilford K. Gibson, MD
Chair
Board of Councilors
Virginia Beach, Virginia



John J. McGraw, MD
Chair-Elect
Board of Councilors
Jefferson City, Tennessee



David J. Mansfield, MD
Secretary
Board of Councilors
El Paso, Texas



Steven D.K. Ross, MD
Chair
Board of Specialty
Societies
Orange, California



David C. Templeman, MD
Chair-Elect
Board of Specialty
Societies
Minneapolis, Minnesota



David A. Halsey, MD
Secretary
Board of Specialty
Societies
South Burlington, Vermont



William J. Best
Lay Member
Jackson, Wyoming



Annunziato Amendola, MD
Member-at-Large
Iowa City, Iowa



Joseph A. Bosco III, MD
Member-at-Large
New York, New York



Matthew B. Dobbs, MD
Member-at-Large
Saint Louis, Missouri



Todd A. Milbrandt, MD
Member-at-Large
Lexington, Kentucky



Karen L. Hackett,
FACHE, CAE
Chief Executive Officer
(Ex-Officio)
Rosemont, Illinois

About our Board of Directors

The Board of Directors manages the affairs of the ACADEMY and the ASSOCIATION. It is the administrative authority of the ACADEMY and the ASSOCIATION and considers all of its activities and determines its policies.

Annual Business Meetings

All Fellows are urged to attend the 2014 Annual Business Meetings held in the La Nouvelle Ballroom of Morial Convention Center. The business meetings will be held on Thursday, March 13, 2014, at 9:00 AM. There will be one business meeting for the American Academy of Orthopaedic Surgeons (“Academy”), the 501(c)(3) organization, immediately followed by the business meeting of the American Association of Orthopaedic Surgeons (“Association”), the 501(c)(6) organization. All registrants are welcome to attend, but only Active, Inactive, and Emeritus Fellows may vote.

Agenda for the Business Meeting of the American Academy of Orthopaedic Surgeons

Thursday, March 13 at 9:00 AM
Morial Convention Center, La Nouvelle Ballroom
Joshua J. Jacobs, MD, Presiding

1. Call to Order and Appointments
2. Report of the Treasurer
3. Report of the Academy Education Enhancement Fund (AEEF)
4. Report of the Orthopaedic Research and Education Foundation (OREF)
5. Report of the Resolutions Committee [DISCUSSION]
6. Adjournment

Agenda for the Business Meeting of the American Association of Orthopaedic Surgeons

Thursday, March 13 at 9:20 AM
Morial Convention Center, La Nouvelle Ballroom
Joshua J. Jacobs, MD, Presiding

1. Call to Order and Appointments
2. Nominations for the 2015 Nominating Committee. Those ineligible to serve on the 2015 Nominating Committee, pursuant to Article XII, Paragraph 12.2 of the Association Bylaws, are Inactive Fellows, Emeritus Fellows, current members of the Board of Directors, and:

James R. Andrews, MD ('12)
 Champ L. Baker, Jr., MD ('12)
 John A. Bergfeld, MD ('13)
 Louis C. Bigliani, MD (elected 3-plus terms)
 David S. Bradford, MD (elected 3-plus terms)
 Robert W. Bucholz, MD ('13)
 Stephen S. Burkhart, MD ('14)
 S. Terry Canale, MD ('12)
 Michael W. Chapman, MD (elected 3-plus terms)
 John J. Callaghan, MD ('14)
 Robert D. D'Ambrosia, MD (elected 3-plus terms)
 Kenneth E. DeHaven, MD (elected 3-plus terms)
 Lawrence D. Dorr, MD ('12)
 Charles H. Epps, Jr., MD (elected 3-plus terms)
 Freddie H. Fu, MD (elected 3-plus terms)
 Richard H. Gelberman, MD ('14)
 Christopher D. Harner, MD ('12)
 James D. Heckman, MD ('13)
 Robert N. Hensinger, MD ('14)
 James H. Herndon, MD ('13)
 Joseph P. Iannotti, MD (elected 3-plus terms)
 Douglas W. Jackson, Jr., MD (elected 3-plus terms)

Mark D. Miller, MD ('13)
 Bernard F. Morrey, MD ('14)
 E. Anthony Rankin, MD ('12)
 Charles A. Rockwood, Jr., MD (elected 3-plus terms)
 Peter J. Stern, MD ('14 and elected 3-plus terms)
 Marc F. Swiontkowski, MD (elected 3-plus terms)
 Roby C. Thompson, Jr., MD (elected 3-plus terms)
 Vernon T. Tolo, MD ('14)
 James R. Urbaniak, MD (elected 3-plus terms)
 Russell F. Warren, MD (elected 3-plus years)
 Augustus A. White, III, MD ('13 and elected 3-plus terms)
 Robert A. Winquist, MD (elected 3-plus years)
 Ken Yamaguchi, MD ('12)

3. Report of the Political Action Committee of the American Association of Orthopaedic Surgeons (Orthopaedic PAC)
4. Report of the Resolutions Committee [DISCUSSION]
5. Report of the Bylaws Committee [DISCUSSION]
6. Report of the Election of AAOS Officer and Other Positions
7. Recognition of Retiring Members of the Board of the American Academy of Orthopaedic Surgeons and the American Association of Orthopaedic Surgeons
8. Recognition of New Members of the Board of the American Academy of Orthopaedic Surgeons and the American Association of Orthopaedic Surgeons
9. Adjournment

Agenda for the Ceremonial Meeting

Thursday, March 13, 10:00 AM
Morial Convention Center, La Nouvelle Ballroom
Joshua J. Jacobs, MD, Presiding

1. Call to Order
2. Introduction of Board of Directors, Council/Cabinet Chairs and Annual Meeting Chairs
3. Presentation of Awards
 - A. William W. Tipton, Jr., MD, Leadership Award
 - B. Humanitarian Award
 - C. Diversity Award
4. Introduction of David D. Teuscher, MD, Incoming First Vice-President
5. Incoming First Vice-Presidential Remarks – David D. Teuscher, MD
6. Introduction of Frederick M. Azar, MD, Incoming President
7. Incoming Presidential Address – Frederick M. Azar, MD
8. Recognition of Past President Joshua J. Jacobs, MD, and Presentation of Past President's Pin, Gavel, and Silver Seal
9. Adjournment

2014 Resolutions Committee

The members of the 2014 Resolutions Committee are:

Michael L. Parks, MD, Chair
 Mark E. Fahey, MD
 Thomas M. Green, MD
 Patrick J. Halpin, MD
 Leslie H. Kim, MD

Paul Levin, MD
Edward A. Toriello, MD

The Resolutions Committee will conduct an Open Hearing on the three resolutions undergoing their five-year review on Wednesday, March 12, beginning at 1:00 PM in Room 349 of the Morial Convention Center. During the Open Hearing, all Fellows are invited to discuss the resolutions under consideration. At the business meetings on March 13, the Resolutions Committee will present its recommendations regarding each resolution under consideration. Shortly after the Annual Meeting, these recommendations will be voted on by the Fellowship. To be adopted, a resolution requires that at least twenty percent of the eligible Fellows vote on the resolution and that of those voting, at least fifty percent vote to adopt the resolution as AAOS policy.

2014 Bylaws Committee

The members of the 2014 Bylaws Committee are:

Scott B. Scutchfield, MD, Chair
Joan B. Krajca-Radcliffe, MD
Gerald J. Lang, MD
Alan H. Morris, MD
William M. Strassberg, MD

The Bylaws Committee will conduct an Open Hearing on the proposed three bylaw amendments on Wednesday, March 12, at the conclusion of the Resolutions Committee Open Hearing (estimated time 1:30 pm) in Room 349 of the Morial Convention Center. During the Open Hearing, all Fellows are invited to discuss the proposed bylaw amendments under consideration. At the business meetings on March 13, the Bylaws Committee will present its recommendations regarding each bylaw amendment under consideration. Shortly after the Annual Meeting, these recommendations will be voted on by the Fellowship. To be adopted, a bylaw amendment requires that at least twenty percent of the eligible Fellows vote on the resolution and that of those voting, at least two-thirds vote to adopt the bylaw amendment.

2014 Nominating Committee

In May, the Fellowship by ballot elected six members of the 2014 Nominating Committee. The Board of Directors appointed the Chair of the Nominating Committee in February. The members of the 2014 Nominating Committee are:

John J. Callaghan, MD, Chair
Stephen S. Burkhart, MD
Richard H. Gelberman, MD
Robert N. Hensinger, MD
Bernard F. Morrey, MD
Peter J. Stern, MD
Vernon T. Tolo, MD

By February 11, the AAOS will prepare a ballot and information regarding all candidates nominated to serve in the office of Second Vice-President, Treasurer-Elect, At-large members of the Board of Directors (one age 45 or older, one under age 45), and member of the National Membership Committee.

Beginning on February 26 and through 1:00 pm on March 12, Fellows will be asked to vote electronically on this ballot. The results of the balloting will be announced by the President during the Association business meeting on Thursday, March 13.

Nominations for the 2015 Nominating Committee

At the business meeting of the American Association of Orthopaedic Surgeons on Thursday, March 13, an unlimited number of nominations will be accepted for individuals to serve on the 2015 Nominating Committee; Inactive or Emeritus Fellows or Active Fellows who have been elected to serve on the Nominating Committee more than three terms are not eligible for election.

All persons nominated will be sent a notification and a form containing a statement for them to sign regarding their willingness to serve on this Nominating Committee. A ballot containing a list of these nominated and willing to serve will be sent to all Fellows.

Award Presentations at the Annual Meeting

Join the American Academy of Orthopaedic Surgeons as we recognize the 2014 Kappa Delta and OREF Clinical Research Award Winners

Wednesday, March 12, 4:00 – 5:30 PM

Morial Convention Center, La Nouvelle Ballroom



2014 Kappa Delta Young Investigator Award
Understanding the Development of Muscle Atrophy and Fatty Infiltration in Massive Rotator Cuff Tears
Brian Feeley, MD
Institution: University of California, San Francisco



2014 Kappa Delta Ann Doner Vaughn Award
Natural History of Rotator Cuff Disease: Relationship to Surgical Indications
Ken Yamaguchi, MD, MBA
Co-Authors: Sharlene A. Teefey, MD; Jay D. Keener, MD; and Leesa Galatz, MD
Institution: Washington University School of Medicine



2014 Kappa Delta Elizabeth Winston Lanier Award
Anatomic Anterior Cruciate Ligament Reconstruction: A Changing Paradigm
Freddie Fu, MD
Institution: University of Pittsburgh



2014 OREF Clinical Research Award
The Spine Patient Outcomes Research Trial (SPORT)
James N. Weinstein, DO, MS
Co-Authors: Adam M. Pearson, MD, MS; Jon D. Lurie, MD, MS; Tor D. Tosteson, ScD; Anna N.A. Tosteson, ScD; William A. Abdu, MD, MS; and Sohail K. Mirza, MD, MPH
Institution: Dartmouth-Hitchcock Medical Center

TUESDAY, MARCH 11

Education	Location - Morial Convention Center	Time
Instructional Courses	See Schedule or pages 52-216 for room numbers	8:00 – 10:00 AM 8:00 – 11:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM
Symposia & Paper Presentations	See pages 52-216 for room numbers	8:00 – 10:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM
Posters	Academy Hall BC	8:00 AM – 6:00 PM
Scientific Exhibits	Academy Hall D	8:00 AM – 6:00 PM
Orthopaedic Video Theater	Academy Hall E	8:00 AM – 6:00 PM
Coding Basics for Starting Your Practice #190	Great Hall B	8:00 – 11:00 AM
Practice Management Symposium for Practicing Orthopaedic Surgeons #199	Rivergate Room	8:00 AM – 5:00 PM
Nursing and Allied Health Course – CAST1	Room R06	8:15 AM – 5:45 PM
Practice Management Symposium for Orthopaedic Residents #191	Great Hall B	12:00 – 5:30 PM
The Top 10 Coding Issues Made by Practicing Orthopaedic Surgeons #192	Room 345	1:30 – 4:30 PM
Community Orthopaedic Surgeon Workshop #193	Room 353	1:30 – 5:30 PM
General	Location - Morial Convention Center	Time
Ready Rooms	Rooms 228 and 252	6:30 AM – 6:00 PM
Registration – Physician	Lobby B, E, & H	7:00 AM – 6:00 PM
Registration – Social Program	Lobby A	7:00 AM – 6:00 PM
Playground Build	Shuttles depart hourly from Lobby B	7:00 AM – 2:30 PM
Job Placement Center	Academy Hall B	8:00 AM – 6:00 PM
Resource Center	Academy Hall E	8:00 AM – 6:00 PM
Guest Nation Booth - France	Lobby G	8:00 AM – 6:00 PM
American Board of Orthopaedic Surgery Booth	Lobby G	8:00 AM – 6:00 PM
American Joint Replacement Registry Booth	Lobby G	8:00 AM – 6:00 PM
Orthopaedic Learning Center Booth	Lobby G	8:00 AM – 6:00 PM
Orthopaedic Research & Education Foundation Booth	Lobby G	8:00 AM – 6:00 PM

WEDNESDAY, MARCH 12

Education	Location - Morial Convention Center	Time
Posters	Academy Hall BC	7:00 AM – 6:00 PM
Scientific Exhibits	Academy Hall D	7:00 AM – 6:00 PM
Orthopaedic Video Theater	Academy Hall E	7:00 AM – 6:00 PM
Instructional Courses	See Schedule or pages 52-216 for room numbers	8:00 – 10:00 AM 8:00 – 11:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM
Symposia & Paper Presentations	See pages 52-216 for room numbers	8:00 – 10:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM
Nursing and Allied Health Course – CAST2	Room R06	8:15 AM – 5:45 PM
Exhibit Hall	Location - Morial Convention Center	Time
Technical Exhibits	Halls B-I	9:00 AM – 5:00 PM
AAOS Advocacy Booth	Hall F, Booth 4213	9:00 AM – 5:00 PM

AAOS Exhibit Hall Resource Center	Hall G, Booth 5519	9:00 AM – 5:00 PM
Electronic Skills Pavilion	Hall F, Booth 4563 See page 360 for schedule	9:30 AM – 4:15 PM
Ask an Expert Sessions	Hall I, Booth 7143 See page 362 for schedule	10:30 AM – 4:15 PM
Complimentary Beverage Break	Halls B-I, Booths 1273, 4842, and 7055	3:30 – 4:00 PM
General	Location - Morial Convention Center	Time
Ready Rooms	Rooms 228 and 252	6:30 AM – 6:00 PM
Registration – Physician	Lobby B, E, & H	7:00 AM – 6:00 PM
Registration – Social Program	Lobby A	7:00 AM – 6:00 PM
Job Placement Center	Academy Hall B	7:00 AM – 6:00 PM
Resource Center	Academy Hall E	7:00 AM – 6:00 PM
Guest Nation Booth – France	Lobby G	7:00 AM – 6:00 PM
American Board of Orthopaedic Surgery Booth	Lobby G	7:00 AM – 6:00 PM
American Joint Replacement Registry Booth	Lobby G	7:00 AM – 6:00 PM
Orthopaedic Learning Center Booth	Lobby G	7:00 AM – 6:00 PM
Orthopaedic Research & Education Foundation Booth	Lobby G	7:00 AM – 6:00 PM
Worldwide Orthopaedic Arthroplasty Registries Session	Room 260	9:00 – 11:00 AM
Resolutions Committee Open Hearing	Room 349	1:00 PM
Bylaws Committee Open Hearing	Room 349	1:30 PM (estimated)
Opening Ceremony	La Nouvelle Ballroom	4:00 – 5:30 PM

*No educational activities are scheduled.

THURSDAY, MARCH 13

Education	Location - Morial Convention Center	Time
Posters	Academy Hall BC	7:00 AM – 6:00 PM
Scientific Exhibits	Academy Hall D	7:00 AM – 6:00 PM
Orthopaedic Video Theater	Academy Hall E	7:00 AM – 6:00 PM
Nursing and Allied Health Courses – NUR1 & NUR2	Room R03	7:30 AM – 12:00 PM 1:30 PM – 6:00 PM
Instructional Courses	See Schedule or pages 52-216 for room numbers	8:00 – 10:00 AM 8:00 – 11:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM
Symposia & Paper Presentations	See pages 52-216 for room numbers	8:00 – 10:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM

Exhibit Hall	Location - Morial Convention Center	Time
Technical Exhibits	Halls B-I	9:00 AM – 5:00 PM
AAOS Advocacy Booth	Hall F, Booth 4213	9:00 AM – 5:00 PM
AAOS Exhibit Hall Resource Center	Hall G, Booth 5519	9:00 AM – 5:00 PM
Ask an Expert Sessions	Hall I, Booth 7143 See page 362 for schedule	9:30 AM – 4:15 PM
Electronic Skills Pavilion	Hall F, Booth 4563 See page 360 for schedule	9:30 AM – 4:15 PM
Unopposed Exhibit Time*	Halls B-I	12:30 – 1:30 PM
Complimentary Beverage Break	Halls B-I, Booths 1273, 4842, and 7055	3:30 – 4:00 PM
General	Location - Morial Convention Center	Time
Ready Rooms	Rooms 228 and 252	6:30 AM – 6:00 PM
Registration – Physician	Lobby B, E, & H	7:00 AM – 6:00 PM

Registration – Social Program	Lobby A	7:00 AM – 6:00 PM
Job Placement Center	Academy Hall B	7:00 AM – 6:00 PM
Resource Center	Academy Hall E	7:00 AM – 6:00 PM
Guest Nation Booth – France	Lobby G	7:00 AM – 6:00 PM
American Board of Orthopaedic Surgery Booth	Lobby G	7:00 AM – 6:00 PM
American Joint Replacement Registry Booth	Lobby G	7:00 AM – 6:00 PM
Orthopaedic Learning Center Booth	Lobby G	7:00 AM – 6:00 PM
Orthopaedic Research & Education Foundation Booth	Lobby G	7:00 AM – 6:00 PM
Business Meetings	La Nouvelle Ballroom	9:00 AM
Ceremonial Meeting	La Nouvelle Ballroom	10:00 AM
Forum for Young Orthopaedic Surgeons with the American Board of Orthopaedic Surgery	Room 349	10:30 AM – 12:30 PM
Presidential Guest Speakers Steven & Cokie Roberts	La Nouvelle Ballroom	11:00 AM

*No educational activities are scheduled.

FRIDAY, MARCH 14

Education	Location - Morial Convention Center	Time
Poster Award Ceremony and Breakfast	Academy Hall BC	7:00 AM
Posters	Academy Hall BC	7:00 AM – 6:00 PM
Scientific Exhibits	Academy Hall D	7:00 AM – 6:00 PM
Orthopaedic Video Theater	Academy Hall E	7:00 AM – 6:00 PM
Nursing and Allied Health Courses – NUR3 & NUR4	Room R03	7:30 AM – 12:00 PM 1:30 PM – 6:00 PM
Instructional Courses	See Schedule or pages 52-216 for room numbers	8:00 – 10:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM
Symposia & Paper Presentations	See pages 52-216 for room numbers	8:00 – 10:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM
Orthopaedic Review Course	Great Hall A	8:00 AM – 5:35 PM
Exhibit Hall	Location - Morial Convention Center	Time
Technical Exhibits	Halls B-I	9:00 AM – 4:00 PM
AAOS Advocacy Booth	Hall F, Booth 4213	9:00 AM – 4:00 PM
AAOS Exhibit Hall Resource Center	Hall G, Booth 5519	9:00 AM – 4:00 PM
Ask an Expert Sessions	Hall I, Booth 7143 See page 362 for schedule	9:30 AM – 3:15 PM
Electronic Skills Pavilion	Hall F, Booth 4563 See page 360 for schedule	9:30 AM – 3:15 PM
Complimentary Beverage Breaks	Halls B-I, Booths 1273, 4842, and 7055	10:00 – 10:30 AM
Unopposed Exhibit Time*	Halls B-I	12:30 – 1:30 PM
Beignet Social	Halls B-I, Booths 1273, 4842, and 7055	2:00 – 3:30 PM
General	Location - Morial Convention Center	Time
Ready Rooms	Rooms 228 and 252	6:30 AM – 6:00 PM
Registration – Physician	Lobby B, E, & H	7:00 AM – 6:00 PM
Registration – Social Program	Lobby A	7:00 AM – 6:00 PM
Job Placement Center	Academy Hall B	7:00 AM – 6:00 PM
Resource Center	Academy Hall E	7:00 AM – 6:00 PM
Guest Nation Booth – France	Lobby G	7:00 AM – 6:00 PM
American Board of Orthopaedic Surgery Booth	Lobby G	7:00 AM – 6:00 PM

American Joint Replacement Registry Booth	Lobby G	7:00 AM – 6:00 PM
Orthopaedic Learning Center Booth	Lobby G	7:00 AM – 6:00 PM
Orthopaedic Research & Education Foundation Booth	Lobby G	7:00 AM – 6:00 PM

*No educational activities are scheduled.

SATURDAY, MARCH 15

Education	Location - Morial Convention Center	Time
Specialty Day	See page 34	Times vary
Posters	Academy Hall BC	7:00 AM – 3:00 PM
Scientific Exhibits	Academy Hall D	7:00 AM – 3:00 PM
Orthopaedic Video Theater	Academy Hall E	7:00 AM – 3:00 PM
General	Location - Morial Convention Center	Time
Ready Rooms	Rooms 228 and 252	6:00 AM – 5:30 PM
Registration – Physician	Lobby B, E, & H	6:30 AM – 5:30 PM
Registration – Social Program	Lobby A	7:00 AM – 12:00 PM
Job Placement Center	Academy Hall B	7:00 AM – 3:00 PM
Resource Center	Academy Hall E	7:00 AM – 3:00 PM



Help Create a Vivid Portrait of Orthopaedics

Surgeon stories will be featured on a special exhibit wall during the 2014 Annual Meeting in New Orleans. Visit this exhibit in the foyer outside of the La Nouvelle Ballroom at the Morial Convention Center.

Share Your Orthopaedic Surgeon Story on ANationInMotion.org Today!

Answer four simple questions at ANationInMotion.org.



ANationInMotion.org

Accreditation

The American Academy of Orthopaedic Surgeons is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

CME Credit

U.S. Physicians: The AAOS designates this live activity for a maximum of **35 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

International Physicians: The AMA has determined that physicians not licensed in the United States but who participate in this CME activity are eligible for **AMA PRA Category 1 Credits™**.

Allied Health Professionals: The AAOS is not accredited to offer credit for nurses and other Allied Health Professionals. To determine if activities offering **AMA PRA Category 1 Credits™** are acceptable for your licensing or certification needs please contact the relevant organizations directly.

IMPORTANT – It is important for you to check in as soon as you arrive. The AAOS transcript system will not allow you to claim CME credit for any educational activities you participated in before you officially check in to the meeting. For instance, if you arrive at the meeting on Tuesday but do not check in until Wednesday, you will not be able to claim CME credits for your Tuesday attendance. The CME credit system is an honor system. You should claim only the number of credits for the learning activities at the Annual Meeting in which you actively participated. For example, if you attend only on Wednesday and Thursday, the maximum amount you may claim is 17 credits. The grid below outlines the number of credit hours available per day:

Checked In OR Register at the Meeting on:	Maximum Daily Credit	Maximum Meeting Credits
Tuesday, March 11	Up to 10 Credits	35 Credits
Wednesday, March 12	Up to 8.5 Credits	25 Credits
Thursday, March 13	Up to 8.5 Credits	16.5 Credits
Friday, March 14	Up to 8 Credits	8 Credits

CME Certificates

The AAOS transcript system will not allow you to claim available CME credit before you officially check in to the meeting. Therefore it is important to check in as soon as you arrive. Physicians should claim only the number of credits for the learning activities at the Annual Meeting in which they actively participated.

The grid below outlines the types of activities that are available at the Annual Meeting and notes which qualify for AMA PRA Category 1 Credit™:

Activity	CME Credit Available
Basics of Coding for Starting Your Practice #190	Yes
Community Orthopaedic Surgeon Workshop #193	Yes
Forum for Young Orthopaedic Surgeons with the ABOS	Yes
Instructional Courses	Yes
Orthopaedic Review Course	Yes
Orthopaedic Video Theater	Yes
Papers	Yes
Posters and Scientific Exhibits (only when the presenter is required to be present and during the poster tours)	Yes
Practice Management Symposium for Practicing Orthopaedic Surgeons #199	Yes
Practice Management Symposium for Orthopaedic Residents #191	Yes
Specialty Day	Yes
Symposia	Yes
The Top 10 Coding Errors Made by Practicing Orthopaedic Surgeons #192	Yes
Worldwide Orthopaedic Arthroplasty Registries	Yes
Ask an Expert	No
Electronic Skills Pavilion	No
Technical Exhibits	No

Specialty Day CME

Listed below are the Specialty Societies designations of *AMA PRA Category 1 Credits*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

American Orthopaedic Foot and Ankle Society – 9 credits

American Orthopaedic Society for Sports Medicine – 7.75 credits

American Shoulder and Elbow Surgeons – 6 credits

American Society of Surgery of the Hand/ American Association for Hand Surgery – 8 credits

Arthroscopy Association of North America – 8.25 credits

Federation of Spine Associations – 7.5 credits

Hip Society/American Association of Hip and Knee Surgeons – 7.75 credits

Knee Society/American Association of Hip and Knee Surgeons – 7.75 credits

Limb Lengthening and Reconstruction Society – 7.5 credits

Musculoskeletal Tumor Society – 6.75 credits

Orthopaedic Trauma Association – 6 credits

Pediatric Orthopaedic Society of North America – 6.25 credits

Disclaimer

The material presented at the Annual Meeting has been made available by the American Academy of Orthopaedic Surgeons for educational purposes only. This material is not intended to represent the only, nor necessarily best, method or procedure appropriate for the medical situations discussed, but rather is intended to present an approach, view, statement or opinion of the faculty which may be helpful to others who face similar situations. The AAOS disclaims any and all liability for injury or other damages resulting to any individual attending a session and for all claims which may arise out of the use of the techniques demonstrated therein by such individuals, whether these claims shall be asserted by a physician or any other person.

Reproduction Policy

The Academy reserves any and all of its rights to materials presented at the Annual Meeting, including Posters and Scientific Exhibits. Reproductions of any kind, by any person or entity, without prior written permission from the Academy, are strictly prohibited. Prohibited reproductions include, but are not limited to, audiotapes, videotape, and/or still photography. Persons violating this policy may have their badge confiscated and be escorted from the meeting.



No unapproved surveys, handouts or literature may be distributed at the meeting.

FDA Statement

Some drugs or medical devices demonstrated at the Annual Meeting have been cleared by the FDA for specific purposes only or have not been cleared by the FDA. The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical devices he or she wishes to use in clinical practice. Academy policy provides that “off label” uses of a drug or medical device may be described in the Academy’s CME activities so long as the “off label” use of the drug or medical

device is also specifically disclosed (i.e. it must be disclosed that the FDA has not cleared the drug or device for the described purpose). Any drug or medical device is being used “off label” if the described use is not set forth on the products approval label.

2014 Annual Meeting Objectives**Global Objectives**

- Develop and refine a perspective on the broad range of orthopaedic knowledge, care and surgical practice.
- Expand and integrate an understanding of the scientific and clinical tenets of orthopaedic surgery to better prevent and treat musculoskeletal disease.
- Develop an understanding of economic and practice management challenges that can lead to strategies that protect continued access to care for patients and viability of the profession.
- Provide a forum to strengthen professional relationships and develop networks that lead to better patient care, individual surgeon career satisfaction, and a more robust profession as a whole.

Instructional Objectives

- To facilitate a personalized educational experience through a comprehensive offering of instructional courses, symposia, and scientific presentations.
- Support a forum for discussion of current issues in orthopaedics including patient safety, advocacy, practice management, technology, and culturally competent care.
- Offer complementing formats to facilitate career-long education that meets the expectations of patients, colleagues and Maintenance of Certification.
- To provide a forum for the presentation of basic and clinical research with current as well as future potential applications in the management of patients with musculoskeletal disease or injury.

Learner Objectives

- Synthesize a basis for the practice of delivering evidence-based, cost effective orthopaedic care.
- Integrate current basic science, translational research, and state-of-the-art procedures and technology into clinical practice.
- Become more informed and involved in advocacy issues related to orthopaedics.
- To provide a forum for resident education on current clinical practice, relevant basic science, practice management, and advocacy issues in preparation for careers as competent and ethical orthopaedic surgeons.

Private Meeting

The AAOS 2014 Annual Meeting is a private meeting. The AAOS reserves the right to control space and ask people to leave the meeting who are not qualified to attend or who cause disruptions, at AAOS’ sole discretion.

Technology at the Annual Meeting

AAOS Mobile Meeting Guide

The AAOS Mobile Meeting Guide application is available free from the App Store or Google Play. View, search, and schedule scientific programming – including all AAOS educational opportunities – Technical Exhibitor information, Social Program, Committee and Affiliate Meetings, and Special Events. You may even add personal events to your schedule.

A mapping program for meeting room location and exhibiting companies within Morial Convention Center is also included. Need some assistance? Visit the help desk located in the Resource Center, Academy Hall E.



Audience Response System

Selected Instructional Courses and Symposia will feature the Audience Response System, allowing interactive participation with the faculty by responding to their questions utilizing a keypad to indicate your choices.

Case Presentation Courses

Several Case Presentation instructional courses will take place during the Annual Meeting. Round tables will be facilitated by expert faculty who will introduce and discuss cases on iPads. The entire audience will discuss results and pearls.

Electronic Handouts

Handouts for all Instructional Courses were available electronically two weeks prior to the meeting if you have purchased a ticket for a course. Beginning with the 2015 Annual Meeting handouts will only be available electronically.



Electronic Skills Pavilion - Hall F, Booth 4563

Presentations that showcase current technology, products, and applications that are developed for the orthopaedic surgeon take place here. Handouts will be accessible electronically through QR codes available on-site at the Electronic Skills Pavilion.

ePosters and eScientific Exhibits – Academy Hall CD

ePosters and eScientific Exhibits provide a digital version of the poster or scientific exhibit. The audio recorded by the presenter will be a narrative of the poster or scientific exhibit and offered on playback by Smartphone and tablets as the attendee views the poster and scientific exhibit. A blog will allow viewers to question the authors creating an ongoing dialog. eScientific Exhibits also may contain video. Kiosks are available within Academy Hall CD where attendees can view, hear the audio, play the video and also decide whether or not to view the actual poster or scientific exhibit. The ePosters and eScientific Exhibits create an excellent post meeting opportunity to view this important research in your office or home.

Evaluations

Instructional Courses and Symposia evaluations can be accessed through the AAOS Mobile Meeting Guide App available for your Smartphone or internet connected device. You can easily complete

and submit your evaluation form for the sessions you attended. Also, Poster Tour evaluations can be completed at the ePoster and eScientific Exhibits Kiosks or by QR code.

Event Touch Digital Signage

LCD touch screens are available at the Welcome and Information Booths located throughout the Morial Convention Center lobbies and will function as an interactive “You Are Here.” This technology allows you to engage directly with the display, assisting with a visual guide to meeting rooms, educational sessions, technical exhibits, Academy Hall, and special events.

Internet Connections - NEW for 2014!

Internet Connections stations are located throughout the Morial Convention Center and offer internet links to the most used Email websites, 2015 Annual Meeting Member Housing, the Exhibitor Directory, and Flight Check-in. These new “all-in-one” stations allow you to utilize key connections not just Emails.



Proceedings

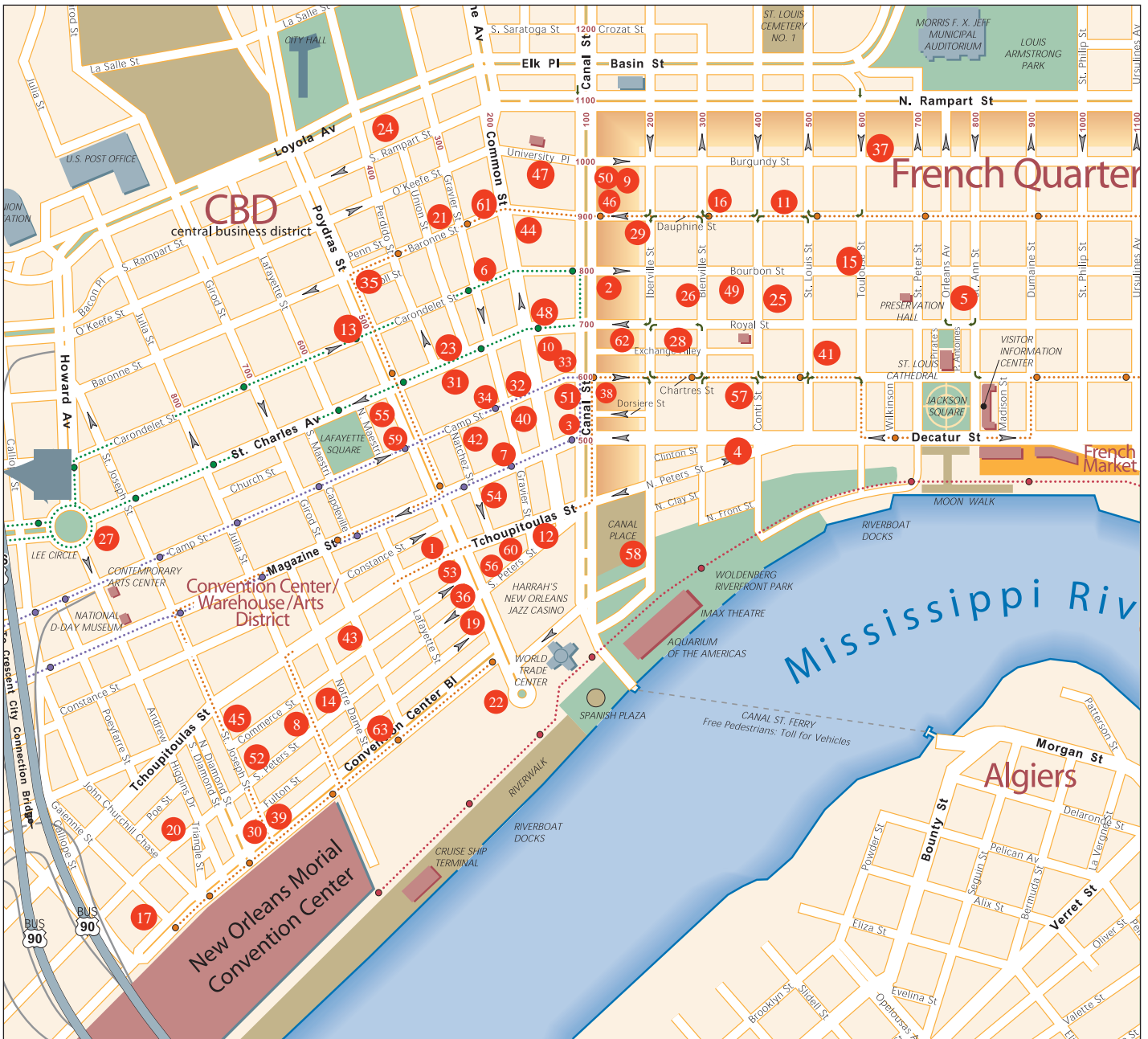
Be sure to visit our website to view the 2014 Annual Meeting Proceedings. A website will be available to view the Proceedings on a PC, tablet, or mobile device at www.aaos.org/proceedings.

Webcasting

View 13 symposia webcasts as they are simulcast live from the Annual Meeting. Choose from a variety of topics addressing joint replacement procedures including shoulder, hip, and sports. Did you miss the live simulcasts? View the webcasts anytime 24 hours after the start of the symposium through Sunday, March 23. Both the AAOS.org/annual website and the AAOS Mobile Meeting Guide app provide access to the webcasts.

AAOS Members and AAOS Residents: Free
Non-Members: \$199 unlimited viewing through March 23























- | | | | |
|--|---|---|----------------------------------|
| 1. Ambassador Hotel | 17. Hampton Inn & Suites Conv Ctr. | 34. La Quinta Inn | 51. Sheraton New Orleans |
| 2. Astor Crowne Plaza | 18. Hampton Inn & Suites
Downtown/ French Quarter Area | 35. Le Pavillon Hotel | 52. SpringHill Suites |
| 3. Best Western Plus St. Christopher | 19. Harrah's New Orleans | 36. Loews New Orleans | 53. Staybridge Suites |
| 4. Bienville House Hotel | 20. Hilton Garden Inn New Orleans | 37. Maison Dupuy Hotel | 54. St. James Hotel |
| 5. Bourbon Orleans | 21. Hilton Garden Inn French Quarter | 38. New Orleans Marriott | 55. The Blake Hotel |
| 6. Cotton Exchange | 22. Hilton New Orleans Riverside | 39. New Orleans Marriott
Convention Center | 56. W New Orleans |
| 7. Country Inn & Suites | 23. Hilton New Orleans St. Charles | 40. Omni Royal Crescent | 57. W New Orleans French Quarter |
| 8. Courtyard by Marriott
Convention Center | 24. Holiday Inn Superdome | 41. Omni Royal Orleans | 58. Westin Canal Place |
| 9. Courtyard Iberville | 25. Hotel Le Marais | 42. Queen & Crescent Hotel | 59. Whitney Wyndham |
| 10. Courtyard French Quarter | 26. Hotel Mazarin | 43. Renaissance Arts | 60. Windsor Court |
| 11. Dauphine Orleans | 27. Hotel Modern | 44. Renaissance Pere Marquette | 61. Wyndham Baronne Plaza |
| 12. Doubletree New Orleans | 28. Hotel Monte Leone | 45. Residence Inn | 62. Wyndham French Quarter |
| 13. Drury Inn & Suites | 29. Hyatt French Quarter | 46. The Ritz-Carlton | 63. Wyndham Riverfront |
| 14. Embassy Suites | 30. Hyatt Place | 47. Roosevelt New Orleans | |
| 15. Four Points by Sheraton
LeMoyné-A Holiday Inn Hotel | 31. Intercontinental New Orleans | 48. Royal St. Charles | |
| | 32. International House | 49. Royal Sonesta | |
| | 33. JW Marriott | 50. The Saint Hotel | |

HOTEL AND AIRPORT SHUTTLE SCHEDULE

	Tuesday March 11	Wednesday March 12	Thursday March 13	Friday March 14	Saturday March 15
Hotel Shuttle	6:30 AM – 6:30 PM	6:30 AM – 6:30 PM	6:30 AM – 6:30 PM	6:30 AM – 6:30 PM	6:30 AM – 6:00 PM
Airport Shuttle	No Service	8:00 AM – 6:30 PM	8:00 AM – 6:30 PM	8:00 AM – 6:30 PM	8:00 AM – 6:30 PM

Route #	Hotel	Boarding Location at Convention Center	Boarding Location at Hotel
Route 8	Ambassador Hotel	Lobby I	@ Loews - Poydras Street Entrance
Route 5	Astor Crowne Plaza 🚍	Lobby I	Canal Street Entrance
Route 4	Best Western St. Christopher	Lobby D	@ Sheraton – Canal Street Entrance
Route 3	Bienville House	Lobby D	@ Westin Canal Place - Iberville Street Entrance
Route 2	Bourbon Orleans	Lobby D	@ Omni Royal Orleans - St. Louis Street Entrance
Route 2	Chateau LeMoyne	Lobby D	@ Dauphine Orleans - Dauphine Street Entrance
Route 6	Cotton Exchange	Lobby I	@ Roosevelt – Baronne Street Entrance
Route 4	Country Inn and Suites	Lobby D	@ Doubletree New Orleans - Tchoupitoulas Street Entrance
Route 5	Courtyard Iberville	Lobby I	@ Ritz-Carlton - Canal Street Entrance
🚶	Courtyard Marriott - Convention Center	Walk 🚶	.24 miles / 5 minute walk
Route 4	Courtyard Marriott St. Charles	Lobby D	@ JW Marriott - Canal Street Entrance
Route 2	Dauphine Orleans 🚍	Lobby D	Dauphine Street Entrance
Route 4	Doubletree New Orleans 🚍	Lobby D	Tchoupitoulas Street Entrance
Route 6	Drury Inn and Suites 🚍	Lobby I	Poydras Street Entrance
🚶	Embassy Suites	Walk 🚶	.27 miles / 6 minute walk
Route 1	Four Points	Lobby D	@ Royal Sonesta - Conti Street Entrance
🚶	Hampton Inn - Convention Center	Walk 🚶	.21 miles / 4 minute walk
Route 5	Hampton Inn Downtown	Lobby I	@ Astor Crowne Plaza – Canal Street Entrance
Route 8	Harrah's New Orleans	Lobby I	@ Loews - Poydras Street Entrance
Route 6	Hilton Garden French Quarter	Lobby I	@ Roosevelt – Baronne Street Entrance
🚶	Hilton Garden Inn - Convention Center	Walk 🚶	.12 miles / 2 minute walk
Route 7	Hilton St. Charles	Lobby I	@ InterContinental – Poydras Street Loading Zone
Route 6	Holiday Inn Superdome	Lobby I	@ Roosevelt – Baronne Street Entrance
Route 7	Hotel InterContinental 🚍	Lobby I	Poydras Street Loading Zone
Route 8	Hotel Modern 🚍	Lobby I	Andrew Higgins Street Entrance
Route 3	Hotel Monteleone	Lobby D	@ New Orleans Marriott - Canal Street Entrance
Route 5	Hyatt French Quarter	Lobby I	@ Ritz-Carlton - Canal Street Entrance
🚶	Hyatt Place - Convention Center	Walk 🚶	.07 miles / 1 minute walk
Route 4	International House	Lobby D	@ Sheraton – Canal Street Entrance
Route 4	JW Marriott 🚍	Lobby D	Canal Street Entrance
Route 7	La Quinta	Lobby I	@ InterContinental – Poydras Street Loading Zone
Route 1	Le Marais	Lobby D	@ Royal Sonesta - Conti Street Entrance
Route 6	Le Pavillon	Lobby I	@ Drury Inn – Poydras Street Entrance
Route 8	Loews New Orleans 🚍	Lobby D	Poydras Street Entrance
🚶	Marriott - Convention Center	Walk 🚶	.07 miles / 1 minute walk

Route #	Hotel	Boarding Location at Convention Center	Boarding Location at Hotel
Route 2	Masion Dupuy	Lobby D	@ Dauphine Orleans - Dauphine Street Entrance
Route 1	Mazarin	Lobby D	@ Royal Sonesta - Conti Street Entrance
Route 8	New Orleans Hilton 	Lobby I	Breezeway Entrance
Route 3	New Orleans Marriott 	Lobby D	Canal Street Entrance
Route 4	Omni Royal Crescent	Lobby D	@ Sheraton – Canal Street Entrance
Route 2	Omni Royal Orleans 	Lobby D	St. Louis Street Entrance
Route 7	Queen and Crescent	Lobby I	@ InterContinental – Poydras Street Loading Zone
	Renaissance Arts	Walk 	.44 miles / 10 minute walk
Route 6	Renaissance Pere Marquette	Lobby I	@ Roosevelt – Baronne Street Entrance
	Residence Inn	Walk 	.24 miles / 5 minute walk
Route 5	Ritz-Carlton New Orleans 	Lobby I	Canal Street Entrance
Route 6	Roosevelt 	Lobby I	Baronne Street Entrance
Route 1	Royal Sonesta 	Lobby D	Conti Street Entrance
Route 4	Royal St. Charles	Lobby D	@ JW Marriott - Canal Street Entrance
Route 4	Sheraton New Orleans 	Lobby D	Canal Street Entrance
	Spring Hill Suites	Walk 	.13 miles / 3 minute walk
Route 4	St. James	Lobby D	@ Doubletree New Orleans - Tchoupitoulas Street Entrance
Route 8	Staybridge Suites	Lobby I	@ Loews - Poydras Street Entrance
Route 7	The Blake	Lobby I	@ InterContinental – Poydras Street Loading Zone
Route 5	The Saint	Lobby I	@ Ritz-Carlton - Canal Street Entrance
Route 1	W French Quarter	Lobby D	@ Royal Sonesta - Conti Street Entrance
Route 7	W New Orleans 	Lobby I	Poydras Street Entrance
Route 3	Westin Canal Place 	Lobby D	Iberville Street Entrance
Route 7	Whitney Wyndham	Lobby I	@ InterContinental – Poydras Street Loading Zone
Route 7	Windsor Court	Lobby I	@ W New Orleans – Poydras Street Entrance
Route 6	Wyndham Baronne Plaza	Lobby I	@ Roosevelt – Baronne Street Entrance
Route 5	Wyndham French Quarter	Lobby D	@ Astor Crowne Plaza – Canal Street Entrance
	Wyndham Riverfront	Walk 	.27 miles / 6 minute walk

 = Passenger Pickup = Walk to Hotel

= Wheel Chair Accessible Vehicles: Call (504)428-2237 and allow (1) Hour for service.

EXPERIENCE

The very best in orthopaedic education, research, and technology

2015 Annual Meeting

March 24 – 28

Las Vegas, Nevada

2016 Annual Meeting

March 1 – 5

Orlando, Florida

All Academy members will automatically receive an Annual Meeting registration packet in mid-October.

AAOS
AMERICAN ACADEMY OF
ORTHOPAEDIC SURGEONS



“The price of apathy towards public affairs is to be ruled by evil men.”
—Plato

Understanding the legislative issues that affect you as an orthopaedic surgeon is a critical first step in becoming more politically active. Political advocacy covers a wide range of activities, including voting in elections, lobbying a Member of Congress, or contributing to the Political Action Committee of the American Association of Orthopaedic Surgeons (Orthopaedic PAC). Formed in 1999, the Orthopaedic PAC works to advance policy issues that face orthopaedic surgeons.

The Orthopaedic PAC supports candidates for Federal office who advocate for the issues that you as orthopaedic surgeons face on a daily basis. It is the only national political action committee in Washington, D.C. representing orthopaedic surgeons before Congress. The Orthopaedic PAC works to build a coalition of pro physician members in Congress who will fight for legislation that supports the practice of medicine.

The Orthopaedic PAC also enhances other advocacy activities of the AAOS, such as the National Orthopaedic Leadership Conference (NOLC), Research Capitol Hill Day, and grassroots outreach programs such as the Washington Health Policy Fellowship. The PAC empowers our advocacy efforts with the additional resources needed to succeed.

It is easy to become frustrated and fatigued by the demands coming out of Washington. But did you know that the AAOS Office of Government Relations in conjunction with the Orthopaedic PAC have protected the in-office ancillary services exception to the Stark Laws from elimination in the fiscal cliff legislation, have worked closely with House and Senate leaders to help craft the Sustainable Growth Rate (SGR) fix legislation and have achieved a 25% increase in funding for the Peer-Reviewed Orthopaedic Research Program in the fiscal year 2012 appropriations bill?

To learn more about AAOS’ legislative and regulatory activities and the Orthopaedic PAC, visit the AAOS Advocacy Booth located in Hall F, Booth 4213.

www.aaos.org/PAC

2013-14 Annual Meeting Committee

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Representative

Thomas (Quin) Throckmorton, MD
Germantown, TN
2015 Central IC Chair

*The Academy would like to
thank the Annual Meeting
Committee for their hard work
and contributions to the
2014 Annual Meeting*



IMPROVING LIVES by supporting excellence in orthopaedic research

“Am I going to be
able to walk again
without help?”

Amanda Marshall, MD
hears this question nearly
every day in her office.



Amanda Marshall, MD

Despite the exceptional success total knee and total hip arthroplasty have in restoring joint function and mobility, polyethylene wear and osteolysis continue to be major factors that limit the longevity of current implants.

With two OREF grants, Dr. Marshall investigated particle-induced osteolysis on mesenchymal stem cell replication in an effort to develop alternatives to revision surgeries associated with bone loss and subsequent aseptic loosening.

Read more at www.oref.org/AmandaMarshall

To ensure research that will
change patients' lives receives
the critical funding it deserves,
contribute to OREF's
2014 Annual Fund

today

www.oref.org/donate14



Orthopaedic Research and Education Foundation
6300 North River Road, Suite 700 | Rosemont, Illinois 60018-4261
(847) 698-9980 | www.oref.org

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1090-006

Safety

Emergency Numbers

Fire/Police Emergency: In case of an Emergency please use any house phone located throughout the Morial Convention Center and dial extension 3040.

Morial Convention Center Security Dispatch (24 hours):
(504)582-3040

City Police Emergency: 911

City Police Non-Emergency: (504)821-2222

Poison Control: (800)222-1222 (Nationwide)

Nearest Hospitals

New Orleans Urgent Care
900 Magazine Street, (504)552-2433 0.3 miles

Tulane University Hospital
1415 Tulane Ave, (504)988-5344 1.2 miles

For Your Safety -When you are outside you should:

- Get directions before leaving the hotel or restaurant.
- Take taxis or shuttles you recognize.
- Walk with another person. Single targets are the most likely victims of crime.
- Do not wear your badges or carry conference bags. Both identify out-of-towners.
- Avoid dark, isolated areas, such as closed plazas and apparent shortcuts back to the hotel.

First Aid – Morial Convention Center, Lobby E and H

These stations are fully equipped and staffed by a licensed medical professional and include automated external defibrillators for reviving heart attack victims.



• Lobby E - Hours of Operation:

Tuesday – Thursday.....7:00 AM – 7:00 PM

Friday.....7:00 AM – 7:00 PM

Saturday.....7:00 AM – 6:00 PM

• Lobby H - Hours of Operation:

Tuesday – Saturday.....7:00 AM – 7:00 PM

Drug Stores

Walgreens, 1801 Saint Charles Avenue, (504)561-8458

• Hours of Operation:

Monday – Sunday..... 24 hours

• Pharmacy Hours:

Monday – Sunday..... 24 hours

CVS, 800 Canal Street, (504)528-7099

• Hours of Operation:

Monday – Sunday..... 7:00 AM – 12:00 Midnight

• Pharmacy Hours:

Monday – Friday.....8:00 AM – 8:00 PM

Saturday.....9:00 AM – 6:00 PM

Sunday.....10:00 AM – 6:00 PM

Walgreens, 900 Canal Street, (504)568-1271

• Hours of Operation:

Monday – Sunday..... 7:00 AM – 12:00 Midnight

Drug Stores continued

• Pharmacy Hours:

Monday – Friday.....8:00 AM – 8:00 PM

Saturday.....9:00 AM – 6:00 PM

Sunday.....10:00 AM – 6:00 PM

AAOS Now

The Daily Edition of *AAOS Now*, the official newspaper of the AAOS Annual Meeting, is published Tuesday through Friday. Pick up a copy from the newspaper racks located throughout the convention center and on the shuttle buses. Each issue contains coverage of events and scientific presentations, news items, and reports on guest speakers and award winners, along with late-breaking news. It's your source for news during the Annual Meeting!



AAOS Privacy Policy – Use of Personal Information

Annual Meeting registration lists, including the medical registrant's name, postal mailing address, and phone number, are available for sale to exhibitors in advance of and after the Annual Meeting. In addition, certain personal information, including the medical registrant's name, postal mailing address, phone number, hospital affiliation, and practice focus, is available at the Annual Meeting to exhibitors through a "lead retrieval system" mechanism.

For additional information, please refer to the entire AAOS Privacy Policy by visiting www.aaos.org/privacy.

Academy Lounges

Morial Convention Center, Lobby G and Hall G

Need a comfortable place to surf the web, catch up with a colleague, and keep up with the Annual Meeting Twitter feed? Relax with your colleagues in an Academy Lounge.

ADA Needs

The Morial Convention Center is ADA compliant. In accordance with the ADA, they are responsible for permanent premises access accommodations, such as, but not limited to, elevator standards, door width standards, and restroom accessibility. It is the group's responsibility to provide non-permanent accessibility requirements, such as, but not limited to, hearing-assisted or visually-assisted devices, and temporary seating accessibility and/or interpreters. Wheelchairs are available through the following company:



The UPS Store – Mobility Scooter Rental
(504)670-8941 or www.theupsstorelocal.com/6216

Advocacy Booth

Morial Convention Center, Hall F, Booth 4213

Learn more about AAOS' legislative and regulatory activities and the Orthopaedic PAC.

• Hours of Operation:

Wednesday-Thursday.....9:00 AM – 5:00 PM

Friday.....9:00 AM – 4:00 PM

Airline Information

If you need to make, change, or reconfirm your reservation, please contact the airline direct. Toll-free numbers for major airlines and CorpTrav are listed below. Change fees may apply and will be charged according to the airline's policy at the time the change is made.



American Airlines	(800)433-7300
Delta	(800)221-1212
United Airlines	(800)864-8331
CorpTrav	(800)211-8016

Airport Shuttle Reservation Counter

Morial Convention Center, Lobby E
Shuttle service is available from the airport to downtown hotels for \$20.00 (per person, one-way) or \$38.00 (per person, round-trip). Advance reservations are required 24 hours prior to travel. ADA accessible requests are required 48 hours prior to travel. Ticket booths are located on the lower level in the baggage claim area of the airport. Book online at www.airportshuttleneworleans.com/aaos0414 to receive a \$3.00 discount or call (866)596-2699 to make a reservation over the phone.

- **Airport Shuttle Bus Hours of Operation:**
Wednesday – Saturday 8:00 AM – 6:30 PM

Allied Organization Displays

Morial Convention Center, Hall F
The booths will be staffed during the following hours:
Wednesday-Thursday 9:00 AM – 5:00 PM
Friday 9:00 AM – 4:00 PM

American Society of Orthopaedic Physician's Assistants - ASOPA	Booth 4119A
Asociacion Argentina de Ortopedia y Traumatologia	Booth 4123A
Chinese Orthopaedic Association.....	Booth 4218A
European Federation of National Associations of Orthopaedics and Traumatology - EFORT	Booth 4115A
National Association of Orthopaedic Technologists - NAOT	Booth 4222B
Operation Walk USA	Booth 4115B
Orthopaedics Overseas	Booth 4123B
SICOT	Booth 4218B
SIGN Fracture Care International.....	Booth 4214B
Sociedad Colombiana de Cirugia Ortopedica y Traumatologia – Grupo Corporativo - SCCOT	Booth 4222A
Sociedad Espanola de Cirugia Ortopedica y Traumatologia – SECOT	Booth 4212A
The Perry Initiative	Booth 4119B
The Royal College of Orthopaedic Surgeons of Thailand – RCOST	Booth 4214A

Please note the different locations and hours for ABOS, AJRR, and OLC Booths:

American Board of Orthopaedic Surgery – ABOS.....	Lobby G
American Joint Replacement Registry – AJRR.....	Lobby G
Orthopaedic Learning Center – OLC.....	Lobby G

The booths will be staffed during the following hours:
Tuesday 8:00 AM – 6:00 PM
Wednesday – Friday 7:00 AM – 6:00 PM

Audio Sales

Morial Convention Center, Academy Hall E
Digital audio downloads of selected sessions may be ordered for post meeting delivery. Orders may be placed at the sales desk. Most educational sessions are recorded.

- **Hours of Operation:**
Tuesday 8:00 AM – 6:00 PM
Wednesday – Friday 7:00 AM – 6:00 PM
Saturday 7:00 AM – 3:00 PM

Badge Information

Everyone who attends the AAOS Annual Meeting must register. Badges are required for entrance to the Exhibit Halls and to attend all other official AAOS sessions. The following badge holder and badge stock colors have been issued:

Badge Holders

Yellow.....	AAOS Fellow
Tan.....	AAOS Members, Resident/Candidate Member, International Members
Blue.....	Non-Member Physician, International Attendee, and U.S. Residency, U.S. Fellowship
Gray.....	U.S. Allied Health
Clear.....	Social Program
Black.....	AAOS Staff
Pink.....	Press

Badge Stock Colors

Lavender..	Social Program
Orange.....	Commercial Representative
Green.....	Technical Exhibitor

Business Center – The UPS Store - (504)670-8941

Morial Convention Center, Lobby F
Unique to the Morial Convention Center is an owned and operated UPS Store (TUPSS) to serve as your full-service business center. Packing, shipping, printing services, photocopying, faxing, and office supplies cannot be more convenient and cost effective. VISA, Master Card, and American Express are accepted.

- **Hours of Operation:**
Tuesday - Saturday 8:00 AM – 6:00 PM

Cash Station/ATM

Morial Convention Center, Lobby B and E
ATM/Banks within close proximity to the convention center:



JPMorgan Chase

2 Poydras St (Inside the Hilton Hotel – ATM only)

Hours of Operation:

ATM Open 24 Hours

Chase

201 St Charles Ave #110, (504)623-8413

Branch Hours of Operation:

Monday - Friday 8:00 AM – 5:00 PM

ATM Hours of Operation:

Monday - Sunday..... Open 24 Hours

Capital One Bank

313 Carondelet Street, (504)533-5712

Hours of Operation:

Monday - Thursday 8:00 AM – 4:00 PM

Friday 8:00 AM – 5:00 PM

Whitney Bank

610 Poydras St, (504)586-7380

Branch Hours of Operation:

Monday - Friday9:00 AM – 5:30 PM

ATM Hours of Operation:

Monday - Sunday Open 24 Hours

Charging Stations

Stop by the electrical plug-in stations to recharge your cell phones, laptops, and tablets.

Morial Convention Center, Lobby B and G**• Hours of Operation:**

Tuesday8:00 AM – 6:00 PM

Wednesday – Friday7:00 AM – 6:00 PM

Saturday7:00 AM – 5:30 PM

Morial Convention Center, Academy Hall B and Academy Hall E**• Hours of Operation:**

Tuesday8:00 AM – 6:00 PM

Wednesday – Friday7:00 AM – 6:00 PM

Saturday7:00 AM – 3:00 PM

Morial Convention Center, Hall G and Hall I**• Hours of Operation:**

Wednesday – Thursday9:00 AM – 5:00 PM

Friday9:00 AM – 4:00 PM

Children

The following guidelines have been approved for the Annual Meeting. Only children 16 or over will be admitted to the educational programs, including the exhibit hall.

Children and individuals of any age, providing they are not disruptive to the meeting, are welcome in the following activities:

- Opening Ceremony
- Posters
- Scientific Exhibits

Children under the age of 16 are not permitted in the following areas of the meeting:

- Technical Exhibit Hall
- Educational Sessions (paper presentations, symposia, instructional courses)
- Business Meetings
- Ceremonial Meeting
- Guest Speaker Presentation

The Academy does provide a Social Program which is open to all spouse, family members and guests accompanying members and attendees to the meeting. Tours and events are offered daily during the meeting.

Please visit the Social Program counter in Lobby A for information on family friendly events.

CME Kiosks

Print your CME certificate for the Annual Meeting and participating Specialty Societies.

Morial Convention Center, Academy Hall E**• Hours of Operation:**

Tuesday8:00 AM – 6:00 PM

Wednesday – Friday7:00 AM – 6:00 PM

Saturday7:00 AM – 3:00 PM

Morial Convention Center, Lobby A, E, and H**• Hours of Operation:**

Tuesday8:00 AM – 6:00 PM

Wednesday – Friday7:00 AM – 6:00 PM

Saturday7:00 AM – 5:30 PM

Coat and Luggage Check**Morial Convention Center, Lobby A, D, and I**

For identification, please leave a business card in your pocket.

• Hours of Operation:

Tuesday – Saturday6:30 AM – 6:30 PM

Disaster Response Course

Developed by SOMOS

Co-sponsored by AAOS, OTA, and POSNA

Course Director: COL Tad L. Gerlinger, MD

Course Co-Directors: COL (Ret) Theodore W. Parsons III, MD and Christopher T. Born, MD

Monday – Morial Convention Center, Room 208

Tuesday – Russell C. Klein Center at Louisiana State University

This hands-on skills course is the central training element for AAOS Fellows to be included in the AAOS Disaster Responder Database. This course covers the application of orthopaedic care techniques critical to disaster-inflicted injuries and treating the wounded in austere environments. Get the important training you need for personal and team preparation to effectively handle the physical, emotional, and care management skills for treating the injured in areas affected by catastrophic events. Day one of lectures is followed by a half-day in the cadaveric skills lab.

For more information on future Disaster Response Courses, please view our CME Course Calendar online at www.aaos.org/courses or contact Customer Service at (800)626-6726.

Focus Groups

Focus Group discussions are being held in rooms 211 and 213 on Wednesday and Thursday. Those who have been invited to observe the discussion groups, please meet in room 212. For additional details please reference the AAOS Annual Meeting Mobile Meeting Guide App. Please note that these are invite-only events.

• Hours of Operation:

Wednesday12:00 – 1:30 PM

Thursday6:00 – 7:30 AM and 12:00 – 1:30 PM

Food Service

The Morial Convention Center has ample food and beverage concession areas to satisfy any appetite. Food and beverage schedule is subject to change. Detailed menu and location information is available at the Welcome & Information Booths located throughout the Morial Convention Center.

AAOS Bistro located in Hall E-F with an all-inclusive buffet lunch and available table reservations, Wednesday – Friday, from 11:00 AM – 2:30 PM. Tickets can be purchased in Lobby G and the back of Hall F.

Forum for Young Orthopaedic Surgeons with the American Board of Orthopaedic Surgery

Morial Convention Center, Room 349

Thursday, 10:30 AM – 12:30 PM

This free annual forum provides senior residents and new practitioners a unique opportunity to meet informally with the

Executive Director, Shepard Hurwitz, MD, of the American Board of Orthopaedic Surgery (ABOS). He will provide you with insightful information about Board requirements and procedures. This special program is a “must attend” as it will answer your questions about this important step in your career. If you are looking at ABOS Part 1 or Part 2 of the exam in the near future, you should not miss it!

Guest Nation - France

Help us welcome France as the Guest Nation for the AAOS 2014 Annual Meeting. Look for special events and activities that will focus on France and the issues facing the French orthopaedic community, including 10 special posters from France, three Instructional Course Lectures co-branded by The French Society of Orthopaedic and Trauma Surgery (SOFOT), and remarks by the President of the Société Française de Chirurgie Orthopédique et Traumatologique (SOFOT) during the opening ceremony. Please stop by the Guest Nation booth, located in Lobby G, to learn more.



Handout Sales

Resource Center, Morial Convention Center, Academy Hall E
Selected Instructional Course handout flash drives will be available for purchase.

• Hours of Operation:

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 3:00 PM

Hotel Shuttle Bus Routes

Complimentary shuttle service will run between AAOS hotels and the Morial Convention Center.

• Hours of Operation:

Tuesday – Friday	6:30 AM – 6:30 PM
Saturday	6:30 AM – 6:00 PM

Items left on the shuttles will be turned in to the Academy Headquarters Office in Room 238.

For the complete details on the Shuttle Schedule and Hotel Map, see pages 17-19.

Hotels without shuttle service (walking distance):

Courtyard Marriott – Convention Center
Embassy Suites
Hampton Inn – Convention Center
Hilton Garden Inn – Convention Center
Hyatt Place – Convention Center
Marriott – Convention Center
Renaissance Arts
Residence Inn
Spring Hill Suites
Wyndham Riverfront

For wheelchair-accessible vehicles please call (504)428-2237. Please allow two hour notice for this service.

Hotel Reservations – 2015 Annual Meeting

AAOS Members attending this year’s Annual Meeting can make hotel reservations for the 2015 Annual Meeting in Las Vegas. Stop by the Internet Connections kiosks to book today.
Morial Convention Center, Lobby A, B, D, G, and H

• Hours of Operation:

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 5:30 PM

Morial Convention Center, Academy Hall C and E

• Hours of Operation:

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 3:00 PM

Morial Convention Center, Hall E, Near Booth 4563

• Hours of Operation:

Wednesday – Thursday	9:00 AM – 5:00 PM
Friday	9:00 AM – 4:00 PM

Housing Help Desk

Morial Convention Center, Lobby D

The official housing bureau, Wyndham Jade, provides housing assistance to all attendees during the meeting. If you have a problem with your reservation or need to change hotels, please go to the Housing Help Desk.

• Hours of Operation:

Monday	2:00 PM – 6:00 PM
Tuesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 5:30 PM

Image Capture

The Academy is videotaping certain portions of the Annual Meeting. The tapes will be used for educational purposes and/or may be sold alone or in connection with other AAOS products. Please note that by attending the Annual Meeting, your image and/or voice may be captured and included as part of this event.

Instructional Course Ticket Exchange

Morial Convention Center, Lobby E

Tickets purchased in advance may be exchanged at the Ticket Exchange counter. The registrant must pay the difference between the advance purchase price and the onsite purchase price in order to exchange a ticket. The difference for the Orthopaedic Review Course is \$100. No exchanges after the start of a course.



International Business Office

Morial Convention Center, Room 341

Academy Staff are available in the International Business Office to help assist you with any issues. Registration inquiries will be handled at registration in Lobby E.

• Hours of Operation:

Tuesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 5:30 PM

International Groups Department

Morial Convention Center, Lobby E

Hotel and registration assistance is available to international guests who used this service.

International Surgeons Lounge

Morial Convention Center, Room 342

We invite International Surgeons to join AAOS at the International Surgeons Lounge for refreshments (coffee, tea and water), to relax, meet with other international colleagues and browse information on AAOS international activities.

- **Hours of Operation:**

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 5:30 PM

International Visitor Tax Free Shopping – Refund Center

Morial Convention Center, Lobby I, Ticket Office III

International visitors are eligible for Tax Free Shopping while in Louisiana.

1. Shop at participating Louisiana Tax Free Shopping stores.
2. Present a photo ID at the time of purchase to receive a “tax free voucher”.
3. Bring your passport, AAOS - ID badge, tax free vouchers and sales receipts to the refund center.

For further details visit www.louisianataxfree.com

Internet Connections

These new “all-in-one” stations allow you to utilize the following key connections:

- 2014 Exhibitor Directory
- 2015 Member Housing
- Email sites
- Flight Check-in

Morial Convention Center, Lobby A, B, D, G, and H

- **Hours of Operation:**

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 5:30 PM

Morial Convention Center, Academy Hall C and E

- **Hours of Operation:**

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 3:00 PM

Morial Convention Center, Hall E, Near Booth 4563

- **Hours of Operation:**

Wednesday – Thursday	9:00 AM – 5:00 PM
Friday	9:00 AM – 4:00 PM

Job Placement Center

Morial Convention Center, Academy Hall B

The Academy’s job placement service, providing a list of employment opportunities and candidates, is available during the Annual Meeting.

- **Hours of Operation:**

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 3:00 PM

Participants

The Job Placement Center has been established for the benefit of the Academy membership. In addition, hospital or practice administrators and medical staff personnel are permitted to access the Job Placement Center. All participants must have an active listing. Professional recruiters are not allowed to participate in this service. This policy is strictly upheld by the Academy. Due to space limitations, we ask that you limit attendance to 2 representatives per company.

Registration Fees/Check-In

All participants MUST register for the Annual Meeting to gain

entry to the Job Placement Center. On-site registration fee is \$250 per person.

All participants must check-in at the on-site Job Placement Center in order for your practice opportunity or Job Seekers listing to be advertised in the on-site booklets. Listings checked-in before 3:00 PM will appear in the next day’s books.

The listings of Job Seekers and Practice Opportunities, represented at the meeting, will be available by 8:00 AM every day.

New Listings

You can submit a new ad for an employment opportunity on-site for a fee. There is no fee to orthopaedic surgeons looking for employment. Listings can be submitted or edited directly from the AAOS website: www.aaos.org/placement.

Bulletin Boards

All participants must check-in prior to posting their ad on the bulletin board. An active listing is required in order to post your ad on-site. Only orthopaedic surgery opportunities will be posted.

Posted items should NOT exceed 8.5” x 11”. Due to space limitations, only one poster per practice is allowed.

Interview Booths

The Job Placement Center may be used to conduct on-site interviews. Private interview space may be reserved on-site at the Job Placement Center. Booths are not intended to be used as exhibit space nor may they be occupied by a candidate or employer for an extended period of time.

Lost and Found

Academy Headquarters Office, Morial Convention Center, Room 238

- **Hours of Operation:**

Monday	7:00 AM – 6:00 PM
Tuesday – Friday	6:30 AM – 6:30 PM
Saturday	6:30 AM – 6:00 PM

AAOS Mobile Meeting Guide

The AAOS Mobile Meeting Guide application is available free from the App Store or Google Play. View, search, and schedule scientific programming – including all AAOS educational opportunities – Technical Exhibitor information, Social Program, Committee and Affiliate Meetings, and Special Events. You may even add personal events to your schedule.



A mapping program for meeting room location and exhibiting companies within Morial Convention Center is also included. Need some assistance? Visit the help desk located in the Resource Center, Academy Hall E.

Non-Smoking Policy

The AAOS Annual Meeting is a non-smoking meeting. Smoking is not permitted in public areas such as restaurants, hotel lobbies, the Morial Convention Center, or Louis Armstrong International Airport (MSY).

Nursing and Allied Health Program

Morial Convention Center, Room R03 and R06

The American Academy of Orthopaedic Surgeons (AAOS), the National Association of Orthopaedic Nurses (NAON), and the

National Association of Orthopaedic Technologists (NAOT) have collaborated to develop the Nursing and Allied Health Program. The program consists of six courses (NUR1, NUR2, NUR3, NUR4, CAST1 and CAST2) designed for registered and licensed practical nurses, physician assistants, orthopaedic technologists, and physical and occupational therapists. In addition, applications have been made to the orthopaedic technologists, physician assistants, and the American Nursing Credentialing Center in order to provide multiple types of contact hours for the aforementioned courses.

To attend any of the Nursing and Allied Health courses, you need to register for the AAOS Annual Meeting and purchase a ticket for each course. The Annual Meeting on-site registration fee is \$250.

Tickets for NUR courses are \$140 per course. Tickets for the CAST1 and CAST2 courses are \$220. A complete listing of the courses can be found on pages 306-309.

Offices

Morial Convention Center

Academy Headquarters	Room 238	(504)670-6025
Exhibits Office	Room 235	(504)670-6018
International Business Office	Room 341	(504)670-6037
Media Briefing	Room 337	
Newspaper Office	Room 336	(504)670-6044
Press Office	Room 338	(504)670-6047
Ready Rooms	Room 228	(504)670-6011
	Room 252	(504)670-6013

Orthopaedic Video Theater – Featured Presentations

Morial Convention Center, Academy Hall E

This year we will once again be hosting the Featured Presentation Theater, an intimate setting where you can meet video authors, view programs as part of the live audience and participate in question and answer sessions. A complete listing of the Orthopaedic Video Theater programs and the Featured Presentation Theater schedule is listed beginning on page 217.

• Hours of Operation:

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 3:00 PM

Parking

The Morial Convention Center is located at 900 Convention Center Blvd., New Orleans, LA, 70130. Parking is available at the center for a daily fee. Many parking lots have reduced rates (“Early Bird Specials”) if you arrive before 9:00 AM. Downtown businesses and department stores offer free or discounted parking with minimum purchases. Metered Parking is also available from 8:00 AM to 6:00 PM. You cannot park at bagged meters. Call Parking Enforcement at (504)826-1880 if you have a question about parking in New Orleans. **DON’T GET TOWED - ALWAYS READ THE SIGNS BEFORE YOU PARK!**

Planning Committees

2014 Central Program Committee

Brian J. Cole, MD, MBA, Chicago, IL, Chair
 James R. Ficke, MD, Baltimore, MD
 Steven L. Frick, MD, Orlando, FL
 William M. Mihalko, MD, PhD, Germantown, TN
 Michael J. Stuart, MD, Rochester, MN

2014 Central Instructional Course Committee

Craig J. Della Valle, MD, Chicago, IL, Chair
 COL Tad L. Gerlinger, MD, San Antonio, TX
 Robert A. Hart, MD, Portland, OR
 Mark W. Pagnano, MD, Rochester, MN
 Thomas (Quin) Throckmorton, MD, Germantown, TN
 Dempsey S. Springfield, MD, Boston, MA, Ex-Officio

2014 Exhibits Committee

Joseph T. Moskal, MD, Roanoke, VA, Chair
 Dennis B. Brooks, MD, Pepper Pike, OH
 Jonathan J. Carmouche, MD, Roanoke, VA
 Karen S. Duane, MD, Newberry, FL
 Benjamin Goldberg, MD, Chicago, IL
 Donald H. Lee, MD, Nashville, TN
 John W. Mann III, MD, Roanoke, VA
 James V. Nepola, MD, Iowa City, IA
 Rick F. Papandrea, MD, Waukesha, WI
 Jeffrey M. Schwartz, MD, FACS, New York, NY
 John R. Tenny, MD, Red Oak, TX
 Scott D. Weiner, MD, Akron, OH

2014 Orthopaedic Video Theater Committee

Kevin D. Plancher, MD, New York, NY, Chair
 Stephen Bartol, MD, Detroit, MI
 James M. Bennett, MD, Houston, TX
 Herbert J. Cooper, MD, New York, NY
 Eric W. Edmonds, MD, San Diego, CA
 J. Mark Evans, MD, Mechanicsville, VA
 John P. Ketz, MD, Pittsford, NY
 Ronald A. Navarro, MD, Rolling Hills, CA
 Christopher E. Pelt, MD, Salt Lake City, UT
 J. Michael Wiater, MD, Beverly Hills, MI
 Mark W. Zawadsky, MD, Washington, DC

Playground Shuttle

AAOS Safe and Accessible Playground Build

Buses depart hourly from the shuttle bus area outside Lobby B.
 Tuesday.....7:30 AM – 2:30 PM

Private Meeting

The AAOS 2014 Annual Meeting is a private meeting. The AAOS reserves the right to control space and ask people to leave the meeting who are not qualified to attend or who cause disruptions, at AAOS’ sole discretion.

Proceedings

Be sure to visit our website to view the Proceedings on a PC, tablet, or mobile device at www.aaos.org/proceedings.

Public Transportation

New Orleans is a city remarkably compact and easy to navigate. Many of the city’s attractions, accommodations, and event venues are within walking distance of each other. It only costs \$1.25 to take an RTA bus or one of the city’s famed streetcars, which travel the Riverfront and Canal Street. The RTA Customer Care Rideline, (504)248-3900, is available weekdays 8:00 AM to 4:00 PM for live assistance with routes and schedules. To access fare information, detailed maps, and schedules online, go to www.norta.com.

Ready Rooms

Morial Convention Center, Rooms 228 and 252

- Hours of Operation:
Monday (Room 252 Only)..... 2:00 PM – 6:00 PM
Tuesday – Friday 6:30 AM – 6:00 PM
Saturday..... 6:00 AM – 5:30 PM

Redemption Centers

Morial Convention Center, Booths 275, 1275, 5759, and 7055

All registered medical attendees will receive coupons in their registration packet that can only be redeemed at AAOS Redemption Centers located in the exhibit halls. A complimentary tote bag will be given to all attendees who turn in their coupons.

On Thursday and Friday, drop off your coupons to enter the drawings for airline tickets, hotel rooms for next year's Annual Meeting, GoPro Cameras, and iPads.

- Hours of Operation:
Wednesday – Thursday 9:00 AM – 5:00 PM
Friday..... 9:00 AM – 4:00 PM

Refund Policy

The Academy will not issue refunds on-site during the meeting. All requests for refunds (registration and/or instructional courses) must have been received in the Academy office on or before January 31, 2014.

Registration On-Site

Morial Convention Center, Lobby E and H

Registration Fees (On-Site)

AAOS Fellows, Members, Resident/Candidate Members in good standing, and International Affiliate Members\$150

International Resident Members\$150

Annual Meeting Official Speakers..... No Fee

Annual Meeting Official Co-Authors\$150

Non-Member Physician or Attendee\$1,000

Non-Member International Medical Attendees – Including Canada.....\$800

Non-Member International Residents (approval required).....\$600

U.S. Fellowship/U.S. Residency\$150

U.S. Allied Health is limited to individuals directly employed by a hospital, healthcare network, university, or freestanding facility administering to patients (i.e. RN, OPA, PA, OTC, ATC, PT, office staff)\$250

- Hours of Operation:
Monday 2:00 PM – 6:00 PM
Tuesday – Friday 7:00 AM – 6:00 PM
Saturday..... 7:00 AM – 5:30 PM

Rental Cars

AAOS has negotiated special rates for rental cars during the meeting. Car reservations can be made via the AAOS website or directly with the rental car companies. Call the number below and mention the discount code listed.

Car Company	Meeting Code	Phone	Internet
Hertz	CV# 02KS0019	(800)654-2240	www.hertz.com
Avis	J095822	(800)331-1600	www.avis.com

Reproduction Policy

The Academy reserves any and all of its rights to materials presented at the Annual Meeting, including Posters and Scientific Exhibits. Reproductions of any kind, by any person or entity, without prior written permission from the Academy, are strictly prohibited. Prohibited reproductions include, but are not limited to, audiotapes, videotape, and/or still photography. Persons violating this policy may have their badge confiscated and be escorted from the meeting.



No unapproved surveys, handouts or literature may be distributed at the meeting.

Resource Center

Morial Convention Center, Academy Hall E

Experience a hands-on showcase of Academy publications, e-books, digital media, and interactive multimedia programs that build your clinical skills and challenge your problem solving aptitude. Discover the Academy's complete line of educational and practice management resources. Stop by to experience the future of surgical skills training – a knee arthroscopy virtual reality simulator. Browse the Academy's collection of educational materials and get your AAOS Membership and member benefits questions answered. Regardless of your practice profile, you'll find solutions at the AAOS Resource Center.

Instructional Course handouts are available for purchase in the Resource Center.

Exhibit Hall Resource Center

Morial Convention Center, Hall G, Booth 5519

For your convenience, when you are in the Exhibit Hall, stop by the AAOS Exhibit Hall Resource Center located in Publishers' Row.

Hours:	Resource Center	Exhibit Hall Booth
Tuesday	8:00 AM – 6:00 PM	Closed
Wednesday – Thursday	7:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Friday	7:00 AM – 6:00 PM	9:00 AM – 4:00 PM
Saturday	7:00 AM – 3:00 PM	Closed

Restaurant Concierge

Morial Convention Center, Lobby G

"On the Town" a local New Orleans concierge and restaurant reservation service is available to assist you in selecting restaurants and entertainment venues during your stay in New Orleans.

- Hours of Operation:
Tuesday 8:00 AM – 6:00 PM
Wednesday – Friday 7:00 AM – 6:00 PM
Saturday 7:00 AM – 1:00 PM

Ribbons

If you did not receive your participant/volunteer ribbon(s) in advance, please stop by the Ribbon Counter located in the Morial Convention Center, Lobby E. Committee members and Board of Councilors will receive their ribbons from their liaisons.

Social Media

Follow the AAOS Annual Meeting:



www.facebook.com/AAOSAnnual



www.twitter.com/AAOSAnnual

Social Program

Morial Convention Center, Lobby A

Tour and seminar information is listed on page 31.

Specialty Day

Saturday, March 15, Morial Convention Center

Specialty Day is a day set aside for scientific programs presented by organizations that are members of the Board of Specialty Societies (BOS). Refer to the listing on page 34.

Taxi Service

Many taxis are privately owned, so one will look different from the other - even those within the same company. Rates from the airport are \$33.00 for 1 or 2 passengers and \$14.00 per passenger for 3 people and up. A taxi ride within the city will cost you \$3.50 plus \$2.00 per mile and \$.25 cents per 40 seconds of waiting time (stuck in traffic, etc). There's a \$1.00 charge per additional passenger. Call the Taxi Bureau at (504)565-6272 if you have questions regarding rates or meter charges.

Technical Exhibits

Morial Convention Center, Halls B-I

• Hours of Operation:

Wednesday – Thursday 9:00 AM – 5:00 PM
Friday 9:00 AM – 4:00 PM

Admission

Admission to the exhibit halls is by badge only. Individuals under the age of 16 are not permitted in the exhibit halls.

Beverage Breaks

Halls B-I, Booths 1273, 4842, and 7055

Complimentary beverage stations will be provided in the exhibit hall each afternoon during the 30 minute break between scientific sessions at 3:30 PM Wednesday – Thursday and on Friday morning at 10:00 AM.

Electronic Skills Pavilion – It's Free!

Hall F, Booth 4563

Presentations that showcase current technology, products, and applications that are developed for the orthopaedic surgeon will take place in the Electronic Skills Pavilion. A schedule of the dates and times of presentations can be found on page 360, in the daily edition of *AAOS Now* and at Booth 4563.

• Hours of Operation:

Wednesday – Thursday 9:30 AM – 4:15 PM
Friday 9:30 AM – 3:15 PM

Exhibitor Directory Kiosk

Stop at an Internet Connections station to view a listing of all exhibitors, their contact and product information, and create and print your personal *My Expo Plan*.

Lead System

There's no need to tote a bulging bag or cram papers in your suitcase when you leave. Simply present your badge to exhibitors whose literature you want to receive. After scanning the bar code, exhibitors will be able to mail materials directly to you after the meeting, enabling you to spend more time in face-to-face discussions with exhibitors.

Seeking Advice? Ask an Expert

Hall I, Booth 7143

Here's an interactive opportunity for you to present a perplexing case to an expert in orthopaedics. Audience participation is encouraged to complement the exchange of ideas. The schedule of topics and the expert leaders is listed on page 362.

• Hours of Operation:

Wednesday 10:30 AM – 4:15 PM
Thursday 9:30 AM – 4:15 PM
Friday 9:30 AM – 3:15 PM

Unopposed Exhibit Time

One hour of unopposed exhibit time will be provided each exhibit day from 12:30 to 1:30 PM.

You are Here Floor Plan and Exhibitor Listing

To assist you in navigating the exhibit halls, pick up an updated floor plan and exhibitor listing at the You Are Here signs located at select entrances to the exhibit halls. These signs and maps are color coded to help you find your way around the exhibit halls.

Webcasting

View 13 symposia webcasts as they are simulcast live from the Annual Meeting. Choose from a variety of topics addressing joint replacement procedures including shoulder, hip, and sports. Did you miss the live simulcasts? View the webcasts anytime 24 hours after the start of the symposium during the Annual Meeting through Sunday, March 23. Both the AAOS.org/annual website and the AAOS Mobile Meeting Guide app provide access to the webcasts for both meeting attendees and virtual participants.

AAOS Members and AAOS Residents: Free

Non-Members: \$199 unlimited viewing through March 23

Wi-Fi

Morial Convention Center

Wireless Internet access – at no charge – will be available throughout the Morial Convention Center Lobbies, Meeting Rooms, Academy Hall, and the Electronic Skills Pavilion.

Worldwide Orthopaedic Arthroplasty Registries

Moderator: William J. Maloney, MD

Wednesday, March 12, 9:00 – 11:00 AM

Morial Convention Center, Room 260

This free informational session is intended for participants to learn from and interact with international arthroplasty registry leaders. Since the 1970's the arthroplasty registry community has transitioned from local institutional efforts and nationwide registries in Scandinavia and currently encompass countries from across Europe, Australia, New Zealand, and North America. The information provided by these registries demonstrated many factors influencing outcomes, with a wealth of academic output, improvements in health care quality, sharing of best practices, and reduction in costs. Recently, arthroplasty registries have begun collaborative arrangements to facilitate data sharing and common methodologies while paying increasing attention to patient reported outcomes and international standardization of metrics.

This session will feature leaders in original pioneering efforts and current collaborative efforts from domestic and international communities. Speakers will present historical origins, focus, value, and goals of their individual registries and current collaborative approaches as related to their visions for future arthroplasty registry efforts.

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Original painting of St. Charles Streetcar by S. Terry Canale, MD.

The Social Program is open to all participants registered for the AAOS 2014 Annual Meeting and their families.

Registration

Visit us online at www.aaos.org/tours or on-site at Morial Convention Center, Lobby A to register for Social Program tours and seminars.

Registration Hours:

Monday2:00 PM – 6:00 PM
 Tuesday-Friday 7:00 AM – 6:00 PM
 Saturday..... 7:00 AM – 12:00 PM

Badges and Tickets

All pre-registered badges and tickets will be available for pick up on-site at the Social Program desk at Morial Convention Center, Lobby A starting Monday, March 10 at 2:00 PM. Badges and Tickets will not be mailed.

Stop by any time prior to your first tour. (See Social Program Desk hours above). You or your spouse will need to provide an ID and confirmation letter to pick up your badge and tickets.

Social Program registrants (categorized as “Spouse”) will receive a name badge. As a spouse you cannot purchase Instructional Course tickets and, no CME credits or verification of attendance will be issued to anyone registered in the “Spouse” category.

Co-workers and associates accompanying a registered attendee cannot register through the Social Program. They will need to go to on-site Registration.

Family badges will be available to non-medical spouses or immediate family onsite during registration hours. Family Badge counters will be located in Lobby E.

Cancellations and Refunds

You may cancel any website ticket purchase up until February 10, 2014. Refunds will not be given after this date.

Participant illness, changes in travel, inclement weather, and late arrival to the tour departure area are beyond the Academy’s control and will not be considered a reason for providing a refund.

Attire

Comfortable walking shoes and layered clothing are recommended for all tours. Tours will not be cancelled due to inclement weather, so please plan accordingly.

Tours

All Social Program tours will depart from Morial Convention Center.

Please plan to board the tour bus 15 minutes prior to the posted departure time on your ticket.

Tuesday, March 11

12:30 PM - 3:30 PM	Louisiana Swamp Tour	\$70
1:00 PM - 4:00 PM	French Quarter Walking Tour	\$50
1:30 PM - 4:30 PM	New Orleans City Tour	\$45

Wednesday, March 12

8:00 AM - 10:00 AM	Locals Overview of the Big Easy	Complimentary
8:00 AM - 10:00 AM	Life After Orthopaedics: 10 Years or More, then What?	\$70
9:00 AM - 1:00 PM	Behind the Scenes of Mardi Gras	\$75
9:00 AM - 2:30 PM	Big Easy Venture	\$95
9:30 AM - 12:30 PM	Garden District Gems	\$55
10:00 AM - 2:30 PM	French Quarter Walking tour with Jazz Brunch	\$135
10:30 AM - 12:30 PM	Life After Orthopaedics: 5 Years or More, then What?	\$70
12:30 PM - 5:30 PM	Oak Alley and Laura Plantations	\$85
1:00 PM - 5:00 PM	National World War II Museum	\$65
1:00 PM - 4:30 PM	Airboat Swamp Tour	\$130
1:30 PM - 4:30 PM	Culinary History Tour	\$125
2:00 PM - 5:00 PM	New Orleans Rum Tour	\$60

Thursday, March 13

9:00 AM - 12:00 PM	Louisiana Swamp Tour	\$70
9:30 AM - 12:30 PM	New Orleans City Tour	\$45
10:00 AM - 2:30 PM	Garden District Gems & Lunch at Commanders Palace	\$145
10:00 AM - 2:00 PM	Cookin’ New Orleans Style	\$90
12:30 PM - 5:30 PM	Oak Alley and Laura Plantations	\$85
1:00 PM - 5:00 PM	Magazine Street-Arts, Antiques and Boutiques	\$65
1:00 PM - 5:00 PM	Birthplace of Jazz Tour	\$100
1:30 PM - 4:30 PM	Cemeteries and Voodoo	\$65
1:30 PM - 5:00 PM	Airboat Swamp Tour	\$130

Friday, March 14

9:00 AM - 4:00 PM	Belles and Bayous	\$150
9:00 AM - 2:30 PM	Big Easy Venture	\$95
9:30 AM - 1:00 PM	Airboat Swamp Tour	\$130
10:00 AM - 2:00 PM	Cookin’ New Orleans Style	\$90
12:30 PM - 3:30 PM	Louisiana Swamp Tour	\$70
1:00 PM - 5:00 PM	Behind the Scenes of Mardi Gras	\$75
1:30 PM - 4:30 PM	Culinary History Tour	\$125
2:00 PM - 5:00 PM	Haunted History Tour	\$70

Saturday, March 15

9:00 AM - 12:00 PM	French Quarter Walking Tour	\$50
9:00 AM - 12:00 PM	Garden District Gems	\$55

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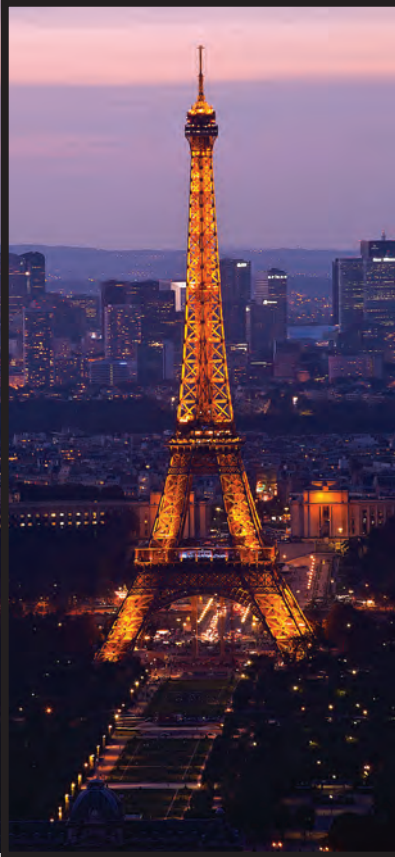


The AAOS Resource Center
Morial Convention Center, Academy Hall E

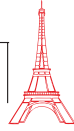
CONVENIENT HOURS

Tuesday	8:00 AM – 6:00 PM
Wednesday – Friday	7:00 AM – 6:00 PM
Saturday	7:00 AM – 3:00 PM

www.aaos.org/store



2014 GUEST NATION France



Help us welcome France as the Guest Nation for the New Orleans meeting. Please stop by the Guest Nation exhibit located in the Morial Convention Center, Lobby G to learn about the accomplishments of the French orthopaedic community.

Look for special activities that focus on issues facing our colleagues in France, including 10 special educational posters, remarks and video by the President of the French Orthopaedic Society (SOFcot) during the Opening Ceremony, and the following ICLs with special guest lecturers from France:

- ICL 122 - International Perspective on Improving the 10-year Outcome of Total Knee Arthroplasty: Get It Right the First Time. 11 March 2014, 10:30 AM - 12:30 PM
- ICL 147 - International Perspective on Preventing and Dealing with Complications in Reverse Shoulder Arthroplasty. 11 March 2014, 1:30 PM - 3:30 PM
- ICL 151 - International Perspectives on the Masquelet Technique for the Treatment of Segmental Defects in Bone. 11 March 2014, 1:30 PM - 3:30 PM

Inaugurated in 2005, the AAOS Guest Nation program was established to foster greater recognition and awareness of the contributions made to the practice of Orthopaedics from the many nations of the world, and to further enhance the robust international flavor and excitement of the AAOS Annual Meeting. AAOS is honored to welcome France as the 2014 Guest Nation.



Visit the AAOS Physician Job Placement Center

If you are a doctor looking for a new practice opportunity or if you are expanding your orthopaedic staff, the Placement Service is designed to help you in your search.

Morial Convention Center, Academy Hall B

Convenient Hours:

Tuesday.....8:00 AM – 6:00 PM
 Wednesday - Friday.....7:00 AM – 6:00 PM
 Saturday.....7:00 AM – 3:00 PM

Browse or post openings on the job boards, meet with potential candidates and schedule on-site interviews.

Your search starts here

Your search for outstanding, qualified candidates can start at the AAOS Annual Meeting and continue throughout the entire year. Visit the online Job Placement Service at www.aaos.org/placement.

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Placement Service

SATURDAY, MARCH 15

Specialty Day is a day set aside for scientific programs presented by organizations that are members of the Board of Specialty Societies (BOS). Each society has its own educational program within the Specialty Day Program. The final programs for each society are available at the individual meeting rooms on Specialty Day.



American Orthopaedic Foot & Ankle Society
 Morial Convention Center, Great Hall B
 7:00 AM – 5:00 PM
 9 AMA PRA Category 1 Credits™



The Hip Society/American Association of Hip and Knee Surgeons
 Morial Convention Center, Theater A
 7:55 AM – 5:00 PM
 7.75 AMA PRA Category 1 Credits™



American Orthopaedic Society for Sports Medicine
 Morial Convention Center,
 La Nouvelle Ballroom B
 7:35 AM – 5:05 PM
 5.75 AMA PRA Category 1 Credits™
 2 AMA PRA Category 1 Credits™
 (Joint AOSSM/ASES session)



The Knee Society/American Association of Hip and Knee Surgeons
 Morial Convention Center, Theater B
 7:55 AM – 5:10 PM
 7.75 AMA PRA Category 1 Credits™



American Shoulder and Elbow Surgeons
 Morial Convention Center, Room 245
 7:25 AM – 5:05 PM
 6 AMA PRA Category 1 Credits™
 2 AMA PRA Category 1 Credits™
 (Joint AOSSM/ASES session)



Limb Lengthening and Reconstruction Society
 Morial Convention Center, Room 350
 8:00 AM – 5:00 PM
 7.5 AMA PRA Category 1 Credits™



**American Society for Surgery of the Hand/
 American Association for Hand Surgery**
 Morial Convention Center, Room 265
 7:00 AM – 5:00 PM
 8.00 AMA PRA Category 1 Credits™



Musculoskeletal Tumor Society
 Morial Convention Center, Room 347
 7:30 AM – 4:00 PM
 6.75 AMA PRA Category 1 Credits™



Orthopaedic Trauma Association
 Morial Convention Center, Theater C
 7:30 AM – 5:00 PM
 6 AMA PRA Category 1 Credits™
 2 AMA PRA Category 1 Credits™
 (Joint OTA/ASSH session)



Arthroscopy Association of North America
 Morial Convention Center,
 La Nouvelle Ballroom C
 7:50 AM – 5:00 PM
 8.25 AMA PRA Category 1 Credits™



Pediatric Orthopaedic Society of North America
 Morial Convention Center, Room 353
 7:55 AM – 4:00 PM
 6.25 AMA PRA Category 1 Credits™



Federation of Spine Associations

- American Spinal Injury Association
- Cervical Spine Research Society
- North American Spine Society
- Scoliosis Research Society

Morial Convention Center, Room 345
 8:00 AM – 5:00 PM
 7.5 AMA PRA Category 1 Credits™

AAOS Board of Specialty Societies

- collaboration on issues
- resolution through communications
- unity among leaders

The Board of Specialty Societies (BOS) brings together the leaders of musculoskeletal specialty societies to address issues of mutual concern and to advise the Board of Directors of the AAOS. The BOS also provides opportunities for shared leadership, shared governance, organizational benchmarking, collaborative program development, and communications among member organizations.

Collaborating in the Science of Patient Care



Sunday, March 16, 2014
ORS 2014 Annual Meeting
Hyatt Regency New Orleans

Make plans to attend the ORS 60th Annual Meeting on Sunday, March 16, when we invite all AAOS Annual Meeting registrants to take advantage of the opportunity for scientists and orthopaedic surgeons to *collaborate in the science of patient care*.

Complimentary Programs:

- Scientific Posters - 6:00 AM – 6:00 PM
- 2014 Kappa Delta, OREF Clinical Research, and CORR® ORS Richard A. Brand Award Paper Presentations 11:15 AM – 12:30 PM
- Professional Advancement Session - Publishing Your Idea - 2:00 PM – 3:30 PM
- Paper Presentations - 9:15 AM – 10:15 AM, 4:15 PM – 5:15 PM, 5:30 PM – 6:30 PM

Scientific Workshops - 2:00 PM – 3:30 PM:

Orthopaedic Combat-Casualty Care: Research Progress and Persistent Gaps after More than a Decade of Conflict
Collaboration of the ORS and the Society of Military Orthopaedic Surgeons – SOMOS

Osteosarcoma: Future Directions in the Targeting of Micrometastases

Collaboration of the ORS and the Musculoskeletal Tumor Society – MSTs

Understanding Early Onset Scoliosis - From Bench Top to Bedside - The Evolution from Genetics to Animal Models to Clinical Trials

Collaboration of the ORS, the Scoliosis Research Society - SRS, and the Pediatric Orthopaedic Society of North America – POSNA

HOW TO REGISTER:

A sticker (to be placed on your badge) is required for access to the ORS Annual Meeting on Sunday, March 16. A sticker can be obtained at ORS satellite check-in located at the Morial Convention Center, Lobby E on Friday, March 14 or at the ORS Registration Desk at the Hyatt Regency New Orleans on Sunday, March 16.

Registration is required for the following programs:

ORS/OREF

Richard Lieber, PhD, Marjolein van der Meulen, PhD, and Ted Miclau, MD

7:00 AM – 4:00 PM

Residents \$145, AAOS or ORS members \$195

Non-Members \$295

Registration: www.ors.org/ors2014aaos

ORS Clinical Research Forum - Building, Funding and Joining the Orthopaedic Clinical Research Community

Kurt Spindler, MD, Ted Miclau, MD, Saam Morshed, MD, George Muschler, MD and Kristy Weber, MD

8:00 AM – 4:30 PM

\$75

Registration: www.ors.org/ors2014aaos

ORS Translational Research Symposium - Atypical Fractures and Long term Use of Bisphosphonates with Special Guest Speakers Ego Seeman, MD, Robert Ritchie, PhD, ScD, Deepak Vashishth, PhD, and Jennifer Schneider, MD, PhD,

12:30 PM – 1:45 PM

ORS Members \$30/Non-Members \$35 (includes lunch)

Registration: www.ors.org/ors2014aaos

The American Academy of Orthopaedic Surgeons gratefully acknowledges the following companies, organizations and individuals for their financial support of AAOS programs and projects throughout 2013. (as of 2/1/14)

Diamond Level – \$200,000 and up



Platinum Level – \$100,000-\$199,999

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and Skin Diseases

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Scoliosis Research Society

Shriners Hospitals for Children

Sociedad Española de Cirugía Ortopédica y
Traumatología (SECOT)

Stryker Spine

Stryker Trauma

Synthes USA

Wright Medical

Bronze Level – \$1,000-\$9,999

Acumed	Dr. Frank and Lawson Kelly
Advanced Biologics	Limb Lengthening and Reconstruction Society
Aesculap Implant Systems	Massachusetts General Hospital
Alexandra's Playground	National Association of Orthopaedic Nurses
American Association of Orthopaedic Executives	New England Baptist Hospital
American Orthopaedic Foot & Ankle Society	Newton-Wellesley Hospital Charitable Foundation
American Shoulder and Elbow Surgeons	Northeast Florida Orthopaedic Society
American Society for Surgery of the Hand	NuVasive
American Society of Orthopaedic Assistants	Orchid Orthopedic Solutions
American Spinal Injury Association	OrthoHelix Surgical Designs
Association of Residency Coordinators in Orthopaedic Surgery	Orthopaedic Nurses Certification Board
Baxano Surgical	Orthopaedic Research Society
Bonutti Technologies	Paragon Medical
Endo Pharmaceuticals	Permanente Medical Group
Richard E. Gayle, MD	Pro-Dex, Inc.
Geneva Foundation	Sandra Lee Reidel, MD
Dr. Stuart and Lisa Hirsch	Ruth Jackson Orthopaedic Society
Hospital for Special Surgery	Société Internationale de Chirurgie Orthopédique et de Traumatologie (SICOT)
Dr. Stephen and Sonny Hurst	William B. Stetson, MD
Indonesian Orthopaedic Association	Symmetry Medical
Integra Foundation	Tecres S.P.A.
J. Robert Gladden Orthopaedic Society	The Journal of Bone and Joint Surgery

Thanks for your support

The Academy would also like to thank the following companies for their support for its 2013 Skills Courses and international activities by providing essential equipment and supplies:

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Biomet Spine	Life Instruments	Stryker Instruments
Biomet Sports Medicine	Kraft Medical	Stryker Joint Preservation
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Exactech	Musculoskeletal Transplant Foundation	Wright Medical Technology
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BEST of AAOS™ 2014

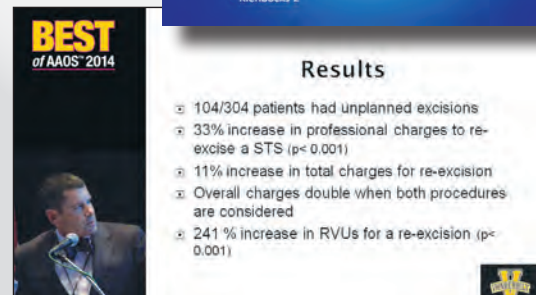
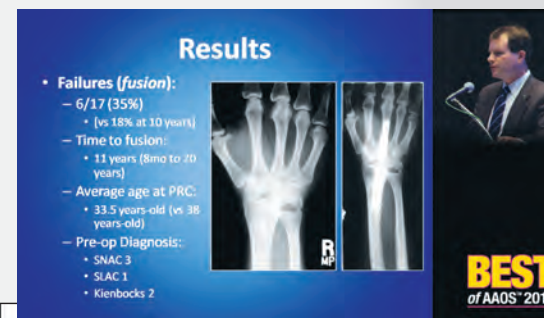
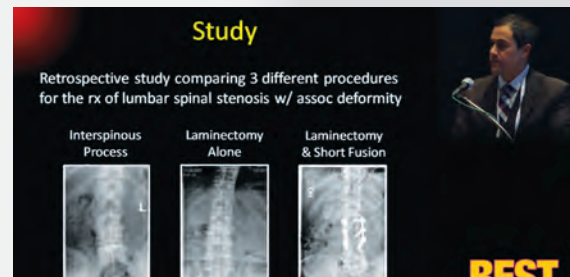
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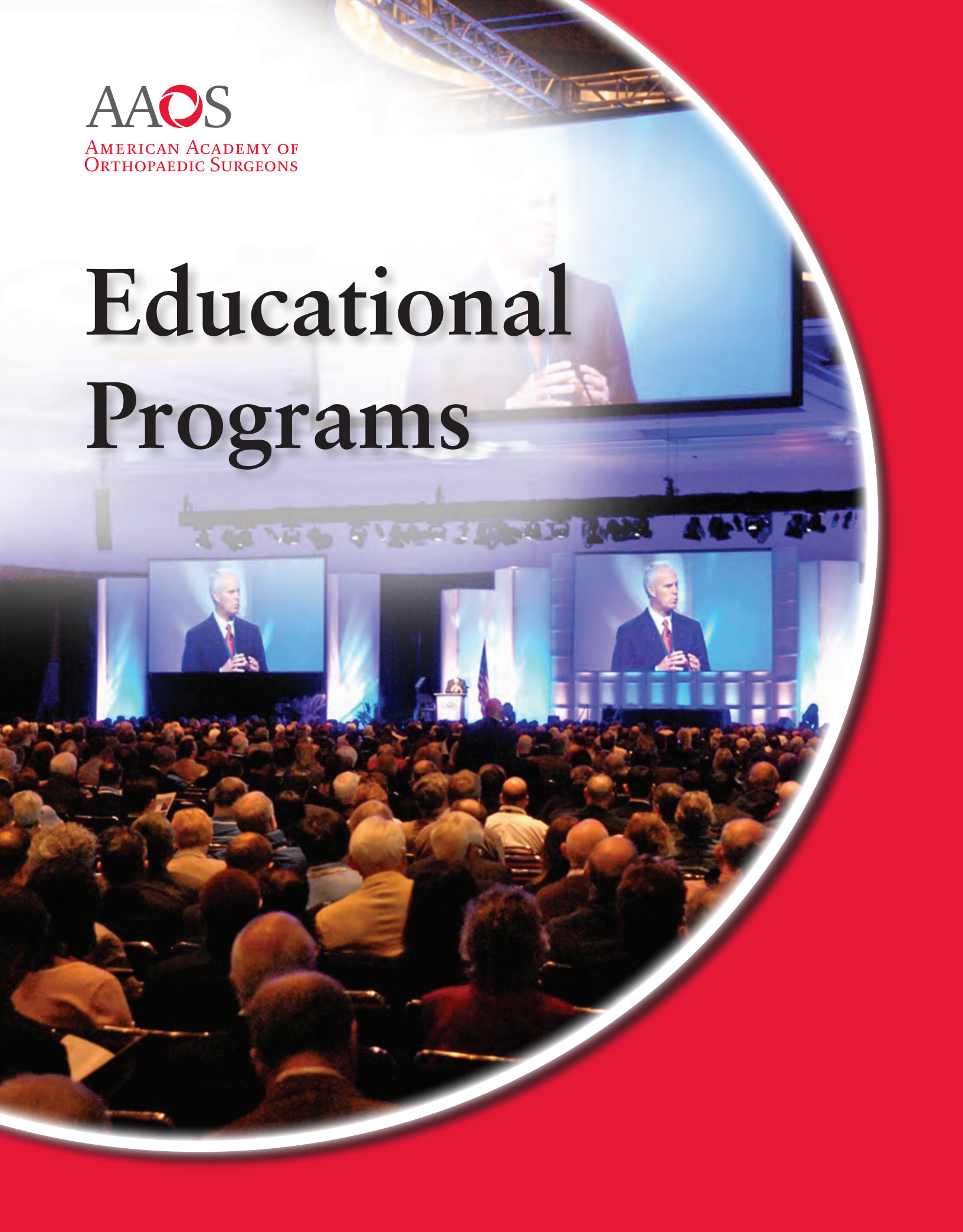
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Educational Programs





Annual Meeting Education


The 2014 Annual Meeting features a variety of educational sessions including Symposia, Instructional Courses, Papers and Posters, Scientific Exhibits and an Orthopaedic Video Theater (formerly MME). In addition, there will be Guided Poster Tours, several mini Review Courses and the all-day Orthopaedic Review Course.

Symposia are two hours in length, meant for cutting edge, controversial, new or innovative topics. Some feature debates with a diverse faculty. It is important that symposia be well balanced and feature a blend of differing techniques, styles or management.

Instructional Courses range from two to three hours in length featuring internationally known faculty. The courses are added, expanded, revised or dropped on the basis of evaluations completed by the previous registrants of the courses. The information presented in Instructional Course Lectures represents accepted principles and techniques as well as new evidence based practices. They often present the pitfalls of a specific procedure and contain pearls that you can take home to your practice.

Innovative Education Format - courses that encourage the use of new and technologically advanced education; featuring the unique use of audiovisual or technology or an educational format other than didactic. These are noted by .

Case Presentation – featuring participant's round table with expert faculty facilitator and an iPad for showing images and data from faculty selected cases. The course moderator will present the case to the participants and the facilitator leads individual table discussion. The case is then discussed by all course participants' with individual tables showing their conclusions. The moderator will present the final solution using evidence based data including teaching points with references to support the selected treatment. Four to five cases will be discussed during the two hour session. These courses are noted by .

Technical Skills – focused on positioning, approach and step by step technical tips in an edited video followed by discussion on the pearls. The courses will feature 4-5 cases. These are noted by .

The Orthopaedic Review Course is an all-day course featuring a review of the current knowledge on the diagnosis and management of clinical orthopaedic problems from a nationally accepted practice perspective. The course outline and faculty are listed on page 46.

Paper Presentations are six minutes grouped in a series of three followed by floor discussion. Our skilled moderators provide attendees with opportunities to ask questions for a more interactive learning experience.

Academy Hall is located in the Morial Convention Center, Hall B-E. In Academy Hall, you can find the Poster Exhibits, Scientific Exhibits, the Orthopaedic Video Theater as well as the Placement Services.

Academy Hall hours of operation are:

Tuesday.....	8:00 AM – 6:00 PM
Wednesday – Friday.....	7:00 AM – 6:00 PM
Saturday.....	7:00 AM – 3:00 PM

Posters provide a unique opportunity for self-study featuring the latest in scientific research. The Poster presenter or co-authors will

be at their poster daily from 11:30 AM – 12:30 PM to discuss their research and answer your questions. Special focus posters by the Orthopaedic Research Society, Board of Specialty Societies, Allied Health Posters, and the Guest Nation - France.

Posters are grouped in the following classifications:

• Adult Hip Reconstruction	P001-P110
• Adult Knee Reconstruction	P111-P205
• Foot and Ankle	P206-P225
• Hand and Wrist.....	P226-P240
• Pediatrics.....	P241-P260
• Practice Management.....	P261-P285
• Shoulder and Elbow.....	P286-P345
• Spine	P346-P405
• Sports Medicine and Arthroscopy	P406-P465
• Trauma.....	P466-P525
• Tumor and Metabolic Bone Disease.....	P526-P545
• Guest Nation.....	P556-P562
• Orthopaedic Research Society.....	P546-P555
• BOS Posters.....	P563-P566
• Allied Health.....	P567-P569

Scientific Exhibit format is used to graphically illustrate a study or a complex procedure. It differentiates itself from a poster presentation in the amount of material that is presented and uses audiovisual, interactive demonstration, or some other type of enhancement in its presentation. The authors of the exhibits are requested to be present Wednesday through Friday between 11:30 AM and 12:30 PM to discuss their ideas and presentation. Schedule your time to visit them when the author is present and can discuss the exhibit with you. Allow 10-15 minutes for the exhibits you are most interested in so that the author has time to properly discuss his or her presentation.

Scientific Exhibits have been grouped in the following categories:

• Adult Reconstruction Hip	SE01-SE14
• Adult Reconstruction Knee	SE43-SE52
• Basic Research.....	SE53-SE54
• Foot and Ankle	SE39-SE42
• Hand and Wrist.....	SE60-SE61
• Pediatrics.....	SE28-SE30
• Practice Management.....	SE62-SE69
• Shoulder and Elbow.....	SE31-SE38
• Spine	SE15-SE18
• Sports Medicine and Arthroscopy	SE70-SE88
• Trauma.....	SE19-SE27
• Tumor and Metabolic Bone Disease.....	SE55-SE59

AAOS Committee Scientific Exhibits:

Medical Liability Committee – SE66
Research and Development Committee – SE53
Women's Health Issues Advisory Board – SE58

BOS Scientific Exhibits:

Knee Society – SE43
Musculoskeletal Tumor Society – SE56
Pediatric Orthopaedic Society of North America – SE28
Society of Military Orthopaedic Surgeon – SE25
American Board of Orthopaedic Surgery Surgical Skills Task Force (SSTF) – SE62

Orthopaedic Video Theater presents peer reviewed videos and media programs developed and produced by your colleagues. Here you are able to observe and study the very latest in orthopaedic surgical technique. Discover leading edge devices as well as new techniques and technologies in a wide range of orthopaedic specialties. Strengthen your knowledge of surgical anatomy, exposures, treatments, and more.

Also, make plans to attend the *Orthopaedic Video Theater*, an intimate setting where you can meet video authors, view programs as part of the live audience, and participate in question and answer sessions.

A complete listing of the Orthopaedic Video Theater programs is listed beginning on page 217.

Award Programs	Stations 1-8
Adult Reconstruction Hip	Stations 9-12
Adult Reconstruction Knee	Station 13
Foot and Ankle	Stations 14-15
Pediatrics	Station 16
Shoulder and Elbow	Stations 17-22
Spine	Station 23
Sports Medicine and Arthroscopy	Stations 24-35
Trauma	Station 36
Tumors and Metabolic Bone Disease	Station 37

In addition, ten self-service stations are available for you to view any Orthopaedic Video Theater title online.

Scientific Program Highlights and What's New

Poster Awards Ceremony

Join us on Friday, March 14 at 7:00 AM for a free continental breakfast and the Poster Awards Ceremony. The Central Program Committee Chair, Brian J. Cole, MD will present the winner of the Best Poster in each classification and the best overall poster for the 2014 Annual Meeting will be selected.

New! ePosters and eScientific Exhibits

ePosters and eScientific Exhibits provide audio for many of the Posters and Scientific Exhibits at the Annual Meeting. The audio will be a narrative of the exhibit recorded by the presenter and offered on playback by smartphone and tablets as the attendee views the exhibit. A blog will allow viewers to question the authors creating an ongoing dialog. This area will feature a workstations with PCs where attendees can view the ePosters and eScientific exhibits, hear the audio and also decide whether or not to view the actual exhibit. Take the Annual Meeting home with you by accessing the ePoster and eScientific Exhibits for up to two years following the meeting.

Proceedings

Access the Proceedings on-line, now you can view the symposia handouts and abstracts from the Papers, Posters, Scientific Exhibits and Orthopaedic Video Theater all on-line at (www.aaos.org/proceedings).

Game Changers Paper Session

Friday, March 14, 1:30 – 3:30 PM

La Nouvelle Ballroom

Moderators: Brian J. Cole, MD, MBA and Michael J. Stuart, MD
The Central Program Committee is pleased to present a very special paper session called, “Game Changers.” This paper session

will focus on cutting edge research that could change the way you might practice in the next 2-3 years. It represents research that could change the way you think or address a difficult problem that impacts current practice. “Game Changers” will be a session that includes the most influential and cutting edge research likely to shape the way we practice in the near term.

Special Program for Residents

La Nouvelle Ballroom, Friday, March 14, 1:30-5:45 PM

1:30 – 3:30 PM: Game Changers Paper Session

These are the studies that will change your practice in the next two to three years. This program will be webcast to all residency programs in the US.

3:45 – 5:45 PM: Symposium FF – Tips, Tricks and Technical Pearls

Interactive format webcast live to Residency Programs throughout the United States. Residency Coordinators are encouraged to set the stage for this program by inviting their residents to gather for this special series of symposia in one room. Highly interactive with questions encouraged by remote audience through email and twitter.

International Paper Session

Tuesday, March 11, 1:30 – 3:30 PM

Theater C

Moderators: Xavier A. Duralde and Robert F. Dunbar, MD

The best papers from countries outside of the United States will be presented in one session. Come hear the experts discuss important topics from outside the US. This paper session will be presented in English.

Best of AAOS Symposium

Friday, March 14, 1:30 – 3:30 PM

Theater A

Moderators: Steven L. Frick, MD and William M. Mihalko, MD

The Best of the AAOS will feature a synopsis of the best papers and posters from each of the 11 classifications that represent Annual Meeting education. Members of the Program Committees will present the best 3 to 5 “shouldn’t be missed” studies presented at the 2014 Annual Meeting. Best of AAOS Symposium provides attendees with an opportunity to maximize their Academy experience.

Translational Biologics (EE)

Friday, March 14, 1:30 – 3:30 PM

Theater B

Moderators: Mathias P. Bostrom, MD, and Brian J. Cole, MD, MBA

This AAOS/ORS Combined symposium will provide a comprehensive review of the foundation and tissue specific techniques applications utilizing tissue engineering, gene therapy, stem cells, growth factors and platelet rich plasma. Regulatory pathways and delivery methods (scaffolds) for each technique will be discussed. The symposium will also feature pathology-specific talks including tendon/ligament, bone, cartilage/meniscus and muscle.

Instructional Courses Highlights and What's New

Review Courses

Tuesday, March 11, 8:00 – 11:00 AM

The following three hour review courses are intended to assist those who need general review or are preparing for maintenance of certification. These courses will be followed by a special optional Maintenance of Certification primer from 11:15 AM – 12:30 PM. Anyone who purchases a ticket for one of the review courses below are invited to attend the complimentary Maintenance of Certification session immediately following.

181 Hand and Wrist Review Course

Moderator: Martin A. Posner, MD

Those hand and wrist problems that are generally the focus of certifying examinations will be discussed including pertinent anatomy, pathophysiology, clinical and imaging findings and treatment.

182 Sports Medicine Review Course

Moderator: Asheesh Bedi, MD

Comprehensive and updated summary of the most pertinent and frequently tested concepts in sports medicine surgery, with specific consideration of athletic injuries to the shoulder, knee, hip, and elbow as well the diagnosis and management of commonly encountered medical problems in athletes.

183 Spine Review Course

Moderator: Thomas J. Errico, MD

Updates on cervical degenerative spine surgery; thoracic and lumbar degenerative spine surgery; spinal trauma surgery and adult spinal deformity surgery.

184 Trauma Review Course

Moderator: Paul Tornetta III, MD

Review recent state of the art management of common fractures as well as future directions and evolving treatments.

MOC Maintenance of Certification: The Basics

Tuesday, March 11, 11:15 AM – 12:30 PM

Room 271

Moderator: Joseph A. Bosco III, MD

Shepard Hurwitz, MD, and Ellen C. Moore

Cover strategies important to taking a multiple choice test and provide details on taking a computerized examination. Covers information that you need to know for maintenance of certification. Features a demonstration of the AAOS Learning Portfolio, designed to assist you in Maintenance of Certification. This session is complimentary for anyone who attended ICL 181-184.

TeamSTEPPS

Thursday, March 13 8:00 AM – 12:00 Noon and 1:30 – 4:30 PM

Rivergate Room

Faculty: Dwight W. Burney, MD, Harpal S. Khanuja, MD,


Mary I. O'Connor, MD, and Kristy L. Weber, MD.

TeamSTEPPS is an evidenced based team building and

communication program designed to enhance patient safety and efficiency in Healthcare. This four hour fundamentals workshop will give members of the healthcare team the tools to help lead highly effective medical teams. The goal is to optimize the use of information, people, and resources to achieve the best clinical outcomes for patients. In these fundamental skills workshops team members will increase team awareness and clarify team roles and responsibilities to produce a functional unit based on patient care. Team members also learn to resolve conflicts and improve information sharing to help eliminate barriers to quality and safety.

Space is limited so register early, the cost is \$50 in advance and \$70 on-site. Each member of the team must register for the Annual Meeting and purchase a ticket for the course.

General Education Information

An Audience Response System will be featured in several courses and symposia. This system provides the faculty and attendee with a unique opportunity to interact, enhancing the learning experience. Audience Response sessions are noted by  in the program book.

Symposia and Instructional Courses noted with the logo of a Board of Orthopaedic Specialty Society are co-branded by that society and AAOS.

Over 5,600 abstracts were submitted for presentation at the 2014 Annual Meeting. Out of those, the Program Committee selected the best for presentation in 856 paper presentations and 569 poster presentations. There will be 88 scientific exhibits displays. 74 of videos were selected for the Orthopaedic Video Theater. From over 200 applications, the Central Program Committee has selected 30 symposia and the Central Instructional Course Committee will present 215 courses and 21 special sessions.

Applications for Symposia and Instructional Courses were evaluated and rated by the Central Program and Central Instructional Course Committees. Countless hours were spent reviewing and rating these applications resulting in the excellent curriculum featured at the Annual Meeting.

Each Symposium and Instructional Course will have an evaluation form, your critical and constructive assessment of each session is essential for us to maintain the high standards that create the Annual Meeting. Please complete the evaluation in written or smartphone format for each session you attend. The evaluations are reviewed by the committees and are used to determine the curriculum that helps us maintain the high standards expected by those attending the Annual Meeting.

The Central Program Committee and Central Instructional Course Committee are very appreciative of the efforts extended by those who submitted abstracts and applications and congratulates them on the high quality submitted for the 2014 Annual Meeting. They are also grateful for the assistance of the Program and Instructional Course Committees in developing an outstanding educational curriculum. Finally we thank the faculty, instructors, moderators, and paper and poster presenters and co-authors for their efforts in presenting an excellent educational program. Their willingness to share their research and knowledge are gratefully acknowledged by all who attend the Annual Meeting.

Instructional Course Ticket Fees 

For those who have not registered and purchased their tickets in advance, available tickets may be purchased when registering onsite.

The following fee is applied:

Instructional Course Lecture (2 hours).....	\$70.00
Instructional Course Lecture (3 hours).....	\$80.00
U.S. Orthopaedic Resident (2 or 3 hours)	\$25.00
Top 10 Coding Errors Made by the Practicing Orthopaedic Surgeon	\$80.00
Orthopaedic Review Course	\$400.00
Orthopaedic Review Course (U.S. Orthopaedic Residents)	\$160.00

Persons who have registered in advance but wish to exchange a ticket may do so as long as neither course has taken place. Persons exchanging tickets must pay the difference between the advance registration ticket fee and the increased on-site fee.

Presentation of Fraudulent Research

The Central Program Committee makes every attempt to ensure that the research activities and findings presented in the scientific program are genuine and valid. It should be understood, however, that it is not possible to vet each and every study that is presented during the Annual Meeting. The abstracts of presentations submitted for grading are rated by qualified and expert graders. In some instances the paper presentation or poster may not reflect its related abstract submitted six months earlier. The Central Program Committee considers these instances to be errors in the presenters' judgment when they occur. Presentation of fraudulent research violates the AAOS Standards of Professionalism on Research and Academic Responsibilities. If you feel you have witnessed a knowingly fraudulent presentation, please address your concern to a member of the Central Program Committee or Academy staff. The Central Program Committee will review the matter and may determine to bar the submission of future abstracts from the speaker(s) and/ or to publish a retraction of the abstract in AAOS Now or other AAOS publications or communications. If there is a sufficient ground, any AAOS member may also file a grievance with the AAOS Professional Compliance Program. Based upon review of the Committee on Professionalism and as applicable the Judiciary Committee, the AAOS Board of Directors may determine to issue a letter of concern, censure, suspend or expel the Fellow or Member who presented the fraudulent research.

AAOS Videotaping

The Academy is videotaping certain portions of the Annual Meeting. The tapes will be used for educational purposes and/or may be sold alone or in connection with AAOS products. Please note that by attending the Annual Meeting, your image and/or voice may be captured and included as part of this event.

Reproduction Policy

The Academy reserves any and all of its rights to materials presented at the Annual Meeting, including Posters and Scientific Exhibits. Reproductions of any kind, by any person or entity, without prior written permission from the Academy, are strictly prohibited. Prohibited reproductions include, but are not limited to, audiotapes, videotape, and/or still photography. Persons violating this policy may have their badge confiscated and be escorted from the meeting.

No unapproved surveys, handouts or literature may be distributed at the meeting.

**Private Meeting**

The AAOS 2014 Annual Meeting is a private meeting. The AAOS reserves the right to control space and ask people to leave the meeting who are not qualified to attend or who cause disruptions, at the AAOS sole discretion.

Cell phones and beepers are a necessity to a doctor but a ringing phone or beeper during an educational session is distracting to the audience and speakers. Please place your cell phone on vibrate as a courtesy to others. When taking or making a call, please step outside the meeting room.

Education Committees

The Central Program Committee, Central Instructional Course and Exhibits Committee gratefully acknowledge the efforts of all of the committee members who work so hard to put on an excellent educational experience for all attending.

2014 Exhibits Committee

Joseph T. Moskal, MD, Roanoke, VA, Chair
Dennis B. Brooks, MD, Pepper Pike, OH
Jonathan J. Carmouche, MD, Roanoke, VA
Karen S. Duane, MD, Newberry, FL
Benjamin Goldberg, MD, Chicago, IL
Donald H. Lee, MD, Nashville, TN
John W. Mann III, MD, Roanoke, VA
James, V. Nepola, MD, Iowa City, IA
Rick F. Papandrea, MD, Waukesha, WI
Jeffrey M. Schwartz, MD, FACS, New York, NY
John R. Tenny, MD, Red Oak, TX
Scott D. Weiner, MD, Akron, OH

2014 Central Program Committee

Brian J. Cole, MD, MBA, Chicago, IL, Chair
James R. Ficke, MD, Baltimore, MD
Steven L. Frick, MD, Orlando, FL
William M. Mihalko, MD, PhD, Germantown, TN
Michael J. Stuart, MD, Rochester, MN

2014 Central Instructional Course Committee

Craig J. Della Valle, MD, Chicago, IL, Chair
Tad L. Gerlinger, MD, San Antonio, TX
Robert A. Hart, MD, Portland, OR
Mark W. Pagnano, MD, Rochester, MN
Thomas (Quin) Throckmorton, MD, Germantown, TN
Dempsey S. Springfield, MD, Boston, MA, Ex-Officio

Orthopaedic Video Theater Committee

Kevin D. Plancher, MD, MS, FACS, New York, NY, Chair
Stephen Bartol, MD, Detroit, MI
James M. Bennett, MD, Houston, TX
Herbert J. Cooper, MD, New York, NY
Eric W. Edmonds, MD, San Diego, CA
J. Mark Evans, MD, Mechanicsville, VA
John P. Ketz, MD, Pittsford, NY
Ronald A. Navarro, MD, Rolling Hills, CA
Christopher Pelt, MD, Salt Lake City, UT
J. Michael Wiater, MD, Beverly Hill, MI
Mark W. Zawadsky, MD, Washington, DC

2014 Program Committees**Adult Reconstruction Hip**

David C. Ayers, MD, Worcester, MA, Chair
 John Antoniou, MD, Montreal, QC, Canada
 Michael J. Archibeck, MD, Albuquerque, NM
 Paul E. Beaulé, MD, Ottawa, ON, Canada
 George F. Chimento, MD, Metairie, LA
 John C. Clohisey, MD, Saint Louis, MO
 John M. Cuckler, MD, Burnsville, NC
 Michael R. Dayton, MD, Aurora, CO
 Harry A. Demos, MD, Charleston, SC
 Joseph F. Fetto, MD, New York, NY
 Kevin B. Fricka, MD, Alexandria, VA
 Kevin L. Garvin, MD, Omaha, NE
 Andrew H. Glassman, MD, Columbus, OH
 Ricardo A. Gonzales, MD, Hopkinton, NH
 William B. Kurtz, MD, Nashville, TN
 William B. Macaulay, MD, New York, NY
 David W. Manning, MD, Chicago, IL
 Richard W. McCalden, MD, London, ON, Canada
 Michael A. Mont, MD, Baltimore, MD
 Amar S. Ranawat, MD, New York, NY
 Abhindrajeet Sandhu, Walnut Creek, CA
 Peter F. Sharkey, MD, Media, PA
 Kipling P. Sharpe, MD, Gilbert, AZ
 James D. Slover, MD, New York, NY
 Scott M. Sporer, MD, Wheaton, IL
 Andrew M. Star, MD, Willow Grove, PA
 Edward J. Stolarski, MD, Sarasota, FL
 Creighton C. Tubb, MD, Olympia, WA
 James P. Waddell, MD, Toronto, ON, Canada
 Steven T. Woolson, MD, Palo Alto, CA

Adult Reconstruction Knee

Michael A. Kelly, MD, Hackensack, NJ, Chair
 David Backstein, MD, Toronto, ON, Canada
 Thomas J. Blumenfeld, MD, Sacramento, CA
 Geoffrey F. Dervin, MD, Ottawa, ON, Canada
 Thomas H. Eickmann, MD, Longmont, CO
 David A. Fisher, MD, Indianapolis, IN
 Jeffrey A. Geller, MD, New York, NY
 William L. Griffin, MD, Charlotte, NC
 Stephen M. Howell, MD, Sacramento, CA
 Gregg R. Klein, MD, Paramus, NJ
 Phillip F. Ludkowski, MD, Arlington Heights, IL
 Robert A. Malinzak, MD, Mooresville, IN
 John L. Masonis, MD, Charlotte, NC
 Craig G. Mohler, MD, Eugene, OR
 Juan J. Rodrigo, MD, Waco, TX
 Alexander P. Sah, MD, Fremont, CA
 Vernon F. Sechriest, MD, San Diego, CA
 Alfred J. Tria, Jr, MD, Princeton, NJ
 Marc E. Umlas, MD, Miami Beach, FL
 Geoffrey H. Westrich, MD, New York, NY
 Russell E. Windsor, MD, New York, NY

Foot and Ankle

Daniel C. Farber, MD, Baltimore, MD, Chair
 Jamal Ahmad, MD, Philadelphia, PA
 Michael S. Aronow, MD, West Hartford, CT
 John A. DiPrea, MD, Albany, NY
 Patrick B. Ebeling, MD, Burnsville, MN

Narendra G. Gurbani, MD, Downey, CA
 Sandra E. Klein, MD, Saint Louis, MO
 Brain C. Toolan, MD, Flossmoor, IL

Hand and Wrist

Fraser J. Leversedge, MD, Durham, NC, Chair
 Jeffrey A. Greenberg, MD, Indianapolis, IN
 Joseph E. Imbriglia, MD, Wexford, PA
 Charles F. Leinberry, MD, Chester Springs, PA
 John S. Taras, MD, Philadelphia, PA

Pediatrics

Ken J. Noonan, MD, Madison, WI, Chair
 Amy L. McIntosh, MD, Rochester, MN
 William M. Mirenda, MD, Danville, PA
 Kristan Pierz, MD, Hartford, CT
 Tim Schrader, MD, Atlanta, GA

Practice Management/Rehabilitation

Thomas A. Malvitz, MD, Grand Rapids, MI, Chair
 Catherine G. Hawthorne, MD, Gallup, NM
 Paul Saiz, MD, Las Cruces, NM

Shoulder and Elbow

Keith Kenter, MD, Cincinnati, OH, Chair
 Joseph A. Abboud, MD, Philadelphia, PA
 Frank A. Cordasco, MD, New York, NY
 John G. Costouros, MD, Los Gatos, CA
 Joshua Dines, MD, New York, NY
 Mark A. Frankle, MD, Temple Terrace, FL
 Reuben Gobezie, MD, Mayfield Heights, OH
 Gordon I. Groh, MD, Asheville, NC
 Samer S. Hasan, MD, PhD, Cincinnati, OH
 G. Russell Huffman, MD, Philadelphia, PA
 Robert B. Litchfield, MD, London, ON, Canada
 Patrick J. McMahon, MD, Pittsburgh, PA
 Wesley M. Nottage, MD, Laguna Hills, CA
 Kaveh R. Sajadi, MD, Lexington, KY
 Robert Z. Tashjian, MD, Salt Lake City, UT

Spine

Norman B. Chutkan, MD, Augusta, GA, Chair
 Hyun W. Bae, MD, Los Angeles, CA
 Patrick J. Cahill, MD, Philadelphia, PA
 Theodore J. Choma, MD, Columbia, MO
 William F. Donaldson III, MD, Pittsburgh, PA
 John C. France, MD, Morgantown, WV
 Michael C. Gerling, MD, Brooklyn, NY
 Hubert L. Gooch, MD, Asheville, NC
 Carl N. Graf, MD, Barrington, IL
 William Francis Lavelle, MD, East Syracuse, NY
 Michael J. Lee, MD, Seattle, WA
 Ronald A. Lehman, MD, Potomac, MD
 Mark D. Rahm, MD, Temple, TX
 Afshin Razi, MD, New York, NY
 Vincent J. Silvaggio, MD, Pittsburgh, PA
 Joseph D. Smucker, MD, Iowa City, IA
 F. Todd Wetzel, MD, Wilmington, DE
 Burt Yaszay, MD, San Diego, CA

Sports Medicine and Arthroscopy

Dean K. Matsuda, MD, Los Angeles, CA, Chair
 Richard L. Angelo, MD, Woodinville, WA
 Champ Baker III, MD, Columbus, GA

David R. Diduch, MD, Charlottesville, VA
 Christopher T. Donaldson, MD, Johnstown, PA
 Greg J. Folsom, MD, Lenexa, KS
 Peter G. Gerbino II, MD, Monterey, CA
 Thomas J. Gill, MD, Boston, MA
 John R.T. Green III, MD, Seattle, WA
 Christopher C. Kaeding, MD, Columbus, OH
 Michael A. Kuhn, MD, Cape Carteret, NC
 Christian Lattermann, MD, Lexington, KY
 Eric B. Pifel, MD, Pewaukee, WI
 Scott E. Powell, MD, Burbank, CA
 Anil S. Ranawat, MD, New York, NY
 Stephen R. Soffer, MD, Wyomissing, PA
 Armando F. Vidal, MD, Denver, CO
 Rick W. Wright, MD, Saint Louis, MO

Trauma

Ivan S. Tarkin, MD, Pittsburgh, PA, Chair
 Jason M. Evans, MD, Franklin, TN
 Steven P. Haman, MD, Lima, OH
 Eric M. Hammerberg, MD, Boulder, CO
 James C. Krieg, MD, Philadelphia, PA
 Amer J. Mirza, MD, Portland, OR
 Yvonne M. Murtha, MD, Wichita, KS
 Gilbert R. Ortega, MD, Scottsdale, AZ
 Edward Perez, MD, Memphis, TN
 Bogadi R. Prashanth, MD, Mysore Karnataka, India
 Frederic B. Wilson, MD, Phoenix, AZ

Tumor and Metabolic Disease

Jeffrey S. Kneisl, MD, Charlotte, NC, Chair
 James B. Hayden, MD, Lake Oswego, OR
 Thomas J. Scharschmidt, MD, Westerville, OH
 Felasfa M. Wodajo, MD, Arlington, VA

2014 Instructional Course Committee

Adult Reconstruction Hip

Paul J. Duwelius, MD, Portland, OR, Chair
 Edward M. Adler, MD, New York, NY
 Wayne G. Paprosky, MD, Winfield, IL
 Andrew A. Shinar, MD, Nashville, TN
 Michael Tanzer, MD, Montreal, QC, Canada
 John F. Tilzey, MD, Burlington, MA

Adult Reconstruction Knee

Brett R. Levine, MD, Chicago, IL, Chair
 Terry A. Clyburn, MD, Houston, TX
 Brian R. Hamlin, MD, Pittsburgh, PA
 Adolph V. Lombardi, Jr, MD, New Albany, OH
 William J. Long, MD, New York, NY
 Jay D. Mabrey, MD, Dallas, TX
 Bryan D. Springer, MD, Charlotte, NC

Foot and Ankle

Paul J. Juliano, MD, Hershey, PA, Chair
 John S. Early, MD, Dallas, TX
 Thomas G. Harris, MD, Altadena, CA
 David S. Levine, MD, Bedford, NY
 Vinod K. Panchbhavi, MD, FACS, Galveston, TX
 Gene W. Shaffer, MD, Ambler, PA

Hand and Wrist

Marco Rizzo, MD, Rochester, MN, Chair
 Thomas R. Hunt III, MD, Houston, TX
 Lewis B. Lane, MD, Great Neck, NY
 Matthew J. Meunier, MD, San Diego, CA
 Peter M. Murray, MD, Jacksonville, FL
 David R. Steinberg, MD, Philadelphia, PA

Pediatrics

Anthony A. Stans, MD, Rochester, MN, Chair
 Richard E. Bowen, MD, Los Angeles, CA
 Shevaun M. Doyle, MD, New York, NY
 Richard W. Kruse, DO, Wilmington, DE
 Ernest L. Sink, MD, New York, NY
 Lewis E. Zionts, MD, Pacific Palisades, CA

Practice Management

A. Herbert Alexander, MD, Ketchum, ID, Chair
 Robert H. Blotter, MD, Marquette, MI
 J. Abbott Byrd III, MD, Virginia Beach, VA
 Stanley H. Dysart, MD, Marietta, GA
 Erick M. Santos, MD, PhD, Corpus Christi, TX

Shoulder and Elbow

William N. Levine, MD, New York, NY, Chair
 Edward V. Craig, MD, New York, NY
 David M. Dines, MD, Uniondale, NY
 Hussein A. Elkousy, MD, Houston, TX
 Leesa M. Galatz, MD, Saint Louis, MO
 Tim R. Lenters, MD, Grand Rapids, MI

Spine

Robert V. Dawe, MD, Fairfield, CT, Chair
 Charles J. Banta II, MD, Dallas, TX
 Eric O. Klineberg, MD, Sacramento, CA
 Timothy A. Moore, MD, Shaker Heights, OH
 Mark A. Palumbo, MD, Providence, RI
 Joseph H. Perra, MD, Minneapolis, MN
 Paul D. Sponseller, MD, Baltimore, MD

Sports Medicine and Arthroscopy

Samuel D. Young III, MD, Saint Augustine, FL, Chair
 Jonathan E. Buzzell, MD, Omaha, NE
 Mary L. Ireland, MD, Lexington, KY
 Kevin R. Murray, MD, Los Gatos, CA
 Marc Safran, MD, Redwood City, CA
 Felix H. Savoie III, MD, New Orleans, LA

Trauma

Paul J. Dougherty, MD, Detroit, MI, Chair
 Cory A. Collinge, MD, Fort Worth, TX
 Kurt J. Ehlert, MD, Raleigh, NC
 Madhav A. Karunakar, MD, Charlotte, NC
 Judith Siegel, MD, Worcester, MA

Tumor and Metabolic Disease

Carol D. Morris, MD, MS, New York, NY, Chair
 Joseph Benevenia, MD, Newark, NJ
 David S. Geller, MD, New York, NY
 Michael P. Mott, MD, Detroit, MI

Orthopaedic Review Course #490

Friday, March 14
Great Hall A

Course Chairman: David L. Skaggs, MD

- Review of current knowledge on diagnosis and management of clinical problems from a nationally accepted orthopaedic practice perspective
- Major sections of the course are pediatrics, upper and lower extremities, tumors and metabolic bone disease, and spine
- Each section includes discussion of fractures, complications, infections and trauma

Please note: the Orthopaedic Review Course is not intended as a review for the Board Examination, it is a review of orthopaedic basics.

8:00 - 10:00 AM	Lower Extremity <i>Moderator: Thomas S. Thornhill, MD</i>	1:30 PM	Fractures of the Upper and Lower Extremities <i>John M. Flynn, MD</i>
8:00 AM	Hip and Knee Reconstruction <i>Thomas S. Thornhill, MD</i>	2:00 PM	Lower Extremity <i>Lori A. Karol, MD</i>
8:30 AM	Trauma <i>Donald A. Wiss, MD</i>	2:30 - 2:45 PM	BREAK
9:00 AM	Foot and Ankle <i>Steven L. Haddad, MD</i>	2:45 - 4:15 PM	Spine <i>Moderator: David L. Skaggs, MD</i>
9:30 AM	Sports Knee <i>Mark D. Miller, MD</i>	2:45 PM	Trauma <i>Jens R. Chapman, MD</i>
10:00 - 10:15 AM	BREAK	3:15 PM	Degenerative <i>Todd J. Albert, MD</i>
10:15 - 11:50 AM	Upper Extremity <i>Moderator: Leesa M. Galatz, MD</i>	3:45 PM	Pediatric <i>David L. Skaggs, MD</i>
10:15 AM	Hand and Wrist <i>Robert J. Strauch, MD</i>	4:15 - 4:30 PM	BREAK
10:50 AM	Forearm and Elbow <i>Leesa M. Galatz, MD</i>	4:30 - 5:35 PM	Tumors and Metabolic Bone Disease <i>Moderator: Albert J. Aboulafla, MD</i>
11:20 AM	Shoulder and Humerus <i>Brian Forsythe, MD</i>	4:30 PM	Tumors <i>Albert J. Aboulafla, MD</i>
11:50 AM - 12:30 PM	LUNCH (lunch included)	5:00 PM	Metabolic Bone Disease <i>Joseph M. Lane, MD</i>
12:30 - 2:30 PM	Pediatrics <i>Moderator: Lori A. Karol, MD</i>	5:35 PM	Adjourn
12:30 PM	Hip <i>William C. Warner, Jr, MD</i>		
1:00 PM	Infection, Congenital, Developmental Problems/Miscellaneous <i>Jeffrey R. Sawyer, MD</i>		

Continental breakfast and a box lunch are included in the fee, which is \$400 on-site.

Attention U.S. Orthopaedic Residents! Discounted tickets are available for the Orthopaedic Review Course and can be purchased on-site for \$160.

Faculty Development Sessions

These sessions are for anyone who would like to further define or develop their presentation skills and create an environment beneficial to learning. The sessions are interactive and attendees are encouraged to bring their laptop. They are offered at no charge and are on a first come, first served basis.

All Faculty Development sessions take place in Room 217.

Faculty Development Course 1: Perspectives on Mentorship

Tuesday, March 11, 2014, 1:30 PM - 3:30 PM

Robert A. Hart, MD, Portland, OR, Moderator

James H. Beaty, MD, Memphis, TN

Edward N. Hanley, Jr., MD, Charlotte, NC

Vernon T. Tolo, MD, Los Angeles, CA

History, definition, and description of the mentoring process will be presented, emphasizing importance of good mentorship to career and personal satisfaction. Specific examples of successful and less successful approaches to mentoring will be described.

Faculty Development Course 2: Getting Your Work Published and Achieving the Highest Impact

Tuesday, March 11, 2014, 4:00 PM - 5:00 PM

Fares S. Haddad, FRCS, London, UK, Moderator

Michael Dunbar, MD, PhD, Halifax, NS, Canada

Cyril Mauffrey, MD, MRCS, Denver, CO

Gareth Scott, FRCS, Brentwood, UK

Will provide a good understanding of the peer review process and its importance in scientific journals, provide key information on best practice, how to optimize papers for publication and an give an insight into how to review papers including a section on identifying research fraud.

Faculty Development Course 3: Techniques for Internationals Submitting Abstracts and Educational Programming Proposals for US Educational Programs

Wednesday, March 12, 2014, 8:00 AM – 10:00 AM

Guido Marra, MD, Chicago, IL, Moderator

Stefano A. Bini, MD, San Francisco, CA

Joaquin Sanchez-Sotelo, MD, Rochester, MN

Designed to help international orthopaedic surgeons understand how to adjust or write an abstract or ICL application in order to increase the likelihood of acceptance in US literature or US educational programming. Principles and suggested techniques will be discussed for writing submissions that are focused, concise, clear and unbiased.

Faculty Development Course 4: The Art of Using PowerPoint for Effective Presentations

Wednesday, March 12, 2014, 10:30 AM – 11:30 AM

Roy W. Sanders, MD, Tampa, FL, Moderator

Paul Tornetta III, MD, Boston, MA

Will focus on utilizing PowerPoint especially for the medical professional. Learn tips and tricks that you can use to enhance your teaching skills when participating in educational sessions for your colleagues and for patient education both individually and community wide.

Faculty Development Course 5: Video Production for Orthopaedic Surgeons: Getting the Award, Making the Difference

Wednesday, March 12, 2014, 1:30 PM – 3:30 PM

Kevin D. Plancher, MD, MS, New York, NY, Moderator

Cesare Faldini, MD, Bologna, Italy

Video is one of orthopaedic education's most widely used instructional tools. This workshop will teach you how to critically evaluate the orthopaedic technique videos you watch, and how to create award winning orthopaedic videos of your own.

Faculty Development Course 6: Principles of Teaching Across Differences in Culture and Language

Wednesday, March 12, 2014, 4:00 PM – 5:00 PM

Room 217

Guido Marra, MD, Chicago, IL, Moderator

Stefano A. Bini, MD, San Francisco, CA

Xavier A. Duralde, MD, Atlanta, GA

Designed to help attendees implement three general principles for teaching people that do not have English as their first language and/or have cultural norms and operating procedures that are significantly different from those in the United States.

Faculty Development Course 7:

The Art of the Orthopaedic Lecture

Thursday, March 13, 2014, 8:00 AM – 10:00 AM

James H. Beaty, MD, Memphis, TN, Moderator

James J. McCarthy, MD, Cincinnati, OH

Learn to develop a lecture for an orthopaedic audience. From a 6 minute paper presentation to a 60 minute lecture on a specific research project or clinical subject. This session will give you the tools to prepare and present. Powerpoint preparation and tips included.

Faculty Development Course 8: Cliff Notes on Clinical Research: What You Need to Get Started

Thursday, March 13, 2014, 10:30 AM – 12:30 PM

John W. Sperling, MD, MBA, Rochester, MN, Moderator

Leesa M. Galatz, MD, St. Louis, MO

Bruce S. Miller, MD, MS, Ann Arbor, MI

Understand the scientific method and be able to design and complete a clinical research project. Formulate a clinically relevant hypothesis, perform a power analysis, collect and analyze data. Determine when the results are worth of submission as an abstract.

Faculty Development Course 9: How to Assemble a Competitive AAOS ICL and Symposium Application

Thursday, March 13, 2014, 1:30 PM – 2:30 PM

Thomas (Quin) Throckmorton, MD, Germantown, TN, Moderator

Robert A. Hart, MD, Portland, OR

William M. Mihalko, MD, PhD, Germantown, TN

Will focus on describing the different types of Instructional Course Lectures and also tips to write ICL and symposium applications.

Faculty Development Course 10: Social Media and Orthopaedics: Opportunities and Challenges

Thursday, March 13, 2014, 4:00 PM – 5:00 PM

Naven Duggal, MD, Boston, MA, Moderator

Howard J. Luks, MD, Katonah, NY

Lance M. Silverman, MD, Edina, MN

Social media is an emerging modality that can be viewed as a chance to update our approach to interacting with patients, data, and each other in important new ways. However, careful attention regarding patient privacy, liability, and HIPAA violations is required by the orthopaedist interested in utilizing this technology. With mindful use of social media, we are able to leverage our positions as trusted community leaders to create and nurture a much larger community. Join your colleagues for an exciting

faculty development course given by fellow orthopaedic surgeons well versed in the opportunities and challenges of social media.

Faculty Development Course 11: The Anatomy of Diversity: Where Are the Women? Why Does that Matter?

Friday, March 14, 2014, 8:00 AM – 9:00 AM

Caroline M. Chebli, MD, Sarasota, FL, Moderator

Ann E. Van Heest, MD, Minneapolis, MN

Lisa L. Lattanzaq, MD, San Francisco, CA

Mary I. O'Connor, MD, Jacksonville, FL

Orthopedics has the lowest percentage of women in any surgical subspecialty. While women comprise greater than fifty percent of medical students, our profession is not attracting the best and brightest. We will examine the current state of women in orthopedics, barriers to women entering the field and ways to improve our diversity.

Faculty Development Course 12: Getting Your Ideas Supported – Effective Techniques for Women in Orthopaedics

Friday, March 14, 2014, 10:30 AM – 11:30 AM

Mary I. O'Connor, MD, Jacksonville, FL, Moderator

Will help you understand the information which different types of people want in order to support your proposals; how to achieve buy-in and counter efforts to sink your next great idea. We will also discuss perceptions of women leaders as well as corresponding tactics for you to counter negative bias and improve your effectiveness.

Faculty Development Course 13: Writing an Abstract that Gets Accepted

Friday, March 14, 2014, 1:30 PM – 2:30 PM

Craig J. Della Valle, MD, Chicago, IL, Moderator

Understand the abstract submission and review process in order to increase the likelihood of acceptance. Learn how to write an abstract that is focused, concise and clear so that your message is “heard” by the reviewers.

Coding Basics for Starting Your Practice #190

Tuesday, March 11, 8:00 – 11:00 AM

Great Hall B

FREE

You don't want to miss this fast-paced course introducing the most important coding topics to orthopaedic residents. Margaret Maley from KarenZupko & Associates brings energy and humor to topics critical to orthopaedic coding and reimbursement.

By the end of the course you will:

- Describe how ICD-10 diagnosis coding will impact your documentation for 5 common orthopaedic diagnoses
- Understand Relative Value Units (RVU's) may be used to calculate your reimbursement or bonus if you are an employed physician
- Know how procedures are discounted by payors and how arthroscopic procedures are discounted differently
- Describe how modifiers protect reimbursement
- Understand what is included in the global surgical package.

Join us for this complimentary workshop that will be so important to your career! Due to the nature of this course, it is limited to U.S. Residents only.

The Top 10 Coding Issues Made by Practicing Orthopaedic Surgeons #192

Tuesday, March 11, 1:30 – 4:30 PM (Course requires fee)

Room 345

Margaret Maley from KarenZupko & Associates brings logic and laughs to this workshop addressing frequent and costly reporting errors made by orthopaedic surgeons.

At the conclusion of this complimentary course you will:

- Correctly document fracture care for ICD-10 and CPT code reporting
- Use the modifier 58 for staged procedures with confidence
- Define the common use of the modifier 59 in hip, knee and shoulder surgery
- Define and document a consultation correctly on non-Medicare patients and Medicare patients
- Describe the correct modifier to use to report a complication

This and much more will be packed into this course specifically designed for practicing orthopaedic surgeons.

Community Orthopaedist Workshop #193

Tuesday, March 11, 1:30 – 5:30 PM

Room 353

FREE

This complimentary workshop is designed specifically for the orthopaedic surgeon who handles a variety of conditions, whether in the emergency room or in their office. It will educate the physician on current “best-practices” for commonly encountered orthopaedic conditions, along with topics devoted to organizational issues associated with a general orthopaedic practice such as Adult Reconstruction Hip and Knee, Shoulder and Elbow, Sports Medicine and Trauma to name a few. AAOS representatives will be available to discuss AAOS Resources including – build your own website, membership and media training, learning portfolio and orthoportals.

Practice Management Symposium for Orthopaedic Residents #191

FREE

Tuesday, March 11, 12:00 – 5:30 PM (Lunch at 11:30 AM)
Great Hall B

New Topics and New Faculty this year! This fast-paced session uses didactic lectures and panel discussions to provide the foundation for an effective transition from resident to practicing physician. Course Directors, Gail Chorney, MD, Charles Goldfarb, MD, and Fred Meyer, MD, re-designed this course to cover the most pertinent issues for this daunting transition. This ½ day track covers essential elements of practice management not covered in most residency programs and while especially beneficial for fourth-year and fifth-year residents, all residents are welcome. Topics include: how to evaluate employment opportunities, negotiating physician employment agreements, how reimbursement works, RVU's, how to read a financial statement, dictating and documenting for ICD-10, and how to build and run a successful practice. Best of all, this Symposium is complimentary to all U.S. residents!

Map out your future in orthopaedics.

Join us to gain valuable career advice from our distinguished faculty.

Here's a sneak peek of course topics:

- Finding the Right Job: How to Evaluate Practice Opportunities – Ryan Dopirak, MD
- Negotiating Physician Employment Agreements – Kathleen DeBruhl, J.D.
- Compensation Formulas: Pros and Cons of Different Methods – Michael McCaslin, CPA
- RVU's: What They Are and Why They Matter – Fred Meyer, MD
- How To Succeed In Practice By Really Trying – Karen Zupko
- How to Build a Successful Practice – Charles Goldfarb, MD
- How to Run an Efficient Office – Gail Chorney, MD
- How to Read a Financial Statement – William Creevy, MD
- Dictating and Documenting for ICD-10 – R. Dale Blasier, MD

PLEASE NOTE: This symposium focuses on issues uniquely relevant to the practice of orthopaedic surgery in the United States. For this reason, registration for the symposium is restricted to orthopaedic residents living in the United States.

Here's what attendees had to say about the 2013 *Practice Management Symposium for Orthopaedic Residents*:

“This symposium will be useful in my job search and early in my career.”

“Now I am educated about what to expect for contract negotiation and developing a professional identity.”

Sponsored in part by educational grants from



For further information concerning Lilly grant funding visit www.lillygrantoffice.com



Practice Management Symposium for Practicing Orthopaedic Surgeons #199

Tuesday, March 11, 8:00 AM-5:00 PM
Rivergate Room

Putting Physicians Back in Charge of Healthcare – Challenges, Opportunities and Drivers Shaping Orthopaedics. This comprehensive educational event provides up-to-date information about the state of orthopaedics, including business and technology trends, changes in regulations and laws, and best practices to manage an orthopaedic practice in today's environment. Learn from leading experts on value-based payment methodologies, transitioning practice models, ICD-10, HIPAA and the most common business mistakes and how to avoid them. Course Directors, Douglas R. Turgeon, MD, and John Cherf, MD, MPH, MBA, developed this year's Symposium to provide both information and tools to help you successfully prepare for the challenges – and opportunities – that lie ahead. Whether you are in solo practice, group practice, or employed, now is the time to strengthen your role as a leader in the future of orthopaedic care.

This unique symposium provides a forum for networking with your peers and interaction with the experts to examine the rapidly evolving health care environment. You will learn how to:

- Guide your practice to avoid management pitfalls
- Utilize benchmarking to identify new ways to combine typical practice metrics with data from outside sources
- Implement practical solutions to meet HIPAA, Meaningful Use, ICD-10, and safety mandates
- Incorporate digital era technology to enhance your practice productivity

Register Now! Invest one day with our expert faculty and in return, gain a plan that will last the rest of your career. Featuring:

- Keynote address – Measuring the Value of Orthopaedic Care by John Tongue, MD *Past President of American Academy of Orthopaedic Surgeons*
- Benchmarking: Using Data to Make Smarter Decisions – Michael McCaslin, CPA
- Physicians, Leadership and Alignment: New Methods of Healthcare Delivery – Craig Mahoney, MD and Michael Freehill, MD
- Top Ten Business Mistakes...and How to Avoid Them! – Karen Zupko
- 30 Tech Tips in 30 Minutes – Marion Jenkins, PhD, FHIMSS
- Patient Safety – An Orthopaedic Surgeon's Perspective – Michael J. Lee, MD
- The Growth Prescription – Bill Champion
- HIPAA Highlights – Kathleen DeBruhl, JD
- Making Use of Meaningful Use – Richard Dell, MD
- ICD-10 Readiness – Louis McIntyre, MD
- Orthopaedics and the next 4 years – John Cherf, MD, MPH, MBA
- Emerging Orthopaedic Healthcare Issues – Town Hall style discussion

This program is approved for CME credit.

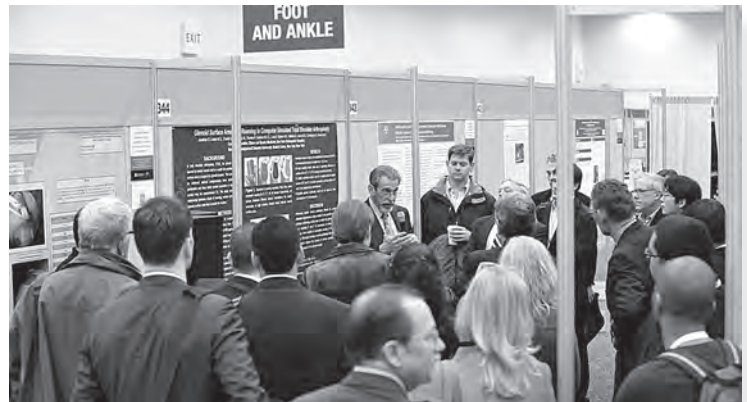
Attendees must also be registered for the AAOS Annual Meeting to purchase a ticket for this symposium.

Guided Poster Tours

Academy Hall BC

Guided poster tours provide an opportunity for meeting attendees to ask questions and gain insights while earning CME credit. Each tour will be guided by an expert in the field. The expert will question the presenter, point out highlights and give interesting tips about selected posters in each classification. Poster Tours will be given in 2 ways; a traditional tour through the classification or at the Presentation Stage. Registrants should meet at the Help Desk. Register for the poster tours at the Poster and Scientific Exhibit Help Desk, Academy Hall D.

Date, times and experts are below:



Date	Classification	Expert
Tuesday, March 11		
10:00 AM – 11:00 AM	Adult Reconstruction Knee	William J. Maloney, MD
11:30 AM – 12:30 PM	Trauma	Paul Tornetta III, MD
3:00 PM – 4:00 PM	Sports Medicine/Arthroscopy	Brian J. Cole, MD
4:30 PM – 5:30 PM	Adult Reconstruction Hip	John J. Callaghan, MD
Wednesday, March 12		
8:30 AM – 9:30 AM	Pediatrics	Steven L. Frick, MD
10:00 AM – 11:00 AM	Shoulder and Elbow	Joseph D. Zuckerman, MD
11:30 AM – 12:30 PM	Adult Reconstruction Hip	Daniel J. Berry, MD
3:00 PM – 4:00 PM	Foot and Ankle	Annunziato Amendola, MD
4:30 PM – 5:30 PM	Spine	Robert A. Hart, MD
Thursday, March 13		
8:30 AM – 9:30 AM	Tumor/Metabolic Disease	Franklin Sim, MD
10:00 AM – 11:00 AM	Sports Medicine/Arthroscopy	Michael J. Stuart, MD
11:30 AM – 12:30 PM	Pediatrics	Martin J. Herman, MD
3:00 PM – 4:00 PM	Hand and Wrist	Terry R. Light, MD
4:30 PM – 5:30 PM	Spine	Todd J. Albert, MD
Friday, March 14		
8:30 AM – 9:30 AM	Adult Reconstruction Knee	Craig J. Della Valle, MD
10:00 AM – 11:00 AM	Practice Management	Thomas A. Malvitz, MD
11:30 AM – 12:30 PM	Trauma	Richard F. Kyle, MD
3:00 PM – 4:00 PM	Shoulder and Elbow	Anthony A. Romeo, MD

New for 2014

International Poster Tours

One tour a day has been set aside for our international guests. The tour guide expert will give a tour in the specified language discussing posters in the identified classification

International Poster Tours Schedule

Date	Time	Language	Classification	Tour Expert
Tuesday, March 11	1:30-2:30 PM	Spanish	Hip/Knee	Dr. Óliver Marin-Peña
Wednesday, March 12	1:30-2:30 PM	French	Shoulder	Prof. Bernard Augereau
Thursday, March 13	1:30-2:30 PM	Spanish	Trauma	Dr. Alberto Delgado
Friday, March 14	1:30-2:30 PM	French	Sports Medicine	Prof. Yves Catonné

Now YOU decide when and where to see and hear these Annual Meeting Symposia

Annual Meeting Symposia Webcasts

Annual Meeting Symposia bring you today's hottest topics, presented by surgeons who are shaping the future of the orthopedic specialty. Now, no matter how busy your schedule –you can “attend” 13 symposia– anytime and anywhere:

- **During the meeting, webcasts will be streamed live** to your mobile device using the AAOS Mobile Meeting Guide app or to your computer (www.aaos.org/annual).
- **On demand streaming will be available through Sunday, March 23.** Symposia webcasts will be available for on demand streaming from the AAOS website (www.aaos.org/annual) beginning on the day after the live presentation.

Please note that CME credit is not available for the live or on-demand symposia webcasts.

AAOS Members and AAOS Residents: Free

Non-Members: \$199 unlimited viewing through March 23

Annual Meeting Symposia provide a rich overview and various viewpoints on specific topics, ranging from health care reform to shoulder surgery. Symposia available as webcasts include:

Title and Moderator	Symposium and Live Webcast
Managing Surgical Pain in the Opioid Epidemic Era (B) <i>Moderator: David L. Nelson, MD</i>	Tuesday: 10:30 AM – 12:30 PM Theater C
New Paradigms and State of the Art Treatment of Osteonecrosis of the Femoral Head (C) <i>Moderator: Rafael J. Sierra, MD</i>	Tuesday: 1:30 – 3:30 PM La Nouvelle Ballroom
Complex Shoulder Instability: Around the World in 120 Minutes (F) <i>Moderator: Pascal Boileau, MD</i>	Tuesday: 4:00 – 6:00 PM La Nouvelle Ballroom
Metal on Metal and Modular Corrosion: Clinical Impact of Tribocorrosion (L) <i>Moderator: Young-Min Kwon, MD, PhD</i>	Wednesday: 10:30 AM – 12:30 PM La Nouvelle Ballroom
Obesity, Orthopaedics, and Outcomes (M) <i>Moderator: George V. Russell, Jr, MD</i>	Wednesday: 10:30 AM – 12:30 PM Theater C
How Do I Perform a Revision Total Knee Arthroplasty (O) <i>Moderator: Steven J. MacDonald, MD</i>	Wednesday: 1:30 – 3:30 PM Theater C
Hot Topics and Controversies in Shoulder Surgery: 2014 (T) <i>Moderator: John W. Sperling, MD, MBA</i>	Thursday: 4:00 – 6:00 PM La Nouvelle Ballroom
Complex Skeletal Reconstruction in Infection, Post Trauma, and Tumor (U) <i>Moderator: Joseph Benevenia, MD</i>	Thursday: 4:00 – 6:00 PM Theater C
Health Care Reform: How Can We Adapt? <i>Moderator: Thomas J. Grogan, MD and Craig Butler, MD</i>	Friday: 8:00 – 10:00 AM La Nouvelle Ballroom
The Multiple Ligament Injured and Dislocated Knee (X) <i>Moderators: Gregory C. Fanelli, MD, and Bruce A. Levi, MD</i>	Friday: 8:00 – 10:00 AM Theater C
Hot Topics and Controversies in Revision Total Hip Arthroplasty (Z) <i>Moderator: Paul F. Lachiewicz, MD</i>	Friday: 10:30 AM – 12:30 PM La Nouvelle Ballroom
Shoulder Surgery, Getting it Right! An ARS Symposium (AA) <i>Moderator: Kevin D. Plancher, MD, MS</i>	Friday: 10:30 AM – 12:30 PM Theater C
Lessons of the Outcomes of ACL Reconstruction Surgery from International Registries (CC) <i>Moderator: Scott A. Rodeo, MD</i>	Friday: 1:30 – 3:30 PM Theater C

Tuesday, March 11

SPECIAL SESSIONS – PRACTICE MANAGEMENT FOCUS

190 Coding Basics for Starting Your Practice



Great
Hall B

Moderator: Margaret Maley, BSN, MS, Chicago, IL

You don't want to miss this fast-paced course introducing the most important coding topics to orthopaedic residents. Margaret Maley from KarenZupko & Associates brings energy and humor to topics critical to orthopaedic coding and reimbursement. By the end of the course you will:

FREE

- Describe how ICD-10 diagnosis coding will impact your documentation for 5 common orthopaedic diagnoses
- Understand Relative Value Units (RVU's) may be used to calculate your reimbursement or bonus if you are an employed physician
- Know how procedures are discounted by payors and how arthroscopic procedures are discounted differently
- Describe how modifiers protect reimbursement
- Understand what is included in the global surgical package.

Join us for this complimentary workshop that will be so important to your career! Due to the nature of this course, it is limited to U.S. Residents only.

SYMPOSIUM

12:00 PM — 5:00 PM

Great Hall B

FREE

Resident Practice Management Symposium (191)

Moderator: Gail S. Chorney, MD, New York, NY

- Finding the Right Job: How to Evaluate Practice Opportunities
Ryan M. Dopirak, MD, Manitowoc, WI
- Negotiating Physician Employment Agreements
Kathleen L. DeBruhl, Esq, New Orleans, LA
- Compensation Formulas: Pros and Cons of Different Methods
Michael McCaslin, CPA, Indianapolis, IN
- How to Succeed in Practice by Really Trying
Karen Zupko, Chicago, IL
- Dictating and Documenting ICD-10: Coding
R.D. Blasier, MD, Little Rock, AR
- How to Read a Financial Statement
William R. Creevy, MD, Boston, MA

SYMPOSIUM

8:00 AM — 5:00 PM

Rivergate Room

Practice Management Symposium for Orthopaedic Surgeons (199)

Moderator: Douglas R. Turgeon, MD, Dallas, TX

- Measuring the Value of Orthopaedic Care: Study Approach and Key Findings
John R. Tongue, MD, Tualatin, OR
- Benchmarking for Performance: Using Data to Make Smarter Decisions
Michael McCaslin, CPA, Indianapolis, IN
- Part 1: Physicians, Leadership and Alignment: New Models of Healthcare Delivery
Craig R. Mahoney, MD, West Des Moines, IA
- Part 2: Physicians, Leadership and Alignment: New Models of Healthcare Delivery
Michael Q. Freehill, MD, Edina, MN
- Top 10 Business Mistakes and How to Avoid Them
Karen Zupko, Chicago, IL
- 30 Tech Tips in 30 Minutes
Marion Jenkins, Greenwood Village, CO
- Making Use of Meaningful Use
Jonathan L. Schaffer, MD, Cleveland, OH
- Patient Safety - Everyone's Business: An Orthopaedic Surgeon Perspective
Michael J. Lee, MD, Seattle, WA
- The Growth Prescription: Research, Communication and Execution
Bill Champion, Omaha, NE
- HIPAA Highlights: What You Need to Know
Kathleen L. DeBruhl, Esq, New Orleans, LA
- Making Use of Meaningful Use
Richard Dell, Cypress, CA
- Make Sure You Get Paid on October 1, 2014 - ICD-10 Readiness
Louis F. McIntyre, MD, White Plains, NY

Tuesday, March 11

SYMPOSIUM

8:00 AM — 10:00 AM

Theater B

Surgical Tips and Tricks to Perform Common Elbow Procedures (A)

Moderator: Joaquin Sanchez-Sotelo, MD, Rochester, MN

This video-based symposium reviews tips and tricks to perform several common elbow procedures around the elbow, including fracture treatment, elbow arthroscopy, and elbow arthroplasty.

- I. Radial Head Replacement
Shawn W. O'Driscoll, MD, Rochester, MN
- II. Coronoid Fixation
Mark E. Morrey, MD, Rochester, MN
- III. Internal Fixation of Distal Humerus Fractures
Bradford O. Parsons, MD, New York, NY
- IV. Lateral Collateral Ligament Repair and Reconstruction
Thomas (Quin) Throckmorton, MD, Germantown, TN
- V. Open Contracture Release
Joaquin Sanchez-Sotelo, MD, Rochester, MN
- VI. Arthroscopic Tennis Elbow Release
Felix H. Savoie III, MD, New Orleans, LA
- VII. Arthroscopic Contracture Release
Matthew L. Ramsey, MD, Philadelphia, PA
- VIII. Unlinked Total Elbow Arthroplasty
Graham J. King, MD, London, ON, Canada
- IX. Linked Total Elbow Arthroplasty
Bernard F. Morrey, MD, Fayetteville, TX

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 10:00 AM

101



Room
226

Arthroplasty as an Option in Unreconstructable Acute Fractures or Failed Fracture Fixation About the Hip and Knee in the Active Elderly

Moderator: Richard F. Kyle, MD, Minneapolis, MN
Paul J. Duwelius, MD, Portland, OR
Evan L. Flatow, MD, New York, NY
George J. Haidukewych, MD, Orlando, FL

Learn which fractures about the hip and knee are unreconstructable or have a high failure rate and why acute arthroplasty in these fractures is best in the active elderly patient. They will learn technical procedures after failed fracture fixation and in acute fractures at risk to optimize the success rate of arthroplasty.

102



Room
208

How to Perform a Primary Total Knee Arthroplasty: Video Vignettes

Moderator: Raymond H. Kim, MD, Denver, CO
Gwo-Chin Lee, MD, Philadelphia, PA
Walter B. Beaver, MD, Charlotte, NC
Giles R. Scuderi, MD, New York, NY

Techniques required to perform a successful TKA will be detailed using video vignettes including pre-operative planning, prosthesis selection, surgical exposures, ligamentous balancing, fixation and patellar resurfacing.

103



Room
276

Magnetic Resonance Imaging of the Knee and Shoulder

Co-Moderators: Dennis C. Crawford, MD, Portland, OR
Erik W. Foss, MD, Portland, OR
Carl S. Winanski, MD, Cleveland, OH
Lynne S. Steinbach, MD, San Francisco, CA

Overview of MRI diagnostic criteria for injury and conditions of the knee and shoulder including pitfalls, confounders and potential applications for novel technologies is planned.

The following symbols appear next to educational sessions and indicate one or more of the following:

◆ U.S. Food and Drug Administration has not cleared the drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an off label use). For full information, refer to page 15.



For those who have not registered or purchased these tickets in advance, available tickets may be purchased when registering on-site



An Audience Response System will be featured in several courses in symposia.



Case Presentations - Features a participant's round table with an expert faculty facilitator and an iPad for showing images and data from faculty selected cases. The moderator will present the case to the participants and the facilitator leads individual table discussion. The case is then discussed by all course participants' with individual tables

showing their conclusions. The moderator will present the final solution using evidence-based data including teaching points with references to support the selected treatment. Four to five cases will be discussed during the highly interactive two hour session.



Innovative Education Format - courses that encourage the use of new and technologically advanced education; featuring the unique use of audiovisual or technology with an educational format other than didactic.



Technical Skills - Focused on positioning, approach, and step-by-step technical tips in an edited video followed by discussion on the pearls. The courses will feature four to five cases.




Symposia that are being Webcast, you can watch it live on your smart phone, laptop or tablet.

The Board of Specialty Societies logo next to an educational session indicates the session is co-branded with AAOS and that society.

An alphabetical faculty financial disclosure list can be found starting on page 312.



Tuesday, March 11

- 104** **Pediatric Sports Medicine Operative Challenges and Solutions: A Case Based Approach**
 Moderator: *Mininder S. Kocher, MD, MPH, Boston, MA*
Michael T. Busch, MD, Atlanta, GA
 Room *Eric J. Wall, MD, Cincinnati, OH*
350 *Peter M. Waters, MD, Boston, MA*

Case-based interactive format with expert faculty to discuss hot topics in pediatric sports medicine from the shoulder to the foot.

- 105** **The Art and Science of Reviewing Manuscripts for Orthopaedic Journals**
 Moderator: *Jeffrey S. Fischgrund, MD, Southfield, MI*
Room *William N. Levine, MD, New York, NY*
218 *Thomas W. Bauer, MD, PhD, Cleveland, OH*
Seth S. Leopold, MD, Seattle, WA

Journal editors will help reviewers and authors learn how to craft more effective manuscripts by emphasizing specific assessment criteria for clinical, research and review articles.

- 106** **Rotator Cuff**
 Moderator: *Peter D. McCann, MD, New York, NY*
 *Sumant G. Krishnan, MD, Dallas, TX*
Stephen S. Burkhart, MD, San Antonio, TX
Room *E L. Cain Jr, MD, Birmingham, AL*
260 *Mark D. Lazarus, MD, Philadelphia, PA*


Tear pattern recognition and mobilization techniques, surgical management of partial and massive tears, and tear fixation options are reviewed in both didactic presentations and case presentations by recognized experts.

- 107** **The Not So Simple Ankle Fracture: Avoiding Problems and Pitfalls to Improve Patient Outcome**
 Moderator: *Michael J. Gardner, MD, St. Louis, MD*
 *Samir Mehta, MD, Philadelphia, PA*
Room *Thomas F. Higgins, MD, Salt Lake City, UT*
221 *Jeremy J. McCormick, MD, Saint Louis, MO*


Topics include the diabetic patient, severe osteoporosis, syndesmotom injuries, posterior malleolus fractures, and techniques to improve outcomes.

INSTRUCTIONAL COURSE LECTURE


8:00 AM — 11:00 AM

- 181** **Hand and Wrist Review Course**
 Moderator: *Martin A. Posner, MD, New York, NY*
Room *John T. Capo, MD, Hoboken, NJ*
356 *Steven M. Green, MD, New York, NY*


Those hand and wrist problems that are generally the focus of certifying examinations will be discussed including pertinent anatomy, pathophysiology, clinical and imaging findings and treatment. A complimentary session on the basics of Maintenance of Certification will follow this review course.

- 182** **Sports Medicine Review Course**
 Moderator: *Asheesh Bedi, MD, Ann Arbor, MI*
Room *Joshua Dines, MD, New York, NY*
353 *Volker Musabl, MD, Pittsburgh, PA*
Anthony Colucci, DO, FACEP, South Lyon, MI

Comprehensive and updated summary of the most pertinent and frequently tested concepts in sports medicine surgery, with specific consideration of athletic injuries to the shoulder, knee, hip, and elbow as well the diagnosis and management of commonly encountered medical problems in athletes. A complimentary session on the basics of Maintenance of Certification will follow this review course.

- ◆ **183** **Spine Review Course**
 Moderator: *Thomas J. Errico, MD, New York, NY*
Room *Todd J. Albert, MD, Philadelphia, PA*
271 *John A. Bendo, MD, New York, NY*
Frank J. Schwab, MD, New York, NY
Alexander Vaccaro, MD, PhD, Gladwyne, PA

Updates on cervical degenerative spine surgery; thoracic and lumbar degenerative spine surgery; spinal trauma surgery and adult spinal deformity surgery. A complimentary session on the basics of Maintenance of Certification will follow this review course.

- 184** **Trauma Review Course**
 Moderator: *Paul Tornetta III, MD, Boston, MA*
Room *Andrew H. Schmidt, MD, Minneapolis, MN*
207 *J. Tracy Watson, MD, Saint Louis, MO*
Robert F. Ostrum, MD, Chapel Hill, NC
Clifford B. Jones, MD, FACS, Grand Rapids, MI

Review recent state of the art management of common fractures as well as future directions and evolving treatments. A complimentary session on the basics of Maintenance of Certification will follow this review course.

INSTRUCTIONAL COURSE LECTURE

Special Session

11:15 AM — 12:30 PM

- MOC** **Maintenance of Certification: The Basics**
Room Moderator: *Joseph A. Bosco III, MD, New York, NY*
271 *Shepard R. Hurwitz, MD, Chapel Hill, NC*
Ellen C. Moore, Rosemont, IL

Cover strategies important to taking a multiple choice test and provide details on taking a computerized examination. Covers information that you need to know for maintenance of certification. Features a look at the AAOS Learning Portfolio, designed to assist you in Maintenance of Certification. This session is complimentary for anyone who attended ICL 181-184.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Tuesday, March 11

PAPER PRESENTATION

8:00 AM — 10:00 AM

Theater A

Adult Reconstruction Hip I: Primary THR I

Moderator(s): Peter F. Sharkey, MD, Media, PA
Kipling P. Sharpe, MD, Mesa, AZ

8:00 AM

PAPER: 001

Effect of Tranexamic Acid on Blood Utilization and Thromboembolic Events after Hip and Knee Surgery

Scott A. Wingerter, MD, PhD, Leawood, KS
Ryan Nunley, MD, Saint Louis, MO
Ronald Jackups Jr, MD, PhD, Saint Louis, MO
Staci Johnson, M.Ed, Saint Louis, MO
Robert L. Barrack, MD, Saint Louis, MO

TXA aids in decreased transfusion rate following primary and revision hip and knee arthroplasty and, for the first time, prospective data on VTE shows no increase in events with the addition of TXA.

8:06 AM

PAPER: 002

Allogenic Blood Transfusion in Total Hip Arthroplasty: Results from the Nationwide Inpatient Sample, 2000-2009

Anas Saleh, MD, Beachwood, OH
Travis Small, DO, Meadville, PA
Aiswarya Lekshmi Pillai Chandran Pillai, MD, MS, Cleveland, OH
Nicholas K. Schiltz, BS, Cleveland, OH
Alison K. Klika, MS, Cleveland, OH
Wael K. Barsoum, MD, Cleveland, OH

Allogenic blood transfusion after total hip arthroplasty has a considerable burden on patients and healthcare institutions, increasing length of stay, admission costs, and acute complications.

8:12 AM

PAPER: 003

Prospective Randomized Study of a Collagen/Thrombin and Autologous Platelet Gel During Total Hip Arthroplasty

David Joyce, MD, Nashville, TN
Amar Mutnal, MD, Cleveland, OH
Alison K. Klika, MS, Cleveland, OH
Caleb Szubski, BA, Cleveland, OH
Viktor Erik Krebs, MD, Rocky River, OH
Ulf Knothe, MD, Cleveland, OH
Robert M. Molloy, MD, Avon Lake, OH
Wael K. Barsoum, MD, Cleveland, OH

In relatively healthy primary THA patients there were no statistically significant differences in transfusion events and mean number of units transfused between groups.

Discussion – 6 Minutes

8:24 AM

PAPER: 004

Direct Anterior vs. Mini-Posterior Hip Arthroplasty with Advanced Pain & Rehabilitation Protocols: Some Surprises

Kirsten L. Poehling-Monaghan, MD, Rochester, MN
Atul F. Kamath, MD, Massapequa, NY
Michael J. Taunton, MD, Rochester, MN
Mark W. Pagnano, MD, Rochester, MN

Advanced pain and rehabilitation protocols may trump surgical approach in determining most early outcomes after contemporary hip arthroplasty using direct anterior or mini-posterior techniques.

8:30 AM

PAPER: 005

Does Hepatitis C Affect the Clinical and Patient-reported Outcomes of Primary Total Hip Arthroplasty?

Kimona Issa, MD, Baltimore, MD
Aiman Rifai, DO, Clifton, NJ
Steven F. Harwin, MD, New York, NY
Michael S. McGrath, MD, Paterson, NJ
Vincent K. McInerney, MD, New Vernon, NJ
Michael A. Mont, MD, Baltimore, MD
Bhaveen Kapadia, MD, Baltimore, MD
Samik Banerjee, MBBS, MS, Baltimore, MD

Prior history of hepatitis C infection alone may not predict inferior clinical outcomes after total hip arthroplasty.

8:36 AM

PAPER: 006

Prior Intra-articular Injection Within a Year of Total Hip Arthroplasty Predicts Early Revision

Bheeshma Ravi, MD, Toronto, ON, Canada
Benjamin Escott, MBBS, Toronto, ON, Canada
Ruth Croxford, MSc, Toronto, ON, Canada
Simon Hollands, MSc, BS, Toronto, ON, Canada
Hans J. Kreder, MD, Toronto, ON, Canada
Gillian Hawker, MD, Toronto, ON, Canada
David Wasserstein, MD, North York, ON, Toronto

Intra-articular injection in the year prior to THA is a risk for revision, mediated by infection.

Discussion – 6 Minutes

8:48 AM

PAPER: 007

Total Hip Arthroplasty Outcomes in Psoriatic Arthritis, Osteoarthritis with Psoriasis and Osteoarthritis Alone

Lisa A. Mandl, MD, MPH, New York, NY
Susan Goodman, MD, New York, NY
Rebecca Zhu, New York, NY
Wei-Ti Huang, MS, New York, NY
Michael M. Alexiades, MD, Manhattan, NY
Mark P. Figgie, MD, New York, NY

Despite increased risk factors, patients with psoriatic arthritis and patients with cutaneous psoriasis and osteoarthritis have equally good outcomes compared to patients with osteoarthritis.

Tuesday, March 11

8:54 AM

PAPER: 008

Total Joint Arthroplasty in Patients with Inflammatory Bowel Disease: Disease Modifying Drugs Should be Halted

Jeffrey Oliver, BS, Philadelphia, PA
 Camilo Restrepo, MD, Philadelphia, PA
 Javad Parvizi, MD, FRCS, Philadelphia, PA

Patients with BIC may exhibit higher incidence of reoperation, cardiopulmonary complications and possible need for subsequent revision arthroplasty.

9:00 AM

PAPER: 009

Perioperative Outcomes of Solid Organ Transplant Patients Following Total Hip Arthroplasty in the United States

Caleb Szubski, BA, Cleveland, OH
 Alison K. Klika, MS, Cleveland, OH
 Aiswarya Lekshmi Pillai Chandran Pillai, MD, MS, Cleveland, OH
 Nicholas K. Schiltz, BS, Cleveland, OH
 Siran M. Koroukian, PhD, Cleveland, OH
 Wael K. Barsoum, MD, Cleveland, OH

Transplant patients have significantly greater morbidity, length of stay, admission costs, and acute complication risk after total hip arthroplasty compared with non-transplant patients.

Discussion – 6 Minutes

9:12 AM

PAPER: 010

◆ Differences in Patient Characteristics prior to Total Hip Arthroplasty between Switzerland and the U.S.

Anne Lubbeke-Wolff, MD, DSc, Geneva, Switzerland
 Laurent-Panayiotis Christofilopoulos, Geneva, Switzerland
 Pierre J. Hoffmeyer, MD, Geneva, Switzerland
 Patricia Franklin, MD, MBA, MPH, Worcester, MA

We found substantial differences in baseline characteristics, especially in age, obesity and diabetes prevalence, and preoperative hip pain levels between a U.S. and a Swiss cohort of THA patients.

9:18 AM

PAPER: 011

TJA Appears Cardioprotective in Patients with Moderate-severe OA: A Propensity-score Matched Landmark Analysis

Bheeshma Ravi, MD, Toronto, ON, Canada
 Ruth Croxford, MSc, Toronto, ON, Canada
 Peter Austin, Toronto, ON, Canada
 Lorraine Lipscombe, Toronto, ON, Canada
 Arlene Bierman, MD, MS, Toronto, ON, Canada
 Paula Harvey, MBBS, PhD, Toronto, ON, Canada
 Gillian Hawker, MD, Toronto, ON, Canada

Primary elective TJA recipients had improved survival relative to propensity-score matched persons with OA.

9:24 AM

PAPER: 012

Non-Steroidal Anti-Inflammatory Drug Use in the First Year Following Total Hip Arthroplasty and Implant Survival

Tamer T. Malak, MB, Oxford, United Kingdom
 Muhammad Javaid, Oxford, UK, United Kingdom
 Mireia Espallargues-Carreras, MPH, MD, Barcelona, Spain
 Nigel Arden, MD, Oxford, United Kingdom
 Andrew J. Carr, FRCS, Headington Oxford, United Kingdom
 Andrew Judge, PhD, Oxford, United Kingdom
 Daniel Prieto-Alhambra, MD
 Sion Glyn-Jones, MA, MBBS, Oxford, United Kingdom

Significant association between Non-Steroidal Anti-Inflammatory Drug use in the first year following Total Hip Arthroplasty and revision rate highlights its potential as a surrogate measure of outcome.

Discussion – 6 Minutes

9:36 AM

PAPER: 013

Radiostereometric Analysis of Cementless Femoral Stem Stability in Young Total Hip Replacement Patients at 5 years

David C. Ayers, MD, Worcester, MA
 Anthony Porter JR, MD, Worcester, MA
 Benjamin M. Snyder, MD, Worcester, MA
 Marie E. Walcott, MD, Worcester, MA
 Michelle Aubin, MD, Worcester, MA
 Jacob M. Drew, MD, Charlotte, NC
 Audrey Nebergall, Boston, MA
 Henrik Malchau, MD, Boston, MA
 Charles R. Bragdon, PhD, Boston, MA

In young, active patients cementless THR demonstrates excellent prosthetic stability by RSA and outstanding clinical outcomes at 5 years using a tapered titanium femoral stem.

9:42 AM

PAPER: 014

Min. 20-Year Followup Straight-Stemmed Plasma-Sprayed Titanium-Alloy Uncemented Femoral Component Primary THA

John B. Meding, MD, Mooresville, IN
 E. Michael Keating, MD, Mooresville, IN
 Philip M. Faris, MD, Mooresville, IN
 Michael E. Berend, MD, Mooresville, IN
 Kenneth Davis, MS, Mooresville, IN

The present study evaluates the minimum twenty-year results of primary THA performed with the use of a proximally porous-coated, plasma-sprayed, straight-stemmed, titanium-alloy femoral component.

Tuesday, March 11

9:48 AM

PAPER: 015

A Decade of Experience with Highly Cross Linked Polyethylene in Total Hip Replacements: A Review of 1,484 Cases

John Mutu-Grigg, MD, London, ON, Canada
Richard W. McCalden, MD, London, ON, Canada
Douglas Naudie, MD, FRCSC, London, ON, Canada
James P. McAuley, MD, London, ON, Canada
Steven J. MacDonald, MD, London, ON, Canada

Similar to other published literature, our data suggests the use of HXLPE is both safe, effective and arguably the gold standard bearing surface in modern total joint replacement.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM

Room 245

Sports Medicine/Arthroscopy I: Elbow, Hand, Cartilage

Moderator(s): *Champ Baker III, MD, Columbus, GA*
Armando F. Vidal, MD, Denver, CO

8:00 AM

PAPER: 016

Incidence of Avulsion Fracture of the Medial Epicondyle After Ulnar Collateral Ligament Reconstruction

Ryan W. Hess, MD, Columbia, SC
Aaron K. Mates, MD, Mobile, AL
Jeremy Bruce, MD, Chattanooga, TN
Patrick W. Joyner, MD, Chesapeake, VA
James R. Andrews, MD, Gulf Breeze, FL

Use of palmaris autograft may decrease the risk of ME avulsion fracture after UCL reconstruction.

8:06 AM

PAPER: 017

Hip Range of Motion Correlates with Kinematic Variables Related to Elbow Valgus Torque in Baseball Pitchers

Andrew Waligora, MD, Gainesville, FL
Trevor Lentz, PT, Gainesville, FL
Giorgio Zeppieri JR, Gainesville, FL
Bryan P. Conrad, Gainesville, FL
Kevin W. Farmer, MD, Gainesville, FL

Increased dominant total arc, dominant external rotation, nondominant total arc, and nondominant internal rotation may aid in the reduction of valgus elbow torque through their kinematic correlations.

8:12 AM

PAPER: 018

Lateral Ulna Collateral Ligament Reconstruction: An Analysis of Ulna Tunnel Locations

Oke A. Anakwenze, MD, Philadelphia, PA
Krishn Khanna, BS, New York, NY
William N. Levine, MD, New York, NY
Christopher S. Ahmad, MD, New York, NY

Proper lateral ulnar collateral ligament (LUCL) reconstruction requires proper placement of ulnar tunnels. A more posterior proximal ulna tunnel is favorable in terms of bony bridge and geometry.

Discussion – 6 Minutes

8:24 AM

PAPER: 019

Performance Metrics Before and After Tommy John Surgery in 160 Professional Pitchers

Eric C. Makhni, MD, NY City, NY
Randall Lee, Hoboken, NJ
Zachary Morrow, BS, New York, NY
Anthony Gualtieri, BA, NY City, NY
Christopher S. Ahmad, MD, New York, NY

There is a high rate of return (52%) to the disabled list among professional pitchers following Tommy John surgery. Moreover, performance declines post-operatively in several key performance metrics.

8:30 AM

PAPER: 020

Management of Hand & Wrist Injuries in Elite Athletes: A Survey of Consultant Hand Surgeons

Christopher J. Dy, MD, New York, NY
Ekaterina Y. Urch, MD, New York, NY
Krystle Hearn, MA, New York, NY
Michelle G. Carlson, MD, New York, NY

Our findings emphasize the need to individually tailor treatment decisions and return to play after hand and wrist injuries to the patient's desires and demands, particularly in the elite athlete.

8:36 AM

PAPER: 021

Comparison of Ulnar Variance in a Cohort of Collegiate Female Gymnasts versus the General Population

Amy T. Moeller, MD, Plymouth, MN
Brian P. Bjerke, MD, Edina, MN
Julie Agel, ATC, Seattle, WA
Ann E. Van Heest, MD, Minneapolis, MN

A cohort of collegiate female gymnasts show statistically significant positive ulnar variance in comparison to a historical normal cohort.

Discussion – 6 Minutes

Tuesday, March 11

8:48 AM

PAPER: 022

The Utility of MRI in the Evaluation and Treatment of Distal Biceps Brachii Ruptures

Nimrod Snir, MD, New York, NY
 Mathew Hamula, BA, BS, New York, NY
 Theodore S. Wolfson, BS, New York, NY
 Soterios Gyftopoulos, MD, Long Island City, NY
 Robert J. Meislin, MD, New York, NY
 Eric J. Strauss, MD, New York, NY
 Laith M. Jazrawi, MD, New York, NY

In our series, the combination of retraction greater than 80 mm, lacertus fibrosis disruption, and absence of extra-articular edema correlated highly with need for reconstruction.

8:54 AM

PAPER: 023

Initiation of Tennis Elbow; Anatomic Findings of Origin of Extensor Carpi Radialis Brevis and Joint Capsule

Akimoto Nimura, MD, Tokyo, Japan
 Tomoyuki Mochizuki, MD, Tokyo, Japan
 Hitomi Fujishiro, Bunkyo-Ku, Japan
 Junya Imatani, MD, PhD, Okayama, Japan
 Hiroyuki Sugaya, MD, Chiba, Japan
 Takeshi Muneta, MD, Tokyo, Japan
 Keiichi Akita, MD, Tokyo, Japan

As a pathological candidate for the tennis elbow, ECRB tendon specially originated with the simple tendinous part and the only thin capsule was underlying the anterior side of the ECRB origin.

9:00 AM

PAPER: 024

Performance and Return-to-Sport After Tommy John Surgery in Major League Baseball Pitchers

Brandon Erickson, MD, Chicago, IL
 Anil K. Gupta, MD, Chicago, IL
 Joshua Harris, MD, Bellaire, TX
 Geoffrey D. Abrams, MD, Portola Valley, CA
 Bernard R. Bach Jr, MD, River Forest, IL
 Angielyn M. San Juan, Chicago, IL
 Brian J. Cole, MD, MBA, Chicago, IL
 Charles A. Bush-Joseph, MD, Chicago, IL
 Anthony A. Romeo, MD, Chicago, IL

Our goal was to determine what the return to sport rate of MLB pitchers undergoing ulnar collateral ligament reconstruction was as well as how they performed when they returned to the MLB.

Discussion – 6 Minutes

9:12 AM

PAPER: 025

A Systematic Review of Repair Techniques for Acute Distal Biceps Tendon Ruptures

Jonathan Watson, MD, Chicago, IL
 Vincent M. Moretti, MD, Berwyn, IL
 Leslie E. Schwindel, MD, Chicago, IL
 Mark R. Hutchinson, MD, Elmhurst, IL

We conducted a systematic review of repair techniques for acute distal biceps tendon ruptures, and found no difference between incision number, but bone tunnel fixation had the fewest complications.

9:18 AM

PAPER: 026

Delayed Onset Ulnar Neuritis After Release of Elbow Contracture: Prevention Strategies

Davide Blonna, MD, Torino, Italy
 Shawn W. O'Driscoll, MD, Rochester, MN

Open ulnar nerve decompression or transposition can reduce the incidence and severity of DOUN. Decompression is as effective as transposition but associated with significantly fewer complications.

9:24 AM

PAPER: 027

Chondrogenesis Using Adipose-Derived Stem Cells and FDA-Approved Biomaterials

Jason L. Drago, MD, Redwood City, CA
 Hillary Braun, BA, Redwood City, CA
 Hyeon Joo Kim, PhD

Translation of articular cartilage tissue engineering remains hindered by the use of non-FDA approved scaffold materials. This investigation evaluates FDA approved scaffolds for chondrogenic potential.

Discussion – 6 Minutes

9:36 AM

PAPER: 028

◆ Matrix Assisted Autologous Chondrocyte Transplantation: Results at 10 Years Follow Up

Elizaveta Kon, MD, Bologna, Italy
 Giuseppe Filardo, MD, Bologna, Italy
 Silvio Patella, MD, Bologna, Italy
 Alessandro Di Martino, MD, Bologna, Italy
 Francesco Perdisa, MD, Bologna, Italy
 Berardo Di Matteo, Med Student, Bologna, Italy
 Luca Andriolo, MD, Bologna, Italy
 Stefano Zaffagnini, MD, Bologna, Italy
 Maurilio Marcacci, MD, Bologna, Italy

Safety and effectiveness assessment of a matrix-assisted autologous chondrocyte transplantation at 10 years follow-up.

Tuesday, March 11

9:42 AM

PAPER: 029

Characterization of a Novel Viable Cartilage Mesh for Microfracture Augmentation for Focal Chondral Defects

C. Thomas Vangsness Jr, MD, Los Angeles, CA
Sandy Deitch, PhD, Columbia, MD
Jin-Qiang Kuang, MD, Columbia, MD
Dana Yoo, PhD, Columbia, MD
Michelle Leroux-Williams, PhD, Columbia, MD

Description of a novel cartilage mesh derived from human articular cartilage that contains chondrogenic growth factors and viable chondrocytes within an intact extracellular matrix.

9:48 AM

PAPER: 030

◆ Magnesium Sulfate - A Chondroprotective Alternative to Intraarticular Local Anesthetic?

Joseph Baker, MD, Dublin, Ireland
Daniel Byrne, PhD, Santry Demsne, Ireland
Pauline Walsh, BSc, PhD, Dublin, Ireland
Kevin J. Mulhall, MD, Dublin, Ireland

In this in vitro study cell viability was better preserved when chondrocytes were treated with magnesium sulfate either alone or in combination with local anaesthetic.

Discussion – 6 Minutes

SYMPOSIUM

10:30 AM — 12:30 PM

Theater C

◆ Managing Surgical Pain in the Opioid Epidemic Era (B)

Moderator: David L. Nelson, MD, Greenbrae, CA

Physicians must provide excellent pain control for patients (CMS Quality Guidelines assesses us on this), yet the CDC indicates that more people are killed by Rx opioid drugs than by trauma or heroin. Examine the problem and solutions that have been proven to work.

- I. Overview of the Dichotomy: Excellent Pain Management vs. Opioid Epidemic
Andrew Gurman, MD, Altoona, PA
- II. Results of the AAOS Opioid Questionnaire
David C. Ring, MD, Boston, MA
- III. We Are the Problem: A Prospective Study Of Opioid Proscribing
Jeffrey A. Rodgers, MD, West Des Moines, IA
- IV. Managing Opioids in a Teaching Hospital
Loree Kalliainen, MD, Saint Paul, MN
- V. Proof of a Model Pain Management Program
David L. Nelson, MD, Greenbrae, CA
- VI. Case Examples and Open Questions
Panel

INSTRUCTIONAL COURSE LECTURE

10:30 AM — 12:30 PM

121



Room 260

Direct Anterior Hip Surgery: Techniques for Arthroplasty and Surgical Approach to Hip Surgery

Moderator: Anthony S. Unger, MD, Washington DC
Stefan Kreuzer, MD, Houston, TX
Tim P. Lovell, MD, Spokane, WA
Michael M. Nogler, Innsbruck, Austria

Explore the history, anatomy and science of the DAA. Surgical technique for arthroplasty and FAI treatment will be presented.

122



Room 226

International Perspective on Improving the 10-year Outcome of Total Knee Arthroplasty: Get It Right the First Time

Moderator: Jean-Noel A. Argenson, MD, Marseille, France
John J. Callaghan, MD, Iowa City, IA
Stephane Boisgard, MD, PhD, Clermont Ferrand, France
Daniel J. Berry, MD, Rochester, MN

Highlight international perspectives on surgical techniques in primary TKA. Familiarize the audience with the many different ways of solving primary TKA problems in Europe and North America and stimulate a dialogue that compares and contrasts the pros and cons of these choices including give and take discussion between the speakers from two continents. Organized by the Guest Nation - Société Française De Chirurgie Orthopédique Et Traumatologique.

123



Room 347

Soft Tissue Coverage Every Orthopedist Should Know

Moderator: Nader Paksima, DO, New York, NY
Jeffrey A. Greenberg, MD, Indianapolis, IN
Kevin R. Knox, MD, Indianapolis, IN
Susan C. Scott, MD, New York, NY

Highlight use techniques such as negative pressure wound therapy using a Wound V.A.C., the most current post-operative dressings for prevention of drainage and wound infections, and synthetic skin grafting materials commonly employed. Topics will include fingertip injuries, managing soft tissue injuries associated with high and low energy trauma, and approaches to treating postoperative wound complications. Simple and complex cases for open discussion and audience questions.

124



Room 270

Congenital Scoliosis: A Case Based Approach

Moderator: Frances A. Farley, MD, Ann Arbor, MI
Michael G. Vitale, MD, MPH, Irvington, NY
Laurel C. Blakemore, MD, Broad Run, VA
John P. Dormans, MD, Philadelphia, PA

Diagnosis and treatment of Congenital Scoliosis. The faculty will use cases to discuss surgery and controversies.

An alphabetical faculty financial disclosure list can be found starting on page 312.

Tuesday, March 11

125

**Lessons Learned from US Hip and Knee Practice**

Moderator: *Rafael J. Sierra, MD, Rochester, MN*
Fabio Orozco, MD, Egg Harbor Township, NJ
Camilo Restrepo, MD, Philadelphia, PA
Carlos J. Lavernia, MD, Coral Gables, FL
Miguel E. Cabanela, MD, Rochester, MN
Claudio Diaz, MD, Santiago, Chile

Room
350

Intended for Spanish speaking international attendees. The aim of the course is the share US THA and TKA practice experiences with the audience in order to improve THA and TKA care in other countries.

126

**Difficult Conversations in Orthopaedics**

Moderator: *Andrew M. Wong, MD, Tallahassee, FL*
David A. Halsey, MD, South Burlington, VT
Michael Marks, MD, MBA, Norwalk, CT
Donna P. Phillips, MD, New York, NY

Room
276

Techniques and tools for difficult patient interactions: bad news, unexpected outcomes, medical error, angry and difficult patients, drug seeking and non-adherence due to financial concerns.

127

**Elbow Arthroscopy: Beginners to Advanced**

Moderator: *Christopher S. Ahmad, New York, NY*
Anthony A. Romeo, MD, Chicago, IL
Matthew L. Ramsey, MD, Philadelphia, PA
Felix H. Savoie III, MD, New Orleans, LA

Room
208

Detailed presentations will instruct patient positioning, portal placement and use of retractors. Specific procedures will include basic loose body removal, arthroscopic treatment of throwing elbow injuries, techniques to manage elbow arthritis and advanced techniques such as arthroscopic assisted fracture treatment.

128

**Diagnosis and Treatment of the Biceps-Labral Complex: The State of the Art 2014**

Moderator: *Stephen J. O'Brien, MD PLLC, New York, NY*
Gary M. Gartsman, MD, Houston, TX
Pascal Boileau, MD, Nice, France
Matthew T. Provencher, MD, San Diego, CA

Room
221

Review of existing scientific knowledge needed to understand the anatomical, functional, and clinical information surrounding the Biceps-Labrum Complex; including diagnostic examination and tools.

129

**Diagnosis and Management of Tumors of the Hand and Upper Extremity**

Moderator: *Sanjeev Kakar, MD, Rochester, MN*
Peter M. Murray, MD, Jacksonville, FL
Edward A. Athanasian, MD, New York, NY

Room
215

Present an overview of the most common benign and malignant tumors in the upper limb. Review the clinical and radiographic features, biopsy principles, and treatment options for each tumor type as well as the anticipated outcomes and recurrence rate following treatment. Indications for neoadjuvant and adjuvant therapy will be reviewed.

130

**Management of Acute (Traumatic) and Chronic Charcot Foot and Ankle Disease: A Surgical Algorithm**

Moderator: *Vincent J. Sammarco, MD, Cincinnati, OH*
Dolfi Herscovici Jr, DO, Temple Terrace, FL
Dror Paley, MD, West Palm Beach, FL

Room
218

Explores the operative treatment of Charcot foot and ankle deformity. Includes both acute (traumatic) and chronic management, with special consideration for managing fractures in diabetics. Indications and techniques for internal and external fixation presented including the treatment of infection, dynamic correction with external fixation, plantar plate, locking plate and axial screw fixation for fusions.

131

**Management of Pelvic Fractures**

Moderator: *Milton L. Rouitt Jr., MD, Houston, TX*
Raymond D. Wright Jr, MD, Lexington, KY
Michael D. Stover, MD, Chicago, IL
Mark C. Reilly, MD, Newark, NJ

Room
352

Current standards of pelvic ring injury evaluation, acute management, decision making, surgical techniques, and complication avoidance are presented in depth.

132

**Complex Shoulder Arthroplasty: Case Discussions and Management**

Moderator: *Thomas (Quin) Throckmorton, MD, Germantown, TN*
Theodore A. Blaine, MD, New Haven, CT
Edward V. Craig, MD, New York, NY
Lynn A. Crosby, MD, Augusta, GA
Thomas B. Edwards, MD, Houston, TX
Evan L. Flatow, MD, New York, NY
Leesa M. Galatz, MD, Saint Louis, MO
Mark A. Mighell, MD, Tampa, FL
John W. Sperling, MD, MBA, Rochester, MN
Gerald R. Williams Jr, MD, Philadelphia, PA
Joseph P. Iannotti, MD, PhD, Cleveland, OH

Room
210

Understand and apply strategies for managing glenoid and humeral bone deficiency in shoulder arthroplasty; options and techniques available to treat infected shoulder arthroplasty; and causes for instability after shoulder arthroplasty and treat them according to each etiology.

Tuesday, March 11

PAPER PRESENTATION

10:30 AM — 12:30 PM

Theater A

Shoulder and Elbow I: Elbow Conditions

Moderator(s): *Russell Huffman, MD, Philadelphia, PA, Robert Z. Tashjian, MD, Salt Lake City, UT, Mark Wright, MD, Auckland, New Zealand*

10:30 AM

PAPER: 031

Outcome of Total Elbow Replacement: A Four-Year Mean Follow Up

*Omid Alizadehkhayat, MD, Liverpool, United Kingdom
Ahmed Al Mandhari, MD, Liverpool, United Kingdom
Alexandros Kyriakos, MD, Liverpool, United Kingdom
Simon Frostick, MD, Liverpool, United Kingdom*

Total elbow replacement (TER) using a linked system produced effective functional improvement in both primary and revision total elbow replacement. The incidence of major complications was in an acceptable range.

10:36 AM

PAPER: 032

Total Elbow Arthroplasty: A National Analysis of Factors Effecting Length of Stay

*Evan O'Donnell, BA, New York, NY
Oke A. Anakwenze, MD, Philadelphia, PA
William N. Levine, MD, New York, NY
Christopher S. Ahmad, MD, New York, NY
Charles M. Jobin, MD, New York, NY*

Postoperative complications are associated with prolonged length of stay (PLOS) after elbow arthroplasty. A high rate (44%) of complications was noted in patients with PLOS after elbow arthroplasty.

10:42 AM

PAPER: 033

Osteosynthesis or Arthroplasty for the Treatment of Geriatric Distal Humerus Fractures: A Meta-analysis

*Michael Githens, MD, Redwood City, CA
Julius A. Bishop, MD, Palo Alto, CA*

A meta-analysis revealed that after treatment of geriatric distal humerus fractures with either TEA or ORIF there is no difference in functional outcomes, yet an increased reoperation rate after ORIF.

Discussion – 6 Minutes

10:54 AM

PAPER: 034

The “Bicipital Aponeurosis Flex Test” and its Role in the Diagnosis and Treatment of Distal Biceps Tendon Ruptures

*Amr Elmaraghy, MD, Toronto, ON, Canada
Moira Devereaux, MSc, Mahone Bay, NS, Canada*

A diagnostic study to evaluate the “Bicipital Aponeurosis Flex Test” in assessing the integrity of the bicipital aponeurosis as part of the evaluation and treatment of distal biceps tendon ruptures.

11:00 AM

PAPER: 035

Proximal Radioulnar Impingement: The Association of Radial Tuberosity Size with Distal Biceps Rupture

*Nicholas R. Slenker, MD, Los Angeles, CA
Neal S. ElAttrache, MD, Los Angeles, CA
Aram Salem, MD, Santa Monica, CA
John Crues, MD, Los Angeles, CA
Orr Limpisvasti, MD, Los Angeles, CA*

Comparative analysis of the proximal radioulnar interval on axial MRI demonstrates a clear association between distal biceps rupture and decreased interval space, implicating mechanical impingement.

11:06 AM

PAPER: 036

Anconeus Interposition Arthroplasty for Reconstruction of the Radiocapitellar and/or Proximal Radioulnar Joint

*Yaser M. Baghdadi, MD, Rochester, MN
Bernard F. Morrey, MD, Fayetteville, TX
Joaquin Sanchez-Sotelo, MD, Rochester, MN*

Interposition of the anconeus muscle provides a satisfactory surgical alternative in the armamentarium of procedures to address pathology at the radiocapitellar and/or proximal radioulnar joint.

Discussion – 6 Minutes

11:18 AM

PAPER: 037

Allograft Ligament Reconstruction for Post-Traumatic Elbow Posterolateral Rotatory Instability

*Yaser M. Baghdadi, MD, Rochester, MN
Bernard F. Morrey, MD, Fayetteville, TX
Shawn W. O'Driscoll, MD, Rochester, MN
Scott P. Steinmann, MD, Rochester, MN
Joaquin Sanchez-Sotelo, MD, Rochester, MN*

Allograft reconstruction of the lateral collateral ligament complex restores elbow stability in approximately 85% of the elbows with post traumatic posterolateral rotatory instability.

11:24 AM

PAPER: 038

Acute Arthroscopic Repair of the Radial Ulnohumeral Ligament Following Elbow Dislocation in High-Demand Patients

*Michael J. O'Brien, MD, New Orleans, LA
Randall L. Murphy Jr, MD, Jackson, MS
Felix H. Savoie III, MD, New Orleans, LA*

Arthroscopic repair of the RUHL is a safe, effective procedure that restores stability to the elbow and allows a select group of high-demand patients to quickly return to work and play.

Tuesday, March 11

11:30 AM

PAPER: 039

The Differential Expression Patterns of Minor Collagens in Post Traumatic Anterior Elbow Contracture Capsules*Srinath Kamineni, MD, Lexington, KY*

Minor collagens have a specific sequence of expression during the formation of an post-traumatic elbow contracture.

Discussion – 6 Minutes

11:42 AM

PAPER: 040

The Long-term Outcomes after Closed Reduction of Simple Elbow Dislocations*Chetan S. Modi, MBChB, MSc, Birmingham, United Kingdom**David Wasserstein, MD, MSc, North York, ON, Canada**Ian Mayne, MD, Toronto, ON, Canada**Patrick Henry, MD, Portland, ME**Nizar Mahomed, MD, Toronto, ON, Canada**Christian Veillette, MD, Toronto, ON, Canada*

The long-term outcomes, defined by requirement for surgery, after simple elbow dislocations treated by closed reduction include: recurrent instability (4.9%); contracture (3.0%); arthritis (0.2%).

11:48 AM

PAPER: 041

Impact of the Pattern and Size of an Ulnar Collateral Ligament Tear on the Posteromedial Compartment of the Elbow*Sheref Hassan, MD, Parlin, NJ**Brent G. Parks, MSc, Baltimore, MD**Janet A. Yu-Yahiro, PhD, Baltimore, MD**Wiemi Douguieh, MD, Washington, DC**Daryl C. Osbahr, MD, Baltimore, MD*

The proximal half of the UCL footprint on the ulna may play a significant role in maintaining stability and protecting the elbow from injury due to abnormal biomechanical forces seen with UCL tears.

11:54 AM

PAPER: 042

Biomechanical Comparison of Ulnar Collateral Ligament Reconstruction Techniques: A Systematic Review*Jonathan M. Frank, MD, Chicago, IL**Joshua Harris, MD, Bellaire, TX**Brandon Erickson, MD, Chicago, IL**Mark S. Cohen, MD, Chicago, IL**Charles A. Bush-Joseph, MD, Chicago, IL**Bernard R. Bach Jr, MD, River Forest, IL**Anthony A. Romeo, MD, Chicago, IL*

A systematic review of biomechanical studies of UCL reconstruction techniques was performed. We found no significant biomechanical advantage of one UCL reconstruction technique over another.

Discussion – 6 Minutes

12:06 PM

PAPER: 043

The Role of Elbow Rotation in the Management of Radial Head Fractures. A Prospective Randomized Controlled Study.*Nikolaos K. Paschos, MD, Davis, CA**Khaled Abuhemoud, MD, PhD, Ioannina, Greece**Dimitrios Gartzonikas, MD, Ioannina, Greece**Anastasos Georgoulis, Ioannina, Greece*

Introducing active elbow rotation in the early management of radial head fractures is associated with worse outcome and poor fracture healing.

12:12 PM

PAPER: 044

Strength of Coronoid Fracture Fixation: A Biomechanical Study*Bashar Alolabi, MD, Toronto, ON, Canada**Simon R. Deluce, London, ON, Canada**Alia Gray, MSc, Belleville, ON, Canada**Louis Ferreira, MSc, London, ON, Canada**James A. Johnson, PhD, London, ON, Canada**George S. Athwal, MD, London, ON, Canada**Graham J. King, MD, London, ON, Canada*

In assessing fixation methods in 40% coronoid fractures, plate fixation was most secure followed by 2 screws, regardless of orientation, followed by 1 screw. Suture fixation failed at very low loads.

12:18 PM

PAPER: 045

Prediction of Olecranon ORIF Complications with Radiographic Parameters*Anshuman Singh, MD, San Diego, CA**Diego A. Figueira, MD, San Diego, CA**Jun Wu, MD, MS, Pasadena, CA**Ronald A. Navarro, MD, Rolling Hills, CA*

We have defined simple radiographic parameters which can help to predict complications after olecranon ORIF.

Discussion – 6 Minutes

Tuesday, March 11

PAPER PRESENTATION

10:30 AM — 12:30 PM
Room 245

Adult Reconstruction Knee I: Infection

Moderator(s): John L. Masonis, MD, Charlotte, NC
Russell E. Windsor, MD, New York, NY

10:30 AM

PAPER: 046

The Host Response: Toll Like Receptor Expression in Periprosthetic Tissues as a Biomarker for Deep Joint Infection

Cara A. Cipriano, MD, Palo Alto, CA
Aparna Maiti, PhD, Richmond, VA
Gregory Hale, MD, Richmond, VA
William A. Jiranek, MD, Richmond, VA

In our pilot study, Toll Like Receptor 1 expression in periprosthetic tissues accurately predicted infection (AUC 0.995, 94.4% sensitivity, 95.5% specificity).

10:36 AM

PAPER: 047

Serum Interleukin 6 Improves Screening for Infected Total Knee Arthroplasty

Vivek S. Jagadale, MD, MS, Mayfield, KY
Edward Y. Cheng, MD, Minneapolis, MN

Serum IL-6 in combination with synovial WBC has highest sensitivity, specificity and NPV, making it a useful screening test in infected total knee arthroplasty.

10:42 AM

PAPER: 048

Diagnosing Periprosthetic Joint Infection: The Era of the Biomarker has Arrived

Carl A. Deirmengian, MD, Wynnewood, PA
Keith Kardos, PhD, Wynnewood, PA
Patrick Kilmartin, BS, MS, Wynnewood, PA
Alexander Cameron, Wynnewood, PA
Kevin Schiller, BS, Wynnewood, PA
Javad Parvizi, MD, FRCS, Philadelphia, PA

A comprehensive biomarker program has led to the identification of several synovial fluid biomarkers that appear to be diagnostic for PJI.

Discussion – 6 Minutes

10:54 AM

PAPER: 049

Prospective, Randomized, Blinded Study to Evaluate Two Surgical Skin Preparations in Reducing SSI after TJA

Tiffany N. Morrison, Philadelphia, PA
Mayank Taneja, Columbus, OH
James J. Purtill, MD, Philadelphia, PA
Matthew Austin, MD, Philadelphia, PA
Javad Parvizi, MD, FRCS, Philadelphia, PA

Single-Center, prospective, randomized, blinded study investing the use of two surgical skin preparation techniques on surgical site infection following total joint arthroplasty.

11:00 AM

PAPER: 050

◆ Killing Staphylococcus epidermidis on Prosthetic Joint Materials using Antiseptic Agents

Brandon Hicks, New Orleans, LA

The purpose of this study was to investigate the effectiveness of two antiseptics in killing Staphylococcus epidermidis (a leading cause of PJI) biofilms on common prosthetic joint materials.

11:06 AM

PAPER: 051

Aseptic Protocol Decreases Surgical Site Infections After Knee Arthroplasty

Joseph Lamplot, BS, Chicago, IL
Gaurav A. Luther, MD, Boston, MA
Tyler R. Krummenacher, MD, Chicago, IL
Mohammed Hussain, BS, Chicago, IL
Hue H. Luu, MD, Chicago, IL
David W. Manning, MD, Chicago, IL

Our aseptic protocol significantly decreases SSI in a high-risk population undergoing knee arthroplasty compared to historical institutional data and contemporary comparable literature.

Discussion – 6 Minutes

11:18 AM

PAPER: 052

Serum Inflammatory Markers for Periprosthetic Knee Infection in Obese versus Non-Obese Patients

Jane Liu, Cleveland, OH
Anas Saleh, MD, Beachwood, OH
Alison K. Klika, MS, Cleveland, OH
Wael K. Barsoum, MD, Cleveland, OH
Carlos A. Higuera, MD, Lakewood, OH

There is a difference of CRP cut-off value on obese patients when compared to non-obese patients to diagnose knee PJI.

11:24 AM

PAPER: 053

Diagnostic Threshold for Synovial Fluid Analysis in Late Periprosthetic Infection Depends on Duration of Symptoms

Kshitij Kumar Agrawal, Arlington, MA
Horim Choi, MD, Boston, MA
Viktor Hansen, MD, Boston, MA
Hany S. Bedair, MD, Boston, MA

Symptom Duration is important in synovial fluid analysis for late periprosthetic infection. The cutoff for 5800 cell/uL in patients with acute symptoms is 3 times higher than in more chronic symptoms.

Tuesday, March 11

11:30 AM

PAPER: 054

Sonication Adds Value in Predicting Failure During Two-stage Reimplantation for Prosthetic Knee and Hip Infections

Robert Jones, MD, Danville, PA
 Kaan Irgit, MD, Ankara, Turkey
 Nathaniel C. Wingert, MD, Danville, PA
 Michael Foltzer, MD, Danville, PA
 Thomas R. Bowen, MD, Danville, PA
 Charles L. Nelson, MD, Philadelphia, PA

Sonication of antibiotic spacers after two-stage reimplantation increases the sensitivity of intra-operative cultures.

Discussion – 6 Minutes

11:42 AM

PAPER: 055

Incubation of Sonicate Fluid in Blood Culture Bottles Leads to an Improved and Quicker Rate of Bacterial Isolation

Viktor Janz, MD, Berlin, Germany
 Georgi Wassilew, MD, Berlin, Germany
 Carsten Perka, MD, Berlin, Germany
 Viktor Janz, MD, Berlin, Germany

The culture of sonicate fluid in blood culture bottles leads to more bacterial isolations and provides positive bacterial growth an average of 1,4 days quicker than conventional agar plate cultures.

11:48 AM

PAPER: 056

Leukocyte Esterase: Matched for MSIS Criteria

Eric H. Tischler, BA, Philadelphia, PA
 Javad Parvizi, MD, FRCS, Philadelphia, PA

The effectiveness of Leukocyte Esterase for diagnosing Periprosthetic Joint Infection When Matched to the current Musculoskeletal Infection Society Criteria.

11:54 AM

PAPER: 057

◆ Alpha-Defensin: A Novel Synovial Fluid Biomarker for PJI that Outperforms the Leukocyte Esterase Test Strip

Carl A. Deirmengian, MD, Wynnwood, PA
 Keith Kardos, PhD, Wynnwood, PA
 Patrick Kilmartin, BS, MS, Wynnwood, PA
 Kevin Schiller, BS, Wynnwood, PA
 Alexander Cameron, Wynnwood, PA
 Dana Geiser, BS, Philadelphia, PA
 Javad Parvizi, MD, FRCS, Philadelphia, PA

The alpha-defensin protein is a novel synovial fluid biomarker for the diagnosis of periprosthetic infection that outperforms the leukocyte esterase test strip.

Discussion – 6 Minutes

12:06 PM

PAPER: 058

Diabetes Mellitus, Hyperglycemia, Hemoglobin A1c and the Risk of Prosthetic Joint Infections

Hilal Maradit-Kremers, MD, MSc, Rochester, MN
 Laura Lewallen, MD, Rochester, MN
 Brian D. Lahr, MSc, Rochester, MN
 Tad M. Mabry, MD, Rochester, MN
 James Steckelberg, MD, Rochester, MN
 Daniel J. Berry, MD, Rochester, MN
 Arlen D. Hanssen, MD, Rochester, MN
 Elie Berbari, MD, Rochester, MN
 Douglas R. Osmon, MD, Rochester, MN

diabetes, perioperative hyperglycemia, glycemic control, and insulin administration on PJI outcomes.

12:12 PM

PAPER: 059

Prosthetic Joint Infection Risk Stratification in Total Hip (THA) and Total Knee (TKA) Arthroplasty

Hilal Maradit-Kremers, MD, MSc, Rochester, MN
 Laura Lewallen, MD, Rochester, MN
 Brian D. Lahr, MSc, Rochester, MN
 Tad M. Mabry, MD, Rochester, MN
 James Steckelberg, MD, Rochester, MN
 Daniel J. Berry, MD, Rochester, MN
 Arlen D. Hanssen, MD, Rochester, MN
 Elie Berbari, MD, Rochester, MN
 Douglas R. Osmon, MD, Rochester, MN

Prosthetic Joint Infection Risk Stratification.

12:18 PM

PAPER: 060

Comparison of a Clinically Derived Prosthetic Joint Infection (PJI) Risk Model and the NHSN Risk Model

Laura Lewallen, MD, Rochester, MN
 Hilal Maradit-Kremers, MD, MSc, Rochester, MN
 Brian D. Lahr, MSc, Rochester, MN
 Tad M. Mabry, MD, Rochester, MN
 James Steckelberg, MD, Rochester, MN
 Daniel J. Berry, MD, Rochester, MN
 Arlen D. Hanssen, MD, Rochester, MN
 Elie Berbari, MD, Rochester, MN
 Douglas R. Osmon, MD, Rochester, MN

compare the prediction of PJI with the THA and TKA specific NHSN risk scores and a clinically-derived risk score that includes patient- and surgery-specific risk factors.

Discussion – 6 Minutes

Tuesday, March 11

PAPER PRESENTATION

10:30 AM — 12:30 PM
Room 265

Trauma I: Ankle/Pilon

Moderator(s): Eric M. Hammerberg, MD, Boulder, CO
J. Lawrence Marsh, MD, Iowa City, IA

10:30 AM

PAPER: 061

The Impact of Popliteal Block on Post-operative Medication Administration and Time to Discharge from PACU

Rachel Y. Goldstein, MD, Boston, MA
Ji Hae Park, BS, New York, NY
Sudheer Jain, New York, NY
Nirmal C. Tejwani, MD, New York, NY

Patients who received popliteal blocks did not require any less medication in the PACU and were no less likely to require overnight hospitalization than those who received general anesthesia.

10:36 AM

PAPER: 062

Normal Distal Tibiofibular Syndesmosis Measurements in 91 Ankles by Computed Tomography

Samuel Rosenbaum, MD, Ann Arbor, MI
John Lee, MD, MS, Ann Arbor, MI
Mark Hake, MD, Ann Arbor, MI
Sven Holcombe, BS, Ann Arbor, MI
Stewart C. Wang, Ann Arbor, MI
James A. Goulet, MD, Ann Arbor, MI

The distal tibiofibular syndesmosis morphology is highly variable and side-to-side differences are noted, understanding morphology is essential for anatomic reduction.

10:42 AM

PAPER: 063

A Randomized Controlled Trial of Early vs Delayed Weightbearing After Surgical Fixation of Unstable Ankle Fractures

Niloofar Dehghan, MD, Toronto, ON, Canada
Richard Jenkinson, MD, Toronto, ON, Canada
Michael D. McKee, MD, Toronto, ON, Canada
Aaron Nauth, MD, Toronto, ON, Canada
Emil H. Schemitsch, MD, Toronto, ON, Canada
Jeremy Hall, MD, FRCS, Toronto, ON, Canada
David J. Stephen, MD, Toronto, ON, Canada
Hans J. Kreder, MD, Toronto, ON, Canada

There is no difference with regards to time to return to work, however the early group has improved ankle function and health outcome scores early on, with no increase in rate of complication/failure.

Discussion – 6 Minutes

10:54 AM

PAPER: 064

Trimalleolar Ankle Fractures; A Comparison of Surgical Techniques for Posterior Malleolus Fixation

Benjamin Mueller, MD, PhD, Saint Paul, MN
Aaron Jacobson, DC, Saint Paul, MN
Eric R. Nelson, MD, De Pere, WI
Peter A. Cole, MD, Saint Paul, MN

Outcomes of posterolateral buttress plating (PL) and fixation with anterior to posterior percutaneous lag screws for posterior malleolus fixation were compared.

11:00 AM

PAPER: 065

Anatomical Strategy for Fixation of Supination External Rotation Type IV Equivalent (SER IV E) Ankle Fractures

Milton T. Little, MD, Seattle, WA
Marschall B. Berkes, MD, Webster, NY
Patrick C. Schottel, MD, New York, NY
Matthew R. Garner, MD, New York, NY
Lionel E. Lazaro, MD, New York, NY
David L. Helfet, MD, New York, NY
Dean G. Lorich, MD, New York, NY

This is an evaluation of the radiographic outcomes of an anatomical ankle fracture fixation strategy which includes posterior malleolar reconstruction/PITFL repair and deltoid repair.

11:06 AM

PAPER: 066

Syndesmotic Over-compression After Fixation of Ankle Fractures with a Syndesmotic Injury

Steven M. Cherney, MD, Saint Louis, MO
Patricia Babb, Saint Louis, MO
Christopher McAndrew, MD, Saint Louis, MO
William M. Ricci, MD, Saint Louis, MO
Michael J. Gardner, MD, Saint Louis, MO

Post-operative computerized tomographic (CT) scans demonstrated significant over-compression of the syndesmosis after operative fixation of syndesmotic injuries when compared to contralateral controls.

Discussion – 6 Minutes

11:18 AM

PAPER: 067

Corrective Effect of Suture-Button Fixation on Iatrogenic Syndesmotic Malreduction: A Cadaveric Study

Robert W. Westermann, MD, Iowa City, IA
Chamnni Rungprai, MD, Iowa City, IA
Jessica Goetz, PhD, Iowa City, IA
John E. Femino, MD, Iowa City, IA
Annunziato Amendola, MD, Iowa City, IA
Phinit Phisitkul, MD, Iowa City, IA

Malreduction is a common with syndesmosis screw treatment; our study suggests suture-button syndesmotic fixation is able to correct for 57-88% of screw-produced malreduction in a cadaveric model.

Tuesday, March 11

11:24 AM

PAPER: 068

Male Sex and Syndesmotic Screw Fixation are Risk Factors for Post-Traumatic Synostosis in Operative Ankle Fractures

Richard M. Hinds, MD, New York, NY
 Lionel E. Lazaro, MD, New York, NY
 David L. Helfet, MD, New York, NY
 Dean G. Lorch, MD, New York, NY

Syndesmotic screw fixation and male sex positively correlate with post-traumatic synostosis in operative ankle fractures.

11:30 AM

PAPER: 069

Does Ankle Syndesmosis Screw Removal Affect Patient Outcomes? A Prospective, Randomized, Controlled Trial

Matthew J. Boyle, MD, Durham, NC
 Ryan Gao, Auckland, New Zealand
 Brendan Coleman, MD, Wellington, New Zealand

In this prospective, randomized, controlled trial we have identified no significant benefit associated with syndesmosis screw removal in adult ankle fracture patients.

Discussion – 6 Minutes

11:42 AM

PAPER: 070

Comparison of Modern Locked Plating and Antigliding Plating for Fixation of Osteoporotic Distal Fibular Fractures

Robert J. Wetzel, MD, Chicago, IL
 Neel Jain, MD, La Porte, IN
 Paul Switaj, MD, Chicago, IL
 Brian M. Weatherford, MD, Columbia, MD
 Li-Qun Zhang, PhD, Chicago, IL
 Bradley R. Merk, MD, Chicago, IL
 Mahesh Polavarapu, Philadelphia, PA
 Yupeng Ren, Chicago, IL

The use of modern lateral locked plating with additional distal fixation is a biomechanically stronger construct than antiglide plating for an osteoporotic, unstable distal fibula fracture.

11:48 AM

PAPER: 071

◆ Fragility Fractures of the Ankle in the Frail Elderly: Treatment of 48 Cases with a Long Calcaneotalibial Nail

Shafic S. Al-Nammari, MRCS, London, United Kingdom
 Sebastian Dawson-Bowling, MD, East Sussex, United Kingdom
 Syed Nawaz, MRCS, Surrey, United Kingdom
 Jeya Palan, MD, Market Harborough, United Kingdom
 Howard Cottam, MD, London, United Kingdom
 Amit Amin, FRCS, Harrow, UK, United Kingdom
 Dominic Nielsen, Surrey, United Kingdom

48 fragility fractures of the ankle were treated with a long intramedullary nail across the os calcis, talus into the tibia. One required removal for infection but the remainder united satisfactorily.

11:54 AM

PAPER: 072

Ankle Fragility Fractures Treated with Primary Retrograde Tibiotalocalcaneal Nail

Dane C. Hansen, DO, Columbus, OH
 Benjamin Taylor, MD, New Albany, OH

Our study shows that retrograde TTC nail is an acceptable treatment in ankle fragility fractures, especially in the setting of comorbidities, leading to early activity and minimal complications.

Discussion – 6 Minutes

12:06 PM

PAPER: 073

Combined Approaches Increases Nonunion in Tibial Pilon Fractures

Paul M. Balthrop, MD, Savannah, GA
 Daniel S. Chan, MD, Tampa, FL
 Roy W. Sanders, MD, Tampa, FL
 Brian D. White, MD, Tampa, FL
 David Glassman, Portsmouth, VA

Combined approaches facilitate anatomic reduction but may increase nonunion risk.

12:12 PM

PAPER: 074

Tibial Pilon Fractures Associated with Acute Compartment Syndrome: A Case-Control Study

Todd S. Yecies, BS, Pittsburgh, PA
 Ivan S. Tarkin, MD, Pittsburgh, PA
 Peter Siska, MD, Pittsburgh, PA
 Gary S. Gruen, MD, Pittsburgh, PA
 Andrew R. Evans, MD, Pittsburgh, PA

The objective of this study is to determine the effects of comorbid ACS on the outcomes of tibial pilon fractures.

12:18 PM

PAPER: 075

Complications of Surgical Management of Grade IIIB and IIIC Open Pilon Fractures in an Urban Level 1 Trauma Center

Joshua L. Gary, MD, Houston, TX
 Jose A. Romero, MD, Dallas, TX
 Evan G. Meeks, MD, Houston, TX
 Catherine G. Ambrose, PhD, Houston, TX
 John W. Munz, MD, Houston, TX
 Timothy S. Achor, MD, Bellaire, TX

Major complication rate after ORIF of grade IIIB and IIIC open pilon fractures is greater than 50% in our urban level-1 trauma center with a 38% infection rate and 30% nonunion rate.

Discussion – 6 Minutes

Tuesday, March 11

SYMPOSIUM

1:30 PM — 3:30 PM

La Nouvelle Ballroom

New Paradigms and State of the Art Treatment of Osteonecrosis of the Femoral Head (C)

Moderator: Rafael J. Sierra, MD, Rochester, MN

This symposium will discuss the new insights into the etiologic factors (epigenetics, gene abnormalities, thrombotic conditions) associated with osteonecrosis of the femoral head and multifocal osteonecrosis. The world-class expert faculty will review their years of experience in nonoperative and surgical management of patients with osteonecrosis.

- I. Treatment with Percutaneous Drilling
Michael A. Mont, MD, Baltimore, MD
- II. Bone Graft Substitutes
Jay R. Lieberman, MD, Los Angeles, CA
- III. Epigenetics of ON
Javad Parvizi, MD, FRCS, Philadelphia, PA
- IV. Pro Ream Device for ON
C Lowry Barnes, MD, Little Rock, AR
- V. Etiology and Nonoperative Treatment of ON
Charles Glueck, MD, Cincinnati, OH
- VI. Bone Marrow Concentration and Treatment for AVN Femoral Head
Philippe Hernigou, PhD, Creteil, France
- VII. THA
Carlos J. Lavernia, MD, Coral Gables, FL

SYMPOSIUM

1:30 PM — 3:30 PM

Theater C

Loss of Standing Balance: The Lifelong (Cradle to Grave) Management of Sagittal Imbalance of the Spine (D)

Moderator: John R. Dimar II, MD, Louisville, KY

The loss of sagittal balance of the spine during aging is the result of progressive changes in alignment of the thoracic & lumbar spine along with the pelvis. These changes may ultimately result in significant positive sagittal imbalance & degradation of the patient's quality of life by limiting activities of daily living. When severe sagittal decompensation develops, it may require surgical realignment via a wide array of surgical procedures. Since there has been extensive research into establishing normal pelvic & spinal alignment parameters, careful adherence to these concepts during surgical correction will avoid needless exacerbation of the patient's sagittal imbalance.




- I. The Development of Normal Upright Balance in Children: The Global Relationship of the Pelvis to the Spine
Hubert H. Labelle, MD, Montreal, QC, Canada
- II. Abnormal Sagittal Alignment in Scoliosis: When is Treatment Required & What Surgical Techniques Are Effective?
Lori A. Karol, MD, Dallas, TX
- III. Scheuermann's Kyphosis & Roundback: Diagnosis & Current Treatment Guidelines
B. Stephens Richards III, MD, Dallas, TX
- IV. Case Presentations of Pediatric Spinal Imbalance
Peter O. Newton, MD, San Diego, CA
- V. Preoperative Measurement & Classification of Sagittal Deformity: Technical Planning & Intraoperative Execution of Sagittal Plane Correction
Frank J. Schwab, MD, New York, NY
- VI. Combining Coronal & Sagittal Plane Deformity: Converting the Plan into an Appropriate Operative Treatment Plan
Sigurd H. Berven, MD, San Francisco, CA
- VII. How Have Recent Advances Surgical Techniques Improved the Success & Safety of Surgery in Adult Sagittal Deformity?
Lawrence G. Lenke, MD, Saint Louis, MO
- VIII. The Loss of Sagittal Balance Adjacent to the Construct following Adult Sagittal Plane Deformity Correction: Current Management Recommendations
Khaled M. Kebais, MD, Baltimore, MD
- IX. Are Sagittal Plane Re-Alignment Procedures Safe, Cost Effective? Pro
Joseph H. Perra, MD, Minneapolis, MN
- X. Are Sagittal Plane Re-Alignment Procedures Safe, Cost Effective? Con
Steven D. Glassman, MD, Louisville, KY

Tuesday, March 11

INSTRUCTIONAL COURSE LECTURE


1:30 PM — 3:30 PM

141 **Advances in Acetabular Reconstruction in Revision Total Hip Arthroplasty: Maximizing Function and Outcomes**

 **Room 260**
 Moderator: *Khaled J. Saleh, MD, MSc, Springfield, IL*
Wayne G. Paprosky, MD, Winfield, IL
Michael D. Ries, MD, San Francisco, CA
William J. Maloney, MD, Redwood City, CA


Advanced imaging modality strategies to diagnose and manage acetabular osteolysis, exposure techniques, advances in component removal and techniques to address bone defects.

142 **Five Easy Steps for Total Knee Arthroplasty**

 **Room 356**
 Moderator: *Robert E. Booth Jr, MD, Philadelphia, PA*
Douglas A. Dennis, MD, Denver, CO
Adolph V. Lombardi Jr, MD, New Albany, OH
Frederick Buechel Jr, Naples, FL
Andreas M. Halder, MD, Kremen, Germany


The success of a TKA is more dependent upon surgical technique than prosthetic design. Different approaches may compliment the experience and skills of different surgeons. The goal is to identify the advantages, as well as the shortcomings, of each style of surgery.

143 **Achilles Tendon Ruptures: An International Evidence Based Approach to Treatment and Rehabilitation**

 **Room 221**
 Moderator: *David R. Richardson, MD, Memphis, TN*
Mahmut N. Doral, MD, Ankara, Turkey
Nicola Maffulli, MD, PhD, London, United Kingdom
Alastair S. E. Younger, MD, Vancouver, BC, Canada

International perspective on current controversies concerning optimal treatment and rehabilitation of achilles tendon ruptures and the efficacy of new techniques and emerging technologies.

144 **Extremity Amputations: Principles, Techniques, and Recent Advances**

 **Room 215**
 Moderator: *Carol D. Morris, MD, MS, New York, NY*
Benjamin K. Potter, MD, Bethesda, MD
Valerae O. Lewis, MD, Houston, TX
Edward A. Athanasian, MD, New York, NY

Review general principles of performing successful upper and lower extremity amputations. Pre-operative considerations and surgical technique emphasized. Cases will be utilized to illustrate key points and highlight recent advances in prosthetic design.

145


The Difficult Pediatric Supracondylar Humerus Fracture: Tips and Techniques to Avoid Complications

Moderator: *Steven L. Frick, MD, Orlando, FL*
Kevin G. Shea, MD, Boise, ID
David L. Skaggs, MD, Los Angeles, CA
Brian K. Brighton, MD, Charlotte, NC

 **Room 352**

Case-based learning will be used to convey tips and techniques aimed at helping orthopaedic surgeons avoid complications when caring for pediatric supracondylar humeral fractures.

146


Selection, Implementation and Interpretation of Patient Centered Orthopedic Outcomes

Moderator: *Richard J. Hawkins, MD, Greenville, SC*
Robert B. Litchfield, MD, London, ON, Canada
Nick G. Mohtadi, MD, Calgary, Canada
John E. Kuhn, MD, Nashville, TN

 **Room 276**

Model strategies for tool selection, implementation, and interpretation to optimize musculoskeletal patient care and practice sustainability.

147


International Perspective on Preventing and Dealing with Complications in Reverse Shoulder Arthroplasty

Moderator: *Pascal Boileau, MD, Nice, France*
Luc Favard, MD, Tours, France
Jon J. Warner, MD, Boston, MA
Gregory P. Nicholson, MD, Chicago, IL
Gilles Walch, MD, Lyon, France

 **Room 350**

Will help surgeons prevent and manage complications in Reverse Shoulder Arthroplasty. Organized by the Guest Nation - Société Française De Chirurgie Orthopédique Et Traumatologique.

148


Management of Glenoid Bone Loss in Primary and Revision Shoulder Arthroplasty

Moderator: *Thomas (Quin) Throckmorton, MD, Germantown, TN*
John W. Sperling, MD, MBA, Rochester, MN
Joseph P. Iannotti, MD, PhD, Cleveland, OH
George S. Athwal, MD, London, ON, Canada

 **Room 218**

Focus on management of glenoid bone loss in shoulder arthroplasty. The key points of glenoid pathoanatomy and their applications to pre-operative planning will be discussed. Glenoid bone grafting techniques, custom targeting guides, and their outcomes, will also be covered. The goal of the course is to understand and apply the tools that are available to treat glenoid defects.

149


Treating the Aging Spine

Moderator: *Theodore J. Choma, MD, Columbia, MO*
Darrel S. Brodke, MD, Salt Lake City, UT
Robert A. McGuire Jr, MD, Jackson, MS
Glenn R. Rechtine II, MD, Pinellas Park, FL

 **Room 208**

Target orthopaedists who treat spinal conditions in the elderly, from osteoporosis and fractures, to degenerative deformities.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Tuesday, March 11

INSTRUCTIONAL COURSE LECTURE

1:30 PM — 3:30 PM

150 Hip Arthroscopy: Tales from the Crypt



Room
226

Moderator: Dean K. Matsuda, MD, Los Angeles, CA
Marc J. Philippon, MD, Vail, CO
Marc Safran, MD, Redwood City, CA
Thomas G. Sampson, MD, San Francisco, CA

Interactive ICL presents nightmarish errors, preventative and corrective measures, and lessons learned by a renowned group of experienced surgeons with integrated time to discuss audience experiences.

151 International Perspectives on the Masquelet Technique for the Treatment of Segmental Defects in Bone



Room
347

Moderator: Laurent Obert, MD, Besancon, France
Paul R. Stafford, MD, Tulsa, OK
Alain C. Masquelet, MD, PhD, Paris, France
Peter Giannoudis, MD, FRCS, MBBS, BS, Leeds, United Kingdom

The Masquelet technique implies a two stage procedure; in the first stage a PMMA block manages the dead space resulting from segmental bone defect and produces a bioactive membrane. In the second stage, the PMMA spacer is removed and fresh cancellous bone autograft is placed into the defect with the bioactive membrane surrounding it. The membrane prevents graft resorption by promoting vascularisation and corticalisation. Indications: The original and most common indication for the Masquelet technique has been a segmental bone defect resulting from septic non union of the leg. The success of the technique has allowed us to expand the indications to other significant long bone defects involving the forearm bones, the humerus and the femur. Bone defects reconstruction, in pediatric patients, due to the resection of congenital pseudarthrosis, bone tumors and other diseases may also benefit from the technique. Results: Recent review of long term results have confirmed the results of already published series and the validity of the technique with successful reconstruction of segmental bone defects > 20 cm. Nonetheless, in a limited number of cases some complications have been observed as fractures of the reconstructed segment or deformities requiring osteotomies. Discussion: Further understanding of membrane biology can help to optimize current procedures, particularly by selecting the nature of the spacer, the optimal time for performing the second stage surgery and the best bone material to be placed within the membrane. Organized by the Guest Nation - Société Française De Chirurgie Orthopédique Et Traumatologique.

152



Room
207

Operative Treatment of Fractures and Dislocations of the Hand: Contemporary Perspectives

Moderator: George S. M. Dyer, MD, Boston, MA
Charles Cassidy, MD, Natick, MA
Chaitanya S. Mudgal, MD, Boston, MA
David E. Ruchelsman, MD, Newton, MA

Will explore contemporary methods of managing hand fractures and dislocations. Emphasis will be on using techniques and technology appropriately to achieve clear functional goals. Participants are encouraged to send cases in advance to ameducation@aaos.org.

153



Room
210

Challenges in the Management of Fractures in Adolescents: A Case Based Approach

Moderator: Susan A. Scherl, MD, Omaha, NE
Bernard D. Horn, MD, Philadelphia, PA
R. D. Blasier, MD, Little Rock, AR
Brian Scannell, MD, Charlotte, NC

Case-based presentations on adolescent fracture patterns, including information regarding technique pearls, complications associated with treatment of the fracture in adolescents and management of those complications.

FD1

Room
217

Perspectives on Mentorship

Moderator: Robert A. Hart, MD, Portland, OR
Vernon T. Tolo, MD, Los Angeles, CA
James H. Beaty, MD, Memphis, TN
Edward N. Hanley Jr, MD, Charlotte, NC

History, definition, and description of the mentoring process will be presented, emphasizing importance of good mentorship to career and personal satisfaction. Specific examples of successful and less successful approaches to mentoring will be described.

Tuesday, March 11

INSTRUCTIONAL COURSE LECTURE

1:30 PM — 4:30 PM

192 **The Top 10 Coding Issues Facing Practicing Orthopaedic Surgeons****Room**
345

Margaret Maley from KarenZupko & Associates brings logic and laughs to this workshop addressing frequently asked questions and costly reporting errors made by orthopaedic surgeons. At the conclusion of this course you will:

- Correctly document fracture care for ICD-10 and CPT code reporting
- Use the modifier 58 for staged procedures with confidence
- Define the common use of the modifier 59 in hip, knee and shoulder surgery
- Define and document a consultation correctly on non-Medicare patients and Medicare patients•Describe the correct modifier to use to report a complication. This and much more will be packed into this course specifically designed for practicing orthopaedic surgeons.

WORKSHOP

1:30 PM — 5:30 PM

193 **Community Orthopaedist Workshop****Room**
353

Moderator: Dwight W. Burney III, MD, Albuquerque, NM
Annunziato Amendola, MD, Iowa City, IA
Daniel J. Berry, MD, Rochester, MN
Thomas K. Febring, MD, Charlotte, NC
Shepard R. Hurwitz, MD, Chapel Hill, NC
William J. Robb III, MD, Winnetka, IL
John R. Tongue, MD, Tualatin, OR
Paul Torretta III, MD, Boston, MA
Ken Yamaguchi, MD, Chesterfield, MO

This workshop is for the orthopaedic surgeon handling a variety of orthopaedic conditions. Whether in the ER or in the office setting, this session is designed to educate the community orthopaedist in accepted practices of common conditions.

PAPER PRESENTATION

1:30 PM — 3:30 PM

Theater A**International Paper Session**

Moderator(s): Robert P. Dunbar, MD, Seattle, WA
Xavier A. Duralde, MD, Atlanta, GA

1:30 PM

Welcome – Overview of Session

1:36 PM

PAPER: 272**The Implications of Clopidogrel on the Management of Hip Fractures: An Institutional Review**

Stephen Preston, MD, London, ON, Canada
Sagar Desai, MD, London, ON, Canada
Lyndsay Somerville, PhD, London, ON, Canada
Dennis Angevine, London, ON, Canada
David Sanders, MD, London, ON, Canada
James Howard, MD, London, ON, Canada

We reviewed our institution's management of hip fractures in those taking Clopidogrel (delay to surgery) and determined its effects on bleeding risk, length of hospital stay, morbidity and mortality.

1:42 PM

PAPER: 279**The Effects of Diabetes Medications on Post-operative Long Bone Fracture Healing**

Christopher M. Simpson, MChB, Leeds, United Kingdom
Suribabu Gudipati, MBBS, MRCS, Carmarthen, United Kingdom
Peter Giannoudis, MD, FRCS, Leeds, United Kingdom

Diabetic medications have a significant impact on the fracture healing process including the timescale and the eventual outcome of union vs. non-union.

Discussion – 6 minutes

1:54 PM

PAPER: 555**Distributed Analysis of Hip Implants Using Five International Registries: Pioneering Study of Bearing Surfaces**

Ove N. Furnes, MD, Bergen, Norway
Guy Cafri, PhD, La Jolla, CA
Liz Paxton, MA, San Diego, CA
Stephen Graves, MD, Adelaide, Australia
Barbara Bordini, MD, Bologna, Italy
Thomas K. Comfort, MD, Stillwater, MN
Samprit Banerjee, PhD, New York, NY
Danica Marinac-Dabic, MD, PhD, Rockville, MD
Art Sedrakyan, PhD, MD, New York, NY

Younger patients with large size but not small size metal on metal implants are at higher risk of revision compared to cross-link polyethylene bearing in worldwide distributed study of five registries.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Tuesday, March 11

2:00 PM**PAPER: 604****Influence of Physical Activity on Metal Concentrations and Pseudotumor Formation in Patients with MoM Arthroplasty**

Jetse Jelsma, MSc, Maastricht, Netherlands
Rachel Senden, PhD, Heerlen, Netherlands
Ide Heyligers, Heerlen, Netherlands
Bernd P. Grimm, PhD, Aachen, Germany

This first study to measure patient physical activity and correlate it with blood ion levels suggests that metal-on-metal wear may be more influenced by the intensity than the quantity of activity.

2:06 PM P**APER: 243****Ceramic-on-Ceramic and Ceramic-on-Highly-X-Linked PE in Same Pts. with Primary Cementless THA**

Young-Hoo Kim, MD, Seoul, Republic of Korea
Jangwon Park, MD, Seoul, Republic of Korea
Jun S. Kim, MD, Seoul, Republic of Korea
Jeong-Hwan Oh, Seoul, Republic of Korea

Cementless THA with Al-on-Al ceramic or Al-on- highly-X-linked PE bearings in 100 pts. (200 hips) younger than 50 years provided high rate of survivorship without osteolysis.

Discussion - 6 minutes

2:18 PM**PAPER: 194****A Randomized Clinical Trial Comparing Hyaluronic Acid for Knee Osteoarthritis Treatment to Placebo**

Walter A. van der Weegen, MD, Geldrop, Netherlands
Hub Noten, PhD, Helmond, Netherlands
Jorgen Wullems, MSc, Geldrop, Netherlands
Ellis Bos, AB Geldrop, Netherlands
Rogier Van Drumpt, Geldrop, Netherlands

Treatment effect of 3 weekly injections of HA using Fermathron plus (2ml injections, 30mg HA, molecular weight 2.2M Dalton) is not superior to placebo. We cannot recommend the use of this particular HA.

2:24 PM**PAPER: 187****Meniscal Allograft with or without Osteotomy - A 15-Year Follow-Up Study**

Hussain Kazi, MB, ChB, , Toronto, ON, Canada
Wael Abdelrahman, MD, Toronto, ON, Canada
Philip Brady, MD, Toronto, ON, Canada
John C. Cameron, MD, Toronto, ON, Canada

Meniscal allograft is a viable solution to meniscal loss in the young patient, survivorship is good providing a mean of 12.5 yrs prior to TKA with 71% of allografts still in situ at 13.5 years.

2:30 PM**PAPER: 485****Joint Aspiration during Two Stage Septic Knee Revision Surgery is Inadequate for Detection of Infection Persistence**

Bernd Preininger, MD, Berlin, Germany
Viktor Janz, MD, Berlin, Germany
Philipp Von Roth, MD, Berlin, Germany
Tobias Winkler, MD, Berlin, Germany
Tilman Pfitzner, MD, Berlin, Germany
Andrej Trampuz, MD, Berlin, Germany
Carsten Perka, MD, Berlin, Germany

Joint aspiration does not accurately exclude persistence of infection; therefore other parameters should be used to determine the correct timing for total knee arthroplasty reimplantation.

Discussion - 6 minutes

2:42 PM**PAPER: 750****Assessing Knowledge Translation in Orthopaedic Surgery Using Time-series Analysis of Clavicle Fracture Treatment**

David Wasserstein, MD, MSc, North York, ON, Canada
Timothy S. Leroux, MD, Toronto, ON, Canada
Patrick Henry, MD, Portland, ME
Michael Paterson, Toronto, ON, Canada
Michael D. McKee, MD, Toronto, ON, Canada
Bheeshma Ravi, MD, Toronto, ON, Canada
Darrell J. Ogilvie-Harris, MD, Toronto, ON, Canada
Nizar Mahomed, MD, Toronto, ON, Canada
Christian Veillette, MD, Toronto, ON, Canada

Using time-series analysis we demonstrated a statistical association between an increase in clavicle fracture surgery that corresponded with published high level evidence supporting that change.

2:48 PM**PAPER: 127****Return to Sport after Recurrent Shoulder Instability: Open Latarjet vs. Arthroscopic Bankart Repair**

Davide Blonna, MD, Torino, Italy
Francesco Pasquero, Chieri, Italy
Francesco Caranzano, MD, Turin, Italy
Umberto Mariotti, Milan, Italy
Marco Assom, MD, Rivoli-Turin, Italy
Umberto Cottino, Pecetto Torinese, Italy
Davide E. Bonasia, MD, Torino, Italy
Marco Assom, MD, Rivoli-Turin, Italy
Filippo Castoldi, MD, Torino, Italy

In this study, arthroscopic Bankart repair seemed to provide a better rate of return to sport and a subjective perception of the shoulder compared to the unaffected shoulder.

Tuesday, March 11

2:54 PM

PAPER: 449

Revision Rate and Reasons for Revision Following Resurfacing Shoulder Replacement in Patients with Osteoarthritis

Jeppé Rasmussen, MD, Brøndby, Denmark
Stig Brorson, PhD, Copenhagen, Denmark

Patient reported outcome, revision rate and reason for revision following resurfacing arthroplasty in patients with osteoarthritis: 837 operations reported to the Danish Shoulder Arthroplasty Registry.

Discussion – 6 minutes

3:06 PM

PAPER: 755

Anterior Cruciate Ligament Reconstruction with Autologous Ruptured Tissue

Tomoyuki Matsumoto, MD, PhD, Kobe, Japan
Ryosuke Kuroda, MD, Kobe, Japan
Takehiko Matsushita, MD, Kobe, Japan
Daisuke Araki, MD, PhD, Pittsburgh, PA
Yohei Kawakami, MD, Hyogo, Japan
Koji Takayama, MD, PhD, Kobe, Japan
Yuichi Hoshino, MD, Kobe, Japan
Kouki Nagamune, PhD, Fukui, Japan
Masahiro Kurosaka, MD, Kobe, Japan

Despite of no differences found in clinical outcomes, the use of the ruptured tissue showed the superiority in tunnel enlargement for ACL reconstruction.

3:12 PM

PAPER: 764

Risk of Re-injury at Two Years: A Randomized Clinical Trial Comparing Three Graft Types for ACL Reconstruction

Nick G. Mohtadi, MD, Calgary, Canada
Denise S. Chan, MBT, MSc, Calgary, Canada
Rhamona Humphrey, Calgary, Canada
Elizabeth Oddone Paolucci, PhD, Calgary, Canada

Risk and predictive factors of graft re-injury at 2-years are evaluated in patients with patellar tendon, quadruple-stranded or double-bundle hamstring ACL reconstructions in this double-blind RCT.

3:18 PM

PAPER: 461

Long Term Results after Matrix Associated Chondrocyte Transplantation (MACT) in the Knee

David Stelzeneder, MD, Vienna, Austria
Martin Brix, CM, Vienna, Austria
Catharina Chiari, MD, Vienna, Austria
Ulrich Koller, MD, Vienna, Austria
Ronald Dorotka, MD, Vienna, Austria
Stefan Nebret, MD, Krems, Austria
Reinhard Windhager, MD, Vienna, Austria
Stephan Domayer, Dedham, MA

The first long term results after MACT of the knee demonstrate that is an effective surgical therapy for full-thickness cartilage defects with good long term results, in particular for simple defects.

Discussion – 6 minutes

• The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 245

Trauma II: Knee/Tibia

Moderator(s): Paul J. Duwelius, MD, Portland, OR
Jason M. Evans, MD, Franklin, TN

1:30 PM

PAPER: 076

Intramedullary Nail and Plate Combinations for Complex Tibial Fractures: Use Beyond the Proximal Tibia

Richard S. Yoon, MD, New York, NY
Jesse E. Bible, MD, MHS, Nashville, TN
Matthew S. Marcus, MD, Chicago, IL
Justin C. Siebler, MD, Omaha, NE
Derek J. Donegan, MD, Philadelphia, PA
Karl Bergmann, MD, Omaha, NE
Hassan R. Mir, MD, Nashville, TN
Frank A. Liporace, MD, Englewood Cliffs, NJ

Combined IMN and plate fixation offers reliable outcomes in complex tibial fractures distal to the proximal third.

1:36 PM

PAPER: 077

Infection Rates After Intramedullary Nailing of Open Tibial Shaft Fractures in Low- and Middle-Income Countries

Paul S. Whiting, MD, Boston, MA
Daniel D. Galat, MD, Bomet, Kenya
Lewis G. Zirkle Jr, MD, Richland, WA

An international database analysis of over 6,000 open tibial shaft fractures treated in low- and middle-income countries with the SIGN nail revealed an overall infection rate between 3.4% and 12.5%.

1:42 PM

PAPER: 078

Dynamizations and Exchange Nailing: Success Rates and Indications

Jody Litrenta, MD, Boston, MA
Paul Tornetta III, MD, Boston, MA
Cory A. Collinge, MD, Fort Worth, TX
Heather A. Vallier, MD, Cleveland, OH
Clifford B. Jones, MD, FACS, Grand Rapids, MI
Christiane G. Kruppa, Bochum, Germany
Reza Firoozabadi, MD, Seattle, WA
Kenneth A. Egol, MD, New York, NY
Ross K. Leighton, MD, Halifax, NS, Canada

The purpose of this study is to report on the timing, indications, and success rates of dynamization and exchange nailing in a multicenter study and to compare these two techniques where appropriate.

Discussion – 6 Minutes

Tuesday, March 11

1:54 PM

PAPER: 079

Are Locked Plates Needed for Split Depression Tibial Plateau Fractures (OTA type 41B)?

Michelle Abghari, BS, Detroit, MI
 Alejandro Marcano, MD, New York, NY
 Roy Davidovitch, MD, New York, NY
 Sanjit R. Konda, MD, Charlotte, NC
 Kenneth A. Egol, MD, New York, NY

Locked and non-locked plating are commonly used implants in the treatment of Schatzker Type-II, OTA type 41-B tibial plateau fractures. The effectiveness of these implants is compared in this study.

2:00 PM

PAPER: 080

Staged Columnar Fixation of Bicondylar Tibial Plateaus: A Cheaper Alternative to External Fixation

Aaron M. Perdue, MD, Nashville, TN
 Jordan C. Apfeld, MD, Nashville, TN
 Vasanth Sathiyakumar, Nashville, TN
 Young M. Lee, BS, Nashville, TN
 Daniel J. Stinner, MD, San Antonio, TX
 Hassan R. Mir, MD, Nashville, TN
 David J. Polga, MD, Marshfield, WI
 William T. Obremskey, MD, MPH, Nashville, TN
 Manish K. Sethi, MD, Nashville, TN

This study is the first to show similar complication rates and significant cost benefits in using staged columnar fixation as opposed to external fixation to treat bicondylar tibial plateau fractures.

2:06 PM

PAPER: 081

Early vs. Delayed External Fixation for High-Energy Tibial Plateau and Plafond Fractures

Justin Haller, MD, Salt Lake City, UT
 David Holt, MD, Salt Lake City, UT
 Erik Kubiak, MD, Salt Lake City, UT
 Thomas F. Higgins, MD, Salt Lake City, UT

There is no difference in infection rate or number secondary procedures in early vs. delayed provisional external fixation for high-energy tibial plateau and plafond fractures.

Discussion – 6 Minutes

2:18 PM

PAPER: 082

Management of the Isolated Medial Tibial Plateau Fracture

Steffen Haider, BS, NY City, NY
 Roy Davidovitch, MD, New York, NY
 Kenneth A. Egol, MD, New York, NY

Isolated medial plateau fractures are heterogeneous with a low and high-energy pattern with differing management and outcomes.

2:24 PM

PAPER: 083

Incidence and Management of Tibial Tubercle Fractures in Bicondylar Fractures of the Tibial Plateau

John A. Scolaro, MD, Irvine, CA
 Medardo R. Maroto, MD, Dallas, TX
 M. Bradford Henley, MD, MBA, FACS, Seattle, WA
 Robert P. Dunbar, MD, Seattle, WA

The tibial tubercle is involved in over twenty percent of bicondylar fractures of the tibial plateau; stable fixation is necessary and can be performed with minimal complications.

2:30 PM

PAPER: 084

Staged Treatment for Complex 3 Column Tibial Plateau Fracture Dislocations

J. Tracy Watson, MD, Saint Louis, MO
 John A. Boudreau, MD, Saint Louis, MO
 David Karges, DO, Saint Louis, MO
 Djoldas Kuldjanov, MD, Saint Louis, MO

Prompt reduction of the posterior column followed by a staged approach for the medial and lateral column components demonstrates excellent results for this complex injury pattern.

Discussion – 6 Minutes

2:42 PM

PAPER: 085

Deep Infection After Staged Management of Bicondylar Tibial Plateau Fractures with Compartment Syndrome

Christian S. Bromfield, MD, Sacramento, CA
 Pooya Javidan, MD, Saint Louis, MO
 J. Tracy Watson, MD, Saint Louis, MO

The incidence of deep infection with a staged management protocol of operative fixation after fasciotomy coverage or closure in 220 bicondylar tibial plateau fractures.

2:48 PM

PAPER: 086

Arthrofibrosis of the Knee After Tibial Plateau Fracture

Justin Haller, MD, Salt Lake City, UT
 David Holt, MD, Salt Lake City, UT
 Thomas F. Higgins, MD, Salt Lake City, UT
 Erik Kubiak, MD, Salt Lake City, UT

High-energy pattern and use of provisional external fixator increase the risk for arthrofibrosis after tibial plateau fracture. CPM use may decrease the risk of arthrofibrosis after plateau fracture.

2:54 PM

PAPER: 087

Malunions After Minimally Invasive Percutaneous Plate Fixation (MIPPF) of Tibia Fractures

Alexandre A. Sitnik, MD, PhD, Minsk, Belarus

Axial malalignments were seen in 28.3% of tibia fractures treated with MIPPF, deformities more than 5 occurred in 8.3%; important rotational deformities were noticed in 26.8% of studied cases.

Discussion – 6 Minutes

Tuesday, March 11

3:06 PM

PAPER: 088

Retrograde Nailing of Distal Femur Periprosthetic Fractures: Malunion by Design?

Benjamin Service, MD, Orlando, FL
William Kang, MD, New Orleans, LA
Nathan Turnbull, MD, Orlando, FL
Joshua Langford, MD, Orlando, FL
George J. Haidukewych, MD, Orlando, FL
Kenneth J. Koval, MD, Belle Isle, FL

This study evaluated how the starting point in retrograde femoral nailing is affected by TKA femoral prosthesis design. Implants with deeper trochlear grooves can displace the starting point.

3:12 PM

PAPER: 089

Open, Intra-Articular, Distal Femur Fractures: A Limb Threatening Injury

Adam Sassoon, MD, Saint Louis, MO
Jeffrey Petrie, MD, Orlando, FL
John Riehl, MD, Louisville, KY
Joshua Langford, MD, Orlando, FL
Kenneth J. Koval, MD, Belle Isle, FL
George J. Haidukewych, MD, Orlando, FL

Twenty per cent of patients presenting with open, intra-articular, distal femur fractures lost their limb. After surgical treatment, union was achieved in 71% with 47% requiring secondary procedures.

3:18 PM

PAPER: 090

Preliminary Outcomes with the Treatment of Comminuted Patellar Fractures Utilizing Plate Fixation

Shannon Boffeli, FNP, Salt Lake City, UT
Michael J. Beebe, MD, Salt Lake City, UT
Erik Kubiak, MD, Salt Lake City, UT

In the setting of a comminuted patella fracture or salvage setting, use of 2.7mm low-profile mesh plate with fixed-angle screws provides a viable solution for offering stable fixation.

3:24 PM

PAPER: 826

Can All Tibial Shaft Fractures Weight Bear Following Intramedullary Nailing? A Randomized Clinical Trial

Steven C. Gross, MD, Charlotte, NC
David P. Taormina, MS, New York, NY
David Galos, MD, New York, NY
Kenneth A. Egol, MD, New York, NY
Nirmal C. Tejwani, MD, New York, NY

This prospective randomized study was designed to examine the potential benefits or risks associated with postoperative weight-bearing versus non-weight-bearing.

Discussion – 6 Minutes

SYMPOSIUM

4:00 PM — 6:00 PM

La Nouvelle Ballroom



Complex Shoulder Instability: Around the World in 120 Minutes (F)

Moderator: Pascal Boileau, MD, Nice, France

An international panel will discuss the current state and the evolving treatment options for complex shoulder instability. Additionally, the challenges and management options for patients with failed instability surgery will be reviewed.

- I. Biomechanics of Shoulder Instability: Glenoid Bone Loss
Eiji Itoi, MD, Sendai, Japan
- II. Biomechanics of Shoulder Instability: Humeral Bone Loss
George S. Athwal, MD, London, ON, Canada
- III. Evaluation of the Failed Instability Surgery Patient
Scott P. Steinmann, MD, Rochester, MN
- IV. Corocoid Transfer: Past, Present and Future
Gilles Walch, MD, Lyon, France
- V. Arthroscopic Latarjet Procedure
Laurent Lafosse, MD, Annecy, France
- VI. The Remplissage Procedure
Pascal Boileau, MD, Nice, France
- VII. When Do I Do a Revision Arthroscopic Procedure?
Leesa M. Galatz, MD, Saint Louis, MO
- VIII. When Do I Do a Revision Open Procedure?
Christian Gerber, MD, Zurich, Switzerland
- IX. Shoulder Arthrodesis as a Salvage Procedure for Persistent Instability
Joaquin Sanchez-Sotelo, MD, Rochester, MN

Tuesday, March 11

SYMPOSIUM

4:00 PM — 6:00 PM

Theater C



Maximizing Your Practice's Potential in the New Healthcare Environment (G)

Moderator: Steven L. Frick, MD, Orlando, FL

The symposium will cover issues faced by orthopaedists in a changing and challenging healthcare environment. Each talk will focus on providing practical management strategies for attendees to take back to their own practice for implementation.

- I. Creating Incentives for Academic and Non-Academic Surgeons
Todd J. Albert, MD, Philadelphia, PA
- II. Using Dashboards to Monitor Productivity and Quality
Daniel B. Murrey, MD, Charlotte, NC
- III. Using Data to Modify Surgeon Behavior in the OR
Ronald A. Navarro, MD, Rolling Hills, CA
- IV. Managing Disruptive Physicians and Your HCAHPS Scores
Brian G. Donley, MD, Cleveland, OH
- V. Maximizing Career and Job Satisfaction
Michael J. Yaszemski, MD, PhD, Rochester, MN

SYMPOSIUM

4:00 PM — 6:00 PM

Theater B

Common Fracture Treatment, What's the Evidence? (H)

Moderator: Paul Tornetta III, MD, Boston, MA

A realistic synopsis of the current evidence for the treatment of common fractures. Each talk will be a very concise eight minutes of evidence and a few tips.

- I. Clavicle Fractures: Which Ones REALLY should be operated on?
Andrew H. Schmidt, MD, Minneapolis, MN
- II. Proximal humerus fractures in the older patient: Op vs Nonop
Andrew Jawa, MD, Cambridge, MA
- III. Distal Radius Fractures: ORIF vs Ex fix, Which to Do When
Thomas F. Varecka, MD, Minneapolis, MN
- IV. Displaced Femoral Neck Fractures: Should Anyone be Fixed?
Robert F. Ostrum, MD, Chapel Hill, NC
- V. Intertrochanteric Fractures: When to Plate and When to Nail
Robert A. Probe, MD, Temple, TX

- VI. Tibial Plateau Fractures: When to Lock and How to Fix
J. Tracy Watson, MD, Saint Louis, MO
- VII. Tibial Shaft Fractures: To Ream or Not to Ream
Mobit Bhandari, MD, FRCSC, Hamilton, Canada
- VIII. Indirect Lateral Malleolar Fractures: Lateral or Antiglidge?
Clifford B. Jones, MD, FACS, Grand Rapids, MI
- IX. Humeral shaft fractures: Indications for surgery
Stephen Kottmeier, MD, Stony Brook, NY

INSTRUCTIONAL COURSE LECTURE

4:00 PM — 5:00 PM

FD2 Getting Your Work Published and Achieving the Highest Impact

Room

217

Moderator: Fares S. Haddad, FRCS, London, United Kingdom

Cyril Mauffrey, MD, MRCS, Denver, CO

Michael Dunbar, MD, Halifax, NS, Canada

Gareth Scott, FRCS, Brentwood, United Kingdom

Will provide a good understanding of the peer review process and its importance in scientific journals, provide key information on best practice, how to optimize papers for publication and give an insight into how to review papers including a section on identifying research fraud.

4:00 PM — 6:00 PM

161 The Painful Metal on Metal Hip Arthroplasty: Evaluation and Management



Room

260

Moderator: Thomas K. Fehring, MD, Charlotte, NC

William L. Griffin, MD, Charlotte, NC

Hollis Potter, MD, New York, NY

Arlen D. Hanssen, MD, Rochester, MN

Determine a management algorithm to avoid necrosis-related problems as well as a treatment algorithm to manage such problems.

162 Indications and Techniques for Bi- and Unicompartmental Knee Arthroplasty



Room

221

Moderator: Adolph V. Lombardi Jr, MD, New Albany, OH

Jess H. Lonner, MD, Philadelphia, PA

Keith R. Berend, MD, New Albany, OH

Fred D. Cushman, MD, New York, NY

Interest in partial knee arthroplasty has resurged because of its less invasive nature, lower complication rates and more normal kinematics provided. Better understanding of indications and enhanced prosthetic designs have led to improved results.

An alphabetical faculty financial disclosure list can be found starting on page 312.

Tuesday, March 11

163

**Nuts and Bolts of Foot and Ankle Injuries in the Athlete**

Moderator: J. Chris Coetzee, MD, Edina, MN
 Thomas O. Clanton, MD, Vail, CO
 Steven L. Haddad, MD, Glenview, IL
 Robert B. Anderson, MD, Charlotte, NC

Room
350

Overview of how injury management has evolved over time to improve outcome, and also allow the athlete a safe and early return to activity. Discuss new innovations in treatment options for specific injuries and also concentrate on post-operative care and rehabilitation techniques to facilitate return to sport. Specific attention will also focus not only on the serious athlete, but also the weekend warrior and dancers.

164

**Limited Wrist Arthrodesis and Motion-Preserving Reconstructive Procedures of the Wrist: Principles, Pearls and Pitfalls**

Moderator: Fraser J. Leversedge, MD, Durham, NC
 Michael Hausman, MD, New York, NY
 Filip Stockmans, MD, PhD, Heule-Kortrijk, Belgium

Room
226

Review and case-based presentations of motion-preserving reconstructive procedures of the wrist. Emphasis on wrist biomechanics, pearls and pitfalls of various surgical methods, including intercarpal arthrodesis, radiocarpal arthrodesis, PRC, resection, prosthetic, and interposition arthroplasty. Outcomes of each and strategies for various pathological conditions reviewed.

165

**Posterior Correction Techniques in Pediatric Spinal Deformities**

Moderator: Viral V. Jain, MD, MBBS, Cincinnati, OH
 Suken A. Shah, MD, Wilmington, DE
 Laurel C. Blakemore, MD, Broad Run, VA
 Patrick J. Cabill, MD, Philadelphia, PA

Room
215

Review surgical technique of spinal deformity correction by posterior approach along with indications, post-op management, pearls and pitfalls of Ponte osteotomy, pedicle subtraction osteotomy and vertebral column resection.

166

**Improving Orthopaedic Operating Room Efficiency - Strategies to Improve Throughout and Patient Safety**

Moderator: Naven Duggal, MD, Manlius, NY
 Ryan Graue, Cambridge, MA

Room
218

A number of strategies can be utilized to improve orthopaedic operating room efficiency and patient safety. Learn how to use these principles in the preoperative, intraoperative and postoperative settings to improve throughput and safety in your operating room.

167

**How About That Proximal Biceps Tendon?**

Moderator: Richard J. Hawkins, MD, Greenville, SC
 Robert H. Bell, MD, Akron, OH
 Robert T. Burks, MD, Salt Lake City, UT
 Peter B. MacDonald, MD, Winnipeg, MB, Canada

Room
208

Feature basic science along with associated pathologies such as: massive rotator cuff tears and the treatment, tenotomy vs tenodesis in various techniques of biceps tenodesis.

168

**Let's Do A Total Shoulder Replacement**

Moderator: Edward V. Craig, MD, New York, NY
 Thomas B. Edwards, MD, Houston, TX
 Evan L. Flatow, MD, New York, NY
 John W. Sperling, MD, MBA, Rochester, MN
 David M. Dines, MD, Uniondale, NY

Room
207

Through presentation by lecture, video and case discussion, registrants will learn a safe and effective technique of unconstrained and reverse shoulder arthroplasty.

169

**Surgical Management of Cervical Spondylotic Myelopathy**

Moderator: James Kang, MD, Pittsburgh, PA
 Joon Y. Lee, MD, Pittsburgh, PA
 Clinton J. Devin, MD, Nashville, TN
 Chris A. Cornett, MD, Omaha, NE

Room
347

Pathophysiology of cervical spondylotic myelopathy will be discussed followed by a thorough discussion on the rationale for surgical treatment. Indications for anterior, posterior, as well as combined approaches discussed.

170

**Worst Case Scenario: The Disaster On My Doorstep and How I Managed It: Complex Knee Cases, Management and Avoidance**

Moderator: Marc Safran, MD, Redwood City, CA
 Donald C. Fithian, MD, El Cajon, CA
 Mark D. Miller, MD, Charlottesville, VA
 Robert F. LaPrade, MD, PhD, Vail, CO

Room
276

Interactive ICL will discuss the thought processes of approach and management of difficult knee surgical problems, surgical approach, and their ultimate outcomes in panel discussion format.

171

**Lower Extremity Fracture Reduction: Tips, Tricks and Techniques So That You Leave The OR Satisfied**

Moderator: Michael T. Archdeacon, MD, Cincinnati, OH
 Christina L. Boulton, MD, Baltimore, MD
 Hassan R. Mir, MD, Nashville, TN
 George V. Russell Jr, MD, Jackson, MS

Room
356

Provide the community fracture surgeon with reduction tools, tips and tricks to facilitate lower extremity fracture reductions and subsequently improve patient outcomes.

Tuesday, March 11

172

Room
352

Fractures in the Osteoporotic and Elderly: Technical Tips and Tricks

Moderator: Frank A. Liporace, MD, Englewood Cliffs, NJ
Derek J. Donegan, MD, Philadelphia, PA
Kenneth A. Egol, MD, New York, NY
Anthony S. Rhorer, MD, Scottsdale, AZ

Designed to discuss technical tips and tricks useful in the operative treatment of fractures in the elderly and osteoporotic patient.

PAPER PRESENTATION

4:00 PM — 6:00 PM

Theater A

Spine I: Deformity

Moderator(s): Norman B. Chutkan, MD, Augusta, GA
Mark D. Rahm, MD, Temple, TX

4:00 PM

PAPER: 091

Evaluating the Extent of Clinical Variability Among Treatment Options for Patients with Adult Spinal Deformity

Philippe T. Phan, MD, Ottawa, ON, Canada
Avraam L. Ploumis, MD, PhD, Thessaloniki, Greece
Kathryn Hess, Boston, MA
Kirkham B. Wood, MD, Boston, MA

Survey of 28 surgeons presented with 10 cases of adult spinal deformity with various clinical presentation. Kappa statistics demonstrates substantial intra-rater but only fair inter-rater agreement.

4:06 PM

PAPER: 092

The Value of Surgical Pathology in Revision Posterior Instrumented Spine Surgery

Jia-Wei Kevin Ko, MD, Portland, OR
Alexander C. Ching, MD, Portland, OR
Penelope Barnes, MBBS, PhD, Portland, OR

Surgical pathology may aid in the diagnosis of posterior spine instrumentation infection.

4:12 PM

PAPER: 093

Adult Spinal Deformity: Clinical and Radiological Analysis using Community-based Cohort

Tetsuya Kobayashi, Asahikawa, Japan

A 12-year cohort study revealed 12.5% incidence of DS. DS was associated with large PI and reduced trunk flexor muscle. DS with DK was associated with worse HRQOL and trunk function than DK alone.

Discussion – 6 Minutes

4:24 PM

PAPER: 094

Antifibrinolytics in Adult Spinal Deformity Surgery: A Prospective Randomized Controlled Trial

Thomas Cheriyian, New York, NY
Kseniya Slobodyanyuk, BA, New York, NY
Austin Peters, BS, NY City, NY
Kushagra Verma, MD, Philadelphia, PA
Frank J. Schwab, MD, New York, NY
Christian M. Hoelscher, MD, Philadelphia, PA
T. Kate Huncke, New York, NY
Baron Lonner, MD, New York, NY
Thomas J. Errico, MD, New York, NY

A randomized controlled trial of tranexamic acid (TXA) and aminocaproic acid (EACA) in reducing blood loss in spine surgery. TXA and EACA were equally effective in reducing blood loss versus placebo.

4:30 PM

PAPER: 095

Patient and Surgical Factors Involved in Postoperative Urinary Retention after Lumbar Spine Surgery

Sapan D. Gandhi, BS, South Windsor, CT
Gursukhman Sidhu, MBBS, Philadelphia, PA
Shyam A. Patel, BS, Philadelphia, PA
D. Greg Anderson, MD, Moorestown, NJ
Alexander Vaccaro, MD, PhD, Gladwyne, PA
Todd J. Albert, MD, Philadelphia, PA
Jeffrey A. Rihn, MD, Media, PA

Postoperative urinary retention following lumbar surgery is positively associated with number of surgical levels, male sex, diabetes, CAD, and BPH, and negatively associated with tobacco use.

4:36 PM

PAPER: 096

Satisfaction after Adult Spinal Deformity Surgery is Not Driven by HRQoL Scores or Curve Correction

D. Kojo Hamilton, Portland, OR
Jayme Hiratzka, MD, Portland, OR
Christopher I. Shaffrey, MD, Charlottesville, VA
Robert S. Bess, MD, Castle Rock, CO
Christopher Ames, MD, San Francisco, CA
Gregory M. Mundis, MD, San Diego, CA
Virginie Lafage, PhD, New York, NY
Robert A. Hart, MD, Portland, OR
International Spine Study Group, Brighton, CO

Impacts of HRQoL measures and radiographic parameters on patient satisfaction following adult spinal deformity surgery showed that factors driving patient satisfaction differed from surgical goals.

Discussion – 6 Minutes

Tuesday, March 11

4:48 PM

PAPER: 097

◆ Adult Spinal Deformity Patients Treated with rhBMP-2 Have Higher Fusion Grades and Report Better Outcomes at 2 Years

Robert S. Bess, MD, Castle Rock, CO
 Breton G. Line, BS, Denver, CO
 Eric O. Klineberg, MD, Sacramento, CA
 Virginie Lafage, PhD, New York, NY
 Frank J. Schwab, MD, New York, NY
 Christopher Ames, MD, San Francisco, CA
 Robert A. Hart, MD, Portland, OR
 Christopher I. Shaffrey, MD, Charlottesville, VA
 International Spine Study Group, Brighton, CO

ASD patients treated with rhBMP-2 had higher fusion grades, fewer implant failures, and greater improvement in SRS-22r scores than NOBMP and similar major and wound complications.

4:54 PM

PAPER: 098

The Biomechanical Consequences of Rod Reduction Following Thoracic Ponte Osteotomy and Lumbar Facetectomy

Ronald A. Lehman, MD, Potomac, MD
 Daniel Kang, MD, Bethesda, MD
 Adam Bevevino, MD, Washington, DC
 Rachel E. Gaume, BS
 Robert W. Tracey, MD, Great Falls, VA

Despite thoracic Ponte osteotomies and lumbar facetectomies to improve flexibility of the spine, the rod reduction device still significantly decreased pedicle screw pullout strength.

5:00 PM

PAPER: 099

Surgical Treatment of Pathological Loss of Lumbar Lordosis (Flatback) in the Setting of Normal SVA

Justin S. Smith, MD, Charlottesville, VA
 Eric O. Klineberg, MD, Sacramento, CA
 Christopher I. Shaffrey, MD, Charlottesville, VA
 Virginie Lafage, PhD, New York, NY
 Frank J. Schwab, MD, New York, NY
 Themistocles S. Protopsaltis, MD, New York, NY
 Vedat Deviren, MD, San Francisco, CA
 Robert S. Bess, MD, Castle Rock, CO
 Christopher Ames, MD, San Francisco, CA

Surgical correction of sagittal spinopelvic malalignment for decompensated (SVA >5cm) and compensated (SVA <5cm and PI-LL >10°) demonstrated similar radiographic and HRQOL improvements in both groups.

Discussion – 6 Minutes

5:12 PM

PAPER: 100

Biomechanical Demands on Posterior Fusion Instrumentation During Lordosis Restoration Procedures

Calvin Kuo, MD, Louisville, KY
 Connor J. Telles, MD, Fresno, CA
 Audrey Martin, Torrance, CA
 Jeremi M. Leasure, MS, San Francisco, CA
 Christopher Ames, MD, San Francisco, CA
 Dimitriy G. Kondrashov, MD, San Francisco, CA

The goal of this study is to investigate the forces placed on posterior fusion instrumentation by three commonly used techniques to restore lumbar lordosis.

5:18 PM

PAPER: 101

Suitability of Stand-alone ALIF as Replacement for Supplemental Posterior Fixation in Long Fusion Constructs

Morsi Khashan, Jaffa Tel Aviv, Israel
 William Camisa, MS, San Francisco, CA
 Sigurd H. Berven, MD, San Francisco, CA
 Jeremi M. Leasure, MS, San Francisco, CA

We hypothesized that in long L1-S1 fusion, ALIF cages reduce strain on S1 screws comparably to bilateral iliac fixation.

5:24 PM

PAPER: 102

Anterior Column Realignment (ACR) has Similar Results to PSO in Adult Spinal Deformity

Gregory M. Mundis, MD, San Diego, CA
 Behrooz A. Akbarnia, MD, La Jolla, CA
 Nima Kabirian, MD, San Diego, CA
 Jeff Pawelek, La Jolla, CA
 Robert K. Eastlack, MD, San Diego, CA
 Christopher I. Shaffrey, MD, Charlottesville, VA
 Eric O. Klineberg, MD, Sacramento, CA
 Virginie Lafage, PhD, New York, NY
 International Spine Study Group, Brighton, CO

ACR was equally as effective in correcting lumbar lordosis, T1 pelvic angle, more effective in correcting pelvic tilt when compared to PSO. ACR had less EBL than PSO and an equal complication profile.

Discussion – 6 Minutes

Tuesday, March 11

5:36 PM

PAPER: 103

◆ **rhBMP-2 Use in Adult Spinal Deformity Does Not Increase Major, Infectious or Neurological Complications at One Year**

Robert S. Bess, MD, Castle Rock, CO
 Breton G. Line, BS, Denver, CO
 Christopher I. Shaffrey, MD, Charlottesville, VA
 Eric O. Klineberg, MD, Sacramento, CA
 Virginie Lafage, PhD, New York, NY
 Frank J. Schwab, MD, New York, NY
 Douglas C. Burton, MD, Kansas City, KS
 Robert A. Hart, MD, Portland, OR
 International Spine Study Group, Brighton, CO

At 1-year, rhBMP-2 use in ASD showed total and minor complications greater for BMP. NOBMP had more complications requiring surgery. Major, wound, infectious and neurological complications were similar.

5:42 PM

PAPER: 104

Clinical and Radiographic Outcomes Following 3-Column Osteotomies at a Minimum Five-Year Follow Up

Kevin R. O'Neill, MD, Nashville, TN
 Lawrence G. Lenke, MD, Saint Louis, MO
 Keith H. Bridwell, MD, Saint Louis, MO
 Brian J. Neuman, MD, Baltimore, MD
 Ian G. Dorward, MD
 Linda A. Koester

Patients undergoing 3-column osteotomies were found to have significant and sustained improvements in ODI and SRS scores and spinal alignment at a min. 5 yrs postoperative.

5:48 PM

PAPER: 105

Analysis of Mechanical Failure Associated with Reoperation in Long Fusion to Sacrum in Adult Spinal Deformity

Shinichi Inoue, MD, San Francisco, CA
 Sigurd H. Berven, MD, San Francisco, CA
 Morsi Khashan, Jaffa Tel Aviv, Israel
 Takahito Fujimori, MD, MSc, Osaka, Japan
 Vedat Deviren, MD, San Francisco, CA
 Shane Burch, MD, San Anselmo, CA
 Bobby Tay, MD, San Francisco, CA
 Serena S. Hu, MD, Redwood City, CA

We investigated retrospectively that the incidence, risk factors, and clinical outcomes of mechanical failure associated with reoperation in 76 patients who underwent long fusion to the sacrum.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 245

Foot and Ankle I: Forefoot and Outcomes

Moderator(s): Jamal Ahmad, MD, Philadelphia, PA
 Brian Toolan, MD, Chicago, IL

4:00 PM

PAPER: 106

Long-Term Patient Perceived and Radiographic Outcomes of the Scarf Bunionectomy: A Cross Sectional Study

Erin E. Klein, DPM, MS, Grayslake, IL
 Lowell S. Weil, DPM, Lake Forest, IL
 Adam Fleischer, DPM, MPH, North Chicago, IL
 Mitchell B. Sheinkop, MD, Chicago, IL

The scarf bunionectomy is an effective procedure where high patient perceived outcome scores are maintained over time but lack correlation with radiographic outcomes.

4:06 PM

PAPER: 107

Crossed Screw Provides Greater Gapping Resistance Than Compression Locking Plate for Lapidus Procedure

Srinivasan Mani, BS, New York, NY
 Jeremy Y. Chan, BS, New York, NY
 Ettore Vulcano, MD, Varese, Italy
 Josh R. Baxter, PhD, New York, NY
 Scott Ellis, MD, New York, NY

Crossed lag screws were found to provide greater stiffness and gapping resistance at the first TMT joint when compared to compression locking plates in a cadaveric model.

4:12 PM

PAPER: 108

Union Rates of First Tarsometatarsal Arthrodesis (Lapidus Procedure) Using Calcaneal Bone Graft

Eric W. Lloyd, MD, Boca Raton, FL
 Matthew Roberts, MD, New York, NY
 David S. Levine, MD, Bedford, NY
 Srinivasan Mani, BS, New York, NY
 Scott Ellis, MD, New York, NY

The use of careful technique and calcaneal bone graft can effectively decrease the rate of nonunion during a Lapidus procedure for hallux valgus.

Discussion – 6 Minutes

Tuesday, March 11

4:24 PM

PAPER: 109

Clinical and Radiographic Testing in Second Metatarsophalangeal Joint High Grade Plantar Plate Tears

Erin E. Klein, DPM, MS, Grayslake, IL
 Adam Fleischer, DPM, MPH, North Chicago, IL
 Lowell S. Weil, DPM, Lake Forest, IL
 Lowell S. Weil, DPM, Des Plaines, IL
 Mitchell B. Sheinkop, MD, Chicago, IL
 Michael J. Coughlin, MD, Boise, ID

A positive drawer test and pain for >2 years coupled with a transverse plane deviation of the 3rd MTP joint strongly suggests a 2nd MTP joint plantar plate tear.

4:30 PM

PAPER: 110

Effect of Operation for Lesser Toes Deformity Concomitant with Hallux Valgus on Clinical Outcomes

Byung-Ki Cho, MD, Cheongju, Republic of Korea
 Yong-Min Kim, MD, Cheongju, Republic of Korea
 Hyun-Chul Shon, MD, Cheongju, Republic of Korea
 Kyoung Jin Park, MD, Cheongju, Republic of Korea

Lesser toes deformity correction in patients underwent hallux valgus operation seems to be considerable treatment method, because of high preoperative expectation and high postoperative satisfaction.

4:36 PM

PAPER: 111

Does Post-Operative Bunion Taping Prevent Recurrence?

Danielle Y. Ponzio, MD, Philadelphia, PA
 Kushagra Verma, MD, Philadelphia, PA
 Mitchell Maltenfort, PhD, Philadelphia, PA
 David I. Pedowitz, MD, Penn Valley, PA
 Steven M. Raikin, MD, Philadelphia, PA

Post-operative taping after Ludloff osteotomy and modified McBride procedures for hallux valgus does not prevent recurrence of HV and IM deformities as compared to use of a toe spacer.

Discussion – 6 Minutes

4:48 PM

PAPER: 112

Clinical Outcomes of Distal Metatarsal Osteotomy using Biocompression Screw for Advanced Hallux Rigidus

Byung-Ki Cho, MD, Cheongju, Republic of Korea
 Yong-Min Kim, MD, Cheongju, Republic of Korea
 Hyun-Chul Shon, MD, Cheongju, Republic of Korea
 Kyoung Jin Park, MD, Cheongju, Republic of Korea

Distal MT osteotomy with biocompression screw is effective surgical method in advanced hallux rigidus, because of restoration of joint motion, reliable pain relief, and needlessness of implant removal.

4:54 PM

PAPER: 113

Detection of In-Vivo Foot and Ankle Implants by Walk-Through Metal Detectors

Srinivasan Mani, BS, New York, NY
 Jeremy Y. Chan, BS, New York, NY
 Phillip Williams, MD, New York, NY
 Matthew Roberts, MD, New York, NY
 David S. Levine, MD, Bedford, NY
 Jonathan T. Deland, MD, New York, NY
 Scott Ellis, MD, New York, NY

Due to the increased use of metal detectors in airports, we studied the detection rate of common foot and ankle implants in vivo and found that all implants studied went undetected.

5:00 PM

PAPER: 114

Cigarette Smoking Increases Complication Rate in Forefoot Surgery

Clayton C. Bettin, MD, Memphis, TN
 Susan N. Isbikawa, MD, Cordova, TN
 Garnett A. Murphy, MD, Germantown, TN
 David R. Richardson, MD, Memphis, TN
 Erin M. Dean, MD, Hudson, OH
 Kelly R. McCormick, MD, Salem, OR
 Kellen H. Gower, BS, Lewisburg, TN

Cigarette smokers were found to have a significantly higher complication rate (36.4%) in forefoot surgery than patients who previously (16.5%) or never (8.5%) smoked in this retrospective review.

Discussion – 6 Minutes

5:12 PM

PAPER: 115

Validation of the Foot and Ankle Outcome Score for Hallux Rigidus

MaCalus Hogan, MD, Wexford, PA
 Srinivasan Mani, BS, New York, NY
 Jeremy Y. Chan, BS, New York, NY
 Huong Do, MA, New York, NY
 Stephen Lyman, PhD, New York, NY
 Jonathan T. Deland, MD, New York, NY
 Scott Ellis, MD, New York, NY

A valid and reliable patient-centered outcome assessment for hallux rigidus is needed. In this study the FAOS is validated for hallux rigidus.

Tuesday, March 11

5:18 PM

PAPER: 116

SF36 PF vs. PF CAT vs. LE CAT: Time for a Paradigm Shift with Outcomes Measurement

Man Hung, PhD, Salt Lake City, UT
Jeremy D. Franklin, Salt Lake City, UT
Shirley Hon, Salt Lake City, UT
Christine Cheng, Salt Lake City, UT
Jillian Conrad, BS, Salt Lake City, UT
Charles L. Saltzman, MD, Salt Lake City, UT

The freely available PF CAT and the LE CAT perform at least as well or better than the SF36 PF.

5:24 PM

PAPER: 117

Comparison of the PROMIS Physical Function CAT with the FFI and FAAM for Foot and Ankle Disorders

Man Hung, PhD, Salt Lake City, UT
Judith F. Baumhauer, MD, MPH, Rochester, NY
Timothy R. Daniels, MD, FRCSC, Toronto, ON, Canada
Scott Ellis, MD, New York, NY
Jeremy D. Franklin, Salt Lake City, UT
Daniel Latt, MD, PhD, Tucson, AZ
Nelson F. SooHoo, MD, Los Angeles, CA
Charles L. Saltzman, MD, Salt Lake City, UT
Kenneth Hunt, MD, Redwood City, CA

The PROMIS PF CAT is a valid tool that performed well in terms of reliability, time for completion, and responsiveness.

Discussion – 6 Minutes

5:36 PM

PAPER: 118

Validation of Two Foot and Ankle Scores - SEFAS (Self-reported Foot And Ankle Score) and AOFAS

Maria C. Coster, MD, Kalmar, Sweden
Ann Bremander, PT, PhD, Oskarström, Sweden
Bjorn Rosengren, MD, PhD, Malmö, Sweden
Hakan Magnusson, Malmö, Sweden
Ake S. Carlsson, MD, PhD, Malmö, Sweden
Magnus Karlsson, MD, Malmö, Sweden

We compared two scores, SEFAS and AOFAS, and found that SEFAS was at least equal to AOFAS for evaluation of patients with foot and ankle disorders and SEFAS is also easy to use by national registers.

5:42 PM

PAPER: 119

Validity of the Self-reported Foot and Ankle Score (SEFAS) in Patients with Forefoot, Hindfoot and Ankle Disorders

Maria C. Coster, MD, Kalmar, Sweden
Ann Bremander, PT, PhD, Oskarström, Sweden
Bjorn Rosengren, MD, PhD, Malmö, Sweden
Hakan Magnusson, Malmö, Sweden
Ake S. Carlsson, MD, PhD, Malmö, Sweden
Magnus Karlsson, MD, Malmö, Sweden

SEFAS is a short and patient-friendly questionnaire with good validity, reliability and responsiveness in patients with forefoot, hindfoot and ankle disorders.

5:48 PM

PAPER: 120

Foot and Ankle Complication Rates of First-Time Board Certification Applicants Versus Recertification Applicants

Joshua Hunter, MD, Rochester, NY
Sara L. Miniaci, MD, Rochester, NY
Judith F. Baumhauer, MD, MPH, Rochester, NY

Our study evaluates the American Board of Orthopaedic Surgeons case lists from orthopaedic foot and ankle surgeons seeking initial board certification and recertification.

Discussion – 6 Minutes

Wednesday, March 12

SYMPOSIUM

8:00 AM — 10:00 AM

La Nouvelle Ballroom



◆ How Do I Get Out of This Jam? Dealing with Intraoperative and Early Postoperative Challenges in Primary THA (I)

Moderator: Daniel J. Berry, MD, Rochester, MN

Prepare the surgeon to deal with these problems by providing recommendations from leading surgeons on how to deal with these common challenges and consensus opinion on the best way to solve problems by the whole panel. Format will include brief, focused didactic lectures; panel discussion/debate; and case-based panel consensus.

- I. Can't Get Enough Exposure: Posterior Approach
Robert T. Trousdale, MD, Rochester, MN
- II. Can't Get Enough Exposure: Anterolateral Approach
Tad M. Mabry, MD, Rochester, MN
- III. The Cup Pressfit Is No Good
C. Anderson Engh Jr, MD, Arlington, VA
- IV. The Socket Is Over Reamed or Cracked
John J. Callaghan, MD, Iowa City, IA
- V. The Anteversion Is Not What I Expected
Kevin L. Garvin, MD, Omaha, NE
- VI. The Femur Is Cracked
Thomas K. Fehring, MD, Charlotte, NC
- VII. The Hip Is Not Stable
Steven J. MacDonald, MD, London, ON, Canada
- VIII. The Leg Length Is Not Right
Paul F. Lachiewicz, MD, Chapel Hill, NC
- IX. The Wound Is Red or Draining Early After Surgery
Steven T. Woolson, MD, Palo Alto, CA
- X. The Hip Dislocates Early After Surgery
William J. Maloney, MD, Redwood City, CA
- XI. There Is An Early Periprosthetic Femur Fracture
Craig J. Della Valle, MD, Chicago, IL
- XII. There Is a Sciatic Nerve Problem
Scott M. Sporer, MD, Wheaton, IL
- XIII. The Patient Has a PE or Symptomatic DVT
Vincent D. Pellegrini, MD, Charleston, SC

SYMPOSIUM

8:00 AM — 10:00 AM

Theater C



Common Tendon Disorders Around the Foot and Ankle (J)

Moderator: Steven L. Haddad, MD, Glenview, IL

Explore tendon disorders and disruption about the foot and ankle. Explore sports injuries and degenerative conditions, and how they influence normal tendon function, and the options following failure. Cutting edge technology will undergo critical review, and need for simultaneous realignment procedures explored. Registrant will have a comprehensive understanding of tendon pathology in the foot and ankle.

- I. Tendons: Why Do They Fail? The Pathophysiology of Tendon Function
Gregory C. Berlet, MD, Westerville, OH
- II. Posterior Tibial Tendon Dysfunction: Restoring the Flatfoot
Robert B. Anderson, MD, Charlotte, NC
- III. Achilles Tendon Disorders: Sorting Through PRP, Percutaneous vs Open Repair, and Chronic Ruptures, Evidence Based Medicine
J. Chris Coetzee, MD, Edina, MN
- IV. Case Presentations and Audience Discussion

SYMPOSIUM

8:00 AM — 10:00 AM

Theater B



How Do You Know It Is True? Integrity in Research and Publications (K)

Moderator: Regis J. O'Keefe, MD, Rochester, NY

The current high stakes research environment can lead to plagiarism, data manipulation, bias, and improper statistics. Professional societies and orthopaedic leaders can ensure scientific integrity in the development of evidence-based practices.

- I. Stretching the Truth in Research: from the Subtle to the Obvious and from the Accidental to the Intentional
Joseph A. Buckwalter, MD, Iowa City, IA
- II. Professional Societies, Journals, and the Review Process: Ensuring Accuracy in Research
Vernon T. Tolo, MD, Los Angeles, CA
- III. Research in Question: Guilty Until Proven Innocent
Regis J. O'Keefe, MD, Rochester, NY

Wednesday, March 12

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 10:00 AM

201 **Periprosthetic Fractures Around the Hip and Knee: Contemporary Techniques of Internal Fixation and Revision**



Room *Moderator: Frank A. Liporace, MD, Englewood Cliffs, NJ*
353 *Brett R. Levine, MD, Chicago, IL*
Erik Kubiak, MD, Salt Lake City, UT
Samir Mehta, MD, Philadelphia, PA

Contemporary indications and techniques of internal fixation and revision for periprosthetic fractures around total hip and total knee arthroplasty will be presented.

202 **Hip Preservation Surgery: How to Avoid and Treat Complications and Failures**



Room *Moderator: Christopher M. Larson, MD, Edina, MN*
207 *John C. Clobis, MD, Saint Louis, MO*
Bryan T. Kelly, MD, New York, NY
Michael Leunig, PhD, Zurich, Switzerland

Complications and early treatment failures are seen after arthroscopic and open joint preservation procedures. Contemporary strategies to avoid and manage sub-optimal outcomes discussed.

203 **Revision TKA: Step by Step Video Techniques**



Moderator: Rafael J. Sierra, MD, Rochester, MN
William G. Hamilton, MD, Alexandria, VA
Raymond H. Kim, MD, Denver, CO
Michael P. Bolognesi, MD, Durham, NC
William L. Griffin, MD, Charlotte, NC

Room To learn and apply the techniques of measured resection and gap balancing for unicompartamental and total knee
208 Arthroplasty.

204 **Osteotomy and Arthrodesis of the Forefoot and Hindfoot**



Room *Moderator: Simon Lee, MD, Chicago, IL*
218 *Todd A. Irwin, MD, Ann Arbor, MI*
Jeremy J. McCormick, MD, Saint Louis, MO
Phinit Phisitkul, MD, Iowa City, IA
Kenneth Hunt, MD, Redwood City, CA

Will review common surgical techniques for correction of hallux valgus and hindfoot arthrodesis.

205 **Hand and Wrist Problems General Orthopaedists Treat (or should treat): Diagnostic and Operative Tips**



Room *Moderator: Nader Paksima, DO, New York, NY*
226 *Jeffrey A. Greenberg, MD, Indianapolis, IN*
Anthony Sapienza, MD, New York, NY
Fraser J. Leversedge, MD, Durham, NC

Focus on diagnostic and treatment pearls and avoiding pitfalls in the treatment of hand conditions by general orthopedic surgeons.

206



Room
271

Current Perspectives in Distal Radius Fixation

Moderator: Peter J. Stern, MD, Cincinnati, OH
Charles S. Day, MD, MBA, Boston, MA
Charles A. Goldfarb, MD, Saint Louis, MO
Mark E. Baratz, MD, WA, PA

Introduction and historical perspective, plate fixation, where's the evidence? Are there still viable alternatives to plate fixation? Complications: Iatrogenic, soft tissue, and osseous.

207



Rivergate
Room

Update in Pediatric Musculoskeletal Infections: When it Is, When it Isn't and What to Do

Moderator: Ken J. Noonan, MD, Madison, WI
Alexandre Arkader, MD, Los Angeles, CA
William C. Warner Jr, MD, Germantown, TN
James H. Conway, MD, FAAP, Madison, WI

Lectures, cases and audience participation provide Attendees with a contemporary understanding of pediatric infections; their management; an appreciation for disorders that mimic infection and strategies to avoid surgical site infections.

208



Room
276

Life After Orthopaedics: 10 Years or More, Then What?

Moderator: Dempsey S. Springfield, MD, Boston, MA
Joseph S. Barr Jr, MD, Boston, MA
Cynthia K. Hinds, CLU, Lakewood, CO
Michael McCaslin, CPA, Indianapolis, IN

For the orthopaedic surgeon and their spouse who plans to practice fulltime for 10 years or more before transitioning to life after orthopaedics. It addresses the preparations necessary to make a successful transition. There is sufficient time to manage your psychological expectations and financial affairs to allow you to choose how and when you will make this transition. Every attendee needs to purchase a ticket.

209



Room
356

The Unstable Elbow: Current Concepts in Diagnosis and Treatment

Moderator: Jay D. Keener, MD, Saint Louis, MO
Christopher S. Ahmad, MD, New York, NY
Robert Z. Tashjian, MD, Salt Lake City, UT
John-Erik Bell, MD, Hanover, NH

Provides a systematic approach to the diagnosis and management of patients with recurrent elbow instability ranging from traumatic onset instability to overhead athletes.

210



Room
221

Massive Rotator Cuff Tears: Arthroscopy to Arthroplasty

Moderator: Robert H. Bell, MD, Akron, OH
Reuben Gobeze, MD, Mayfield Heights, OH
Frances Cuomo, MD, New York, NY
Gerald R. Williams Jr, MD, Philadelphia, PA

Cover the diagnosis, classification and treatment of massive cuff tears, including open and arthroscopic repair, the use of grafts and transfers, and arthroplasty options.

Wednesday, March 12

211 **Modern Techniques in the Treatment of Patients with Metastatic Spine Disease**



Moderator: Rex A. W. Marco, MD, Bellaire, TX

Justin Bird, MD, Houston, TX

Room Peter S. Rose, MD, Rochester, MN

347 Joseph H. Schwab, MD, Boston, MA

Focus on which patients with spinal metastatic disease may benefit from surgery vs. radiation therapy. In addition advanced spine surgical techniques will be presented.

212 **Knee MLI Injuries: A Case-Based Approach**



Moderator: Mark D. Miller, MD, Charlottesville, VA

Christopher D. Harner, MD, Pittsburgh, PA

Claude T. Moorman III, MD, Durham, NC

Darren L. Johnson, MD, Lexington, KY



Room 350

Knee MLI cases will be presented and discussed between the faculty and the attendees.

213 **Challenging Adolescent Sports Injuries: A Case Based Approach**



Moderator: Rick W. Wright, MD, St. Louis, MO

Matthew V. Smith, MD, Town and Country, MO

Matthew J. Matava, MD, Chesterfield, MO

Asheesh Bedi, MD, Ann Arbor, MI



Room 270

ase-based approach to reviewing the challenges and controversies in the diagnosis, treatment and outcome a variety of adolescent sports injuries.

214 **Geriatric Trauma: The Role of Immediate Arthroplasty**



Moderator: Andrew H. Schmidt, MD, Minneapolis, MN

Jonathan P. Braman, MD, Minneapolis, MN

Michael D. McKee, MD, Toronto, ON, Canada

Paul J. Duvelius, MD, Portland, OR



Room 262

Discuss, in a case-based format, current indications and techniques for acute arthroplasty to treat articular fractures of the shoulder, elbow, hip and knee in the geriatric patient.

215 **Opportunities for American Orthopaedists in the Developing World: Home and Abroad**



Moderator: David A. Spiegel, MD, Philadelphia, PA

Dino Aguilar, MD, MBA, Managua, Nicaragua

Kaye E. Wilkins, MD, San Antonio, TX

Derek J. Donegan, MD, Philadelphia, PA



Room 349

Discuss barriers to the delivery of orthopaedic care in both developed and underdeveloped environments, and opportunities for American orthopaedists to become involved in outreach activities.

FD3 **Techniques for Internationals Submitting Abstracts and Educational Programming Proposals to US Educational Programs**

Room 217

Moderator: Guido Marra, MD, Chicago, IL

Stefano A. Bini, MD, San Francisco, CA

Joaquin Sanchez-Sotelo, MD, Rochester, MN

Designed to help international orthopaedic surgeons understand how to adjust or write an abstract or ICL application in order to increase the likelihood of acceptance in US literature or US educational programming. Principles and suggested techniques will be discussed for writing submissions that are focused, concise, clear and unbiased.

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 11:00 AM

281 **Challenging Problems in Shoulder Instability: How To Get It Right the First Time and What To Do If You Don't**



Moderator: Matthew T. Provencher, MD, Boston, MA

Richard K. Ryu, MD, Santa Barbara, CA

Jeffrey S. Abrams, MD, Princeton, NJ

Pascal Boileau, MD, Nice, France

John M. Tokish, MD, Scottsdale, AZ



Room 352

Understanding of the common pathology, associated conditions, and radiographic and examination findings of glenohumeral instability. Evaluation and treatment of the failed instability procedures offers additional challenges to optimize return to function.

PAPER PRESENTATION

8:00 AM — 10:00 AM

Theater A

Shoulder and Elbow II: Shoulder Instability and Sports Medicine

Moderator(s): Joseph A. Abboud, MD, Philadelphia, PA

Frank Cordasco, MD, New York, NY

8:00 AM

PAPER: 121

What Functional Magnetic Resonance Imaging Tells us About Complex Shoulder Instability

Anthony Howard, MD, Liverpool, United Kingdom

David Hawkes, MD, Liverpool, United Kingdom

Jo Gibson, Liverpool, United Kingdom

Omid Alizadehkhayat, MD, Liverpool, United Kingdom

Margaret M. Roebuck, PhD, Liverpool, United Kingdom

Graham Kemp, DM, Liverpool, United Kingdom

Simon Frostick, MD, Liverpool, United Kingdom

This is the first fMRI study of patients with Polar Type III Shoulder instability. Given the plasticity of the cortex, the difference in cortical activation of this group, it could change treatment.

Wednesday, March 12

8:06 AM

PAPER: 122

A Computational Assessment of Hill-Sachs Defect Size as it Relates to Glenohumeral Stability

Mark F. Welsh, BS, London, ON, Canada
 Ryan Willing, PhD, London, ON, Canada
 Josh W. Giles, BESC, London, ON, Canada
 George S. Athwal, MD, London, ON, Canada
 James A. Johnson, PhD, London, ON, Canada

Influence of various sized Hill-Sachs defects on glenohumeral stability were analysed using computer models. Instability occurred for large defects even while restricting anterior humeral translation.

8:12 AM

PAPER: 123

Frequency and Size of Humeral and Glenoid Bone Defects in Patients with Shoulder Instability

David Cantu Morales, MD, Puebla, Mexico
 Michell Ruiz Suarez, MD, MS, Mexico City, Mexico
 David Cantu Morales, MD, Puebla, Mexico
 Ivan Encalada, MD, Mexico City, Mexico
 Fernando Valero, MD, Mexico City, Mexico

Humeral and glenoid defects are frequent in shoulder instability. Humeral defects are more frequent, but glenoid defects are larger.

Discussion – 6 Minutes

8:24 AM

PAPER: 124

Increasing Number and Total Time of Dislocation Affect Surgical Management of Anterior Shoulder Instability

Patrick J. Denard, MD, Medford, OR
 Xuesong Dai, Hangzhou, China
 Stephen S. Burkhart, MD, San Antonio, TX

Increasing number and total time of dislocation are associated with the development of glenoid and humeral head bony lesions that alter surgical management of anterior shoulder instability.

8:30 AM

PAPER: 125

Is the Effectiveness of Bristow-latarjet Procedure Related to the Fate of the Bone-block? A Prospective Study

Antonio Vadala, MD, Rome, Italy
 Cristina Rossi, Rome, Italy
 Alessandro Ciompi, MD, Roma, Italy
 Domenico Lupariello, Matera, Italy
 Alessandro Maria Agrò, MD, Rome, Italy
 Giuseppe Argento, MD, Rome, Italy
 Angelo De Carli, MD, Rome, Italy
 Andrea Ferretti, MD, Rome, Italy

The clinical outcome of Bristow-Latarjet procedure seems to be uncorrelated to the fate (union, nonunion or rate of reabsorption) of the coracoid bone block.

8:36 AM

PAPER: 126

Arthropathy after the Bristow-latarjet Repair for Shoulder Instability: A 33-35 Years Follow Up of 31 Shoulders

Lennart Hovelius, MD, Gavle, Sweden
 Vladislavs Gordins, MD, Gävle, Sweden
 Bjorn Sandstrom, MD, Gavle, Sweden
 Hans Rahme, MD, Uppsala State, Sweden
 Ulrica Bergstrom, MD, Umea, Sweden

Arthropathy after Bristow-Latarjet repair follows the natural history. The Samilson Prieto system is not appropriate when describing milder joint changes.

Discussion – 6 Minutes

8:48 AM

PAPER: 127

Return to Sport after Recurrent Shoulder Instability: Open Latarjet vs. Arthroscopic Bankart Repair

Davide Blonna, MD, Torino, Italy
 Francesco Pasquero, Chieri, Italy
 Francesco Caranzano, MD, Turin, Italy
 Umberto Mariotti, Milan, Italy
 Marco Assom, MD, Rivoli-Turin, Italy
 Umberto Cottino, Pecetto Torinese, Italy
 Davide E. Bonasia, MD, Torino, Italy
 Marco Assom, MD, Rivoli-Turin, Italy
 Filippo Castoldi, MD, Torino, Italy

In this study, arthroscopic Bankart repair seemed to provide a better rate of return to sport and a subjective perception of the shoulder compared to the unaffected shoulder.

8:54 AM

PAPER: 128

Latarjet Procedure: Comparative Short Term Study of Arthroscopic Versus Mini-open Approach

Blandine Marion, Boulogne Billancourt, France
 Julien Deranlot, MD, Paris, France
 Shahnaz Klouche, MD
 Geoffroy Nourissat, MD, Paris, France
 Philippe Hardy, PhD, Boulogne, France

This prospective comparative study showed that arthroscopic Latarjet procedure was significantly less painful than mini-open procedure with a more lateral coracoid bone block position and a better equatorial position.

9:00 AM

PAPER: 129

Longterm Outcome of Open Bankart for Recurrent Anterior Dislocation of the Shoulder - Is it Still the Gold Standard

Robert J. Neviasser, MD, Washington, DC
 Michael T. Benke, MD, Bloomfield, NJ
 Andrew Neviasser, MD, Washington, DC

the open Bankart provides a durable, reliable stabilization for recurrent anterior dislocation of the shoulder.

Discussion – 6 Minutes

Wednesday, March 12

9:12 AM

PAPER: 130

Latarjet Procedure: Biomechanical Evaluation of Coracoid Fixation

Andrew Green, MD, Providence, RI
 Douglas A. Scott, MD, Hilton Head, SC
 David Paller, MS, Providence, RI

Latarjet fixation employing fully-threaded screws is biomechanically superior to partially threaded screws. Better fixation may improve the healing rate and reduce the risk of hardware complications.

9:18 AM

PAPER: 131

The Bristow and Latarjet Procedures are Not Equivalent: A Biomechanical Comparison

Josh W. Giles, BSc, London, ON, Canada
 Ryan Degen, MD, London, ON, Canada
 James A. Johnson, PhD, London, ON, Canada
 George S. Athwal, MD, London, ON, Canada

This biomechanical comparison found that these two procedures produce equivalent stability when used to treat instability with preserved glenoid anatomy but the Latarjet is superior in bone loss situations.

9:24 AM

PAPER: 132

Neuromonitoring the Latarjet Procedure

Ruth A. Delaney, MD, Boston, MA
 Michael T. Freehill, MD, Winston-Salem, NC
 David R. Janfaza, MD, Boston, MA
 Kamen Vlassakou, MD, Boston, MA
 Laurence D. Higgins, MD, Boston, MA
 Jon J. Warner, MD, Boston, MA

Neuromonitoring demonstrates that the most common stages of the Latarjet procedure during which the axillary and musculocutaneous nerves are under tension are glenoid exposure and graft insertion.

Discussion – 6 Minutes

9:36 AM

PAPER: 133

30-Day Morbidity and Mortality Following Elective Shoulder Arthroscopy: A Review of 9,410 Cases

Christopher T. Martin, MD, Iowa City, IA
 Yubo Gao, PhD, Iowa City, IA
 Andrew J. Pugely, MD, Iowa City, IA
 Brian R. Wolf, MD, Iowa City, IA

We reviewed 9410 cases of shoulder arthroscopy to identify risk factors for 30-day complications. Smoking history, history of COPD, operative time >1.5 hrs, and ASA class ≥ 3 were significant.

9:42 AM

PAPER: 134

Histopathologic Analysis of the Extra-Articular Portion of the Long Head of the Biceps Tendon and Tenosynovium

Samuel Dubrow, MD, Omaha, NE
 Jonathan Streit, MD, Cleveland, OH
 Yousef Shishani, MD, Cleveland, OH
 Stephanie Muh, MD, Birmingham, MI
 Mark Rodgers
 Reuben Gobeze, MD, Mayfield Heights, OH

We present a histopathologic analysis of the extra-articular biceps tendon supporting the concept that the pathologic changes are due to a degenerative process that is seen in other tendinopathies.

9:48 AM

PAPER: 135

Biceps Tenodesis: How Low Do You Go? A Comparison of Arthroscopic Suprapectoral and Open Subpectoral Techniques

Brian C. Werner, MD, Charlottesville, VA
 Matthew L. Lyons, MD, Charlottesville, VA
 Eric W. Carson, MD, Charlottesville, VA
 David R. Diduch, MD, Charlottesville, VA
 Mark D. Miller, MD, Charlottesville, VA
 Stephen F. Brockmeier, MD, Charlottesville, VA

Arthroscopic suprapectoral and open subpectoral techniques result in significantly different locations of biceps tenodesis.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM

Room 245

Practice Management/Rehabilitation I: Quality Improvement

Moderator(s): Thomas Malvitz, MD, Grand Rapids, MI
 Paul Saiz, MD, Las Cruces, NM

8:00 AM

PAPER: 136

A PCR Protocol to Test for Methicillin-Resistant *S. aureus* Carriage in Orthopaedic Trauma Patients

Richard D. Southgate, MD, Rochester, NY
 Holman Chan, MD, Henderson, NV
 John P. Ketz, MD, Pittsford, NY
 Catherine A. Humphrey, MD, Rochester, NY
 Jonathan M. Gross, MD, Rochester, NY
 John T. Gorczyca, MD, Rochester, NY

Rapid PCR amplification identified 7.4% of orthopaedic trauma patients at a single center as MRSA carriers. Results, available within 4 hours, allowed for tailoring of perioperative antibiotics.

Wednesday, March 12

8:06 AM

PAPER: 137

◆ Efficacy of Antifibrinolytics on Surgical Bleeding in Orthopaedic Surgery: A Meta-Analysis

Thomas Cheriyan, New York, NY
 Stephen P. Maier, BA, New York, NY
 Kristina Bianco, New York, NY
 Kseniya Slobodyanyuk, BA, New York, NY
 Frank J. Schwab, MD, New York, NY
 Baron Lonner, MD, New York, NY
 Thomas J. Errico, MD, New York, NY

Both TXA and EACA reduce surgical bleeding and transfusion requirements in patients undergoing orthopaedic surgery, without an increase in incidence of thromboembolic events.

8:12 AM

PAPER: 138

Early Results of CMS Bundled Payment Initiative for a 90-day Total Joint Replacement Episode of Care

Richard Iorio, MD, New Rochelle, NY
 James D. Slover, MD, New York, NY
 Andrew J. Clair, BA, New York, NY
 Joseph D. Zuckerman, MD, New York, NY

Early results from this CMS bundled payment initiative demonstrate decreased length of stay and increased discharge to home, with stable readmissions, suggesting significant cost-savings with no loss.

Discussion – 6 Minutes

8:24 AM

PAPER: 139

Incidence of Failure of Continuous Peripheral Nerve Catheters for Post-operative Analgesia in Orthopaedic Surgery

Zahab Ahsan, BS, Indianapolis, IN
 Jeffrey Yao, MD, Redwood City, CA

The potential of postoperative continuous peripheral nerve block failure and resulting breakthrough pain upon recovery from the primary nerve block is important to emphasize to patients.

8:30 AM

PAPER: 140

Predictors of Musculoskeletal Injury-related Outcome in American Soldiers: A Prognostic Analysis

Andrew J. Schoenfeld, MD, Ann Arbor, MI
 Gens P. Goodman, DO, El Paso, TX
 Philip J. Belmont Jr, MD, El Paso, TX

Musculoskeletal conditions, psychological diagnoses, and lower rank (socio-economic status) were identified as potent predictors of inferior outcome in this study.

8:36 AM

PAPER: 141

The Effect of Discharge Disposition on Readmission Rates following Total Joint Arthroplasty

Nicholas Ramos, MD, New York, NY
 Raj Karia, MPH, New York, NY
 Lorraine Hutzler, BA, New York, NY
 Aaron Brandt, New York, NY
 James D. Slover, MD, New York, NY
 Joseph A. Bosco III, MD, New York, NY

Patients discharged to rehab facilities have a higher incidence of comorbidity and readmissions.

Discussion – 6 Minutes

8:48 AM

PAPER: 142

It's Not Just Demographics; Injury Type and Emergency Room Care of Orthopaedic Patients Influences Follow-Up Rates

Michelle M. Coleman, MD, Charlotte, NC
 Laura N. Medford-Davis, MD, Houston, TX
 Omar H. Atassi, MD, Houston, TX
 Angela Siler-Fisher, MD, Houston, TX
 Charles A. Reitman, MD, Houston, TX

This retrospective study of 464 patients highlights distinct orthopaedic-related factors associated with “no-show” to orthopaedic follow-up after Emergency Department visit.

8:54 AM

PAPER: 143

Patients' Perception of Care Correlates with Quality of Hospital Care: A Survey of 4,605 Hospitals

Spencer M. Stein, New York, NY
 Michael S. Day, MD, New York, NY
 Raj Karia, MPH, New York, NY
 Lorraine Hutzler, BA, New York, NY
 Joseph A. Bosco III, MD, New York, NY

The patient's perception of the care they received is a key performance metric and is being used to determine payments to hospitals.

9:00 AM

PAPER: 144

An Orthopaedic-Hospitalist Co-Managed Hip Fracture Service Reduces Inpatient Length of Stay

Daniel Bracey, MD, Winston Salem, NC
 Cynthia L. Emory, MD, Winston Salem, NC
 Kamran S. Hamid, MD, MPH, Winston-Salem, NC
 Rebecca L. Pareja, BS, Winston-Salem, NC
 Johannes F. Plate, MD, Winston-Salem, NC
 Erik C. Summers, MD, Winston-Salem, NC
 Riyaz H. Jinnah, MD, Winston-Salem, NC

Since implementing an orthopaedic-hospitalist co-managed hip fracture service line at our institution in March 2012, hip fracture inpatient length of stay has been significantly reduced by 1.41 days.

Discussion – 6 Minutes

Wednesday, March 12

9:12 AM

PAPER: 145

Development of an Outpatient Total Knee Replacement Pathway

Geoffrey F. Dervin, MD, Ottawa, ON, Canada
Brendan O'Neill, MD, Ottawa, ON, Canada

Through a well-coordinated team approach, length of stay following TKA can be successfully reduced to outpatient without compromising patient care in selected, healthy patients.

9:18 AM

PAPER: 146

The Impact of Resident Involvement on Post-operative Morbidity and Mortality Following Orthopaedic Procedures

Andrew J. Schoenfeld, MD, Ann Arbor, MI
Philip J. Belmont Jr, MD, El Paso, TX
Julia O. Bader, PhD, El Paso, TX

A mild to moderate risk for complications was noted following resident involvement in joint arthroplasty procedures. No significant risk was appreciated for other orthopaedic procedures studied.

9:24 AM

PAPER: 147

A Pre-Surgical Questionnaire for Urinary Tract Infections and Bleeding Disorders in Arthroplasty Patients

Ying-Ying J. Kao, MD, San Francisco, CA
Alicia Kalamas, MD, Piedmont, CA
Kevin J. Bozic, MD, MBA, San Francisco, CA

The purpose of this study was to develop and validate a brief pre-operative tool to screen for urinary tract infections and bleeding disorders in pre-surgical arthroplasty patients.

Discussion – 6 Minutes

9:36 AM

PAPER: 148

Readmission Burden of 30-day Readmissions Following Total Joint Replacement Among Medicare Beneficiaries

Joseph A. Bosco III, MD, New York, NY
Lorraine Hutzler, BA, New York, NY
Alexa J. Karkenny, BS, Montvale, NJ
James D. Slover, MD, New York, NY
Richard Iorio, MD, New Rochelle, NY

We reviewed the hospital cost burden of 30 day readmissions following primary and revision total joint arthroplasty (TJA) to examine the financial implications of the episode of care payment model.

9:42 AM

PAPER: 149

An Analysis of Cancelled Surgeries: Implications for Clinical Operations and Resource Utilization

Roshan P. Shah, MD, JD, Chicago, IL
Stuart D. Kinsella, BA, Philadelphia, PA
Craig L. Israelite, MD, Philadelphia, PA

Surgical cancellations disrupt patients, surgeons, and hospitals. We found a 23% cancellation rate with 64% unrescheduled. This is an opportunity to improve clinic operations and resource utilization.

9:48 AM

PAPER: 150

The Safety of Outpatient Hand and Upper Extremity Surgery - A Statistical Review of Complications in 28,737 Cases

Sameer Jain, MD, Columbus, OH
Joseph E. Imbriglia, MD, Wexford, PA

With proper patient selection, a very low (.23%) complication rate can be achieved in outpatient hand and upper extremity surgery.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM

Room 265

Pediatrics I: Spine

Moderator(s): Anthony A Scaduto, MD, Los Angeles, CA
Suken A. Shah, MD, Wilmington, DE

8:00 AM

PAPER: 151

An Evaluation of the Validity of a DNA-Based Prognostic Test for Adolescent Idiopathic Scoliosis

Benjamin D. Roye, MD, New York, NY
Margaret Wright, BS, New York, NY
Hiroko Matsumoto, MA, New York, NY
Petya Yorgova, MS, Wilmington, DE
Geraldine Neiss, PhD, Wilmington, DE
Joshua E. Hyman, MD, New York, NY
David P. Roye Jr, MD, New York, NY
Suken A. Shah, MD, Wilmington, DE
Michael G. Vitale, MD, MPH, Irvington, NY

This is the first study to independently evaluate the ability of the Scolioscore, a DNA-based prognostic test, to stratify risk of curve progression in patients with Adolescent Idiopathic Scoliosis.

8:06 AM

PAPER: 152

Minimum 20-Year Health Related Quality of Life and Surgical Rates for Treatment of Adolescent Idiopathic Scoliosis

Annalise N. Larson, MD, Rochester, MN
Ali Ashraf, MD, Garland, TX
David W. Polly Jr, MD, Minneapolis, MN
Yaser M. Baghdadi, MD, Rochester, MN
Michael J. Yaszemski, MD, PhD, Rochester, MN

Retrospective survey study of patients who underwent treatment with surgery, bracing, or observation for the treatment of adolescent idiopathic scoliosis (AIS) with minimum 20-year follow-up.

Wednesday, March 12

8:12 AM

PAPER: 153

Symptomatic Operative AIS Patients - Can Their Increased Perception of Deformity Be Changed?

Anna McClung, RN, Dallas, TX
Daniel J. Sucato, MD, MS, Dallas, TX

Symptomatic patients with operative AIS scored worse on the SRS-30 compared to non-symptomatic peers. Postoperatively symptomatic patients scores improved and were comparable to non-symptomatic.

Discussion – 6 Minutes

8:24 AM

PAPER: 154

Clinical and Economic Implications of Early Discharge Following Posterior Spinal Fusion for AIS

Nicholas D. Fletcher, MD, Atlanta, GA
Nader A. Shourbaji, MD, Atlanta, GA
Phillip Mitchell, MD, Nashville, TN
Timothy S. Oswald, MD, Marietta, GA
Dennis P. Devito, MD, Atlanta, GA
Robert W. Bruce, MD, Atlanta, GA

Early discharge on post operative day 2 or 3 is possible following PSF for AIS with no increase in complications.

8:30 AM

PAPER: 155

Increasing Hospital Charges in Adolescent Idiopathic Scoliosis Fusions

Christopher T. Martin, MD, Iowa City, IA
Andrew J. Pugely, MD, Iowa City, IA
Yubo Gao, PhD, Iowa City, IA
Sergio A. Mendoza-Lattes, MD, Iowa City, IA
Ryan M. Ilgenfritz, MD, Iowa City, IA
Stuart L. Weinstein, MD, Iowa City, IA

Implant charges for AIS fusions increased 24% annually, while physicians charges increased only 1.3%, and all other charges increased only 7.5%. Implants are the primary drivers of increased charges.

8:36 AM

PAPER: 156

Axial Rotation Correction in Adolescent Idiopathic Scoliosis with Pedicle Screw Construct

Arash A. Dini, MD, New Orleans, LA
Mae E. Young, MD, New Orleans, LA
Katherine Faust, MD, New Orleans, LA
Meghan Brashear, MPH, New Orleans, LA
Kristen L. Stupay, BA, New Orleans, LA
James T. Bennett, MD, New Orleans, LA

Axial rotation correction in adolescent idiopathic scoliosis with pedicle screws and de-rotation maneuver can provide a statistically significant decrease in axial rotation of the spine.

Discussion – 6 Minutes

8:48 AM

PAPER: 157

Safety and Efficacy of Power-Assisted Pedicle Tract Preparation and Pedicle Screw Placement

Derek A. Seehausen, BA, Los Angeles, CA
Lindsay Andras, MD, Los Angeles, CA
Yashar Javidan, MD, Los Angeles, CA
David L. Skaggs, MD, Los Angeles, CA

Pedicle tract preparation and pedicle screw placement using power tools was found to be associated with reduced screw failure and reduced operative radiation exposure compared to using manual tools.

8:54 AM

PAPER: 158

◆ Safety of Pedicle Screws for Pediatric Patients Younger than 10 Years Old: Analysis of 5,024 Pedicle Screws

Takahito Fujimori, MD, MSc, Osaka, Japan
Burt Yaszay, MD, San Diego, CA
Carrie Bartley, MA, San Diego, CA
Tracey Bastrom, MA, San Diego, CA
Peter O. Newton, MD, San Diego, CA

The pedicle screw-associated complication rate per screw was 0.6% in the 0-5 years-old group, 0.3% in the 5-10 years-old group, and 0.09% in the 10-15 years-old group.

9:00 AM

PAPER: 159

◆ Proximal Rib Anchors Have 77% Less Risk of Rod Breakage Than Proximal Spine Anchors in Growing Rods

Kent Yamaguchi, MD, Los Angeles, CA
David L. Skaggs, MD, Los Angeles, CA
Karen S. Myung, MD, Indianapolis, IN
Muharrem Yazici, MD, Ankara, Turkey
Charles E. Johnston II, MD, Dallas, TX
George H. Thompson, MD, Cleveland, OH
Paul D. Sponseller, MD, Baltimore, MD
Behrooz A. Akbarnia, MD, La Jolla, CA
Michael G. Vitale, MD, MPH, Irvington, NY

This comparative survival analysis of distraction-based growing rods shows proximal rib-anchored rods have 1/4th the risk of rod breakage as proximal spine-anchored growing rods, without an increased risk of rod breakage.

Discussion – 6 Minutes

Wednesday, March 12

9:12 AM

PAPER: 160

◆ Growing Rods vs. Shilla: Better Cobb Angle Correction and T1-S1 Length Increase but More Surgeries

Lindsay Andras, MD, Los Angeles, CA
 Elizabeth Joiner, BS, Los Angeles, CA
 Richard E. McCarthy, MD, Little Rock, AR
 Scott J. Luhmann, MD, Saint Louis, MO
 Paul D. Sponseller, MD, Baltimore, MD
 John B. Emans, MD, Boston, MA
 David L. Skaggs, MD, Los Angeles, CA
 Growing Spine Study Group, Milwaukee, WI

In this case matched series, dual growing rods demonstrated a greater increase in T1- S1 length, better Cobb correction but more than twice the number of surgeries compared to Shilla.

9:18 AM

PAPER: 161

◆ Traditional Growing Rods vs. Magnetically Controlled Growing Rods in EOS: A Case-Matched Study

Behrooz A. Akbarnia, MD, La Jolla, CA
 Kenneth M. Cheung, MD, Hong Kong, China
 John B. Emans, MD, Boston, MA
 Charles E. Johnston II, MD, Dallas, TX
 Hilali H. Noordeen, FRCS, London, United Kingdom
 Jeff Pawelek, La Jolla, CA
 David L. Skaggs, MD, Los Angeles, CA
 Paul D. Sponseller, MD, Baltimore, MD
 George H. Thompson, MD, Cleveland, OH

Major curve correction was similar between MCGR and TGR patients. However, TGR patients had greater annual T1-S1 growth and more surgical procedures than MCGR patients.

9:24 AM

PAPER: 162

The Fate of the Neuromuscular Hip After Spinal Fusion

Lindsay M. Crawford, MD, Houston, TX
 Jose A. Herrera Soto, MD, Orlando, FL
 John Ruder, BS, Orlando, FL
 Kathryn M. Peck, MD, Indianapolis, IN
 Jonathan H Phillips, MD, Orlando, FL
 Dennis R. Knapp Jr, MD, Orlando, FL

After correction of pelvic obliquity, 21% of patients had new onset hip subluxation/dislocation following spinal fusion. 40% of our neuromuscular spinal fusion patients required a hip procedure.

Discussion – 6 Minutes

9:36 AM

PAPER: 163

Predicting Failure of Iliac Fixation in Neuromuscular Spine Deformity

Sumeet Garg, MD, Aurora, CO
 Courtney A. Holland, MD, El Paso, TX
 Jaren Lagreca, BA, Aurora, CO
 Bryan McNair, MS, Aurora, CO
 Mark A. Erickson, MD, Aurora, CO

From 2001-2009, 27% (27/100) of patients with NM scoliosis had failure of iliac fixation. Patients with flaccid tone had lower risk, and use of a distal crosslink trended towards protective effect.

9:42 AM

PAPER: 164

While Inconvenient, Baclofen Pumps Do Not Complicate Scoliosis Surgery in Cerebral Palsy Patients

Burt Yaszay, MD, San Diego, CA
 James D. Bomar, San Diego, CA
 Paul D. Sponseller, MD, Baltimore, MD
 Suken A. Shah, MD, Wilmington, DE
 Jahangir Asghar, MD, Coral Gables, FL
 Amer Samdani, MD, Philadelphia, PA
 Tracey Bastrom, MA, San Diego, CA
 Peter O. Newton, MD, San Diego, CA
 Harms Study Group, San Diego, CA

This study suggests no increased risk of wound complications or operative time with the presence of a baclofen pump for patients with Cerebral Palsy who undergo scoliosis correction surgery.

9:48 AM

PAPER: 165

Are MRSA Nare Cultures Predictors of Infection in Adolescent Idiopathic and Neuromuscular Scoliosis

Jose A. Herrera Soto, MD, Orlando, FL
 Kathryn M. Peck, MD, Indianapolis, IN
 Lindsay M. Crawford, MD, Houston, TX
 Jonathan H. Wilhite, MD, Indianapolis, IN
 Jonathan H Phillips, MD, Orlando, FL
 Dennis R. Knapp Jr, MD, Orlando, FL
 Brandon A. Ramo, MD, Dallas, TX

The utility of MRSA nasal cultures were evaluated as a predictor of MRSA infection with spinal fusion in AIS and NMS. Nasal cultures were not predictive or increase awareness of infection risk.

Discussion – 6 Minutes

Wednesday, March 12

PAPER PRESENTATION

8:00 AM — 10:00 AM
Room 345

Hand and Wrist I: Hand

Moderator(s): Charles F. Leinberry, MD, Chester Springs, MD
John S. Taras, MD, Philadelphia, PA

8:00 AM **PAPER: 166**
Patient-Reported Outcome Measures in the Upper Extremity: DASH vs. PF CAT

Andrew R. Tyser, MD, Salt Lake City, UT
Shirley Hon, Salt Lake City, UT
Jeremy D. Franklin, Salt Lake City, UT
James Beckmann, MD, Salt Lake City, UT
Christine Cheng, Salt Lake City, UT
Angela A. Wang, MD, Salt Lake City, UT
Jillian Conrad, BS, Salt Lake City, UT
Man Hung, PhD, Salt Lake City, UT

The PROMIS Physical Function Computerized Adaptive Testing instrument performs at least as well the DASH in the parameters reported, and in some cases significantly better.

8:06 AM **PAPER: 167**

Pain with Activity is a Significant Predictor of DASH Score in a Prospective Cohort of Patients with CMC Arthritis

James Lin, MD, New York, NY
Kiran S. Yemul, New York, NY
Melvin P. Rosenwasser, MD, New York, NY

Patients' self-reported pain with activity (as measured by VAS) was the only significant predictor of DASH score in a cohort of both operative and non-operative CMC arthritis patients.

8:12 AM **PAPER: 168**

Comparison of the Validity of Goniometer and Visual Assessments of Angular Joint Positions of the Hand and Wrist

Peter M. Murray, MD, Jacksonville, FL
Kimberly McVeigh, OTR/L, Jacksonville, FL
Michael Heckman, MS, Jacksonville, FL

Based on this study, there is a statistical advantage to measuring the angular position of the PIP joint with a goniometer compared to visual estimation but no statistical advantage to measuring the angular position of the MCP or wrist joint with a goniometer compared to visual estimation.

Discussion – 6 Minutes

8:24 AM **PAPER: 169**

Long Term Follow-up of Four Cases of Osteochondral Autologous Transplantation for Metacarpal Head Chondral Defects

Louis Constantinou, BA, Le Claire, IA
Anna L. Walden, BS, DC, Davenport, IA
Tyson K. Cobb, MD, Davenport, IA

Long-term clinical outcomes of 4 cases of Osteochondral Autologous Transplantation suggest this may be a viable surgical option for treatment of traumatic cartilage defects of the metacarpal head.

8:30 AM **PAPER: 170**

The Long-term Outcome of Corticosteroid Injection for Trigger Finger

Robert D. Wojahn, MD, Saint Louis, MO
Nicholas C. Foeger, MD, Honolulu, HI
Richard H. Gelberman, MD, Clayton, MO
Ryan P. Calfee, MD, Saint Louis, MO

The long term success of initial corticosteroid injection for trigger finger is dependent on patient sex and the presence of multiple trigger fingers.

8:36 AM **PAPER: 171**

Pathogenesis of Trigger Fingers with PIP Joint Contracture - High-resolution Ultrasonographic Assessment

Rikuo Shinomiya, MD, PhD, Hiroshima, Japan
Toru Sunagawa, Hiroshima, Japan
Yuko Nakashima, MD
Mitsuo Ochi, MD, PhD, Hiroshima, Japan

Not only thickness of A1 pulley and flexor digitorum tendons, but also changes of quality of these structures contributed to pathogenesis of trigger fingers with PIP joint contracture.

Discussion – 6 Minutes

8:48 AM **PAPER: 172**

Open Drainage (OD) versus Closed Catheter Irrigation (CCI) for Treatment of Purulent Flexor Tenosynovitis

Trevor R. Born, MD, Rochester, MN
Eric R. Wagner, MD, Rochester, MN
Sanjeev Kakar, MD, Rochester, MN

Comparison of open drainage (OD) with closed catheter irrigation (CCI) showed similar outcomes with regards to pain, function, and reoperation rates at mean three year follow-up.

Wednesday, March 12

8:54 AM

PAPER: 173

Radiographic Thumb Osteoarthritis Index (ThOA) Correlating to Clinical Disease Severity

Amy L. Ladd, MD, Palo Alto, CA
 Joe Messana, Mountain View, CA
 Aaron J. Berger, MD, PhD, Palo Alto, CA
 Arnold-Peter C. Weiss, MD, Providence, RI

A thumb osteoarthritis index (ThOA) measured from a Robert's view alone provides a simple, reproducible, and clinically relevant means of quantifying the severity of thumb CMC osteoarthritis.

9:00 AM

PAPER: 174

First Carpometacarpal Arthroplasty with Ligamentous Reconstruction: A Long-term Follow Up

Mark A. Yaffe, MD, Indianapolis, IN
 Bennet Butler, Chicago, IL
 Daniel J. Nagle, MD, Chicago, IL

This study demonstrates the clinical, functional, and radiographic outcomes following a trapeziectomy with FCR suspension arthroplasty without tendon interposition (LRSA) for advanced CMC arthritis.

Discussion – 6 Minutes

9:12 AM

PAPER: 175

A Comparative Study of Trapeziectomy with Tightrope - Are We Making A Difference?

Arvind Mohan, MBBS, Epsom, Surrey, United Kingdom
 Michael Shenouda, Chertsey, United Kingdom
 Hiba Ismail, London/Middlesex, United Kingdom
 Tanaya Sarkhel, FRCS, MBBS, Chertsey, Surrey, United Kingdom

The insertion of tightrope does not seem to provide any additional benefits in terms of clinical outcome.

9:18 AM

PAPER: 176

◆ Suture Fixation vs. Tendonous Reconstruction in CMC Arthroplasty: Double-Blind RCT

Mellisa Roskosky, MSPH, Athens, GA
 Ashley Cole, MPH, San Clemente, CA
 Emily S. Epstein, MPH, CO Springs, CO
 Michael S. Shuler, MD, Athens, GA

No difference was found between the two procedures in terms of functionality, strength and range of motion. However, suture fixation is the shorter and potentially less invasive alternative.

9:24 AM

PAPER: 177

Risks and Outcomes Associated with 382 Consecutive Intraoperative Periprosthetic Fractures in PIP Arthroplasty

Eric R. Wagner, MD, Rochester, MN
 Robert Van Demark, MD, Rochester, MN
 Marco Rizzo, MD, Rochester, MN

Intraoperative fractures occur in 5% of PIP arthroplasties, but do not influence outcomes. Female gender, increasing BMI, RA, and pyrocarbon implants increase the risk for these fractures.

Discussion – 6 Minutes

9:36 AM

PAPER: 178

Gliding Coefficient Seems to Favor the Use of More Repair Strands Over the Use of an Epitendinous Suture

Zaneb Yaseen, MD, Rochester, NY
 Christopher S. English, MD, Downey, CA
 Spencer J. Stanbury, MD, Rochester, NY
 Tony Chen, PhD, New York, NY
 Hani Awad, PhD, Rochester, NY
 John Elfar, MD, Rochester, NY

The gliding coefficient was not greatly affected by the number of strands in the repair but improved by omitting the epitendinous suture in both repair groups.

9:42 AM

PAPER: 179

The Biomechanical and Histological Effect of Platelet Rich Plasma on Rabbit Forepaw Flexor Tendon Repair

Katie Kollitz, BS, Seattle, WA
 Erin M. Parsons, MS, Seattle, WA
 Matt Weaver, PhD, Seattle, WA
 Jerry I. Huang, MD, Seattle, WA

In contrast to other studies, platelet-rich plasma did not improve ultimate strength or ROM in a rabbit flexor tendon model at 2, 4, or 8 weeks. Minor histologic differences disappeared after 2 weeks.

9:48 AM

PAPER: 180

Repeat Emergency Room Visits for Hand and Upper Extremity Injuries

Vishnu C. Potini, MD, New York, NY
 Walter W. Bratchenko, MS, PA-C, Newark, NJ
 Glen Jacob, Morgantown, West VA
 Linda Y. Chen, MS, BS, Newark, NJ
 Virak Tan, MD, Newark, NJ

Despite having already been evaluated by another emergency department, most repeat patients presented to our ED during normal business hours, with diagnoses that did not warrant urgent treatment.

Discussion – 6 Minutes

Wednesday, March 12

SYMPOSIUM

10:30 AM — 12:30 PM

La Nouvelle Ballroom



◆ Metal on Metal and Modular Corrosion: Clinical Impact of Tribocorrosion (L)

Moderator: Young-Min Kwon, MD, PhD, Boston, MA

Tribocorrosion in the form articular surface material loss from metal-on-metal bearings and material loss from metal/metal modular junctions has emerged as one of the most important clinical problems in Adult Reconstructive Orthopaedic Surgery. This symposium will provide an update on the clinical impact of tribocorrosion focusing on diagnostic modalities and treatment options for the evaluation and management of patients with suspected adverse local tissue reactions (ALTRs) to metal debris.

- I. What do Implant Retrieval Studie Tell Us? Metal on Metal
Alister Hart, FRCS, London, United Kingdom
- II. What do Implant Retrieval Studies Tell Us? Modular Junctions
Robert M. Urban, Chicago, IL
- III. Algorithm for the Management of Patients with MOM Bearings
Young-Min Kwon, MD, PhD, Boston, MA
- IV. Adverse Local Tissue Reactions (ALTRs) Associated with Modular Tribocorrosion
Herbert J. Cooper, MD, New York, NY
- V. ALTRs vs. Infection
Craig J. Della Valle, MD, Chicago, IL
- VI. Systemic Effects
J M. Wilkinson, MD, Sheffield, United Kingdom

SYMPOSIUM

10:30 AM — 12:30 PM

Theater C

Obesity, Orthopaedics, and Outcomes (M)



Moderator: George V. Russell Jr, MD, Jackson, MS

Clinicians and researchers review the evidence of the effects of obesity on musculoskeletal conditions and orthopaedic outcomes. Insights and techniques for dealing with the obese patient provided.

- I. Obesity in Orthopaedics: Why is this an Important Topic?
George V. Russell Jr, MD, Jackson, MS
- II. Definition of Obesity; Managing Weight Loss - What Works and What Doesn't Work?
Lynda Powell, PhD

- III. Importance of Associated Co-Morbidities
William M. Mihalko, MD, PhD, Germantown, TN
- IV. Specific Issues Related to Anesthesia, Postoperative Care, Pain Management, and Sleep Apnea in Obese Patients
Kenneth Oswald, MD, Jackson, MS
- V. Intra-Operative Management of the Obese Patient
William A. Jiranek, MD, Richmond, VA
- VI. Overview of Complications
George V. Russell Jr, MD, Jackson, MS
- VII. Value Measurements: The Impending Barrier to Orthopaedic Surgery for the Obese Patient
Adolph J. Yates Jr, MD, Pittsburgh, PA

SYMPOSIUM

10:30 AM — 12:30 PM

Theater B



Traumatic and Athletic Disorders of the Immature Foot and Ankle (N)

Moderator: Vincent S. Mosca, MD, Seattle, WA

Highlight many of the differences to help educate the audience on the proper assessment and management of injuries and athletic disorders of the immature foot and ankle.

- I. Growth Plate Injuries of the Immature Ankle
Vincent S. Mosca, MD, Seattle, WA
- II. Tarsal Coalitions and Accessory Navicular
James R. Kasser, MD, Boston, MA
- III. OCD Lesions of the Talus
Annunziato Amendola, MD, Iowa City, IA
- IV. Os Trigonum and other Dancer's Injuries
Lyle J. Micheli, MD, Boston, MA
- V. Ankle Injuries in Gymnasts and Tumblers. Ankle Impingement.
Michael T. Busch, MD, Atlanta, GA

An alphabetical faculty financial disclosure list can be found starting on page 312.

Wednesday, March 12

INSTRUCTIONAL COURSE LECTURE

10:30 AM — 11:30 AM

FD4 The Art of Using PowerPoint for Effective Presentations


Room Moderator: Roy W. Sanders, Tampa, FL
217 Paul Tornetta III, MD, Boston, MA

This hands on session will focus on utilizing PowerPoint especially for the medical professional. Learn tips and tricks that you can use to enhance your teaching skills when participating in educational sessions for your colleagues and for patient education both individually and community wide.

INSTRUCTIONAL COURSE LECTURE


10:30 AM — 12:30 PM

221 Revision in Total Hip Arthroplasty: Understanding and Management of Osteolysis

 Moderator: C. Anderson Engh Jr, MD, Alexandria, VA
Room William J. Maloney, MD, Redwood City, CA
207 Wayne G. Paprosky, MD, Winfield, IL
Neil P. Sheth, MD, Philadelphia, PA


Review the etiology, evaluation, and surgical treatment of periprosthetic hip osteolysis. Will include polyethylene and metal on metal bearing surface associated osteolysis. Emphasis on surgical decision making techniques.

222 Ensuring a Winner: The A,B,C's of Primary Total Knee Arthroplasty

 Moderator: Steven J. MacDonald, MD, London, ON, Canada
Room Michael E. Berend, MD, Mooresville, IN
353 Jay R. Lieberman, MD, Los Angeles, CA
John J. Callaghan, MD, Iowa City, IA

Includes information on patient selection, achieving reproducible limb alignment, balancing the varus and valgus knee, appropriate component sizing and positioning and best cementing techniques. Interesting cases of primary TKA will be presented.

223 Management of Complications of Common Foot and Ankle Surgeries

 Moderator: Steven L. Haddad, MD, Glenview, IL
Room Gregory C. Berlet, MD, Westerville, OH
221 J. Chris Coetzee, MD, Edina, MN
William C. McGarvey, MD, Katy, TX

Strategies for managing common complications following foot and ankle surgery. Present an approach to reconstruction and salvage of complications of the forefoot, midfoot, hindfoot and ankle.

224



An Orthopaedist's Introduction to the AMA Guides to Permanent Physical Impairment By Examples Using the 4th, 5th and 6th Edition

Room Moderator: J. Mark Melhorn, MD, Wichita, KS
208

The need for accurate impairment and disability evaluations continues to increase. Designed to select the most common musculoskeletal diagnoses and review how to evaluate and rate using the 4th, 5th and 6th editions of the Guides. This course will improve your efficiency and the quality of your evaluations.

225



Complications of Common Hand Surgery Procedures



Room Moderator: A. Lee Osterman, MD, Villanova, PA
350 Peter J. Stern, MD, Cincinnati, OH
James Chang, MD, Palo Alto, CA
Joshua M. Abzug, MD, Timonium, MD

Address common complications of hand surgeries and how to avoid them. Procedures range from carpal and cubital tunnel release, hand and wrist fractures, joint injuries such as PIPJ fracture dislocations, tendon repairs and tendon release procedures. Tips to avoid the pitfalls algorithms for their treatment and management.

226



Advanced Ponseti Course and Minimally Invasive Management of Vertical Talus



 Moderator: Matthew B. Dobbs, MD, Saint Louis, MO
 John E. Herzenberg, MD, Baltimore, MD
Harold J. Van Bosse, MD, Wynnewood, PA
Haemish A. Crawford, MBChB, FRACS, Auckland, New Zealand
Room Steven L. Frick, MD, Orlando, FL
215

Learn the tricks for dealing with complex, neurogenic, and syndromic clubfeet as well as the principles of correcting congenital vertical talus with the minimally invasive approach.

227



Life After Orthopaedics: 5 Years or Less, Then What?

 Moderator: Dempsey S. Springfield, MD, Boston, MA
 Joseph S. Barr Jr, MD, Boston, MA
Cynthia K. Hinds, CLU, Lakewood, CO
Michael McCaslin, CPA, Indianapolis, IN
Room 276

For the orthopaedic surgeon and their spouse who plans to practice fulltime for 5 years or less. It addresses the issues that must be solved between now and leaving fulltime practice. There is not much time to prepare but with the advice offered in this ICL the psychological and financial transition can be successfully made. Do not let it just happen. Every attendee needs to purchase a ticket.

Wednesday, March 12

228

Rotator Cuff



Moderator: Peter J. Millett, MD, MSc, Vail, CO
 Stephen S. Burkhart, MD, San Antonio, TX
 Jonathan B. Ticker, MD, Merrick, NY
 Ken Yamaguchi, MD, Chesterfield, MO



Room
356

This will be an advanced technical course that will review the full spectrum of current surgical techniques, pearls, and pitfalls for arthroscopic rotator cuff repair with a renowned, expert faculty.

229

Lumbar Spinal Stenosis: Today and Tomorrow



Moderator: Darrel S. Brodke, MD, Salt Lake City, UT
 D. Greg Anderson, MD, Moorestown, NJ
 Theodore J. Choma, MD, Columbia, MO
 Brandon D. Lawrence, MD, Salt Lake City, UT

Room
271

Will cover the indications and evidence base for current treatment options in spinal stenosis, as well as future trends, including minimally invasive techniques.

230

Surgical Management of Articular Cartilage Defects of the Knee



Moderator: Brian J. Cole, MD, MBA, Chicago, IL
 William Bugbee, MD, La Jolla, CA
 Christian Lattermann, MD, Lexington, KY
 Andreas H. Gomoll, MD, Chestnut Hill, MA



Room
226

Overview of the indications and results of the current and near-term treatment options as alternatives for patients presenting with chondral defects, meniscal deficiency and malalignment. Case-based decision encouraging audience participation.

231

Fractures and Dislocations About the Elbow and Their Adverse Sequelae: Contemporary Perspectives



Moderator: Scott P. Steinmann, MD, Rochester, MN
 Graham J. King, MD, London, ON, Canada
 Shawn W. O'Driscoll, MD, Rochester, MN
 Robert N. Hotchkiss, MD, New York, NY



Room
270

Based upon clinical cases and surgical videos, this course will address contemporary treatments and controversies regarding traumatic injuries about the elbow and their sequela.

232

Metastatic Disease for the General Orthopedist: How to Avoid Conflict and Controversy



Moderator: John E. Ready, MD, Boston, MA
 Kevin A. Raskin, MD, Boston, MA
 Marco Ferrone, MD, Boston, MA
 Megan E. Anderson, MD, Boston, MA



Rivergate
Room

Prepare the General Orthopedist to effectively manage patients with metastatic disease in a rational fashion. Lectures will focus on a case-based discussion of the contemporary treatment principles. Participants are encouraged to bring relevant cases for discussion.

233

Pediatric Orthopaedic Trauma: Principles of Management



Moderator: Shital N. Parikh, MD, Cincinnati, OH
 David L. Skaggs, MD, Los Angeles, CA
 James H. Beaty, MD, Memphis, TN
 Ken J. Noonan, MD, Madison, WI



Room
262

Discuss the fundamentals of pediatric orthopaedic trauma management in general and for specific injuries, providing guidelines for management.

234

Challenges in Shoulder Arthroplasty



Moderator: Peter Lapner, MD, Ottawa, ON, Canada
 Gilles Walch, MD, Lyon, France
 Thomas R. Duquin, MD, Buffalo, NY
 Jay D. Keener, MD, Saint Louis, MO

Room
218

Provide an in depth look at challenges encountered in total shoulder replacement. Best evidence will be examined related to the workup, diagnosis, and management of infection in shoulder arthroplasty. Post-operative instability discussed as well as strategies to prevent the risk of its occurrence. Finally, surgical techniques to minimize the risk of glenoid lucencies and maximize glenoid implant survivorship will be reviewed as well as relevant clinical cases.

235

Strategies to Enhance Value and Improve Patient Experience Through Patient Centered Care



Moderator: Kevin J. Bozic, MD, MBA, San Francisco, CA
 Karen Zupko, Chicago, IL
 Dwight W. Burney III, MD, Albuquerque, NM
 James B. Rickert, MD, Bloomington, IN

Room
347

Modes of payment and improved online ratings and outcomes are achievable by using the Patient Centered Care strategies discussed.

PAPER PRESENTATION

10:30 AM — 12:30 PM

Theater A

Adult Reconstruction Knee II: Non-Prosthetic/UKA

Moderator(s): Geoffrey F. Dervin, MD, Ottawa, ON, Canada
 Alfred J. Tria, MD, Princeton, NJ

10:30 AM

PAPER: 181

Optimal Usage of Unicompartmental Knee Replacement: An Analysis of 41,986 Cases

Alexander D. Liddle, MBBS, Oxford, United Kingdom
 Hemant G. Pandit, FRCS, Oxford, United Kingdom
 Andrew Judge, PhD, Oxford, United Kingdom
 David W. Murray, MD, Oxford, United Kingdom

A study to define the optimal usage of UKR, comparing broad and narrow indications in terms of their effect on implant survival.

Wednesday, March 12

10:36 AM

PAPER: 182

Load Sharing and Ligament Strains After Unicompartmental Knee Arthroplasty - A Validated Finite Element Analysis

Bernardo Innocenti, PhD, Bruxelles, Belgium
 Ömer F. Bilgen, PhD, MD, Bursa, Turkey
 Luc Labey, Leuven, Belgium
 Harry Van Lenthe, PhD, Leuven, Belgium
 Jos Vander Sloten, Leuven, Belgium
 Fabio Catani, MD, Modena, Italy

Even if a medial UKA is aligned and balanced it induces a change in stiffness in the knee joint that alters the bone stress and the collateral ligament strain leading to an osteoarthritic progression.

10:42 AM

PAPER: 183

Comparison of Joint Moments of Patients with Medial Unicompartmental Replacement during Stair Ascent

Yang-Chieh Fu, PhD, University, MS
 Kathy J. Simpson, PhD, Athens, GA
 Rumit S. Kakar, PT, Athens, GA
 Tracy Kinsey, MPH, Athens, GA
 Ormonde M. Mahoney, MD, Athens, GA

Patients with medial unilateral compartment knee reconstruction may demonstrate operated-limb joint moments during stair ascent typical of healthy individuals.

Discussion – 6 Minutes

10:54 AM

PAPER: 184

Osteoarthritis Progression in Untreated Compartment, Comparing Open Wedge Tibial Osteotomy and Unicompartmental Knee

Kwang J. Oh, MD, Seoul, Republic of Korea
 Anshul S. Sobti, MBBS, MS, Navi Mumbai, India

OA progression occurred irrespective of the operative procedure used, significant progression occurred only in UKA knees. However it did not affect the patellofemoral pain and function outcome of patients.

11:00 AM

PAPER: 185

Does Opening Wedge Osteotomy Affect Long Term Results of Postero-stabilized Fixed Bearing Knee Replacement?

Philippe Hernigou, PhD, Creteil, France
 Charles Henri Flouzat-Lachaniette, MD, Creteil, France
 Alexandre Poignard, MD, Creteil, France

The present study suggests that the clinical and radiographic results of primary TKA in knees with and without a previous opening wedge HTO are not substantially different.

11:06 AM

PAPER: 186

Success of High Tibial Osteotomy in the United States Military

Brian Waterman, MD, El Paso, TX
 Jeffrey Hoffmann, MD, El Paso, TX
 Matthew Laughlin, DO, El Paso, TX
 Courtney A. Holland, MD, El Paso, TX
 John M. Tokish, MD, Scottsdale, AZ
 Philip J. Belmont Jr, MD, El Paso, TX

High tibial osteotomy is a useful in the treatment of medial unicompartmental disease and has demonstrated success in an active US military population at a minimum of 2-year follow-up.

Discussion – 6 Minutes

11:18 AM

PAPER: 187

Meniscal Allograft with or without Osteotomy - A 15-Year Follow-Up Study

Hussain Kazi, MB, ChB, , Toronto, ON, Canada
 Wael Abdelrahman, MD, Toronto, ON, Canada
 Philip Brady, MD, Toronto, ON, Canada
 John C. Cameron, MD, Toronto, ON, Canada

Meniscal allograft is a viable solution to meniscal loss in the young patient, survivorship is good providing a mean of 12.5 yrs prior to TKA with 71% of allografts still in situ at 13.5 years.

11:24 AM

PAPER: 188

Fresh Osteochondral Allograft Transplantation for Osteochondritis Dissecans of the Knee

Kamran N. Sadr, MD, MS, Menlo Park, CA
 Pamela A. Pulido, RN, BSN, La Jolla, CA
 Julie C. McCauley, MPH, La Jolla, CA
 William Bugbee, MD, La Jolla, CA

Fresh osteochondral allografting is an effective treatment for repair of large osteochondritis dissecans lesions in the knee.

11:30 AM

PAPER: 189

Visual, Indentation and Histological Assessment of Articular Cartilage Integrity

Sally Arno, MSc, New York, NY
 Christopher Bell, MSc, New York, NY
 Humera Khan, BS, New York, NY
 Peter S. Walker, PhD, New York, NY

The visual grade used to denote osteoarthritis severity was inversely associated with cartilage stiffness and can therefore serve as a useful tool in defining areas to resurface at the time of surgery.

Discussion – 6 Minutes

Wednesday, March 12

11:42 AM

PAPER: 190

◆ Treatment of Cartilage Defects with a Novel RUNX-1 Inducing Molecule to Induce Chondrogenesis

Adam Gitlin, MD, New Hyde Park, NY
 John A. Schwartz, BS, Manhasset, NY
 Pasquale Razzano, MS, Manhasset, NY
 Nicholas A. Sgaglione, MD, Great Neck, NY
 Daniel A. Grande, PhD, Manhasset, NY

The novel molecule Kartogenin was used as an adjunct for cartilage repair. Defects that were treated with a Kartogenin-coated collagen scaffold demonstrated significantly improved cartilage tissue.

11:48 AM

PAPER: 191

◆ Autologous Adipose Tissue derived Mesenchymal Stem Cells for the Treatment of Osteoarthritis of the Knee

Chris H. Jo, MD, Seoul, Republic of Korea
 Lee Young-Gil, Chumbuk Kunsan, Republic of Korea
 Won Hyoung Shin, Seoul, Republic of Korea
 Ji Sun Shin, BS, Seoul, Republic of Korea
 Hyang Kim, PhD, Seoul, Republic of Korea
 Kang Sup Yoon, MD, Seoul, Republic of Korea

The intra-articular injection of AD MSCs into the osteoarthritic knee improved function and pain without causing adverse events, and reduced cartilage defects by regeneration of articular cartilage.

11:54 AM

PAPER: 192

◆ Combination of Orthokine-therapy and Physiotherapy May Delay Surgery in Highly Symptomatic Knee Osteoarthritis

Jaime Baselga G. Escudero, MD, Mirasierra, Spain
 Pedro M. Hernandez Trillos, MD, Madrid, Spain

Combination of Orthokine-Therapy, physiotherapy and TENS may delay surgery in highly symptomatic knee Osteoarthritis. Independent 2 year prospective clinical observational study.

Discussion – 6 Minutes

12:06 PM

PAPER: 193

Bone Marrow Cell Mobilization by G-CSF may Enhance Osseointegration? A Prospective Phase II Clinical Trial

Antongiulio Marmotti, MD, Torino, Italy
 Filippo Castoldi, MD, Torino, Italy
 Roberto Rossi, MD, Torino, Italy
 Matteo Bruzzone, MD, Torino, Italy
 Federico Dettoni, MD, Torino, Italy
 Davide E. Bonasia, MD, Torino, Italy
 Marco Assom, MD, Rivoli-Turin, Italy
 Gianluca Collo, MD, Torino, Italy
 Corrado Tarella, MD, PhD, Torino, Italy

Preoperative bone-marrow-derived cell mobilization by G-CSF is a safe orthopaedic procedure and allows circulation in the blood of high numbers of CD34+ve cells, promoting bone substitute integration.

12:12 PM

PAPER: 194

◆ A Randomized Clinical Trial Comparing Hyaluronic Acid for Knee Osteoarthritis Treatment to Placebo

Walter A. van der Weegen, MD, Geldrop, Netherlands
 Hub Noten, PhD, Helmond, Netherlands
 Jorgen Wullems, MSc, Geldrop, Netherlands
 Ellis Bos, AB Geldrop, Netherlands
 Rogier Van Drumpt, Geldrop, Netherlands

Treatment effect of 3 weekly injections of HA using Fermathron plus (2ml injections, 30mg HA, molecular weight 2.2M Dalton) is not superior to placebo. We cannot recommend the use of this particular HA.

12:18 PM

PAPER: 195

Extreme Variability in Posterior Slope of Proximal Tibia: Are We Accounting for Patient's Normal Anatomy in UKA?

Ryan Nunley, MD, Saint Louis, MO
 C. Lowry Barnes, MD, Little Rock, AR
 Cara L. Petrus, BS, Little Rock, AR

Purpose of this study was to accurately determine the posterior tibial slope in patients having medial or lateral UKA performed.

Discussion – 6 Minutes

PAPER PRESENTATION

10:30 AM — 12:30 PM
 Room 245

Sports Medicine/Arthroscopy II: Shoulder I

Moderator(s): Christopher Donaldson, MD, Johnstown, PA
 Stephen Soffer, MD, Wyomissing, PA

10:30 AM

PAPER: 196

The Effect of Insertion Angle on the Pullout Strength of Threaded Suture Anchors

Michael J. Beebe, MD, Salt Lake City, UT
 Todd A. Clevenger, MD, Medford, OR
 Eric J. Strauss, MD, New York, NY
 Erik Kubiak, MD, Salt Lake City, UT

An insertion angle of 90 degrees or greater, for threaded metallic suture anchors, withstands a greater load to failure and provides a stiffer construct than more acute insertion angles.

Wednesday, March 12

10:36 AM

PAPER: 197

Single-Row, Double-Row and Transosseous Equivalent Rotator Cuff Repair Techniques, A Comparative Analysis

Frank McCormick, MD, Ft Lauderdale, FL
 Anil Gupta, MD, MBA, Tampa, FL
 Benjamin G. Bruce, MD, Providence, RI
 Joshua Harris, MD, Bellaire, TX
 Geoffrey D. Abrams, MD, Portola Valley, CA
 Kristen Hussey, BS, Chicago, IL
 Hillary Wilson, BA, Chicago, IL
 Brian J. Cole, MD, MBA, Chicago, IL

The study measures and compares the subjective, objective and radiographic healing outcomes of single-row, double-row and transosseous equivalent suture techniques for arthroscopic rotator cuff repair.

10:42 AM

PAPER: 198

Arthroscopic Rotator Cuff Repair: The Characterization of Preoperative and Postoperative Sleep Disturbance

Luke S. Austin, MD, Linwood, NJ
 Bradford S. Tucker, MD, Ocean City, NJ
 Alvin C. Ong, MD, Linwood, NJ
 Brandon Eck, BS, Egg Harbor Township, NJ
 Fotios P. Tjoumakaris, MD, Ocean View, NJ
 Matthew D. Pepe, MD, Linwood, NJ

Adequate sleep plays a role in postoperative healing and also in patient satisfaction, it is necessary to investigate and characterize sleep disturbances in patients undergoing RCR.

Discussion – 6 Minutes

10:54 AM

PAPER: 199

Are Platelet Rich Plasma Injections Effective After Arthroscopic Rotator Cuff Tear Repair?

Francesco Franceschi, MD, Rome, Italy
 Rocco Papalia, MD, PhD, Rome, Italy
 Edoardo Franceschetti, MD, Roma, Italy
 Biagio Zampogna, MD, Rome, Italy
 Sebastiano Vasta, MD
 Alessio Palumbo, MD, Roma, Italy
 Michele Paciotti, MD, Avezzano, Italy
 Nicola Maffulli, MD, PhD, London, United Kingdom
 Vincenzo Denaro, MD, Rome, Italy

Although PRP application after arthroscopic repair of the rotator cuff has no effects on clinical recovery and structural integrity, it reduces the postoperative occurrence of shoulder stiffness.

11:00 AM

PAPER: 200

PRP Augmentation Reduces Re-tear Rates after Repair of Small and Medium Sized Rotator Cuff Tears

Patrick Vavken, MD, Basel, Switzerland
 Patrick Sadoghi, Graz, Austria
 Marc A. Mueller, MD, Basel, Switzerland
 Claudio Rosso, MD, MSc, Basel, Switzerland
 Victor Valderrabano, MD, Basel, Switzerland

Platelet concentrate augmentation reduces re-tear rates after arthroscopic repair of small and medium sized rotator cuff tears.

11:06 AM

PAPER: 201

The Costs of Preoperative Evaluation of Rotator Cuff Tears Prior to Surgical Repair

Frank Petrigliano, MD, Santa Monica, CA
 Michael Yeraniosian, MD, Hoboken, NJ
 Rodney Terrell, MD, San Jose, CA
 Jeffrey Wong, MD, Playa Vista, CA
 David R. McAllister, MD, Los Angeles, CA

The costs of preoperative evaluation of rotator cuff tears prior to surgical repair is examined here via a retrospective database review that tracks preoperative expenditures over a 3 month period.

Discussion – 6 Minutes

11:18 AM

PAPER: 202

Shoulder Osteoarthritis in Young Patients: When is Arthroscopic Management Indicated? A Markov Decision Analysis

Ulrich J. Spiegl, MD, Vail, CO
 Scott C. Faucett, MD, Bethesda, MD
 Marilee P. Horan, MPH, Vail, CO
 Peter J. Millett, MD, MSc, Vail, CO

Arthroscopic management was the preferred treatment strategy for glenohumeral OA in patients under 65 years old.

11:24 AM

PAPER: 203

Distal Peripheral Neuropathy after Open and Arthroscopic Shoulder Surgery: An Under-Recognized Complication

Benjamin Thomasson, DO, Mantua, NJ
 Luke S. Austin, MD, Linwood, NJ
 Brandon Eck, BS, Egg Harbor Township, NJ
 Matthew D. Pepe, MD, Linwood, NJ
 Bradford S. Tucker, MD, Ocean City, NJ
 Jonas L. Matzon, MD, Philadelphia, PA

Distal peripheral neuropathy is an under-reported complication following total shoulder arthroplasty and arthroscopic rotator cuff repair.

Wednesday, March 12

11:30 AM

PAPER: 204

Glenohumeral Joint Pathology Associated with High Grade Acromioclavicular Joint Injuries

Matthew Nugent, MD, Grants Pass, OR
 Michael J. Kissenberth, MD, Simpsonville, SC
 Thomas R. Carter, MD, Phoenix, AZ
 Anikar Chhabra, MD, Paradise Valley, AZ
 Evan S. Lederman, MD, Phoenix, AZ

Multicenter study of intra articular pathology of high grade ACJ injuries. 124 consecutive patients found greater than 50% incidence of concomitant pathology at the time of diagnostic arthroscopy.

Discussion – 6 Minutes

11:42 AM

PAPER: 205

Analysis of Mechanical Failures after Anatomic Acromioclavicular Joint Reconstruction

Marcus D. Biggers II, MD, Memphis, TN
 Benjamin M. Mauck, MD, Collierville, TN
 Frederick M. Azar, MD, Memphis, TN
 Richard A. Smith, PhD, Memphis, TN
 Thomas (Quin) Throckmorton, MD, Germantown, TN

Multivariate analysis of 14 factors found that interference screw fixation and distal clavicle excision were protective factors against failure of anatomic acromioclavicular joint reconstruction.

11:48 AM

PAPER: 206

Evaluation of Risk to the Suprascapular Nerve During Arthroscopic SLAP Repair: Is a Posterior Portal Safer?

Mark J. Sando, MD, Baltimore, MD
 R. Frank Henn III, MD, Ellicott City, MD
 James C. Dreese, MD, Monkton, MD

Use of the portal of Wilmington results in a much lower incidence of glenoid perforation during placement of posterior and far posterior suture anchors making this a safe method for SLAP repair.

11:54 AM

PAPER: 207

Management of the Long Head of the Biceps in Rotator Cuff Repair: High Versus Subpectoral Tenodesis

Francesco Franceschi, MD, Rome, Italy
 Rocco Papalia, MD, PhD, Rome, Italy
 Edoardo Franceschetti, MD, Roma, Italy
 Stefano Campi, MD, Rome, Italy
 Alessio Palumbo, MD, Roma, Italy
 Biagio Zampogna, MD, Rome, Italy
 Sebastiano Vasta, MD
 Nicola Maffulli, MD, PhD, London, United Kingdom
 Vincenzo Denaro, MD, Rome, Italy

The open subpectoral tenodesis is an easy and reproducible technique, leading to better clinical and cosmetic results when compared to the high arthroscopic tenodesis.

Discussion – 6 Minutes

12:06 PM

PAPER: 208

Biomechanical Comparison of the Interval Throwing Progression and Baseball Pitching

Nicholas R. Slenker, MD, Los Angeles, CA
 Orr Limpisvasti, MD, Los Angeles, CA
 Karen J. Mohr, PT, Los Angeles, CA
 Neal S. ElAttrache, MD, Los Angeles, CA

Biomechanical comparison of the interval throwing program and baseball pitching illustrates the various stresses on the shoulder and elbow during rehabilitation and training.

12:12 PM

PAPER: 209

Resorbable Devices for Arthroscopic Stabilization of the Shoulder are Really Harmless?

Carlo Alberto Augusti, MD, Paderno Dugnano (MI), Italy
 Paolo Paladini, MD, Cattolica, Italy
 Fabrizio Campi, MD, Cattolica, Italy
 Marco Bigoni, MD, Milano, Italy
 Giuseppe Porcellini, MD, Cattolica, Italy

The study we conducted showed that in all patients the implanted anchors are never completely reabsorbed, even at longest follow up. In all cases these devices caused the formation of osteolytic areas.

12:18 PM

PAPER: 210

Simulation Training Decreases Surgical Errors during Diagnostic Shoulder Arthroscopy by Residents in Training

Kevin D. Martin, DO, El Paso, TX
 Brian Waterman, MD, El Paso, TX
 Kenneth L. Cameron, PhD, West Point, NY
 Brett D Owens, MD, West Point, NY
 Philip J. Belmont Jr, MD, El Paso, TX

This study establishes transfer validity and suggests that training residents and interns on a validated simulator model can decrease surgical time while improving basic surgical skills.

Discussion – 6 Minutes

PAPER PRESENTATION

10:30 AM — 12:30 PM

Room 265

Spine II: Cervical Spine

Moderator(s): Michael J. Lee, MD, Seattle, WA
 Vincent Silvaggio, MD, Pittsburgh, PA

10:30 AM

PAPER: 211

Clinical and Radiographic Analysis of an Artificial Cervical Disc: Seven-Year Outcomes

J. Kenneth Burkus, MD, Columbus, GA
 Vincent C. Traynelis, MD, Chicago, IL
 Praveen V. Mummaneni, San Francisco, CA
 Regis W. Haid JR, MD, Atlanta, GA

Cervical disc arthroplasty maintained improved clinical outcomes and segmental motion after implantation at 7 years of follow up.

Wednesday, March 12

10:36 AM

PAPER: 212

Outcomes of Patients Undergoing Anterior Cervical Fusion in July; Analysis of the "July Effect"

Sreeharsha Nandyala, BA, Aurora, IL
 Steven Fineberg, MD, Valhalla, NY
 Alejandro Marquez-Lara, MD, Chicago, IL
 Kern Singh, MD, Chicago, IL

This study demonstrated that the start of the academic year was not associated with an increase in LOS, total hospital costs, or mortality among July patients following ACF in teaching hospitals.

10:42 AM

PAPER: 213

Revision Strategies in Cervical Disc Arthroplasty Failures

Ronald A. Lehman, MD, Potomac, MD
 Daniel Kang, MD, Bethesda, MD
 K. Daniel Riew, MD, Saint Louis, MO

Our study found <5% of cervical TDRs required revision. Regardless of approach, all patients demonstrated neurologic recovery and relief of symptoms following surgery.

Discussion – 6 Minutes

10:54 AM

PAPER: 214

Comparison of RhBMP-2 with Allograft in Single-Level Anterior Cervical Arthrodesis

J. Kenneth Burkus, MD, Columbus, GA
 Randall F. Dryer, MD, Austin, TX
 Paul M. Arnold, MD, FACS, Kansas City, KS
 Kevin T. Foley, MD, Memphis, TN

RhBMP-2 was effective in inducing fusion and improving arm pain and function in patients undergoing anterior cervical arthrodesis; certain adverse events were observed.

11:00 AM

PAPER: 215

The Prevalence of Cervical Radiculopathy in Patients with Cervical Myelopathy

Mark F. Kurd, MD, Charlotte, NC
 Amir S. Mohamed, Moraga, CA
 Kelly Wepking, BS, Pleasant Prairie, WI
 Joseph K. Lee, MD, New York, NY
 Kasra Ahmadiania, MD, Tulsa, OK
 Howard S. An, MD, Chicago, IL

This study sought to identify the prevalence of cervical radiculopathy (CR) in cases of cervical spine myelopathy (CSM), finding that 3 of 4 patients with CSM have CR and 90% have multilevel CR.

11:06 AM

PAPER: 216

Methods to Eliminate Postoperative Posterior Cervical Wound Infections: No Matter what the Case

Brian J. Neuman, MD, Baltimore, MD
 Kevin R. O'Neill, MD, Nashville, TN
 Sang D. Kim, MD, Los Angeles, CA
 K. Daniel Riew, MD, Saint Louis, MO

Despite the type of posterior cervical procedure, comorbidities or body habitus, our protocol for preparation, exposure and closure has decreased the risk of posterior cervical wound infections.

Discussion – 6 Minutes

11:18 AM

PAPER: 217

Reliability of the Subaxial Cervical Spine Injury Classification System for Orthopedic Surgeons

Ronald A. Lehman, MD, Potomac, MD
 Daniel Kang, MD, Bethesda, MD
 Adam Bevevino, MD, Washington, DC
 Robert W. Tracey, MD, Great Falls, VA

The use of SLICS demonstrated excellent intra- and inter-observer reliability among orthopaedic surgeons of different training levels, ranging from orthopaedic intern to staff spine surgeon.

11:24 AM

PAPER: 218

Correlation of Cord Signal Change with Physical Exam Findings in 61 Consecutive Patients with Cervical Myelopathy

Venu Nemani, MD, PhD, New York, NY
 Han Jo Kim, MD, New York, NY
 Chaiwat Piyaskulkaew, MD, Saint Louis, MO
 K. Daniel Riew, MD, Saint Louis, MO

Cord signal change visualized on MRI correlates poorly with the upper extremity reflex examination in patients with cervical spondylotic myelopathy.

11:30 AM

PAPER: 219

Cervical Dural Tears: Risk Factors and Outcomes

Kevin R. O'Neill, MD, Nashville, TN
 Brian J. Neuman, MD, Baltimore, MD
 K. Daniel Riew, MD, Saint Louis, MO

Dural tear occurred in 38 of 3848 (1%) cervical surgeries. Risk factors were older age, RA, OPLL, deformity, revision, longer operative time, more levels, and doing corpectomy or laminectomy.

Discussion – 6 Minutes

Wednesday, March 12

11:42 AM

PAPER: 220

Evaluation of Spinal Cord Motion in Patients with Normal Cervical Sagittal Alignment Using Kinetic MRI

Chengjie Xiong JR, Chongqing, China
 Michael D. Daubs, MD, Las Vegas, NV
 Akinobu Suzuki, MD, PhD, Osaka, Japan
 Bayan Aghdasi, MD, Clovis, CA
 Trevor Scott, MD, Santa Monica, CA
 Kevin Phan, BS, Irvine, CA
 Monchai Ruangchainikom, MD, Bangkok, Thailand
 Jeffrey C. Wang, MD, Sherman Oaks, CA

With normal lordotic alignment, the spinal cord shifts posteriorly away from the spinal column with flexion and toward the anterior column with extension.

11:48 AM

PAPER: 221

Effect of Global Cervical Sagittal Imbalance on Postural Compensation and Cervical Mechanics

Avinash G. Patwardhan, PhD, Maywood, IL
 Robert Havey, Hines, IL
 Muturi Muriuki, PhD, Forest Park, IL
 Leonard Voronov, PhD, Hines, IL
 Saeed Khayatizadeh, MSc, Hines, IL
 Gerard Carandang, Hines, IL
 Alexander J. Ghanayem, MD, Maywood, IL
 Ngoc-Lam Nguyen, MD, Maywood, IL
 William Sears, FRACS, Sydney, Australia

First study establishing a cause-&-effect relationship between radiographic measures of FHP, T1 tilt and spine mechanics and illustrates how biomechanical data can be useful in pre-treatment planning.

11:54 AM

PAPER: 222

Challenging the Norm: Further Psychometric Investigation of the Neck Disability Index

Man Hung, PhD, Salt Lake City, UT
 Jeremy D. Franklin, Salt Lake City, UT
 Shirley Hon, Salt Lake City, UT
 Brandon D. Lawrence, MD, Salt Lake City, UT
 Christine Cheng, Salt Lake City, UT
 Ashley Woodbury, BS, Salt Lake City, UT
 Jillian Conrad, BS, Salt Lake City, UT
 Darrel S. Brodke, MD, Salt Lake City, UT

Despite great investment by individuals in the NDI, this analysis and previous research demonstrate that the NDI needs to be further investigated and refined.

Discussion – 6 Minutes

12:06 PM

PAPER: 223

Vertebral Artery Anomalies at the Craniovertebral Junction in the U.S. Population

Courtney M. O'Donnell, MD, Seattle, WA
 Zachary A. Child, MD, Albuquerque, NM
 Quynh Nguyen, MHS, PA-C, Seattle, WA
 Paul A. Anderson, MD, Madison, WI
 Michael J. Lee, MD, Seattle, WA

Vertebral artery course anomalies in the upper cervical spine were rare (0.42%) in a retrospective review of 975 CT angiograms; this contrasts with previously published rates from Asia as high as 10%.

12:12 PM

PAPER: 224

Patterns of Cervical Disc Degeneration - Analysis of Magnetic Resonance Imaging of Over 1,000 Symptomatic Subjects

Akinobu Suzuki, MD, PhD, Osaka, Japan
 Michael D. Daubs, MD, Las Vegas, NV
 Tetsuo Hayashi, MD, Fukuoka, Japan
 Monchai Ruangchainikom, MD, Bangkok, Thailand
 Chengjie Xiong JR, Chongqing, China
 Kevin Phan, BS, Irvine, CA
 Trevor Scott, MD, Santa Monica, CA
 Jeffrey C. Wang, MD, Sherman Oaks, CA

This cross-sectional study using MRI elucidates the prevalence of natural patterns of cervical disc degeneration in symptomatic middle aged patients.

12:18 PM

PAPER: 225

Rapid Progressive Clinical Deterioration of Cervical Spondylotic Myelopathy

Yuichiro Morishita, MD, PhD, Iizuka, Japan
 Takeshi Maeda, Iizuka, Japan
 Eiji Mori, MD, Fukuoka, Japan
 Itaru Yugue, MD, Iizuka Fukuoka, Japan
 Osamu Kawano, MD
 Tsuneaki Takao, MD, Iizuka, Japan
 Hiroaki Sakai, MD
 Tetsuo Hayashi, MD, Fukuoka, Japan
 Keiichiro Shiba, MD, Iizuka, Japan

Surgical decompression led to highly positive postoperative results in patients with rapid progressive clinical deterioration of CSM. Early decompression is therefore recommended in such CSM patients.

Discussion – 6 Minutes

Wednesday, March 12

PAPER PRESENTATION

10:30 AM — 12:30 PM
Room 345

Tumor/Metabolic Disease I: Sarcoma and Metastatic Disease

Moderator(s): Jeffrey S. Kneisl, MD, Charlotte, NC
Felasfa M. Wodajo, MD, Arlington, VA

10:30 AM

PAPER: 226

What is the Best Method of Staging Sarcomas, Enneking or TNM?

Krista Goulding, MD, Birmingham, United Kingdom
Lee Jeys, FRCS, Droitwich, United Kingdom
Robert J. Grimer, FRCS, Worcester, United Kingdom

The TNM staging system is a superior prognostication system compared to Enneking staging for bone and soft tissue sarcoma.

10:36 AM

PAPER: 227

Multiple Primary Malignancies with High Grade Soft Tissue Sarcoma in Patients Over 45 Years

Eiji Kozawa, MD, Nagoya, Japan
Yoshihiro Nishida, Nagoya, Japan
Satoshi Tsukushi, MD, Nagoya, Japan
Hiroshi Urakawa, Nagoya, Japan
Eisuke Arai, Nagoya, Japan
Hideshi Sugiura, MD, Nagoya City, Japan
Naohisa Futamura, MD, Aichi, Japan
Naoki Ishiguro, MD, Nagoya, Japan

The incidence of multiple primary malignancies is attributable to age-group. Occurrence of them does not necessarily worsen the prognosis of the patients when physicians undertake adequate treatment.

10:42 AM

PAPER: 228

Prognostic Significance of Histological Invasion in High Grade Soft Tissue Sarcomas

Satoshi Tsukushi, MD, Nagoya, Japan
Yoshihiro Nishida, Nagoya, Japan
Hiroshi Urakawa, Nagoya, Japan
Eisuke Arai, Nagoya, Japan
Eiji Kozawa, MD, Nagoya, Japan
Naohisa Futamura, MD, Aichi, Japan
Naoki Ishiguro, MD, Nagoya, Japan

We evaluated the relation between histological invasion and the oncological outcomes of high grade sarcomas. Histological invasion was found to be an independent adverse prognostic factor.

Discussion – 6 Minutes

10:54 AM

PAPER: 229

Impact of Peroxisome Proliferator-activated Receptor Gamma Expression on Outcome of Myxoid Liposarcoma

Akihiko Takeuchi, MD, Kanazawa, Japan
Norio Yamamoto, MD, Kanazawa, Ishikawa, Japan
Toshiharu Shirai, MD, Kanazawa, Japan
Hideji Nishida, MD, Kanazawa City, Japan
Katsuhiko Hayashi, MD, Nagoya, Japan
Hiroaki Kimura, MD, PhD, Kanazawa, Japan
Shinji Miwa, MD, Ishikawa, Japan
Kentaro Igarashi, Kanazawa, Japan
Hiroyuki Tsuchiya, MD, Kanazawa, Japan

The low expression of PPAR γ significantly correlated with the better metastasis-free survival in patients with myxoid liposarcoma, suggesting its usefulness as a prognostic marker.

11:00 AM

PAPER: 230

Desmoid Tumors of the Upper Extremity

Matthew Houdek, MD, Rochester, MN
Peter S. Rose, MD, Rochester, MN
Sanjeev Kakar, MD, Rochester, MN

Desmoid tumors are rare, locally aggressive tumors. Recurrence following excision in the upper extremity is common. The addition of chemo or radiation therapy may increase disease free survival.

11:06 AM

PAPER: 231

Low-dose Chemotherapy or Intentional Marginal Resection Following Meloxicam Treatment for Patients with Desmoid

Yoshihiro Nishida, Nagoya, Japan
Satoshi Tsukushi, MD, Nagoya, Japan
Hiroshi Urakawa, Nagoya, Japan
Eiji Kozawa, MD, Nagoya, Japan
Eisuke Arai, Nagoya, Japan
Naohisa Futamura, MD, Aichi, Japan
Naoki Ishiguro, MD, Nagoya, Japan

Treatment algorithm beginning with meloxicam followed by low-dose chemotherapy or intentional marginal resection for patients with extra-peritoneal desmoid tumors could be adequately established.

Discussion – 6 Minutes

11:18 AM

PAPER: 232

Factors Affecting Wound Healing in Soft Tissue Sarcomas of the Anterior Thigh

Tessa Balach, MD, Farmington, CT
Robert Kulwin, Chicago, IL
Mark Cote, PT, Farmington, CT
Terrance D. Peabody, MD, Chicago, IL
Rex Haydon, MD, Chicago, IL

In soft tissue sarcomas of the anterior thigh, both neoadjuvant and adjuvant chemotherapy are significant risk factors for both wound healing complications and additional surgery to treat them.

Wednesday, March 12

11:24 AM

PAPER: 233

The Effect of Radiation Therapy in the Treatment of Adult Soft Tissue Sarcomas of the Extremities

Chad Ferguson, MD, Charlotte, NC
 Jeffrey S. Kneisl, MD, Charlotte, NC
 Michael D. Bates, MD, Charlotte, NC
 Jim Symanowski, PhD, Charlotte, NC
 Anthony Crimaldi, MD, DDS, Charlotte, NC
 Will Ahrens, MD, Charlotte, NC
 Franklin Gettys, MD, Charlotte, NC
 Joshua C. Patt, MD, Charlotte, NC
 Edward Kim, MD, Charlotte, NC

Radiation therapy treatment of adult extremity soft tissue sarcomas results in decreased local recurrence without survival improvement for high grade tumors. Radiation incurs high complication rates.

11:30 AM

PAPER: 234

Preoperative CRP, ESR and NLR are Reliable Predictors of Survival in Soft Tissue Sarcomas

Eun Seok Choi, Seoul, Republic of Korea
 Han-Soo Kim, MD, PhD, Seoul, Republic of Korea
 Wanlim Kim, Seoul, Republic of Korea
 Ilkyu Han, MD, Seoul, Republic of Korea
 Seungcheol Kang, MD, Seoul, Republic of Korea

Inflammation is implicated in the development and progression of malignancy. Preoperative CRP, ESR and NLR are predictors of disease-specific survival and histologic grade of soft tissue sarcomas.

Discussion – 6 Minutes

11:42 AM

PAPER: 235

Total Lesion Glycolysis by 18F-FDG PET/CT is a Reliable Predictive Value of Soft Tissue Sarcoma

Eun Seok Choi, Seoul, Republic of Korea
 Han-Soo Kim, MD, PhD, Seoul, Republic of Korea
 Ilkyu Han, MD, Seoul, Republic of Korea

TLG is a more accurate predictor of disease progression than SUVmax or MTV. TLG enables accurate preoperative assessment of aggressiveness comparable with conventional clinicopathologic parameters.

11:48 AM

PAPER: 236

The Endogenous Peptide Angiotensin-(1-7) Prevents Radiation-Induced Muscle Fibrosis: An In Vivo Murine Model

Daniel Bracey, MD, Winston Salem, NC
 Jeffrey Willey, PhD, Winston-Salem, NC
 Ann Tallant, PhD, Winston-Salem, NC
 Patricia Gallagher, PhD, Winston-Salem, NC
 Walter F. Wiggins, PhD, Winston-Salem, NC
 Michael F. Callahan, PhD, Columbia, MO
 Thomas L. Smith, PhD, Winston-Salem, NC
 Cynthia L. Emory, MD, Winston Salem, NC

Prophylactic Angiotensin-(1-7) treatment prior to radiation therapy may prevent the development of fibrosis in muscles exposed to high dose radiation during sarcoma treatment.

11:54 AM

PAPER: 237

Eight-year Experience of a Bone Metastasis MDT at an Acute Teaching Hospital and its Impact on Patient Care

Raghu Raman, FRCS, North Ferriby, United Kingdom
 Rasheed Afinowi, FRCS, North Ferriby, United Kingdom
 Howard Widdall, Swanland, United Kingdom
 Geoffrey V. Johnson, FRCS, North Ferriby, United Kingdom
 Keith Jackson, Swanland, United Kingdom
 Christopher J. Shaw, MD, East Yorkshire, United Kingdom
 Helen Cattermole, FRCS, North Ferriby, United Kingdom

A dedicated Bone Metastasis MDT has increased awareness and uptake of surgical prophylaxis, reduced the incidence of pathological fractures, early identification of unknown primary tumours.

Discussion – 6 Minutes

12:06 PM

PAPER: 238

Intramedullary Nail Stabilization without Cementation and Curettage for Impending Pathologic Fractures

Alexandria O. Starks, BA, Philadelphia, PA
 Brandon J. Shallop, BS, Philadelphia, PA
 Alan H. Lee, MD, Brookline, MA
 Simon Greenbaum, BA, Bronx, NY
 David S. Geller, MD, New York, NY
 Marco Ferrone, MD, Boston, MA
 John E. Ready, MD, Boston, MA
 John A. Abraham, MD, Philadelphia, PA

The purpose of this study is to describe outcomes of IM nail stabilization without intra-lesional curettage and cementation for impending pathological fracture.

Wednesday, March 12

12:12 PM

PAPER: 239

Intramedullary Nailing for Pathologic Fracture of the Proximal Humerus

Eun Seok Choi, Seoul, Republic of Korea
Ilkyu Han, MD, Seoul, Republic of Korea
Wanlim Kim, Seoul, Republic of Korea
Han-Soo Kim, MD, PhD, Seoul, Republic of Korea
Seungcheol Kang, MD, Seoul, Republic of Korea

Proximal interlocked nail with cement augmentation appears to be a reliable treatment option for pathological or impending fracture of the proximal humerus in selected patients with metastatic tumors,

12:18 PM

PAPER: 240

Indications of Reverse Total Shoulder Arthroplasty in Musculoskeletal Oncology: Preliminary Results

Pietro Ruggieri, MD, Bologna, Italy
Andrea Angelini, MD, Bologna, Italy
Matteo Romantini, MD
Marco Maraldi, Cesentico, Italy
Giulia Trovarelli, Bologna, Italy
Teresa Calabrò, Bologna, Italy

Reverse total shoulder arthroplasty for tumors, with correct surgical indications, is a reasonable reconstructive option at short-term. It restores function and is associated with low complication rate.

Discussion – 6 Minutes

SYMPOSIUM

1:30 PM — 3:30 PM

Theater C

**How Do I Perform a Revision Total Knee Arthroplasty (O)**

Moderator: Thomas K. Fehring, MD, Charlotte, NC
Steven J. MacDonald, MD, London, ON, Canada

Designed to be a detailed practical series of video vignettes describing critical techniques associated with primary and revision total knee arthroplasty. Each lecture/video will build on the previous as all important steps in primary and revision total knee arthroplasty are discussed fully. This symposium is a “how to,” practical, and clinically applicable series of presentations from leading arthroplasty surgeons. There will also be panel discussions to further discuss the technical challenges surrounding performing a primary and revision total knee arthroplasty.

- I. How I Achieve Alignment with Standard Instrumentation
John J. Callaghan, MD, Iowa City, IA
- II. How I Use Navigation
Arun Mullaji, FRCS, Mumbai, India

- III. How I Use Patient Specific Jigs
Adolph V. Lombardi Jr, MD, New Albany, OH
- IV. How I Balance the Varus Knee
Jean-Noel A. Argenson, MD, Marseille, France
- V. How I Balance the Valgus Knee
Mark W. Pagnano, MD, Rochester, MN
- VI. How I Deal with a Flexion Contracture
Ormonde M. Mahoney, MD, Athens, GA
- VII. How I Perform Measured Resection
Thomas S. Thornhill, MD, Boston, MA
- VIII. How I Perform Gap Balancing
Thomas K. Fehring, MD, Charlotte, NC
- IX. How I Cement
Thomas P. Sculco, MD, New York, NY
- X. Tips for the Obese Knee
Robert T. Trousdale, MD, Rochester, MN
- XI. How I Preoperatively Plan
William J. Maloney, MD, Redwood City, CA
- XII. How I Perform a Standard Revision Approach (Incisions, etc.)
Thomas P. Vail, MD, San Francisco, CA
- XIII. How I Perform an Extensile Approach (Quad Snips, TTO)
David G. Lewallen, MD, Rochester, MN
- XIV. How I Remove Components
Steven J. MacDonald, MD, London, ON, Canada
- XV. How I Use Stems
Daniel J. Berry, MD, Rochester, MN
- XVI. How I Use Bone Graft
Aaron A. Hofmann, MD, Salt Lake City, UT
- XVII. How I Use Sleeves
Douglas A. Dennis, MD, Denver, CO
- XVIII. How I Use Cones/Augments
Arlen D. Hanssen, MD, Rochester, MN
- XIV. How I Balance the Revision Knee
Giles R. Scuderi, MD, New York, NY
- XX. How I Determine Constraint
Robert E. Booth Jr, MD, Philadelphia, PA

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Wednesday, March 12

SYMPOSIUM

1:30 PM — 3:30 PM

Theater B

Complexity of Delivering Orthopaedic Care: The Stakeholders Speak (P)



Moderator: *Khaled J. Saleh, MD, MSc, Springfield, IL*

Recommendations for future-focused orthopedic surgeons and healthcare administrators to consider as they seek newly adaptive, mutually reinforcing, management systems to drive the level of orthopaedic care our nation deserves at a cost it can afford.

- I. The State of Health Care
Khaled J. Saleh, MD, MSc, Springfield, IL
- II. Achieving Standardization in Orthopaedic Care
Kevin J. Bozic, MD, MBA, San Francisco, CA
- III. Challenges in Orthopaedic Care Delivery: A Case Study
Daniel M. Adair, MD, Springfield, IL
- IV. Minimizing Development of Change-Resistant Organisms: Surgeon's Perspective
Charles D. Callaban, PhD, MBA, Springfield, IL
- V. Millennials: The Next Generation of Orthopaedic Physicians
Blaine Manning, BS, Springfield, IL, Jamal Saleh, Springfield, IL
- VI. Minimizing Development of Change-Resistant Organisms: Patient's Perspective
Charles D. Callaban, PhD, MBA, Springfield, IL, Khaled J. Saleh, MD, MSc, Springfield, IL

INSTRUCTIONAL COURSE LECTURE

1:30 PM — 3:30 PM

241 Outpatient Arthroplasty: Same Day, Home Safe

Moderator: *Keith R. Berend, MD, New Albany, OH*
Michael E. Berend, MD, Mooresville, IN
Richard A. Berger, MD, Chicago, IL
Mark A. Hartzband, MD, Franklin Lakes, NJ

Understanding and addressing safely, the reasons that surgeons and patients believe they “need” a hospital admission is the cornerstone to outpatient arthroplasty. Will review the surgical techniques and perioperative factors.

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Room 356

Periprosthetic Infection: The Algorithmic Approach and the Emerging Evidence

Moderator: *Javad Parvizi, MD, FRCS, Philadelphia, PA*
Bryan D. Springer, MD, Charlotte, NC
Craig J. Della Valle, MD, Chicago, IL
Fares S. Haddad, FRCS, London, United Kingdom

Management of periprosthetic joint infection will be discussed and all hot topics related to management of PJI. The course will be divided to three sections: prevention, diagnosis and surgical treatment of PJI.

243



Room 276

Biologic Augmentation of Tendon-Bone Healing: Where Are We Now?

Moderator: *Joshua, Dines, MD, Great Neck, NY*
Scott A. Rodeo, MD, New York, NY
George A. Murrell, MD, Kogarah, Australia
Joseph A. Abboud, MD, Philadelphia, PA

Review of the biology, indications and evidenced-based outcomes of biologic augmentation of tendon to bone healing for the clinician. Current options and future state-of-the art discussed, including the use of single growth factors, platelet rich plasma (PRP), cell-based technologies, and scaffolds for anterior cruciate ligament (ACL), rotator cuff, and tendinopathy surgery.

244



Room 221

The Land of Ligaments: Navigating Sprains, Strains and Ruptures About the Foot and Ankle

Moderator: *Steven L. Haddad, MD, Glenview, IL*
Thomas O. Clanton, MD, Vail, CO
Robert B. Anderson, MD, Charlotte, NC
J. Chris Coetzee, MD, Edina, MN

Simple and complex injuries to the syndesmosis, lateral collateral ligaments, deltoid ligament, and Lisfranc ligament. Master diagnostic and management strategies to achieve optimal reconstruction and appropriate return-to-play through didactic and case based approach.

245



Room 350

How to Build a Safe and Quality Orthopaedic OR Team in 2014: A Tool Kit to Improve Surgical Outcomes for Your Patients

Moderator: *William J. Robb III, MD, Evanston, IL*
David Jeusevar, MD, MBA, Saint George, UT
Dwight W. Burney III, MD, Albuquerque, NM
William J. Richardson, MD, Durham, NC

Surgical safety is essential to provision of optimal orthopaedic care in all orthopaedic settings. Six critical elements of surgical safety have been identified based upon analysis of surgical errors: 1. Surgeon, Surgical Team and Patient Communication, 2. Surgical Consent, 3. Surgical Side/Site/Procedure/Level/implant/Patient Confirmation, 4. Surgical Team Concentration, 5. Surgical Process Consistency and 6. Systematic Surgical Data Collection and Analysis. Establish why using these six elements of safety in orthopaedic practice is important and how you can implement these surgical safety tools and techniques in your practice to improve orthopaedic outcomes.

An alphabetical faculty financial disclosure list can be found starting on page 312.

Wednesday, March 12

246

**Contemporary Management of Dupuytren's Contracture**

Moderator: Marco Rizzo, MD, Rochester, MN
 Prosper Benhaim, MD, Los Angeles, CA
 Lawrence C. Hurst, MD, Stony Brook, NY
 Peter J. Stern, MD, Cincinnati, OH



Room
262

Comprehensive review of the pathophysiology and management of Dupuytren's contracture with treatment focus on surgical intervention, needle aponeurotomy and collagenase.

247

**Current Perspectives on the Diagnosis and Management of DDH through Early Adulthood**

Co-Moderators: Stuart L. Weinstein, MD, Iowa City, IA
 Dennis R. Wenger, MD, San Diego, CA
 Klaus Siebenrock, MD, Bern, Switzerland
 Pablo Castaneda, MD, Mexico City, Mexico



Room
215

Provide the international perspective to the diagnosis and management of developmental hip dysplasia and dislocation from birth through early adulthood.

248

**Strategic Positioning and Marketing**

Moderator: Eric N. Berkowitz, PhD, Amherst, MA

Room
208

Session will focus on developing market responsive strategies to attract patients, referrals and managed care subscribers. Understanding how to develop market responsive strategic plans along with recognizing what physicians, patients, and other customers are buying from your organization is essential in an evolving health care market. As health care moves from a fee-for-service to managed care market, the strategies involving promotion, pricing, and distribution of services must also be refined and will be reviewed. Identify market needs, understand how physicians and patients make choices among organizations, determine your marketplace differential. Learn strategies for market research, pricing and advertising. Develop methods for controlling patient flow and enhancing bargaining strategy.

249

**Rotator Cuff Repair 2014: Current Principles and New Dimensions**

Moderator: Leesa M. Galatz, MD, Saint Louis, MO
 Olivier Verborgt, MD, PhD, Wilrijk, Belgium
 Christopher S. Ahmad, MD, New York, NY
 Bradford O. Parsons, MD, New York, NY



Room
353

Evidence based discussion of controversial issues surrounding rotator cuff repair including the latest science of tendon healing and augmentation opportunities, and the effect of surgical approach and devices on results. Latest techniques for repair are demonstrated. International faculty offers a unique commentary on future directions and the impact of economics on surgical decision making.

250

**Shoulder Instability**

Moderator: April D. Armstrong, MD, Hershey, PA
 Brian R. Wolf, MD, Iowa City, IA
 Anand M. Murthi, MD, Baltimore, MD
 Robert Z. Tashjian, MD, Salt Lake City, UT



Room
218

Will discuss the anatomy of the shoulder and arthroscopic portals, and techniques of anterior and posterior shoulder instability repairs.

251

**MRI of the Spine: Essentials for the Orthopaedic Surgeon**

Moderator: A J. Khanna, MD, Bethesda, MD
 John A. Carrino, MD, Baltimore, MD
 Khaled M. Kebaish, MD, Baltimore, MD

Room
271

Review the essential and advanced concepts in spine MRI and provide attendees with a systematic approach to the evaluation of these studies.

252

**Cases and Controversies in Treatment of SLAP Injuries**

Moderator: Felix H. Savoie III, MD, New Orleans, LA
 Michael J. O'Brien, MD, New Orleans, LA
 Neal S. ElAttrache, MD, Los Angeles, CA
 Richard K. Ryu, MD, Santa Barbara, CA

Room
260

Improve diagnostic skills, and then learn to use these skills to determine the best treatment option for each case: Rehabilitation, Repair, or Tenodesis. Cases presented will include the young overhead athlete, a highly active middle age patient, a work related injury with pain, and a relatively sedentary patient with a positive MRI for a SLAP lesion. Emphasis on accurate physical examination techniques.

253

**ACL Revision Reconstruction Technical Issues: A Case Based Approach**

Moderator: Rick W. Wright, MD, Saint Louis, MO
 Thomas M. DeBerardino, MD, Farmington, CT
 Kurt P. Spindler, MD, Nashville, TN
 Michael J. Stuart, MD, Rochester, MN

Room
207

Revision ACL reconstructions result in worse outcomes than primary reconstructions. Focus on cases that demonstrate technical issues including preoperative assessment, graft choice, and femoral and tibial tunnel issues including bone grafting.

254

**Comprehensive Care of Fragility Fractures**

Moderator: Stephen L. Kates, MD, Rochester, NY
 Alexandra K. Schwartz, MD, San Diego, CA
 Troy H. Caron, DO, Springfield, MO



Room
347

Establishing a hip fracture service, hip fractures - tips to avoid surgical failure, post-fracture osteoporosis for the orthopaedic surgeon, pearls on hip fracture care.

Wednesday, March 12

255



Complex Proximal Tibia Fractures: Work Up, Surgical Approaches and Definitive Treatment Options

Moderator: *Philip R. Wolinsky, MD, Sacramento, CA*
Nirmal C. Tejwani, MD, New York, NY
Bruce Ziran, MD, Atlanta, GA
Brad J. Yoo, MD, Sacramento, CA

Room
352

Discussion of intra-and-extra-articular proximal tibia fracture evaluation and management including soft tissue injuries, surgical approaches and reduction and fixation strategies.

256



The Pre-Arthritic Hip in the Young, Active Patient: How Do You Approach It – Scope vs Open, Acetabulum or Femur: A Case Based ICL

Moderator: *Marc Safran, MD, Redwood City, CA*
J. W. Thomas Byrd, MD, Nashville, TN
Michael Leunig, PhD, Zurich, Switzerland
John C. Clohisy, MD, Saint Louis, MO

Room
270

Will review the different treatment options for femoroacetabular impingement and hip dysplasia. Including arthroscopic treatment, as well as open acetabular based and open femoral osteotomy based approaches.

FD5

Room
217

Video Production for Orthopaedic Surgeons: Getting the Award, Making the Difference

Moderator: *Kevin D. Plancher, MD, MS, New York, NY*
Cesare Faldini, MD, Bologna, Italy

Video is one of orthopaedic educations most widely used instructional tools. This workshop will teach you how to critically evaluate the orthopaedic technique videos you watch, and how to create award winning orthopaedic videos of your own.

PAPER PRESENTATION

1:30 PM — 3:30 PM

Theater A

Adult Reconstruction Hip II: Bearing Surfaces

Moderator(s): *David W. Manning, MD, Chicago, IL*
Edward Stolarski, MD, Sarasota, FL

1:30 PM

PAPER: 241

Randomized Controlled Trial Comparing Wear of Oxinium and Cobalt-Chrome on Standard and Cross-Linked Polyethylene

Zachary Morison, MSc
Sunit Patil, FRCS, Toronto, ON, Canada
Emil H. Schemitsch, MD, Toronto, ON, Canada
James P. Waddell, MD, Toronto, ON, Canada

There was no reduction in wear rate by using Oxinium in place of cobalt-chrome femoral heads at early follow-up.

1:36 PM

PAPER: 242

Oxidized Zirconium Femoral Heads in Total Hip Arthroplasty: A Five-Year Follow Up using Radiostereometric Analysis

Benedikt A. Jonsson, MD, Bergen, Norway
Thomas Kadar, MD, Bergen, Norway
Leif I. Havelin, MD, Bergen, Norway
Kristin Haugan, MA, Trondheim, Norway
Birgitte Espehaug, PhD, Bergen, Norway
Terje Stokke, Flaktveit, Norway
Kari Indrekvam, MD, Bergen, Norway
Ove N. Furnes, MD, Bergen, Norway
Geir Hallan, MD, Bergen, Norway

In this RCT we found no advantage of Oxidized Zirconium femoral heads over Cobalt Chromium with respect to polyethylene wear as measured with RSA in cemented THA using both UHMWPE and HXLPE cups.

1:42 PM

PAPER: 243

◆ Ceramic-on-Ceramic and Ceramic-on-Highly-X-Linked PE in Same Pts. with Primary Cementless THA

Young-Hoo Kim, MD, Seoul, Republic of Korea
Jangwon Park, MD, Seoul, Republic of Korea
Jun S. Kim, MD, Seoul, Republic of Korea
Jeong-Hwan Oh, Seoul, Republic of Korea

Cementless THA with Al-on-Al ceramic or Al-on- highly-X-linked PE bearings in 100 pts. (200 hips) younger than 50 years provided high rate of survivorship without osteolysis.

Discussion – 6 Minutes

1:54 PM

PAPER: 244

Radiostereometric Analysis of Femoral Head Penetration in Cross-Linked Polyethylene in THR Patients

David C. Ayers, MD, Worcester, MA
Anthony Porter Jr, MD, Worcester, MA
Benjamin M. Snyder, MD, Worcester, MA
Marie E. Walcott, MD, Worcester, MA
Michelle Aubin, MD, Worcester, MA
Jacob M. Drew, MD, Charlotte, NC
Meridith E. Greene, Boston, MA
Henrik Malchau, MD, Boston, MA
Charles R. Bragdon, PhD, Boston, MA

In young, active THR patients highly crosslinked polyethylene liners demonstrated less wear than conventional liners by RSA analysis, and had outstanding clinical outcomes at 5 years.

Wednesday, March 12

2:00 PM

PAPER: 245

Wear Rates of Highly Cross Linked Polyethylene with 36mm Femoral Heads - A Prospective Study With Five-Year Follow Up

Elango Selvarajah, ChB, MB, Christchurch, New Zealand
Gary J. Hooper, MD, Christchurch, New Zealand
Kyle C. Grabowski, Christchurch, New Zealand
Grahame S. Inglis, MD, Christchurch, New Zealand
Tim Woodfield, MSc, PhD, Christchurch, New Zealand
Chris Frampton, Christchurch, New Zealand

Prospective study of 100 total hip arthroplasties, shows 0.1mm/year steady state wear rate in highly cross linked polyethylene when used with 36mm femoral heads.

2:06 PM

PAPER: 246

Fixation and Wear with Contemporary Acetabular Components and Cross-linked Polyethylene at 10 Years

Nicholas Bedard, MD, Iowa City, IA
John J. Callaghan, MD, Iowa City, IA
Michael Stefl, MD, Santa Monica, CA
Tyler J. Willman, BS, Iowa City, IA
Steve S. Liu, MD, Iowa City, IA
Yubo Gao, PhD, Iowa City, IA
Devon D. Goetz, MD, West Des Moines, IA

At minimum 10 year follow-up using a contemporary cementless acetabular construct and moderately cross-linked polyethylene liner, excellent fixation and low bearing surface wear has been demonstrated.

Discussion – 6 Minutes

2:18 PM

PAPER: 247

◆ Twelve-Year Comparative Assessment of Metal-on-metal vs. Ceramic-on-polyethylene Small Head THA

Anne Lubbeke-Wolff, MD, DSc, Geneva, Switzerland
Amanda Gonzalez, Geneva, Switzerland
Guido Garavaglia, MD, Maggia, Switzerland
Constantinos Rousos, MD
Alexis Bonvin, MD, Geneva, Switzerland
Laurent-Panayiotis Christofilopoulos, Geneva, Switzerland
Richard E. Stern, MD, Geneva, Switzerland
Robin E. Peter, MD, Geneva, Switzerland
Pierre J. Hoffmeyer, MD, Geneva, Switzerland

We found similar results for the MoM and CoP bearings up to ten years postoperative. However, after ten years MoM bearing small head THAs had a significantly higher risk for all-cause revision.

2:24 PM

PAPER: 248

Effect of Bearing Surface on Mid-term Survivalship of Total Hip Replacement

Eric R. Bohm, MD, Winnipeg, MB, Canada
Nicole De Guia, MSc, Toronto, ON, Canada
Michael Dunbar, MD, Halifax, NS, Canada
Vivian T. Poon, MSc, Toronto, ON, Canada
Michael Terner, MSc, Toronto, ON, Canada

Using registry data, we did not find evidence that new THA bearing designs (cross linked poly, ceramic, metal or resurfacing) improves 5 year survival. Large head metal on metal decreases survival.

2:30 PM

PAPER: 249

3-Year Multicenter RSA Evaluation Vitamin E Diffused Highly Cross-linked Poly Liners and Acetabular Cup Stability

Nanna Sillesen, MD, Boston, MA
Meridith E. Greene, Boston, MA
Audrey Nebergall, Boston, MA
Mogens B. Laursen, MD, PhD, Aalborg, Denmark
Anders Troelsen, MD, PhD, Koege, Denmark
Henrik Malchau, MD, Boston, MA

Multicenter results show little to no wear of vitamin E diffused highly cross-linked polyethylene liners with metal or ceramic 32mm heads and stable porous-titanium coated acetabular cups at 3 years.

Discussion – 6 Minutes

2:42 PM

PAPER: 250

Wear of Large Metal on Highly Cross-Linked Polyethylene Articulations Measured by RSA

Stuart A. Callary, BS, Adelaide, Australia
Oksana Holubowycz, PhD, MPH, Adelaide, Australia
Donald Howie, MD, PhD, Adelaide, Australia

This study, the first randomized study using RSA to compare wear between 36 and 28 mm metal on HXLPE articulations, found no difference in proximal wear at 2 years after total hip arthroplasty.

2:48 PM

PAPER: 251

10-year Follow Up of Highly Cross-linked Polyethylene Using Radiostereometric Analysis (RSA)

Audrey Nebergall, Boston, MA
Meridith E. Greene, Boston, MA
Harry E. Rubash, MD, Boston, MA
Janet Dorrwachter, MSN, ANP-BC, Boston, MA
Charles R. Bragdon, PhD, Boston, MA
Henrik Malchau, MD, Boston, MA

The RSA results show no change in femoral head penetration into or steady state wear of highly cross-linked polyethylene (HXLPE) liners with 28 or 36mm femoral heads over 10 years in vivo.

Wednesday, March 12

2:54 PM

PAPER: 252

Volumetric Wear of Highly Cross-linked Polyethylene in Total Hip Arthroplasty - A Ten Year Double-blind RCT using RSA

Geraint E. Thomas, MA, MBBS, Oxford, United Kingdom
Patrick Garfjeld Roberts, MBBS, Oxford, United Kingdom
Antony Palmer, MA, BMBCh, Oxford, United Kingdom
Barbara Marks, Oxford, United Kingdom
Adrian Taylor, MBBS, FRCS, Oxford, United Kingdom
Peter McLardy-Smith, FRCS, Oxford, United Kingdom
David W. Murray, MD, Oxford, United Kingdom
Sion Glyn-Jones, MA MBBS, Oxford, United Kingdom

In a ten year double-blind randomised controlled trial using radiostereometric analysis, wear of HXLPE is significantly lower than that of conventional UHMWPE.

Discussion – 6 Minutes

3:06 PM

PAPER: 253

Osteolysis and Wear of Large and Standard Metal on Highly Cross-Linked Polyethylene Articulations

Oksana Holubowycz, PhD, MPH, Adelaide, Australia
Donald Howie, MD, PhD, Adelaide, Australia
Lucian B. Solomon, MD, Hyde Park, Australia
Caroline R. Moran, BS, Adelaide, Australia

Seven years after THA with a metal on HXLPE articulation, 8 of 101 patients with no pre-existing acetabular cysts had periacetabular osteolytic lesions >1cm³ in the absence of significant HXLPE wear.

3:12 PM

PAPER: 254

Epidemiology of Total Hip Arthroplasty Bearing Surfaces Used in the United States, 2007 - 2011

James E. Ho, MD, Chicago, IL
Yu Ho, PhD, Chicago, IL
Samuel J. Chmell, MD, Chicago, IL

An epidemiology study was conducted to investigate national and regional utilization trends of four bearing surface types used in total hip arthroplasty in the United States from 2007 – 2011.

3:18 PM

PAPER: 255

Trends in Total Hip Arthroplasty Implant Utilization in the United States

Kevin J. Bozic, MD, MBA, San Francisco, CA
Mandeep Lebil, San Francisco, CA

THA implant usage trends favor cementless fixation, metal-on-polyethylene or ceramic-on-polyethylene bearings, modular acetabular cups, and large diameter femoral heads.

Discussion – 6 Minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 245

Foot and Ankle II: Tendons, OCD, and More

Moderator(s): Eric Giza, MD, Sacramento, CA
Sandra E. Klein, MD, Saint Louis, MO

1:30 PM

PAPER: 256

Achilles Tendon Rupture: A Biomechanical Evaluation of Varying the Number of Loops in a Physiological Model

Qais Naziri, MD, Brooklyn, NY
Preston W. Grieco, BA, Thornwood, NY
Westley Hayes, MS, Brooklyn, NY
David B. Frumberg, MD, Brooklyn, NY
Maxwell Weinberg, BS, Scarsdale, NY
Jaime A. Uribe, MD, Albertson, NY
David J. Hip-Flores, MD, Rockville, MD

We sought to determine the effect of suturing the frayed ends of a ruptured tendon in an in-vitro Achilles model. Additional sutures in the frayed segment didn't augment the biomechanical strength.

1:36 PM

PAPER: 257

Acute Achilles Tendon Ruptures: Results of Minimally Invasive Approach and Early Rehabilitation

Nirmal C. Tejwani, MD, New York, NY
James Lee, ME, New York, NY

A review of 41 Achilles tendon ruptures repaired using a minimally invasive approach with an accelerated rehabilitation and weight bearing program showed no re-ruptures and excellent outcome.

1:42 PM

PAPER: 258

Treatment of Acute Insertional Achilles Ruptures

Jamal Ahmad, MD, Philadelphia, PA
Kennis Jones, BA, Philadelphia, PA
Steven M. Raikin, MD, Philadelphia, PA

Surgical treatment of insertional Achilles tendon ruptures results in improved function and pain.

Discussion – 6 Minutes

1:54 PM

PAPER: 259

A New Technique for Reconstruction of the Neglected Achilles Tendon Rupture

Vipin Asopa, MRCS, Surrey, United Kingdom
James Clayton, Adelaide, Australia
Robert Douglas, Adelaide, Australia

We describe a free-flap modification of the Lindholm technique of repair that eliminates the bulk and demonstrates excellent clinical results.

Wednesday, March 12

2:00 PM

PAPER: 260

The Use of an Achilles Tendon Turndown to Treat Chronic Achilles Ruptures with Large Defects

Jamal Ahmad, MD, Philadelphia, PA
Steven M. Raikin, MD, Philadelphia, PA

Our method of Achilles reconstruction of chronic ruptures with large defects results in a high rate of improved patient function and pain relief.

2:06 PM

PAPER: 261

Reconstruction of Chronic Achilles Tendon Ruptures Using Scar Tissue Located Between the Tendon Stumps

Toshito Yasuda, MD, Takatsuki City, Japan
Ryuzo Okuda, MD, Kyoto, Japan
Tsuyoshi Jotoku, MD, Takatsuki, Osaka, Japan
Hiroaki Shima, MD, Takatsuki City, Japan
Takashi Hida, MD, Osaka, Japan
Masashi Neo, Takatsuki, Japan

Our newly devised surgical procedure using scar tissue between stumps was effective for reconstruction of chronic Achilles tendon ruptures without sacrificing normal autologous tissue.

Discussion – 6 Minutes

2:18 PM

PAPER: 262

Outcomes of Surgical Treatment for Insertional Achilles Tendinopathy Using a Central Tendon Splitting Approach

Elizabeth A. Martin, MD, Rochester, NY
Ruth Chimenti, DPT, Rochester, NY
Andrew Hollenbeck, BS, Candor, NY
Sara L. Miniaci, MD, Rochester, NY
Josh Tome, MS, Rochester, NY
John P. Ketz, MD, Pittsford, NY
Jeff R. Houck, PhD, PT, Rochester, NY
Adolph S. Flemister Jr, MD, Rochester, NY

The central tendon splitting approach for insertional Achilles tendinopathy afforded excellent functional outcomes, good pain relief and high satisfaction despite decreased plantarflexion strength.

2:24 PM

PAPER: 263

Flexor Hallucis Longus Transfer for Insertional Achilles Tendinopathy: A Prospective, Randomized Study

Kenneth Hunt, MD, Redwood City, CA
Carroll P. Jones, MD, Charlotte, NC
Bruce E. Cohen, MD, Charlotte, NC
W H. Davis, MD, Charlotte, NC
Robert B. Anderson, MD, Charlotte, NC

Compared to Achilles debridement alone, FHL augmentation resulted in greater ankle plantarflexion strength and similar clinical outcome, without loss of hallux strength, in patients age 50 and over.

2:30 PM

PAPER: 264

Comparison of Surgical Outcome in Peroneal Tendon Dislocations with and without Fibular Groove Deepening

Jae Ho Cho, MD, Seoul, Republic of Korea
Woo Chun Lee, Seoul, Republic of Korea
Hong Joon Choi, MD, Seoul, Republic of Korea
Chulhyun Park, MD, Daegu, Republic of Korea
Dong-Il Chun, Seoul, Republic of Korea
Kang Lee, MD, Seoul, Republic of Korea
Tae Keun Ahn, MD, Seoul, Republic of Korea
Young Yi, MD, Seoul, Republic of Korea
Jiyong Ahn, MD, Seoul, Republic of Korea

This study confirms the previous reported results of the isolated repair of retinaculum without fibular groove deepening with cohort study.

Discussion – 6 Minutes

2:42 PM

PAPER: 265

Characterizing the Molecular Biology of Pain and Degeneration in Posterior Tibial Tendon Dysfunction

David M. Tainter, BSE, Durham, NC
Selene G. Parekh, MBA, MD, Cary, NC
Richard Bell, BS, Durham, NC
James A. Nunley II, MD, Durham, NC
Mark E. Easley, MD, Durham, NC
Liufang Jing, Durham, NC
Janet L. Huebner, Durham, NC
Virginia B. Kraus, PhD, Durham, NC
Samuel B. Adams Jr, MD, Durham, NC

The purpose of this study was to characterize the inflammatory cytokine, matrix metalloprotease, and pain neurotransmitter profiles in the diseased posterior tibial tendon and tendon insertion.

2:48 PM

PAPER: 266

Functional Outcomes of Suture Bridge vs. Bone Tunnel Technique for Chronic Ankle Instability in Athletes

Byung-Ki Cho, MD, Cheong-Ju, Republic of Korea
Yong-Min Kim, MD, Cheongju, Republic of Korea
Hyun-Chul Shon, MD, Cheongju, Republic of Korea
Kyoung Jin Park, MD, Cheongju, Republic of Korea

Both suture bridge and bone tunnel technique are good surgical methods for ankle instability in athletes. Suture bridge technique has advantage of more mechanical stability in rehabilitation period

2:54 PM

PAPER: 267

New Option of the Treatment for Osteonecrosis of the Talus

Narihito Kodama, MD, Shiga, Japan
Yoshitaka Matsusue, Otsu, Shiga, Japan

New option of the treatment for osteonecrosis of the talus, with vascularized bone graft (VBG) using one of the pedicle divided from the tibial arterial arch, was considered.

Discussion – 6 Minutes

Wednesday, March 12

3:06 PM

PAPER: 268

Clinical and MRI Outcomes After Arthroscopic Microfracture of Osteochondral Lesions of the Distal Tibial Plafond

Keir A. Ross, McKinney, TX
 Charles P. Hannon, BS, New York, NY
 Timothy W. Deyer, MD, New York, NY
 Niall A. Smyth, MD, South Miami, FL
 MaCalus Hogan, MD, Wexford, PA
 Huong Do, MA, New York, NY
 John G. Kennedy, MD, New York, NY

Arthroscopic microfracture of 32 tibial osteochondral lesions resulted in improved clinical outcomes and repair tissue inferior to normal cartilage on MRI. Outcomes may decline with increasing age.

3:12 PM

PAPER: 269

Evaluation of Pain, Activity and Patient-reported Outcomes of Percutaneous Drilling to Treat Ankle Osteonecrosis

Qais Naziri, MD, Brooklyn, NY
 Kimona Issa, MD, Baltimore, MD
 Bhaveen Kapadia, MD, Baltimore, MD
 Bradley M. Lamm, DPM, Luthule Timonimonium, MD
 Lynne C. Jones, PhD, Baltimore, MD
 Michael A. Mont, MD, Baltimore, MD

Improvements in pain and activity levels as well as patient-reported outcomes of percutaneous drilling to treat early-stage osteonecrosis of the distal tibia and talus are encouraging.

3:18 PM

PAPER: 270

Functional and MRI Outcomes after Microfracture with Bone Marrow Aspirate for Talar Osteochondral Lesions

Charles P. Hannon, BS, New York, NY
 Keir A. Ross, McKinney, TX
 Christopher D. Murawski, Stroudsburg, PA
 Timothy W. Deyer, MD, New York, NY
 Niall A. Smyth, MD, South Miami, FL
 Huong Do, MA, New York, NY
 MaCalus Hogan, MD, Wexford, PA
 John G. Kennedy, MD, New York, NY

Arthroscopic microfracture with bone marrow aspirate of talar osteochondral lesions improved clinical outcomes and created non-hyaline repair tissue on T2 mapping. Outcomes declined with lesion size.

Discussion – 6 Minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 265

Trauma III: Femur/Hip

Moderator(s): Steven P. Haman, MD, Lima, OH,
 Edward J. Harvey, MD, MSc, Montreal, QC, Canada
 Yvonne Murtha, MD, Wichita, KS

1:30 PM

PAPER: 271

An Evidence Based Warfarin Management Protocol Reduces Surgical Delay in Hip Fracture Patients

Muhammed A. Khan, MBBS, MRCS Ed, London, United Kingdom
 Iftikhar Ahmed, MBBS, MSc, Kingston Upon Hull, United Kingdom
 Amr Mohsen, FRCS, FRCS, , Hull, United Kingdom

Implementation of a perioperative warfarin management protocol can expedite surgery in hip fracture patients but does not appear to reduce hospital length of stay.

1:36 PM

PAPER: 272

The Implications of Clopidogrel on the Management of Hip Fractures: An Institutional Review

Stephen Preston, MD, London, ON, Canada
 Sagar Desai, MD, London, ON, Canada
 Lyndsay Somerville, PhD, London, ON, Canada
 Dennis Angevine, London, ON, Canada
 David Sanders, MD, London, ON, Canada
 James Howard, MD, London, ON, Canada

We reviewed our institution's management of hip fractures in those taking Clopidogrel (delay to surgery) and determined its effects on bleeding risk, length of hospital stay, morbidity and mortality.

1:42 PM

PAPER: 273

ICU Admission and Vasopressor Support Results in Poor Survivorship after Hip Fracture Surgery

Diren Arsoy, MD, Rochester, MN
 Atul F. Kamath, MD, Massapequa, NY
 Joseph R. Cass, MD, Rochester, MN
 Arun Subramanian, Rochester, MN
 Stephen A. Sems, MD, Rochester, MN
 Robert T. Trousdale, MD, Rochester, MN

ICU admission after hip fracture surgery portends poor survival. 36.7% of hip fracture patients required ICU admission; mortality rate for patients requiring vasopressors was 93% at final follow-up.

Discussion – 6 Minutes

1:54 PM

PAPER: 274

The Cost-Effectiveness of Prophylactic Intramedullary Nailing for Bisphosphonate Associated Femoral Fractures

Kenneth A. Egol, MD, New York, NY
 James Lee, ME, New York, NY
 Michelle Abghari, BS, Detroit, MI
 Zehava Sadka Rosenberg, New York, NY
 Nirmal C. Tejwani, MD, New York, NY

Prophylactic intramedullary nailing is generally the superior option leading to fracture healing in the short-term, and we recommend the use of cost-effectiveness ratios in the decision-making process.

An alphabetical faculty financial disclosure list can be found starting on page 312.

Wednesday, March 12

2:00 PM

PAPER: 275

Symptomatic Atypical Femoral Fractures are Related to Underlying Hip Geometry

David P. Taormina, MS, New York, NY
 Alejandro Marciano, MD, New York, NY
 Kenneth A. Egol, MD, New York, NY
 Nirmal C. Tejwani, MD, New York, NY

We compared hip anatomy of symptomatic bisphosphonate users to those without and found significantly more varus at the femoral neck.

2:06 PM

PAPER: 276

Atypical Femur Fractures in Patients on Chronic Bisphosphonates: Does Geometry Matter?

Jennifer E. Hagen, MD, Baltimore, MD
 James C. Krieg, MD, Philadelphia, PA
 Susan Ott, MD, Seattle, WA
 Timothy B. Alton, MD, Seattle, WA

There appears to be an association between varus proximal femoral geometry and the propensity for patients on chronic bisphosphonates to develop atypical femoral shaft fractures.

Discussion – 6 Minutes

2:18 PM

PAPER: 277

The Effect of the RIA on the Volume of Embolic Load during Intramedullary Nailing of Femoral Shaft Fractures

Jeremy Hall, MD, FRCS MEd, Toronto, ON, Canada
 Michael D. McKee, MD, Toronto, ON, Canada
 Zachary Morison, MSc
 Niloofar Dehghan, MD, Toronto, ON, Canada
 Milena Vicente, RN, Toronto, ON, Canada
 Christine Schemitsch, Toronto, ON, Canada
 Brad Petrisor, MD, Hamilton, Canada
 Hans J. Kreder, MD, Toronto, ON, Canada
 Emil H. Schemitsch, MD, Toronto, ON, Canada

Using a randomized clinical trial, we sought to determine if the use of the RIA resulted in a decreased amount of emboli compared to standard reaming.

2:24 PM

PAPER: 278

Impact of Surrounding Canal Size on Time to Union Following Femoral Intramedullary Nailing: Does Size Really Matter?

Daniel Seigerman, MD, Hackensack, NJ
 Richard S. Yoon, MD, New York, NY
 Mark Gage, MD, New York, NY
 Philip Lim, BS, MD, Northridge, CA
 John Koerner, MD, Philadelphia, PA
 Neeraj M. Patel, MD, MPH, MBS, New York, NY
 Derek J. Donegan, MD, Philadelphia, PA
 Frank A. Liporace, MD, Englewood Cliffs, NJ

In the treatment of diaphyseal femur fractures, increasing canal size surrounding a 10mm nail does not impact time to union, independent of patient and/or fracture characteristics.

2:30 PM

PAPER: 279

The Effects of Diabetes Medications on Post-operative Long Bone Fracture Healing

Christopher M. Simpson, MChB, Leeds, United Kingdom
 Suribabu Gudipati, MBBS, MRCS, Carmarthen, United Kingdom
 Peter Giannoudis, MD, FRCS, Leeds, United Kingdom

Diabetic medications have a significant impact on the fracture healing process including the timescale and the eventual outcome of union vs. non-union.

Discussion – 6 Minutes

2:42 PM

PAPER: 280

Locked Plating vs. Retrograde Nailing for Distal Femur Fractures: A Multicenter Randomized Trial

Paul Tornetta III, MD, Boston, MA
 Kenneth A. Egol, MD, New York, NY
 Janos P. Ertl, MD, Carmel, IN
 Brian Mullis, MD, Indianapolis, IN
 Cory A. Collinge, MD, Fort Worth, TX
 Robert F. Ostrum, MD, Chapel Hill, NC

The purpose of this study was to evaluate the radiographic, functional and physical outcomes of locked plates vs retrograde nails in an IRB approved randomized controlled trial.

2:48 PM

PAPER: 281

Dynamic Fixation of Distal Femur Fractures using Far Cortical Locking Screws: A Prospective Observational Study

Michael Bottlang, PhD, Portland, OR
 Kirk Hansen, BS, Portland, OR
 Richard E. Gellman, MD, Portland, OR
 Daniel C. Fitzpatrick, MD, Eugene, OR
 Corey J. Vande Zandschulp, MD, Portland, OR
 Daniel V. Sheerin, MD, Eugene, OR
 Erik Kubiak, MD, Salt Lake City, UT
 Steven M. Madey, MD, Portland, OR

This study demonstrated that dynamic fixation of a locking plate with Far Cortical Locking (FCL) screws provides reliable stabilization and may improve healing compared to standard locked plating.

2:54 PM

PAPER: 282

Dynamic Locked Plating of Comminuted Distal Femur Fractures: A Matched Cohort Study

Michael J. Gardner, MD, Saint Louis, MO
 Patricia Babb, Saint Louis, MO
 Christopher McAndrew, MD, Saint Louis, MO
 William M. Ricci, MD, Saint Louis, MO

“Dynamic” locked plating of distal femur fractures, by allowing slight toggle between the plate and bone, is safe and increases callus formation.

Discussion – 6 Minutes

Wednesday, March 12

3:06 PM

PAPER: 283

Long Bone Defects Managed with the Induced Membrane Technique: Treatment Protocol and Clinical Outcomes

Suribabu Gudipati, MBBS, MRCS, Carmarthen, United Kingdom
Paul Harwood, MD, Leeds, United Kingdom
Nikolaos K. Kanakaris, MD, Leeds, United Kingdom
Peter Giannoudis, MD, FRCS, Leeds, United Kingdom

The induced membrane technique appears to be an alternative good option for the treatment of large bone defects secondary to acute bone loss or as a result of chronic infected non-unions

3:12 PM

PAPER: 284

Can Reamer-irrigator-aspirator Replace the Iliac Autografting in Diaphyseal Long Bones Nonunion?

Xavier Flecher, Marseille, France
Jean-Philippe Vivona, Les Pennes Mirabeau, France
Sebastian Parratte, MD, Marseille, France
Jean-Noel A. Argenson, MD, Marseille, France

Autologous anterior iliac crest (AIC) bone graft remains the gold standard for treating tibial or femoral shaft nonunions despite its morbidity.

3:18 PM

PAPER: 285

Management of Long Bone Non-union with the Diamond Concept - Our Institutional Experience

Suribabu Gudipati, MBBS, MRCS, Carmarthen, United Kingdom
Nikolaos K. Kanakaris, MD, Leeds, United Kingdom
Peter Giannoudis, MD, FRCS, MBBS, BS, Leeds, United Kingdom

Diamond concept has allowed restoration of optimal mechanical and biological environment and facilitated fracture healing and high success rate of union in the current study.

Discussion – 6 Minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 345

Pediatrics II: Trauma and Urgencies

Moderator(s): William M. Mirenda, MD, Danville, PA
J. Michael Wattenbarger, MD, Charlotte, NC

1:30 PM

PAPER: 286

Outcomes of Treatment of Pediatric Supracondylar Elbow Fractures at a Non-university Medical Center

Kathleen A. McHale, Alexandria, VA
Mark M. Theiss, MD, Falls Church, VA
Brantley P. Vitek Jr, MD, Oakton, VA

Outcomes of pediatric supracondylar elbow fractures treated surgically by community surgeons compete favorably with those of universities or childrens' hospitals.

1:36 PM

PAPER: 287

Crossed Wires versus Two Lateral Wires in Management of Supracondylar Fracture of the Humerus in Children

Ahmed Hosny, Cairo, Egypt
Mahmoud Abdel Karim, MBBCh, MSc, Cairo, Egypt
M. Hani Mohamadi, Cairo, Egypt

The crossed pin configuration showed more statistically significant difference in stability than lateral pin configuration (P value ; 0.031) in management of supracondylar humeral fracture in children.

1:42 PM

PAPER: 288

Rotation and Coronal Displacement Predict Outcomes in Pediatric Supracondylar Humerus Fractures

Michael A. Flierl, MD, Aurora, CO
Patrick Carry, Aurora, CO
Frank A. Scott, Aurora, CO
Gaia Georgopoulos, MD, Aurora, CO
Nancy H. Miller, MD, Aurora, CO

Sagittal plane rotation and coronal plane displacement on pre-surgical radiographs predict adverse events following the closed reduction and percutaneous pinning of pediatric supracondylar fractures.

Discussion – 6 Minutes

1:54 PM

PAPER: 289

The Effect of C-Arm Orientation on Radiation Exposure during Supracondylar Humerus Fracture Fixation

Raymond Y. Hsu, MD, Providence, RI
Craig R. Lareau, MD, Providence, RI
Jeomsoon Kim, Providence, RI
Sarath C. Koruprolu, MS, Providence, RI
Christopher T. Born, MD, Providence, RI
Jonathan R. Schiller, MD, Providence, RI

This study compares surgeon radiation exposure from upright and inverted C-arm orientations during fixation of pediatric supracondylar humerus fractures.

2:00 PM

PAPER: 290

Fracture of the Medial Humeral Epicondyle in Children: A Comparison of Operative and Nonoperative Management

Marcus D. Biggers II, MD, Memphis, TN
Timothy M. Bert, MD, Phoenix, AZ
Alice Moisan, BSN, RN, CCRP, Memphis, TN
David D. Spence, MD, Memphis, TN
William C. Warner Jr, MD, Germantown, TN
James H. Beaty, MD, Memphis, TN
Jeffrey R. Sawyer, MD, Germantown, TN
Derek M. Kelly, MD, Memphis, TN

Review of Medial Epicondyle Fractures revealed similar union rate and functional outcome between operative and non-operative treatment; but high rate of distal humeral deformity and valgus instability.

Wednesday, March 12

2:06 PM

PAPER: 291

Operative versus Non-operative Treatment of Displaced Proximal Humeral Physeal Fractures: A Matched Cohort

George W. Chaus, MD, Aurora, CO
 Azin Kheirandish Pishkenari, Aurora, CO
 Patrick Carry, Aurora, CO
 Nancy H. Miller, MD, Aurora, CO

Patients matched by age and fracture patterns had similar clinical outcomes regardless of whether they underwent operative or non-operative treatment for a displaced proximal humeral physeal fracture.

Discussion – 6 Minutes

2:18 PM

PAPER: 292

Radiographic Evaluation of Pediatric Distal Radius Fractures: Implications on Clinical Care and Cost

Gaurav A. Luther, MD, Boston, MA
 Patricia Miller, MS, Boston, MA
 Peter M. Waters, MD, Boston, MA
 Donald S. Bae, MD, Boston, MA

The week 4 x-ray adds little value to clinical decision making, and its elimination would result in a savings of 4.8% to 11.9% in the overall cost of non-operative fracture care.

2:24 PM

PAPER: 293

Long Arm Cast Versus Double Sugar Tong Splint for Treatment of Pediatric Distal Forearm Fractures

Jay B. Cook, MD, Kailua, HI
 Justin J. Ernat, MD, Tripler AMC, HI
 Daniel Song, MD, APO, AE
 Jeffrey Levy, DO, Fort Eustis, VA

Double sugar tong splints are equivalent to long arm casts in maintaining reduction in pediatric distal forearm fractures.

2:30 PM

PAPER: 294

To Cast, to Saw and Not to Injure: Can Safety Strips Decrease Cast Saw Injuries?

Natalie Stork, MD, Madison, WI
 Rachel L. Lenhart, MS, Middleton, WI
 Blaise A. Nemeth, Madison, WI
 Ken J. Noonan, MD, Madison, WI
 Sarah A. Sund, BS, Madison, WI
 Matthew A. Halanski, MD, Madison, WI

Cast saw injuries are iatrogenic events that can occur when splitting or removing casts. This study demonstrates the potential effectiveness of casting safety strips in reducing cast saw injuries.

Discussion – 6 Minutes

2:42 PM

PAPER: 295

Open versus Closed Reduction of Fully Displaced Pediatric Femoral Neck Fractures

Joseph D. Stone, MD, Atlanta, GA
 Mary K. Hill, BA, Aurora, CO
 Eduardo N. Novais, MD, Aurora, CO

Open reduction of fully displaced pediatric femoral neck fractures results in improved quality of reduction and fewer complications, including osteonecrosis (ON), than closed reduction.

2:48 PM

PAPER: 296

Association Between Femoral Shaft and Ipsilateral Femoral Neck Fractures in the Pediatric Population

Lindsey Caldwell, MD, Rochester, NY
 James O. Sanders, MD, Rochester, NY
 John T. Gorczyca, MD, Rochester, NY
 Charles Chan, MD, Irvine, CA

The incidence of ipsilateral femoral shaft and neck fractures is significantly lower in the pediatric trauma population than in adults.

2:54 PM

PAPER: 297

Non-accidental Fractures in Children: An Evaluation of Age and Seasonal Variation

William L. Hennrikus Jr, MD, Hershey, PA
 Laura Carbone, BS, Elizabethtown, PA

This study confirms the findings of previous authors that fractures in children age < 1 year are at a greater risk for abuse than at age 1-2 years.

Discussion – 6 Minutes

3:06 PM

PAPER: 298

Epidemiology, Diagnosis and Treatment of Pericapsular Pyomyositis of the Hip in Children

Megan Mignemi, MD, Nashville, TN
 Travis J. Menge, MD, Nashville, TN
 Heather Cole, Nashville, TN
 Christopher M. Stutz, MD, Nashville, TN
 Jeffrey E. Martus, MD, MS, Nashville, TN
 Steven A. Lovejoy, MD, Nashville, TN
 Gregory A. Mencio, MD, Nashville, TN
 Jonathan G. Schoenecker, MD, Nashville, TN

Pericapsular pyomyositis is twice as common as septic arthritis in children and can be best diagnosed using a combination of CRP, temperature, physical exam, effusion size on ultrasound and MRI.

Wednesday, March 12

3:12 PM

PAPER: 299

Diagnosing Acute Rheumatic Fever or Septic Arthritis in Children: The Value of Serological Inflammatory Markers

Matthew J. Boyle, MD, Durham, NC
 Raakhi M. Mistry, MBBS, Auckland, New Zealand
 Diana Lennon, Auckland, New Zealand
 Karel Chivers, MD, Wellington South, New Zealand
 Wesley P. Bevan, MD, Auckland, New Zealand
 Chris Frampton, Christchurch, New Zealand
 Haemish A. Crawford, MBChB, FRACS, Auckland, New Zealand

In this retrospective analysis of 114 children with acute rheumatic fever (ARF) and 111 children with acute septic arthritis, a high serum ESR and low serum WCC on presentation was predictive of ARF.

3:18 PM

PAPER: 300

Management of Pediatric Synovial Fluid WBC Values Between 25,000-75,000 Following Aspiration

Benton E. Heyworth, MD, Boston, MA
 Benjamin J. Shore, MD, FRCSC, Boston, MA
 Catherine A. Suppan, BA, Boston, MA
 Aubrey M. Wasser, MPH, Boston, MA
 Mininder S. Kocher, MD, MPH, Boston, MA
 Michael P. Glotzbecker, MD, Boston, MA

A substantial percentage of children with synovial fluid WBC values of 25-75K are ultimately diagnosed with culture-positive septic arthritis requiring surgical I&D.

Discussion – 6 Minutes

INSTRUCTIONAL COURSE LECTURE

4:00 PM — 5:00 PM

FD6 Principles of Teaching Across Differences in Culture and Language

Room 217
 Moderator: Guido Marra, MD, Chicago, IL
 Stefano A. Bini, MD, San Francisco, CA
 Xavier A. Duralde, MD, Atlanta, GA

Designed to help attendees implement three general principles for teaching people that do not have English as their first language and/or have cultural norms and operating procedures that are significantly different from those in the United States.

INSTRUCTIONAL COURSE LECTURE

4:00 PM — 6:00 PM

261 Complications after Total Hip Arthroplasty: Current Strategies for Prevention and Treatment



Room 207

Moderator: Craig J. Della Valle, MD, Chicago, IL
 David J. Jacofsky, MD, Phoenix, AZ
 R. Michael Meneghini, MD, Fishers, IN
 Fares S. Haddad, FRCS, London, United Kingdom

Learn to avoid and optimize the management of complications associated with total hip arthroplasty including dislocation and leg length discrepancy, infection, symptomatic DVT and periprosthetic fractures.

262 Update on Unicondylar Knee Replacement



Room 221

Moderator: David F. Dalury, MD, Baltimore, MD
 William A. Jiranek, MD, Richmond, VA
 Jean-Noel A. Argenson, MD, Marseille, France
 William G. Hamilton, MD, Alexandria, VA

Will review the most current information on partial knee replacement and address its role in the treatment of arthritis of the knee in 2014.

263 Tendon Transfers about the Foot and Ankle



Room 356

Moderator: Keith L. Wapner, MD, Philadelphia, PA
 Thomas H. Lee, MD, Westerville, OH
 Bruce E. Cohen, MD, Charlotte, NC

Cover the options of tendon transfers about the foot and ankle for a range of disorders from chronic tendon injury, tendinosis to the use of tendon transfers for reconstructive and realignment in stroke and other neuromuscular disorders. Principles of tendon transfer and the various techniques will be reviewed with emphasis on surgical videos.

264 Differentiating Cervical Spine and Shoulder Pathology: Common Disorders and Key Points of Evaluation and Treatment



Room 260

Moderator: Clinton J. Devin, MD, Nashville, TN
 Charles L. Cox III, MD, Nashville, TN
 Wellington K. Hsu, MD, Chicago, IL
 Thomas R. Duquin, MD, Buffalo, NY

Differentiating cervical spine and shoulder pathology: Common disorders and key points of evaluation and treatment.

Wednesday

Wednesday, March 12

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Room
226**The Management of Thumb Basilar Joint Arthritis**

Moderator: Sanjeev Kakar, MD, Rochester, MN
 Marco Rizzo, MD, Rochester, MN
 A. Lee Osterman, MD, Villanova, PA
 Amy L. Ladd, MD, Palo Alto, CA

Overview as to the pathophysiology of basilar thumb joint arthritis and review the treatment options/available evidence including arthroscopic debridement, trapeziectomy alone or with interposition, trapeziectomy with suspension arthroplasty, arthrodesis and joint replacement. Areas of controversy such as how to address MCP joint hyperextension and the management of failed primary basilar thumb joint reconstructions will be covered. Cases for panel and audience discussion and an algorithm presented.

266

Room
218**The Diagnosis and Management of Pediatric Elbow Injuries That Are Not Supracondylar Fractures**

Moderator: Martin J. Herman, MD, Philadelphia, PA
 Joshua M. Abzug, MD, Timonium, MD
 Bernard D. Horn, MD, Philadelphia, PA
 Scott H. Kozin, MD, Philadelphia, PA

Case-based course discusses pediatric elbow injuries except for supracondylar fractures. Fractures of radial neck, lateral condyle, and medial epicondyle among others will be presented.

267

Room
347**Strategic Positioning and Marketing**

Moderator: Eric N. Berkowitz, PhD, Amherst, MA

Session will focus on developing market responsive strategies to attract patients, referrals and managed care subscribers. Understanding how to develop market responsive strategic plans along with recognizing what physicians, patients, and other customers are buying from your organization is essential in an evolving health care market. As health care moves from a fee-for-service to managed care market, the strategies involving promotion, pricing, and distribution of services must also be refined and will be reviewed. Identify market needs, understand how physicians and patients make choices among organizations, determine your marketplace differential. Learn strategies for market research, pricing and advertising. Develop methods for controlling patient flow and enhancing bargaining strategy.

268

Room
276**All Things Clavicle: From AC to SC and All Points In Between**

Moderator: Gordon I. Groh, MD, Asheville, NC
 Mark A. Mighell, MD, Tampa, FL
 Carl J. Basamania, MD, Edmonds, WA
 W. B. Kibler, MD, Lexington, KY

Management and clinical outcomes of clavicular injuries including midshaft and distal clavicle fractures, as well as ac and sc joint dislocations. Anatomical and biomechanics related to treatment are reviewed.

269

Room
271**Shoulder Arthroplasty: Key Steps to Improve Outcomes and Minimize Complications**

Moderator: John W. Sperling, MD, MBA, Rochester, MN
 Emilie V. Cheung, MD, Redwood City, CA
 George S. Athwal, MD, London, ON, Canada
 Joaquin Sanchez-Sotelo, MD, Rochester, MN

Discuss challenges and latest surgical advances in the treatment of osteoarthritis and cuff tear arthropathy, and the salvage of a failed arthroplasty. Includes case based discussions.

270

Room
208**Current Concepts in Cervical Spine Trauma**

Moderator: Richard J. Bransford, MD, Seattle, WA
 Carlo Bellabarba, MD, Seattle, WA
 Robert W. Molinari, MD, Pittsford, NY
 Timothy A. Moore, MD, Shaker Heights, OH

Review current concepts in evaluation and treatment of cervical spine trauma to include upper and subaxial cervical fractures, and spinal cord injuries.

271

Room
353**Surgical Management of Patellar Instability**

Moderator: Shital N. Parikh, MD, Cincinnati, OH
 Robert A. Teitge, MD, Dearborn, MI
 John P. Fulkerson, MD, Farmington, CT
 David Dejour, MD, Lyon, France

Focus on step-wise approach to the surgical treatment of patellar stabilization addressing each contributing factor.

272

Room
262**Thin Wire Fixation: An Overview**

Moderator: Kevin J. Pugh, MD, Columbus, OH
 J. Tracy Watson, MD, Saint Louis, MO
 Joseph R. Hsu, MD, Charlotte, NC
 Animesh Agarwal, MD, San Antonio, TX

Directed to the generalist taking call or traumatologist who wants add another "arrow to their quiver" and become more familiar with wire external fixation techniques. Will discuss history, biomechanics, periarticular tibial trauma and post-traumatic reconstructive techniques. Lecture, case presentation and case discussion format.

273

Room
350**Acetabular Fractures: A Problem-Oriented, Case-Based Approach**

Moderator: Berton R. Moed, MD, Saint Louis, MO
 Michael D. Stover, MD, Chicago, IL
 Mark S. Vrahas, MD, Boston, MA
 Philip J. Kregor, MD, Nashville, TN

The participant will come away with an improved understanding of the operative management of acetabular fractures occurring in combination with complicating factors. This will be achieved using a case-based approach.

Wednesday, March 12

PAPER PRESENTATION

4:00 PM — 6:00 PM

Theater A

Adult Reconstruction Hip III: Complications

Moderator(s): Kevin L. Garvin, MD, Omaha, NE
William B. Kurtz, MD, Nashville, TN

4:00 PM

PAPER: 301

Total Hip Arthroplasty Survival Stratified According to Body Mass Index

Eric R. Wagner, MD, Rochester, MN
Atul F. Kamath, MD, Massapequa, NY
Kristin Fruth, BS, Rochester, MN
William Harmsen, MS, Rochester, MN
Daniel J. Berry, MD, Rochester, MN

The rate of revision surgery after THA is associated with BMI, increasing in a sigmoidal fashion for BMIs <27 and >32. This study adds to the debate of impact of BMI on the outcomes after primary THA.

4:06 PM

PAPER: 302

Percent Body Fat More Associated with Perioperative Outcomes After Total Joint Arthroplasty than BMI

Cameron K. Ledford, MD, Durham, NC
Ramon R. Thiele, MS, Durham, NC
Robert J. Butler, DPT, PhD, PT, Durham, NC
John S. Appleton Jr, MD, Dallas, TX
Robin M. Queen, PhD, Durham, NC
Samuel S. Wellman, MD, Durham, NC
David E. Attarian, MD, Durham, NC
Michael P. Bolognesi, MD, Durham, NC

Percent body fat may be a more effective measure to use in determining perioperative risks and outcomes associated with total joint arthroplasty, especially those performed in obese patients.

4:12 PM

PAPER: 303

The Effect of Body Mass Index on Outcomes in Total Joint Arthroplasty

Hasham M. Alvi, MD, Chicago, IL
Rachel E. Mednick, MD, Chicago, IL
Lauren Mioton, BS, Nashville, TN
Varun Krishnan, BA, Chicago, IL
David W. Manning, MD, Chicago, IL

This study aimed to look at the effect of Body Mass Index (BMI) on outcomes after total joint arthroplasty.

Discussion – 6 Minutes

4:24 PM

PAPER: 304

Do Functional Gain and Pain Relief After Total Hip Replacement Differ By Patient Obese Status?

Wenjun Li, PhD, Worcester, MA
David C. Ayers, MD, Worcester, MA
Leslie Harrold, MD, MPH, Worcester, MA
Jeroan Allison, MD, Worcester, MA
Courtland G. Lewis, MD, Farmington, CT
Thomas R. Bowen, MD, Danville, PA
Patricia Franklin, MD, MBA, MPH, Worcester, MA

While all patients reported significant functional gains at 6 months post-THR, the mean functional gain was lower in patients with a BMI greater than 35.

4:30 PM

PAPER: 305

Morbid Obesity Alone Affects THA Complication Risk and Resource Utilization - A Matched-Control Study

Michele R. D'Apuzzo, MD, New York, NY
Wendy Novicoff, PhD, Charlottesville, VA
James A. Browne, MD, Charlottesville, VA

Morbid obese patients have a significantly higher risk for select postoperative complications and costs even when matching for comorbid medical conditions linked to obesity.

4:36 PM

PAPER: 306

Thirty-Day Postoperative Complications and Mortality Following Total Hip Arthroplasty: A Study of 17,640 Patients

Philip J. Belmont Jr, MD, El Paso, TX
Gens P. Goodman, DO, El Paso, TX
William G. Hamilton, MD, Alexandria, VA
Brian Waterman, MD, El Paso, TX
Andrew J. Schoenfeld, MD, Ann Arbor, MI

The 2.6% mortality or major complication rate for patients undergoing a primary unilateral Total Hip Arthroplasty confirms the need for diligent medical management during the perioperative period.

Discussion – 6 Minutes

4:48 PM

PAPER: 307

Characterization of Periprosthetic Femur Fractures in 32,644 Primary Total Hip Arthroplasties

Matthew P. Abdel, MD, Eagan, MN
Chad Watts, MD, Rochester, MN
David G. Lewallen, MD, Rochester, MN
Daniel J. Berry, MD, Rochester, MN

Intraoperative fractures are most common in women over 65 treated with an uncemented stem; cumulative risk of postoperative femoral fracture at 25 years was 4.7%.

Wednesday, March 12

4:54 PM

PAPER: 308

MRI Findings Associated with Recalled Modular Neck Femoral Implants

Christopher P. Walsh, MD, Northville, MI
Joseph P. Nessler, MD, Sartell, MN
David C. Markel, MD, Southfield, MI

Retrospective review of prospectively collected data of modular neck femoral stems showing an increased revision rate with findings of synovitis, effusion, tendinopathy, and elevated metal ion levels.

5:00 PM

PAPER: 309

Time to Surgery for Definitive Fixation of Hip Fractures: A Look at Outcomes Based Upon Delay

Hasham M. Alvi, MD, Chicago, IL
Rachel E. Mednick, MD, Chicago, IL
Varun Krishnan, BA, Chicago, IL
Mary J. Kwasny, PhD, Chicago, IL
David W. Manning, MD, Chicago, IL

This study aims to look at outcomes in patients with hip fractures based upon time from admission to definitive surgical fixation.

Discussion – 6 Minutes

5:12 PM

PAPER: 310

Pre-Admission Chlorhexidine Reduces Infections in Joint Arthroplasty: A Prospective, Randomized, Level I Study

Bhaveen Kapadia, MD, Baltimore, MD
Mark J. McElroy, BS, MS, Monroeville, PA
Kimona Issa, MD, Baltimore, MD
Samik Banerjee, MBBS, MS, Baltimore, MD
Sreenath Jagannathan, BS, Baltimore, MD
Michael A. Mont, MD, Baltimore, MD

A pre-operative chlorhexidine cloth applied the night before and the morning of total joint arthroplasty significantly reduced infections when compared to patients receiving standard disinfection.

5:18 PM

PAPER: 311

Risk Factors for Infection after Hip Arthroplasty: Preventable vs. Non-preventable Infection

Michael Phillips, MD, New York, NY
Guy Maoz, MD, New York, NY
James D. Slover, MD, New York, NY
Joseph A. Bosco III, MD, New York, NY
Richard Iorio, MD, New Rochelle, NY

Identify the potentially modifiable risk factors for deep surgical site infections (SSI) after primary hip arthroplasties.

5:24 PM

PAPER: 312

A Randomized Controlled Trial of Triclosan-Coated Sutures in 2,547 Lower Limb Arthroplasty Operations

Cyrus D. Jensen, MBBS, FRCS, Newcastle Upon Tyne, United Kingdom
Andy Sprowson, MD, Warwickshire, United Kingdom
Paul F. Partington, MD, Corbridge, United Kingdom
Ian Carluke, MB ChB, Ashington, United Kingdom
Kevin Emmerson, FRCS Orth, Newcastle Upon Tyne, United Kingdom
Seif S. Asaad, Tyne & Wear, United Kingdom
Roland Pratt, MB, FRCS, North Shields, United Kingdom
Scott Muller, MBBS MD, FRCS, Northumberland, United Kingdom
Mike R. Reed, MBBS MD, Northumberland, United Kingdom

The use of triclosan-coated absorbable sutures resulted in no difference in the surgical site infection rate following lower limb arthroplasty, when compared to an uncoated version of the same suture.

Discussion – 6 Minutes

5:36 PM

PAPER: 313

Thirty-day Outcomes in Insulin-Dependent and Non-Insulin Dependent Diabetics After Lower Extremity Arthroplasty

Francis Lovecchio, BA, Chicago, IL
David W. Manning, MD, Chicago, IL
Alexei Mlodinow, BA, Chicago, IL
Lalit Puri, MD, Glenview, IL
John Kim, MD, Chicago, IL

A retrospective review comparing nationwide thirty-day arthroplasty complications in diabetics under different forms of glucose control.

5:42 PM

PAPER: 314

The Validity of Patient-Reported Short-Term Complications following Total Hip and Knee Arthroplasty

Leslie Harrold, MD, MPH, Worcester, MA
David C. Ayers, MD, Worcester, MA
Regis J. O'Keefe, MD, Rochester, NY
Courtland G. Lewis, MD, Farmington, CT
Vincent D. Pellegrini, MD, Charleston, SC
Patricia Franklin, MD, MBA, MPH, Worcester, MA

Given the new public reporting requirements of all post-TJA discharge complications, patient reported post-operative events may augment current hospital-specific surveillance procedures.

Wednesday, March 12

5:48 PM

PAPER: 315

Is it Reasonable to Hold Surgeons Legally Accountable for Leg Length Discrepancy after THA?

Carl A. Deirmengian, MD, Wynnewood, PA
 Adam Sadler, DO, Philadelphia, PA
 Jenny Cai, Philadelphia, PA
 Gregory K. Deirmengian, MD, Broomall, PA
 William J. Hozack, MD, Philadelphia, PA
 Javad Parvizi, MD, FRCS, Philadelphia, PA
 Matthew Austin, MD, Philadelphia, PA
 Alvin C. Ong, MD, Linwood, NJ

Given that a LLD greater than 1cm occurs in 10% of THAs among fellowship-trained surgeons, and is due to several complex factors, it appears unreasonable to hold surgeons legally accountable.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 245

Adult Reconstruction Knee III: Revision TKA

Moderator(s): David Backstein, Toronto, ON, Canada
 William L. Griffin, MD, Charlotte, NC

4:00 PM

PAPER: 316

Does Speed Kill? Revision Rates and Functional Outcomes in TKA in Relation to Duration of Surgery

Simon Young, MD, Scottsdale, AZ
 John Mutu-Grigg, MD, London, ON, Canada
 Chris Frampton, Christchurch, New Zealand
 John C. Cullen, MD, Auckland, New Zealand

Surgical Duration less than 40 minutes was associated with poorer outcomes in TKA.

4:06 PM

PAPER: 317

Mortality Following Revision Total Knee Arthroplasty: A Matched Cohort Study of Septic versus Aseptic Revision

Horim Choi, MD, Boston, MA
 Hany S. Bedair, MD, Boston, MA

Septic revision TKA showed 6 fold increases in mortality rates than aseptic revision. Increased age, higher ASA, and septic revision were identified as predictors of mortality in revision TKA.

4:12 PM

PAPER: 318

Mechanically Assisted Taper Corrosion in Modular Total Knee Arthroplasty

Christina M. Arnholt, Philadelphia, PA
 Daniel MacDonald, Philadelphia, PA
 Mariya Tohfafarosh, BS, Philadelphia, PA
 Jeremy Gilbert, PhD, Syracuse, NY
 Gregg R. Klein, MD, Paramus, NJ
 Michael A. Mont, MD, Baltimore, MD
 Javad Parvizi, MD, FRCS, Philadelphia, PA
 Clare M. Rimnac, PhD, Cleveland, OH
 Steven M. Kurtz, PhD, Philadelphia, PA

The purpose of this study was to characterize the prevalence of taper damage in modular components for TKA.

Discussion – 6 Minutes

4:24 PM

PAPER: 319

Malrotation of the Tibial Component in Total Knee Replacements: The Impact of Implant Design and Surgical Experience

Sabir Ismaily, Houston, TX
 Jonathan Gold, BS, Houston, TX
 Stephen J. Incavo, MD, Houston, TX
 Michael P. Bolognesi, MD, Durham, NC
 Philip C. Noble, PhD, Houston, TX

Malrotation of the tibial component is a common error in TKR that is greatly affected by both the overall shape of the implant design as well as the operative experience of the surgeon.

4:30 PM

PAPER: 320

The Adductor Ratio: A New Tool for Joint Line Reconstruction in Revision Total Knee Arthroplasty

Thomas Luyckx, MD, Bertem, Belgium
 Lucas Beckers, Grimbergen, Belgium
 William L. Colyn, Kasterlee, Belgium
 Johan Bellemans, MD, Langdorp, Belgium

In this study, we investigated the value of the landmarks around the knee to reconstruct the joint line at its original level. The adductor ratio was found the most reliable tool.

4:36 PM

PAPER: 321

◆ Use of a Hydro-Dissecting Device as a Novel Tool for Biofilm Dispersal from Metal Implants

Constantinos Ketonis, MD, PhD, Philadelphia, PA
 Sana Dastgheyb, BS, Philadelphia, PA
 Danielle M. Pineda, MD, Philadelphia, PA
 Javad Parvizi, MD, FRCS, Philadelphia, PA
 Gary A. Tuma, MD, FACS, Pennington, NJ

A Hydro-dissecting Device is an effective way to dissociate Staphylococcus aureus biofilm from colonized metal implants as compared to pulse lavage and antibiotic treatment.

Discussion – 6 Minutes

Wednesday, March 12

4:48 PM

PAPER: 322

Primary and Revision Arthroplasty: Monocyte Recruitment and Scores

Simon Frostick, MD, Liverpool, United Kingdom
 Amanda Williams, Research Nurse, Liverpool, United Kingdom
 Haiyi Wang, Liverpool, United Kingdom
 Alasdair Santini, Liverpool, United Kingdom
 Viju Peter, MD, Merseyside., United Kingdom
 Joanne Banks, FRCS), MB, Liverpool, United Kingdom
 John Davidson, FRCS, ChB, Liverpool, United Kingdom
 Margaret M. Roebuck, PhD, Liverpool, United Kingdom
 Richard Jackson, Liverpool, Merseyside, United Kingdom

Plasma S100A8/A9 detects monocyte recruitment in chronic inflammation. Increased S100A8/A9 may be useful identifying enhanced risk of loosening in patients without osteoarthritis in other joints.

4:54 PM

PAPER: 323

Incidence of Patella Clunk Syndrome in a Fixed Versus Mobile Bearing Posterior-Stabilized Total Knee Arthroplasty

Nimrod Snir, MD, New York, NY
 Ran Schwarzkopf, MD, Irvine, CA
 Mathew Hamula, BA, BS, New York, NY
 Richelle C. Takemoto, MD, Pittsburgh, PA
 Brian Diskin, New York, NY
 Patrick A. Meere, MD, New York, NY

The incidence of patella clunk syndrome in posterior-stabilized total knee replacements is 11.7% in a rotating platform mobile bearing design compared to 1.8% in a fixed bearing prosthesis.

5:00 PM

PAPER: 324

Radiographic and Technical Factors Associated with Patellar Clunk Syndrome in Total Knee Arthroplasty

James A. Costanzo, MD, Philadelphia, PA
 John Peters, BS, Clarks Summit, PA
 Daniel M. Kopolovich, BA, Philadelphia, PA
 Michael C. Aynardi, MD, Philadelphia, PA
 James J. Purtill, MD, Philadelphia, PA

Patellar component size, increase in posterior femoral offset, and preoperative valgus alignment are associated with patellar clunk syndrome in posterior stabilized total knee arthroplasty.

Discussion – 6 Minutes

5:12 PM

PAPER: 325

Rotating Hinge Versus Constrained Condylar Knee Replacement: Which One is More Constrained? A Finite Element Study

Saeid Samiezadeh, PhD, Toronto, ON, Canada
 Mansour Abolghasemian, MD, Tebran, Iran
 Darryl D. D'Lima, MD, La Jolla, CA
 David Backstein, MD, Toronto, ON, Canada

Rotating hinge knee prosthesis design is less constrained compared to constrained condylar design in full extension for both MCL and LCL deficient knee.

5:18 PM

PAPER: 326

How Much of Cement Depth Guarantees Stem Stability in Revision Knee Arthroplasty with Hybrid Fixation Technique?

Duhyun Ro, MD., Seoul, Republic of Korea
 Joon Kyu Lee, MD, Seoul, Republic of Korea
 Yool Cho, MD, Seoul, Republic of Korea
 Kee Yun Chung, MD, Seoul, Republic of Korea
 Seong Hwan Kim, MD, Daehak-Ro, Republic of Korea
 Sahnghoon Lee, MD, PhD, Seoul, Republic of Korea
 Sang C. Seong, MD, Seoul, Republic of Korea
 Young Min Lee, MD, Seoul, Republic of Korea
 Myung C. Lee, MD, Seoul, Republic of Korea

Radiolucent line was negatively correlated with cementing depth. At least 80mm of cementing depth is advised to prevent radiolucent lines in femur and 70mm in tibia in hybrid fixation technique.

5:24 PM

PAPER: 327

Distal Femoral Valgus is Highly Variable in Patients Undergoing Total Knee Arthroplasty

William Bugbee, MD, La Jolla, CA
 Luke Aram, MS, Warsaw, IN
 Alex J. Schenher, Warsaw, IN

Conclusion The anatomy of the distal femur is highly variable in patients undergoing TKA. Routine use of mechanical instruments can lead to errors in alignment.

Discussion – 6 Minutes

5:36 PM

PAPER: 328

Porous Tantalum Tibial Cones in Revision Total Knee Arthroplasty: Minimum Five-Year Follow Up

Atul F. Kamath, MD, Massapequa, NY
 Arlen D. Hanssen, MD, Rochester, MN
 David G. Lewallen, MD, Rochester, MN

At 5-9 year follow-up, porous tantalum cones for severe tibial bone loss demonstrate durable clinical results and radiographic fixation. Revision-free survival of the tibial cone component was 95.4%.

5:42 PM

PAPER: 329

Does Increased Topside Conformity in Modular Total Knee Arthroplasty Lead to Increased Backside Wear?

Ran Schwarzkopf, MD, Irvine, CA
 Evan M. Carlson, MS, Hanover, NH
 John H. Currier, MS, Hanover, NH
 Richard D. Scott, MD, Boston, MA

The study results confirm the hypothesis that the more conforming tibial inserts experienced a higher backside wear rate than the flatter designs.

Wednesday, March 12

5:48 PM

PAPER: 330

The Epidemiology of Revision Total Knee Arthroplasty in the United States

Kevin J. Bozic, MD, MBA, San Francisco, CA
 Atul F. Kamath, MD, Massapequa, NY
 Edmund Lau, MS, Menlo Park, CA
 Kevin Ong, PhD, Philadelphia, PA
 Steven M. Kurtz, PhD, Philadelphia, PA
 Vanessa Chan, MPH, San Francisco, CA
 Harry E. Rubash, MD, Boston, MA
 Daniel J. Berry, MD, Rochester, MN
 Thomas P. Vail, MD, San Francisco, CA

The burden of revision TKA is growing. PJI and mechanical loosening are the most common causes of revision TKA.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 265

Hand and Wrist II: Wrist & Forearm

Moderator(s): Fraser J. Leversedge, MD, Durham, NC
 Kevin J. Renfree, MD, Phoenix, AZ

4:00 PM

PAPER: 331

Early Versus Late Motion Following Volar Plating of Distal Radius Fractures

David G. Dennison, MD, Rochester, MN
 Char Blanchard, Rochester, MN
 Bassem T. Elbassan, MD, Rochester, MN
 Steven L. Moran, MD, Rochester, MN
 Alexander Yong Shik Shin, MD, Rochester, MN

Following volar plating for distal radius fractures, early motion favored only better 6 week motion and outcome scores while delayed motion also resulted in similar outcome at one year.

4:06 PM

PAPER: 332

Complications of Volar Locked Plating for Distal Radius Fractures

David M. Brogan, MD, Rochester, MN
 Alexander Yong Shik Shin, MD, Rochester, MN
 David G. Dennison, MD, Rochester, MN
 Hillary A. Becker, MD, Sioux Falls, SD
 Ashley C. Walker, NP, MS, Rochester, MN

Volar locked plating of distal radius fractures has a complication rate as high as 26%, but most of these were minor sensory neurapraxias that subsequently resolved.

4:12 PM

PAPER: 333

Ulnar Styloid Fracture in Association with Distal Radius Fracture Portends Poorer Outcome

Omri Ayalon, MD, New York, NY
 Alejandro Marcano, MD, New York, NY
 Nader Paksima, DO, New York, NY
 Kenneth A. Egol, MD, New York, NY

Presence of an ulnar styloid fracture with a distal radius fracture is associated with worse pain and lower function than those without.

Discussion – 6 Minutes

4:24 PM

PAPER: 334

Factors Associated with Complex Regional Pain Syndrome I in Patients with Surgically Treated Distal Radius Fracture

Young Hak Roh, Incheon, Republic of Korea
 Beom Koo Lee, Incheon, Republic of Korea
 Do Hyun Moon, Incheon, Republic of Korea
 Jong Ryoong Baek, Incheon, Republic of Korea
 Jung Ho Noh, MD, PhD, Chuncheon-Si, Republic of Korea

Preventive measures for CRPS I after distal radius surgery should be focused on patients with a comminuted fracture and combined soft tissue injury, and on women with a low BMD.

4:30 PM

PAPER: 335

No Difference Between Anatomical Position and Amount of Osteoarthritis 15 Years After a Distal Radius Fracture

Mark V. Van Outeren, MD, The Hague, Netherlands
 David Arashvand, Rotterdam, Netherlands
 Gerald Kraan, MD, Delft, Netherlands

Patients with a non-anatomical position of their DRF do not show a higher amount of OA after 15 year. Although their ROM and grip strength are decreased, there is no functional deficiency.

4:36 PM

PAPER: 336

Does the Degree of Distal Radius Fracture Malunion Predict Functional Outcomes?

Alejandro Marcano, MD, New York, NY
 Matthew Cantlon, MD, New York, NY
 James Lee, ME, New York, NY
 Kenneth A. Egol, MD, New York, NY

The objective of this study was to investigate whether the total number of radiographic radial malalignments following fracture was associated with poor clinical outcomes.

Discussion – 6 Minutes

Wednesday, March 12

4:48 PM

PAPER: 337

Computer Assisted Surgical Planning for Distal Radius Malunion: A Randomized Controlled Trial

Natalie Leong, MD, Los Angeles, CA
 Geert Buijze, MD, PhD, Boston, Netherlands
 Peter M. Axelsson, MD, Göteborg, Sweden
 Rodrigo Moreno, MD, Louisville, KY
 Filip Stockmans, MD, PhD, Heule-Kortrijk, Belgium
 Jesse B. Jupiter, MD, Boston, MA

This prospective randomized controlled trial compares patient outcomes after corrective osteotomy for distal radius malunion with and without computer-assisted planning and peri-operative patient-specific surgical guides.

4:54 PM

PAPER: 338

Long-term Outcomes After Radiocarpal Dislocation: A Prospective Review

Brandon J. Yuan, MD, Rochester, MN
 David G. Dennison, MD, Rochester, MN
 Bassem T. Elhassan, MD, Rochester, MN
 Sanjeev Kakar, MD, Rochester, MN

Early recognition and treatment of radiocarpal dislocations with open reduction, internal fixation and repair of ligaments results in improved long-term functional outcome scores.

5:00 PM

PAPER: 339

Perilunate Dislocation and Fracture-dislocation of the Wrist: Retrospective Evaluation of 65 Cases

Pierre Mansat, MD, PhD, Toulouse, France
 Dan Israel, MD, Toulouse, France
 Nicolas Bonneville, MD, Toulouse Cedex, France
 Michel Rongieres, MD, Blagnac, France
 Michel F. Mansat, MD, Toulouse Cedex, France
 Philippe Chiron, MD, Toulouse Cedex, France
 Paul Bonneville, MD, Toulouse, France

Perilunate dislocation and fracture-dislocation are severe wrist trauma with often numerous sequelae with follow-up. Early diagnosis and anatomic reduction are prerequisite to a satisfactory functional result.

Discussion – 6 Minutes

5:12 PM

PAPER: 340

Proximal Row Carpectomy Considerations for Maximizing Long-term Outcomes; A Longitudinal Study of 144 Cases

Eric R. Wagner, MD, Rochester, MN
 Dalibel M. Bravo, San Juan, PR
 Bassem T. Elhassan, MD, Rochester, MN
 Steven L. Moran, MD, Rochester, MN

Proximal row carpectomy improves patient's pain, function and quality of life, while improved outcomes occur in patients >40 years, non-laborers, Kienbock's and concomitant PIN and/or AIN.

5:18 PM

PAPER: 341

Locked Intramedullary Total Wrist Arthrodesis

Jorge L. Orbay, MD, Miami, FL
 Eric Feliciano, BS, Miami, FL
 Maria-Carolina Orbay, BS, Coral Gables, FL
 Michael R. Mijares, MD, Pinecrest, FL

Locked intramedullary total wrist arthrodesis provides stable fixation and avoids problems associated with fixation plates, such as soft tissue irritation, which often require removal.

5:24 PM

PAPER: 342

Total Distal Radioulnar Joint Arthroplasty: A Multicenter Long-term Outcome Study

Roongsak Limthongthang, MD, Bangkok, Thailand
 Ryan M. Zimmerman, MD, Boston, MA
 Luis R. Scheke, MD, Louisville, KY
 Douglas P. Hanel, MD, Seattle, WA
 Richard A. Berger, MD, PhD, Rochester, MN
 Jesse B. Jupiter, MD, Boston, MA

Multicenter long-term outcomes of a self-constrained total distal radioulnar joint replacement show significant improvement in pain and functionality.

Discussion – 6 Minutes

5:36 PM

PAPER: 343

◆ Comparison of Compression Screw and Perpendicular Clamp in Ulnar Shortening Osteotomy

Daniel Martin, MD, Walnut Creek, CA
 Dan A. Zlotolow, MD, Philadelphia, PA
 Stephanie Russo, Philadelphia, PA
 Scott H. Kozin, MD, Philadelphia, PA

When compared with compression screw technique in ulnar shortening osteotomy, perpendicular clamp placement significantly increased force across the osteotomy in this cadaveric biomechanical study.

5:42 PM

PAPER: 344

Bilateral Total Wrist Arthrodesis Improves Long-term Pain and Function

Eric R. Wagner, MD, Rochester, MN
 Bassem T. Elhassan, MD, Rochester, MN
 Sanjeev Kakar, MD, Rochester, MN

Bilateral total wrist arthrodesis improves pain, function, and quality of life in patients with severe carpal arthrosis. This procedure is a salvage option for patients with severe bilateral disease.

Wednesday, March 12

5:48 PM

PAPER: 345

Percutaneous Fixation Leads to Consolidation in Selected Cases of Delayed Union of the Scaphoid Waist

Matthias Vanbees, MD, Stabroek, Belgium
Roger P. van Riet, MD, Wilrijk, Belgium
Frederik Verstreken, MD, Deurne, Belgium

Percutaneous, transtrapezial fixation without bone graft leads to consolidation in selected cases of delayed union of the scaphoid waist.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 345

Foot and Ankle III: Fractures and Flatfoot

Moderator(s): Patrick Ebeling, MD, Burnsville, MN
Naren G. Gurbani, MD, Capistrano Beach, CA

4:00 PM

PAPER: 346

Epidemiology of Fifth Metatarsal Fractures: A Retrospective Review

Justin M. Kane, MD, Coatesville, PA
Kristin Brown, Philadelphia, PA
Heather L. Saffel, BS, MS, Elkins, West VA
Anthony Albanese, BA, BS, MEd, Philadelphia, PA
Michael C. Aynardi, MD, Philadelphia, PA
Steven M. Raikin, MD, Philadelphia, PA
David I. Pedowitz, MD, Penn Valley, PA

A retrospective chart review of 772 fifth metatarsal fractures was undertaken. An attempt was made to establish trends towards different fractures and risk factors in the general US population.

4:06 PM

PAPER: 347

Incidence and Long-term Outcome of Nonoperative Management of Dancer's Fractures

Michael C. Aynardi, MD, Philadelphia, PA
David I. Pedowitz, MD, Penn Valley, PA
Christine C. Piper, Philadelphia, PA
Heather L. Saffel, BS, MS, Elkins, West VA
Steven M. Raikin, MD, Philadelphia, PA

This large cohort describes the incidence, natural history, and functional outcomes of dancer's fractures; importantly, nonoperative management yields excellent functional results.

4:12 PM

PAPER: 348

The Effect of Peroneus Brevis Tendon Anatomy on Stability of Fractures at the Fifth Metatarsal Base

Parisa Morris, MD, Phoenix, AZ
Annie-Lourdes G. Francois, MD, Tucson, AZ
Randall E. Marcus, MD, Cleveland, OH
Lutul D. Farrow, MD, Garfield Heights, OH

The peroneus brevis tendon exerts a greater deforming force on Jones fractures than avulsion injuries.

Discussion – 6 Minutes

4:24 PM

PAPER: 349

Balloon Assisted Reduction, Pin Fixation and Tricalcium Phosphate Augmentation for Calcaneal Fracture

Giovanni Vicenti Jr, MD, Altamura, Italy
Gianni Caizzi, Bari, Italy
Donato Vittore, Bari, Italy
Marco Dilonardo, Taranto, Italy
Antonella Abate Jr, Bari, Italy
Biagio Moretti, Bari, Italy

An inflatable bone tamp filled with tricalcium phosphate and percutaneous pinning for intra-articular calcaneal fracture to restore mechanical stability, get earlier weight-bearing and mobilization.

4:30 PM

PAPER: 350

Percutaneous Reduction and Screw Fixation in Displaced Intra-articular Fractures of the Calcaneus

Saran Tantavisut, Bangkok, Thailand
Phinit Phisitkul, MD, Iowa City, IA
Brian O. Westerlind, BA, Iowa City, IA
John L. Marsh, MD, Iowa City, IA

Using percutaneous reduction techniques and fixation with screws alone, 182 consecutive displaced intra-articular calcaneus fractures was treated with satisfactory clinical and radiographic results.

Wednesday, March 12

4:36 PM

PAPER: 351

Integrated Orthotic and Rehabilitation Initiative Results in Rapid Improvement

Katherine M. Bedigrew, MD, Fort Sam Houston, TX
 Jeanne C. Patzkowski, MD, San Antonio, TX
 Jason M. Wilken, PhD, PT, Fort Sam Houston, TX
 Johnny Owens, San Antonio, TX
 Ryan Blanck, Fort Sam Houston, TX
 Daniel J. Stinner, MD, San Antonio, TX
 LTC Kevin L. Kirk, DO, Skillman, NJ
 Joseph R. Hsu, MD, Charlotte, NC

Subjects enrolled in the Return to Run clinical pathway demonstrated significant improvements in validated functional measures and patient based outcomes in eight weeks.

Discussion – 6 Minutes

4:48 PM

PAPER: 352

Glycaemic Control in Diabetic Patients and Ankle Fracture Healing

Waseem Jerjes, MD, PhD, West Yorkshire, United Kingdom
 Hiang Boon Tan, MBBS, Leeds, United Kingdom
 Peter Giannoudis, MD, FRCS, Leeds, United Kingdom

Diabetic patients have slight increase in time to union when compared to the normal population.

4:54 PM

PAPER: 353

Effect of Chronic Heavy Smoking on Ankle Fracture Healing

Waseem Jerjes, MD, PhD, West Yorkshire, United Kingdom
 Hiang Boon Tan, MBBS, Leeds, United Kingdom
 Peter Giannoudis, MD, FRCS, Leeds, United Kingdom

Chronic heavy smokers with ankle fractures requiring surgical intervention should be informed of their increased risk of delayed fracture and wound healing.

5:00 PM

PAPER: 354

Does Syndesmotic Injury Have a Negative Effect on Functional Outcomes? A Multicenter Prospective Evaluation

Jody Litrenta, MD, Boston, MA
 Paul Tornetta III, MD, Boston, MA
 Laura Phieffer, MD, Columbus, OH
 Clifford B. Jones, MD, FACS, Grand Rapids, MI
 Janos P. Ertl, MD, Carmel, IN
 Brian Mullis, MD, Indianapolis, IN
 Kenneth A. Egol, MD, New York, NY
 Michael J. Gardner, MD, Saint Louis, MO
 William M. Ricci, MD, Saint Louis, MO

Our purpose was to evaluate the effect of syndesmotic disruption on the functional outcomes of Weber B, SE4 ankle fractures treated operatively.

Discussion – 6 Minutes

5:12 PM

PAPER: 355

The Fate of the Fixed Syndesmosis over Time

Scott Koenig, MD, Irvine, CA
 Elisabeth Gennis, MD, Wayland, MA
 Deirdre Rodericks, Boston, MA
 Peters T. Otlans, BA, MA, Boston, MA
 Paul Tornetta III, MD, Boston, MA

The purpose of this study is to evaluate syndesmotic widening and talar shift over time in patients treated with syndesmotic screws and to compare removal vs. retention along with other potential risk factors.

5:18 PM

PAPER: 356

The Quality and Utility of Routine Immediate Postoperative Radiographs Following Ankle Fracture Surgery

Elizabeth A. Martin, MD, Rochester, NY
 Sara L. Miniaci, MD, Rochester, NY
 Joshua Hunter, MD, Rochester, NY
 John T. Gorczyca, MD, Rochester, NY
 Jonathan M. Gross, MD, Rochester, NY
 Catherine A. Humphrey, MD, Rochester, NY
 John P. Ketz, MD, Pittsford, NY

The routine use of immediate postoperative radiographs following ankle fracture surgery does not provide additional value to the patient or orthopaedic surgeon.

5:24 PM

PAPER: 357

Assessment Change of Subtalar Joint according to Hindfoot Valgus Alignment using Weightbearing CT

Jae Ho Cho, MD, Seoul, Republic of Korea
 Woo Chun Lee, Seoul, Republic of Korea
 Hong Joon Choi, MD, Seoul, Republic of Korea
 Chulhyun Park, MD, Daegu, Republic of Korea
 Dong-Il Chun, Seoul, Republic of Korea
 Tae Keun Ahn, MD, Seoul, Republic of Korea
 Young Yi, MD, Seoul, Republic of Korea
 Kang Lee, MD, Seoul, Republic of Korea
 Jiyong Ahn, MD, Seoul, Republic of Korea

On this study using weightbearing CT, talocalcaneal impingement in sinus tarsi is possible to be predicted by measuring hindfoot valgus alignment in simple radiograph.

Discussion – 6 Minutes

Wednesday, March 12

5:36 PM

PAPER: 358

A Plantar Closing Wedge Osteotomy of the Medial Cuneiform in Flatfoot Reconstruction

Keir A. Ross, McKinney, TX
 Jeff Ling, MD, New York, NY
 Charles P. Hannon, BS, New York, NY
 Niall A. Smyth, MD, South Miami, FL
 Christopher J. Egan, PA-C, Westbury, NY
 John G. Kennedy, MD, New York, NY

A new technique for residual forefoot supination in flatfoot reconstruction is described. Clinical outcomes and radiographic measures were improved postoperatively.

5:42 PM

PAPER: 359

Outcomes of the Calcaneal Scarf Osteotomy for Surgical Correction of the Adult Acquired Flatfoot

Catherine A. Feuerstein, DPM, Des Plaines, IL
 Lowell S. Weil, DPM, Lake Forest, IL
 Lowell S. Weil, DPM, Des Plaines, IL
 Erin E. Klein, DPM, MS, Grayslake, IL
 Nicholas Argerakis, DPM, Des Plaines, IL
 Mitchell B. Sheinkop, MD, Chicago, IL
 Usman Akram, DPM, Glendale, WI

The results of the current study demonstrate that the CSO significantly changes clinical and radiographic exam parameters while obtaining high outcome scores in patients.

5:48 PM

PAPER: 360

Biomechanical Analysis of a Flatfoot Model and Lateral Column Lengthening Technique

Jeffrey Mercer, MD, PhD, Lake Oswego, OR
 Nathanael D. Heckmann, MD, Long Beach, CA
 Lawrence C. Wang, Orange, CA
 Michelle H. McGarry, MD, Long Beach, CA
 Steven D. Ross, MD, Orange, CA
 Thay Q. Lee, PhD, Long Beach, CA

Development of a flatfoot resulted in decreased forefoot liftoff forces that were restored sequentially with increasing sizes of Evans-type calcaneal osteotomies.

Discussion – 6 Minutes

Thursday, March 13

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 10:00 AM

301 Innovative Techniques in Revision Total Hip ArthroplastyRoom
207

Moderator: Paul F. Lachiewicz, MD, Chapel Hill, NC
 Scott M. Sporer, MD, Wheaton, IL
 Keith R. Berend, MD, New Albany, OH
 Michael P. Bolognesi, MD, Durham, NC

New techniques for management of common problems encountered in revision hip surgery. Acetabular component removal and revision with enhanced surface jumbo cups; new recurrent dislocation options; easier ways to perform ETO and fabricate antibiotic cement spacer; and management of the painful metal-metal and ceramic-ceramic hip will be covered in video vignettes and case presentations.

302 Complex Cases Controversies in Primary and Revision Total Knee ArthroplastyRoom
356

Moderator: Bryan D. Springer, MD, Charlotte, NC
 Thomas K. Febring, MD, Charlotte, NC
 William J. Long, MD, New York, NY
 R. Michael Meneghini, MD, Fishers, IN

Focus on controversial issues in primary, complex primary and revision total knee arthroplasty with experts in the field.

303 Infection in Arthroplasty: The Basic Science of Bacterial Biofilms in Its Pathogenesis, Diagnosis, Treatment and PreventionRoom
350

Moderator: William V. Arnold, MD, Jenkintown, PA
 Paul Stoodley, PhD, Columbus, OH
 Mark Shirtliff, PhD, Baltimore, MD
 Thorsten Gehrke, MD, Hamburg, Germany

Role of bacterial biofilms in periprosthetic infection will be discussed with particular attention toward current clinical treatment and future decisions.

304 Emerging Methods for Treatment of Ankle ArthritisRoom
208

Moderator: Timothy R. Daniels, MD, FRCSC,
 Toronto, ON, Canada
 Alastair S. E. Younger, MD, Vancouver, BC, Canada
 James W. Brodsky, MD, Dallas, TX

Compare the functional and biomechanical outcomes of ankle fusion and total ankle arthroplasty. Indications, complications, surgical techniques and outcomes of both surgical procedures.

305

Room
260**Is "Medical Clearance" Enough? Understanding Medical Issues That Can Affect Your Patients' Outcomes**

Moderator: William M. Mibalko, MD, PhD,
 Germantown, TN

Khaled J. Saleh, MD, MSc, FRCSC, FACS, Springfield, IL
 Javad Parvizi, MD, FRCS, Philadelphia, PA
 Joseph M. Lane, MD, New York, NY

Many times orthopaedic surgeons obtain medical clearance on their patients prior to elective surgery. Will discuss the many systemic, endocrine and nutritional issues that can affect your patients outcome not addressed by medical clearance.

306

Room
276**Scaphoid Fractures and Nonunions: What's Hot, What's Not**

Moderator: Dean G. Sotereanos, MD, Pittsburgh, PA
 Gregory I. Bain, MD, North Adelaide, Australia
 Thomas G. Sommerkamp, MD, Crestview Hills, KY
 Mike Hayton, FRSC(Ortho), Lancashire, United Kingdom

Current concepts for diagnosis and treatment of scaphoid fractures and nonunions including arthroscopic percutaneous vascularized and non-vascularized techniques.

307

Room
262**Problems and Procedures in Pediatric Trauma: Case Based Learning**

Moderator: Steven L. Frick, MD, Orlando, FL
 Christopher A. Iobst, MD, Key Biscayne, FL
 Matthew A. Halanski, MD, Madison, WI
 Susan A. Scherl, MD, Omaha, NE

Case presentations of pediatric trauma and complications will guide audience response and discussion. Technical methodology will be provided as tools for treatment of challenging trauma.

308

Room
353**Getting Ready for ICD-10 and Meaningful Use Stage 2**

Moderator: Jack M. Bert, MD, Woodbury, MN
 Ranjan Sachdev, MD, Bethlehem, PA
 William R. Beach, MD, Richmond, VA
 Louis F. McIntyre, MD, White Plains, NY

Will examine the financial and operational impact ICD-10 and meaningful use stage 2 regulations will have on orthopaedic practices. The organization of ICD-10, cross walk from ICD-9 to ICD-10 and steps needed for successful conversion will be discussed. Significant changes proposed in Meaningful use 2 regulations and compliance risks posed by these regulations will also be discussed.

Thursday, March 13

309



Arthroscopic Rotator Cuff Repair: Indication and Technique

Moderator: *Felix H. Savoie III, MD, New Orleans, LA*
Jeffrey S. Abrams, MD, Princeton, NJ
 Joshua Dines, MD, New York, NY
 Peter J. Millett, MD, MSc, Vail, CO



Room
226

Review current physical examination, imaging, optimal surgical and biologic repair techniques in the injured rotator cuff patient, as well as cost efficient post operative care via a case based, interactive approach.

310



Elbow Arthroscopy: Indications, Techniques, Outcomes and Complications

Moderator: *Julie E. Adams, MD, Minneapolis, MN*
Scott P. Steinmann, MD, Rochester, MN
Graham J. King, MD, London, ON, Canada
Larry D. Field, MD, Jackson, MS

Room
221

Outline techniques for performing arthroscopic procedures at the elbow, with a specific focus on indications, tips and pearls, and outcomes and alternative treatment strategies. Potential complications will be studied with emphasis on how to avoid them.

311



Avoiding and Managing Complications in Routine Lumbar Spine Surgery

Moderator: *Louis G. Jenis, MD, Newton, MA*
Wellington K. Hsu, MD, Chicago, IL
Joseph R. O'Brien, MD, Washington, DC
Peter G. Whang, MD, New Haven, CT

Room
215

Identification, management and avoidance of complications related to common conditions treated with lumbar spine surgery.

312



Dilemmas of the Throwing Shoulder

Moderator: *James R. Andrews, MD, Gulf Breeze, FL*
Neal S. ElAttrache, MD, Los Angeles, CA
Anthony A. Romeo, MD, Chicago, IL
James P. Bradley, MD, Pittsburgh, PA

Room
271

Discuss the various pathologies of the throwing shoulder, including the role of retroversion and soft tissue, the physical examination signs and treatment options.

313



Treatment of Periprosthetic Fractures

Moderator: *Jeremy Hall, MD, FRCS, Toronto, ON, Canada*
Richard Jenkinson, MD, Toronto, ON, Canada
Aaron Nauth, MD, Toronto, ON, Canada
Markku Nousiainen, MD, Toronto, ON, Canada

Room
218

Practical treatment of upper and lower extremity periprosthetic fractures will be illustrated and discussed using a case-based approach.

314



Humeral Shaft Fractures: Is Nonoperative Treatment Still an Option?

Moderator: *Amer J. Mirza, MD, Portland, OR*
Matthew D. McElwany, MD, Santa Rosa, CA
Erik Kubiak, MD, Salt Lake City, UT
Samir Mehta, MD, Philadelphia, PA

Room
347

Identify which humeral shaft fractures benefit from operative stabilization and the optimum techniques for managing these fractures and their complications will be detailed.

315



Room
210

Adult Spinal Deformity: Surgical Planning and Complications

Moderator: *Robert A. Hart, MD, Portland, OR*
Robert S. Bess, MD, Castle Rock, CO
Darrel S. Brodke, MD, Salt Lake City, UT
Thomas J. Errico, MD, New York, NY
Eric O. Klineberg, MD, Sacramento, CA
Frank J. Schwab, MD, New York, NY
Christopher I. Shaffrey, MD, Charlottesville, VA
Justin S. Smith, MD, Charlottesville, VA

Cases will focus on various scenarios of adult spinal deformity (untreated idiopathic scoliosis, degenerative lumbar scoliosis, flat back syndrome, the older adult deformity patient) as well as complications of treatment (interoperative spinal cord signal changes, proximal junctional failure, and non-union with rod fracture).

FD7

Room
217

The Art of the Orthopaedic Lecture

Moderator: *James H. Beaty, MD, Memphis, TN*
James J. McCarthy, MD, Cincinnati, OH

Learn to develop a lecture for an orthopaedic audience. From a 6 minute paper presentation to a 60 minute lecture on a specific research project or clinical subject. This session will give you the tools to prepare and present. Powerpoint preparation and tips included.

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 11:00 AM

381



Room
352

MRI-Arthroscopy Correlations of the Shoulder, Elbow, Hip and Knee: A Case Based Approach

Moderator: *Mark D. Miller, MD, Charlottesville, VA*
Anil S. Ranawat, MD, New York, NY
Hollis Potter, MD, New York, NY
Cree Gaskin, MD, Charlottesville, VA
Stephen F. Brockmeier, MD, Charlottesville, VA

Brief introduction to MRI, a series of knee, shoulder, elbow, and hip cases will be presented and discussed. MRI and arthroscopy correlation will be emphasized.

Thursday, March 13

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 12:00 PM

901 TeamSTEPPS

Rivergate
Room

Moderator: Harpal S. Khanuja, MD, Cockeysville, MD
Dwight W. Burney III, MD, Albuquerque, NM
Mary I. O'Connor, MD, Jacksonville, FL
Kristy L. Weber, MD, Philadelphia, PA

TeamSTEPPS is an evidenced based team building and communication program designed to enhance patient safety and efficiency in Healthcare. This four hour fundamentals workshop will give members of the healthcare team the tools to help lead highly effective medical teams. The goal is to optimize the use of information, people, and resources to achieve the best clinical outcomes for patients. In these fundamental skills workshops team members will increase team awareness and clarify team roles and responsibilities to produce a functional unit based on patient care. Team members also learn to resolve conflicts and improve information sharing to help eliminate barriers to quality and safety.

PAPER PRESENTATION

8:00 AM — 10:00 AM

Theater A

Adult Reconstruction Knee IV: Complications

Moderator(s): Thomas J. Blumenfeld, MD, Sacramento, CA
Michael A. Kelly, MD, Hackensack, NJ
Gregg Klein, MD, Paramus, NJ

8:00 AM

PAPER: 361

Patients with Rheumatoid Arthritis are at Increased Risk for Complications Following Total Joint Arthroplasty

Bheeshma Ravi, MD, Toronto, ON, Canada
Ruth Croxford, MSc, Toronto, ON, Canada
Benjamin Escott, MBBS, Toronto, ON, Canada
Simon Hollands, MSc, BS, Toronto, ON, Canada
Michael Paterson, Toronto, ON, Canada
Earl R. Bogoch, MD, Toronto, ON, Canada
Hans J. Kreder, MD, Toronto, ON, Canada
Gillian Hawker, MD, Toronto, ON, Canada

Patients with RA are at increased risk for dislocation following THA and infection following TKA.

8:06 AM

PAPER: 362

Rheumatoid Arthritis Does Not Increase Perioperative Complications Following Same-day Bilateral TKA

Lazaros A. Poultsides, MD, New York, NY
Stavros G. Memtsoudis, MD, PhD, New York, NY
Huong Do, MA, New York, NY
Thomas P. Sculco, MD, New York, NY
Mark P. Figgie, MD, New York, NY

Same-day bilateral TKA can be performed safely in appropriately selected RA patients with no increase in the risk of death or other perioperative complications.

8:12 AM

PAPER: 363

HIV Infection and Risk of Perioperative Complications Following Total Knee Arthroplasty

Qais Naziri, MD, Brooklyn, NY
Matthew R. Boylan, Brooklyn, NY
Kimona Issa, MD, Baltimore, MD
Aditya V. Maheshwari, MD, Brooklyn, NY
Michael A. Mont, MD, Baltimore, MD

This study compared the cost, length and risk of short-term complications during admission among HIV-positive and HIV-negative patients admitted for primary total knee arthroplasty (TKA).

Discussion – 6 Minutes

8:24 AM

PAPER: 364

Ninety-Day Morbidity in Patients Undergoing Primary TKA with Discontinuation of Warfarin and Bridging with LMWH

Emmanuel Gibon, MD, Paris, France
Nicolas Barut, MD, Paris, France
Jean-Pierre Courpied, PhD, Paris, France
Philippe Anract, MD, Paris, France
Moussa Hamadouche, PhD, Paris, France

This paper evaluates the 90-day complications rate following primary TKA in patients under chronic anticoagulation managed with warfarin discontinuation and bridged with LMWH.

8:30 AM

PAPER: 365

Recent National Trends and Outcomes for Pulmonary Embolism after Total Knee Arthroplasty in the United States

Vincent M. Moretti, MD, Berwyn, IL
Ritesh Shah, MD, Glenview, IL

Pulmonary embolism (PE) after total knee arthroplasty can have a significant impact on patient outcomes and healthcare costs. Recent efforts to decrease PE have not altered its occurrence.

Thursday, March 13

8:36 AM

PAPER: 366

The Embolic Load After Total Knee Replacement is a Function of the Tourniquet Time

Rajesh Malhotra, MS, New Delhi, India
 Vijay Kumar, MD, New Delhi, India, India
 Amit Singla, MBBS, MS, New Delhi, India
 Vishwas Malik, Delhi, India
 Dr. Chandralekha, New Delhi, India
 Ganesan Karthikeyan, MBBS, MD, New Delhi, India
 Dr. Rajni B. Safaya, New Delhi, India

Emboli load is dependent on tourniquet time regardless of whether intramedullary canal is breached or not.

Discussion – 6 Minutes

8:48 AM

PAPER: 367

Implications of Outpatient vs. Inpatient Total Joint Arthroplasty on Hospital Readmission Rates

David N. Vegari, MD, Philadelphia, PA
 Jeffrey G. Mokriss, MD, Charlotte, NC
 Susan M. Odum, PhD, Charlotte, NC
 Bryan D. Springer, MD, Charlotte, NC

In properly selected patients, the outcomes of outpatient TJA are comparable to inpatient arthroplasty without increasing readmission rates and financially penalizing hospitals.

8:54 AM

PAPER: 368

In-Hospital Complications and UTIs Increased in Obese Patients Undergoing TKA

Matthew P. Abdel, MD, Eagan, MN
 Michael P. Ast, MD, New York, NY
 Yuo-Yu Lee, MS, New York, NY
 Stephen Lyman, PhD, New York, NY
 Alejandro Gonzalez Della Valle, MD, New York, NY

Obese patients undergoing primary TKA are at increased risk for all-cause in-house complications, ARF, and UTI and perioperative management should take BMI into account.

Discussion – 6 Minutes

9:00 AM

PAPER: 369

Thirty Day Readmission Rates are Not Inferior for 2 vs. 3 Day Lengths of Stay in 23635 Primary Total Knee Arthroplasties

Stefano A. Bini, MD, San Francisco, CA
 Maria C. Inacio, MS, San Diego, CA
 Guy Cafri, PhD, La Jolla, CA

Thirty Day Readmission Rates for 2 vs 3 day LOS were not inferior in 23,635 primary TKAs treated since 2009. The home discharge rate was 81%. Readmission risk factors were identified.

Discussion – 6 Minutes

9:12 AM

PAPER: 370

Effects of Various Factors on the Incidence Manipulation Under Anesthesia after Primary Total Knee Arthroplasty

Kimona Issa, MD, Baltimore, MD
 Aiman Rifai, DO, Clifton, NJ
 Qais Naziri, MD, Brooklyn, NY
 Harpal S. Khanuja, MD, Cockeysville, MD
 Vincent K. McInerney, MD, New Vernon, NJ
 Mark A. Kester, PhD, Mahwah, NJ
 Mark A. Kester, PhD, Mahwah, NJ
 Michael A. Mont, MD, Baltimore, MD

Younger age (<50 years), non-Caucasians background, diabetes, tobacco smoking, osteonecrosis, and lower pre-TKA range-of-motion were associated with a higher incidence of knee stiffness after TKA.

9:18 AM

PAPER: 371

Risk Factors for Manipulation After Total Knee Arthroplasty: A Pooled Electronic Health Record Database Study

Kiel J. Pfefferle, MD, Akron, OH
 Scott T. Shemory, MD, Akron, OH
 Matthew F. Dilisio, MD, Chestnut Hill, MA
 Stephen Fening, PhD, Akron, OH
 Ian M. Gradisar, MD, Akron, OH

African American race, female sex and nicotine dependence are statistically significant risk factors for manipulation under anesthesia after TKA.

9:24 AM

PAPER: 372

Low-dose Dexamethasone Further Reduces Postoperative Emesis and Pain in a Current Multimodal Regime Following TKA

In Jun Koh, MD, Gyeonggi-Do, Republic of Korea
 Tae Kyun Kim, MD, Seongnam-si, Republic of Korea
 Chong Bum Chang, MD, PhD, Seongnamsi, Republic of Korea
 Moon Jong Chang, MD, Seoul, Republic of Korea
 Young Gon Na, Seongnam-Si, Republic of Korea
 Sanghwa Eom, MD, Seongnamsi, Republic of Korea
 Seok Jin Kim, MD, Gyeonggi-Do, Republic of Korea
 Yeon Gwi Kang, MD, Seongnam-Si, Republic of Korea
 Byung June Chung, MD, Seoul, Republic of Korea

Concomitant use of dexamethasone further reduces postoperative emesis and pain after TKA without increased risks for wound complications in patients managed using a contemporary multimodal regimen.

Discussion – 6 Minutes

Thursday, March 13

9:36 AM

PAPER: 373

Is Tourniquet Use in Total Knee Arthroplasty Safe in Patients with Radiographic Evidence of Vascular Calcification?

Steven Koehler, MD, New York, NY
 Adam C. Fields, BA, New York, NY
 Naudereh Noori, San Luis Obispo, CA
 Calin S. Moucha, MD, New York, NY
 Michael J. Bronson, MD, New York, NY

In this study, we show that total knee arthroplasty can be safely performed with a tourniquet in patients who have preoperative radiographic evidence of calcification in the arteries of the knee.

9:42 AM

PAPER: 374

Femoral Nerve Catheters Associated with High Fall Risk in Total Knee Arthroplasty

Christopher Pelt, MD, Salt Lake City, UT
 Mike Anderson, MS, ATC, Salt Lake City, UT
 Christin A. Van Dine, PA-C, Salt Lake City, UT
 Christopher L. Peters, MD, Salt Lake City, UT

Consideration of alternative multimodal pain management strategies that preserve muscle strength and minimize required added precautions but maintain adequate pain relief and outcomes is needed.

9:48 AM

PAPER: 375

The Effect of Statin Therapy on Venous Thromboembolism After Hip or Knee Arthroplasty

Anne Bass, MD, NY City, NY
 Yuo-Yu Lee, MS, New York, NY
 Stephen Lyman, PhD, New York, NY
 Geoffrey H. Westrich, MD, New York, NY
 Brian F. Gage, MD, MSc, Saint Louis, MO

In a study of 16183 patients prospectively enrolled in the HSS hip and knee arthroplasty registry, statins reduced the risk of postoperative pulmonary embolism but not total venous thromboembolism.

9:54 AM

PAPER: 828

An Alternative for Pulmonary Embolism Prophylaxis After Arthroplasty?

Ibrahim Raphael, MD, Philadelphia, PA
 Eric H. Tischler, BA, Philadelphia, PA
 Ronald Huang, MD, Philadelphia, PA
 Richard H. Rothman, MD, Philadelphia, PA
 William J. Hozack, MD, Philadelphia, PA
 Javad Parvizi, MD, FRCS, Philadelphia, PA

We compared the rates of thromboembolism and adverse effects of aspirin and warfarin after total joint arthroplasty. Aspirin offers suitable prophylaxis against symptomatic PE in selected patients.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM

Room 245

Pediatrics III: Hip and Sports Medicine

Moderator(s): Tim Schrader, MD, Atlanta, GA
 Kevin G. Shea, MD, Boise, ID

8:00 AM

PAPER: 376

Pavlik Harness Treatment May Not be Necessary for All Newborns with Ultrasonic Hip Dysplasia

Harry K. Kim, MD, Dallas, TX
 Brigid N. Maloney, MS, Tucson, AZ
 Adriana De La Rocha, MS, Dallas, TX
 Erica Flores, RN MSN, Dallas, TX
 Case E. Brabham, Dallas, TX
 Chan-Hee Jo, PhD, Dallas, TX

Based on this study, not all patients with ultrasonic dysplasia need to be treated with a Pavlik harness. Further studies are needed to define which patients need to be treated and which do not.

8:06 AM

PAPER: 377

Hip Dysplasia Follow-up After Six Months: Why Order X-rays Later if Ultrasound has Normalized?

Eric J. Sarkissian, BS, Philadelphia, PA
 John M. Flynn, MD, Philadelphia, PA
 Wudbhav N. Sankar, MD, Wynnewood, PA

Notable incidences of residual dysplasia in infants after previous normalization of DDH may warrant radiographic follow-up at 6 and 12 months of age to allow timely diagnosis and early intervention.

8:12 AM

PAPER: 378

Residual Dysplasia After Treatment with Pemberton vs. Salter Osteotomy for DDH: Mean 10-year Follow Up

Daniel J. Sucato, MD, MS, Dallas, TX
 Adriana De La Rocha, MS, Dallas, TX
 Chester J. Donnally III, BS, El Paso, TX
 Brigid N. Maloney, MS, Tucson, AZ
 David A. Podeszwa, MD, Dallas, TX
 Lori A. Karol, MD, Dallas, TX

At a mean 10 yr follow-up, there were no differences in the rates of residual dysplasia after treatment with a Pemberton or Salter osteotomy, however Salter patients require subsequent pin removal.

Discussion – 6 Minutes

Thursday, March 13

8:24 AM

PAPER: 379

Long-term Outcomes of Operative and Nonoperative Treatment of Congenital Coxa Vara

David W. Roberts, MD, Winnetka, IL
 Yavuz Saglam, MD, Dallas, TX
 Adriana De La Rocha, MS, Dallas, TX
 Brigid N. Maloney, MS, Tucson, AZ
 Harry K. Kim, MD, Dallas, TX

Forty-seven hips with CCV showed satisfactory outcomes at mean 10 year follow-up, but abnormal growth may lead to recurrence, and many have persistently abnormal gait at long-term follow-up.

8:30 AM

PAPER: 380

Combined Surgical Hip Dislocation and Proximal Femoral Osteotomy for Severe Hip Deformities

Stephen T. Duncan, MD, Lexington, KY
 Geneva Baca, Saint Louis, MO
 Angela D. Keith, MS, Saint Louis, MO
 Gail Pashos, Saint Louis, MO
 Perry L. Schoenecker, MD, Saint Louis, MO
 John C. Clobisy, MD, Saint Louis, MO

Combined surgical hip dislocation and proximal femoral osteotomy is an effective treatment option with improved hip function and low conversion rate to THA in patients with severe hip deformities.

8:36 AM

PAPER: 381

A Concomitant Arthrotomy Does Not Improve Outcome for Adolescents with Hip Dysplasia Undergoing a PAO

Daniel J. Sucato, MD, MS, Dallas, TX
 David A. Podeszwa, MD, Dallas, TX
 Adriana De La Rocha, MS, Dallas, TX
 John C. Clobisy, MD, Saint Louis, MO
 Ernest L. Sink, MD, New York, NY
 Ira Zaltz, MD, Royal Oak, MI
 Michael B. Millis, MD, Boston, MA
 Young Jo Kim, MD, PhD, Boston, MA
 Young Jo Kim, MD, PhD, Boston, MA

Performing an arthrotomy in combination with a PAO is may not be routinely indicated for adolescents and young adults less than 25 years of age with hip dysplasia.

Discussion – 6 Minutes

8:48 AM

PAPER: 382

Subcapital Realignment versus In-situ Fixation for Severe Stable Slipped Capital Femoral Epiphysis

Eduardo N. Novais, MD, Aurora, CO
 Mary K. Hill, BA, Aurora, CO
 Travis C. Heare, MD, Aurora, CO
 Joseph D. Stone, MD, Atlanta, GA
 Patrick Carry, Aurora, CO
 Ernest L. Sink, MD, New York, NY

Severe stable slipped capital femoral epiphysis (SCFE) treatment methods were compared. Subcapital realignment led to greater anatomic restoration and fewer secondary procedures than in-situ fixation.

8:54 AM

PAPER: 383

Idiopathic Cam Morphology is Not Caused by Subclinical Slipped Capital Femoral Epiphysis: A MRI and CT Study

Shafagh Monazzam, MD, Sacramento, CA
 James D. Bomar, San Diego, CA
 Andrew T. Pennock, MD, San Diego, CA

The growth plate tilt of hips with cam morphology secondary to SCFE and idiopathic cam morphology significantly differ suggesting subclinical SCFEs are not the cause of idiopathic cam morphology.

9:00 AM

PAPER: 384

Intermediate Results of the Bernese Periacetabular Osteotomy for the Treatment of Perthes-like Hip Deformities

Stephen T. Duncan, MD, Lexington, KY
 Angela D. Keith, MS, Saint Louis, MO
 Gail Pashos, Saint Louis, MO
 Geneva Baca, Saint Louis, MO
 Perry L. Schoenecker, MD, Saint Louis, MO
 John C. Clobisy, MD, Saint Louis, MO

At intermediate term follow-up, patients with Perthes-like deformity following periacetabular osteotomy demonstrated good clinical results and an acceptable conversion rate to total hip arthroplasty.

Discussion – 6 Minutes

9:12 AM

PAPER: 385

Acute Complications of Pediatric and Adolescent Knee Arthroscopy

Ali Ashraf, MD, Garland, TX
 Christy M. Christophersen, Saint Paul, MN
 Lindsay R. Hunter, Rochester, MN
 Diane L. Dahm, MD, Rochester, MN
 Amy L. McIntosh, MD, Rochester, MN

The purpose of this study is to determine the acute complications (within 6 months) of arthroscopic knee procedures in patients aged 17 years or less.

Thursday, March 13

9:18 AM

PAPER: 386

Gene Expression Differences in Young Male and Female Ruptured Anterior Cruciate Ligaments

Susan M. Moen, MD, Akron, OH
 Jeffrey S. Johnson, MD, Rock Springs, WY
 Robin Jacquet, Akron, OH
 Melanie Morscher, Akron, OH
 Christopher J. Klonk, Akron, OH
 Kerwyn Jones, MD, Akron, OH
 William J. Landis, Akron, OH

Microarray comparison of young female and male ruptured ACL tissue demonstrated significant gene expression differences that may contribute to the increased frequency of such injuries in females.

9:24 AM

PAPER: 387

Meniscal Tears in Adolescents with Anterior Cruciate Ligament Rupture: Relation to Medical Insurance Type

Richard E. Bowen, MD, Los Angeles, CA
 Seth C. Gamradt, MD, Los Angeles, CA
 Peter Wang, BS, Granada Hills, CA
 Kristin Toy, MS, San Dimas, CA

This study shows increased irreparable meniscal tears and lower preoperative Lysholm scores in adolescent patients with anterior cruciate ligament ruptures and government versus commercial insurance.

Discussion – 6 Minutes

9:36 AM

PAPER: 388

Efficacy of the Modified Bröstrom Repair for Adolescent Patients Suffering from Chronic Lateral Ankle Instability

Jared T. Lee, MD, Vail, CO
 Adam Nasreddine, BS, MA, Boston, MA
 Nicole J. Stenquist, Brookline, MA
 Mininder S. Kocher, MD, MPH, Boston, MA

The purpose of this study was to report on the outcomes of the modified Brostrom technique in the pediatric and adolescent population for chronic lateral ankle instability.

9:42 AM

PAPER: 389

Indirect Shoulder Magnetic Resonance Arthrography: A Technique for Identifying Labral Pathology in Young Patients

Andrew J. Razzano Jr, DO, Massillon, OH
 Melanie Morscher, Akron, OH
 Richard Steiner, PhD, Akron, OH
 Kerwyn Jones, MD, Akron, OH
 Azam Eghbal, Akron, OH

Indirect MR arthrography may be a less invasive, cost effective alternative to direct MR arthrography for detecting shoulder labral pathology in young patients with comparable sensitivity (94%).

9:48 AM

PAPER: 390

Digital Radiography in Adolescent Patellar Instability: Is MRI Really Necessary?

Richard E. Bowen, MD, Los Angeles, CA
 Scott Montgomery, MD, Venice, CA
 Kristin Toy, MS, San Dimas, CA

While digital radiography gives useful information regarding patellar height and trochlear dysplasia, MRI is essential to measure the most important factors in adolescent patellar dislocation.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM

Room 265

Practice Management/Rehabilitation II: Health Care Policy and Evaluation

Moderator(s): Catherine G. Hawthorne, MD, Gallup, NM
 Frederick N. Meyer, MD, Mobile, AL

8:00 AM

PAPER: 391

Assessing the Value of Work Done by an Orthopaedic Resident During Call

William Huntington, MD, Charlotte, NC
 Steven L. Frick, MD, Orlando, FL
 James B. Jackson, MD, Salt Lake City, UT

The clinical call work performed by residents substantiates that Medicare is getting its money's worth from residents, in addition to supporting the education of the next generation of surgeons.

8:06 AM

PAPER: 392

Does State-Wide Restriction Affect MRI Ordering Patterns in Orthopaedic Surgeons?

Thomas Barrett, MD, Albany, NY
 Nilay Patel, BS, Albany, NY
 Richard Uhl, MD, Albany, NY
 Jared T. Roberts, MD, Watervliet, NY

A comparative 3,600 patient retroactive analysis of MRI tests ordered per patient encounter in large orthopaedic practices before and after the ban on ownership legislation took place in MD.

8:12 AM

PAPER: 393

Value in Care Coordination: Orthopaedic Surgeon Virtual Consults for MRI Imaging Requests

Alexandra E. Page, MD, La Jolla, CA
 Anshuman Singh, MD, San Diego, CA
 David Buccigrossi, MD, San Diego, CA
 Dustin W. Helvey, DPT, San Diego, CA

Through EMR review orthopaedic surgeons were able to demonstrate improved utilization of musculoskeletal MRI, identifying non-value-added studies and recommending appropriate conservative treatment.

Discussion – 6 Minutes

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Thursday, March 13

8:24 AM

PAPER: 394

The Institutional Burden of Emergent Hip Arthroplasty

Atul F. Kamath, MD, Massapequa, NY
Daniel Austin, BA, Bryn Mawr, PA
Peter Derman, MD, New York, NY
Craig L. Israelite, MD, Philadelphia, PA

Emergent arthroplasty is most often carried out for femoral fractures and prosthetic dislocations and are associated with more complicated and expensive clinical courses.

8:30 AM

PAPER: 395

Prevalence and Costs of Rehabilitation and Physical Therapy After Primary Total Joint Arthroplasty

Kevin Ong, PhD, Philadelphia, PA
Paul A. Lotke, MD, Gladwyne, PA
Edmund Lau, MS, Menlo Park, CA
Michael T. Manley, PhD, Wyckoff, NJ
Steven M. Kurtz, PhD, Philadelphia, PA

Physical therapy is utilized extensively, and in aggregate, costs the Medicare system more than \$648 million a year. Many of the PT modalities utilized remain without substantive outcome data.

8:36 AM

PAPER: 396

The Potential Effect of Regionalization Strategies on Care Delivery for Elective Total Joint Replacement

Christopher J. Dy, MD, New York, NY
Robert G. Marx, MD, New York, NY
Hassan Ghomrawi, PhD, New York, NY
Trevor Banka, MD, New York, NY
Ting-Jung Pan, MPH, New York, NY
Huong Do, MA, New York, NY
Geoffrey H. Westrich, MD, New York, NY
Stephen Lyman, PhD, New York, NY

Selecting a high volume hospital is ideal given the increased complication risk with other choices. However, patients from vulnerable groups are less likely to have access to these optimal choices.

Discussion – 6 Minutes

8:48 AM

PAPER: 397

Cost of “Zero Event” Complications Associated with Common Orthopaedic Procedures

Robert A. Hart, MD, Portland, OR
Garrett Waagmeester, BS, Portland, OR
Paul A. Anderson, MD, Madison, WI
Melanie Arthur, PhD, Fairbanks, AK

“Zero event” complications (DVT, PE, SSI) increase the cost after orthopaedic procedures substantially, which must be anticipated as the risk burden of such events shifts from payers to providers.

8:54 AM

PAPER: 398

The Role of Present on Admission Indicators on TKA Complication Rates in Medicare Claims Data

Peter Cram, MD, MBA, Iowa City, IA
John J. Callaghan, MD, Iowa City, IA
Xin Lu, MS, Iowa City, IA
Yue Li, PhD, Rochester, NY

The objective of our study was to examine how present on admission indicators in Medicare data might enhance estimates of complication rates after primary and revision TKA.

9:00 AM

PAPER: 399

Has Best Available Evidence Changed the Treatment of Femoral Neck Fractures? A Look at ABOS Part 2 Examinees

Benjamin J. Miller, MD, Iowa City, IA
Nicolas O. Noiseux, MD, Iowa City, IA
Matthew D. Karam, MD, North Liberty, IA
John L. Marsh, MD, Iowa City, IA
John J. Callaghan, MD, Iowa City, IA

The trends in the treatment of femoral neck fractures in ABOS Part 2 candidates demonstrate an increase in the utilization of THA, most evident in patients <65 years and adult reconstruction examinees.

Discussion – 6 Minutes

9:12 AM

PAPER: 400

Shared Medical Decision Making in Patients with Osteoarthritis of the Hip and Knee: Results of a RCT

Kevin J. Bozic, MD, MBA, San Francisco, CA
Jeff Belkora, San Francisco, CA
Vanessa Chan, MPH, San Francisco, CA
Jiwon Youm, BS, MS, San Jose, CA
Tianzan Zhou, BA, La Jolla, CA
John Dupaix, MD, Honolulu, HI
Angela N. Bye, MA, ATC, Redwood City, CA
Clarence H. Braddock III, MD, MPH, Stanford, CA
James I. Huddleston III, MD, Redwood City, CA

We found that decision and communication aids used in orthopaedic practice had benefits for both patients and surgeons.

9:18 AM

PAPER: 401

Surgical Skills Curriculum: Development of Orthopaedic Training Modules

Adam Brooks, MD, Alameda, CA
William Camisa, MS, San Francisco, CA
Jeremi M. Leasure, MS, San Francisco, CA
Dimitriy G. Kondrashov, MD, San Francisco, CA
William A. McGann, MD, San Francisco, CA

A basic manual skills training curriculum for orthopaedic residents has been developed and tested with promising results.

Thursday, March 13

9:24 AM

PAPER: 402

The Effect of Orthopaedic Advertising and Self Promotion on a Naïve Population

Stephen Mohny, BA, Rochester, NY
 Peter Quartararo, MD, Rochester, NY
 John Elfar, MD, Rochester, NY

A study of Internet based surgeon biographies categorized as self-promoting and non-self-promoting and their impact on patient and colleague perceptions.

Discussion – 6 Minutes

9:36 AM

PAPER: 403

Blood and Body Fluid Exposures in Orthopaedics: Decreasing the Incidence with an Evidence-Based Protocol

Simon L. Amsdell, MD, Rochester, NY
 Richard D. Southgate, MD, Rochester, NY
 John T. Gorczyca, MD, Rochester, NY

Blood and body fluid exposures can be decreased in the field of orthopaedic surgery by implementing simple, educational protocols.

9:42 AM

PAPER: 404

Computer-Simulated Arthroscopic Knee Surgery: Effects of Distraction

James Cowan, MD, Ann Arbor, MI
 Mark Seeley, MD, Ann Arbor, MI
 Todd A. Irwin, MD, Ann Arbor, MI
 Michelle S. Caird, MD, Ann Arbor, MI

Knee arthroscopy simulation to investigate the effects of distraction on resident surgical performance showed residents at all levels appear susceptible to the detrimental effects of distraction.

9:48 AM

PAPER: 405

The Influence of Comorbidities on Hospital Costs and Length of Stay Following Total Knee Arthroplasty

Andrew J. Pugely, MD, Iowa City, IA
 Yubo Gao, PhD, Iowa City, IA
 Christopher T. Martin, MD, Iowa City, IA
 John J. Callaghan, MD, Iowa City, IA

With incremental comorbidities, both hospital charges and length of stay increased after TKA.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM

Room 345

Sports Medicine/Arthroscopy III: Hip/Pelvis

Moderator(s): Greg J. Folsom, MD, Lenexa, KS
 Eric Pifel, MD, Pewaukee, WI

8:00 AM

PAPER: 406

Prevalence of Femoroacetabular Impingement Imaging Findings in Asymptomatic Volunteers: A Systematic Review

Jonathan M. Frank, MD, Chicago, IL
 Joshua Harris, MD, Bellaire, TX
 Brandon Erickson, MD, Chicago, IL
 William Slikker III, MD, Chicago, IL
 Michael Salata, MD, Cleveland, OH
 Shane J. Nho, MD, Chicago, IL

A systematic review was performed to investigate the prevalence of femoroacetabular impingement findings on imaging in asymptomatic volunteers. We found cam and pincer morphology to be common.

8:06 AM

PAPER: 407

Can Bracing Affect Altered Gait Patterns in Femoroacetabular Impingement

Marc Safran, MD, Redwood City, CA
 Jonathan Rylander, PhD, San Antonio, TX
 Beatrice Shu, MD, Atlanta, GA
 Thomas P. Andriacchi, PhD, Stanford, CA

Bracing can alter hip motion patterns that often result in hip impingement (flexion, adduction and IR) in patients with FAI, with selected activities such as walking, jogging, and stair climbing.

8:12 AM

PAPER: 408

Validation of a Computer-Assisted Dynamic Simulation for Treatment of Symptomatic Femoroacetabular Impingement

Olusanjo O. Adeoye, MD, Chantilly, VA
 Asheesh Bedi, MD, Ann Arbor, MI
 Bryan T. Kelly, MD, New York, NY

Three dimensional, CT-based modeling of hip with symptomatic FAI deformity can render a template and virtual surgical plan that is very similar to the postoperative result.

Discussion – 6 Minutes

Thursday, March 13

8:24 AM

PAPER: 409

The Effect of Acetabular Rim Recession on Anterior Coverage: A Cadaveric Study Using the False Profile Radiograph

Scott Kling, MD, Cleveland, OH
 Michael Karns, MD, Cleveland, OH
 Jeremy Gebhart, MD, Cleveland, OH
 Mark R. Robbin, MD, Cleveland, OH
 Christos Kosmas, MD, Cleveland, OH
 Shane J. Nho, MD, Chicago, IL
 Michael Salata, MD, Cleveland, OH

The anterior center edge angle, as measured on the false profile radiograph, is a superior index of anterior rim recession for pincer lesions compared to the lateral center edge angle.

8:30 AM

PAPER: 410

Arthroscopic Management of Femoroacetabular Impingement (FAI) in Adolescents

JW Thomas Byrd, MD, Nashville, TN
 Kay S. Jones, RN, Nashville, TN

This controlled study demonstrates favorable outcomes for arthroscopic management of FAI in adolescents with improvement more than comparable to that of an adult population and higher absolute scores.

8:36 AM

PAPER: 411

Three to Seven Year Outcome and Survivorship Following Hip Arthroscopy in Dysplastic Hips

Jack G. Skendzel, MD, Woodbury, MN
 Karen K. Briggs, MPH, Vail, CO
 Peter Goljan, MD, Boylston, MA
 Marc J. Philippon, MD, Vail, CO

In this difficult patient population, hip arthroscopy can help restore function in some patients.

Discussion – 6 Minutes

8:48 AM

PAPER: 412

Predictors of Poor Clinical Outcome Following Hip Arthroscopy for Developmental Dysplasia of the Hip

Soshi Uchida, MD, PhD, Kitakyushu, Japan
 Hajime Utsunomiya, MD, Kitakyushu, Japan
 Tsuyoshi Furuko, MD, Kitakyushu, Japan
 Toshiharu Mori, MD, PhD, Kitakyushu, Japan
 Akinori Sakai, MD, PhD, Kitakyushu, Japan
 Tomonori Taketa, MD, Kitakyushu-shi, Japan
 Toshitaka Nakamura, Kitakyushu, Japan

Hip arthroscopy for developmental dysplasia of the hip generally has a moderate clinical outcome, unless proper candidates are selected.

8:54 AM

PAPER: 413

Arthroscopic Surgery for Global versus Focal Pincer Femoroacetabular Impingement: Are the Outcomes Different?

Dean K. Matsuda, MD, Los Angeles, CA
 Nikhil Gupta, BA, Fullerton, CA
 Bantoo Sehgal, MD, West Fargo, ND
 Bantoo Sehgal, MD, West Fargo, ND
 Raoul Burchette, MA MS, Pasadena, CA

This prospective multicenter study demonstrates comparable safety and outcomes from arthroscopic surgery of global and focal pincer femoroacetabular impingement.

9:00 AM

PAPER: 414

Femoral and Combined Anteversion is Not Predictive of Outcome After Arthroscopic Treatment of FAI

Peter D. Fabricant, MD, MPH, New York, NY
 Kara Fields, MS, New York, NY
 Erin Magennis, New York, NY
 Samuel A. Taylor, MD, New York, NY
 Michael D. Stover, MD, Chicago, IL
 Asheesh Bedi, MD, Ann Arbor, MI
 Bryan T. Kelly, MD, New York, NY

In the absence of a psoas lengthening, favorable outcomes after corrective FAI surgery may be expected even in the setting of increased femoral or combined anteversion.

Discussion – 6 Minutes

9:12 AM

PAPER: 415

Arthroscopic Acetabular Labral Reconstruction in FAI: A Matched-Pair Controlled Study with Two-year Follow Up

Benjamin G. Domb, MD, Oak Brook, IL
 Timothy J. Jackson, MD, Studio City, CA
 Anthony P. Trenga, Charlottesville, VA
 Christine E. Stake, MA, Naperville, IL
 Youssef El Bitar, MD, Springfield, IL

The purpose of this matched-pair controlled study is to compare the clinical outcomes of arthroscopic labral reconstruction and resection in patients with FAI of the hip.

9:18 AM

PAPER: 416

Arthroscopic Hip Revision Surgery for Residual FAI: Surgical Outcomes

Christopher M. Larson, MD, Edina, MN
 M. Russell Giveans, PhD, Eden Prairie, MN
 Asheesh Bedi, MD, Ann Arbor, MI
 Kathryn Samuelson, BS, Edina, MN
 Rebecca M. Stone, ATC, Edina, MN

Arthroscopic hip revision surgery for residual FAI led to significantly improved outcome measures; however, outcomes were inferior to those after primary arthroscopic FAI corrective surgery.

Thursday, March 13

9:24 AM

PAPER: 417

Short-term Complications and Survival Analyses of Hip Arthroscopies Performed in the UK NHS-A Review of 6,395 Cases

Ajay Malviya, MD, Newcastle Upon Tyne, United Kingdom
 Simon Jameson, Stockton-on-Tees, United Kingdom
 Ali Raza, MBBS, MS, Northumberland, United Kingdom
 Philip James, PhD, Alcester, Warwickshire, United Kingdom
 Mike R. Reed, MBBS MD, Northumberland, United Kingdom
 Paul F. Partington, MD, Corbridge, United Kingdom

We have reviewed the outcomes of hip arthroscopy performed in the English National health service from 2005 to 2012 to look at the short term complications and conversion to total hip arthroplasty.

Discussion – 6 Minutes

9:36 AM

PAPER: 418

Arthroscopic Reduction Versus Open Reduction in Femoral Head Fractures

Sun Jung Yoon, MD, Jeonju, Republic of Korea
 Myung-Sik Park, MD, Jeonju, Republic of Korea
 Hongman Cho, MD, Gwangju, Republic of Korea
 Young-Jae Moon, Jeonju, Republic of Korea
 Seung-Min Choi, Jeonju, Republic of Korea

An arthroscopic approach results in stable fixation and early joint motion, thereby effectively treating displaced femoral head fractures in a minimally invasive manner.

9:42 AM

PAPER: 419

Delayed Gadolinium-Enhanced MRI of Cartilage Predicts the Pattern of Hip Osteoarthritis Progression at Five Years

Antony Palmer, MA, BMBCb, Oxford, United Kingdom
 Scott J. Fernquest, BA, MBBS, Newport, United Kingdom
 Tom Pollard, MD, Oxford, United Kingdom
 Helen L. Vigar, Oxford, United Kingdom
 Hamish G. Lowdon, Warwickshire, United Kingdom
 Eugene McNally, MD, Oxford, United Kingdom
 David R. Wilson, PhD, Vancouver, BC, Canada
 Andrew J. Carr, FRCS, Headington Oxford, United Kingdom
 Sion Glyn-Jones, MA MBBS, Oxford, United Kingdom

Individuals with FAI morphology and a low dGEMRIC ratio may represent those most likely to benefit from FAI lesion debridement for osteoarthritis prevention.

9:48 AM

PAPER: 420

Functional Outcomes of Acute & Chronic Proximal Hamstring Ruptures: Repair versus Allograft Reconstruction

David A. Rust, MD, Duluth, MN
 M. Russell Giveans, PhD, Eden Prairie, MN
 Rebecca M. Stone, ATC, Edina, MN
 Kathryn Samuelson, BS, Edina, MN
 Christopher M. Larson, MD, Edina, MN

Both direct proximal hamstring repair & allograft reconstruction had favorable results for ADLs; for patients who desire to return to sports or higher demand activities, acute repair is recommended.

Discussion – 6 Minutes

INSTRUCTIONAL COURSE LECTURE

10:30 AM — 12:30 PM

321 Bearing Surfaces and Total Hip Arthroplasty: Clinical Outcomes and Avoidance, Management of Adverse Events

Room 221

Moderator: Jay R. Lieberman, MD, Los Angeles, CA
 William J. Hozack, MD, Philadelphia, PA
 Steven J. MacDonald, MD, London, ON, Canada
 William J. Maloney, MD, Redwood City, CA

Clinical outcomes, strategies to optimally manage these adverse events and selection of the appropriate bearing surface for your patients will be reviewed.

322 A Patient Specific Approach to Knee Arthroplasty

Room 208

Moderator: Adolph V. Lombardi Jr, MD, New Albany, OH
 S D. Stulberg, MD, Chicago, IL
 Steven B. Haas, MD, New York, NY
 Wolfgang Fitz, MD, Boston, MA

Patient specific techniques in knee arthroplasty utilize preoperative imaging to determine anatomical reference points and alignment. Customized pin or cut guides are generated to facilitate accurate bony resections and optimize component position.

323 The Fab Five of the Foot and Ankle

Room 226

Moderator: Mark J. Berkowitz, MD, Cleveland, OH
 Michael P. Clare, MD, Tampa, FL
 Mark Drakos, MD, Uniondale, NY
 James J. Sferra, MD, Cleveland, OH

Tips and techniques for the surgical treatment of Lisfranc injuries, hallux rigidus, 5th metatarsal fractures, ankle instability, and insertional Achilles tendinopathy are presented.

Thursday, March 13

324 Shared Decision Making and Informed Consent: Understanding the Goals and the Responsibility of the Orthopaedic Surgeon



Room 262
 Moderator: Paul Levin, MD, Bronx, NY
 Hassan R. Mir, MD, Nashville, TN
 Lauren Flicker, JD, MBE, Bronx, NY

Complicated clinical, cultural and social presentations frequently create medical uncertainty. Understanding the core biomedical principals of patient care and shared decision making can successfully assist the physician in resolving personal conflicts in the care of these patients.

325 Venturing into the Overlap Between Pediatric Orthopaedics and Hand Surgery



Room 276
 Moderator: Scott H. Kozin, MD, Philadelphia, PA
 Dan A. Zlotolow, MD, Philadelphia, PA
 Joshua Ratner, MD, Atlanta, GA
 Roger Cornwall, MD, Cincinnati, OH

Designed to allow the pediatric orthopaedist and adult hand surgeon to become comfortable with a set of pediatric hand surgery procedures that can safely be performed. Lectures, case presentations, and surgical videos will be used to highlight indications, technique and outcomes. The goal is for the participant to expand their practice to the pediatric hand.

326 Surgical Aspects of Spinal Growth Modulation in Scoliosis Correction



Room 215
 Moderator: Viral V. Jain, MD, MBBS, Cincinnati, OH
 Peter F. Sturm, MD, Cincinnati, OH
 Eric J. Wall, MD, Cincinnati, OH
 Michael G. Vitale, MD, MPH, Irvington, NY
 Amer Samdani, MD, Philadelphia, PA

Surgical aspects of spinal growth modulation: Indications, surgical techniques, post-operative management, pearls and pitfalls, and salvage techniques of nitinol staples, titanium staple-screw and anterior spinal tether.

327 Leading a Digital Life in Orthopaedics



Room 260
 Moderator: Jack Choueka, MD, Lawrence, NY
 Eric Eisemon, MD, Newton Center, MA
 Norman Stone, MD, Alexandria, VA
 Ira H. Kirschenbaum, Bronx, NY
 Howard J. Goodman, MD, Englewood, NJ

Computerized medical records, online resources, smartphones and iPads can seem foreign and complicated to the busy orthopaedic surgeon. Demonstrate the tremendous potential that these technologies hold to improve efficiency, safety and patient care.

328 What Went Wrong and What Was Done About It: Pitfalls in Treatment of Common Shoulder Surgery



Room 353

Moderator: Gerald R. Williams Jr, MD, Philadelphia, PA
 Gary M. Gartsman, MD, Houston, TX
 Edwin E. Spencer Jr, MD, Knoxville, TN
 Joseph D. Zuckerman, MD, New York, NY

Address the common complications of arthroscopic cuff repair, Bankart repair, hemiarthroplasty for fracture, and acromioclavicular reconstruction in primarily a case-based format.

329 Reverse Shoulder Arthroplasty



Room 271

Moderator: Edward G. McFarland, MD, Lutherville, MD
 Xavier A. Duralde, MD, Atlanta, GA
 Lynn A. Crosby, MD, Augusta, GA
 Guido Marra, MD, Chicago, IL
 Steve A. Petersen, MD, Lutherville, MD

Will encompass the theory and methodology of reverse shoulder arthroplasty as applied to primary and revision situations.

330 Realignment Planning in Adult Spinal Deformity: The Newest Tools, Formulas and Techniques to Get It Right



Room 350

Moderator: Thomas J. Errico, MD, New York, NY
 Robert S. Bess, MD, Castle Rock, CO
 Virginia Lafage, PhD, New York, NY
 Justin S. Smith, MD, Charlottesville, VA

Treatment of adult spinal deformity focusing on clinical data and new tools to help improve surgical planning, outcomes and avoid complications.

331 High Tibial Osteotomy and Distal Femoral Osteotomy: Indications, Techniques and Post-Op Management for the Treatment of Arthrosis and Cartilage Deficiency



Room 356

Moderator: Chadwick C. Prodromos, MD, Glenview, IL
 Roland P. Jakob, MD, Môtier, Switzerland
 Annunziato Amendola, MD, Iowa City, IA

Complete guidelines on how to use high tibial osteotomy and distal femoral osteotomy as primary treatment for arthrosis and as a necessary adjunct to un-weight the knee in conjunction with cartilage restoration procedures.

332 Current Plating Techniques and Definitive Treatment Options for Fractures of the Tibial Plafond and Treatment of the Late and Failed Pilon



Room 207

Moderator: Anthony S. Rhorer, MD, Scottsdale, AZ
 Gilbert R. Ortega, MD, Scottsdale, AZ
 Michael T. Archdeacon, MD, Cincinnati, OH

Staged treatment of tibial pilon fractures. Emphasis will be on modern plating techniques including standard and alternative operative approaches. Open treatment in combination with definitive external fixation and salvage of the late presentation and treatment failures.

An alphabetical faculty financial disclosure list can be found starting on page 312.

Thursday, March 13

333 Controversies in Management of Tibia Fractures*Moderator: Nirmal C. Tejwani, MD**David R. Polonet, MD, Manalapan, NJ**Michael Suk, MD, Danville, PA**Philip R. Wolinsky, MD, Sacramento, CA***Room
347**

Focus on controversies associated with management of tibia fractures including the use of supra-patellar nailing. The merits of choosing the appropriate fixation for tibial metaphyseal fractures, both proximal and distal will be debated. The use of external fixation for definitive management of non-articular tibia fractures will also be discussed.

334 Complex Primary Total Hip Arthroplasty: A Case Based Approach*Moderator: Daniel J. Berry, MD, Rochester, MN**Craig J. Della Valle, MD, Chicago, IL**David G. Lewallen, MD, Rochester, MN**John J. Callaghan, MD, Iowa City, IA**C A. Engh Jr, MD, Arlington, VA**Kevin L. Garvin, MD, Omaha, NE**William A. Jiranek, MD, Richmond, VA**Wayne G. Paprosky, MD, Winfield, IL**Christopher L. Peters, MD, Salt Lake City, UT**George J. Haidukewych, MD, Orlando, FL***Room
210**

Case-based format to highlight techniques and discuss clinical tips and tricks to manage complex primary hip arthroplasty challenges. Techniques to manage challenging cases including DDH, post-traumatic hip problems, bone deformity and deficiency and young patients will be discussed.

335 Soft Tissue Lumps and Bumps: Tips to Stay Out of Trouble*Moderator: Joel Mayerson, MD, Columbus OH**Valerae O. Lewis, MD, Houston, TX**Thomas J. Schar Schmidt, MD, Westerville, OH**Carol D. Morris, MD, MS, New York, NY***Room
218**

Will illustrate tips to provide optimal patient care when managing soft tissue lumps and bumps.

FD8 Cliff Notes on Clinical Research: What You Need to Get Started**Room
217***Moderator: John W. Sperling, MD, MBA, Rochester, MN**Leesa M. Galatz, MD, Saint Louis, MO**Bruce S. Miller, MD, MS, Ann Arbor, MI*

Understand the scientific method and be able to design and complete a clinical research project. Formulate a clinically relevant hypothesis, perform a power analysis, collect and analyze data. Determine when the results are worth of submission as an abstract.

PAPER PRESENTATION

10:30 AM — 12:30 PM**Theater A****Adult Reconstruction Hip IV: Revision THA***Moderator(s): George F. Chimento, MD, Metairie, LA**Bassam Masri, MD, FRCSC, Vancouver, BC, Canada**Scott M. Sporer, MD, Wheaton, IL***10:30 AM****PAPER: 421****Preoperative Radiographic Evaluation of Patients with Pelvic Discontinuity***John R. Martin, MD, Rochester, MN**Ian J. Barrett, Rochester, MN**Rafael J. Sierra, MD, Rochester, MN**David G. Lewallen, MD, Rochester, MN**Daniel J. Berry, MD, Rochester, MN*

The diagnostic accuracy of standard and additional views for pelvic discontinuity have been examined, with excellent sensitivity noted with a combination of AP and judet films.

10:36 AM**PAPER: 422****Outcomes of Revision Total Hip Arthroplasty: Analysis of a U.S. Total Joint Registry***Monti Khatod, MD, Santa Monica, CA**Guy Cafri, PhD, La Jolla, CA**Maria C. Inacio, MS, San Diego, CA**Alan L. Schepps, San Diego, CA**Liz Paxton, MA, San Diego, CA**Stefano A. Bini, MD, San Francisco, CA*

When evaluating patient, implant, surgical and hospital factors at time of revision THA: age, surgeon experience, implant fixation, and bearing surfaces had significant impact on risk of re-revision.

10:42 AM**PAPER: 423****Specific Screening of Metal-on-Metal Hip Patients will Significantly Increase their Revision Surgery***Olli Lainiala, MB, Tampere, Finland**Antti Eskelinen, MD, PhD, Tampere, Finland**Petra Elo, MD, PhD, Tampere, Finland**Aleksi Reito, MD, Tampere, Finland**Jorma Pajamäki, MD, PhD, Tampere, Finland**Timo J. Puolakka, MD, PhD, Tampere, Finland**Teemu Moilanen, MD, Tampere, Finland*

Screening with blood metal ion measurements and targeted cross-sectional imaging revealed several new cases of adverse reaction to metal debris among MoM THRs with previously good mid-term results.

Discussion – 6 Minutes

Thursday, March 13

10:54 AM

PAPER: 424

Trabecular Metal Cups - A Safe Option in Cup Revision Surgery

Maziar Mohaddes, MD, Molndal, Sweden
 Ola Rolfson, MD, PhD, Gothenburg, Sweden
 Johan N. Karrholm, MD, Molndal, Sweden

Analysis of 2,490 revisions, with a mean follow-up of 3.7 years, from the Swedish hip arthroplasty register show that trabecular metal cups can be used safely in first time cup revisions.

11:00 AM

PAPER: 425

RSA of the Migration of Porous Tantalum Components Used to Reconstruct Major Acetabular Deficiencies

Donald Howie, MD, PhD, Adelaide, Australia
 Stuart A. Callary, BS, Adelaide, Australia
 John M. Abrahams, Malvern, Australia
 Lucian B. Solomon, MD, Hyde Park, Australia

Most porous-tantalum acetabular reconstructions for severe acetabular deficiencies were stable. Migration >3mm at 3 months is associated with symptomatic ongoing migration leading to revision surgery.

11:06 AM

PAPER: 426

Medicare Fails to Compensate Time/Effort Associated with Revision Arthroplasty; Is Patient Access to Care at Risk?

Gregory K. Deirmengian, MD, Broomall, PA
 Anthony T. Tokarski, BS, Philadelphia, PA
 Paul M. Lichstein, MD, Philadelphia, PA
 Carl A. Deirmengian, MD, Wynnewood, PA
 Matthew Austin, MD, Philadelphia, PA

The time and effort employed for primary and revision arthroplasty procedures was assessed to determine if Medicare reimbursement rates compensate for the additional time and effort required for revision.

Discussion – 6 Minutes

11:18 AM

PAPER: 427

Determination of Serum Deoxyipyridinoline Allows Diagnosis of Aseptic Loosening after Total Joint Replacement

Stefan Landgraeber, MD, Essen, Germany
 Sebastian Warwas, Essen, Germany
 Marcel Haversath, MD, Essen, Germany
 Henning Quitmann, MD, Essen, Germany
 Axel Marx, Sommerfeld, Germany
 Marcus Jager, MD, PhD, Essen, Germany

Measurement of serum Deoxyipyridinoline is a meaningful assay for evaluation of aseptic loosening of hip and knee replacements.

11:24 AM

PAPER: 428

Polyethylene Wear and Osteolysis is Associated with High Revision Rate of the Bantam AML Femoral Component in DDH

Patrick Murray, MD, Charleston, SC
 James I. Huddleston III, MD, Redwood City, CA
 Katherine Hwang, MS, Redwood City, CA
 Sussanna Imrie, PT, Stanford, CA
 Stuart B. Goodman, MD, Redwood City, CA

The long term results of primary total hip arthroplasty with a Bantam AML femoral stem in DDH patients showed a high complication and revision rate.

11:30 AM

PAPER: 429

Revision of Recalled Modular Neck Femoral Implants

Christopher P. Walsh, MD, Northville, MI
 Joseph P. Nessler, MD, Sartell, MN
 David C. Markel, MD, Southfield, MI

Retrospective review of modular neck femoral stems shows elevated rates of tissue necrosis, synovitis, bony erosion, stem-neck corrosion, chronic inflammatory changes and osteotomy at revision.

Discussion – 6 Minutes

11:42 AM

PAPER: 430

◆ Early Results of Metal-on-Metal Hip Revisions for Adverse Reactions to Metal Debris

Olli Lainiala, MB, Tampere, Finland
 Aleksi Reito, MD, Tampere, Finland
 Petra Elo, MD, PhD, Tampere, Finland
 Jorma Pajamäki, MD, PhD, Tampere, Finland
 Timo J. Puolakka, MD, PhD, Tampere, Finland
 Antti Eskelinen, MD, PhD, Tampere, Finland

Blood metal ion levels of 60 patients with a unilateral metal-on-metal hip decreased significantly during the first 12 months after revision surgery, however, many reMED symptomatic.

11:48 AM

PAPER: 431

Improvement in the Detection Rate of PJI in Total Hip Arthroplasty Through Multiple Sonicate Fluid Cultures

Viktor Janz, MD, Berlin, Germany

The acquisition of multiple sonicate fluid cultures and the combined interpretation with the histological results both help to reference singular bacterial isolations and improve the diagnosis of PJI.

Thursday, March 13

11:54 AM

PAPER: 432

Quantifying the Burden of Periprosthetic Joint Infection in Revision Total Hip and Knee Arthroplasty

Kevin J. Bozic, MD, MBA, San Francisco, CA
 Edmund Lau, MS, Menlo Park, CA
 Kevin Ong, PhD, Philadelphia, PA
 Atul F. Kamath, MD, Massapequa, NY
 Vanessa Chan, MPH, San Francisco, CA
 Thomas P. Vail, MD, San Francisco, CA
 Steven M. Kurtz, PhD, Philadelphia, PA
 Harry E. Rubash, MD, Boston, MA
 Daniel J. Berry, MD, Rochester, MN

The burden of PJI following THA and TKA is immense. Epidemiologic differences exist in the rank, severity and population of patients who undergo RTHA and RTKA for PJI.

Discussion – 6 Minutes

12:06 PM

PAPER: 433

Periprosthetic Joint Infections Treated with Two-Stage Revision over 14 Years: An Evolving Microbiology Profile

Benjamin Bjerke-Kroll, MD, New York, NY
 Alexander Christ, MD, New York, NY
 Alexander S. McLawhorn, MD, MBA, New York, NY
 Peter K. Sculco, MD, New York, NY
 Dorothy Marcello, BA, New York, NY
 Barry D. Brause, MD, New York, NY
 Kethy Jules-Elysee, MD
 Thomas P. Sculco, MD, New York, NY

We identified temporal trends in PJI pathogens in series of 785 patients from one institution. There were significant increases in the rates of primary MRSA, *S. viridans*, and *P. acnes*.

12:12 PM

PAPER: 434

The Outcome of Unexpected Positive Intraoperative Cultures in Presumed Aseptic Revision Hip and Knee Arthroplasty

Anas Saleh, MD, Beachwood, OH
 Kevin J. Bloom, BA, South Euclid, OH
 Mark Hebeish, DDS, Cleveland, OH
 Mario Farias-Kovac, MD, Cleveland, OH
 Carlos A. Higuera, MD, Lakewood, OH
 Wael K. Barsoum, MD, Cleveland, OH

This is a descriptive study that reports the rate of unexpected positive intraoperative cultures in revision THA and TKA performed for aseptic indications and the long-term implications.

12:18 PM

PAPER: 435

An Accurate Diagnosis of Periprosthetic Joint Infection: Are We There Yet?

Benjamin Zmistowski, BS, Philadelphia, PA
 Camilo Restrepo, MD, Philadelphia, PA
 Dana Geiser, BS, Philadelphia, PA
 Mitchell Maltenfort, PhD, Philadelphia, PA
 Javad Parvizi, MD, FRCS, Philadelphia, PA

A model provided by recursive partitioning had greater accuracy (96%) in diagnosing periprosthetic joint infection than a rigid diagnostic algorithm (90%) or surgeon judgment (94%).

Discussion – 6 Minutes

PAPER PRESENTATION

10:30 AM — 12:30 PM

Room 245

Shoulder and Elbow III: Shoulder Arthroplasty

Moderator(s): Mark A. Frankle, MD, Temple Terrace, FL
 Samer S. Hasan, MD, Cincinnati, OH

10:30 AM

PAPER: 436

Shoulder Registry Five Year Outcomes Analysis

Richard S. Page, MD, FRACS, Geelong, Australia
 Stephen Graves, MD, Adelaide, Australia
 Richard De Steiger, MD, Richmond, Australia
 David Davidson, MD, University Of Adelaide, Australia
 Robyn Vial, MSc, Adelaide, Australia
 Elizabeth C. Griffith, BA, Adelaide, Australia
 Kara Cashman, BSc (HONS), Adelaide, Australia
 Yen-Liang Liu, Adelaide, Australia
 Michelle Lorimer, Adelaide, Australia

Registry data reporting outcomes of shoulder arthroplasty are helping to guide surgical selection, improving outcomes, informing choice for surgeons, and reducing revision burden and cost.

10:36 AM

PAPER: 437

Minimum 20-Year Follow Up of Neer Shoulder Arthroplasty in Patients Less than 50 Years

Bradley S. Schoch, MD, Rochester, MN
 John W. Sperling, MD, MBA, Rochester, MN
 Robert H. Cofield, MD, Rochester, MN
 Cathy D. Schleck, Rochester, MN

Both hemiarthroplasty and total shoulder arthroplasty, in patients less than 50 years old, provide lasting pain relief, improved range of motion, and 75% survivorship at 20 year follow up.

Thursday, March 13

10:42 AM

PAPER: 438

Driving Performance after Total Shoulder Arthroplasty

Garret Garofolo, BS, Commack, NY
 Mathew Hamula, BA, BS, New York, NY
 Joseph D. Zuckerman, MD, New York, NY

The present study findings suggest that patients undergoing total shoulder replacement show improvement in driving performance with the mitigation of shoulder pain and discomfort.

Discussion – 6 Minutes

10:54 AM

PAPER: 439

Does Preoperative Rotator Cuff Fatty Infiltration Affect Outcome After Shoulder Arthroplasty?

Peter Lapner, MD, Ottawa, ON, Canada
 Lianfu Jiang, Wenzhou, China
 Tinghua Zhang, MSc, Ottawa, ON, Canada
 George S. Athwal, MD, London, ON, Canada

Associations were identified that correlated greater degrees of fat infiltration and atrophy to poorer functional results after shoulder arthroplasty.

11:00 AM

PAPER: 440

Factors that Predict Postoperative Motion in Patients Treated with Reverse Shoulder Arthroplasty

Mark A. Frankle, MD, Temple Terrace, FL
 Daniel G. Schwartz, MD, Chicago, IL
 Benjamin J. Cottrell, BS, Tampa, FL
 Matthew J. Teusink, MD, Omaha, NE
 Rachel Clark, BA, Tampa, FL
 Katheryne Downes, MPH, Rockville, MD

Maximizing intraoperative motion can ensure patients have a much greater likelihood of improvement in their final active motion.

11:06 AM

PAPER: 441

Shoulder Muscle Parameters as Predictors of Outcome Following Reverse Total Shoulder Arthroplasty

Brett P. Wiater, MD, Birmingham, MI
 James E. Moravek Jr, MD, Palos Hills, IL
 Daphne Pinkas, MD, Pleasant Rdg, MI
 Denise Koueiter, Royal Oak, MI
 Tristan Maerz, MS, Royal Oak, MI
 Samuel Yonan, Royal Oak, MI
 David Marcantonio, MD
 J. Michael Wiater, MD, Beverly Hills, MI

Deltoid size impacts functional outcomes following RTSA.

Discussion – 6 Minutes

11:18 AM

PAPER: 442

Radiographs and CT Show Similar Observer Agreement When Classifying Glenoid Morphology in Glenohumeral Arthritis

Jessica G. Aronowitz, MD, Bangor, ME
 William Harmsen, MS, Rochester, MN
 Cathy D. Schleck, Rochester, MN
 Joaquin Sanchez-Sotelo, MD, Rochester, MN
 John W. Sperling, MD, MBA, Rochester, MN
 Robert H. Cofield, MD, Rochester, MN

Axillary radiographs and computed tomography provide similar observer agreement when the Walch classification is used in primary glenohumeral osteoarthritis.

11:24 AM

PAPER: 443

A Comparison of Perioperative Outcomes Following Total Shoulder Arthroplasty in Patients with and without Diabetes

Jason L. Koh, MD, Winnetka, IL
 Jimmy Jiang, MD, Chicago, IL
 Aneet Toor, MD, Chicago, IL
 Lewis L. Shi, MD, Chicago, IL

Pts with uncontrolled diabetes had more comorbidities, longer hospitalizations, higher costs & increased periop complications after total sholder arthroplasty than patient without diabetes or control.

11:30 AM

PAPER: 444

Outcomes of Glenoid Bone Grafting in Revision Reverse Total Shoulder Arthroplasty

Eric R. Wagner, MD, Rochester, MN
 Timothy B. Griffith, MD, Rochester, MN
 Matthew Houdek, MD, Rochester, MN
 Robert H. Cofield, MD, Rochester, MN
 Joaquin Sanchez-Sotelo, MD, Rochester, MN
 John W. Sperling, MD, MBA, Rochester, MN
 Bassam Elhassan, MD, Rochester, MN

Glenoid bone grafting is commonly required in revision surgery, and while associated with an increased risk of glenoid loosening, it is able to restore shoulder function, stability and relieve pain.

Discussion – 6 Minutes

11:42 AM

PAPER: 445

Radiostereometric and Radiographic Analysis of Glenoid Component Motion After Total Shoulder Arthroplasty

Jonathan Streit, MD, Cleveland, OH
 Yousef Shishani, MD, Cleveland, OH
 Meridith E. Greene, Boston, MA
 Audrey Nebergall, Boston, MA
 Charles R. Bragdon, PhD, Boston, MA
 Henrik Malchau, MD, Boston, MA
 Reuben Gobezie, MD, Mayfield Heights, OH

The early motion of glenoid components in our cohort was greatest in rotation, and the presence of radiolucencies appears to be associated with high levels of early rotational motion.

Thursday, March 13

11:48 AM

PAPER: 446

Scapular Neck Length Measurement and Distribution in the Reverse Shoulder Arthroplasty (RSA) Patient Population

Peter Simon, PhD, Tampa, FL
 Miguel Diaz, BS, Tampa, FL
 Daniel G. Schwartz, MD, Chicago, IL
 Brandon G. Santoni, PhD, Tampa, FL
 Mark A. Frankle, MD, Temple Terrace, FL

This retrospective study reports on the novel, three-dimensional image-based methodology of quantifying the scapular neck length in the population of RSA subjects.

11:54 AM

PAPER: 447

Wear Characteristics of Vitamin E-infused Polyethylene in a Reverse Shoulder Arthroplasty Model

Thomas (Quin) Throckmorton, MD, Germantown, TN
 John W. Sperling, MD, MBA, Rochester, MN
 Hani Haider, PhD, Omaha, NE

Vitamin E-infused polyethylene produces less volumetric wear than highly cross-linked polyethylene.

Discussion – 6 Minutes

12:06 PM

PAPER: 448

Feasibility of an Osteochondral Allograft for Biologic Glenoid Resurfacing

Gregory L. Cvetanovich, MD, Chicago, IL
 Peter N. Chalmers, MD, Chicago, IL
 Adam B. Yanke, MD, Chicago, IL
 Anil Gupta, MD, MBA, Tampa, FL
 Emma L. Klosterman, MA, Chicago, IL
 Nikhil N. Verma, MD, Chicago, IL
 Anthony A. Romeo, MD, Chicago, IL

We used three-dimensional computed tomography modeling of cadaveric glenoids to determine that most glenoids could support center-based osteochondral allografts of 16-20mm diameter at depth of 4mm.

12:12 PM

PAPER: 449

Revision Rate and Reasons for Revision Following Resurfacing Shoulder Replacement in Patients with Osteoarthritis

Jeppé Rasmussen, MD, Brøndby, Denmark
 Stig Brorson, PhD, Copenhagen, Denmark

Patient reported outcome, revision rate and reason for revision following resurfacing arthroplasty in patients with osteoarthritis: 837 operations reported to the Danish Shoulder Arthroplasty Registry.

12:18 PM

PAPER: 450

Outcome of Resurfacing Total Shoulder Arthroplasty at Two to Seven Years

Rupen Dattani, MD, FRCS, Middlesex, United Kingdom
 Vijayraj Ramasamy, High Wycombe, United Kingdom
 Gavin Brigstocke, Surrey, United Kingdom
 David R. Boardman, FRCS, MBBS, Epsom, United Kingdom
 Vipul Patel, MBBS, MS, Surrey, United Kingdom

Resurfacing total shoulder arthroplasty (TSR) yields excellent clinical and radiological outcomes at a mean follow-up of 4 years comparable with those observed after a conventional stemmed TSR.

Discussion – 6 Minutes

PAPER PRESENTATION

10:30 AM — 12:30 PM

Room 265

Sports Medicine/Arthroscopy IV: Knee I

Moderator(s): Peter G. Gerbino, MD, Monterey, CA
 Rick W. Wright, MD, St. Louis, MO

10:30 AM

PAPER: 451

Arthroscopic Meniscal Allograft Transplantation in Male Professional Soccer Players

Giulio Maria Marcheggiani Muccioli, MD, Bologna, Italy
 Stefano Zaffagnini, MD, Bologna, Italy
 Alberto Grassi, MD, Bologna, Italy
 Tommaso Bonanzinga, MD, Bologna, Italy
 Stefano Della Villa, MD, Bologna, Italy
 Maurilio Marcacci, MD, Bologna, Italy

Arthroscopic Meniscal Allograft Transplantation in professional soccer players allowed returning to play at the same level (Tegner 10) in 75% of the cases at 36-month follow-up.

10:36 AM

PAPER: 452

Risk Factors for 30-Day Morbidity and Mortality Following Knee Arthroscopy: A Review of 12,271 Patients

Christopher T. Martin, MD, Iowa City, IA
 Andrew J. Pugely, MD, Iowa City, IA
 Yubo Gao, PhD, Iowa City, IA
 Brian R. Wolf, MD, Iowa City, IA

We reviewed 12,271 cases of knee arthroscopy to identify risk factors for 30-day complications. Recent surgery, operative time > 1.5 hrs, black race, ASA class, and age over 40 yrs were significant.

Thursday, March 13

10:42 AM

PAPER: 453

Analysis of Failure and Subsequent Surgery after Unsatisfactory Medial Patellofemoral Ligament Reconstruction

Manfred Nelitz, MD, Oberstdorf, Germany
Sean R. Williams, MBBS, Oberstdorf, Germany
Sabine Lippacher, MD, Ulm, Germany

Errors in patient selection, technical problems and non-consideration of additional risk factors were found to be the reasons for revision surgery after MPFL reconstruction.

Discussion – 6 Minutes

10:54 AM

PAPER: 454

The Relationship of the Medial Patellofemoral Ligament (MPFL) Attachment to the Femoral Physis

Lutul D. Farrow, MD, Garfield Heights, OH
Vincent Alentado, BS, Cleveland Heights, OH
Zakaria Abdulnabi, BS, Cleveland, OH
Raymond W. Liu, MD, Cleveland, OH
Allison Gilmore, MD, Shaker Heights, OH

The MPFL attachment is distal to the medial aspect of the femoral physis but is juxtaposed to the concave undulation of the posterior physis.

11:00 AM

PAPER: 455

◆ Two-year Follow Up of Randomized Controlled Trial of Arthroscopic Autologous Chondrocyte Implantation in the Knee

Clemente Ibarra, MD, Mexico City, Mexico
Felix E. Villalobos, MD, Mexico City, Mexico
Aldo F. Izaguirre, MD, Tlalpan, Mexico
Cristina Velasquillo, PhD, Mexico City, Mexico
Victor R. Guevara, Puebla, Mexico
Anell Olivos Meza, Mexico City, Mexico
Socorro Cortes, Mexico City, Mexico
Daniel Chavez, MD, Magdalena Contreras, Mexico
Luis G. Ibarra, MD, Mexico City, Mexico

All-arthroscopic matrix encapsulated autologous chondrocyte implantation at the knee has better T2 mapping values and second look evaluation than microfracture technique at 2 years follow up.

11:06 AM

PAPER: 456

Outcomes of Magnetic Resonance Imaging of the Knee by Provider Training and Predictors of Positive Findings

James Wylie, MD, Holladay, UT
Zachary Working, MD, Salt Lake City, UT
Robert L. Schmidt, MD, PhD, MBA, Salt Lake City, UT
Robert T. Burks, MD, Salt Lake City, UT
Julia R. Crim, MD, Salt Lake City, UT

Orthopedists and medical sports physicians are more likely to obtain positive findings on knee MRI compared to primary care doctors. Other predictors of positive findings are also identified.

Discussion – 6 Minutes

11:18 AM

PAPER: 457

Meniscal Allograft Transplantation: Survival, Re-operation Rates and Analysis of Failures

Frank McCormick, MD, Ft Lauderdale, FL
Joshua Harris, MD, Bellaire, TX
Geoffrey D. Abrams, MD, Portola Valley, CA
Kristen Hussey, BS, Chicago, IL
Hillary Wilson, BA, Chicago, IL
Rachel M. Frank, MD, Chicago, IL
Anil Gupta, MD, MBA, Tampa, FL
Bernard R. Bach Jr, MD, River Forest, IL
Brian J. Cole, MD, MBA, Chicago, IL

This study quantifies the survival for meniscus allograft transplantation in 200 consecutive cases and reports the findings at re-operation.

11:24 AM

PAPER: 458

The Effect of ACL In Situ Graft Force on the Biologic Healing Response of the ACL Graft-Tunnel Interface

S. Richard Ma, MD, Columbia, MO
Michael Schaer, MD, New York, NY
Clifford Voigt, MD, Pittsburgh, PA
Katherina Y. Chen, MS, Flushing, NY
Marco L. Sisto, BA, New York, NY
Lilly Ying, VBS, New York, NY
Xiang-Hua Deng, MD, New York, NY
Scott A. Rodeo, MD, New York, NY

Elevated in situ ACL graft forces impair the biological healing of the ACL graft in a preclinical model of ACL reconstruction.

11:30 AM

PAPER: 459

The Effect of Microfracture on Meniscal Healing in a Goat (*Capra hircus*) Model; Sports Animal Model

William Howarth, MD, Monument, CO
Brian F. Grogan, MD, Temple, TX
Kevin S. Borchard, MD, USAF Academy, CO
Warren R. Kadrmaz, MD, Helotes, TX

Bone marrow stimulation by subchondral microfracture effect on meniscal healing in a goat model.

Discussion – 6 Minutes

11:42 AM

PAPER: 460

Gonarthrosis: Comparison between Hyaluronic Acid and Platelet-Rich Plasma Obtained with Two Different Methods

Stefano Carni, MD, Roma, Italy
Alessandro Carcangiu, Rome, Italy
Fabio Cerza, Velletri, Italy

Purpose of this study is to compare clinical outcomes in patients treated with injections of Hyaluronic Acid and Platelet Rich Plasma (obtained by two different methods) in gonarthrosis.

Thursday, March 13

11:48 AM

PAPER: 461

◆ Long Term Results after Matrix Associated Chondrocyte Transplantation (MACT) in the Knee

David Stelzeneder, MD, Vienna, Austria
 Martin Brix, CM, Vienna, Austria
 Catharina Chiari, MD, Vienna, Austria
 Ulrich Koller, MD, Vienna, Austria
 Ronald Dorotka, MD, Vienna, Austria
 Stefan Nehrer, MD, Krems, Austria
 Reinhard Windhager, MD, Vienna, Austria
 Stephan Domayer, Dedham, MA

The first long term results after MACT of the knee demonstrate that is an effective surgical therapy for full-thickness cartilage defects with good long term results, in particular for simple defects.

11:54 AM

PAPER: 462

Autograft vs. Allograft ACL Reconstructions: A Prospective, Randomized Clinical Study with Min. 10-Year Follow Up

Craig R. Bottoni, MD, Honolulu, HI
 Eric L. Smith, MD, Boston, MA
 Sarah G. Raybin, BA, Honolulu, HI
 James S. Shaha, MD, Kailua, HI
 John M. Tokish, MD, Scottsdale, AZ
 Douglas J. Rowles, MD, Aiea, HI

A long-term clinical comparison of allografts and autografts for primary ACL reconstructions in a young, athletic population showed a 3X greater failure rate with allografts.

Discussion – 6 Minutes

12:06 PM

PAPER: 463

Comparison of Outcomes Following ACL Reconstruction Using Patellar-Tendon Autograft Versus Allograft

Lauren M. Matheny, Vail, CO
 Ryan J. Warth, MD, Vail, CO
 Jason M. Hurst, MD, New Albany, OH
 Karen K. Briggs, MPH, Vail, CO
 J R. Steadman, MD, Vail, CO

There was no significant difference in average postoperative Lysholm score, Tegner or patient satisfaction between the allograft and the autograft groups.

12:12 PM

PAPER: 464

Can We Determine Patients at Risk for Having a Small Quadrupled Hamstring Graft Based on Preoperative MRI Studies?

Jason A. Walters, MD, New Orleans, LA
 Sam Akhavan, MD, Sewickley, PA

We can determine patients at risk for a small quadrupled hamstring graft using preoperative MRI studies.

12:18 PM

PAPER: 465

The Risk of Knee Arthroplasty Following Cruciate Ligament Reconstruction: A Population-Based Matched Cohort Study

Timothy S. Leroux, MD, Toronto, ON, Canada
 Darrell J. Ogilvie-Harris, MD, Toronto, ON, Canada
 Tim Dwyer, MBBS, Toronto, ON, Canada
 Jaskarndip Chahal, MD, Toronto, ON, Canada
 Amir Khoshbin, MD, Toronto, ON, Canada
 Rajiv Gandhi, MD, Toronto, ON, Canada
 Nizar Mahomed, MD, Toronto, ON, Canada
 David Wasserstein, MD, MSc, North York, ON, Canada

The risk of knee arthroplasty following cruciate ligament reconstruction: A population-based matched cohort study.

Discussion – 6 Minutes

PAPER PRESENTATION

10:30 AM — 12:30 PM
 Room 345

Practice Management/Rehabilitation III: Risk Management and Quality Improvement II

Moderator(s): Kevin P. Black, MD, Hershey, PA
 John D. Campbell, MD, Bozeman, MT

10:30 AM

PAPER: 466

ASA Score as a Predictor of 90-Day Readmission in Patients with Isolated Orthopaedic Trauma Injuries

Vasanth Sathiyakumar, Nashville, TN
 Aaron M. Yengo-Kahn, BS, Nashville, TN
 Harrison F. Kay, BS, Nashville, TN
 R Adams Cowley, Baltimore, MD
 Young M. Lee, BS, Nashville, TN
 Jesse Ebnfeld, MD, MPH, Nashville, TN
 William T. Obrebsky, MD, MPH, Nashville, TN
 Manish K. Sethi, MD, Nashville, TN

ASA score is highly correlated with postoperative readmission rates for patients presenting with isolated orthopaedic trauma injuries, and could be used to help hospitals target at-risk individuals.

10:36 AM

PAPER: 467

Thrombogenicity and Platelet Function in Lower Extremity Total Joint Arthroplasty: A Prospective Randomized Study

Bhaveen Kapadia, MD, Baltimore, MD
 Mark J. McElroy, BS, MS, Monroeville, PA
 Kevin Bliden, MBA, BS, Baltimore, MD
 Martin G. Gesheff, BS, Baltimore, MD
 Christopher J. Franzese, BS, Baltimore, MD
 Samik Banerjee, MBBS, MS, Baltimore, MD
 Udaya S. Tantry, PhD, Baltimore, MD
 Paul Gurbel, MD, Baltimore, MD
 Michael A. Mont, MD, Baltimore, MD

The primary aim of this study was to assess potential changes in thrombogenicity by using measures of coagulability and platelet reactivity following elective surgery for lower extremity arthroplasty.

◆ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Thursday, March 13

10:42 AM

PAPER: 468

Pre-Operative Bleeding Risk Predictability for Lower Extremity Joint Arthroplasty: Prospective Randomized Study

Bhaveen Kapadia, MD, Baltimore, MD
 Mark J. McElroy, BS, MS, Monroeville, PA
 Kimona Issa, MD, Baltimore, MD
 Kevin Bliden, MBA, BS, Baltimore, MD
 Martin G. Gesheff, BS, Baltimore, MD
 Christopher J. Franzese, BS, Baltimore, MD
 Udaya S. Tantry, PhD, Baltimore, MD
 Paul Gurbel, MD, Baltimore, MD
 Michael A. Mont, MD, Baltimore, MD

This study assessed changes in thrombogenicity by measuring coagulability and platelet reactivity and to correlate the results with transfusion risk following lower extremity total joint arthroplasty.

Discussion – 6 Minutes

10:54 AM

PAPER: 469

The Ottawa and Pittsburgh Rules for Selective Radiography Following Acute Knee Injury

Sujith Konan, London, United Kingdom
 Fares S. Haddad, FRCS, London, United Kingdom

The Ottawa and the Pittsburgh rules have a high sensitivity for the detection of knee fractures. Use of these rules can aid efficient clinical evaluation.

11:00 AM

PAPER: 470

Operative Intervention for Geriatric Hip Fracture: Does Type of Surgery Impact Length of Stay?

Vasanth Satbiyakumar, Nashville, TN
 Anna E. Garcia, BS, Nashville, TN
 Young M. Lee, BS, Nashville, TN
 William T. Obremskey, MD, MPH, Nashville, TN
 Amir A. Jahangir, MD, Nashville, TN
 Jesse Ebnrenfeld, MD, MPH, Nashville, TN
 Manish K. Sethi, MD, Nashville, TN

This study shows that type of surgery is a significant predictor of post-operative LOS and the related inpatient hospital costs following operative fixation of a low energy geriatric hip fracture.

11:06 AM

PAPER: 471

Unnecessary Magnetic Resonance Imaging of Hips: Economic Burden to Patients and Healthcare System

Kimona Issa, MD, Baltimore, MD
 Bhaveen Kapadia, MD, Baltimore, MD
 Samik Banerjee, MBBS, MS, Baltimore, MD
 Robert Pivec, MD, Baltimore, MD
 Michael A. Mont, MD, Baltimore, MD

The ordering of unnecessary MRIs in patients with hip arthritis represents a tremendous cost to patients and to an already financially challenged healthcare system.

Discussion – 6 Minutes

11:18 AM

PAPER: 472

Do Surgeons Know the Cost of Orthopaedic Implants? A Multicenter Study of 503 Orthopaedic Surgeons

Kanu M. Okike, MD, Honolulu, HI
 Robert V. O'Toole, MD, Baltimore, MD
 Julius A. Bishop, MD, Palo Alto, CA
 Christopher McAndrew, MD, Saint Louis, MO
 Samir Mehta, MD, Philadelphia, PA
 William W. Cross III, MD, Rochester, MN
 Grant Garrigues, MD, Chapel Hill, NC
 Mitchel B. Harris, MD, Boston, MA
 Christopher T. LeBrun, MD, Ellicott City, MD

In this multicenter survey of 503 orthopaedic surgeons, knowledge of implant costs was found to be low as attending surgeons were able to estimate device cost only 21% of the time.

11:24 AM

PAPER: 473

Foley Catheters are Unnecessary and Result in More Urological Complications in Total Joint Arthroplasty

Antonia Chen, MD, MBA, Philadelphia, PA
 Benjamin Rothrauff, BA, Pittsburgh, PA
 Peter Z. Xu, BA, Pittsburgh, PA
 Brooke Klatt, DPT, PT, Pittsburgh, PA
 Brian A. Klatt, MD, Pittsburgh, PA

Patients who void prior to primary TJA have less intermittent catheterization, lower UTIs, and less postoperative foley insertions, compared to those who undergo routine preoperative foley insertion.

11:30 AM

PAPER: 474

The Clinical and Economic Impact of TENS in Patients with CLBP: A Long-Term Retrospective Database Study

Michael E. Minshall, MPH, Fishers, IN
 Abhishek Chitnis, MS, PhD, Lexington, MA
 Michael E. Stokes, MPH, Dorval, Canada
 Veronica Alas, MPH, PhD, Lexington, MA
 Luke Boulanger, Lexington, MA
 Elyse Gatt, BA, Lexington, MI
 Robert Pivec, MD, Baltimore, MD
 Michael A. Mont, MD, Baltimore, MD

TENS demonstrated reduced utilization of back surgery, imaging, physical therapy, ER visits, and opioid therapy when compared to patients who were not treated with TENS.

Discussion – 6 Minutes

Thursday, March 13

11:42 AM

PAPER: 475

Malnourished Primary Total Joint Arthroplasty Patients Have Increased Transfusion and Infection Rates

Antonia Chen, MD, MBA, Philadelphia, PA
 Peter Z. Xu, BA, Pittsburgh, PA
 Benjamin Rothrauff, BA, Pittsburgh, PA
 Jonathan Waters, MD, Pittsburgh, PA
 Brian A. Klatt, MD, Pittsburgh, PA

Total joint arthroplasty patients who were malnourished (low protein, low albumin and low iron) were more likely to receive postoperative transfusions and subsequently become infected.

11:48 AM

PAPER: 476

The Importance of Risk Adjustment in Reporting Total Joint Replacement Outcomes

Nelson F. SooHoo, MD, Los Angeles, CA
 Zhongmin Li, PhD, Sacramento, CA
 Kevin J. Bozic, MD, MBA, San Francisco, CA

Adequate risk adjustment is a key element in objective comparison of surgeons, hospitals, and devices using TJR registry data.

11:54 AM

PAPER: 477

Financial Impact of a Multi-Disciplinary Pre-Operative Risk Stratification Program for Joint Arthroplasty

Neil L. Duplantier, MD, New Orleans, LA
 David Briski, Mequon, WI
 J L. Ochsner Jr, MD, New Orleans, LA
 Mark S. Meyer, MD, Destrehan, LA
 Daryl F. Stanga, PA-C, Madisonville, LA
 George F. Chimento, MD, Metairie, LA

A pre-operative, risk stratification program significantly decreased the average length of stay per hip and knee arthroplasty in this retrospectively reviewed cohort.

Discussion – 6 Minutes

12:06 PM

PAPER: 478

Convergent Validity of the Lower Extremity Computerized Adaptive Testing in Adult Reconstruction Patients

Christopher Pelt, MD, Salt Lake City, UT
 Mike Anderson, MS, ATC, Salt Lake City, UT
 Man Hung, PhD, Salt Lake City, UT
 Angela P. Presson, PhD, Salt Lake City, UT
 Christopher L. Peters, MD, Salt Lake City, UT

The LE CAT may be a valuable PRO in the assessment of adult reconstruction patients but we recommend a more in depth analysis including detailed psychometric analysis prior to widespread use.

12:12 PM

PAPER: 479

A Comparison of 30-day Readmissions Following Orthopedic Procedures and Medical Admissions

Jed I. Maslow, New York, NY
 Lorraine Hutzler, BA, New York, NY
 James D. Slover, MD, New York, NY
 Joseph A. Bosco III, MD, New York, NY

The causes of readmissions following orthopedic surgery and medical admissions are different and strategies to reduce orthopedic readmissions should focus on preventing perioperative complications.

12:18 PM

PAPER: 480

Impact of Preoperative Medical Clearance on the Time to Definitive Surgical Management of Hip Fractures

Fred L. Speck, MD, Galveston, TX
 Randal Morris, Galveston, TX
 Jillian K. McAngus, BS, TX City, TX
 Nikoletta M. Leontaritis Carayannopoulos, DO, Galveston, TX
 Ronald W. Lindsey, MD, Galveston, TX

Many experts recommend performing surgery within 24 to 48 hours of admission in older hip fracture patients. Some diagnostic procedures significantly increase time to definitive surgery.

Discussion – 6 Minutes

Thursday, March 13

SYMPOSIUM

1:30 PM — 3:30 PM

La Nouvelle Ballroom

Hip Joint Preservation Pearls and Controversies: State of the Art 2014 (Q)

Moderator: Christopher M. Larson, MD, Edina, MN

Consists of short case based and evidence based presentations from experts in the field of arthroscopic and open hip preservation surgery. Focus on current controversial indications and emerging concepts.

- I. Guidelines for Management of the Borderline Dysplastic Hip- Arthroscopy vs Corrective Osteotomy
John C. Clohisy, MD, Saint Louis, MO
- II. Acetabular Retroversion: Normal Variant, Arthroscopic Rim Resection, or Anteversion PAO
Bryan T. Kelly, MD, New York, NY
- III. Global Acetabular Overcoverage: Rim Resection vs Corrective Osteotomy
Michael Leunig, PhD, Zurich, Switzerland
- IV. FAI induced Instability and Role for Arthroscopic Capsular Repair / Plication
Christopher M. Larson, MD, Edina, MN
- V. Femoral Version and Hip Mechanics?
Martin Beck, MD, Luzern, Switzerland
- VI. Evidence for Nonsurgical Treatment of FAI and Hip Dysplasia
Cara Beth Lee, MD, Seattle, WA
- VII. Top 5 reasons for the Failed Hip Arthroscopy
Asheesh Bedi, MD, Ann Arbor, MI
- VIII. Can we return to Athletics after SHD and PAO?
Young Jo Kim, MD, PhD, Boston, MA
- IX. Arthroscopic Access to Challenging Areas: Global Overcoverage and Lateral Cam Deformity
Dean K. Matsuda, MD, Los Angeles, CA
- X. Extra-articular FAI: Diagnostic and Treatment PEARLS
Ira Zaltz, MD, Royal Oak, MI
- XI. Arthroscopic FAI Correction: How Young is too Young and How old is too Old?
JW Thomas Byrd, MD, Nashville, TN

SYMPOSIUM

1:30 PM — 3:30 PM

Theater C

Remaining Competitive in the Changing Orthopaedic Practice Landscape (R)

Moderator: Gerald R. Williams Jr, MD, Philadelphia, PA

Intended for the provider who is contemplating a change in practice models or looking for ways to remain competitive in their current practice model with the proposed changes occurring in the healthcare market. Allow the registrant to understand the advantages and disadvantages of these practice models. In addition, the common legal issues surrounding these practice models, with particular reference to the new health care environment, will be discussed by a leading healthcare attorney active in mergers, acquisitions, and new facility and practice startups. Potential new reimbursement models, including accountable care organizations, quality based models, and episode of care arrangements will be discussed by a corporate private practice CEO along with potential strategies for navigating them. Finally, the role of national provider networks and their potential advantages and disadvantages will be discussed. Ample time will be allowed for audience participation.

- I. Hospital Employment Models
Bernard F. Morrey, MD, Fayetteville, TX
- II. Corporate Private Practice Model
Richard H. Rothman, MD, Philadelphia, PA
- III. Hybrid Practice Models
Gerald R. Williams Jr, MD, Philadelphia, PA
- IV. Navigating the Legal Aspects of Practice Models
Roger D. Strobe, JD, Chicago, IL
- V. Navigating New Reimbursement Models
Michael West, CEO, Philadelphia, PA
- VI. National Provider Networks-- Where do they fit?
Joseph P. Iannotti, MD, PhD, Cleveland, OH

Thursday, March 13

SYMPOSIUM

1:30 PM — 3:30 PM

Theater B

Hand Surgery Update: Treatment Recommendations for Common Hand and Wrist Injuries and Afflictions (S)

Moderator: John S. Taras, MD, Philadelphia, PA

Designed for the hand and upper extremity surgeon and the general orthopedist. Case presentations will focus on common conditions such as carpal tunnel syndrome, distal radius fractures, digital tendon and nerve lacerations, CMC arthritis, Dupuytren's contracture, and the circumstances that can disrupt an ideal course of recovery. Newly introduced treatment methods will be presented and compared and contrasted to traditional standards. The course format consists of case presentations by the faculty followed by a question and answer session.

- I. Introduction
John S. Taras, MD, Philadelphia, PA
- II. Nerve Lacerations; Carpal Tunnel Syndrome
Dean G. Sotereanos, MD, Pittsburgh, PA
- III. New Injection Technologies
Craig S. Williams, MD, Des Plaines, IL
- IV. CMC Arthritis; Osteoarthritis
Richard A. Bernstein, MD, New Haven, CT

INSTRUCTIONAL COURSE LECTURE

1:30 PM — 2:30 PM

FD9 How to Assemble a Competitive AAOS ICL and Symposium Application

Room 217

Moderator: Thomas (Quin) Throckmorton, MD, Germantown, TN

Robert A. Hart, MD, Portland, OR
William M. Mihalko, MD, PhD, Germantown, TN

Will focus on describing the different types of Instructional Course Lectures and also tips to write ICL and symposium applications.

INSTRUCTIONAL COURSE LECTURE

1:30 PM — 3:30 PM

341 Complex Revision Total Hip Arthroplasty: An Advanced Course

Room 226

Moderator: Bassam A. Masri, MD, FRCSC, Vancouver, BC, Canada

*Clive P. Duncan, MD, FRCSC, Vancouver, BC, Canada**Douglas E. Padgett, MD, New York, NY**Wayne G. Paprosky, MD, Winfield, IL**Richard W. McCalden, MD, London, ON, Canada*

Audience response and videos will demonstrate revision total hip arthroplasty techniques stressing planning and exposure, reconstruction of bone loss and treating dislocations.

342 Revision Total Knee Arthroplasty: Planning and Performance (Video Technique)

Room 208

Moderator: Javad Parvizi, MD, FRCSC, Philadelphia, PA

*Robert L. Barrack, MD, Saint Louis, MO**Michael Dunbar, MD, Halifax, NS, Canada**Emmanuel Thienpont, MD, Asse, Belgium*

Will address the issue of major bone deficiency during knee revision surgery. Options for handling this problem will be discussed.

343 The Subtle to Severe Cavus Foot

Room 260

Moderator: Brian C. Toolan, MD, Flossmoor, IL

*John G. Anderson, MD, Grand Rapids, MI**Donald R. Bohay, MD, Grand Rapids, MI**Norman S. Turner III, MD, Rochester, MN*

From subtle to severe, the cavus deformity is an underappreciated factor in the evaluation and management of foot and ankle complaints.

344 Antibiotic Stewardship in Orthopaedic Surgery: Principles and Practice

Room 347

Moderator: Joseph A. Bosco III, MD, New York, NY

*James D. Slover, MD, New York, NY**Brett R. Levine, MD, Chicago, IL**Michael Phillips, MD, New York, NY*

Thorough knowledge of the principles of antibiotic stewardship programs (ASPs) is essential for the practicing orthopedic surgeon. These principles include 1) determining appropriate indications for antibiotic administration, 2) choosing correct antibiotic based on known or expected pathogens and 3) determining the correct dosage and 4) treatment time period. The emergence of resistance, geographical diversity of infecting pathogens, and changing patient population will require customization of our prophylactic regimen to reduce infectious complications. A multidisciplinary approach to ASP leads to improved patient outcomes and cost effective medical care.

Thursday, March 13

345



Practical Implementation of Quality Improvement in Orthopaedic Practice

Moderator: David Jevsevar, MD, MBA, Saint George, UT
 Mark I. Froimson, MD, Euclid, OH
 Kevin G. Shea, MD, Boise, ID
 Karl Koenig, MD, MS, Lebanon, NH



Room
262

Aims to identify practical methodologies to improve your practice's quality indicators. Examples of quality analysis and improvement on very basic items will be presented from leading health systems and authorities. Emphasis on a tool-kit applied to all practices.

346



PIP Joint Fracture Dislocations: Evaluation and Treatment Options

Moderator: Julie E. Adams, MD, Minneapolis, MN
 Robert J. Strauch, MD, New Rochelle, NY
 Ryan P. Calfee, MD, Saint Louis, MO
 O.A. Barron, MD, New York, NY

Room
271

Strategies for evaluation and treatment of proximal interphalangeal joint injuries are discussed. Individual treatment options discussed with emphasis on indications, contraindications, postoperative rehabilitation, complications and anticipated outcomes. Cases and interactive discussion with audience participation. Challenges of evaluation and treatment include discerning which treatment option is most appropriate.

347



Adult Consequences of Pediatric Orthopedic Conditions

Moderator: Martin J. Herman, MD, Philadelphia, PA
 Joshua Ratner, MD, Atlanta, GA
 Todd J. Albert, MD, Philadelphia, PA
 Mininder S. Kocher, MD, MPH, Boston, MA



Room
352

Provides management strategies for common pediatric orthopedic diseases that have important sequelae in adulthood including scoliosis, spondylolisthesis, knee pathology and upper extremity conditions.

348



Stress Management and Balance for the Orthopaedic Surgeon

Moderator: John M. Flynn, MD, Philadelphia, PA
 Peter M. Waters, MD, Boston, MA
 Eric C. McCarty, MD, Boulder, CO
 Jennifer M. Weiss, MD, Los Angeles, CA

Room
215

Orthopaedic surgeons work hard and stress can compromise performance. We address managing time and stress, life balance, maintaining happy families, and issues unique to the female orthopaedic surgeon.

349



Room
221

Shoulder Instability

Moderator: Patrick J. McMahon, MD, Pittsburgh, PA
 Mark D. Lazarus, MD, Philadelphia, PA
 Jon K. Sekiya, MD, Ann Arbor, MI
 Andrew S. Rokito, MD, New York, NY
 Hussein A. Elkousy, MD, Houston, TX

Will focus on the evaluation and management and the latest techniques in arthroscopic and open surgery of shoulder instability. Learn management of patients from the athlete to the manual laborer.

350



Room
207

Elbow Arthroplasty: Lessons Learned from the Past and Directions for the Future

Moderator: Joaquin Sanchez-Sotelo, MD, Rochester, MN
 George S. Athwal, MD, London, ON, Canada
 Emilie V. Cheung, MD, Redwood City, CA
 Mark E. Morrey, MD, Rochester, MN

Review current standards on elbow arthroplasty including patient selection, exposure, implant selection, surgical technique and postoperative management. The Course will also provide an evidence-based approach to current literature on elbow arthroplasty. Present and future improvements in implant design and surgical technique will be discussed as well.

351



Room
218

Avoiding and Managing Complications in Cervical Spine Surgery

Moderator: Joon Y. Lee, MD, Pittsburgh, PA
 Darrel S. Brodke, MD, Salt Lake City, UT
 Jeffrey A. Rihn, MD, Media, PA
 Moe R. Lim, MD, Chapel Hill, NC

Management of common complications such as dysphasia and dysphonia and more complex ones such as vertebral artery injuries, adjacent level disease, inadequate decompression, and fusion related complications.

352



Room
356

The Management of Meniscal Pathology: From Partial Meniscectomy to Transplantation

Moderator: Laith M. Jazrawi, MD, New York, NY
 James N. Gladstone, MD, New York, NY
 Philip A. Davidson, MD, Park City, UT
 Eric J. Strauss, MD, New York, NY

Provide a focused consolidation of expert lectures on current diagnoses and management of meniscus pathology and treatment.

Thursday, March 13

353 **The Four Most Common Types of Cartilage Damage You Will See in Practice: How We Treat Them and Why**

*Moderator: Andreas H. Gomoll, MD, Chestnut Hill, MA
Jack Farr II, MD, Greenwood, IN*

Brian J. Cole, MD, MBA, Chicago, IL

Will discuss cartilage disease based on common real-life patient presentations, including OCD, patellofemoral pain, post-menisectomy pain, and incidental defects found during arthroscopy. We will focus on patient selection and indications, leaving ample time for discussion.

354 **Fractures of the Proximal Femur: A Case Based Approach**

*Moderator: Kenneth A. Egol, MD, New York, NY
Roy Davidovitch, MD, New York, NY*

Madhav A. Karunakar, MD, Charlotte, NC

Mark S. Vrahas, MD, Boston, MA

Case based course focuses on the management of femoral neck and pertrochanteric fracture. Attention is given to surgical tips and tricks.

355 **Advances in Treatment and Understanding of Musculoskeletal Infections**

*Moderator: David W. Lowenberg, MD, Redwood City, CA
J. Tracy Watson, MD, Saint Louis, MO
L. Scott Levin, MD, Philadelphia, PA*

Room 350

Understanding of emerging technologies in better diagnosis and management of musculoskeletal infections. Strategies for the comprehensive care of the bone and soft tissue in limb infections will be emphasized.

INSTRUCTIONAL COURSE LECTURE

1:30 PM — 5:30 PM

902 **TeamSTEPS**

*Moderator: Harpal S. Khanuja, MD, Cockeysville, MD
Dwight W. Burney III, MD, Albuquerque, NM*

Mary I. O'Connor, MD, Jacksonville, FL

Kristy L. Weber, MD, Philadelphia, PA

TeamSTEPS is an evidenced based team building and communication program designed to enhance patient safety and efficiency in Healthcare. This four hour fundamentals workshop will give members of the healthcare team the tools to help lead highly effective medical teams. The goal is to optimize the use of information, people, and resources to achieve the best clinical outcomes for patients. In these fundamental skills workshops team members will increase team awareness and clarify team roles and responsibilities to produce a functional unit based on patient care. Team members also learn to resolve conflicts and improve information sharing to help eliminate barriers to quality and safety.

PAPER PRESENTATION

1:30 PM — 3:30 PM
Theater A

Adult Reconstruction Knee V: Infection

*Moderator(s): Robert A. Malinzak, MD, Mooresville, IN
Alexander P. Sab, MD, Fremont, CA*

1:30 PM

PAPER: 481

Is Regional Anesthesia Safe in Patients Undergoing Surgery for Treatment of Periprosthetic Joint Infection?

*Mohammad R. Rasouli, MD, Philadelphia, PA
Hasan H. Ceylan, Istanbul, Turkey
Camilo Restrepo, MD, Philadelphia, PA
Eugene R. Viscusi, MD, Philadelphia, PA
Javad Parvizi, MD, FRCS, Philadelphia, PA*

Epidural abscess following neuraxial anesthesia during revision surgery for treatment of PJI is rare. Thus, the benefits of neuraxial anesthesia may outweigh the small risk of epidural abscess.

1:36 PM

PAPER: 482

Does Operative Time Affect Infection Rate Following Primary Total Knee Arthroplasty?

*Sameer Naranje, MBBS, MS, Minneapolis, MN
Lisa Lendway, PhD, Saint Paul, MN
Susan C. Mehle, Saint Paul, MN
Terence J. Gioe, MD, Apple Valley, MN*

Prolongation of the operative time increases the hazard of TKA revision due to infection independent of age, sex, BMI and comorbidities.

1:42 PM

PAPER: 483

The Role of Surgical Dressing in Total Joint Arthroplasty: Level I Randomized Clinical Trial

*Bryan D. Springer, MD, Charlotte, NC
Walter B. Beaver, MD, Charlotte, NC
William L. Griffin, MD, Charlotte, NC
J. Bohannon Mason, MD, Charlotte, NC
Susan M. Odum, PhD, Charlotte, NC*

An occlusive antimicrobial surgical dressing showed significant reduction in wound complications, blisters, number of dressing changes/exposure and patient satisfaction compared to standard gauze dressing.

Discussion – 6 Minutes

1:54 PM

PAPER: 484

Do Space Suits Increase Contamination & Deep Infection in Total Joint Arthroplasty? A Systematic Review

*Simon Young, MD, Scottsdale, AZ
Mark Zhu, Auckland, New Zealand*

In contrast to charnley type exhaust suits, modern space suits do not lower and may increase deep infection rates.

Thursday, March 13

2:00 PM**PAPER: 485****Joint Aspiration during Two Stage Septic Knee Revision Surgery is Inadequate for Detection of Infection Persistence**

Bernd Preininger, MD, Berlin, Germany
 Viktor Janz, MD, Berlin, Germany
 Philipp Von Roth, MD, Berlin, Germany
 Tobias Winkler, MD, Berlin, Germany
 Tilman Pfitzner, MD, Berlin, Germany
 Andrej Trampuz, MD, Berlin, Germany
 Carsten Perka, MD, Berlin, Germany

Joint aspiration does not accurately exclude persistence of infection; therefore other parameters should be used to determine the correct timing for total knee arthroplasty reimplantation.

2:06 PM**PAPER: 486****An in vivo Assessment of the Bacterial Susceptibility of Porous Tantalum**

Alexandra Stavrakis, MD, Los Angeles, CA
 Jared Niska, MD, Los Angeles, CA
 Amanda Loftin, Santa Monica, CA
 Lloyd Miller, MD, PhD, Baltimore, MD
 Louis M. Kwong, MD, Torrance, CA
 Fabrizio Billi, PhD, Los Angeles, CA
 Nicholas Bernthal, MD, Venice, CA

Using an established mouse model of post-arthroplasty infection to compare the susceptibility to infection among porous tantalum, stainless steel, and titanium implants.

Discussion – 6 Minutes

2:18 PM**PAPER: 487****Articulating vs. Static Antibiotic Spacers in Revision Total Knee Arthroplasty for Sepsis - A Meta-analysis**

George N. Guild III, MD, Atlanta, GA
 Baohua Wu, Duluth, GA
 Giles R. Scuderi, MD, New York, NY

Articulating spacers provided superior range of motion, improved infection rates for simple and complex patients, facilitated reimplantation, and developed less bone loss than did static spacers.

2:24 PM**PAPER: 488****Ceftazidime-Vancomycin Impregnated Cement Spacers in Two-stage Revision for Infected TKA**

Michael Drexler, MD, Toronto, ON, Canada
 Tim Dwyer, MBBS, Toronto, ON, Canada
 Paul R. Kuzyk, MD, FRCSC, Toronto, ON, Canada
 Rajesh Chakraverty, MD, Toronto, ON, Canada
 Mansour Abolghasemian, MD, Tehran, Iran
 Benjamin Lozano, MD
 David Backstein, MD, Toronto, ON, Canada

ceftazidime-vancomycin impregnated cement spacers – an alternative antibiotic combination for two-stage revision of infected total knee arthroplasty.

2:30 PM**PAPER: 489****Sonication for the Enhanced Diagnosis of Prosthetic Joint Infection**

Curtis W. Hartman, MD, Omaha, NE
 Angela Hewlett, MD, MS, Omaha, NE
 Derrick T. Antoniak, MD, Omaha, NE
 Beau S. Konigsberg, MD, Omaha, NE
 Kevin L. Garvin, MD, Omaha, NE

Sonication does not improve sensitivity or specificity of enhanced periprosthetic tissue culture.

Discussion – 6 Minutes

2:42 PM**PAPER: 490****Younger Age is Associated with a Higher Risk of Periprosthetic Infection and Aseptic Failure After TKA**

John P. Meehan, MD, Sacramento, CA
 Richard H. White, MD, Sacramento, CA
 Beate Danielson, PhD
 Sunny H. Kim, PhD, Sacramento, CA
 Amir A. Jamali, MD, Sacramento, CA

Patients younger than 50 years had a significantly higher risk of undergoing revision joint surgery because of both periprosthetic joint infection and aseptic mechanical failure one year after TKA.

2:48 PM**PAPER: 491****The Economics of Unplanned Readmissions Following TKA and the Potential Consequences of Healthcare Reform**

R Clement Carter, BSE, Durham, NC
 Michael M. Kheir, BS, Philadelphia, PA
 Peter Derman, MD, New York, NY
 Rebecca Speck, Philadelphia, PA
 David N. Flynn, MD, MBA, Philadelphia, PA
 L. Scott Levin, MD, Philadelphia, PA
 Lee A. Fleisher, MD, Philadelphia, PA

Review of 3,224 TKAs reveals that unplanned readmissions generate a positive contribution margin but are not profitable in the long run. New policies will likely accelerate efforts to eliminate them.

2:54 PM**PAPER: 492****Optimal Irrigation and Debridement of Infected Total Joint Implants with Chlorhexidine Gluconate**

Daniel C. Smith, MD, New York, NY
 Richard Maiman, BA, Bronx, NY
 Evan Schwechter, MD, Scarsdale, NY
 Sun Jin Kim, MD, New York, NY
 David M. Hirsh, MD, Bronx, NY

An in vitro comparison of scrubbing biofilm from a total joint implant analog with different chlorhexidine gluconate solutions demonstrated significant biofilm eradication at 4% and 2% concentrations.

Discussion – 6 Minutes

Thursday, March 13

3:06 PM

PAPER: 493

Levels of Evidence in Knee Surgery: Progress Over the Last Decade?

Kamrul Hasan, MBBS, PhD, London, United Kingdom
Aadhar Sharma, MBBS, Hertfordshire, United Kingdom
Alison Carter, London, United Kingdom
Razi Zaidi, Stanmore, United Kingdom
Mudussar Ahmad, MBBS, London, United Kingdom
Suzie Cro, MSc, BS, London, United Kingdom
Zameer Shah, MBBS, FRCS, London, United Kingdom
Andy Goldberg, Middox, United Kingdom

There has been a trend towards higher levels of evidence in Knee Surgery over a decade but the differences did not reach statistical significance.

3:12 PM

PAPER: 494

Are There Identifiable Risk Factors or Causes Associated with Unplanned Readmission Following TKA?

R Clement Carter, BSE, Durham, NC
Michael M. Kheir, BS, Philadelphia, PA
Peter Derman, MD, New York, NY
Rebecca Speck, Philadelphia, PA
David N. Flynn, MD, MBA, Philadelphia, PA
L. Scott Levin, MD, Philadelphia, PA
Lee A. Fleisher, MD, Philadelphia, PA

Review of 3,224 TKAs reveals that increased length of stay and revision surgery are associated with unplanned readmissions, most commonly cause by infection, confusion or hematoma.

3:18 PM

PAPER: 495

Success of Different Knee Arthrodesis Techniques After Failed Total Knee Arthroplasty

Ran Schwarzkopf, MD, Irvine, CA
Timothy L. Kahn, BA, Irvine, CA
Julien Succar, MD, Boston, MA
John E. Ready, MD, Boston, MA

The fusion rates of those using IMN were consistent with previous reports. Recurrence of infection was relatively high and could be related to the high proportion of history of infected TKA.

3:24 PM

PAPER: 830

Vancomycin plus Rifampin Therapy has Enhanced Efficacy Against a Staphylococcus aureus Implant Infection

Jared Niska, MD, Los Angeles, CA
Jonathan Shabbazian, Baltimore, MD
Romela Ramos, MS, Los Angeles, CA
Kevin Francis, Alameda, CA
Nicholas Bernthal, MD, Venice, CA
LLyod Miller, MD, PhD, Baltimore, MD

We evaluated the efficacy of vancomycin plus rifampin combination therapy against a *S. aureus* implant infection. Rifampin elicited a marked therapeutic benefit.

Discussion – 6 Minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 245

Trauma IV: Pelvis/Acetabulum

Moderator(s): James C. Krieg, MD, Seattle, WA
Edward Perez, MD, Memphis, TN

1:30 PM

PAPER: 496

Computed Tomography Generated versus Conventional Plain Radiographs for the Diagnosis of Pelvic Ring Injury

Adham Abdelfattah, MD, Saint Louis, MO
Berton R. Moed, MD, Saint Louis, MO
John A. Boudreau, MD, Saint Louis, MO

CT-generated 2D virtual radiographs are very beneficial for inexperienced surgeons and as useful as conventional plain radiographs for experienced surgeons in accurately classifying pelvic ring injury.

1:36 PM

PAPER: 497

The Ongoing Relevance of Acetabular Fracture Classification

Jonathan R. Hutt, BA, MBBS, FRCS, London, United Kingdom
Martin Bircher III, FRCS, Ashted Surrey, United Kingdom
Mark Rickman, MD, London, United Kingdom

Changing patient demographics and injury mechanisms have led to altered acetabular fracture patterns that may require modifications to the currently accepted classification system.

1:42 PM

PAPER: 498

Femoral Head Impaction Predicts Early Failure after Central Fracture-dislocation of the Acetabulum

Gregory Y. Blaisdell, MD, Tampa, FL
Chris James, MD, Columbia, MO
Henry C. Sagi, MD, Tampa, FL

Superolateral femoral head impaction lesions associated with central fracture-dislocations of the acetabulum were highly correlated with femoral head collapse and early conversion to arthroplasty.

Discussion – 6 Minutes

1:54 PM

PAPER: 499

The Pararectus Approach for Anterior Fixation of Acetabular Fractures - Outcome at Two Years

Marius Keel, MD, Berne, Switzerland
Salvatore Tomagra, Bern, Switzerland
Harald M. Bonel, MD, Bern, Switzerland
Klaus Siebenrock, MD, Bern, Switzerland
Johannes D. Bastian, MD, Bern, Switzerland

The Pararectus approach allowed for anatomic restoration of displaced acetabular fractures involving the anterior column with minimal access morbidity and provided promising outcome after two years.

Thursday, March 13

2:00 PM

PAPER: 500

Outcome Following Fixation of Comminuted Quadrilateral Plate Fracture—Single Surgeon's Experience

Suribabu Gudipati, MBBS, MRCS, Carmarthen, United Kingdom
Peter Giannoudis, MD, FRCS, Leeds, United Kingdom
Nikolaos K. Kanakaris, MD, Leeds, United Kingdom
Grace White, Leeds, United Kingdom
Laszlo Toth, Leeds, UK, United Kingdom

Open reduction internal fixation of medial wall acetabulum fractures using a spring plate has been effective in reducing the risk of post-traumatic arthritis and maintaining the joint congruity.

2:06 PM

PAPER: 501

Simultaneous Fixation and Joint Arthroplasty for Osteoporotic Acetabular Fractures to Allow Full Weight-bearing

James A. Young, FRCS, London, United Kingdom
Rachel Pearce, Tooting London, United Kingdom
Mark Hamilton, London, United Kingdom
Alex Trompeter, Farnham, Surrey, United Kingdom
Mark Rickman, MD, London, United Kingdom

We present 24 consecutive cases of osteoporotic acetabular fracture treated with simultaneous fixation and hip arthroplasty and immediate full weight-bearing with good mid-term results.

Discussion – 6 Minutes

2:18 PM

PAPER: 502

Fixation of the Anterior Pelvic Ring through the Modified Stoppa Approach - Focus on the Outcome in Relation to Age

Johannes D. Bastian, MD, Bern, Switzerland
Alexandre Ansoorge JR, MA, Bern, Switzerland
Salvatore Tomagra, Bern, Switzerland
Lorenz Buchler, MD, Bern, Switzerland
Lorin M. Benneker, MD, Bern, Switzerland
Klaus Siebenrock, MD, Bern, Switzerland
Marius Keel, MD, Berne, Switzerland

Surgical treatment with open reduction and internal fixation of the anterior pelvic ring in type B- and C- pelvic ring injuries appears to be an adequate technique even in the elderly.

2:24 PM

PAPER: 503

Risk of Spermatic Cord Injury During Anterior Pelvic Ring and Acetabular Surgery: An Anatomic Study

Reza Firoozabadi, MD, Seattle, WA
Paul R. Stafford, MD, Tulsa, OK
Milton L. Routt Jr, MD, Houston, TX

Due to the proximity of the spermatic cord, the surgeon should limit lateral dissection from the midline during Pfannenstiel and Stoppa exposures.

2:30 PM

PAPER: 504

Indication and Outcomes of the INFIX in Pelvic Ring Fractures? A Prospective Comparison of Surgical Techniques

John Stammers, MBBS, BSc, Newark/Nottinghamshire, United Kingdom
Edward Massa, MD, MSc, London, United Kingdom
Edward M. Britton, London, United Kingdom
Paul Culpán, FRCS, London, United Kingdom
Peter Bates, FRCS, MBBS, Kent, United Kingdom

A comparison between the Subcutaneous Internal Fixator versus open reduction internal fixation in Anterior Pelvic Ring Fractures. Our Experience, Indications, Radiological and Clinical Outcomes.

Discussion – 6 Minutes

2:42 PM

PAPER: 505

Predictive Value of Radiographic Fracture Characteristics to Determine Operative Indication in LC-1 Fractures

James Beckmann, MD, Salt Lake City, UT
Angela P. Presson, PhD, Salt Lake City, UT
Stuart H. Curtis, BS, Cottonwood Heights, UT
Ami Stuart, Salt Lake City, UT
Thomas F. Higgins, MD, Salt Lake City, UT
Erik Kubiak, MD, Salt Lake City, UT

Predictive Value of Specific Radiographic Fracture Characteristics to Determine Operative Indication in LC-1 Type Fractures.

2:48 PM

PAPER: 506

◆ Percutaneous Lumbopelvic Instrumentation for Highly Unstable Sacral Fractures with Spino-Pelvic Dissociation

Seth K. Williams, MD, Madison, WI
Stephen M. Quinman, MD, Miami, FL

Percutaneous lumbopelvic fixation is a safe and effective option for stabilization of highly unstable sacral fracture patterns with associated spino-pelvic dissociation.

2:54 PM

PAPER: 507

◆ Does Lumbopelvic Fixation add Stability? A Cadaveric Biomechanical Analysis of an Unstable Pelvic Fracture Model

Ehsan Jazini, MD, Baltimore, MD
Oliver O. Tannous, MD, Baltimore, MD
Eric Belin, MD, Mt Pleasant, SC
Christopher M. Hoshino, MD, Redondo Beach, CA
Robert V. O'Toole, MD, Baltimore, MD
Noelle Klocke, MS, Audubon, PA
Mir Hussain, BS, Audubon, PA
Brandon Bucklen, PhD, Audubon, PA
Steven C. Ludwig, MD, Baltimore, MD

Lumbopelvic fixation is not biomechanically equivalent and does not add stability to a vertical sacral fracture with anterior stability cadaveric model.

Discussion – 6 Minutes

Thursday, March 13

3:06 PM

PAPER: 508

Functional Outcomes of Isolated Tile Type B Pelvic Ring Injuries Fixed with Percutaneous Posterior-only Fixation

Matthew P. Sullivan, MD, Philadelphia, PA
 John A. Sclaro, MD, Irvine, CA
 Samir Mehta, MD, Philadelphia, PA

Posterior only percutaneous fixation of partially unstable pelvic ring injuries results in near excellent functional recovery and that bilateral fixation correlates with the best functional outcomes.

3:12 PM

PAPER: 509

Gait Abnormalities after Closed Reduction and Percutaneous Pinning for Posterior Pelvic Ring Disruption

Pooria Salari, MD, MD Heights, MO
 Berton R. Moed, MD, Saint Louis, MO
 Lisa K. Cannada, MD, Saint Louis, MO

Gait in asymptomatic patients with posterior pelvic ring injury after anatomic closed reduction and percutaneous pinning is significantly altered as compared to normal.

3:18 PM

PAPER: 510

Diagnosis and Treatment of Sacroiliac Joint Pain using Anterior Compression Plating: A Retrospective Outcome Study

Russell D. Goode, MD, Mobile, AL
 Martha George, MD, Birmingham, AL
 Jorge Alonso, MD, Mobile, AL

A 15 year analysis of patients treated with anterior compression plating of sacroiliac joint pain resistant to conservative therapies specifically focusing on pain relief.

Discussion – 6 Minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 265

Shoulder and Elbow IV: Rotator Cuff

Moderator(s): Wesley Nottage, Laguna Hills, CA
 Kaveh R. Sajadi, MD, Lexington, KY

1:30 PM

PAPER: 511

Oxidative Stress Induced Degenerative Changes of Rotator Cuff and the Antioxidant Attenuated the Changes in Mice

Daichi Morikawa, MD, Tokyo, Japan
 Yoshiaki Itoigawa, MD, Rochester, MN
 Hidetoshi Nojiri, MD, PhD, Tokyo, Japan
 Hirotaka Sano, MD, PhD, Sendai, Japan
 Eiji Itoi, MD, Sendai, Japan
 Yoshifumi Saijo, MD, PhD, Sendai, Japan
 Kazuo Kaneko, MD, Tokyo, Japan
 Takahiko Shimizu, PhD, Chiba, Japan

An antioxidant enzyme, Sod1, deficiency induced degenerative changes of rotator cuff enthesis and antioxidant treatment attenuated them, suggesting that oxidative stress induced degeneration of rotator cuff.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

1:36 PM

PAPER: 512

◆ The Effect of Granulocyte Colony Stimulating Factor on Rat Rotator Cuff Healing following Acute Injury and Repair

David R. Ross, MD, Franklin, WI
 Tristan Maerz, MS, Royal Oak, MI
 Michael Kurdziel, MS, Royal Oak, MI
 Shashin Doshi, MD, Royal Oak, MI
 Asheesh Bedi, MD, Ann Arbor, MI
 Kevin C. Baker, PhD, Royal Oak, MI
 Kyle Anderson, MD, West Bloomfield, MI

Subcutaneous granulocyte colony stimulating factor increased marrow cellularity and induced bony remodeling, but thwarted recovery of tendon mechanical properties in a rat supraspinatus injury model.

1:42 PM

PAPER: 513

Fluoroquinolones Impair Tendon-Bone Healing in a Rat Rotator Cuff Repair Model

Alice J. Fox, MSc, New York, NY
 Michael Schaer, MD, New York, NY
 Florian Wanivenhaus, MD, Zürich, Switzerland
 Tony Chen, PhD, New York, NY
 Erik Attia, BS, New York, NY
 Nikolaus B. Binder, MD PhD, NY City, NY
 Miquel Otero, PhD, New York, NY
 Russell F. Warren, MD, New York, NY
 Scott A. Rodeo, MD, New York, NY

Fluoroquinolone exposure negatively influenced the biochemical, histological and biomechanical properties of the healing enthesis in this in-vivo model.

Discussion – 6 Minutes

1:54 PM

PAPER: 514

Prostaglandins Mediate the Beneficial Effects of Atorvastatin During the Early Phase of Rotator Cuff Healing

Oleg Dolkart, PhD, Tel Aviv, Israel
 Yankel Gabet, DDS, PhD, Tel Aviv, Israel
 Ofir Chechik, MD, Ramat Hasharon, Israel
 Fadi Y. Alhajajra SR, Tel Aviv, Israel
 Tamar Liron, Tel Aviv, Israel
 Eran Maman, MD, Tel Aviv, Israel

Although chronic inflammation contributes to the development of tendinopathy, our results advocate for a positive role of PGE-2 in tendon healing during the acute inflammatory phase that follows tendon surgical repair.

Thursday, March 13

2:00 PM

PAPER: 515

Are the Symptoms of Calcific Tendonitis Due to Neoinnervation and/or Neovascularization?

Lisa Hackett, Sonographer, Coogee, Australia
 Neal L. Millar, MD, Glasgow, United Kingdom
 Patrick H. Lam, PhD, Sydney, Australia
 George A. Murrell, MD, Kogarah, Australia

This study shows a very significant concomitant eight (8) fold increase in mast cells, macrophages, and neo-neurovascular infiltration in the tendons of patients with calcific tendonitis.

2:06 PM

PAPER: 516

Gene Expression in Human Rotator Cuff Pathology

Alexander Choo, MD, San Diego, CA
 Meagan M. McCarthy, MD, San Diego, CA
 Rajeswari Pichika, PhD, San Diego, CA
 Eugene J. Sato, MS, San Diego, CA
 Richard L. Lieber, PhD, La Jolla, CA
 Simon Schenk, PhD, La Jolla, CA
 John G. Lane, MD, San Diego, CA
 Samuel R. Ward, PhD, La Jolla, CA

Quantification of gene expression in human rotator cuff muscle demonstrates varied gene expression in fibrotic/adipogenic/myogenic programs in response to different types of pathology.

Discussion – 6 Minutes

2:18 PM

PAPER: 517

◆ Botulinum Toxin is Detrimental to Repair of a Chronic Rotator Cuff Tear in a Rabbit Model

Mohit Gilotra, MD, Baltimore, MD
 Thao Nguyen, MD, Baltimore, MD
 Matthew Christian, MD, Baltimore, MD
 Derik L. Davis, MD, Baltimore, MD
 R. Frank Henn III, MD, Ellicott City, MD
 Syed A. Hasan, MD, Fulton, MD

In a chronic rotator cuff repair model, botulinum toxin impairs rotator cuff healing.

2:24 PM

PAPER: 518

The Infraspinatus is an Active Humeral Head Depressor; the Supraspinatus is Not - An in vivo Study

Peggy Kuhnel, MD, London, ON, Canada
 Clement Werner, MD, Zurich, Switzerland
 Stephan Blumenthal, Zurich, Switzerland
 Sebastian Guenkel, DMed, Zurich, Switzerland
 Christian Gerber, MD, Zurich, Switzerland

This in-vivo MRI-study with experimental paralysis of the infraspinatus muscle in patients with isolated supraspinatus shows, that the supraspinatus doesn't act as a humeral head depressor.

2:30 PM

PAPER: 519

Prospective Longitudinal Analysis of the Risk of Tear Progression for Asymptomatic Degenerative Rotator Cuff Tears

Jay D. Keener, MD, Saint Louis, MO
 Leesa M. Galatz, MD, Saint Louis, MO
 GA Stobbs Cucchi, RN, Saint Louis, MO
 Rebecca Patton, MA, Saint Louis, MO
 Sharlene A. Teefey, MD, Saint Louis, MO
 Karen Steger-May, MD, Saint Louis, MO
 Aaron M. Chamberlain, MD, Saint Louis, MO
 Ken Yamaguchi, MD, Chesterfield, MO

This longitudinal cohort study showed 46% of partial and 53% of painless full thickness rotator cuff tears enlarged within 5 years. Pain was not related to tear enlargement.

Discussion – 6 Minutes

2:42 PM

PAPER: 520

A Prospective Follow Up of Patients Treated Surgically or Non-Surgically for Full-thickness Rotator Cuff Tears

Joel J. Gagnier, PhD, Ann Arbor, MI
 Hanna Oltean, MPH, Ann Arbor, MI
 Bruce S. Miller, MD, MS, Assoc Prof, Ann Arbor, MI

Our Shoulder Registry was used to compare the efficacy of surgical versus non-surgical management of full-thickness rotator cuff tears and to detect variables that predict success within each group.

2:48 PM

PAPER: 521

Rotator Cuff Repair: What Predicts Anatomic and Clinical Outcomes? A Systematic Review of 8,240 Cases

Matthew D. McElvany, MD, Santa Rosa, CA
 Erik McGoldrick, MD, Arcata, CA
 Albert O. Gee, MD, Seattle, WA
 Moni B. Neradilek, MS, Seattle, WA
 Frederick A. Matsen III, MD, Seattle, WA

The integrity of a rotator cuff repair at followup is most closely associated with patient age, tear size, and the degree of fatty infiltration, rather than repair method.

2:54 PM

PAPER: 522

Is Arthroscopic Rotator Cuff Repair Justified in Patients Older than 70 Years Old? A Prospective Multicenter Study

Philippe Valenti, MD, Paris Cedex 16, France
 Constantina Moraiti, MD, Paris, France
 Pablo E. Valle, Córdoba, Argentina
 Ali Maqdes, MBBS, MD, Paris, France
 Denis Katz, Ploemeur, France
 Kamil Elkholti, Villeurbanne, France
 Jean Kany, Toulouse, France

Arthroscopic rotator cuff repair seems to be justified in symptomatic patients over 70 years old.

Discussion – 6 Minutes

Thursday, March 13

3:06 PM

PAPER: 523

Prevalence of Rotator Cuff Repairs With and Without Concomitant Subacromial Decompressions

Daniel D. Buss, MD, Edina, MN
 Leroy P. McCarty III, MD, Edina, MN
 Steven H. Stern, MD, Northfield, IL
 Ned Tervola, MA, ATC, Edina, MN
 Mitchell Schoen, BA, Edina, MN
 M. Russell Giveans, PhD, Eden Prairie, MN

The rate of rotator cuff repairs performed with subacromial decompression is significantly higher than RCR without SAD in all age groups, and is not decreasing with time.

3:12 PM

PAPER: 524

Does Arthroscopic Subacromial Decompression Influence the Functional Outcome of Calcific Tendonitis?

Nicholas D. Clement, MRCs Ed, Edinburgh, United Kingdom
 Julie M. McBirnie, MD, Edinburgh, United Kingdom

Subacromial decompression used as part of the arthroscopic management of acute calcific tendonitis does not influence to functional outcome of the patient.

3:18 PM

PAPER: 525

Rotator Cuff Lesions in Patients with Frozen Shoulder: An Analysis of 300 Stiff Shoulders

Yusuke Ueda, MD, Tokyo, Japan
 Hiroyuki Sugaya, MD, Chiba, Japan
 Norimasa Takahashi, MD, Funabashi, Japan
 Nobuaki Kawai, MD, Chiba, Japan
 Moribito Tokai, MD, Funabashi, Chiba, Japan
 Kazutomo Onishi, MD, Chiba, Japan
 Motoki Tanaka, Fukuoka City, Japan

Rotator cuff lesions in 300 stiff shoulders were prospectively evaluated using MRI or ultrasonography in order to elucidate relationship between cuff lesions and severity of stiffness.

Discussion – 6 Minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 345

Spine III: Scoliosis

Moderator(s): William Donaldson, MD, Pittsburgh, PA
 Kern Singh, MD, Chicago, IL

1:30 PM

PAPER: 526

Gait Improvement After Fusion for AIS is Influenced by Measures in Coronal and Sagittal Planes

Justin Paul, MD, New York, NY
 Ashish Patel, MD, Brooklyn, NY
 Ellen M. Godwin, PT, PhD, Brooklyn, NY
 Kristina Bianco, New York, NY
 Charles R. Spero, MD, Pomona, NY
 Nicholas H. Post, MD, Brooklyn, NY
 Thomas J. Errico, MD, New York, NY
 Virginie Lafage, PhD, New York, NY
 Carl B. Paulino, MD, Brooklyn, NY

The interaction between COM and COP suggests that fusion surgery for AIS improves gait by correcting measures in the coronal and sagittal planes.

1:36 PM

PAPER: 527

Transverse Process Hooks at Upper Instrumented Vertebra Provide More Gradual Motion Transition than Pedicle Screws

Dinesh Thawrani, MD, Richlands, VA
 David Glos, Research Eng, Cincinnati, OH
 Matthew Coombs, Cincinnati, OH
 Donita Bylski-Austrow, Cincinnati, OH
 Peter F. Sturm, MD, Cincinnati, OH

Transverse process hooks at upper instrumented vertebra provided more gradual transition to normal motion compared to pedicle screws in long posterior spinal fusion constructs in biomechanical tests.

1:42 PM

PAPER: 528

EOS Imaging System is Available for Early Onset Scoliosis and Can Reduce Ionizing Radiation Exposure

Burt Yaszay, MD, San Diego, CA
 Nima Kabirian, MD, San Diego, CA
 Gregory M. Mundis, MD, San Diego, CA
 Jeff Pawelek, La Jolla, CA
 Carrie Bartley, MA, San Diego, CA
 Behrooz A. Akbarnia, MD, La Jolla, CA

The novel EOS Imaging system can significantly reduce emitted ionizing radiation in early onset scoliosis patients as young as 3 years old.

Discussion – 6 Minutes

Thursday, March 13

1:54 PM

PAPER: 529

Comparison of Typical Thoracic Curves and Atypical Thoracic Curves within the Lenke 1 Classification

Takahito Fujimori, MD, MSc, Osaka, Japan
Tracey Bastrom, MA, San Diego, CA
Carrie Bartley, MA, San Diego, CA
Peter O. Newton, MD, San Diego, CA
Harms Study Group, San Diego, CA

Significant differences exist between Lenke 1 curves when one considers the location of the apex, which may introduce unintended bias to a study population when utilizing only the Lenke 1 designation.

2:00 PM

PAPER: 530

Evolution of the Surgical Correction of Scoliosis in Patients with Duchenne Muscular Dystrophy

Brian Scannell, MD, Charlotte, NC
Burt Yaszay, MD, San Diego, CA
Carrie Bartley, MA, San Diego, CA
Tracey Bastrom, MA, San Diego, CA
Peter O. Newton, MD, San Diego, CA
Scott J. Mubarak, MD, San Diego, CA

Operative treatment of scoliosis in Duchenne Muscular Dystrophy was evaluated. Both pedicle screw and Luque instrumentation had high complication rates, with more implant failure in the Luque group.

2:06 PM

PAPER: 531

Single Stage Vertebral Column Resection (VCR) of Hemivertebrae in Children under the Age of 10 Years

Mohammad M. El-Sharkawi, MD, Assiut, Egypt
Wael Koptan, MD, Cairo, Egypt
Yasser H. El Miligui, MD, FRCS, Cairo, Egypt
Mohamed Omar A. Soliman, Prof., Cairo, Egypt

In a prospective study of 31 children with a lumbar hemivertebra, single stage posterior VCR and short segment posterior instrumentation achieved adequate correction and satisfactory clinical outcome.

Discussion – 6 Minutes

2:18 PM

PAPER: 532

A Multicenter Inter-observer Reliability Study of Radiographic Characteristics of Dystrophic Scoliosis in NF1

Charles Gerald T. Ledonio, MD, Minneapolis, MN
David W. Polly Jr, MD, Minneapolis, MN
Ann M. Brearley, PhD, MS, Minneapolis, MN
Alvin H. Crawford, MD, Cincinnati, OH
Daniel J. Sucato, MD, MS, Dallas, TX
Leah Y. Carreon, MD, Louisville, KY
Annalise N. Larson, MD, Rochester, MN
David Stevenson, Salt Lake City, UT

8. This multicenter radiographic assessment study shows that there is good reliability to detect dystrophic scoliosis in NF1 patients by assessing radiographic characteristics of dystrophic modulation.

2:24 PM

PAPER: 533

Modeling Thoracic Volume to Predict Pulmonary Function in Scoliosis, Pectus and Combined Deformity

David W. Polly Jr, MD, Minneapolis, MN
Ben E. Rosenstein, BS, Minneapolis, MN
Charles Gerald T. Ledonio, MD, Minneapolis, MN
Annalise N. Larson, MD, Rochester, MN
David J. Nuckley, PhD, Minneapolis, MN

A computational model for thoracic volume measurement using patient specific spine & chest wall deformity has been validated with a maximal error of 4.1%.

2:30 PM

PAPER: 534

A Systematic Review of All Smart Phone Applications Specifically Aimed for use as a Scoliosis Screening Tool

Qais Naziri, MD, Brooklyn, NY
Jadie E. De Tolla, BS, Brooklyn, NY
Chibuikem Akamnonu, MD, Brooklyn, NY
Ardalan A. Nourian, MD, New York, NY
Dante M. Leven, DO, Brooklyn, NY
Westley Hayes, MS, Brooklyn, NY
Katherine Stiene, Northport, NY
Andrew A. Merola, MD, Brooklyn, NY
Carl B. Paulino, MD, Brooklyn, NY

New Smart phone apps can be useful in screening and diagnosis of scoliosis. We systematically reviewed all apps that fit this description to determine the most accurate ones compared to scoliometer.

Discussion – 6 Minutes

Thursday, March 13

2:42 PM

PAPER: 535

A Novel Animal Model for Congenital Scoliosis in Chicken Embryos

Andrea Ketschek, PhD, Philadelphia, PA
 Mirela Spillane, PhD, Philadelphia, PA
 Wenhai Wang, PhD, Philadelphia, PA
 Giuseppe Orlando, MD, Palmi, Italy
 Amer Samdani, MD, Philadelphia, PA
 Randal R. Betz, MD, Philadelphia, PA
 Joshua Pahys, MD, Wynnewood, PA
 Gianluca Gallo, PhD, Philadelphia, PA
 Patrick J. Cahill, MD, Philadelphia, PA

The induction of congenital scoliosis in chicken embryos through in ovo electroporation may represent a new model for studying the etiology, consequences, and therapies for congenital scoliosis in humans.

2:48 PM

PAPER: 536

Thoracic Volume Predicts Pulmonary Function Recovery in Scoliosis Patients

David W. Polly Jr, MD, Minneapolis, MN
 Ben E. Rosenstein, BS, Minneapolis, MN
 Charles Gerald T. Ledonio, MD, Minneapolis, MN
 Charles E. Johnston II, MD, Dallas, TX
 David J. Nuckley, PhD, Minneapolis, MN

Computational modeling of thoracic volumes in AIS patients was found to be correlated with improved PFTs after surgical correction of spine deformity.

2:54 PM

PAPER: 537

Identification of Risk Factors for Rapid Progression of Scoliosis in Children with an Isolated Syrinx

Senthil T. Nathan, MBBS, MS, Cincinnati, OH
 Viral V. Jain, MD, MBBS, MS, Cincinnati, OH
 Jennifer M. Anadio, MA, Cincinnati, OH
 Peter F. Sturm, MD, Cincinnati, OH

We present our experience on isolated syrinx and risk of rapid scoliosis progression based on data collected over a period of 10 years.

Discussion – 6 Minutes

3:06 PM

PAPER: 538

Understanding Direct Vertebral Rotation: Developing a Multisegmental Biomechanical Model and Evaluation Factors

Siddharth Badve, MD, MBBS, MS, Cleveland, OH
 Nathaniel R. Ordway, Syracuse, NY
 Yushek Pun, Sandy Hook, CT
 Stephen A. Albanese, MD, East Syracuse, NY
 William F. Lavelle, MD, East Syracuse, NY

Screw placement and direction of derotation force are important. Bi-cortical pedicle screws provided an advantage due to higher threshold for failure and potential for improved deformity correction.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

3:12 PM

PAPER: 539

Radiation Exposure During Posterior Instrumented Fusion for Idiopathic Scoliosis

Courtney M. O'Donnell, MD, Seattle, WA
 Viviana Bompadre, PhD, Seattle, WA
 Walter F. Krenkel III, MD, Seattle, WA

This retrospective review demonstrates decreased radiation exposure for pediatric posterior instrumented fusion cases using fluoroscopy as compared to published values for CT-guided technology.

3:18 PM

PAPER: 540

The Effect of Increasing Pedicle Screw Diameter on Thoracic Spinal Canal Dimensions

Samuel K. Cho, MD, Palisades Park, NJ
 Young Lu, BA, New York, NY
 Lawrence G. Lenke, MD, Saint Louis, MO

pedicle screw size caused pedicle expansion laterally but did not alter spinal canal dimensions. When there was an osseous breach, most were lateral and did not involve the spinal cavity.

Discussion – 6 Minutes

Thursday, March 13

SYMPOSIUM

4:00 PM — 6:00 PM

La Nouvelle Ballroom



Hot Topics and Controversies in Shoulder Surgery: 2014 (T)

Moderator: John W. Sperling, MD, MBA, Rochester, MN

The symposium will update attendees on state of the art treatment for common problems encountered in shoulder surgery including instability, rotator cuff, arthritis, and fracture management.

- I. Arthroscopic Capsulolabral Repair: The Gold Standard
Wesley M. Nottage, MD, Laguna Hills, CA
- II. Coracoid Transfer Procedures: What is the Current Role?
Scott P. Steinmann, MD, Rochester, MN
- III. Single Row Repair: The Preferred Approach
Jeffrey S. Abrams, MD, Princeton, NJ
- IV. Double Row Repair: The New Gold-Standard
Christopher S. Ahmad, MD, New York, NY
- V. Patch Reinforcement of Rotator Cuff Repairs: Current Indications
Thomas B. Edwards, MD, Houston, TX
- VI. PRP and Stem Cells: Current Evidence
Leesa M. Galatz, MD, Saint Louis, MO
- VII. Tissue Transfers-What is the Current Role?
Emilie V. Cheung, MD, Redwood City, CA
- VIII. When is the Reverse Indicated for the Massive Tear?
David M. Dines, MD, Uniondale, NY
- IX. ORIF-Key Steps in Fracture Reduction and Fixation
William N. Levine, MD, New York, NY
- X. Reverse Arthroplasty is the New Gold Standard for Four Part Fractures
Edward V. Craig, MD, New York, NY
- XI. LTO vs. Tenotomy- Preferred Approach To The Subscapularis?
George S. Athwal, MD, London, ON, Canada
- XII. Current Indications For Hemiarthroplasty Vs. Total Shoulder
Thomas (Quin) Throckmorton, MD, Germantown, TN

SYMPOSIUM

4:00 PM — 6:00 PM

Theater C



◆ Complex Skeletal Reconstruction in Infection, Post Trauma, and Tumor (U)

Moderator: Joseph Benevenia, MD, Newark, NJ

Complex skeletal defects which having different etiologies may be approached with common principles of limb-preservation using biologic and endoprosthetic means. By using a multi subspecialty treatment approach the patient may be afforded many of the available options.

- I. Management of Skeletal Defects in Infection and Trauma
Michael S. Sirkin, MD, Newark, NJ
- II. Limb Preservation Techniques for Skeletal Defects of the Upper Limb and Shoulder Girdle
Virak Tan, MD, Newark, NJ
- III. Complex Limb Preservation for Skeletal Defects of the Pelvis, Acetabular and Hip
Joseph Benevenia, MD, Newark, NJ
- IV. Limb Preservation Techniques for Skeletal Defects of the Lower Extremity
Francis R. Patterson, MD, Newark, NJ

Thursday, March 13

SYMPOSIUM

4:00 PM — 6:00 PM

Theater B

◆ Partial Knee Arthroplasty: State of the Art 2014 (V)

Moderator: Adolph V. Lombardi Jr, MD, New Albany, OH

Partial knee arthroplasty remains a highly debatable topic with controversies over indications, use of custom devices, surgical techniques, bearing options, utilization and results. Controversies will be debated and illustrative cases presented.

- I. Partial Knee Arthroplasty is Underutilized - Affirmative
William A. Jiranek, MD, Richmond, VA
- II. Partial Knee Arthroplasty is Underutilized - Opposes
Giles R. Scuderi, MD, New York, NY
- III. Patellofemoral Arthroplasty: A Patient Specific Approach Can Optimize Results
Adolph V. Lombardi Jr, MD, New Albany, OH
- IV. Patellofemoral Arthroplasty: Off-the-Shelf Implants Allow for Correction of Trochlear Alignment
Jess H. Lonner, MD, Philadelphia, PA
- V. Medial Unicompartmental Knee Arthroplasty: Respect the Classic Indications
Fred D. Cushner, MD, New York, NY
- VI. Medial Unicompartmental Knee Arthroplasty: Expanded Indications are Appropriate
Michael E. Berend, MD, Mooresville, IN
- VII. Medial Unicompartmental Knee Arthroplasty: Fixed-Bearing Is Better
Jean-Noel A. Argenson, MD, Marseille, France
- VIII. Medial Unicompartmental Knee Arthroplasty: Mobile-Bearing Is Better
Christopher A. Dodd, FRCS, Oxford, United Kingdom
- IX. ACL Deficiency Is Not a Contraindication to Medial Unicompartmental Knee Arthroplasty
William Bugbee, MD, La Jolla, CA
- X. Medial Unicompartmental Knee Arthroplasty Requires the ACL to Be Intact or Reconstructed
Jason M. Hurst, MD, New Albany, OH
- XI. Partial Knee Arthroplasty Should Be Considered a Pre-Total Knee - Affirmative
Kelly Vince, MD, Whangarei, New Zealand
- XII. Partial Knee Arthroplasty Should Be Considered a Pre-Total Knee - Opposes
David W. Murray, MD, Oxford, United Kingdom

- XIII. Tips and Tricks to Improve the Results of Lateral UKA with Off-the-Shelf Implants
Keith R. Berend, MD, New Albany, OH

- XIV. Optimize Results of Lateral UKA with a Custom Approach
Wolfgang Fitz, MD, Boston, MA

INSTRUCTIONAL COURSE LECTURE

4:00 PM — 5:00 PM

FD10 Social Media and Orthopaedics: Opportunities and Challenges

Room 217

Moderator: Naven Duggal, MD, Boston, MA
Lance M. Silverman, MD, Edina, MN
Howard J. Luks, MD, Katonah, NY

Social media is an emerging modality that can be viewed as a chance to update our approach to interacting with patients, data, and each other in important new ways. However, careful attention regarding patient privacy, liability, and HIPAA violations is required by the orthopaedist interested in utilizing this technology. With mindful use of social media, we are able to leverage our positions as trusted community leaders to create and nurture a much larger community. Join your colleagues for an exciting faculty development course given by fellow orthopaedic surgeons well versed in the opportunities and challenges of social media.

4:00 PM — 6:00 PM

361 Safe Adaptation of Anterior THA With and Without a Specialized Table



Room 271

Moderator: J.B. Mason, MD, Charlotte, NC
John L. Masonis, MD, Charlotte, NC
Joseph T. Moskal, MD, Roanoke, VA
Michael M. Nogler, MD, Innsbruck, Austria

Video and didactic material to introduce the audience to DA-THA and outline best practice strategies for adaptation including discussion of risks and pitfalls of the procedure.

362 The Difficult Primary Total Knee Arthroplasty



Room 226

Moderator: Arthur L. Malkani, MD, Louisville, KY
Thomas K. Fehring, MD, Charlotte, NC
Kirby Hitt, MD, Temple, TX
Michael A. Mont, MD, Baltimore, MD

Identify and plan for the difficult primary TKA in patients with deformity, bone loss, post traumatic arthritis, muscular, ligamentous, neurologic compromise, and complex medical problems.

Thursday, March 13

363



Osteochondral Lesions of the Talus: Current Treatment Dilemmas

Moderator: Mark Glazebrook, MD, Halifax, NS, Canada
C.N. Van Dijk, MD, Abcoude, Netherlands
Richard D. Ferkel, MD, Van Nuys, CA
Alastair S.E. Younger, MD, Vancouver, BC, Canada



Room
262

Explore the natural history of the untreated osteochondral lesion of the talus, as well as the current treatment options, including arthroscopic autograft, allograft, or autologous chondrocyte implantation.

364



Tendinopathy of the Upper Extremity: Evaluation, Treatment and Evidence Based Care

Moderator: Julie E. Adams, MD, Minneapolis, MN
David C. Ring, MD, Boston, MA
Jeffrey A. Greenberg, MD, Indianapolis, IN
Donald H. Lee, MD, Nashville, TN

Room
207

Diagnosis, evaluation, and treatment of various tendinopathies of the upper extremity, including those about the shoulder, elbow, wrist and hand, will be discussed. Understanding of pathophysiology, treatment options, and the biomechanical and biological evidence supporting these treatment options will be explored. Case discussion and audience participation will be encouraged.

365



The Kids You See on Call: Pearls for Managing Urgent Pediatric Orthopaedics

Moderator: John M. Flynn, MD, Philadelphia, PA
Martin J. Herman, MD, Philadelphia, PA
James H. Beaty, MD, Memphis, TN
David L. Skaggs, MD, Los Angeles, CA

Room
221

Address many of the pediatric orthopaedics urgencies and emergencies that might cause anxiety for the general orthopaedist covering his or her local emergency room. Highlight standard of care for managing dangerous infection, pediatric femur fractures, SCFE (including technique) and the pulseless supracondylar. Enhanced case discussions are used to teach principles of treating a wide variety of acute pediatric orthopaedic issues, and demonstrating decision-making for controversial pediatric fracture surgical indications.

366



Anatomy of a Medical Liability Lawsuit: Practical Issues in Malpractice Avoidance

Moderator: Thomas B. Fleeter, MD, Reston, VA
Byron Mitchell, JD, Henrico, VA
Joseph L. Messa Jr., Esq., Philadelphia, PA
Elliott H. Leitman, MD, Newark, DE
Jeffrey Varnell, MD, FACS, Denver, CO



Room
218

A medical negligence defense attorney and orthopaedic experts in medical liability will present techniques and tips to use during medical negligence lawsuits and plaintiff's depositions.

367



Room
276

Reverse Total Shoulder Arthroplasty for Management of Acute Fracture and the Sequelae of Proximal Humeral Fractures

Moderator: Joseph P. Iannotti, MD, PhD, Cleveland, OH
Anders L. Ekelund, MD, Stockholm, Sweden
Ludwig Seebauer, MD, Forstinning, Germany
Jon J. Warner, MD, Boston, MA

Deal with both the controversies and surgical techniques tips and pearls associated with the use of reverse total shoulder replacement for a complex set of problems associated with trauma to shoulder.

368



Room
350

Fractures of the Proximal Humerus: Reduce and Pin, Plate or Replace

Moderator: Robert J. Neviaser, MD, Washington, DC
Herbert Resch, MD, Salzburg, Austria
Andrew Neviaser, MD, Washington, DC
Lynn A. Crosby, MD, Augusta, GA

Will discuss in detail means for correct diagnosis, choice of treatment, and rehabilitation to ensure best outcome for fracture treatment.

369



Room
208

Adult Lumbar Scoliosis: State-of-the-Art Treatment (Operative and Non-Operative)

Moderator: Eric O. Klineberg, MD, Sacramento, CA
Munish C. Gupta, MD, Sacramento, CA
Serena S. Hu, MD, Redwood City, CA
Themistocles S. Protopsaltis, New York, NY

Will focus on the definition of adult lumbar scoliosis, and discuss the radiographic, clinical and surgical indications for correction. Format will be lecture and case discussion.

370



Room
260

Biceps Tendon: Problems and Surgical Techniques

Moderator: Nikhil N. Verma, MD, Chicago, IL
Jeffrey R. Dugas, MD, Birmingham, AL
Larry D. Field, MD, Jackson, MS
Paul Sethi, MD, Greenwich, CT

Discuss contemporary management of long head biceps tendon pathology including tenotomy vs. tenodesis, management of SLAP lesions, and proximal versus distal tenodesis.

371



Room
347

Complex Trauma to Shoulder Girdle Including Clavicle, Scapula and Proximal Humerus: Current Concepts in Diagnosis and Treatment

Moderator: Mark A. Mighell, MD, Tampa, FL
J. Tracy Watson, MD, Saint Louis, MO
Roy W. Sanders, MD, Tampa, FL
Armodios M. Hatzidakis, MD, Denver, CO

Current concepts in treatment of acute and chronic trauma to the shoulder girdle including the clavicle, scapula and proximal humerus will be presented comprehensively.

Thursday, March 13

372 Tips and Tricks for Problem Fractures

Moderator: *Steven J. Morgan, MD, Denver, CO*
Peter L. Althausen, MD, Reno, NV
Daniel S. Horwitz, MD, Danville, PA
Paul Tornetta III, MD, Boston, MA

Room
356

Trauma experts detail technical tips for common challenges in community orthopaedic fracture care, including intramedullary nailing, locked plate applications, tibial plateau and hip fractures.

373 PRP, BMP and Stem Cells: What Surgeons Need to Know

Moderator: *Jeffrey C. Wang, MD, Sherman Oaks, CA*
Wellington K. Hsu, MD, Chicago, IL
Thomas E. Mroz, MD, Cleveland, OH
Frank Petrigliano, MD, Santa Monica, CA

Room
353

Discuss the most important biologics in orthopaedic surgery, including growth factors, cell therapy and pharmacologics to promote bone and soft-tissue healing.

PAPER PRESENTATION

4:00 PM — 6:00 PM

Theater A

Adult Reconstruction Hip V: Primary THR II

Moderator(s): *James I. Huddleston III, MD, Redwood City, CA*
Steven T. Woolson, MD, Palo Alto, CA

4:00 PM

PAPER: 541

Low Surgeon Volume is Associated with Increased Complications Following THA, After Accounting for Experience

Bheeshma Ravi, MD, Toronto, ON, Canada
Peter Austin, Toronto, ON, Canada
Benjamin Escott, MBBS, Toronto, ON, Canada
Ruth Croxford, MSc, Toronto, ON, Canada
Richard Jenkinson, MD, Toronto, ON, Canada
Hans J. Kreder, MD, Toronto, ON, Canada
Gillian Hawker, MD, Toronto, ON, Canada

Low surgeon volume is associated with increased complications following total hip arthroplasty.

4:06 PM

PAPER: 542

Trends in Total Hip Arthroplasty in the United States: The Shift to a Younger Demographic

Jacob M. Drew, MD, Charlotte, NC
Jeffrey K. Lange, MD, Worcester, MA
Virginia Briggs, PhD, Worcester, MA
Patricia Franklin, MD, MBA, MPH, Worcester, MA
David C. Ayers, MD, Worcester, MA

As the rate of THA in the US continues to rise to meet patient demand, particularly among younger patients, patterns of resource use are changing, and the revision burden is decreasing substantially.

4:12 PM

PAPER: 543

The Utility of a Total Joint Registry in Quality Improvement

Thomas C. Barber, MD, Oakland, CA
Liz Paxton, MA, San Diego, CA
Maria C. Inacio, MS, San Diego, CA
Christopher F. Ake, PhD, San Diego, CA
Eric J. Yue, MD, Sacramento, CA
Monti Khatod, MD, Santa Monica, CA
Robert S. Namba, MD, Corona Del Mar, CA
Tadashi T. Funabashi, MD, Irvine, CA

In a US integrated healthcare system with over 9 million members, a total joint replacement registry (TJRR) has implemented a comprehensive reporting program to support quality improvement.

Discussion – 6 Minutes

4:24 PM

PAPER: 544

HIV Infection and Risk of Perioperative Complications Following Total Hip Arthroplasty

Qais Naziri, MD, Brooklyn, NY
Matthew R. Boylan, Brooklyn, NY
Kimona Issa, MD, Baltimore, MD
Harpal S. Khanuja, MD, Cockeysville, MD
Michael A. Mont, MD, Baltimore, MD

This study compared the cost, length and risk of short-term complications during admission among HIV-positive and HIV-negative patients admitted for primary total hip arthroplasty (THA).

4:30 PM

PAPER: 545

Factors Affecting Readmission Rates Following Primary Total Hip Arthroplasty

Rachel E. Mednick, MD, Chicago, IL
Hasham M. Alvi, MD, Chicago, IL
Hasham M. Alvi, MD, Chicago, IL
Varun Krishnan, BA, Chicago, IL
Francis Lovecchio, BA, Chicago, IL
David W. Manning, MD, Chicago, IL

The risk of readmission following total hip arthroplasty is increased in patients with a BMI > 40, a history of chronic steroid use, and in patients with a low preoperative serum albumin.

Thursday, March 13

4:36 PM

PAPER: 546

Bisphosphonates Reduce the Risk of Revision Following Total Hip Arthroplasty

Monti Khatod, MD, Santa Monica, CA
 Maria C. Inacio, MS, San Diego, CA
 Richard M. Dell, MD, Cypress, CA
 Stefano A. Bini, MD, San Francisco, CA
 Liz Paxton, MA, San Diego, CA
 Robert S. Namba, MD, Corona Del Mar, CA

Bisphosphonate use is associated with lower risk of revision in THA patients and a higher risk of periprosthetic fracture in younger THA patients with normal bone density.

Discussion – 6 Minutes

4:48 PM

PAPER: 547

Timing of Pharmacologic Thromboprophylaxis on Venous Thromboembolism and Surgical Site Infection following TJA

Zhong Wang, PhD, Bethesda, MD
 Frederick A. Anderson, PhD, Worcester, MA
 Michael M. Ward, MD, Bethesda, MD
 Timothy Bhattacharyya, MD, Bethesda, MD

LMWH prophylaxis closer to the surgical time reduced VTE risk, was associated with higher incidences of bleeding and, more importantly, surgical site infections.

4:54 PM

PAPER: 548

Topical Versus Intravenous Tranexamic Acid in Total Hip Arthroplasty: A Double-Blind, Randomized Controlled Trial

Wayne T. North, MD, Berkley, MI
 Nima Mehran, MD, Royal Oak, MI
 Michael W. Laker, MD, Birmingham, MI
 Kaiser Shah, BA, Oak Brook, IL
 Craig Silvertson, DO, Detroit, MI
 Robb M. Weir, MD, Novi, MI
 Jason J. Davis, MD, Commerce Township, MI
 Lige Kaplan, MD, Royal Oak, MI

Intravenous TA reduces blood loss and transfusion requirements in THA. This double blind, RCT demonstrates that topical TA is equivalent in its ability to reduce blood transfusions in THA.

5:00 PM

PAPER: 549

Wound Complications with Therapeutic Anticoagulation after Total Joint Arthroplasty

Ryan Nunley, MD, Saint Louis, MO
 James A. Keeney, MD, Saint Louis, MO
 John C. Clobis, MD, Saint Louis, MO
 Staci Johnson, M.Ed, Saint Louis, MO
 Douglas J. McDonald, MD, Webster Groves, MO
 Robert L. Barrack, MD, Saint Louis, MO

MCDs were equivalent to warfarin in prevention of VTEs even after introduction of TXA.

Discussion – 6 Minutes

5:12 PM

PAPER: 550

Is Closed Suction Drainage Effective in Recovery of Hip Joint Function After Total Hip Arthroplasty?

Gaku Koyano, MD, PhD, Tokyo, Japan
 Tetsuya Jinno, MD, PhD, Tokyo, Japan
 Daisuke Koga, MD, Tokyo, Japan
 Chisato Hoshino, Tokyo, Japan
 Takeshi Muneta, MD, Tokyo, Japan
 Atsushi Okawa, Tokyo, Japan

Closed suction drainage has favorable effects on early recovery of hip joint function after THA.

5:18 PM

PAPER: 551

Rivaroxaban versus Enoxaparin for Venous Thromboembolism Prophylaxis after Hip and Knee Arthroplasty

Nicholas B. Frisch, MD, MBA, Bloomfield Hills, MI
 Michael A. Charters, MD, Detroit, MI
 Nolan M. Wessell, MD, Detroit, MI
 Jakub A. Sikora-Klak, BS, Bloomfield Hills, MI
 Stephen Yu, BS, Garden City, MI
 James J. Jeffries JR, Detroit, MI
 Clifford M. Les, DVM, Detroit, MI
 Craig Silvertson, DO, Detroit, MI
 Michael W. Laker, MD, Birmingham, MI

This non-industry funded study compared the rates of venous thromboembolism and major bleeding complications between rivaroxaban versus enoxaparin after primary total hip and knee arthroplasty.

5:24 PM

PAPER: 552

Thrombosis Prevention Using a Portable Compression Device in Total Hip Arthroplasty

Clifford W. Colwell Jr, MD, La Jolla, CA
 Mark I. Froimson, MD, Euclid, OH
 Scott D. Anseth, MD, Edina, MN
 Nicholas J. Giori, MD, Palo Alto, CA
 William G. Hamilton, MD, Alexandria, VA
 Robert L. Barrack, MD, Saint Louis, MO
 Michael A. Mont, MD, Baltimore, MD
 Knute C. Buehler, MD, Bend, OR
 C. Lowry Barnes, MD, Little Rock, AR

Of 1509 patients using a portable compression device with or without aspirin as the sole means of venous thromboembolism, 8 (0.53%) had VTE (4 distal DVT, 1 proximal DVT, and 3PEs). No deaths occurred.

Discussion – 6 Minutes

Thursday, March 13

5:36 PM

PAPER: 553

The Painful Reality of Hip Stem Modularity - Catastrophic Adverse Tissue Responses in a Series of 216 Cases

Danyal Nawabi, MD, FRCS (Orth), New York, NY
Brett Lurie, MBBS, New York, NY
Allison Ruel, BA, New York, NY
Giorgio Perino, New York, NY
Hollis Potter, MD, New York, NY
Geoffrey H. Westrich, MD, New York, NY

A cobalt-chrome on titanium, modular neck-stem hip design has shown a poor survivorship of only 76.6% at 2 years. The majority (93%) of the revisions are due to ALTR.

5:42 PM

PAPER: 554

Medicaid Patients Have Higher Complication Rates and Costs After Primary TJA - A Matched-Control Study

Michele R. D'Apuzzo, MD, New York, NY
Wendy Novicoff, PhD, Charlottesville, VA
James A. Browne, MD, Charlottesville, VA

Medicaid patients have a significantly higher risk for select postoperative complications and increased costs when matched for age, gender and comorbid medical condition.

5:48 PM

PAPER: 555

Distributed Analysis of Hip Implants Using Five International Registries: Pioneering Study of Bearing Surfaces

Ove N. Furnes, MD, Bergen, Norway
Guy Cafri, PhD, La Jolla, CA
Liz Paxton, MA, San Diego, CA
Stephen Graves, MD, Adelaide, Australia
Barbara Bordini, MD, Bologna, Italy
Thomas K. Comfort, MD, Stillwater, MN
Samprit Banerjee, PhD, New York, NY
Danica Marinac-Dabic, MD, PhD, Rockville, MD
Art Sedrakyan, PhD, MD, New York, NY

Younger patients with large size but not small size metal on metal implants are at higher risk of revision compared to cross-link polyethylene bearing in worldwide distributed study of five registries.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 245

Sports Medicine/Arthroscopy V: Shoulder II

Moderator(s): Richard Angelo, Woodinville, WA
Michael A. Kuhn, MD, Cape Carteret, NC

4:00 PM

PAPER: 556

Increased Rate of Posterior Instability in Young Active Patients

Jay B. Cook, MD, Kailua, HI
Daniel Song, MD, APO, AE
Douglas J. Rowles, MD, Aiea, HI
Craig R. Bottoni, MD, Honolulu, HI
Steve Shaha, Draper, UT
John M. Tokish, MD, Scottsdale, AZ

The rate of posterior instability our young, active population is greater than double that previously reported.

4:06 PM

PAPER: 557

Footprint Contact Restoration Between the Biceps-labrum Complex and the Glenoid Rim in SLAP Repair

Sung-Jae Kim, MD, Seoul, Republic of Korea
Sung-Hwan Kim, MD, Seoul, Republic of Korea
Yun-Rak Choi, MD, PhD, Seoul, Republic of Korea
Seong-Hun Kim, Goyang-Si, Republic of Korea
Min Jung, MD, Seoul, Republic of Korea
Su Keon A. Lee, MD, Seoul, Republic of Korea
Jae-Ho Yang, Seoul, Republic of Korea
Yong-Min Chun, MD, PhD, Seoul, Republic of Korea

Although two single-loaded anchors with simple suture resulted in the largest pressurized contact dimension in SLAP repair, this approach showed suboptimal contact area just below the biceps anchor.

4:12 PM

PAPER: 558

Arthroscopic Latarjet Procedure for Anterior Shoulder Instability: Five-Year Minimum Follow Up

Guillaume D. Dumont, MD, Boston, MA
Simon Fogerty, FRCS, North Yorkshire, United Kingdom
Laurent Lafosse, MD, Annecy, France

Evaluation of the rate of recurrent instability and patient outcomes after shoulder stabilization using the arthroscopic Latarjet procedure a minimum of five years after surgery.

Discussion – 6 Minutes

Thursday, March 13

4:24 PM

PAPER: 559

Biomechanical Analysis of the Modified Bristow Procedure: Is the Bone Block Necessary?

Curtis J. Kephart, MD, Delray Beach, FL
 Michael Abdulian, MD, Studio City, CA
 Michelle H. McGarry, MD, Long Beach, CA
 James E. Tibone, MD, Los Angeles, CA
 Thay Q. Lee, PhD, Long Beach, CA

Glenohumeral instability due to a bony Bankart lesion was restored with a modified Bristow procedure where only the conjoint tendon without the bone block was transferred to the glenoid.

4:30 PM

PAPER: 560

A Randomized Controlled Trial Comparing Arthroscopic and Open Bankart Repair for Anterior Shoulder Dislocations

Steven J. Svoboda, MD, West Point, NY
 Kenneth L. Cameron, PhD, West Point, NY
 Karen Y. Peck, ATC, MEd, West Point, NY
 Thomas M. DeBerardino, MD, Farmington, CT
 Bradley J. Nelson, MD, Minneapolis, MN
 Dean C. Taylor, COL, MD, Durham, NC
 Joachim Tenuta, MD, Albany, NY
 John M. Uhorchak, MD, Cornwall, NY
 Brett D. Owens, MD, West Point, NY

In a young, high-demand military cadet population, open and arthroscopic shoulder stabilization procedures were found to have similar clinical outcomes.

4:36 PM

PAPER: 561

Hill-Sachs Remplissage: Two to 10-year Follow Up and Incidence of Recurrence

Eugene M. Wolf, MD, San Francisco, CA
 Afshin Arianjam, MD, San Francisco, CA

This paper presents the results of arthroscopic remplissage used in the treatment of traumatic anterior shoulder instability in patients with both glenoid bone loss and a Hill Sachs lesion.

Discussion – 6 Minutes

4:48 PM

PAPER: 562

3-D Modeling of Humeral Head Defects in Glenohumeral Instability: Implications of the Glenoid Track

Jaicharan Iyengar, MD, Lodi, CA

Our study examines three-dimensional humeral head lesion morphology in attempt to validate the glenoid track concept with respect to clinical instability and surgical treatment outcomes.

4:54 PM

PAPER: 563

Redefining “Critical” Bone Loss in Shoulder Instability: Functional Outcomes Worsen with “Subcritical” Bone Loss

James S. Shaha, MD, Kailua, HI
 Jay B. Cook, MD, Kailua, HI
 Daniel Song, MD, APO, AE
 Craig R. Bottoni, MD, Honolulu, HI
 Douglas J. Rowles, MD, Aiea, HI
 Steve Shaha, Draper, UT
 John M. Tokish, MD, Scottsdale, AZ

“Subcritical” glenoid bone loss above 13.4% led to a clinically significant decrease in WOSI scores consistent with an unacceptable outcome.

5:00 PM

PAPER: 564

A Prospective Outcome Evaluation of Humeral Avulsions of the Glenohumeral Ligament (HAGL) Tears

CDR (ret) Matthew T. Provencher, MD, Boston, MA
 Frank McCormick, MD, Ft Lauderdale, FL
 Lance E. LeClere, MD, San Diego, CA
 Tistia Gaston, PA-C, Boston, MA
 Daniel J. Solomon, MD, Novato, CA
 Christopher B. Dewing, MD, San Diego, CA

After surgery, patients demonstrated statistically and clinically significant improved outcomes, a predictable return to activity and patient satisfaction.

Discussion – 6 Minutes

5:12 PM

PAPER: 565

Arthroscopic Subdeltoid Transfer of the Long Head of the Biceps Tendon: Outcomes at Two to 10 Years Follow Up

Samuel A. Taylor, MD, New York, NY
 Peter D. Fabricant, MD, MPH, New York, NY
 Nikolas Baret, New York, NY
 Ashley M. Newman, BS, Syracuse, NY
 Nicole Sliva, BA, New York, NY
 Stephen J. O’Brien, MD PLLC, New York, NY

Arthroscopic subdeltoid transfer of the long head of the biceps tendon is a safe, reliable intervention for chronic biceps tendinopathy with favorable 2-10 year outcomes.

Thursday, March 13

5:18 PM

PAPER: 566

Graft Position Determines Stability in Free Bone Graft Augmentation Procedures of the Anterior Glenoid

Laurent B. Willemot, MD, Rochester, MN
 Alexander W. Hooke, MA, Rochester, MN
 Andrew Thoreson, MD
 Philippe Debeer, MD, Herent, Belgium
 Jan M. Victor, MD, GENT, Belgium
 Kai-Nan An, PhD, Rochester, MN
 Olivier Verborgt, MD, PhD, Wilrijk, Belgium

This study found improved stability for free bone graft augmentation when compared to standard labral repair; furthermore, it stresses the importance of bone graft positioning in the sagittal plane.

5:24 PM

PAPER: 567

Arthroscopic Repair Versus Conservative Treatment in Acute Shoulder Dislocation: A Prospective Case Control Study

Angelo De Carli, MD, Rome, Italy
 Luigi Mossa, Rome, Italy
 Antonio Vadala, MD, Rome, Italy
 Alessandro Ciompi, MD, Roma, Italy
 Riccardo Maria Lanzetti, Roma, Italy
 Domenico Lupariello, Matera, Italy
 Carlo Iorio, MD
 Andrea Ferretti, MD, Rome, Italy

Primary repair of Bankart lesion after first time shoulder dislocation in young active people offers better clinical and functional results than conservative treatment.

Discussion – 6 Minutes

5:36 PM

PAPER: 568

The Arthroscopic Latarjet Procedure - An Update

Claudio Rosso, MD, MSc, Basel, Switzerland
 Vito Bongiorno, MD, Annecy, France
 Simon Fogarty, FRCS, North Yorkshire, United Kingdom
 Simon Boyle, York, United Kingdom
 Laurent Lafosse, MD, Annecy, France

We will present the updated technique on the all-arthroscopic Latarjet procedure including tips and tricks for the most common pitfalls.

5:42 PM

PAPER: 569

Spectrum of Intra-articular Shoulder Injury in Skeletally Immature Patients

Shital N. Parikh, MD, Cincinnati, OH
 Eric W. Edmonds, MD, San Diego, CA
 Joanna H. Roocroft, MA, San Diego, CA

In contrast to adults, the primary intra-articular pathology (97.4%) in children was labral tear; 68% tears involved at least 2 zones. Treating surgeons should expect such extensive tears in children.

5:48 PM

PAPER: 570

Glenoid Bone Loss in Posterior Shoulder Instability: Prevalence and Implications in Arthroscopic Treatment

Adam C. Hines, MD, Kailua, HI
 Jay B. Cook, MD, Kailua, HI
 James S. Shaha, MD, Kailua, HI
 Kevin Krul, MD, Kailua, HI
 John M. Tokish, MD, Scottsdale, AZ

While anterior glenoid bone loss is known to significantly affect outcomes for anterior shoulder instability, posterior glenoid bone loss may not have as direct a correlation with patient outcomes.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 265

Hand and Wrist III: Nerve, Soft Tissue Reconstruction, & Pediatric Hand

Moderator(s): Mark E. Baratz, MD, Washington PA,
 Amy L. Ladd, MD, Palo Alto, CA

4:00 PM

PAPER: 571

Posterior Elbow Soft-tissue Reconstruction Using a Flexor Carpi Ulnaris Muscle Turnover Flap

Christopher O. Bayne, MD, Rochester, MN
 Jianjun Ma, MD, Springfield, IL
 William Slikker III, MD, Chicago, IL
 Fraser J. Leversedge, MD, Durham, NC
 Mark S. Cohen, MD, Chicago, IL
 Robert W. Wysocki Jr, MD, Chicago, IL

This study reports the outcomes of using a flexor carpi ulnaris muscle turnover flap for reconstruction of posterior elbow soft-tissue defects.

4:06 PM

PAPER: 572

Radialization vs. Centralization Procedures for High Grade Radial Club Hand: A Randomized Trial

Bhavuk Garg, MS Ortho, New Delhi, India
 Prakash Kotwal, MS, New Delhi, India
 Samarth Mittal, MBBS, New Delhi, India
 Vijay Kumar, MD, New Delhi, India, India

According to our study radialization has shown better results as compared to centralization in terms of clinical and radiological outcome but no significant difference in functional outcome was seen.

Thursday, March 13

4:12 PM

PAPER: 573

Long-Term Results Following Surgical Treatment of Wrist Flexion Deformity in Patients with Cerebral Palsy

Christopher J. Dy, MD, New York, NY
Morgan M. Swanstrom, MD, New York, NY
Krystle Hearn, MA, New York, NY
Lorene Janowski, DPS OTR/L MS, New York, NY
Michelle G. Carlson, MD, New York, NY

We report our long-term results of FCU to ECRB transfer, ECU to ECRB transfer, and FCU lengthening to treat wrist flexion deformity in patients with cerebral palsy.

Discussion – 6 Minutes

4:24 PM

PAPER: 574

The Impact of Perioperative Warfarin in Patients Undergoing Surgery of the Hand and Wrist

Ljiljana Bogunovic, MD, Saint Louis, MO
Richard H. Gelberman, MD, Clayton, MO
Charles A. Goldfarb, MD, Saint Louis, MO
Martin I. Boyer, MD, Saint Louis, MO
Ryan P. Calfee, MD, Saint Louis, MO

The perioperative continuation of Warfarin therapy is safe in patients undergoing surgery of the hand and wrist.

4:30 PM

PAPER: 575

Novel Polymer Scaffold for MSC Engineering and Biologic Enhancement of Ligament Differentiation

Eric R. Wagner, MD, Rochester, MN
Dalibel M. Bravo, San Juan, PR
Michael J. Yaszemski, MD, PhD, Rochester, MN
Sanjeev Kakar, MD, Rochester, MN

aMSCs attach, proliferate and differentiate into ligamentous phenotypes along the porous PCLF scaffold. This novel scaffold has potential in stem cell engineering and ligament regeneration.

4:36 PM

PAPER: 576

A Comparison of Ultrasound and Electrodiagnostic Testing for the Diagnosis of Carpal Tunnel Syndrome

John R. Fowler, MD, Gibsonia, PA
Richard J. Tosti, MD, Philadelphia, PA
William C. Hagberg, MD, Wexford, PA
Joseph E. Imbriglia, MD, Wexford, PA

While US will not replace EDX in complicated cases, in a select group of patients with a positive CTS-6, US can be used to confirm the diagnosis of carpal tunnel syndrome.

Discussion – 6 Minutes

4:48 PM

PAPER: 577

Ulnar Nerve Stability Based Approach for Patients with Cubital Tunnel Syndrome: A Prospective Cohort Study

Yun-Rak Choi, MD, PhD, Seoul, Republic of Korea
Ho-Jung Kang, MD, PhD, Seoul, Republic of Korea
Yong-Min Chun, MD, PhD, Seoul, Republic of Korea
Il-Hyun Koh, Gyeonggi-Do, Republic of Korea

An ulnar nerve stability-based approach to surgery selection for cubital tunnel syndrome was effective based on two-year followup data.

4:54 PM

PAPER: 578

Redefining the Supraclavicular Anatomy of the Brachial Plexus

Sophia Leung, MD, Baltimore, MD
Dan A. Zlotolow, MD, Philadelphia, PA
Scott H. Kozin, MD, Philadelphia, PA
Joshua M. Abzug, MD, Timonium, MD

In the infant brachial plexus, a trifurcation is seen invariably at the upper trunk, with the suprascapular nerve being the most lateral structure, which questions standard depictions of the plexus.

5:00 PM

PAPER: 579

An Evaluation of Inflammation, Histology and Function in Nerve Regeneration

Peter Tang, MD, New York, NY
Ken Nakayama, MD, Shizuoka, Japan
Hyunwoo P. Kang, BS, MA, New York, NY
Derek Smith, MD, Lake Oswego, OR
Francis Y. Lee, MD, PhD, New York, NY

Nerve regeneration in the setting of segmental peripheral nerve defects continues to be a challenge. Inflammation plays a key role in histologic and functional recovery.

Discussion – 6 Minutes

5:12 PM

PAPER: 580

Allograft Nerve Reconstruction for Digital Nerve Loss

John S. Taras, MD, Philadelphia, PA
Nirav H. Amin, MD, Cleveland, OH
Nimit A. Patel, MD, Philadelphia, PA
Lucy McCabe, Philadelphia, PA

The data suggest that processed nerve allograft provides a safe and effective option for the reconstruction of peripheral sensory nerve deficits in the hand measuring up to 30 mm.

Thursday, March 13

5:18 PM

PAPER: 581

Optimal Axon Counts for Brachial Plexus Nerve Transfers

Joseph Schreiber, MD, New York, NY
 Mahmoud M. Khair, MD, New York, NY
 Lauren Rosenblatt, BS, San Antonio, TX
 David J. Byun, BS, New York, NY
 Steve K. Lee, MD, New York, NY
 Scott W. Wolfe, MD, New York, NY

Based on axon counts of historically successful nerve transfers, our findings suggest that a donor to recipient axon count ratio of greater than 1:1 may be the goal in brachial plexus reconstructions.

5:24 PM

PAPER: 582

Axon Counts Yield Multiple Options for Triceps to Axillary Nerve Transfer

Mahmoud M. Khair, MD, New York, NY
 Joseph Schreiber, MD, New York, NY
 Lauren Rosenblatt, BS, San Antonio, TX
 David J. Byun, BS, New York, NY
 Steve K. Lee, MD, New York, NY
 Scott W. Wolfe, MD, New York, NY

This study evaluates the possibility of restoring deltoid muscle function in patients with upper brachial plexus injuries by transferring divisions of the radial nerve to the axillary nerve.

Discussion – 6 Minutes

5:36 PM

PAPER: 583

Assessment of the Role of Nerve Transfer for Management of Upper Extremity Peripheral Nerve Injuries

Asser Sallam, MD, Ismailia, Egypt
 Adel Abdelkafy, Ismailia, Egypt
 Ahmed M. Metwally, MD, Suez, Egypt
 Khaled Aboelnasr, Ismailia, Egypt
 Khaled Salama, MD, Ismailia, Egypt

Nerve transfers offer a surgical alternative for restoration of function by providing expendable axons close to the end organ and thereby minimizing the time required for re-innervation.

5:42 PM

PAPER: 584

Does Pre-operative Donor Nerve Electromyography Predict Nerve Transfer Outcomes?

Joseph Schreiber, MD, New York, NY
 Joseph Feinberg, MD, New York, NY
 David J. Byun, BS, New York, NY
 Steve K. Lee, MD, New York, NY
 Scott W. Wolfe, MD, New York, NY

When planning nerve transfers for brachial plexus reconstruction, EMG evaluation of the quality of potential donor nerves can serve to prognosticate post-operative motor strength outcomes.

5:48 PM

PAPER: 585

Early Surgical Outcomes of Targeted Muscle Reinnervation

Aaron E. Barrow, MD, Fort Sam Houston, TX
 Chad A. Krueger, MD, San Antonio, TX
 Mickey S. Cho, MD, San Antonio, TX

This paper reports on the early surgical outcomes for TMR, including a low rate of post-operative complications and a high rate myoprosthesis fitting.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 345

Spine IV: Lumbar/Miscellaneous

Moderator(s): Ronald A. Lehman, MD, Potomac, MD
 E. Todd Wetzel, MD, Wilmington, DE

4:00 PM

PAPER: 586

The Anti-inflammatory Effects of Perioperative Methylprednisolone on Soft Tissue Inflammation Induced by rhBMP-2

Chengjie Xiong JR, Chongqing, China
 Michael D. Daubs, MD, Las Vegas, NV
 Haijun Tian, MD, Shanghai, China
 Scott Montgomery, MD, Venice, CA
 Bayan Aghdasi, MD, Clovis, CA
 Akinobu Suzuki, MD, PhD, Osaka, Japan
 Trevor Scott, MD, Santa Monica, CA
 Kevin Phan, BS, Irvine, CA
 Jeffrey C. Wang, MD, Sherman Oaks, CA

A very low dose of methylprednisolone was equally sufficient as a pharmacological dose to decrease rhBMP-2 induced inflammation and edema in a rat model.

4:06 PM

PAPER: 587

◆ Epidemiological Trends in the Use of Bone Morphogenetic Protein in Spinal Fusions from 2002-2010

Sreeharsha Nandyala, BA, Aurora, IL
 Steven Fineberg, MD, Valhalla, NY
 Alejandro Marquez-Lara, MD, Chicago, IL
 Kern Singh, MD, Chicago, IL

Increasing trend in use of BMP for spinal fusion surgery in the United States between 2002-2010.

Thursday, March 13

4:12 PM

PAPER: 588

Contrast Enhanced CT of the Intervertebral Disc Using Equilibrium Partitioning of an Ionic Contrast Agent (epic) μ CT

Kraig A. Kristof, MD, Sylvania, OH
Tristan Maerz, MS, Royal Oak, MI
Michael D. Newton, BS, Warren, MI
Olesya Motovylyak, BS, West Bloomfield, MI
Vishal C. Patel, MD, Dallas, TX
Daniel K. Park, MD, Bloomfield Hills, MI
Kevin C. Baker, PhD, Royal Oak, MI

EPIC- μ CT is a contrast-enhancing CT method sensitive to temporal and spatial differences in sulfated glycosaminoglycans in in vitro and in vivo models of disc degeneration in a rabbit.

Discussion – 6 Minutes

4:24 PM

PAPER: 589

The Effect of Vitamin D Deficiency on Spinal Fusion in an Aged Rat Model Using BMP2

Michael D. Daubs, MD, Las Vegas, NV
Kevin Phan, BS, Irvine, CA
Chengjie Xiong JR, Chongqing, China
Tetsuo Hayashi, MD, Fukuoka, Japan
Raed M. Alobaidan, MBBS, Los Angeles, CA
Haijun Tian, MD, Shanghai, China
Trevor Scott, MD, Santa Monica, CA
Chelsea B. Fan, San Ramon, CA
Jeffrey C. Wang, MD, Sherman Oaks, CA

Vitamin D deficiency did not affect fusion healing rates in young or aged rats.

4:30 PM

PAPER: 590

The Change of Mechanical Properties After Rod Contouring on Different Spinal Constructs

Satoru Demura, MD, Kanazawa, Japan
Hideki Murakami, MD, Kanazawa, Japan
Satoshi Kato, MD, Kanazawa, Japan
Katsuhito Yoshioka, MD, Kanazawa, Japan
Hiroyuki Hayashi, MD, Kanazawa, Japan
Kazuya Shinmura, MD, Ishikawa, Japan
Noriaki Yokogawa, MD, Ishikawa, Japan
Takayoshi Ishii, MD, Kanazawa, Japan
Hiroyuki Tsuchiya, MD, Kanazawa, Japan

We investigated the influences of rod contouring on yield strength and stiffness of rods varying in material type and diameter. Rod contouring procedure reduced yield strength and stiffness of the rod.

4:36 PM

PAPER: 591

Occipitocervical Fusion in Skeletal Dysplasia: A New Surgical Technique

Prakash Sitoula, MD, Wilmington, DE
Suken A. Shah, MD, Wilmington, DE
Laurens Holmes, PhD, DrPH, Wilmington, DE
Kenneth J. Rogers, PhD, Wilmington, DE
Colleen P. Ditro, NP, Wilmington, DE
William G. Mackenzie, MD, Wilmington, DE

This study describes a new technique for occipitocervical fusion in children with skeletal dysplasia when the posterior elements are not of a size or quality for other types of instrumentation.

Discussion – 6 Minutes

4:48 PM

PAPER: 592

◆ Prevention of Surgical Site Infection Using Iodine-supported Spinal Instruments in Total Spondylectomy

Hiroyuki Hayashi, MD, Kanazawa, Japan
Hiroyuki Tsuchiya, MD, Kanazawa, Japan
Hideki Murakami, MD, Kanazawa, Japan
Satoru Demura, MD, Kanazawa, Japan
Toshiharu Shirai, MD, Kanazawa, Japan
Satoshi Kato, MD, Kanazawa, Japan
Katsuhito Yoshioka, MD, Kanazawa, Japan
Kazuya Shinmura, MD, Ishikawa, Japan
Noriaki Yokogawa, MD, Ishikawa, Japan

We newly developed iodine-supported instruments. Iodine-supported spinal instruments were effective for prevention of SSI. In addition, there were no cytotoxicity and adverse effects detected.

4:54 PM

PAPER: 593

Predictors of Dynamic Instability in Degenerative Spondylolisthesis

William Slikker III, MD, Chicago, IL
Joe Lee, MD, Arcadia, CA
Krzysztof B. Siemionow, MD, Chicago, IL
Alejandro Espinoza, PhD, Chicago, IL
Howard S. An, MD, Chicago, IL

This study identifies possible risk factors for dynamic instability including disc height, disc degeneration, and spondylosis in patients with degenerative spondylolisthesis.

Thursday, March 13

5:00 PM

PAPER: 594

The Prognostic Value of Pre-operative Activity Level on Post-operative Outcomes Following Lumbar Microdiscectomy

Ravi Ramachandran, MD, Sacramento, CA
 Rachel M. Deering, MPH, BS, Boston, MA
 Christopher M. Bono, MD, Boston, MA
 Mitchel B. Harris, MD, Boston, MA
 Kirkham B. Wood, MD, Boston, MA

This study seeks to elucidate which, if any, activities of daily living give us insight on the postoperative course of a patient after lumbar discectomy.

Discussion – 6 Minutes

5:12 PM

PAPER: 595

An Efficacy Study of Institutional Protocol for Deep Vein Thrombosis Associated with Spinal Surgery

Norihiko Takegami, Tsu, Japan
 Koji Akeda, MD, PhD, Tsu, Japan
 Takao Imanishi, MD, Tsu-Shi Mie-Ken, Japan
 Koichiro Murata, Tsu City, Japan
 Masahiro Hasegawa, MD, Mie, Japan
 Toshihiko Sakakibara, MD, Mie Pref, Japan
 Yuichi Kasai, MD, Mie Prefecture, Japan
 Akihiro Sudo, Prof., Tsu City, Mie, Japan

11% of patients who underwent spinal surgery had DVT peri-operatively. More than 90% of these DVTs improved with proper perioperative management without chemical prophylaxis.

5:18 PM

PAPER: 596

Selective Densitometry of the Lumbar Spine

Bryant Chu, BS, San Francisco, CA
 Jeremi M. Leasure, MS, San Francisco, CA
 Dimitriy G. Kondrashov, MD, San Francisco, CA

The goal of this study was to describe BMD of anatomic regions within lumbar vertebrae using the correlation of CT Hounsfield Units (HU) to BMD.

5:24 PM

PAPER: 597

Modulating the Effect of BMP-2 through Delivery in a Nanocapsule

Haijun Tian, MD, Shanghai, China
 Michael D. Daubs, MD, Las Vegas, NV
 Scott Montgomery, MD, Venice, CA
 Trevor Scott, MD, Santa Monica, CA
 Bayan Aghdasi, MD, Clovis, CA
 Kevin Phan, BS, Irvine, CA
 Akinobu Suzuki, MD, PhD, Osaka, Japan
 Monchai Ruangchainikom, MD, Bangkok, Thailand
 Jeffrey C. Wang, MD, Sherman Oaks, CA

We herein report a novel protein delivery system based on protein nanocapsules capable of controlled release and of alleviating immune response.

Discussion – 6 Minutes

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

5:36 PM

PAPER: 598

Sacral Screw Strain in a Long Posterior Spinal Fusion Construct with Sacral Alar-Iliac (S2AI) versus Iliac Fixation

Daniel Kang, MD, Bethesda, MD
 Ronald A. Lehman, MD, Potomac, MD
 Robert W. Tracey, MD, Great Falls, VA
 Rachel E. Gaume, BS
 Khaled M. Kebaish, MD, Baltimore, MD
 Lawrence G. Lenke, MD, Saint Louis, MO

Both S2AI and Iliac fixation provide significant reduction in S1 sacral screw strain compared to sacral fixation alone. Bilateral S2AI fixation is a viable and biomechanically comparable alternative.

5:42 PM

PAPER: 599

Medical vs. Surgical Treatment of Spinal Epidural Abscesses in Patients with Normal Neurology or Radicular Deficit

Rojeh Melikian, MD, Cambridge, MA
 Sang D. Kim, MD, Los Angeles, CA
 Kevin L. Ju, MD, Boston, MA
 David Zurakowski, PhD, Boston, MA
 Christopher M. Bono, MD, Boston, MA
 Mitchel B. Harris, MD, Boston, MA

Comparison of medical vs surgical treatment of SEA in patients with no deficit or radicular deficits showed higher failure rates in medical group but no difference in final outcomes or complications.

5:48 PM

PAPER: 600

Expression of Vascular Endothelial Growth Factor in Hypertrophic Ligamentum Flavum of Lumbar Spinal Stenosis

Sittisak Honsawek, MD, PhD, Bangkok, Thailand
 Worawat Limthongkul, MD, Bangkok, Thailand
 Wicharn Yingsakmongkol, MD, Bangkok, Thailand
 Vinai Parkpian, MD, Bangkok, Thailand

The increased expression of VEGF was associated with the degenerative changes of hypertrophic LF, suggesting that VEGF could contribute to pathogenesis in lumbar spinal stenosis.

5:54 PM

PAPER: 829

Oxy133: Activation Of Hedgehog Signaling And Osteogenesis Through Smoothened Binding

Scott Montgomery, MD, Venice, CA
 Taya Nargizyan, Los Angeles, CA
 Sigrid Nachtergaele, Palo Alto, CA
 Haijun Tian, Shanghai, China
 Gil Weintraub, Encino, CA
 Elisa Atti, Los Angeles, CA
 Jeffrey Wang, Sherman Oaks, CA
 Farhad Parhami, Los Angeles, CA

Oxy133 stimulates endochondral bone formation via Hedgehog signaling by direct binding to smoothened.

Discussion – 6 Minutes

Friday, March 14

SYMPOSIUM**8:00 AM — 10:00 AM****La Nouvelle Ballroom****Health Care Reform: How Can We Adapt? (W)**

Moderator(s): *Craig A. Butler, MD, MBA, Philadelphia, PA*
Thomas J. Grogan, Santa Monica, CA

Healthcare delivery is changing rapidly. With the proliferation of technological advances combined with real payment reform and the growing pressures of having to provide more care to more people for less cost; 2014 will be a sentinel year of change for orthopedic surgeons and their practices. This cutting edge symposium will examine not only the changing landscape of orthopedic practice, but will provide real solutions necessary to not only weather these changes, but excel in these tumultuous times. From the SGR fix to ICD-10 implementation to surviving the changes of the Affordable Care Act, this symposium will become the keystone to developing the successful practice now and in the future.

- I. Overview: Health Care Reform and the AAOS
Joshua J. Jacobs, MD, Chicago, IL
- II. The SGR: Will the Fix be Worse than the Problem?
Thomas C. Barber, MD, Oakland, CA
- III. ICD-10: It's Coming Very Soon
M. B. Henley, Seattle, WA
- IV. Health Insurance Exchanges: What Does the Early Experience Tell Us?
Alexandra E. Page, MD, Seattle, WA
- V. Bundled Payments: How Can Orthopaedic Surgeons Lead?
Peggy Naas, MD, Chanhassen, MN
- VI. Is Hospital Employment the Answer?
Craig A. Butler, Philadelphia, PA

SYMPOSIUM**8:00 AM — 10:00 AM****Theater C****The Multiple Ligament Injured and Dislocated Knee (X)**

Moderator(s): *Gregory C. Fanelli, MD, Danville, PA*
Bruce A. Levy, MD, Rochester, MN

Focus on current treatment strategies for the multiligament injured/dislocated knee using a case based approach and highlighting the best available evidence.

- I. Knee Dislocation Controversies
Bruce A. Levy, MD, Rochester, MN
- II. Neuro Vascular Assessment of the Multiple Ligament Injured Knee
James P. Stannard, MD, Columbia, MO
- III. Timing of Surgery after Knee Dislocation
Gregory C. Fanelli, MD, Danville, PA
- IV. ACL Reconstruction in the Multiple Ligament Injured Knee
Robert G. Marx, MD, New York, NY
- V. PCL Reconstruction in the Multiple Ligament Injured Knee
Mark D. Miller, MD, Charlottesville, VA
- VI. Medial Sided injuries in the Multiple Ligament Injured Knee
Lars Engebretsen, MD, Oslo, Norway
- VII. Lateral Sided Injuries in the Multiple Ligament Injured Knee
Robert F. LaPrade, MD, PhD, Vail, CO
- VIII. Revision Multi-ligament Reconstruction Surgery
Michael J. Stuart, MD, Rochester, MN
- IX. Faculty
Peter B. MacDonald, MD, Winnipeg, MB, Canada
- X. Faculty
Joel L. Boyd, MD, Minneapolis, MN
- XI. Faculty
Daniel Whelan, MD, Toronto, ON, Canada

Friday, March 14

SYMPOSIUM

8:00 AM — 10:00 AM

Theater B

Can We Improve Surgical Outcomes for Orthopaedic Patients? A Compelling Need for Change. (Y)*Moderator: James H. Herndon, MD, Boston, MA*

Educate surgeons and surgical team members regarding the importance of surgical safety and impact on orthopaedic outcomes including adverse orthopaedic events reported to the Joint Commission and American Board of Orthopaedic Surgery. The aligned perspectives of the surgical patients, hospitals, payers, orthopaedic surgeons and orthopaedic community will be presented calling for collaboration. Safety solutions including regular use of effective surgical team communication, reliable safety processes and systematic safety data collection with analysis will be outlined - all requiring orthopaedic surgeon leadership.

- I. Patient's Perspectives of Orthopaedic Surgical Safety. Expanding roles of the the American Board of Medical Specialties and American Board of Orthopaedic Surgery.
Lloyd Morgan, Winnetka, IL
- II. Hospital and Healthcare System Perspectives of Orthopaedic Surgical Safety. Joint Commission Understanding of Surgical Errors and System-based Solutions.
Mark Chassin, MD, MPH, Oakbrook Terrace, IL
- III. Payer Perspectives of Orthopaedic Surgical Safety. Costs and Economic Incentives for Improvement.
Steven H. Stern, MD, Northfield, IL
- IV. Orthopaedic Surgeon and Team Member Perspectives of Orthopaedic Surgical Safety. Critical role of Surgeon Leadership.
David C. Ring, MD, Boston, MA
- V. Scientific Perspectives of Orthopaedic Surgical Safety. Utilization of Reliable Validated Effective Surgical Communication and Process to Reduce Surgical Errors.
John S. Webster, MD, MBA, La Mesa, CA
- VI. AAOS Perspectives of Orthopaedic surgical Safety. Commitment to Improve Orthopaedic Patient Safety and Care
William J. Robb III, MD, Wnnetka, IL

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 9:00 AM

FD11 The Anatomy of Diversity: Where Are The Women? Why Does That Matter?Room
217

*Moderator: Caroline M Chebli, MD, Sarasota, FL
Ann E. Van Heest, MD, Minneapolis, MN
Mary I. O'Connor, MD, Jacksonville, FL
Lisa L. Lattanza, MD, San Francisco, CA*

Orthopedics has the lowest percentage of women in any surgical subspecialty. While women comprise greater than fifty percent of medical students, our profession is not attracting the best and brightest. We will examine the current state of women in orthopedics, barriers to women entering the field and ways to improve our diversity.

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 10:00 AM

401 Let's Do a Direct Anterior Hip Replacement (without a special table)Room
271

*Moderator: William J. Hozack, MD, Philadelphia, PA
Jose A. Rodriguez, MD, New York, NY
Michael Leunig, PhD, Zurich, Switzerland
Kristoff Corten, MD, Pellenberg, Belgium*

Video based program focusing on local anatomy related to the direct anterior approach as well as surgical techniques for primary and revision THA using a direct anterior approach without a special table. Tips for novices on how to shorten the learning curve.

402 Video Techniques in Revision Total Knee ReplacementRoom
215

*Moderator: David F. Dalury, MD, Baltimore, MD
William L. Griffin, MD, Charlotte, NC
Giles R. Scuderi, MD, New York, NY
Arlen D. Hanssen, MD, Rochester, MN*

Use videos to demonstrate technical tips for revision TKR. Topics will include, surgical approaches, soft tissue management techniques and bony reconstruction options in the revision setting.

403 Management of Complex Foot and Ankle Injuries in the AthleteRoom
221

*Moderator: James A. Nunley II, MD, Durham, NC
Thomas O. Clanton, MD, Vail, CO
John G. Kennedy, MD, New York, NY
Robert B. Anderson, MD, Charlotte, NC*

Treating foot and ankle injuries in the athlete requires an understanding of their unique mechanism, surgical options and rehabilitation issues. These will be addressed for stress fractures, ligament injuries, achilles/peroneal tendon disorders and the syndesmosis.

Friday, March 14

404

**The Art of Teaching Orthopaedic Surgery**

Moderator: *Joseph D. Zuckerman, MD, New York, NY*
Samir Mehta, MD, Philadelphia, PA
Donna P. Phillips, MD, New York, NY
Kenneth A. Egol, MD, New York, NY

Room
276

Provide the learner with an assessment of barriers to the implementation of modern teaching strategies in orthopaedic residencies and will discuss the historical and current models for training in the US. Focus on the didactic and clinical education options currently available to programs training orthopaedic learners. Discuss metrics for evaluation and present methods to improve resident assessment.

405

**Translational Research in Orthopaedics: Structural Bone Allograft from Benchtop to Bedside**

Moderator: *Robert A. Hart, MD, Portland, OR*
Steven Gitelis, MD, Chicago, IL
Allan E. Gross, MD, FRCSC, Toronto, ON, Canada
Ross M. Wilkins, MD, Evergreen, CO

Room
262

Techniques for selection and processing of allograft bone based on basic biological and biomechanical research, as well as the ultimate clinical applications of structural allograft bone in multiple orthopaedic sub-specialties are described.

406

**Ulnar Sided Wrist Pain: Where Do I Start?**

Moderator: *Sanjeev Kakar, MD, Rochester, MN*
Brian D. Adams, MD, Iowa City, IA
A. Lee Osterman, MD, Villanova, PA
William B. Geissler, MD, Jackson, MS

Room
353

Overview of pathophysiology and provide an evidenced based approach towards management of ulnar sided wrist pain. Normal anatomy and kinematics of the ulnar side of the wrist will better enable physicians to identify and treat problems in the ulnar aspect of the wrist. Panel will review the treatment options available for conditions such as DRUJ arthritis and instability, TFCC disruption and ulnar impaction.

407

**Legg Clave Perthes Disease: The Beginning and The End**

Co-Moderators: *Harish S. Hosalkar, MD, San Diego, CA,*
Kishore Mulpuri, MD, Vancouver, BC, Canada
Klaus Siebenrock, MD, Bern, Switzerland
David G. Little, Westmead, Australia

Room
347

Will present approaches to the diagnosis and management of Perthes disease.

408

**Coding and Reimbursement Update 2014**

Moderator: *R D. Blasler, MD, Little Rock, AR*
Louis F. McIntyre, MD, White Plains, NY
Bernard A. Pfeifer, MD, Chatham, MA

Room
356

Annual update on changes to CPT and Reimbursement from physicians actively involved in the AAOS coding and reimbursement activities.

409

**Fracture and Dislocations of the Elbow: A Return to the Basics**

Moderator: *Ken Faber, MD, London, ON, Canada*
April D. Armstrong, MD, Hershey, PA
Graham J. King, MD, London, ON, Canada
Daphne M. Beingessner, MD, Seattle, WA

Room
208

Provide a comprehensive review of the decision making processes, surgical indications, operative techniques and controversies in the management of fracture and dislocations of the elbow.

410

**Adult Lumbar Disc Herniation: Treatment, Complications, Outcomes and Evidence Based Data for Patient and Health Professional Counseling**

Moderator: *Robert S. Bess, MD, Castle Rock, CO*
Alexander C. Ching, MD, Portland, OR
Eric O. Klineberg, MD, Sacramento, CA
Gregory M. Mundis, San Diego, CA

Room
218

Will provide evidence based treatment options for adult patients with lumbar disc herniation to aid surgeons in counseling patients and health care professionals.

411

**Advances in Cervical Deformity Surgery**

Moderator: *Alok D. Sharan, MD, New York, NY*
James Kang, MD, Pittsburgh, PA
Ahmad Nassr, MD, Rochester, MN
K. Daniel Riew, MD, Saint Louis, MO

Room
352

Proper evaluation of the patient with a coronal and sagittal cervical deformity. Techniques of deformity correction will be discussed including the use of advanced osteotomies.

412

**Patellofemoral Joint: From Instability to Osteoarthritis**

Moderator: *Elizabeth A. Arendt, MD, Minneapolis, MN*
Donald C. Fithian, MD, El Cajon, CA
David Dejour, MD, Lyon, France
Diane L. Dahm, MD, Rochester, MN

Room
352

Discuss treatment options for patellofemoral instability and arthrosis. Span operative and non-operative management schemes, with emphasis on technical aspects of surgical management.

Friday, March 14

413 **Extreme Nailing: Tips and Tricks from the Experts**
 Moderator: *George J. Haidukewych, MD, Orlando, FL*
Joshua Langford, MD, Orlando, FL
Daniel S. Horwitz, MD, Danville, PA



Room
260

Focus on fractures commonly encountered by the practicing surgeon that can be challenging to nail. Subtrochanteric, distal femur, proximal tibia, and distal tibia will be covered in a “how I do it” video presentation followed by a “key points” slide presentation and discussion. Video intense.

414 **What's Wrong with the Bone?**
 Moderator: *Kristy L. Weber, MD, Philadelphia, PA*
Richard L. McGough, MD, Pittsburgh, PA
Michael P. Mott, MD, Detroit, MI



Room
350

Overview of common metabolic lesions, infection, benign and malignant bone tumors occurring in children and adults. Imaging characteristics and the appropriate diagnostic workup will be reviewed. A robust discussion and case-based format will be used.

415 **Femoroacetabular Impingement: Pathophysiological Concepts, Treatment and Outcomes**



Moderator: *John C. Clohisy, MD, Saint Louis, MO*
Christopher L. Peters, MD, Salt Lake City, UT
J.W. Thomas Byrd, MD, Nashville, TN
Paul E. Beaulé, MD, Ottawa, ON, Canada

Room
207

Comprehensive presentation of FAI pathophysiology, contemporary trends in surgical treatment and indications for different techniques (videos) including clinical outcomes.

416 **Articular Cartilage Disease and Meniscal Deficiency**



Room
210

Moderator: *Brian J. Cole, MD, MBA, Chicago, IL*
Jack M. Bert, MD, Woodbury, MN
Jack Farr II, MD, Greenwood, IN
Andreas H. Gomoll, MD, Chestnut Hill, MA
Christian Lattermann, MD, Lexington, KY
Bert Mandelbaum, MD, Santa Monica, CA
Frank R. Noyes, MD, Cincinnati, OH
Nicholas A. Sgallione, MD, Great Neck, NY
Nikhil N. Verma, MD, Chicago, IL
Riley J. Williams, MD, New York, NY
Robert T. Burks, MD, Salt Lake City, UT

Case-based course focusing on evidence based decision making as it relates to the care and treatment of patients with articular cartilage defects. Facilitators will emphasize an open dialogue related to concomitant management of comorbidities such as meniscal deficiency and malignancy.

ORTHOPAEDIC REVIEW COURSE

8:00 AM — 5:35 PM

490 Orthopaedic Review Course

Great
Hall A

Moderator: *David L. Skaggs, MD, Los Angeles, CA*
Albert J. Aboulafla, MD, Baltimore, MD
Todd J. Albert, MD, Philadelphia, PA
Jens R. Chapman, MD, Seattle, WA
Thomas S. Thornhill, MD, Boston, MA
Donald A. Wiss, MD, Los Angeles, CA
John M. Flynn, MD, Philadelphia, PA
Brian Forsythe, MD, Chicago, IL
Leesa M. Galatz, MD, Saint Louis, MO
Steven L. Haddad, MD, Glenview, IL
Joseph M. Lane, MD, New York, NY
Mark D. Miller, MD, Charlottesville, VA
Jeffrey R. Sawyer, MD, Germantown, TN
Robert J. Strauch, MD, New Rochelle, NY
William C. Warner Jr, MD, Germantown, TN

- Review of current knowledge on diagnosis and management of clinical problems from a nationally accepted orthopaedic practice perspective • Major sections of the course are pediatrics, upper and lower extremities, tumors and metabolic bone disease and spine
- Each section includes discussion of fractures, complications, infections and trauma Please note, the Orthopaedic Review Course is not intended as a review for the Board Examination, it is a review of orthopaedic basics.

PAPER PRESENTATION

8:00 AM — 10:00 AM

Theater A

Adult Reconstruction Hip VI: Metal on Metal

Moderator(s): *Kevin B. Fricka, MD, Alexandria, VA*
Michael A. Mont, MD, Baltimore, MD

8:00 AM

PAPER: 601

Systematic Screening for Adverse Soft Tissue Reactions in Patients Operated on with Birmingham Hip Resurfacing

Aleksi Reito, MD, Tampere, Finland
Timo J. Puolakka, MD, PhD, Tampere, Finland
Petra Elo, MD, PhD, Tampere, Finland
Jorma Pajamäki, MD, PhD, Tampere, Finland
Antti Eskelinen, MD, PhD, Tampere, Finland

We implemented a systematic screening program including whole blood metal ion analysis, clinical evaluation and targeted cross-sectional imaging to identify possible ARMeD in patients with BHR.

Friday, March 14

8:06 AM

PAPER: 602

Does Gender or Head Size Affect Blood Metal Ion Concentrations Following Metal-on-Metal Hip Resurfacing?

Gulraj Matharu, BSc, Birmingham, United Kingdom
Fiona Berryman, PhD, Birmingham, United Kingdom
Lesley Brash, MSc, RN, Birmingham, United Kingdom
Paul Pynsent, PhD
Ronan Treacy, Worcestershire, United Kingdom
David J. Dunlop, MD, Stourbridge, United Kingdom

If blood metal ion concentrations are to be used for screening patients with hip resurfacings it is recommended that the subgroup to target is females with small femoral head sizes.

8:12 AM

PAPER: 603

◆ Investigating the Painful Metal-on-Metal Hip: Is CT a Substitute for Metal Artefact Reduction Sequence MRI?

Elizabeth Robinson, Stanmore, United Kingdom
Shiraz Sabah, MD, Middlesex, United Kingdom
Johann Henckel, MD, London, United Kingdom
Keshthra Satchithananda, FRCR, London, United Kingdom
Michael Khoo, MBBS, Stanmore, United Kingdom
Thomas M. Parsons, Banbury, United Kingdom
John Skinner, FRCS, London, United Kingdom
Alister Hart, FRCS, London, United Kingdom

CT is not a suitable substitute for Metal Artifact Reduction Sequence MRI for the detection of pseudotumours and musculotendinous pathology associated with metal-on-metal hips.

Discussion – 6 Minutes

8:24 AM

PAPER: 604

Influence of Physical Activity on Metal Concentrations and Pseudotumor Formation in Patients with MoM Arthroplasty

Jetse Jelsma, MSc, Maastricht, Netherlands
Rachel Senden, PhD, Heerlen, Netherlands
Ide Heyligers, Heerlen, Netherlands
Bernd P. Grimm, PhD, Aachen, Germany

This first study to measure patient physical activity and correlate it with blood ion levels suggests that metal-on-metal wear may be more influenced by the intensity than the quantity of activity.

8:30 AM

PAPER: 605

Histological Reaction Around Metal-Metal Total Hips is Not Dependent on Dosage of Wear Debris

Patricia A. Campbell, PhD, Los Angeles, CA
Edward Ebramzadeh, PhD, Los Angeles, CA
Sophia Sangiorgio, PhD, Los Angeles, CA
Zhen Lu, Los Angeles, CA
Sang-Hyun Park, PhD, Los Angeles, CA
Tim Tan, BS, Los Angeles, CA
Scott D. Nelson, MD, Santa Monica, CA
Koen A. DeSmet, MD, Gent, Belgium

Using multivariate analysis, we found weak correlations between histological features and implant wear in 118 failed metal-on-metal hips. Wear alone does not explain the variation in histological features.

8:36 AM

PAPER: 606

High Prevalence of Adverse Reactions to Metal Debris in Small-headed ASR Hips

Aleksi Reito, MD, Tampere, Finland
Timo J. Puolakka, MD, PhD, Tampere, Finland
Petra Elo, MD, PhD, Tampere, Finland
Olli Lainiala, MB, Tampere, Finland
Jorma Pajamäki, MD, PhD, Tampere, Finland
Antti Eskelinen, MD, PhD, Tampere, Finland

We observed a high prevalence of adverse soft tissue reactions in patients with ASR hip replacement with femoral diameter less than 50 mm.

Discussion – 6 Minutes

8:48 AM

PAPER: 607

◆ Pseudotumor After Large Head Metal-on-metal Stemmed Total Hip Replacement. Risk Factors, Time Course and Revisions

Bart Hans Bosker, MD, Zwolle, Netherlands
Harmen B. Ettema, Lierderholthuis, Netherlands
Marloes Van Rossum, MD, Zwolle, Netherlands
Martijn F. Boomsma, MD, Zwolle, Netherlands
Boudewijn Kollen, Groningen, Netherlands
Mario Maas, Amsterdam, Netherlands
Cees Verheyen, PhD, Zwolle, Netherlands

This study shows a very high incidence of pseudotumors in patients treated with large-head MoM THA's, although we confirm several well known risk factors the most important risk factor is time.

Friday, March 14

8:54 AM

PAPER: 608

Longitudinal MRI Analysis of Soft Tissue Lesions Around Metal on Metal Total Hip Arthroplasties

Toby Briant-Evans, FRCS, Winchester, United Kingdom
 Nicola Lyle, FRCS, MBBS, Basingstoke, United Kingdom
 Jennifer Hauptfleisch, Oxford, United Kingdom
 Andrea R. Pearce, Basingstoke, United Kingdom
 Richard Harker, MA, FRCS, Hampshire, United Kingdom
 Kevin Conn, FRCS, Basingstoke, United Kingdom
 John M. Britton, Hampshire, United Kingdom
 Geoffrey Stranks, FRCS, Tadley, United Kingdom

Serial Metal Artefact Reduction Sequence MRI scans performed on 94 MoM THAs demonstrated that the majority of soft tissue lesions enlarge over time, but this is not correlated with patient symptoms.

9:00 AM

PAPER: 609

Natural History of Pseudotumours in Metal-on-Metal Hip Replacements: A Longitudinal MARS MRI Study

Young-Min Kwon, MD, PhD, Boston, MA
 Kshitijkumar Agrawal, Arlington, MA
 Andrew A. Freiberg, MD, Boston, MA
 Harry E. Rubash, MD, Boston, MA
 Henrik Malchau, MD, Boston, MA

The natural history of cystic pseudotumours appears to be non-progressive in the majority of MoM patients with no or minimal symptoms. MRI features of complex cysts are associated with progression.

Discussion – 6 Minutes

9:12 AM

PAPER: 610

Which Factors Determine the Volume of Material Lost from the Taper Junctions of Metal-on-Metal Hip Replacements?

Ashley Matthies, BSc, London, United Kingdom
 Suzie Cro, MSc, BS, London, United Kingdom
 Paul J. Bills, PhD, MSc, Huddersfield, United Kingdom
 Radu Racasan, PhD, Huddersfield, United Kingdom
 Liam Blunt, PhD, Huddersfield, United Kingdom
 Gordon W. Blunn, MD, Middlesex, United Kingdom
 Johann Henckel, MD, London, United Kingdom
 John Skinner, FRCS, London, United Kingdom
 Alister Hart, FRCS, London, United Kingdom

Multiple linear regression analysis of fifteen factors showed that bearing surface design was the most significant predictor of high taper material loss in retrieved metal-on-metal hip replacements.

9:18 AM

PAPER: 611

Metal Ions from Well-functioning Hip Resurfacings Decline Significantly at Ten Years

Catherine Van Der Straeten, MD, Ghent, Belgium
 Damien A. Van Quickenborne, Laarne, Belgium
 Bart De Roest, Deurle, Belgium
 Jan M. Victor, MD, Gent, Belgium
 Koen A. DeSmet, MD, Gent, Belgium

In well-functioning MoM hip resurfacings ion levels are low even after 10 years in situ. There is a significant decrease of ion levels with time. In 25% of patients ions were undetectable at 10 years.

9:24 AM

PAPER: 612

Cancer Incidence and Cause-specific Mortality Among Patients with Metal-on-metal Hip Replacements

Keijo Makela, MD, Turku, Finland
 Tuomo I. Visuri, Espoo, Finland
 Pekka Pulkkinen, PhD, Helsinki, Finland
 Antti Eskelinen, MD, PhD, Tampere, Finland
 Ville M. Remes, MD, Helsinki, Finland
 Petri Virolainen, MD, Littoinen, Finland
 Mika Junnila, Turku, Finland
 Eero Pukkala, Helsinki, Finland

Overall risk of cancer and risk of death is decreased after metal-on-metal hip replacement due to healthy patient effect. However, metal-on-metal hip implants should not be considered safe until more data is available.

Discussion – 6 Minutes

9:36 AM

PAPER: 613

Analysis of the Taper Supports Retention of a Well-fixed Stem in Revision Surgery of Metal-on-Metal Hip Replacements

Ashley Matthies, BSc, London, United Kingdom
 Paul J. Bills, PhD, MSc, Huddersfield, United Kingdom
 Radu Racasan, PhD, Huddersfield, United Kingdom
 Liam Blunt, PhD, Huddersfield, United Kingdom
 Gordon W. Blunn, MD, Middlesex, United Kingdom
 John Skinner, FRCS, London, United Kingdom
 Alister Hart, FRCS, London, United Kingdom

Retrieval analysis of metal-on-metal hip stems showed negligible wear (<1mm³) of the male taper surface in all cases. This supports retention of a well-fixed, undamaged stem during revision surgery.

9:42 AM

PAPER: 614

Variables Influencing Tribo-corrosion of Modular Junctions in Metal-on-Polyethylene THR?

Iustin Moga, BA, Toronto, ON, Canada
 Melvyn A. Harrington, MD, Bellaire, TX
 Philip C. Noble, PhD, Houston, TX

Increased bearing torque of large head Metal-on-Metal heads leads to increased wear, release of metal ions and corrosion in the taper junction compared to Metal-on-Polyethylene THR.

Friday, March 14

9:48 AM

PAPER: 615

What is the Prevalence of Pseudotumors in Total Hip Arthroplasty Patients with Dual Taper Modular Femoral Stem?

Young-Min Kwon, MD, PhD, Boston, MA
 William A. Leone, MD, Lighthouse Point, FL
 Tsung-Yuan Tsai, PhD, Boston, MA
 Guoan Li, PhD, Boston, MA
 Andrew A. Freiberg, MD, Boston, MA
 Harry E. Rubash, MD, Boston, MA

MARS MRI prevalence of pseudotumours was 33% in patients with dual taper modular stem. This was associated with elevation of Co/Cr ratio secondary to taper corrosion.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM
 Room 245

Shoulder and Elbow V: Shoulder Complications

Moderator(s): Joshua Dines, MD, Great Neck, NY
 Gordon I. Groh, MD, Asheville, NC

8:00 AM

PAPER: 616

Adverse Events Associated with Biodegradable Lactide-Containing Suture Anchors

Andres F. Cobaleda Aristizabal, MD, Mexico City, Mexico
 Eric J. Sanders, BS, Plano, TX
 F. Alan Barber, MD, Plano, TX

2 of 370 procedures (0.5%) demonstrated anchor specific adverse events. No instances of inflammatory reactions were documented in these PLLA based anchors.

8:06 AM

PAPER: 617

Propionibacterium Acnes Infection as an Etiology of Pain After Shoulder Arthroscopy

John G. Horneff, MD, Philadelphia, PA
 Pramod B. Voleti, MD, Philadelphia, PA
 Jason Hsu, MD, Saint Louis, MO
 Judith O'Donnell, MD, Philadelphia, PA
 G. Russell Huffman, MD, Philadelphia, PA

Propionibacterium acnes infection in revision shoulder arthroscopy should be considered in cases of refractory postoperative pain.

8:12 AM

PAPER: 618

Poor Utility of Serum Interleukin-6 Levels to Predict Indolent Periprosthetic Shoulder Infections

Matthew Grosso, BS, Cleveland, OH
 Salvatore J. Frangiamore, MD, MS, Cleveland, OH
 Anas Saleh, MD, Beachwood, OH
 Mario Farias-Kovac, MD, Cleveland, OH
 Eric T. Ricchetti, MD, Cleveland, OH
 Thomas W. Bauer, MD, PhD, Cleveland, OH
 Joseph P. Iannotti, MD, PhD, Cleveland, OH

Perioperative serum interleukin-6 levels are not a sensitive marker of infection for indolent periprosthetic shoulder infections.

Discussion – 6 Minutes

8:24 AM

PAPER: 619

Early Versus Late Culture Growth Characteristics in P. Acnes Positive Periprosthetic Shoulder Infections

Salvatore J. Frangiamore, MD, MS, Cleveland, OH
 Matthew Grosso, BS, Cleveland, OH
 Anas Saleh, MD, Beachwood, OH
 Bashar Alolabi, MD, Toronto, ON, Canada
 Thomas W. Bauer, MD, PhD, Cleveland, OH
 Joseph P. Iannotti, MD, PhD, Cleveland, OH
 Eric T. Ricchetti, MD, Cleveland, OH

In revision shoulder arthroplasty, the early growth of *P. acnes* in intraoperative cultures (< 7 days) is more likely to represent a true infection as opposed to a false-positive result.

8:30 AM

PAPER: 620

Propionibacterium Acnes in Shoulder Surgery: False Positive, Commensal Organism or Pathogen?

William R. Mook, MD, Durham, NC
 Grant Garrigues, MD, Chapel Hill, NC

The reported incidences of true positive *P. acnes* cultures at the time of shoulder arthroplasty may be overestimated based on the rate of false positive control specimens identified in our study.

8:36 AM

PAPER: 621

Serum Interleukin-6 as a Marker of Periprosthetic Shoulder Infection

Diego C. Villacis, MD, Los Angeles, CA
 Jarrad A. Merriman, MPH, Pasadena, CA
 Raj Yalamanchili, Los Angeles, CA
 Reza Omid, MD, Los Angeles, CA
 John M. Itamura, MD, Los Angeles, CA
 George F. Hatch III, MD, Los Angeles, CA

A prospective cohort study of patients having undergone revision shoulder surgery concluding that interleukin-6 is not an effective screening tool for periprosthetic shoulder infection.

Discussion – 6 Minutes

Friday, March 14

8:48 AM

PAPER: 622

Intraoperative Periprosthetic Fractures in Revision Reverse Shoulder Arthroplasty: 132 Consecutive Cases

Eric R. Wagner, MD, Rochester, MN
 Matthew Houdek, MD, Rochester, MN
 Robert H. Cofield, MD, Rochester, MN
 Joaquin Sanchez-Sotelo, MD, Rochester, MN
 John W. Sperling, MD, MBA, Rochester, MN

Intraoperative humeral fractures occur in 10% of revision surgeries, but when stabilized, have no effect on overall final outcome. The risk is higher for females, cemented, and multiply operated.

8:54 AM

PAPER: 623

The Incidence of Humeral Stem Loosening in Reverse Total Shoulder Arthroplasty

Andres M. Alvarez, MD, Weston, FL
 Gregory J. Gilot, MD, Davie, FL
 Edward G. Benton JR, MD, Waco, TX
 Sherif Dabash, MBBS, MD, Weston, FL

Incidence of aseptic loosening of the humeral component in Reverse Total Shoulder Arthroplasty.

9:00 AM

PAPER: 624

What Biomechanical and Patient Factors Influence Fretting Corrosion in Total Shoulder Replacement?

Judd Day, PhD, Philadelphia, PA
 Daniel MacDonald, Philadelphia, PA
 Christina M. Arnholt, Philadelphia, PA
 Gerald R. Williams Jr, MD, Philadelphia, PA
 Charles L. Getz, MD, Newton Square, PA
 Matthew J. Kraay, MD, Cleveland, OH
 Clare M. Rimnac, PhD, Cleveland, OH
 Steven M. Kurtz, PhD, Philadelphia, PA

This study investigates the prevalence of fretting assisted corrosion in modular total shoulder replacements. Also, evaluates how patient and implant factors are associated with corrosion.

Discussion – 6 Minutes

9:12 AM

PAPER: 625

Results of Closed Management of Acute Dislocation Following Reverse Shoulder Arthroplasty

Matthew J. Teusink, MD, Omaha, NE
 Ioannis P. Pappou, MD, PhD, Palm Harbor, FL
 Daniel G. Schwartz, MD, Chicago, IL
 Mark A. Frankle, MD, Temple Terrace, FL

This study examined the outcomes of patients that dislocated postoperatively and were treated with nonoperative, closed reduction.

9:18 AM

PAPER: 626

Retrieved Reverse Total Shoulder Systems: An Analysis of Damage, Imaging, Clinical and Outcomes Data

Brett P. Wiater, MD, Birmingham, MI
 James E. Moravek Jr, MD, Palos Hills, IL
 Erin A. Baker, MS, Royal Oak, MI
 Meagan Salisbury, BS, Royal Oak, MI
 Daphne Pinkas, MD, Pleasant Rdg, MI
 J M. Wiater, MD, Beverly Hills, MI

The study objective was to explore trends in clinical failure of reverse total shoulder, through analyses of retrieved implants, clinical records, radiographs and functional outcomes data.

9:24 AM

PAPER: 627

Failure After Reverse Total Shoulder Arthroplasty - What is the Success of Component Revision?

Eric M. Black, MD, Philadelphia, PA
 Susanne M. Roberts, MD, Boston, MA
 Elana J. Siegel, BA, Boston, MA
 Paul F. Yannopoulos, BA, Boston, MA
 Laurence D. Higgins, MD, Boston, MA
 Jon J. Warner, MD, Boston, MA

This study looks at the success and failures of patients with failed reverse shoulder arthroplasty undergoing revision to an additional reverse shoulder arthroplasty. We also analyze salvage measures.

Discussion – 6 Minutes

9:36 AM

PAPER: 628

Patient Specific Risk Factors Associated with Deep Infection after Primary Shoulder Arthroplasty

Jason P. Richards, MD, Pocatello, ID
 Maria C. Inacio, MS, San Diego, CA
 Michael P. Beckett, MD, Santa Monica, CA
 Ronald A. Navarro, MD, Rolling Hills, CA
 Anshuman Singh, MD, San Diego, CA
 Mark T. Dillon, MD, Sacramento, CA
 Lawrence Hsu, MD, Bakersfield, CA
 Edward Yian, MD, Newport Coast, CA

This study utilizes data from a regional shoulder arthroplasty registry to quantify several identifiable risk factors for post-surgical infection after primary shoulder arthroplasty.

9:42 AM

PAPER: 629

The Relationship Between Patient Characteristics, Complications and Outcomes after Total Shoulder Arthroplasty

Oke A. Anakwenze, MD, Philadelphia, PA
 Evan O'Donnell, BA, New York, NY
 Charles M. Jobin, MD, New York, NY
 William N. Levine, MD, New York, NY
 Christopher S. Ahmad, MD, New York, NY

Peri-operative complications following total shoulder arthroplasty occur in over 10% of patients. These complications are predictive of poor patient outcomes.

Friday, March 14

9:48 AM

PAPER: 630

Effects of Morbid Obesity on RSA: A Case Control Study on Outcomes, Complications, Disposition and Cost

Mark A. Frankle, MD, Temple Terrace, FL
Ioannis P. Pappou, MD, PhD, Palm Harbor, FL
Rachel Clark, BA, Tampa, FL
Nazeem Virani, MD

RSA is safe and effective in morbidly obese patients, but at an increased cost, disposition to facilities and needs after discharge.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM

Room 265

Pediatrics IV: Potpourri

Moderator(s): Kristan Pierz, MD, Hartford, CT
Harold J. Van Bosse, MD, Wynnewood, PA

8:00 AM

PAPER: 631

Re-operation Following Tarsal Coalition Resection: A Population-Based Study

Amir Khoshbin, MD, Toronto, ON, Canada
Timothy S. Leroux, MD, Toronto, ON, Canada
Maryse Boucharde, MD, FRCSC, Seattle, WA
David Wasserstein, MD, MSc, North York, ON, Canada
Peggy W. Law, MSc, Toronto, ON, Canada
Hans J. Kreder, MD, Toronto, ON, Canada
Timothy R. Daniels, MD, FRCSC, Toronto, ON, Canada
James G. Wright, MD, Toronto, ON, Canada

Re-operation Following Tarsal Coalition Resection: A Population-Based Study.

8:06 AM

PAPER: 632

Amniotic Band Syndrome and Clubfoot: Effectiveness of Ponseti Casting

Aaron M. Carpiaux, MD, Lexington, KY
Pooya Hosseinzadeh, MD, Huntington, West VA
Ryan D. Muchow, MD, Lexington, KY
Vishwas R. Talwalkar, MD, Lexington, KY
Todd A. Milbrandt, MD, Lexington, KY
Janet Walker, MD, Lexington, KY
Henry J. Iwinski, MD, Lexington, KY

Ponseti casting is effective in treatment of clubfeet associated with amniotic band syndrome.

8:12 AM

PAPER: 633

Age at Walking in Infants Treated with Idiopathic Clubfoot

David Packer, MD, Bonita Springs, FL
Lewis E. Zionts, MD, Pacific Palisades, CA
Sophia Sangiorgio, PhD, Los Angeles, CA
Edward Ebramzadeh, PhD, Los Angeles, CA
Jennifer Hall, Los Angeles, CA

The parents of infants with idiopathic clubfoot deformity treated using the Ponseti method should expect their child to achieve independent walking approximately 2 months later than normal infants.

Discussion – 6 Minutes

8:24 AM

PAPER: 634

Clubfoot Treatment Responsive Patients are Anatomically Distinct from Those Who Require More Treatment

Daniel K. Moon, MD, Saint Louis, MO
Paul Commean, Saint Louis, MO
Marilyn J. Siegel, MD, Saint Louis, MO
Christina A. Gurnett, MD, PhD, Webster Groves, MO
Matthew B. Dobbs, MD, Saint Louis, MO

Clubfoot patients with initial success after proper Ponseti treatment had quantitative and qualitative differences in soft tissue composition distinct from patients who required additional treatments.

8:30 AM

PAPER: 635

Residual Forefoot Adductus Predicts the Need for Future Surgery Clubfeet Treated by Ponseti Casting

Pooya Hosseinzadeh, MD, Huntington, West VA
Erik D. Peterson, MD, Toledo, OH
Janet Walker, MD, Lexington, KY
Ryan D. Muchow, MD, Lexington, KY
Henry J. Iwinski, MD, Lexington, KY
Vishwas R. Talwalkar, MD, Lexington, KY
Todd A. Milbrandt, MD, Lexington, KY

Residual forefoot adductus is associated with increased need for future surgery in clubfeet treated by Ponseti casting.

8:36 AM

PAPER: 636

Clubfoot Recurrence after Tibialis Anterior Tendon Transfer in Patients Treated with Ponseti Casting

Matthew R. Luckett, MD, Lexington, KY
Pooya Hosseinzadeh, MD, Huntington, West VA
Philip A. Ashley, MD, Lexington, KY
Ryan D. Muchow, MD, Lexington, KY
Todd A. Milbrandt, MD, Lexington, KY
Janet Walker, MD, Lexington, KY
Vishwas R. Talwalkar, MD, Lexington, KY
Henry J. Iwinski, MD, Lexington, KY
Philip A. Ashley, MD, Lexington, KY

Patients who undergo Tibialis Anterior tendon transfer at early age are at high risk for recurrence.

Discussion – 6 Minutes

An alphabetical faculty financial disclosure list can be found starting on page 312.

Friday, March 14

8:48 AM

PAPER: 637

Idiopathic Genu Valgum: Correlation with Obesity and Vitamin D Deficiency

Pooya Hosseinzadeh, MD, Huntington, West VA
 Kevin A. Murr, MD, Lexington, KY
 Ryan D. Muchow, MD, Lexington, KY
 Henry J. Iwinski, MD, Lexington, KY
 Vishwas R. Talwalkar, MD, Lexington, KY
 Todd A. Milbrandt, MD, Lexington, KY
 Janet Walker, MD, Lexington, KY

Vitamin D deficiency is present in majority of patients with idiopathic genu valgum.

8:54 AM

PAPER: 638

A Comparison of Hemiepiphyodesis Implants for Late-Onset Tibia Vara: The Staple Revisited

Shawn S. Funk, MD, Nashville, TN
 Megan Mignemi, MD, Nashville, TN
 Jonathan G. Schoenecker, MD, Nashville, TN
 Steven A. Lovejoy, MD, Nashville, TN
 Gregory A. Mencio, MD, Nashville, TN
 Jeffrey E. Martus, MD, MS, Nashville, TN

Treatment of late-onset tibia vara with hemiepiphyodesis has evolved from staples to physeal plates; however, this study noted no difference in surgical success rates despite greater implant costs.

9:00 AM

PAPER: 639

Association of Hypertension with Blount's and Slipped Capital Femoral Epiphysis

Jonathan G. Schoenecker, MD, Nashville, TN
 K. Patrick Powell, MD, Fort Worth, TX
 Heather Cole, Nashville, TN
 Vishwas R. Talwalkar, MD, Lexington, KY
 Henry J. Iwinski, MD, Lexington, KY
 Janet Walker, MD, Lexington, KY
 Todd A. Milbrandt, MD, Lexington, KY

Although it is estimated that only 3-5% of all children has hypertension; these results clearly indicate a higher incidence (>60%) of hypertension in patients with SCFE or Blount's disease.

Discussion – 6 Minutes

9:12 AM

PAPER: 640

Comparison of Internal and External Fixation for Limb Lengthening Patients Who Have Experienced Both

John E. Herzenberg, MD, Baltimore, MD
 Shawn C. Standard, MD, Baltimore, MD
 Vikrant Landge, MBBS, Baltimore, MD
 Stacy C. Specht, MPA, Baltimore, MD

Limb lengthening with a new, internal, magnetically controlled device results in a high rate of satisfaction, when compared to external fixation.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

9:18 AM

PAPER: 641

Outcomes of Dynamic Splinting in Patients with Stiffness After Knee Surgery

James L. Pace, MD, Hawthorne, CA
 Adam Nasreddine, BS, MA, Boston, MA
 Michael K. Simoni, BA, Boston, MA
 David Zurakowski, PhD, Boston, MA
 Mininder S. Kocher, MD, MPH, Boston, MA

Investigate the outcomes of dynamic splinting of the arthrofibrotic knee in the pediatric population in terms of increased range of motion and reducing the need for lysis of adhesion surgery.

9:24 AM

PAPER: 642

Hemoglobin to Hematocrit Ratio: The Strongest Predictor of Avascular Necrosis in Children with Sickle Cell Disease

Douglas M. Worrall, Philadelphia, PA
 Lawrence Wells, MD, Philadelphia, PA
 Kimberly Smith-Whitley, MD, Philadelphia, PA

High blood pressure, elevated Hb/Hematocrit, elevated weight(SS), and elevated Hb(SS) are clinically useful tools to predict femoral head AVN risk in children with SCD promoting earlier intervention.

Discussion – 6 Minutes

9:36 AM

PAPER: 643

A Multicenter Longitudinal Study of Osteogenesis Imperfecta: Baseline Observations

Ronak Patel, BS, Houston, TX
 David Cuthbertson, MS, Tampa, FL
 Jeffrey Krischer, PhD, Tampa, FL
 Jay R. Shapiro, MD, Baltimore, MD
 Peter A. Smith, MD, Chicago, IL
 Francis H. Glorieux, MD, PhD, Montreal, Canada
 Brendan Lee, MD, PhD, Houston, TX
 Vernon R. Sutton, MD, Houston, TX
 Linked Clinical Res Ctrs Osteogenesis Imperfecta, Houston, TX

Baseline observations of the largest cohort of osteogenesis imperfecta patients to date. The prevalence of clinical features, rodding, fracture rates and BMD are presented.

Friday, March 14

9:42 AM

PAPER: 644

Conflict of Interest in the Assessment of Botulinum Toxin A Injections in Patients with Cerebral Palsy

Moon Seok Park, MD, Sunghnam, Republic of Korea
 Kyoung Min Lee, MD, Sunghnam, Republic of Korea
 Ki Hyuk Sung, MD, Kyungki, Republic of Korea
 Seung Yeol Lee, MD, Seongnam, Republic of Korea
 Young Choi, MD, Busan, Republic of Korea
 In H. Choi, MD, Seoul, Republic of Korea
 Tae-Joon Cho, Seoul, Republic of Korea
 Won Joon Yoo, MD, Seoul, Republic of Korea
 Chin Y. Chung, MD, PhD, Seongnam, Republic of Korea

Clinicians should be aware of an industry-related conflict of interest regarding a report on the efficacy of botulinum toxin A injections in patients with cerebral palsy.

9:48 AM

PAPER: 645

Long-Term Results Following Surgical Treatment of Elbow Deformity in Patients with Cerebral Palsy

Christopher J. Dy, MD, New York, NY
 Morgan M. Swanstrom, MD, New York, NY
 Krystle Hearn, MA, New York, NY
 Christian A. Pean, MS, New York, NY
 Lorene Janowski, DPS OTR/L MS, New York, NY
 Michelle G. Carlson, MD, New York, NY

Carefully selected soft tissue releases of the elbow, guided by preoperative contracture, can significantly improve active extension and flexion posture during ambulation in patients with CP.

Discussion – 6 Minutes

PAPER PRESENTATION

8:00 AM — 10:00 AM

Room 345

Tumor/Metabolic Disease II: Spine and Pelvic Tumors/ Periprosthetic Issues

Moderator(s): Tim Briggs, FRCS, Middlesex, United Kingdom
 Thomas J. Scharshmidt, MD, Westerville, OH

8:00 AM

PAPER: 646

Percutaneous Acetabuloplasty Compared with Surgery for High Grade Periacetabular Carcinoma Metastases

Matthew Colman, MD, Salt Lake City, UT
 Syed M. Karim, BS, Boston, MA
 Vinil Shah, MD, Boston, MA
 Albert Yoo, MD, Boston, MA
 Joshua A. Hirsch, MD, Boston, MA
 Joseph H. Schwab, MD, Boston, MA
 Francis J. Hornicek, MD, Boston, MA
 Kevin A. Raskin, MD, Boston, MA

Open reconstruction may provide better short term pain reduction and ambulatory status improvement than cement acetabuloplasty.

8:06 AM

PAPER: 647

Acetabular Reconstructions for Metastatic Disease in the Era of Cost Containment

Nicholas Bernthal, MD, Venice, CA
 Shawn L. Price, MD, Louisville, KY
 Brandon G. Wilkinson, BS, Provo, UT
 Kevin B. Jones, MD, Salt Lake City, UT
 R L. Randall, MD, Salt Lake City, UT

Cement-rebar acetabular reconstructions for metastatic disease with all polyethylene cups are safe and successful, as well comparatively inexpensive.

8:12 AM

PAPER: 648

Prognostic Factors in the Operative Management of Sacral Chordomas

Babar Kayani, MBBS BSc, Herts, United Kingdom
 Sammy A. Hanna, MRCS, London, United Kingdom
 William Aston, FRCS, Stanmore, Middlesex, United Kingdom
 Rob Pollock, FRCS, Middx, United Kingdom
 John Skinner, FRCS, London, United Kingdom
 Stephen R. Cannon, FRCS, Buckinghamshire, United Kingdom
 Asif Saifuddin, MBBS, Stanmore, United Kingdom
 Tim Briggs, FRCS, Middlesex, United Kingdom

This study retrospectively reviews the results of 58 patients undergoing sacrectomy for sacral chordoma and identifies prognostic factors affecting oncological outcomes.

Discussion – 6 Minutes

8:24 AM

PAPER: 649

The Role of Spinopelvic Reconstruction after Amputative Sacrectomy

Grigoriy Arutyunyan, MD, Rochester, MN
 Peter S. Rose, MD, Rochester, MN
 Franklin H. Sim, MD, Rochester, MN
 Michael J. Yaszemski, MD, PhD, Rochester, MN

Amputative sacrectomy can be pursued with high complication rates but reasonable long term outcome for advanced spinopelvic malignancy.

8:30 AM

PAPER: 650

Quality of Life After En-Bloc Resection of Malignant Tumors of the Mobile Spine

Matthew Colman, MD, Salt Lake City, UT
 Syed M. Karim, BS, Boston, MA
 Kevin A. Raskin, MD, Boston, MA
 Francis J. Hornicek, MD, Boston, MA
 Joseph H. Schwab, MD, Boston, MA

We report on quality of life after en-bloc resection of tumors in the mobile spine in comparison to a definitive XRT group and the general population.

Friday, March 14

8:36 AM

PAPER: 651

The Effect of Supplemental Bone Grafting in Periarticular Bone Tumors

Joseph Benevenia, MD, Newark, NJ
 Jeffrey Moore, Califon, NJ
 Kathleen S. Beebe, MD, Montclair, NJ
 Francis R. Patterson, MD, Newark, NJ

We examine the effect of supplemental bone grafting in patients following resection-curretage and adjuvant treatment of periarticular bone tumors, specifically in terms of postoperative complications.

Discussion – 6 Minutes

8:48 AM

PAPER: 652

Treatment of Nonunion with Autologous Bone Marrow Aspirate; Demineralized Bone Matrix and Bone Morphogenic Protein

Pingal A. Desai, MD, Parsippany, NJ
 Saad M. Hasan, BA, New York, NY
 Vishal Hegde, BA, New York, NY
 Joseph Nguyen, MPH, New York, NY
 Parth A. Vyas, MD, New York, NY
 Lester Zambrana, BA, New York, NY
 Joseph M. Lane, MD, New York, NY

Bone Morphogenic Protein and Demineralized Bone Matrix are equally effective as Osteoinductors when mixed with concentrated autologous Iliac crest bone marrow aspirate for the treatment of nonunion.

8:54 AM

PAPER: 653

The Relationship between Solitary Pulmonary Micronodules at Presentation and Survival in Young Sarcoma Patients

Cara A. Cipriano, MD, Palo Alto, CA
 Lauren Brockman, BS, Chicago, IL
 Jeff Ording, BS, Chicago, IL
 Jason T. Romancik, BS, Chicago, IL
 Curt Ginder, BS, Chicago, IL
 Robert G. Hartemayer, Chicago, IL
 Joel Krier, MD, Jamaica Plain, MA
 Steven Gitelis, MD, Chicago, IL
 Paul Kent, MD, Chicago, IL

In our cohort of 121 sarcoma patients <50 years of age, solitary <5mm pulmonary nodules detected on CT at time of initial diagnosis did not adversely affect survival at mean 47.2 month follow up.

9:00 AM

PAPER: 654

Cortical Atrophy Related with Tumor Prosthesis in Skeletally Immature Osteosarcoma Patients

Wanlim Kim, Seoul, Republic of Korea
 Ilkyu Han, MD, Seoul, Republic of Korea
 Seungcheol Kang, MD, Seoul, Republic of Korea
 Han-Soo Kim, MD, PhD, Seoul, Republic of Korea

Gradual development of cortical atrophy was observed in majority of patients. Severe cortical atrophy was developed by post-operative 6 to 7 years, and significantly correlated with stem failure.

Discussion – 6 Minutes

9:12 AM

PAPER: 655

Gait Outcomes Post Lower Extremity Tumor Resection and Endoprosthetic Reconstruction

Eileen Fowler, PhD, Los Angeles, CA
 Nicholas Bernthal, MD, Venice, CA
 Marcia B. Greenberg, MS, PT, Los Angeles, CA
 Kent Heberer, MS, Los Angeles, CA
 Susan V. Bukata, MD, Los Angeles, CA
 Jeffrey J. Eckardt, MD, Los Angeles, CA

Laboratory and community gait outcomes post lower extremity endoprosthetic reconstruction following tumor resection demonstrate a higher level of function than previously reported.

9:18 AM

PAPER: 656

Is There a Role for Knee Arthrodesis with Modular Endoprostheses for Tumor and Revision of Failed Endoprostheses?

Pietro Ruggieri, MD, Bologna, Italy
 Eric Henderson, MD, Hanover, NH
 Giulia Trovarelli, Bologna, Italy
 Elisa Pala, MD, Bologna, Italy
 Teresa Calabrò, Bologna, Italy
 Andrea Angelini, MD, Bologna BO, Italy

Survivorship of modular arthrodesis implant was 50% at 5 years due to high complication rate. Infection was the most common cause of failure of both oncologic and revision implants.

9:24 AM

PAPER: 657

Periprosthetic Infection in the Oncologic Patient

Daniel C. Allison, MD, Studio City, CA
 Eddie H. Huang, MD, La Jolla, CA
 Elke R. Ahlmann, MD, Newport Beach, CA
 Scott Carney, Huntington Beach, CA
 Lingjun Wang, MA, PA-C, Los Angeles, CA
 Lawrence R. Menendez, MD, Manhattan Beach, CA

13% of oncologic joint prostheses become infected, most commonly by S aureus. Infection is associated with adjuvant radiation and chemotherapy, and an overall increase in revision surgery rates.

Discussion – 6 Minutes

Friday, March 14

9:36 AM

PAPER: 658

Infected Tumor Prostheses: A Single Institution Experience

Pietro Ruggieri, MD, Bologna, Italy
 Andrea Angelini, MD, Bologna BO, Italy
 Teresa Calabrò, Bologna, Italy
 Giulia Trovarelli, Bologna, Italy
 Gabriele Drago, MD, Bologna, Italy
 Matteo Romantini, MD
 Elisa Pala, MD, Bologna, Italy

Infection is one of the worst complication related to the reconstruction with modular prostheses used after tumor resection.

9:42 AM

PAPER: 659

Fungal and Mycobacterial Septic Arthritis and Osteomyelitis of the Extremities

Efthymios Papasoulis, Pasadena, CA
 Charalampos Zalavras, MD, Los Angeles, CA
 Kevork Hindoyan, BA, San Marino, CA
 Paul D. Holtom, MD, Los Angeles, CA
 Michael J. Patzakis, MD, San Marino, CA

Fungal and mycobacterial osteoarticular extremity infections have similar clinical and laboratory characteristics. Diagnosis of these infections is delayed; therefore a high index of suspicion is needed.

9:48 AM

PAPER: 660

Presentation, Diagnosis and Treatment of Chronic Recurrent Multifocal Osteomyelitis (CRMO)

Colin J. Anderson, MD, Aurora, CO
 Erin Wylie, BA, Denver, CO
 Jennifer Soep, MD, Aurora, CO
 Jaime R. Stewart, MD, Denver, CO
 Kelley Capocelli, MD, Aurora, CO
 Shelley Dell'Orfano, NP, RN, MS, Aurora, CO
 Travis C. Heare, MD, Aurora, CO

This study summarizes the clinical presentation, diagnosis, and treatment for chronic recurrent multifocal osteomyelitis in 57 patients at a single institution.

Discussion – 6 Minutes

SYMPOSIUM

10:30 AM — 12:30 PM

La Nouvelle Ballroom

◆ **Hot Topics and Controversies in Revision****Total Hip Arthroplasty (Z)**

Moderator: Paul F. Lachiewicz, MD, Chapel Hill, NC

Focus on pertinent issues and controversies for the practicing orthopaedic surgeon who performs revision hip arthroplasty including infection and dislocation. Loosening of components, especially the acetabulum and failure of metal bearings will also be covered.

- I. Uncemented Jumbo Cups for Acetabular Revisions
Paul F. Lachiewicz, MD, Chapel Hill, NC
- II. Extensile Posterior Approach for All Revisions
Kevin L. Garvin, MD, Omaha, NE
- III. Anterolateral Approach for All Revisions
David G. Lewallen, MD, Rochester, MN
- IV. Extended Trochanteric Osteotomy for Most Revisions
Andrew H. Glassman, MD, Columbus, OH
- V. When Acetabular Augments are Necessary
Wayne G. Paprosky, MD, Winfield, IL
- VI. When Acetabular Cages are Necessary
Allan E. Gross, MD, FRCSC, Toronto, ON, Canada
- VII. Monoblock Femoral Components Work Well in Most Patients
Craig J. Della Valle, MD, Chicago, IL
- VIII. Modular Femoral Components for All Revisions
William J. Hozack, MD, Philadelphia, PA
- IX. Blood Conservation and VTE Prophylaxis: Is it Different for Revisions?
Jay R. Lieberman, MD, Los Angeles, CA
- X. Infected THA: I Make My Own Spacer!
Scott M. Sporer, MD, Wheaton, IL
- XI. Infected THA: I Use Preformed Spacers
Stephen J. Incavo, MD, Houston, TX
- XII. Infected THA: I Do One-Stage Revision Often
Fares S. Haddad, FRCS, London, United Kingdom
- XIII. Large Heads for All Revisions Despite Taper Corrosion
Donald Howie, MD, PhD, Adelaide, Australia
- XIV. Constrained Liners in Revisions: Blessing or Curse
Mark W. Pagnano, MD, Rochester, MN
- XV. Dual Mobility Components for All Revisions?
Moussa Hamadouche, PhD, Paris, France

Friday, March 14

XII. Posterior Shoulder Atrophy in a 23-Year-Old Thrower: Release of the Suprascapular Nerve
Kevin D. Plancher, MD, MS, FACS, New York, NY

XIII. Posterior Shoulder Atrophy in a 23-Year-Old Thrower: Therapy and Leave It Alone
James R. Andrews, MD, Gulf Breeze, FL

SYMPOSIUM**10:30 AM — 12:30 PM****Theater B****Controversies in Pediatric Sports Medicine: Update in 2014 (BB)**

Moderator: *Jennifer M. Weiss, MD, Los Angeles, CA*

Case-based debate examining treatment options for four common pediatric sports injuries: shoulder dislocation, tibial spine fractures, management of osteochondritis dissecans as an incidental finding, and discoid meniscus.

I. Adolescent Shoulder Dislocations
Mininder S. Kocher, MD, MPH, Boston, MA

II. Adolescent Shoulder Dislocations.
Eric W. Edmonds, MD, San Diego, CA

III. Tibial Spine Fractures
Kevin G. Shea, MD, Boise, ID

IV. Tibial Spine Fractures
Theodore J. Ganley, MD, Philadelphia, PA

V. Management of Osteochondritis Dissecans as an Incidental Finding
Daniel W. Green, MD, New York, NY

VI. Management of Osteochondritis Dissecans as an Incidental Finding
John D. Polousky, MD, Greenwood Village, CO

VII. Discoid Meniscus
Lawrence Wells, MD, Philadelphia, PA

VIII. Discoid Meniscus
Jennifer M. Weiss, MD, Los Angeles, CA

SYMPOSIUM**10:30 AM — 12:30 PM****Theater C****Shoulder Surgery, Getting it Right! An ARS Symposium (AA)**

Moderator: *Kevin D. Plancher, MD, MS, New York, NY*

Leading shoulder experts will debate six controversial topics utilizing an Audience Response Symposium. A clinical presentation, with a didactic lecture supporting the proper management of the case will follow. The participants will learn how to better handle common shoulder problems, in an effort to treat their own patients in a successful manner.

I. Anterior Instability in Contact Athletes: Arthroscopic Technique
Jeffrey S. Abrams, MD, Princeton, NJ

II. Anterior Instability in Contact Athletes: Open Stabilization
Russell F. Warren, MD, New York, NY

III. The Diseased Biceps Tendon in a 55-Year-Old: Subpectoral Tenodesis
Anthony A. Romeo, MD, Chicago, IL

IV. The Disease Biceps Tendon in a 55-Year-Old: Tenotomy
Richard J. Hawkins, MD, Greenville, SC

V. Full Thickness Large Rotator Cuff Tear in a 65-Year-Old: Pro Repair and Double Row Technique
Brian J. Cole, MD, MBA, Chicago, IL

VI. Full Thickness Large Rotator Cuff Tear in a 65-Year-Old: Pro Single Row Technique
Felix H. Savoie III, MD, New Orleans, LA

VII. Full Thickness Large Rotator Cuff Tear in a 65-Year-Old: Con, Don't Fix it
Robert T. Burks, MD, Salt Lake City, UT

VIII. New Modalities to Promote Tendon Healing: PRP in the Shoulder - Please Think Twice
Scott A. Rodeo, MD, New York, NY

IX. New Modalities to Promote Tendon Healing: PRP - A Glimmer of Hope
William B. Stetson, MD, Burbank, CA

X. Idiopathic Avascular Necrosis of the Proximal Humerus in a 52-Year Old: Hemiarthroplasty is the Way to Go
Gerald R. Williams Jr, MD, Philadelphia, PA

XI. Idiopathic Avascular Necrosis of the Proximal Humerus in a 52-Year Old: Total Shoulder Replacement is Necessary for Success
Edward V. Craig, MD, New York, NY

Friday, March 14

INSTRUCTIONAL COURSE LECTURE

10:30 AM — 11:30 AM

FD12 Getting Your Great Ideas Supported - Effective Techniques for Women in Orthopaedics
 Room 217 Moderator: Mary I. O'Connor, MD, Jacksonville, FL



Will help you understand the information which different types of people want in order to support your proposals; how to achieve buy-in and counter efforts to sink your next great idea. We will also discuss perceptions of women leaders as well as corresponding tactics for you to counter negative bias and improve your effectiveness.

INSTRUCTIONAL COURSE LECTURE


10:30 AM — 12:30 PM

421 Preventing Leg Length Inequality and Instability after THA
 Moderator: Rafael J. Sierra, MD, Rochester, MN
 Room 207 Aaron G. Rosenberg, FACS, MD, Chicago, IL
 Carlos J. Lavernia, MD, Coral Gables, FL
 Matthew Austin, MD, Philadelphia, PA



Discuss the practical approach (preoperative preparation, surgical treatment) to preventing leg length inequality and instability after primary THA with some emphasis on the management of instability after THA.

422 The Perioperative Management in Total Knee Arthroplasty
 Moderator: R. Michael Meneghini, MD, Fishers, IN
 Pete Caccavallo, MD, Fishers, IN
 Room 226 Bryan D. Springer, MD, Charlotte, NC
 Brett R. Levine, MD, Chicago, IL



Perioperative care of knee arthroplasty patients focused on evidence and value driven recommendations for medical management, blood conservation, pain management, infection prevention and wound management.

423 The Synovial Joint: Structure, Function, Injury and Repair, Osteoarthritis
 Moderator: Alan J. Grodzinsky, PhD, Cambridge, MA
 Room 352 Joseph A. Buckwalter, MD, Iowa City, IA




Concise review of current understanding of the biology and biomechanics of articular cartilage. Provide a basis for current understanding of osteoarthritis and cartilage repair. Provide the basis for understanding current clinical approaches to providing biologic resurfacing of articular cartilage and restoration of synovial joint function.

424 Pes Planovalgus: From Adolescent to Adulthood
 Moderator: Jenny Frances, MD, New York, NY
 Vincent S. Mosca, MD, Seattle, WA
 Room 276 David S. Feldman, MD, New York, NY
 Lew C. Schon, MD, Baltimore, MD




Review all aspects of treatment of painful pes planovalgus feet, from idiopathic pathology in children, through neuromuscular deformity to adult pathology using a case based approach. Review current concepts with regards to surgical indications, operative techniques and pearls and pitfalls in each treatment group.

425 Sex, Women and Bones: A Musculoskeletal Health Update
 Moderator: Jennifer M. Wolf, MD, Farmington, CT
 Lisa K. Cannada, MD, Saint Louis, MO
 Room 262 Joseph M. Lane, MD, New York, NY
 Aenor J. Sawyer, MD, Oakland, CA

In the context of children, women and men at risk, this osteoporosis course will emphasize bone metabolism, interaction with pharmaceuticals, imaging techniques and surgical treatment.

426 Wide Awake Hand and Wrist Surgery: A New Horizon in Outpatient Surgery
 Moderator: Jesse B. Jupiter, MD, Boston, MA
 Charles Eaton, MD, Jupiter, FL
 Don Lalonde, MD, St John, Canada
 Room 350 Peter C. Amadio, MD, Rochester, MN

Demonstrate techniques of applying local anesthesia with minimal pain and effectiveness for a variety of hand and wrist procedures. These will include flexor tendon repair as well as flexor tenolysis; carpal tunnel surgery; percutaneous and open fasciotomy and fasciotomy for Dupuytren's disorders; fractures in the hand; arthroplasties; and wrist surgery including arthroscopy and ganglion excision. Patient satisfaction documented; clinical outcomes reported with best evidence regarding safety and function, and surgeon experiences with pitfalls and pearls.

427 Hip Pathology in the Adolescent Athlete
 Moderator: Jeremy S. Frank, MD, Parkland, FL
 Ira Zaltz, MD, Royal Oak, MI
 Peter L. Gambacorta, DO, Clarence Ctr, NY
 Room 347 Lyle J. Micheli, MD, Boston, MA

Hip and groin pathology in the adolescent athlete is an emerging topic in young adult sports medicine. Expert faculty will review various etiologies and treatment options in this ever evolving field within sports medicine.

An alphabetical faculty financial disclosure list can be found starting on page 312.

Friday, March 14

428 Complications of Common Pediatric Fractures: Prevention and Management

Room 221

Moderator: *Martin J. Herman, MD, Philadelphia, PA*
Shannon D. Safier, MD, Gladwyne, PA
Scott H. Kozin, MD, Philadelphia, PA
Joshua M. Abzug, MD, Timonium, MD

Complications of common pediatric fractures will be presented in a case based manner. Discussion regarding pearls and pitfalls of avoiding complications as well as managing them.

429 Compliance in 2014: What You Need to Know!

Room 260

Moderator: *Jack M. Bert, MD, Woodbury, MN*
Ranjan Sachdev, MD, Bethlehem, PA
Abby Pendleton, Esq, Southfield, MI

Adoption of EHRs along with new regulations introduced by HITECH and ARRA (American Recovery and Reinvestment Act) and PPACA (Patient Protection and Affordable Care Act) laws have significantly increased practice exposure to fines and penalties. Increasing payor audits are putting practices at risk for large repayments and costly Corporate Integrity agreements. Detail risks and outline steps practices can take to update their existing/implement new compliance plans. This will not only help to minimize risks but also help to mitigate fines and penalties in case of unfavorable OIG (Office of Inspector General) audits.

430 Acute Elbow Trauma: A Logical Evidence-Based Approach to Complex Elbow Injuries

Room 271

Moderator: *Michael D. McKee, MD, Toronto, ON, Canada*
Mark A. Mighell, MD, Tampa, FL
Aaron Nauth, MD, Toronto, ON, Canada
Ken Faber, MD, London, ON, Canada

Use high-level evidence based prospective and randomized studies to provide attendee's with a well supported clinical approach to fractures of the distal humerus, fracture of the elbow and complex elbow fracture dislocations.

431 Degenerative Spondylolisthesis: A Participant Driven Interactive Program for Evidence Based Decision Making

Room 270

Moderator: *Mark B. Dekutoski, MD, Phoenix, AZ*
Norman B. Chutkan, MD, Augusta, GA
John R. Dimar II, MD, Louisville, KY
John C. France, MD, Morgantown, West VA
James D. Schwender, MD, Minneapolis, MN
William R. Stevens, MD, Phoenix, AZ
Adam L. Wollowick, MD, New York, NY

A case based, interactive, educational session focused on contemporary practice and evidence in the management of degenerative spondylolisthesis.

432 Controversies in Hip Arthroscopy

Room 353

Moderator: *Paul E. Beaulé, MD, Ottawa, ON, Canada*
Christopher M. Larson, MD, Edina, MN
John C. Clohisy, MD, Saint Louis, MO
JW Thomas Byrd, MD, Nashville, TN

Address the various pathologies such as FAI as well as dealing with the more complex clinical scenarios such as the failed hip arthroscopy are becoming more complex. World experts on the subject matter combined with case base discussions.

433 Talus and Calcaneus Fractures: Current Treatment

Room 356

Moderator: *Michael S. Sirkin, MD, Newark, NJ*
David J. Stephen, MD, Toronto, ON, Canada
Wayne S. Berberian, MD, Paramus, NJ
Mark Adams, MD, Newark, NJ

Focus on the current surgical treatment options for fractures of the talus and calcaneus.

434 Bone and Soft Tissue Tumors for the General Orthopedic Surgeon: How to Diagnose, Manage and Avoid Errors

Room 218

Moderator: *G.D. Letson, MD, Tampa, FL*
H. T. Temple, MD, Miami, FL
Carol D. Morris, MD, MS, New York, NY
John P. Dormans, MD, Philadelphia, PA

Intended for the general orthopedic surgeon to help work up, diagnose and manage musculoskeletal lesions, avoid errors, and to refer when appropriate.

435 Techniques and Decision Making in Common Fractures: A Case Based Small Group Session

Room 210

Moderator: *Paul Tornetta III, MD, Boston, MA*
Daniel S. Horwitz, MD, Danville, PA
Clifford B. Jones, MD, FACS, Grand Rapids, MI
Stephen Kottmeier, MD, Stony Brook, NY

Case based teaching with discussion, questions and answers for various trauma cases.

PAPER PRESENTATION

10:30 AM — 12:30 PM

Theater A

Adult Reconstruction Knee VI: Outcomes/Results

Moderator(s): *Jeffrey A. Geller, MD, New York, NY*
Geoffrey H. Westrich, MD, New York, NY

10:30 AM

PAPER: 661

Recent National Trends and Outcomes for Unilateral and Bilateral Total Knee Arthroplasty in the United States

Vincent M. Moretti, MD, Berwyn, IL
Alexander C. Gordon, MD, Prospect Heights, IL

Bilateral TKA is becoming less popular in the United States. Its use is associated with longer hospital stays, more blood transfusions, more pulmonary embolism, and more rehabilitation requirements.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Friday, March 14

10:36 AM

PAPER: 662

Trends in Total Knee Arthroplasty in the U.S.: Understanding the Shift to a Younger Demographic

Jacob M. Drew, MD, Charlotte, NC
 Virginia Briggs, PhD, Worcester, MA
 Patricia Franklin, MD, MBA, MPH, Worcester, MA
 David C. Ayers, MD, Worcester, MA

While TKA remains a cost-effective and underutilized procedure, its burgeoning rate among younger patients in the US influences patterns of resource use and the revision burden.

10:42 AM

PAPER: 663

Evaluation of Five-Year Trends in KSS Scores Stratified by Comorbidities: A Prospective, Longitudinal Study

Michael A. Mont, MD, Baltimore, MD
 Robert Pivec, MD, Baltimore, MD
 Kimona Issa, MD, Baltimore, MD
 Steven F. Harwin, MD, New York, NY
 Kirby Hitt, MD, Temple, TX
 Kenneth A. Greene, MD, Akron, OH
 Mark A. Kester, PhD, Mahwah, NJ
 Kristin Given, MS, Mahwah, NJ

Peak KSS scores are observed at 1 year and remain stable at up to five year. At early follow-up (<3 months) patients will not see a clinical improvement in function.

Discussion – 6 Minutes

10:54 AM

PAPER: 664

Five-year Prospective Longitudinal Study of Activity Levels After TKA Stratified by Demographic Comorbid Factors

Michael A. Mont, MD, Baltimore, MD
 Robert Pivec, MD, Baltimore, MD
 Kimona Issa, MD, Baltimore, MD
 Samik Banerjee, MBBS, MS, Baltimore, MD
 Kirby Hitt, MD, Temple, TX
 Steven F. Harwin, MD, New York, NY
 Kenneth A. Greene, MD, Akron, OH
 Kristin Given, MS, Mahwah, NJ
 Mark A. Kester, PhD, Mahwah, NJ

Activity levels significantly drop relative to pre-op levels at <3 months post op. Scores reach a peak at 1 year and remain stable up to 5 years.

11:00 AM

PAPER: 665

Functional Recovery After Total Knee Arthroplasty: A Prospective Randomized Trial Between Two Surgical Approaches

Wayne E. Moschetti, MD, MS, Jamaica Plain, MA
 Ivan M. Tomek, MD, Lebanon, NH
 Stephen R. Kantor, MD, Lebanon, NH
 Luanne A. Cori, BA, Enfield Center, NH
 Kevin F. Spratt, PhD, Lebanon, NH
 Tamara S. Morgan, MA, Lebanon, NH

Patient-reported functional outcomes in the first 8 weeks after total knee arthroplasty: A randomized, blinded trial comparing a quadriceps-sparing subvastus versus medial parapatellar approach.

11:06 AM

PAPER: 666

The Effect of Total Knee Arthroplasty on Pain and Function in End Stage Knee OA: A Subscale Analysis of 55,706 Patients

Luke Jones, MRCS, Oxford, UK, United Kingdom
 Derfel Williams, MBChB, MRCS, Oxford, United Kingdom
 Kristina Harris, MSc, Oxford, United Kingdom
 Ines Rombach, MSc, Oxford, United Kingdom
 David J. Beard, MA, MSc, PhD, Oxford, United Kingdom
 Andrew J. Price, FRCS, Oxford, United Kingdom

The PROMS and HES databases were used to identify the outcome of 55,706 patients who underwent primary knee arthroplasty and outcomes were determined in terms of pain and function.

Discussion – 6 Minutes

11:18 AM

PAPER: 667

Economic Benefit to the Society at Large of TKA in the Young Patient: A Markov Analysis

Hany S. Bedair, MD, Boston, MA
 Thomas D. Cha, MD, Boston, MA
 Viktor Hansen, MD, Boston, MA

A Markov state-transition decision model was used to model the overall average cost of TKA and non-operative treatment in a 50-year-old patient with severe knee OA.

11:24 AM

PAPER: 668

A Cost-Utility Analysis of Knee Arthroplasty Using Data from Three National Registries

Barry Andrews, MBChB, FRCS, London, United Kingdom
 Charles Anthony Willis-Owen, FRCS, MA, London, United Kingdom
 Adeel Aqil, MBChB, MRCS Ed, London, United Kingdom
 Justin P. Cobb, MD, London, United Kingdom

Cost-utility analysis of UKA vs. TKA, using three national registries, demonstrated dominance of UKA over TKA, with an ICER of -\$2010/QALY. UKA is both cheaper and more effective.

Friday, March 14

11:30 AM

PAPER: 669

Simultaneous Bilateral Knee Arthroplasty in Octogenarians: A Safe and Effective Option for Selected Patients?

Catherine W. Cahill, MD, Houston, TX
 Richard D. Scott, MD, Boston, MA
 Ran Schwarzkopf, MD, Irvine, CA
 Sumi Sinha, BS, Nashua, NH

Simultaneous bilateral knee arthroplasty for selected octogenarians can be a safe and effective treatment option for bilateral knee arthritis.

Discussion – 6 Minutes

11:42 AM

PAPER: 670

Increased Accuracy of MRI-based Versus CT-based Patient Specific Instrumentation in Total Knee Arthroplasty

Tilman Pfitzner, MD, Berlin, Germany
 Carsten Perka, MD, Berlin, Germany
 Hagen Hommel, Eggersdorf, Germany

PSI improve accuracy in component alignment. In absence of contraindications MRI-based PSI should be favoured over CT-based PSI because of the increased accuracy.

11:48 AM

PAPER: 671

Total Knee Arthroplasty With or Without Patellar Resurfacing for Patients with Patellofemoral Osteoarthritis

Jong-Keun Seon, MD, Hwasungun, Republic of Korea
 Eun K. Song, MD, Hwasun-Gun, Republic of Korea
 Hasung Kim, Hwasun, Republic of Korea

This study suggested that TKA without patellar resurfacing is a good treatment option even in patients with high grade osteoarthritis of the patellofemoral joint.

11:54 AM

PAPER: 672

Fifteen Year Results of All-Polyethylene Tibial Components in Total Knee Arthroplasty

Donald L. Pomeroy, MD, Louisville, KY
 Lucas J. Burton, MD, Nashville, TN
 Janene A. Empson, RN, ONC, Louisville, KY
 Jessica S. Olson, BS, Louisville, KY
 Carla M. Baumgartner, Louisville, KY

Modern all polyethylene tibia components for primary total knee arthroplasty demonstrate excellent long term results.

Discussion – 6 Minutes

12:06 PM

PAPER: 673

At Five Years Highly-Porous-Metal Tibial Components were Durable and Reliable: A Randomized Trial of 389 Patients

Luis Pulido, MD, Rochester, MN
 Matthew P. Abdel, MD, Eagan, MN
 David G. Lewallen, MD, Rochester, MN
 Michael J. Stuart, MD, Rochester, MN
 Joaquin Sanchez-Sotelo, MD, Rochester, MN
 Arlen D. Hanssen, MD, Rochester, MN
 Mark W. Pagnano, MD, Rochester, MN

In this large RCT, highly porous metal tibias provided durable fixation and reliable clinical outcomes at 5 years.

12:12 PM

PAPER: 674

Evaluation of Mobile Bearing TKA Using a Harmonized Distributed Analyses of Four National Registries

Robert S. Namba, MD, Corona Del Mar, CA
 Guy Cafri, PhD, La Jolla, CA
 Liz Paxton, MA, San Diego, CA
 Stephen Graves, MD, Adelaide, Australia
 Otto Robertsson, MD, PhD, Reykjavik, Iceland
 Danica Marinac-Dabic, MD, PhD, Rockville, MD
 Samprit Banerjee, PhD, New York, NY
 Susan Stea, BS, Bologna, Italy
 Art Sedrakyan, PhD, MD, New York, NY

An advanced harmonized distributed analyses of four national total joint registries calculated log hazard ratios. Mobile bearing knees had a higher risk of revision with HR 1.46 (95% CI 1.33,1.61).

12:18 PM

PAPER: 675

Liposomal Bupivacaine: The First 1,000 Cases in a New Era

John W. Barrington, MD, Plano, TX
 Roger H. Emerson Jr, MD, Dallas, TX

This prospective case-control study comparing the first 1,000 cases utilizing a novel extended-release liposomal bupivacaine to a control group demonstrated improved overall mean VAS pain scores.

Discussion – 6 Minutes

Friday, March 14

PAPER PRESENTATION

10:30 AM — 12:30 PM

Room 245

Trauma V: Upper Extremity

Moderator(s): *Gil Ortega, Scottsdale, AZ*
Ivan S. Tarkin, MD, Pittsburgh, PA

10:30 AM

PAPER: 676

The Floating Flail Chest: Treating an Injury Combination of the Flail Chest and Floating Shoulder

Brian Cunningham, MD, Phoenix, AZ
Gilbert R. Ortega, MD, Scottsdale, AZ
Anthony S. Rhorer, MD, Scottsdale, AZ
Ryan McLemore, PhD, Phoenix, AZ
Kelly Jackson, NP, Scottsdale, AZ

Operative treatment of the floating shoulder helps improve outcomes in patients with a floating flail chest and may decrease hospital length of stay and home oxygen requirements.

10:36 AM

PAPER: 677

The Rising Incidence of Operative Fixation of Acute Mid-shaft Clavicle Fractures

Alan J. Micev, MD, Chicago, IL
Derek Hsu, BA, Chicago, IL
Sara L. Edwards, MD, Chicago, IL
Guido Marra, MD, Chicago, IL
Matthew D. Saltzman, MD, Chicago, IL

The purpose of this study is to evaluate whether the incidence of operative treatment of mid-shaft clavicle fractures has increased in recent years.

10:42 AM

PAPER: 678

Re-operation Following Open Reduction Internal Fixation of Midshaft Clavicle Fractures in ON, Canada

Timothy S. Leroux, MD, Toronto, ON, Canada
David Wasserstein, MD, MSc, North York, ON, Canada
Patrick Henry, MD, Portland, ME
Amir Khoshbin, MD, Toronto, ON, Canada
Tim Dwyer, MBBS, Toronto, ON, Canada
Darrell J. Ogilvie-Harris, MD, Toronto, ON, Canada
Nizar Mahomed, MD, Toronto, ON, Canada
Christian Veillette, MD, Toronto, ON, Canada

Re-operation following open reduction internal fixation of midshaft clavicle fractures in Ontario Canada.

Discussion – 6 Minutes

10:54 AM

PAPER: 679

Comparison Study of Different Approach for Proximal Humeral Fractures

Jinmyoung Dan, MD, Kyeong-Buk
Seung-Hee Kim, Gumi
Yoon Seok Lee, Gumi
Byoung-Gook Kim, Gumi

Deltoid-splitting approach revealed better functional outcomes in the fracture reduction and internal fixation using LCP for the treatment of unstable proximal humerus fractures.

11:00 AM

PAPER: 680

Is the Axillary Nerve at Risk During a Deltoid-Splitting Approach for Proximal Humerus Fractures?

Jessica L. Traver, MD, Saint Louis, MO
Miguel A. Guzman, MD, Saint Louis, MO
Scott G. Kaar, MD, Saint Louis, MO
Lisa K. Cannada, MD, Saint Louis, MO

Although the deltoid-splitting approach places fewer anatomic structures at risk for iatrogenic injury, care must be taken to avoid over-retraction and soft-tissue injury during this exposure.

11:06 AM

PAPER: 681

Is an Axillary View for Proximal Humerus Fractures Worthwhile for Patients and Physicians?

Marschall B. Berkes, MD, Webster, NY
Joshua Dines, MD, New York, NY
Jacqueline F. Birnbaum, BA, Basking Ridge, NJ
Lionel E. Lazaro, MD, New York, NY
Matthew R. Garner, MD, New York, NY
Patrick C. Schottel, MD, New York, NY
Joseph Nguyen, MPH, New York, NY
Milton T. Little, MD, Seattle, WA
Dean G. Lorich, MD, New York, NY

The axillary view provided no additional information to sufficiently influence treatment of proximal humerus fractures.

Discussion – 6 Minutes

11:18 AM

PAPER: 682

Results of Humeral Shaft Fracture Treatment in 296 Patients

Edward Westrick, MD, New Castle, PA
Benjamin Hamilton, MS, Cleveland Heights, OH
M. Bradford Henley, MD, MBA, Seattle, WA
Reza Firoozabadi, MD, Seattle, WA

This study of humeral shaft fractures demonstrates a higher nerve palsy rate for operative and non-operative treatment, and a higher nonunion rate for non-operative management than previously reported.

Friday, March 14

11:24 AM

PAPER: 683

Iatrogenic Radial Nerve Injury during Open Reduction Internal Fixation (ORIF) of Humeral Shaft Fractures

Thomas LaPorta, MD, New Hyde Park, NY
 Ariel Goldman, MD, Roslyn Heights, NY
 Sara Merwin, MPH, New Hyde Park, NY
 Myriam Kline, PhD, Manhasset, NY

Our study is a review of local data of humeral shaft fractures following ORIF to quantify, describe and analyze factors that may contribute to iatrogenic nerve palsies sustained during the procedure.

11:30 AM

PAPER: 684

Comparison of Nonsurgical and Surgical Treatment in Humeral Shaft Fractures: Our Experience

Antonio Vadala, MD, Rome, Italy
 Andrea Gatti, MD, Rome, Italy
 Pierluigi Serlorenzi, MD, Rome, Italy
 Alessandro Maria Agrò, MD, Rome, Italy
 Carlo Iorio, MD
 Angelo De Carli, MD, Rome, Italy
 Andrea Ferretti, MD, Rome, Italy

Comparison Of Nonsurgical And Surgical Treatment In Humeral Shaft Fractures: Our Experience.

Discussion – 6 Minutes

11:42 AM

PAPER: 685

Outcomes after Plating of Olecranon Fractures: A Multicenter Evaluation

Anthony De Giacomo, MD, Boston, MA
 Paul Tornetta III, MD, Boston, MA
 Brent J. Sinicrope, MD, Louisville, KY
 Patrick Cronin, Boston, MA
 Peter L. Althausen, MD, Reno, NV
 Timothy J. Bray, MD, Reno, NV
 Michael S. Kain, MD, Burlington, MA
 Andrew J. Marcantonio, DO, Wellesley, MA
 Henry C. Sagi, MD, Tampa, FL

The purpose of this study is to report the physical and functional outcomes after ORIF of the olecranon with region specific plating in a large series with a more robust data set.

11:48 AM

PAPER: 686

Post-operative Complications of Olecranon Fractures: Comparing Outcomes of Various Plate Fixation

Jessica L. Traver, MD, Saint Louis, MO
 Heidi Israel, PhD, RN, Saint Louis, MO
 Lisa K. Cannada, MD, Saint Louis, MO
 J. Tracy Watson, MD, Saint Louis, MO

For olecranon fix. the pre-contoured locked plating constructs are available, this study demonstrates no additional clinical benefit to the patient with the additional increase in cost.

11:54 AM

PAPER: 687

Open Fractures of the Proximal Ulna Have Similar Injury Patterns and Outcomes as Closed Fractures

Paul H. Yi, BA, Chicago, IL
 Sangmin R. Shin, MD, Jamaica Plain, MA
 Alexander Weening, MD, Amsterdam, Netherlands
 Paul Tornetta III, MD, Boston, MA
 David C. Ring, MD, Boston, MA
 Andrew Jawa, MD, Cambridge, MA

Open fractures of the proximal ulna present with similar injury patterns and have similar final outcomes and postoperative complication rates as closed fractures.

Discussion – 6 Minutes

12:06 PM

PAPER: 688

Salvage of Upper Extremities with Humeral Fracture and Associated Brachial Artery Injury

Ebrahim Paryavi, MD, MPH, Baltimore, MD
 Raymond A. Pensy, MD, Brinklow, MD
 Thomas F. Higgins, MD, Salt Lake City, UT
 W. Andrew Eglseder, MD, Baltimore, MD

Salvage of the upper extremity with humeral fracture and associated brachial artery injury is not dependent on type of fixation or time to reperfusion. Flap coverage is correlated with amputation.

12:12 PM

PAPER: 689

A Comparison of Health Outcomes of Upper Limb Combat Amputees and Non-Amputees with Serious Upper Extremity Injuries

Ted Melcer, San Diego, CA
 Jay Walker, BA, San Diego, CA
 Vernon F. Sechriest, MD, San Diego, CA
 Michael R. Galarneau, MS, San Diego, CA

This study of patients with serious upper extremity injuries sustained during the Iraq or Afghanistan wars compares clinical outcomes between amputees and non-amputees.

12:18 PM

PAPER: 690

Characterization and Outcomes of Upper Extremity Amputations

David J. Tennent, MD, San Antonio, TX
 Joseph C. Wenke, PhD, San Antonio, TX
 Chad A. Krueger, MD, San Antonio, TX

Upper extremity amputations have significant disability and are more disabled than lower extremity amputees.

Discussion – 6 Minutes

Friday, March 14

PAPER PRESENTATION

10:30 AM — 12:30 PM
Room 265

Spine V: Spine Trauma

Moderator(s): Patrick J. Cabill, MD, Philadelphia, PA
Theodore J. Choma, MD, Columbia, MO

10:30 AM PAPER: 691

National Trends in the Surgical Management of Pediatric Cervical Spine Trauma

Samuel K. Cho, MD, Palisades Park, NJ

The rate of cervical spine surgery for trauma in the pediatric population has reMED steady over the past decade. The majority of cases were caused by motor vehicle accidents.

10:36 AM PAPER: 692

Blunt Cerebrovascular Injury in Cervical Spine Fractures - Are More Liberal Screening Criteria Warranted?

Ryan Robertson, MD, Columbia, SC
Gregory Grabowski, MD, Columbia, SC

Cervical spine injuries meeting Biffel criteria have a higher incidence of BCVI(19%) but a significant incidence of 11% also exists with non-Biffel fractures meaning more liberal screening may be needed.

10:42 AM PAPER: 693

Osteoporosis in Acute Fractures of the Cervical Spine: The Role of Opportunistic Computed Tomography Screening

Osa Emohare, MBBS, PhD, Saint Paul, MN
Amanda Cagan, BA, Saint Paul, MN
Alison J. Dittmer, BA, Plymouth, MN
Martin Asis, MD, Minneapolis, MN
Julie A. Switzer, MD, Saint Paul, MN
David W. Polly Jr, MD, Minneapolis, MN

It is now possible to diagnose osteoporosis using incidental abdominal CT scans; applying this approach to fractures of the cervical spine demonstrates levels of osteoporosis in patients over 65.

Discussion – 6 Minutes

10:54 AM PAPER: 694

Questioning the Need for Extensive Instrumentation in Thoracic Fractures: A Biomechanical Analysis

Robert F. McLain, MD, Cleveland, OH
Tiffany G. Perry, Shaker Heights, OH
Mageswaran Prasath, PhD, Cleveland, OH
Robb Colbrunn, PhD, Cleveland, OH
Tara F. Bonner, BS, MSc, Cleveland, OH
Thomas E. Mroz, MD, Cleveland, OH

Biomechanical Assessment of the effect of an intact rib cage in the stabilization of a thoracic burst fracture.

11:00 AM PAPER: 695

Burst C2 Fractures Combined with Traumatic Spondylolisthesis: Single-Session Single-Incision Approach

Yasser M. Assaghir, MD, Naser City, Egypt

We believe single stage anterior surgery proved successful in achieving union and regaining function with preservation of C1-2 motion. However, we also believe that ideal management is yet to evolve.

11:06 AM PAPER: 696

Grip Weakness: Not Just a C8 or T1 Problem

Brian J. Neuman, MD, Baltimore, MD
Kevin R. O'Neill, MD, Nashville, TN
Sang D. Kim, MD, Los Angeles, CA
K. Daniel Riew, MD, Saint Louis, MO

Grip weakness is thought to be caused from pathology at the C7-T1 or T1-T2 level. However, This study demonstrates that cervical pathology at the C5-C6, C6-C7, or the C7-T1 can result in grip weakness.

Discussion – 6 Minutes

11:18 AM PAPER: 697

Assessment of the Rapid Increase in Incidence and Cost of Treating C2 Fractures in the United States from 2000-2010

Alan H. Daniels, MD, Providence, RI
Sean Esmende, MD, Providence, RI
Melanie Arthur, PhD, Fairbanks, AK
Hari Vigneswaran, BS, Providence, RI
Mark A. Palumbo, MD, Providence, RI

The incidence and cost of treating C2 fractures has increased dramatically from 2000 to 2010. The estimated yearly cost of inpatient care for C2 fractures was over 1.6 billion US dollars in 2010.

11:24 AM PAPER: 698

How Often are Interfacility Transfers of Spine Injury Patients Truly Necessary?

Jesse E. Bible, MD, MHS, Nashville, TN
Rishin Kadakia, Nashville, TN
Harrison F. Kay, BS, Nashville, TN
Chi Zhang, BA, Nashville, TN
Geoffrey E. Casimir, BS, Nashville, TN
Clinton J. Devin, MD, Nashville, TN

There is an overutilization of interfacility transfers of spine injuries that can easily be treated with and without an orthotic device and appropriate outpatient follow-up.

Friday, March 14

11:30 AM

PAPER: 699

The Relationship Between MRI Features and Neurological Prognosis in Patients with Cervical Spinal Cord Injury

Akinobu Matsushita, MD, Fukuoka, Japan
 Takeshi Maeda, Iizuka, Japan
 Eiji Mori, MD, Fukuoka, Japan
 Itaru Yugue, MD, Iizuka Fukuoka, Japan
 Osamu Kawano, MD
 Tsuneaki Takao, MD, Iizuka, Japan
 Hiroaki Sakai, MD
 Keiichiro Shiba, MD, Iizuka, Japan

We investigated the relationship between the MRI and the neurological prognosis in patients with CSCI. A significant relationship was observed between the T1 low area and the neurological recovery.

Discussion – 6 Minutes

11:42 AM

PAPER: 700

Nonfusion Method in Thoracolumbar and Lumbar Spinal Fractures

Yong-Min Kim, MD, Cheongju, Republic of Korea
 Dong-Soo Kim, MD, Cheongju, Republic of Korea
 Hyun-Chul Shon, MD, Cheongju, Republic of Korea
 Kyoung Jin Park, MD, Cheongju, Republic of Korea
 Byung-Ki Cho, MD, Cheong-Ju, Republic of Korea
 Eun M. Lee, MD, Cheongju, Republic of Korea

Nonfusion Method in Thoracolumbar and Lumbar Spinal Fractures.

11:48 AM

PAPER: 701

The Provocative Radiographic Traction Test for Diagnosing Occipito-cervical Dissociation

Zachary A. Child, MD, Albuquerque, NM
 Carlo Bellabarba, MD, Seattle, WA
 Michael J. Lee, MD, Seattle, WA
 Richard J. Bransford, MD, Seattle, WA
 Randal P. Ching, Seattle, WA
 Jens R. Chapman, MD, Seattle, WA
 Daniel Rau, MD, Berlin, Germany

A cadaveric biomechanical study was performed to better define the test in equivocal cases of occipito-cervical instability.

11:54 AM

PAPER: 702

Comparison of Methods of Halo Vest Application: A Biomechanical Study

Mark L. Prasarn, MD, Bellaire, TX
 Caleb J. Behrend, MD, Roanoke, VA
 MaryBeth Horodyski, EdD, ATC, LAT, Gainesville, FL
 Bryan P. Conrad, Gainesville, FL
 Glenn R. Rechline II, MD, Pinellas Park, FL

We propose a new method for application of the halo vest that results in less motion at an unstable upper cervical spine injury, possibly resulting in improved protection of the spinal cord.

Discussion – 6 Minutes

• The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

12:06 PM

PAPER: 703

Does Spinal Canal Stenosis Affect the Neurological Outcomes after Spinal Cord Injury without Major Bony Injury?

Tsuneaki Takao, MD, Iizuka, Japan
 Yuichiro Morishita, MD, PhD, Iizuka, Japan
 Takeshi Maeda, Iizuka, Japan
 Eiji Mori, MD, Fukuoka, Japan
 Itaru Yugue, MD, Iizuka Fukuoka, Japan
 Osamu Kawano, MD
 Hiroaki Sakai, MD
 Keiichiro Shiba, MD, Iizuka, Japan

The decompression surgery might not be recommended for traumatic CSCI without major fracture or dislocation even though they had preexisting CSCS.

12:12 PM

PAPER: 704

Evaluation of Spinal Cord Motion in Patients with Abnormal Sagittal Cervical Alignment Using Kinetic MRI

Chengjie Xiong JR, Chongqing, China
 Michael D. Daubs, MD, Las Vegas, NV
 Akinobu Suzuki, MD, PhD, Osaka, Japan
 Bayan Aghdasi, MD, Clovis, CA
 Trevor Scott, MD, Santa Monica, CA
 Kevin Phan, BS, Irvine, CA
 Monchai Ruangchainikom, MD, Bangkok, Thailand
 Jeffrey C. Wang, MD, Sherman Oaks, CA

With kyphotic sagittal cervical alignment there is paradoxical motion of the spinal cord with increased anterior translation in flexion at the C5-6 level.

12:18 PM

PAPER: 705

Comparing the Osteogenic Potential of Mesenchymal Stem Cells Isolated from Multiple Lumbar Fusion Bone Graft Sites

Sarina Sinclair, PhD, Salt Lake City, UT
 Darrel S. Brodke, MD, Salt Lake City, UT
 Brandon D. Lawrence, MD, Salt Lake City, UT

This work aimed to isolate and compare the osteogenic potential, cellular and growth factors, of mesenchymal stem cells from multiple lumbar fusion bone graft sites.

Discussion – 6 Minutes

Friday, March 14

PAPER PRESENTATION

10:30 AM — 12:30 PM
Room 345

Foot and Ankle IV: Arthritis in Ankles

Moderator(s): Michael S. Aronow, MD, West Hartford, CT
David I. Pedowitz, MD, Penn Valley, PA

10:30 AM

PAPER: 706

Long-Term Clinical and Functional Outcomes Following Bilateral Ankle Arthrodesis

Matthew Houdek, MD, Rochester, MN
Benjamin Wilke, MD, Rochester, MN
Daniel B. Ryssman, MD, Rochester, MN
Norman S. Turner III, MD, Rochester, MN

Bilateral ankle arthrodesis provides patients with a reliable treatment for bilateral end-stage ankle arthritis with good clinical and functional outcomes.

10:36 AM

PAPER: 707

Arthrodesis is Preferred to Re-Arthroplasty after a Failed Ankle Prosthesis - The Swedish Ankle Register

Ilka Kamrad, MD, Malmo, Sweden
Bjorn Rosengren, MD, PhD, Malmo, Sweden
Anders S. Henricson, MD, Falun, Sweden
Hakan Magnusson, Malmo, Sweden
Jan-Ake Nilsson, BSc, Malmo, Sweden
Magnus Karlsson, MD, Malmo, Sweden
Ake S. Carlsson, MD, PhD, Malmo, Sweden

Since exchanging failed ankle prostheses resulted in a new revision rate of 56 % and since the outcome was similar to secondary fusion we question the value of exchanging a failed ankle prosthesis.

10:42 AM

PAPER: 708

◆ Outcomes of Tibiotalocalcaneal/Pantalar Fusion versus Total Ankle Replacement with Subtalar Fusion

Maryse Bouchard, MD, FRCSC, Seattle, WA
Mara Jones, MD, Toronto, ON, Canada
Syndie Singer, MD, Vaughan, ON, Canada
Ellie Pinsker, Toronto, ON, Canada
Kevin J. Wing, MD, Vancouver, BC, Canada
Alastair S E. Younger, MD, Vancouver, BC, Canada
Murray J. Penner, MD, Vancouver, BC, Canada
Timothy R. Daniels, MD, FRCSC, Toronto, ON, Canada

Both total ankle replacement with subtalar fusion and tibiotalocalcaneal/pantalar fusion significantly improve pain and disability from ankle/hindfoot arthritis, with no difference in complications.

Discussion – 6 Minutes

10:54 AM

PAPER: 709

Salvage Arthrodesis after Failed Total Ankle Replacement vs. Primary Ankle Arthrodesis

Stefan Rahm, MD, St. Gallen, Switzerland
Georg Klammer, MD, Zurich, Switzerland
Emanuel Benninger, Effretikon, Switzerland
Mazda Farshad, MD, Zurich, Switzerland
Fabienne A. Gerber, Zumikon, Switzerland
Norman Espinosa, MD, Zurich, Switzerland

This matched case control study shows significantly better clinical results and less complications in primary arthrodesis compared to salvage arthrodesis after failed total ankle replacement.

11:00 AM

PAPER: 710

Risks to the Blood Supply of the Talus after Four Methods of Total Ankle Arthroplasty: A Cadaveric Injection Study

Joshua N. Tennant, MD, Chapel Hill, NC
Chamnanni Rungprai, MD, Iowa City, IA
Marc Pizzimenti, PhD, Iowa City, IA
Jessica Goetz, PhD, Iowa City, IA
Phinit Phisitkul, MD, Iowa City, IA
John E. Femino, MD, Iowa City, IA
Annunziato Amendola, MD, Iowa City, IA

The extraosseous talar blood supply is assessed in relation to surgical resection for 4 current TAA methods. CT scan and non-dissection debridement were used. Risks exist for all implant systems.

11:06 AM

PAPER: 711

Variations in Talar Morphology Affect Implant Fit in Total Ankle Arthroplasty

Christopher E. Talbot, MS, Biddeford, ME
Shana N. Miskovsky, MD, Shaker Heights, OH
Brian Schmotzer, Cleveland, OH

Using measured trochlear aspect ratios from osseous specimens, models of talar implant fit revealed that, in cases with proper anterior fit, an average of 50% did not fit with respect to length.

Discussion – 6 Minutes

11:18 AM

PAPER: 712

Subtalar Articular Facet Involvement during Intramedullary Guidance of Total Ankle Arthroplasty

Shyler L. DeMill, DO, Yakima, WA
Jaymes Granata, MD, Lewis Center, OH
Jeffrey E. McAlister, DPM, Westerville, OH
Gregory C. Berlet, MD, Westerville, OH
Christopher Hyer, DPM, Westerville, OH

The purpose of this cadaveric anatomic evaluation was to quantify the frequency and amount of posterior subtalar facet joint involvement during intramedullary guidance to the tibial canal and evaluate the relational anatomy.

Friday, March 14

11:24 AM

PAPER: 713

Short to Mid-term Clinical Evaluation of a Cementless Fixed Bearing Total Ankle Prosthesis

Scott Nodzo, MD, Buffalo, NY
 Michael Miladore, MD, Buffalo, NY
 Nathan B. Kaplan, MD, Rochester, NY
 Christopher Ritter, MD, Buffalo, NY

We evaluated the short to midterm clinical and radiographic outcomes of a recently FDA approved total ankle prosthesis.

11:30 AM

PAPER: 714

◆ Total Ankle Replacement - A Population-based Study on 714 Cases from the Finnish Arthroplasty Register

Eerik T. Skytta, MD, PhD, Tampere, Finland
 Holger Kneer, MD, Tampere, Finland
 Pirjo Honkanen, MD, Ylojarvo, Finland
 Antti Eskelinen, MD, PhD, Tampere, Finland
 Ville M. Remes, MD, Helsinki, Finland

10-year survival of total ankle replacements was 77%, and selected prosthesis, patients' age, sex and diagnosis had no effect on survival.

Discussion – 6 Minutes

11:42 AM

PAPER: 715

Outcomes after Total Ankle Replacement in Association with Ipsilateral Hindfoot Arthrodesis

John S. Lewis Jr, MD, Durham, NC
 Samuel B. Adams Jr, MD, Durham, NC
 Robin M. Queen, PhD, Durham, NC
 James K. DeOrio, MD, Durham, NC
 James A. Nunley II, MD, Durham, NC
 Mark E. Easley, MD, Durham, NC

Total ankle replacement (TAR) performed with ipsilateral hindfoot arthrodesis results in significant improvements in pain and functional status, but outcome may be inferior to that of isolated TAR.

11:48 AM

PAPER: 716

◆ Clinical Performance and Minimal Clinically Important Difference in the Ankle Osteoarthritis Scale

Marcus P. Coe, MD, Enfield, NH
 Jason M. Sutherland, PhD, Vancouver, BC, Canada
 Murray J. Penner, MD, Vancouver, BC, Canada
 Alastair S E. Younger, MD, Vancouver, BC, Canada
 Kevin J. Wing, MD, Vancouver, BC, Canada

Preoperative AOS and comorbidities affected improvement in the AOS after surgery for ankle arthritis. Average improvement in AOS (31.7 points) was greater than the estimated MCID of 26.1 points.

11:54 AM

PAPER: 717

Bony Contact of a Straight versus a Curved Tibiotalocalcaneal Arthrodesis Intramedullary Nail

Shelton A. McKenzie, MD, Silver Spring, MD
 Domingo Molina IV, MS, Dickinson, TX
 Randal Morris, Galveston, TX
 Vinod K. Panchbhavi, MD, FACS, Galveston, TX

Calcaneal bony contact surface was greater with a curved tibiotalocalcaneal arthrodesis IM nail through the posterolateral calcaneus than with a straight nail aligned with the tibial IM canal.

Discussion – 6 Minutes

12:06 PM

PAPER: 718

Improvement in Gait Following Combined Ankle and Subtalar Arthrodesis

Shay A. Tenenbaum, MD, Herzliya, Israel
 Scott Coleman, MS, MBA, Dallas, TX
 James W. Brodsky, MD, Dallas, TX

In patients with severe ankle and hindfoot arthritis, combined ankle and subtalar arthrodesis with an intramedullary retrograde nail produces objective improvements in quantifiable parameters of gait.

12:12 PM

PAPER: 719

The Treatment of Osteomyelitis Following Fractures About the Ankle: A Comparison of Two Fusion Methods

Jeffrey Moore, Califon, NJ
 Manuel H. Lee, BS, Newark, NJ
 Wayne S. Berberian, MD, Paramus, NJ

We compare two methods of fusion used in the treatment of traumatic ankle fractures complicated by chronic osteomyelitis.

12:18 PM

PAPER: 720

◆ The Impact of Obesity on the Outcome of Total Ankle Replacement

Maryse Bouchard, MD, FRCSC, MSc, Seattle, WA
 Amit Amin, FRCS, Harrow, UK, United Kingdom
 Ellie Pinsker, Toronto, ON, Canada
 Ryan Khan, Toronto, ON, Canada
 Erisa Deda, Toronto, ON, Canada
 Timothy R. Daniels, MD, FRCSC, Toronto, ON, Canada

Total ankle replacement significantly and similarly improves pain and disability in obese and non-obese patients with ankle arthritis, with no significant difference in complication rate.

Discussion – 6 Minutes

Friday, March 14

SYMPOSIUM

1:30 PM — 3:30 PM

Theater C

Lessons on the Outcomes of ACL Reconstruction Surgery from International Registries (CC)

Moderator: Scott A. Rodeo, MD, New York, NY

Registries have been developed to monitor large cohorts of patients undergoing ACL reconstruction. The symposium will present approaches to the study of these issues from registries that collect data on large numbers of ACLR patients.

- I. Minimum Data Set for ACL Registry
Gregory B. Maletis, MD, Baldwin Park, CA
- II. Imaging Evaluation Following ACL Reconstruction
Hollis Potter, MD, New York, NY
- III. Evaluation of Functional Outcomes: Knee Stability, Strength, Coordination
John Cavanaugh, PT, New York, NY
- IV. Challenges of Achieving Long Term Follow-up: Lessons from European Registries
Lars Engebretsen, MD, Oslo, Norway
- V. Point-Counterpoint: The Best Way to Evaluate ACL Reconstruction Outcomes is Registries
Tadashi T. Funahashi, MD, Irvine, CA
- VI. Point-Counterpoint: The Best Way to Evaluate ACL Reconstruction Outcomes is Randomized Clinical Trials
Stephen Lyman, PhD, New York, NY
- VII. The 30,000 Foot View from Large Patient Registries in 2014
Juri Kartus, MD, Trollhattan, Sweden

SYMPOSIUM

1:30 PM — 3:30 PM

Theater B

Best of AAOS (DD)Moderator: Steven L. Frick, MD, Orlando, FL
William M. Mihalko, MD, Germantown, TN

The Best of AAOS symposium will feature highlights from the best papers and posters presented at the 2014 Annual Meeting as chosen by the AAOS Program Committee.

- I. Foot and Ankle
Daniel C. Farber, MD, Baltimore, MD
- II. Hand and Wrist
Fraser J. Leversedge, MD, Durham, NC
- III. Pediatrics
Ken J. Noonan, MD, Madison, WI
- IV. Spine
Norman B. Chutkan, MD, Augusta, GA
- V. Sports Medicine/Arthroscopy
Dean K. Matsuda, MD, Los Angeles, CA
- VI. Trauma
Ivan S. Tarkin, MD, Pittsburgh, PA
- VII. Tumor/Metabolic Disease
Jeffrey S. Kneisl, MD, Charlotte, NC
- VIII. Practice Management/Rehabilitation
Thomas Malvitz, Grand Rapids, MI
- IX. Adult Reconstruction Knee
Michael A. Kelly, MD, Hackensack, NJ
- X. Shoulder and Elbow
Keith Kenter, MD, Cincinnati, OH
- XI. Adult Reconstruction Hip
David C. Ayers, MD, Worcester, MA

INSTRUCTIONAL COURSE LECTURE

1:30 PM — 2:30 PM

FD13 Writing an Abstract that Gets AcceptedModerator: Craig J. Della Valle, MD, Chicago, IL
Room 217 Javad Parvizi, MD, FRCS, Philadelphia, PA
Mark W. Pagnano, MD, Rochester, MN

Understand the abstract submission and review process in order to increase the likelihood of acceptance. Learn how to write an abstract that is focused, concise and clear so that your message is “heard” by the reviewers.

Friday, March 14

INSTRUCTIONAL COURSE LECTURE

1:30 PM — 3:30 PM

441 Preventing Hospital Readmissions and Limiting the Complications Associated with Total Hip Arthroplasty

Moderator: Kevin L. Garvin, MD, Omaha, NE
William L. Healy, MD, Newton, MA
Richard Iorio, MD, New Rochelle, NY
Vincent D. Pellegrini, MD, Charleston, SC

Room 221

With increasing attention on hospital readmission after THA, there is a need to better understand and prevent complications responsible for readmission to the hospital.

442 Aetiology and Management of Soft Tissue Instability during TKA

Moderator: Kenneth A. Krackow, MD, Buffalo, NY
Sam Hakki, MD, Saint Petersburg, FL
William M. Mihalko, MD, PhD, Germantown, TN
Khaled J. Saleh, MD, MSc, Springfield, IL
Leo A. Whiteside, MD, Saint Louis, MO

Room 207

Soft tissue resection may negatively impact the stability of TKA especially in flexion. Discuss the controversial techniques as to when, how and the extent of soft tissue resection to avoid iatrogenic causes of TKA instability

443 Foot and Ankle Fusions: You Can't Always Replace Us

Moderator: Eric M. Bluman, MD, Chestnut Hill, MA
Jeffrey E. Johnson, MD, Saint Louis, MO
Christopher P. Chiodo, MD, Boston, MA
Donald R. Bobay, MD, Grand Rapids, MI

Room 208

Cover foot and ankle fusions, including indications, surgical techniques, current controversies, as well as pearls and pitfalls will be reviewed.

444 Preparing a Medical Manuscript

Moderator: Charles R. Clark, MD, Iowa City, IA
Marc F. Swiontkowski, MD, Minneapolis, MN
Vernon T. Tolo, MD, Los Angeles, CA

Room 262

Cover all aspects of medical writing with a focus on preparing an outline, methods and statistics and common writing errors. An audience participation section focuses on "how to state it better."

445 A 13 Year Retrospective on the Volar Approach for Distal Radius Fractures: What Have We Learned?

Moderator: David L. Nelson, MD, Greenbrae, CA
Jorge L. Orbay, MD, Miami, FL
Diego L. Fernandez, MD, Berne, Switzerland

Room 276

Cover what we have learned during this 13 year period, from both our own practices and those of surgeons who contacted us regarding complications. Cases will be presented.

446

**Cerebral Palsy: Clinical Decision Making and Current Orthopaedic Surgical Management**

Moderator: Jon R. Davids, MD, Sacramento, CA
Robert M. Kay, MD, Los Angeles, CA
Unni G. Narayanan, MBBS, MSc, Toronto, ON, Canada

Room 218

Comprehensive overview of the management of children with cerebral palsy, emphasizing pathophysiology, natural history, and biomechanics; and treatment through the integration of orthopaedic surgery, tone management, and objective outcomes assessment.

447

**Assembling the Orthopaedic Team**

Moderator: Harpal S. Khanuja, MD, Cockeysville, MD
C. Lowry Barnes, MD, Little Rock, AR
Tricia Marriott PA-C, Alexandria, VA
Timothy S. Johnson, MD, Lansdowne, VA

Room 347

Various allied health professionals can improve the services delivered by an orthopaedic practice. These include: MAs, NPs, PAs, and athletic trainers. Understanding the potential roles of these team members can maximize utilization and efficiency.

448

**Rotator Cuff Controversies**

Moderator: Richard J. Hawkins, MD, Greenville, SC
John E. Kuhn, MD, Nashville, TN
Neal S. ElAttrache, MD, Los Angeles, CA
Theodore F. Schlegel, MD, Greenwood Village, CO

Room 353

Discuss the basic science of cuff healing and the issues of repairing or not repairing, single vs double row, and knotless systems along with the future related to tissue engineering, scapolding and healing.

449

**Shoulder Prosthetic Arthroplasty Options in 2014: What To Do and When To Do It**

Moderator: J. Michael Wiater, MD, Beverly Hills, MI
John W. Uribe, MD, Coral Gables, FL
Peter L. Verrillo, Wood Ridge, NJ
Ralph Hertel, MD, Bern, Switzerland
Geert Declercq, MD, Deurne, Belgium
Anand M. Murthi, MD, Baltimore, MD
Thomas B. Edwards, MD, Houston, TX
Edwin E. Spencer Jr, MD, Knoxville, TN

Room 356

Describe the indications and technical considerations for the latest cutting-edge prosthetic designs, including stemless TSA, in use in Europe and being investigated in the US. Treatment algorithms, technical pearls, and pitfalls will be covered by an experienced international faculty. Interesting and controversial cases will be presented.

Friday, March 14

450

**Complication Management in Minimally Invasive Spine Surgery**

Moderator: *Sheeraz Qureshi, MD, New York, NY*
Kern Singh, MD, Chicago, IL
Saad Chaudhary, MD, Murray Hill, NJ
Adam L. Wollowick, MD, New York, NY

Room
350

Addresses rarely discussed complications involved with MIS spine surgery both in the initial and later phases of adoption. The course involves a detailed interactive discussion on peri- and intra-operative pearls to safely and successfully perform minimally invasive procedures. In addition, salvage techniques will be discussed addressing complication avoidance, management, and results.

451

**Adverse Event Reporting in Spine Clinical Research**

Moderator: *Robert A. Hart, MD, Portland, OR*
Paul A. Anderson, MD, Madison, WI
Brook I. Martin, Lebanon, NH
Bradley K. Weiner, MD, Houston, TX

Room
352

Describe the current status of recording and reporting of adverse events during spine surgery as well as initiatives to improve standardization of adverse event reporting and barriers to implementation of such initiatives.

452

**Risks, Benefits and Evidence-Based Recommendations for Improving the Outcome of ACL Reconstruction**

Moderator: *James H. Lubowitz, MD, Taos, NM*
Nikhil N. Verma, MD, Chicago, IL
Matthew T. Provencher, MD, Boston, MA
Vipool K. Goradia, MD, Houston, TX

Room
271

Describe the risks and benefits of ACL reconstruction with focus on anatomy, graft selection, rehabilitation, and fixation. Each case presentation will be the basis for a faculty panel discussion and audience question and answer session, where faculty will review evidence-based recommendations for improving outcome based upon comparative effectiveness research.

453

**Hip Arthroscopy: Fundamental Techniques and Foundational Skills**

Moderator: *Christopher M. Larson, MD, Edina, MN*
Asheesh Bedi, MD, Ann Arbor, MI
Michael Salata, MD, Cleveland, OH
Bryan T. Kelly, MD, New York, NY

Room
260

Will focus on patient work up, arthroscopic access to the hip joint, techniques for capsulotomy and repair, and surgical indications for hip arthroscopy. In addition, techniques for cam-type, pincer-type, and subspine / AIIS femoroacetabular impingement, peritrochanteric space disorders, and internal and external snapping hip will be discussed.

454

**Non-union Evaluation and Treatment**

Moderator: *Clifford B. Jones, MD, FACS, Grand Rapids, MI*
Joseph R. Hsu, MD, Charlotte, NC
Michael J. Gardner, MD, Saint Louis, MO
Alan L. Jones, MD, Dallas, TX

Room
226

Discuss how to appropriately work up, evaluate, treat with nail/plate/external fixation and utilize adjunctive grafting of non-unions.

PAPER PRESENTATION

1:30 PM — 3:30 PM

LaNouvelle

Game Changers Paper Session

Moderator(s): *Brian J. Cole, MD, Chicago, IL*
Michael J. Stuart, MD, Rochester, MN

1:30 PM

PAPER: 002

Allogenic Blood Transfusion in Total Hip Arthroplasty: Results from the Nationwide Inpatient Sample, 2000-2009

Anas Saleh, MD, Beachwood, OH
Travis Small, DO, Meadville, PA
Aiswarya Lekshmi Pillai Chandran Pillai, MD, MS, Cleveland, OH
Nicholas K. Schiltz, BS, Cleveland, OH
Alison K. Klika, MS, Cleveland, OH
Wael K. Barsoum, MD, Cleveland, OH

Allogenic blood transfusion after total hip arthroplasty has a considerable burden on patients and healthcare institutions, increasing length of stay, admission costs, and acute complications.

1:36 PM

PAPER: 545

Factors Affecting Readmission Rates Following Primary Total Hip Arthroplasty

Rachel E. Mednick, MD, Chicago, IL
Hasham M. Alvi, MD, Chicago, IL
Hasham M. Alvi, MD, Chicago, IL
Varun Krishnan, BA, Chicago, IL
Francis Lovecchio, BA, Chicago, IL
David W. Manning, MD, Chicago, IL

The risk of readmission following total hip arthroplasty is increased in patients with a BMI>40, a history of chronic steroid use, and in patients with a low preoperative serum albumin.

Friday, March 14

1:42 PM

PAPER: 191

Autologous Adipose Tissue derived Mesenchymal Stem Cells for the Treatment of Osteoarthritis of the Knee

Chris H. Jo, MD, Seoul, Republic of Korea
 Lee Young-Gil, Chumbuk Kunsan, Republic of Korea
 Won Hyoung Shin, Seoul, Republic of Korea
 Ji Sun Shin, BS, Seoul, Republic of Korea
 Hyang Kim, PhD, Seoul, Republic of Korea
 Kang Sup Yoon, MD, Seoul, Republic of Korea

The intra-articular injection of AD MSCs into the osteoarthritic knee improved function and pain without causing adverse events, and reduced cartilage defects by regeneration of articular cartilage.

Discussion – 6 minutes

1:54 PM

PAPER: 117

Comparison of the PROMIS Physical Function CAT with the FFI and FAAM for Foot and Ankle Disorders

Man Hung, PhD, Salt Lake City, UT
 Judith F. Baumbauer, MD, MPH, Rochester, NY
 Timothy R. Daniels, MD, FRCSC, Toronto, ON, Canada
 Scott Ellis, MD, New York, NY
 Jeremy D. Franklin, Salt Lake City, UT
 Daniel Latt, MD, PhD, Tucson, AZ
 Nelson F. SooHoo, MD, Los Angeles, CA
 Charles L. Saltzman, MD, Salt Lake City, UT
 Kenneth Hunt, MD, Redwood City, CA

The PROMIS PF CAT is a valid tool that performed well in terms of reliability, time for completion, and responsiveness.

2:00 PM

PAPER: 179

The Biomechanical and Histological Effect of Platelet Rich Plasma on Rabbit Forepaw Flexor Tendon Repair

Katie Kollitz, BS, Seattle, WA
 Erin M. Parsons, MS, Seattle, WA
 Matt Weaver, PhD, Seattle, WA
 Jerry I. Huang, MD, Seattle, WA

In contrast to other studies, platelet-rich plasma did not improve ultimate strength or ROM in a rabbit flexor tendon model at 2, 4, or 8 weeks. Minor histologic differences disappeared after 2 weeks.

2:06 PM

PAPER: 576

A Comparison of Ultrasound and Electrodiagnostic Testing for the Diagnosis of Carpal Tunnel Syndrome

John R. Fowler, MD, Gibsonia, PA
 Richard J. Tosti, MD, Philadelphia, PA
 William C. Hagberg, MD, Wexford, PA
 Joseph E. Imbruglia, MD, Wexford, PA

While US will not replace EDX in complicated cases, in a select group of patients with a positive CTS-6, US can be used to confirm the diagnosis of carpal tunnel syndrome.

Discussion – 6 minutes

2:18 PM

PAPER: 151

An Evaluation of the Validity of a DNA-Based Prognostic Test for Adolescent Idiopathic Scoliosis

Benjamin D. Roye, MD, New York, NY
 Margaret Wright, BS, New York, NY
 Hiroko Matsumoto, MA, New York, NY
 Petya Yorgova, MS, Wilmington, DE
 Geraldine Neiss, PhD, Wilmington, DE
 Joshua E. Hyman, MD, New York, NY
 David P. Roye Jr, MD, New York, NY
 Suken A. Shah, MD, Wilmington, DE
 Michael G. Vitale, MD, MPH, Irvington, NY

This is the first study to independently evaluate the ability of the Scoliscore, a DNA-based prognostic test, to stratify risk of curve progression in patients with Adolescent Idiopathic Scoliosis.

2:24 PM

PAPER: 138

Early Results of CMS Bundled Payment Initiative for a 90-day Total Joint Replacement Episode of Care

Richard Iorio, MD, New Rochelle, NY
 James D. Slover, MD, New York, NY
 Andrew J. Clair, BA, New York, NY
 Joseph D. Zuckerman, MD, New York, NY

Early results from this CMS bundled payment initiative demonstrate decreased length of stay and increased discharge to home, with stable readmissions, suggesting significant cost-savings with no loss.

2:30 PM

PAPER: 520

A Prospective Follow Up of Patients Treated Surgically or Non-Surgically for Full-thickness Rotator Cuff Tears

Joel J. Gagnier, PhD, Ann Arbor, MI
 Hanna Oltean, MPH, Ann Arbor, MI
 Bruce S. Miller, MD, MS, Ann Arbor, MI

Our Shoulder Registry was used to compare the efficacy of surgical versus non-surgical management of full-thickness rotator cuff tears and to detect variables that predict success within each group.

Discussion – 6 minutes

2:42 PM

PAPER: 216

Methods to Eliminate Postoperative Posterior Cervical Wound Infections: No Matter what the Case

Brian J. Neuman, MD, Baltimore, MD
 Kevin R. O'Neill, MD, Nashville, TN
 Sang D. Kim, MD, Los Angeles, CA
 K. Daniel Riew, MD, Saint Louis, MO

Despite the type of posterior cervical procedure, comorbidities or body habitus, our protocol for preparation, exposure and closure has decreased the risk of posterior cervical wound infections.

Friday, March 14

2:48 PM

PAPER: 411

Three to Seven Year Outcome and Survivorship Following Hip Arthroscopy in Dysplastic Hips

Jack G. Skendzel, MD, Woodbury, MN
 Karen K. Briggs, MPH, Vail, CO
 Peter Goljan, MD, Boylston, MA
 Marc J. Philippon, MD, Vail, CO

In this difficult patient population, hip arthroscopy can help restore function in some patients.

2:54 PM

PAPER: 567

Arthroscopic Repair Versus Conservative Treatment in Acute Shoulder Dislocation: A Prospective Case Control Study

Angelo De Carli, MD, Rome, Italy
 Luigi Mossa, Rome, Italy
 Antonio Vadala, MD, Rome, Italy
 Alessandro Ciompi, MD, Roma, Italy
 Riccardo Maria Lanzetti, Roma, Italy
 Domenico Lupariello, Matera, Italy
 Carlo Iorio, MD
 Andrea Ferretti, MD, Rome, Italy

Primary repair of Bankart lesion after first time shoulder dislocation in young active people offers better clinical and functional results than conservative treatment.

Discussion – 6 minutes

3:06 PM

PAPER: 063

A Randomized Controlled Trial of Early vs Delayed Weightbearing After Surgical Fixation of Unstable Ankle Fractures

Niloofar Dehghan, MD, Toronto, ON, Canada
 Richard Jenkinson, MD, Toronto, ON, Canada
 Michael D. McKee, MD, Toronto, ON, Canada
 Aaron Nauth, MD, Toronto, ON, Canada
 Emil H. Schemitsch, MD, Toronto, ON, Canada
 Jeremy Hall, MD, FRCS, Toronto, ON, Canada
 David J. Stephen, MD, Toronto, ON, Canada
 Hans J. Kreder, MD, Toronto, ON, Canada

There is no difference with regards to time to return to work, however the early group has improved ankle function and health outcome scores early on, with no increase in rate of complication/failure.

3:12 PM

PAPER: 069

Does Ankle Syndesmosis Screw Removal Affect Patient Outcomes? A Prospective, Randomized, Controlled Trial

Matthew J. Boyle, MD, Durham, NC
 Ryan Gao, Auckland, New Zealand
 Brendan Coleman, MD, Wellington, New Zealand

In this prospective, randomized, controlled trial we have identified no significant benefit associated with syndesmosis screw removal in adult ankle fracture patients.

3:18 PM

PAPER: 826

Can All Tibial Shaft Fractures Weight Bear Following Intramedullary Nailing? A Randomized Clinical Trial

Steven C. Gross, MD, Charlotte, NC
 David P. Taormina, MS, New York, NY
 David Galos, MD, New York, NY
 Kenneth A. Egol, MD, New York, NY
 Nirmal C. Tejwani, MD, New York, NY

This prospective randomized study was designed to examine the potential benefits or risks associated with postoperative weight-bearing versus non-weight-bearing.

Discussion – 6 minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 245

Adult Reconstruction Hip VII: Other/Complications

Moderator(s): Paul E. Beaulé, MD, Ottawa, ON, Canada
 William B. Macaulay, MD, Columbia, NY

1:30 PM

PAPER: 721

What is the Fate of “Malpositioned” Acetabular Components When Evaluated in the Standing Position?

John V. Tiberi, MD, Torrance, CA
 Selami Cakmak, MD, Istanbul, Turkey
 Dov Goldvasser, MSc, Boston, MA
 Tsung-Yuan Tsai, PhD, Boston, MA
 Jing-Sheng Li, PT, MS, Boston, MA
 Andrew A. Freiberg, MD, Boston, MA
 Henrik Malchau, MD, Boston, MA
 Harry E. Rubash, MD, Boston, MA
 Young-Min Kwon, MD, PhD, Boston, MA

Nearly half of conventionally malpositioned cups were well-positioned while standing. This difference in orientation may, in part, explain why many “malpositioned” cups are well-functioning.

1:36 PM

PAPER: 722

Effect of Lumbosacral Spine on Pelvic Orientation and Cup Positioning

Morteza Meftah, MD, New York, NY
 Joseph D. Lipman, MS, New York, NY
 Amar S. Ranawat, MD, New York, NY
 Chitranjan S. Ranawat, MD, New York, NY

There is a significant change in pelvic tilt from standing to sitting. In the majority of patients, the functional anteversion increases with sitting.

Friday, March 14

1:42 PM

PAPER: 723

Bariatric Orthopaedics: Total Hip Arthroplasty in Patients Who are Super-obese (BMI>50 kg/m²)

Kimona Issa, MD, Baltimore, MD
 Steven F. Harwin, MD, New York, NY
 Arthur L. Malkani, MD, Louisville, KY
 Bhaveen Kapadia, MD, Baltimore, MD
 Aiman Rifai, DO, Clifton, NJ
 Vincent K. McInerney, MD, New Vernon, NJ
 Michael A. Mont, MD, Baltimore, MD

The clinical and patient-reported outcomes of primary total hip arthroplasty were lower in the super-obese patients compared to patients with normal body mass index.

Discussion – 6 Minutes

1:54 PM

PAPER: 724

Weight Change after Hip and Knee Arthroplasty: Incidence, Predictors and Effects on Clinical Outcomes

Michael P. Ast, MD, New York, NY
 Matthew P. Abdel, MD, Eagan, MN
 Alexandra Gorab, BS, New York, NY
 Yuo-Yu Lee, MS, New York, NY
 Allison Ruel, BA, New York, NY
 Stephen Lyman, PhD, New York, NY
 Geoffrey H. Westrich, MD, New York, NY

This series of 6900 patients demonstrates that while the majority of patients maintain their weight after lower extremity arthroplasty, those who lose weight demonstrate superior clinical outcomes.

2:00 PM

PAPER: 725

Pre- and Post-Operative Weight Patterns of TJA Patients and Characteristics Associated with Weight Change

Maria C. Inacio, MS, San Diego, CA
 Donna Kritz-Silverstein, PhD, La Jolla, CA
 Rema Raman, PhD, La Jolla, CA
 Caroline A. Macera, PhD, San Diego, CA
 Jeanne Nichols, La Jolla, CA
 Richard Shaffer, PhD, San Diego, CA
 Donald C. Fithian, MD, El Cajon, CA

This study describes weight changes of 30,632 patients undergoing TJA and evaluates patient characteristics associated with different weight patterns one year pre- and one year post-TJA.

2:06 PM

PAPER: 726

Osteoarthritis and Function: Inflammation and Obesity

Simon Frostick, MD, Liverpool, United Kingdom
 Amanda Williams, Research Nurse, Liverpool, United Kingdom
 Haiyi Wang, Liverpool, United Kingdom
 Alasdair Santini, Liverpool, United Kingdom
 Viju Peter, MD, Merseyside., United Kingdom
 Joanne Banks, FRCS, MB, Liverpool, United Kingdom
 John Davidson, FRCS, ChB, Liverpool, United Kingdom
 Margaret M. Roebuck, PhD, Liverpool, United Kingdom
 Richard Jackson, Liverpool, Merseyside, United Kingdom

Reduction in inflammation following arthroplasty surgery in lower limb patients with osteoarthritis indicates inflammatory drivers within joint tissues contribute to systemic levels of inflammation.

Discussion – 6 Minutes

2:18 PM

PAPER: 727

Direct Anterior Hip Yields Faster Voluntary Cessation of All Walking Aids in a Randomized Trial

J. Bohannon Mason, MD, Charlotte, NC
 Michael J. Taunton, MD, Rochester, MN
 Bryan D. Springer, MD, Charlotte, NC
 Susan M. Odum, PhD, Charlotte, NC

In a randomized prospective trial patients undergoing total hip arthroplasty via direct anterior approach voluntarily quit use of all walking aids on average 12 days earlier than patients with a mini-incision posterior approach.

2:24 PM

PAPER: 728

Risk of Stem Undersizing in Anterior Approach for Total Hip Arthroplasty

Fabrizio Rivera, MD, Torino, Italy
 Francesco Leonardi, MD, Savigliano, Italy
 Andrea Evangelista, MSc, Turin, Italy

High level of difficulty of femoral surgical exposition significantly increases risk of stem undersizing in anterior hip approach.

2:30 PM

PAPER: 729

Unsealed Holes in the Cup Risk Factor for Acetabular Osteolysis

Volker T. Otten, MD, Umea, Sweden
 Sead Crnalic, MD, Umea, Sweden
 Per Soderlund, Umea, Sweden
 Kjell G. Nilsson, MD, Umea, Sweden

In a RCT of 4 different modes of uncemented hip cup fixation CT analysis 15 years postop. revealed that acetabular osteolysis typically emanates from unsealed holes. Seal cup holes or use no-hole cups.

Discussion – 6 Minutes

Friday, March 14

2:42 PM

PAPER: 730

Is Hip or Knee Joint Replacement Appropriate for Patients in their 90s?

Melissa Levering, Tampa, FL
 Thomas L. Bernasek, MD, Tampa, FL
 Grant E. Flammer, Tampa, FL
 Christine E. Hilliard, Tampa, FL
 Corey C. Engel, Tampa, FL

TJR can be an effective solution for patients in their 90s experience with debilitating pain.

2:48 PM

PAPER: 731

Can Local Application of Tranexamic Acid Reduce Blood Loss in Cemented Total Hip Arthroplasty?

Yong Qiang Jerry Chen, MBBS, Singapore, Singapore
 Ngai-Nung Lo, MD, Singapore, Singapore
 Darren Tay, MBBS, FRCS, Singapore, Singapore
 Pak Lin Chin, FRCSEd, Singapore, Singapore
 Shi-lu Chia, MBBS, FRCS, PhD, Singapore, Singapore
 Seng-jin Yeo, FRCS, Singapore, Singapore

Local application of 1500 mg tranexamic acid is the more effective regime in reducing blood loss and the need for blood transfusion during total hip arthroplasty.

2:54 PM

PAPER: 732

Mechanical Complications of Hip and Knee Spacers are Common

Javad Parvizi, MD, FRCS, Philadelphia, PA
 James A. Costanzo, MD, Philadelphia, PA
 Anthony T. Tokarski, BS, Philadelphia, PA
 Alex Uhr, Philadelphia, PA
 Raj G. Patel, BS, Philadelphia, PA
 Darren Lepere, BS, Wexford, PA
 Carl A. Deirmengian, MD, Wynnewood, PA
 Gregory K. Deirmengian, MD, Broomall, PA

Patients with elevated BMI, significant bone loss, and knee spacers are more at risk for mechanical complications of their spacers. These complications did not affect success of the treatment.

Discussion – 6 Minutes

3:06 PM

PAPER: 733

Assessment of Durability and Function at Minimum 35-year Follow Up of THR in Patients 50 and Under

Lucian C. Warth, MD, Iowa City, IA
 John J. Callaghan, MD, Iowa City, IA
 Steve S. Liu, MD, Iowa City, IA
 Alison L. Klaassen, MA, Iowa City, IA
 Devon D. Goetz, MD, West Des Moines, IA
 Richard C. Johnston, MD, Iowa City, IA

At minimum 35 year follow-up of Charnley cemented THR in patients age 50 and under, 63.5% of original hips continued to function or the patients had died with the original prosthesis in place.

3:12 PM

PAPER: 734

Digital Tomosynthesis Effectively Confirms Biological Fixation of Cementless Total Hip Arthroplasty

Tamon Kabata, MD, Kanazawa, Japan
 Toru Maeda, MD, PhD, Kanazawa, Japan
 Yoshitomo Kajino, MD, Kanazawa, Japan
 Shintaro Iwai, MD, Kanazawa, Japan
 Kazunari Kuroda, MD, Kanazawa-Shi, Japan
 Kenji Fujita, MD, Kanazawa, Japan
 Kazuhiro Hasegawa, MD, Kanazawa, Japan
 Hiroyuki Tsuchiya, MD, Kanazawa, Japan

Digital tomosynthesis is more effective and safer than plain X-rays for evaluating the biological fixation of cementless THA, due to its high resolution, low dose exposure, and minimum artifacts.

3:18 PM

PAPER: 735

Variations in the Trunion Surface Topography between 11 Different Commercially Available Hip Replacement Stems

Selin Mumir, Wollstonecraft, Australia
 Arjuna M. Imbuldeniya, MBBS, Sydney, Australia
 William L. Walter, MD, PhD, North Sydney, Australia

The quantitative analysis of the surface topography of 11 commercial trunnions.

Discussion – 6 Minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 265

Shoulder and Elbow VI: Shoulder Trauma and Miscellaneous Injuries

Moderator(s): John G. Costouros, MD, San Francisco, CA
 Patrick J. McMahon, MD, Pittsburgh, PA

1:30 PM

PAPER: 736

Incidence and Risk Factors for Acute Infection After Proximal Humeral Fractures: A Multicenter Study

Davide Blonna, MD, Torino, Italy
 Nicola Barbasetti Di Prun, MD, Turin, Italy
 Stefano Marengo, Torino, Italy
 Valter Trombetta, Mezzomerico, Italy
 Bruno Battiston, MD
 Enrico Bellato, MD, Torino, Italy
 Alessandro Masse, MD, Orbassano, Italy
 Marco Assom, MD, Rivoli-Turin, Italy
 Filippo Castoldi, MD, Torino, Italy

This study suggests that washing the shoulder with chlorhexidine gluconate and avoiding the use of first generation cephalosporin are effective at reducing the risk for infection.

Friday, March 14

1:36 PM

PAPER: 737

Early Outcomes Following Nonbridging External Fixation for Proximal Humerus Fractures

David Kovacevic, MD, Cleveland, OH
 Eric T. Ricchetti, MD, Cleveland, OH
 Peter J. Evans, MD, PhD, Cleveland, OH

Early outcomes following surgical treatment of proximal humerus fractures with a nonbridging external fixator provides reliable pain relief, excellent motion, and negligible reoperation rates.

1:42 PM

PAPER: 738

Open Reduction and Internal Fixation Versus Hemiarthroplasty in the Management of Proximal Humerus Fractures

Robert J. Thorsness, MD, Rochester, NY
 James C. Iannuzzi, MD, MPH, Rochester, NY
 Katia Noyes, PhD, MPH, Rochester, NY
 Stephen L. Kates, MD, Rochester, NY
 Ilya Voloshin, MD, Rochester, NY

The purpose of this study was to use a nationally representative database to determine differences in 30-day outcomes based on procedure choice for management of proximal humerus fractures.

Discussion – 6 Minutes

1:54 PM

PAPER: 739

Reverse Total Shoulder Arthroplasty versus Hemiarthroplasty for the Treatment of Acute Proximal Humerus Fractures

Cyrus M. Press, MD, Alexandria, VA
 Hussein A. Elkousy, MD, Houston, TX
 Daniel P O'Connor, PhD, Houston, TX
 Gary M. Gartsman, MD, Houston, TX
 Thomas B. Edwards, MD, Houston, TX

Clinical results following proximal humerus fractures treated either with reverse shoulder arthroplasty or hemiarthroplasty with minimum 2 years follow-up.

2:00 PM

PAPER: 740

Percutaneous Intramedullary K-wire Fixation Versus Plate Fixation for Displaced Midshaft Clavicular Fractures

Kawakami Takeshi, MD, Osaka, Japan
 Teruhisa Mihata, MD, PhD, Takatsuki, Japan
 Takeshi Kawakami, Osaka, Japan
 Muneaki Abe, Osaka, Japan
 Chisato Watanabe, MD, PhD, Osaka, Japan
 Masashi Neo, Takatsuki, Japan

Intramedullary K-wire fixation and plate fixation for displaced midshaft clavicular fractures provided high rates of radiographic union. Intramedullary K-wire fixation decreased time to bone union compared with plate fixation.

2:06 PM

PAPER: 741

Biomechanical Analysis of Intramedullary vs. Superior Plate Fixation of Transverse Midshaft Clavicle Fractures

David J. Wilson, MD, Lacey, WA
 Kyong S. Min, MD, Lakewood, WA
 William F. Scully III, MD, Fort Benning, GA
 DeWayne L. Weaver, MD, Tacoma, WA
 Josef K. Eichinger, MD, Gig Harbor, WA
 Edward D. Arrington, MD, University Place, WA

Biomechanical analysis of a new intramedullary fixation device vs. superior plate fixation using fourth generation SawBones models tested under combined axial compression and torsion.

Discussion – 6 Minutes

2:18 PM

PAPER: 742

Intra- and Inter- Observer Agreement in the Classification and Treatment of Distal Third Clavicle Fractures

Julie Y. Bishop, MD, Columbus, OH
 Grant L. Jones, MD, Columbus, OH
 Brian Lewis, MD, Dayton, OH
 Angela D. Pedroza, MPH, Columbus, OH
 MOON Shoulder Group, BA, Nashville, TN

Our study has shown that when evaluating distal clavicle fracture patterns on radiographs, the intra- and inter- agreement was highest for determination of fragment stability.

2:24 PM

PAPER: 743

Correlation of Functional and Radiographic Outcomes After Acromioclavicular Joint Reconstruction

Gregory N. Lervick, MD, Minneapolis, MN
 M. Russell Giveans, PhD, Eden Prairie, MN
 Kathryn Samuelson, BS, Edina, MN

Suture fixation (with or without allograft augmentation) of grade III-V AC separations resulted in a high success rate when measured both functionally as well as radiographically.

2:30 PM

PAPER: 744

Short-term Failure Rates after Acromioclavicular Joint Reconstruction

Lawrence Hsu, MD, Bakersfield, CA
 Hillard T. Spencer, MD, Anaheim, CA
 Jeffrey F. Sodl, MD, Newport Beach, CA
 Jason P. Richards, MD, Pocatello, ID
 Edward Yian, MD, Newport Coast, CA

Short-term Failure Rates after Acromio-Clavicular Joint Reconstruction: A Comparison of Anatomic and Non-Anatomic Surgical Techniques.

Discussion – 6 Minutes

Friday, March 14

2:42 PM

PAPER: 745

Suture Technique Influences the Biomechanical Integrity of Pectoralis Major Repairs

James M. Gregory, MD, Saint Louis, MO
 Emma L. Klosterman, MA, Chicago, IL
 Jacqueline M. Thomas, BS, Des Plaines, IL
 James E. Hammond, DO, Suffolk, VA
 Deepti Gupta, MD, Chicago, IL
 Elizabeth Shewman, MS, Chicago, IL
 Vincent Wang, Chicago, IL
 Nikhil N. Verma, MD, Chicago, IL
 Anthony A. Romeo, MD, Chicago, IL

Suture technique substantially influences the biomechanical integrity of pectoralis major repairs. A running, locking stitch is recommended to prevent early suture pull-out from tendon.

2:48 PM

PAPER: 746

Unicortical Stress Risers of the Proximal Humerus After Pectoralis Major Repair: A Biomechanical Analysis

David J. Wilson, MD, Lacey, WA
 Todd P. Balog, MD, Lacey, WA
 Kyong S. Min, MD, Lakewood, WA
 Betsey K. Bean, DO, Tacoma, WA
 William F. Scully III, MD, Fort Benning, GA
 Bryant Marchant, MD, DuPont, WA
 COL Edward D. Arrington, MD, University Place, WA

This is a biomechanical analysis of the fracture risk associated with various techniques for proximal humerus myotenodesis associated with pectoralis major tendon repair.

2:54 PM

PAPER: 747

Influence of Bicipital Groove Morphology on the Stability of Biceps Long-head Tendon

Jin Ho Hong, MD, Seoul, Republic of Korea
 Ho-Young Ryu, MD, Seoul, Republic of Korea
 Yong Bok Park, MD, Seoul, Republic of Korea
 Yeong Seok Lee, MD, Seoul, Republic of Korea
 Sanghoon Chae, Seoul, Republic of Korea
 Jae-Chul Yoo, MD, Seoul, Republic of Korea

The shallow bicipital groove, as identified by lesser depth, increased opening angle and decreased medial angle could be the predisposing factor to biceps instability.

Discussion – 6 Minutes

3:06 PM

PAPER: 748

Outcome Assessment of Long Thoracic Nerve Decompression at the Axillary Region

Ahmed Al Mandhari, MD, Liverpool, United Kingdom
 Omid Alizadehkhayat, MD, Liverpool, United Kingdom
 Alexandros Kyriakos, MD, Liverpool, United Kingdom
 Simon Frostick, MD, Liverpool, United Kingdom

Surgical decompression of the long thoracic nerve at the axillary region resulted in satisfactory outcome in terms of pain relief and enhanced shoulder function.

3:12 PM

PAPER: 749

Pectoralis Major Transfer with its Bony Insertion Stabilizes Scapular Winging via Enhanced Bone-Bone Healing

Eric R. Wagner, MD, Rochester, MN
 Bassem T. Elhassan, MD, Rochester, MN

Transfer of the sternal head of the pectoralis major with its bony insertion to the inferior pole of the scapula does stabilize and restore the function to the scapula in patients with winging.

3:18 PM

PAPER: 750

Assessing Knowledge Translation in Orthopaedic Surgery Using Time-series Analysis of Clavicle Fracture Treatment

David Wasserstein, MD, MSc, North York, ON, Canada
 Timothy S. Leroux, MD, Toronto, ON, Canada
 Patrick Henry, MD, Portland, ME
 Michael Paterson, Toronto, ON, Canada
 Michael D. McKee, MD, Toronto, ON, Canada
 Bheeshma Ravi, MD, Toronto, ON, Canada
 Darrell J. Ogilvie-Harris, MD, Toronto, ON, Canada
 Nizar Mahomed, MD, Toronto, ON, Canada
 Christian Veillette, MD, Toronto, ON, Canada

Using time-series analysis we demonstrated a statistical association between an increase in clavicle fracture surgery that corresponded with published high level evidence supporting that change.

Discussion – 6 Minutes

PAPER PRESENTATION

1:30 PM — 3:30 PM

Room 345

Sports Medicine/Arthroscopy VI: Knee II

Moderator(s): David Diduch, MD, Charlottesville, VA
 Christopher C. Kaeding, MD, Columbus, OH

1:30 PM

PAPER: 751

Tunnel Collisions During Simultaneous Anterior Cruciate Ligament and Posterolateral Corner Reconstruction

Julio C. Gali, MD, Sorocaba, Brazil
 Phelipe Cintra, Sorocaba, Brazil
 Marco Almagro, Sorocaba, Brazil
 Adilio Bernardes, Sorocaba, Brazil
 Ildefonso Mora Neto, Votorantim, Brazil
 Thiago Ferreira, Sorocaba, Brazil
 Edie Caetano, Sorocaba, Brazil
 Julio C. Gali, MD, Sorocaba, Brazil

Tunnel collision on anterior cruciate ligament and posterolateral corner reconstruction can be minimized by drilling popliteus tendon/fibular collateral ligament tunnels at 20° axial/20° coronal angle.

Friday, March 14

1:36 PM

PAPER: 752

Adolescent Anterior Cruciate Ligament Reconstruction: Autograft versus Allograft

Michael T. Busch, MD, Atlanta, GA
 Mackenzie M. Herzog, BA, Atlanta, GA
 Keith May, ATC, DPT, Atlanta, GA
 Will Mansour, BS, Lagrange, GA
 Jonathan C. Riboh, MD, Durham, NC
 Melissa Leake, MS, ATC, Atlanta, GA
 Meagan M. Fernandez, DO, Hummelstown, PA
 Samuel C. Willimon, MD, Atlanta, GA

The purpose of this study was to compare failure rates and clinical outcomes following ACL reconstruction using hamstring tendon autograft compared to posterior tibialis tendon allograft.

1:42 PM

PAPER: 753

Risk Factors of Subsequent Operations after Primary Anterior Cruciate Ligament Reconstruction

Rick P. Csintalan, MD, Irvine, CA
 Maria C. Inacio, MS, San Diego, CA
 Tadashi T. Funahashi, MD, Irvine, CA
 Gregory B. Maletis, MD, Baldwin Park, CA

Overall short-term re-operation rates after ACLR are relatively low. Risk factors for subsequent surgery vary depending on the type of surgery evaluated. Some of the risk factors observed for re-operations.

Discussion – 6 Minutes

1:54 PM

PAPER: 754

The Association between Cruciate Ligament Injury and Development of Post-traumatic Osteoarthritis

Richard Nordenvall, MD, Stockholm, Sweden
 Shabram Bahmanyar, PhD, MD, Stockholm, Sweden
 Johanna Adami, Stockholm, Sweden
 Ville Mattila, Stockholm, Sweden
 Li Fellander-Tsai, MD, Stockholm, Sweden

The association between Cruciate Ligament injury and development of post-traumatic osteoarthritis, a population based nationwide study in Sweden, 1987-2009.

2:00 PM

PAPER: 755

Anterior Cruciate Ligament Reconstruction with Autologous Ruptured Tissue

Tomoyuki Matsumoto, MD., PhD, Kobe, Japan
 Ryosuke Kuroda, MD, Kobe, Japan
 Takehiko Matsushita, MD, Kobe, Japan
 Daisuke Araki, MD, PhD, Pittsburgh, PA
 Yohei Kawakami, MD, Hyogo, Japan
 Koji Takayama, MD, PhD, Kobe, Japan
 Yuichi Hoshino, MD, Kobe, Japan
 Kouki Nagamune, PhD, Fukui, Japan
 Masahiro Kurosaka, MD, Kobe, Japan

Despite of no differences found in clinical outcomes, the use of the ruptured tissue showed the superiority in tunnel enlargement for ACL reconstruction.

2:06 PM

PAPER: 756

Prevention Programs for Anterior Cruciate Ligament Injuries: A Cost-Effectiveness Analysis

Eric F. Swart, MD, New York, NY
 Lauren H. Redler, MD, New York, NY
 Peter D. Fabricant, MD, MPH, New York, NY
 Bert Mandelbaum, MD, Santa Monica, CA
 Christopher S. Ahmad, MD, New York, NY
 Claire Wang, MD, PhD, New York, NY

Cost effectiveness analysis of prevention and screening strategies for ACL injuries in young athletes. Prevention is cost effective under current protocols, while current screening strategies are not.

Discussion – 6 Minutes

2:18 PM

PAPER: 757

Value of Arthroscopic Partial Meniscectomy in Treatment of Symptomatic Patients with Meniscal Tears and Knee OA

Elena Losina, MD, Boston, MA
 A. David Paltiel, PhD, New Haven, CT
 Elizabeth E. Dervan, BA, Boston, MA
 Yan Dong, PhD, Boston, MA
 Kurt P. Spindler, MD, Nashville, TN
 Lisa A. Mandl, MD, MPH, New York, NY
 Morgan H. Jones, MD, Cleveland Heights, OH
 Robert J. Wright, MD, Boston, MA
 Jeffrey N. Katz, MD, Brookline, MA

We estimated value of arthroscopic partial meniscectomy in symptomatic persons with meniscal tears and knee OA and assessed whether future reserach is warranted in this population.

Friday, March 14

2:24 PM

PAPER: 758

The Effect of Lateral Meniscal Root Injuries on the Stability of the Anterior Cruciate Ligament Deficient Knee

Charles Vega, MD, Lake Jackson, TX
 Jebran Haddad III, BS, Houston, TX
 Jerry W. Alexander, Houston, TX
 Jonathan Gold, BS, Houston, TX
 Theodore Shybut, MD, Houston, TX
 Philip C. Noble, PhD, Houston, TX
 Walter R. Lowe, MD, Houston, TX

The presence of a lateral meniscal posterior root injury further destabilizes the ACL-D knee with dynamic rotational loads but does not significantly affect AP stability with a Lachman-type maneuver.

2:30 PM

PAPER: 759

Risk of Meniscectomy following Meniscal Repair

Stephen Lyman, PhD, New York, NY
 Chisa Hidaka, MD, New York, NY
 Ana S. Valdez, BA, New York, NY
 Iftach Hetsroni, MD, Tel Aviv, Israel
 Ting-Jung Pan, MPH, New York, NY
 Huong Do, MA, New York, NY
 Warren Dunn, MD, MPH, Madison, WI
 Robert G. Marx, MD, New York, NY

Risk of subsequent meniscectomy is decreased in patients undergoing lateral meniscus repair, having concomitant ACL reconstruction, those of older age, and those operated by higher volume surgeons.

Discussion – 6 Minutes

2:42 PM

PAPER: 760

Arthroscopic Partial Meniscectomy Versus Sham Surgery for a Degenerative Meniscus Tear

Teppo L. Jarvinen, MD, PhD, Helsinki, Finland
 Raine T. Sihvonen, MD, Tampere, Finland
 Mika P. Paavola, MD, Helsinki, Finland
 Antti Malmivaara, Helsinki, Finland
 Ari Itala, PhD, Turku, Finland
 Antti Joukainen, MD, PhD, Kuopio, Finland
 Hekki T. Nurmi SR, MD, Jyväskylä, Finland
 Juha Kalske, Espoo, Finland

In this controlled trial the outcomes after arthroscopic partial meniscectomy were no better than those after a sham procedure.

2:48 PM

PAPER: 761

◆ A Tissue Engineered Load Sharing Scaffold for Meniscal Regeneration

Brian M. Culp, MD, NB, NJ
 Aaron R. Merriam, Milltown, NJ
 Charles J. Gatt Jr, MD, Somerset, NJ
 Michael G. Dunn, NB, NJ

This study demonstrates the feasibility of a tissue engineered meniscal replacement that has the potential to prevent post meniscectomy degenerative arthritis.

2:54 PM

PAPER: 762

Gene Expression Profile of Synovial Fluid following Meniscal Injury; Osteoarthritis Markers Found

Danica D. Vance, BS, Miami, FL
 Liyong Wang, PhD, Miami, FL
 Evadnie Rampersaud, PhD, Miami, FL
 Bryson P. Lesniak, MD, Miami, FL
 Jeffery Vance, MD, PhD, Miami, FL
 Margaret A. Pericak-Vance, PhD, Miami, FL
 Lee D. Kaplan, MD, Miami, FL

Gene Expression profile of synovial fluid following meniscal injury show expression of OA markers.

Discussion – 6 Minutes

3:06 PM

PAPER: 763

Degenerative Meniscal Extrusion in the Development of OA Knee - A Nested Case Control Study of 941 Knees. Data from OAI.

Luke Jones, MRCS, Oxford, UK, United Kingdom
 Jonathan Palmer, MBBS, London, United Kingdom
 Muhammad Javaid, Oxford, UK, United Kingdom
 George A. Grammatopoulos, MRCS, Oxford, United Kingdom
 Paul Monk, MRCS, Oxford, United Kingdom
 David J. Beard, MA, MSc, Oxford, United Kingdom
 Andrew J. Price, FRCS, Oxford, United Kingdom

This study examines the role of degenerative meniscal extrusion in the development of knee OA using a nested case control design and data from the OAI.

3:12 PM

PAPER: 764

Risk of Re-injury at Two Years: A Randomized Clinical Trial Comparing Three Graft Types for ACL Reconstruction

Nick G. Mohtadi, MD, Calgary, Canada
 Denise S. Chan, MBT, MSc, Calgary, Canada
 Rhamona Humphrey, Calgary, Canada
 Elizabeth Oddone Paolucci, PhD, Calgary, Canada

Risk and predictive factors of graft re-injury at 2-years are evaluated in patients with patellar tendon, quadruple-stranded or double-bundle hamstring ACL reconstructions in this double-blind RCT.

Friday, March 14

3:18 PM

PAPER: 765

What is the Safe Penetration Depth for “All-Inside” Meniscal Repairs?

Jeffrey Lue, MD, Plano, TX
 Hugh L. Jones, Houston, TX
 Jesal N. Parekh, PhD, Houston, TX
 Philip C. Noble, PhD, Houston, TX
 Patrick C. McCulloch, MD, Houston, TX

Due to relatively blind deployment of “all inside” repair device anchors, there is risk of harm to adjacent structures by over penetration. Our study defines the optimal setting for an inflated knee.

Discussion – 6 Minutes

SYMPOSIUM

3:45 PM — 5:45 PM

Theater C

◆ **Tips, Tricks and Technical Pearls (FF)** 

Moderator: William M. Mihalko, MD, PhD, Germantown, TN

This special educational event has been developed especially for residents. It will feature experts presenting their own tips, tricks and technical pearls on adult reconstruction, trauma, hand and sports medicine. This highly interactive session will encourage the virtual audience to submit questions via email and twitter.

- I. Knee
Craig J. Della Valle, MD, Chicago, IL
- II. Shoulder
Thomas (Quin) Throckmorton, MD, Germantown, TN
- III. Sports Medicine
Christopher D. Harner, MD, Pittsburgh, PA
- IV. Trauma
Andrew H. Schmidt, MD, Minneapolis, MN
- V. Hand
A. Lee Osterman, MD, Philadelphia, PA

SYMPOSIUM

4:00 PM — 6:00 PM

Theater B

**Translational Biologics (EE)**

Moderator: Matthias PG Bostrom, MD, New York, NY
 Brian J. Cole, MD, MBA, Chicago, IL

A comprehensive review of the foundation and tissue specific techniques applications utilizing tissue engineering, gene therapy, stem cells, growth factors and platelet rich plasma. Regulatory pathways and delivery methods (scaffolds) for each technique will be discussed. Feature pathology-specific talks including tendon/ligament, bone, cartilage/meniscus and muscle.

- I. Techniques in Tissue Engineering: Gene Therapy
Christopher H. Evans, PhD, Boston, MA
- II. Techniques in Tissue Engineering: Stem Cells
Johnny Huard, PhD, Pittsburgh, PA
- III. Techniques in Tissue Engineering: Growth Factors
Vicki Rosen, PhD, Boston, MA
- IV. Techniques in Tissue Engineering: PRP
Lisa Fortier, DVM, PhD, Ithaca, NY
- V. Tissue Pathology: Tendon/Ligament
Scott A. Rodeo, MD, New York, NY
- VI. Tissue Pathology: Bone
Matthias PG Bostrom, MD, New York, NY
- VII. Tissue Pathology: Cartilage/Meniscus
Brian J. Cole, MD, MBA, Chicago, IL
- VIII. Tissue Pathology: Muscle
Richard L. Lieber, PhD, La Jolla, CA

INSTRUCTIONAL COURSE LECTURE

4:00 PM — 6:00 PM

461

Room
276**Practical Techniques for Revision Total Hip Arthroplasty**

Moderator: George J. Haidukewych, MD, Orlando, FL
 Richard F. Kyle, MD, Minneapolis, MN
 Frank A. Liporace, MD, Englewood Cliffs, NJ
 Thomas L. Bernasek, MD, Tampa, FL

Video rich course will focus on specific tips and tricks from the experts on common, practical techniques useful during revision THA. Videos will be supplemented by short, key point slide presentations. Case based discussion with ARS system will follow to highlight key points of exposure, implant removal, and reconstruction strategies.

◆ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Friday, March 14

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**Primary Total Hip Arthroplasty: Everything You Need to Know**

Moderator: Jay R. Lieberman, MD, Los Angeles, CA
Robert T. Trousdale, MD, Rochester, MN
John J. Callaghan, MD, Iowa City, IA
J. Bohannon Mason, MD, Charlotte, NC

Room
356

Will review pre and post-operative strategies to improve outcomes, component preparation and implantation techniques (video demonstrations) and bearing surface selection.

463

**Innovative Techniques and Frontiers in Revision Total Knee Arthroplasty**

Moderator: Michael P. Bolognesi, MD, Durham, NC
Thomas P. Vail, MD, San Francisco, CA
Michael E. Berend, MD, Mooresville, IN
Aaron A. Hofmann, MD, Salt Lake City, UT

Room
221

Will describe techniques related to revision total knee arthroplasty including the treatment of bone deficiency, implant fixation, and diagnosis of infection.

464

**Don't Get On My Nerves**

Moderator: Ashish Shah, MD, Birmingham, AL
John S. Gould, MD, Birmingham, AL
Lew C. Schon, MD, Baltimore, MD
Vinod K. Panchbhavi, MD, FACS, Galveston, TX

Room
260

Reviews clinical and surgical aspects of different nerve problems in foot and ankle as well as cover clinical diagnosis, electrodiagnostic evaluation, medical management and surgical management, including surgical indications, surgical techniques, post-op management, pearls and pitfalls, salvage and innovative techniques, of different nerve problems.

465

**Skeletally Immature ACL: Controversies and Management**

Moderator: Shital N. Parikh, MD, Cincinnati, OH
Allen F. Anderson, MD, Nashville, TN
Theodore J. Ganley, MD, Philadelphia, PA
Mininder S. Kocher, MD, MPH, Boston, MA

Room
208

Focus on pearls and pitfalls of management of the immature ACL. Videos of surgical technique would help the audience with technical considerations during ACL reconstruction. Cases would be discussed which would bring forward the pros and cons of each form of treatment.

466

**Contemporary Medico-Legal Issues in Orthopaedic Surgery**

Moderator: B S. Bal, MD, Columbia, MO
Lawrence Brenner, JD, Carrboro, NC
Roshan P. Shah, MD, JD, Chicago, IL
David H. Sohn, JD, MD, Perrysburg, OH

Room
350

Targeted at the busy clinician, this course presents practical information on important legal topics to help mitigate risk, and enhance your medical practice.

467

Room
353**Challenges and Controversies in Treating Massive Rotator Cuff Tears**

Moderator: Leesa M. Galatz, MD, Saint Louis, MO
Stephen S. Burkhart, MD, San Antonio, TX
William N. Levine, MD, New York, NY
Joseph P. Iannotti, MD, PhD, Cleveland, OH

Massive cuff tears pose a significant clinical challenge. This course will comprehensively review treatment options and controversies surrounding repair, tendon transfer, arthroplasty, and biologic augmentation.

468

Room
218**Thoracolumbar Fracture: Evaluation and Management from ER to Rehab**

Moderator: Carlo Bellabarba, MD, Seattle, WA
Richard J. Bransford, MD, Seattle, WA
Kirkham B. Wood, MD, Boston, MA
Brandon D. Lawrence, MD, Salt Lake City, UT

Controversies as to the optimal approach to evaluation and management of thoracolumbar fractures from the ER to post-operative care discussed.

469

Room
226**"Back to the Future" - The Ongoing Evolution of Anterior Cruciate Ligament Reconstruction**

Moderator: David Yucha, MD, Upland, PA
Robert T. Burks, MD, Salt Lake City, UT
James L. Carey, MD, Villanova, PA
John C. Richmond, MD, Boston, MA

Review the history of ACL surgery, how trends in ACL surgery have changed, and what has stood the test of time. Surgical techniques will be reviewed, with options for graft selection, fixation, and rehab. Complication management will be discussed.

470

Room
271**Arthroscopic Management of Shoulder Instabilities: Anterior, Posterior and Multidirectional**

Moderator: Larry D. Field, MD, Jackson, MS
Matthew T. Provencher, MD, Boston, MA
Jeffrey S. Abrams, MD, Princeton, NJ
Richard K. Ryu, MD, Santa Barbara, CA

Comprehensive overview featuring advanced, cutting edge arthroscopic shoulder instability techniques. Clinical pearls and technique tips are emphasized. Case controversies will be presented and discussed.

Friday, March 14

471 **Surgical Exposure Trends and Controversies in Extremity Fracture Care**Room
207

Moderator: *Stephen Kottmeier, MD, Stony Brook, NY*
Clifford B. Jones, MD, FACS, Grand Rapids, MI
Paul Tornetta III, MD, Boston, MA
Dean G. Lorich, MD, New York, NY

Half of this course will be dedicated to upper extremity and the second half to lower extremity contemporary plating techniques. Emphasis will be directed to surgical access routes, trends and controversies. Anatomic dissection, patient positioning and preoperative planning will be emphasized. Indication, implant insertion, outcomes and complications will be deemphasized or omitted. Questions and answers and well edited video dissections complete the course.

472 **Periarticular Fractures of the Lower Extremity: IM Nail versus Plate**Room
347

Moderator: *Robert A. Probe, MD, Temple, TX*
Kyle F. Dickson, MD, Bellaire, TX
Alan L. Jones, MD, Dallas, TX
David C. Teague, MD, OK City, OK

Metaphyseal fractures of the lower extremity challenge surgical decision making. Will feature interactive discussions complimented by opinions of an expert panel.

PAPER PRESENTATION

4:00 PM — 6:00 PM

Theater A

Sports Medicine/Arthroscopy VII: Head, Foot, Miscellaneous

Moderator(s): *John R. Trey Green, MD, Seattle, WA*
Anil S. Ranawat, MD, New York, NY

4:00 PM **PAPER: 766**
Incidence of Head and Neck Injuries in Extreme Sports

Vinay K. Sharma, Portage, MI
Juan N. Rango, BS, Belmont, MI
Alexander Connaughton, Wayland, MA
Vani J. Sabesan, MD, Kalamazoo, MI

Approximately 40,000 head and neck injuries are reported per year due to participation in extreme sports, a greater awareness regarding incidence and consequences of these types of injuries is needed.

4:06 PM **PAPER: 767**
◆ Early Results of Oculomotor Testing in Evaluating Sports Concussions

Sam Akhavan, MD, Sewickley, PA
Alexander Kiderman, PhD, Pittsburgh, PA
Edward D. Snell, MD, Pittsburgh, PA
Patrick J. DeMeo, MD, Pittsburgh, PA
Kevin M. Kelly, MD, PhD, Pittsburgh, PA
Matthew R. Quigley, MD, Pittsburgh, PA

Oculomotor Testing can be used as an objective tool in the diagnosis and management of sports concussion.

◆ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

4:12 PM **PAPER: 768**
Relationship between Years of Participation and Neurocognitive Function among Adolescent Football Athletes

Gregory W. Stewart, MD, New Orleans, LA
Leann Myers, PhD, New Orleans, LA
Roberta Bell, Metairie, LA
Hagar T. Elgendy, BS, MS, New Orleans, LA
Jenifer Juengling, PhD, Laplace, LA
Felix H. Savoie III, MD, New Orleans, LA

Correlation between years of playing football and digit symbol substitution does not support the hypothesis that participation in collision sport negatively affects neurocognitive function.

Discussion – 6 Minutes

4:24 PM **PAPER: 769**
Arthroscopic Treatment of Anterior Ankle Impingement: A Prospective Study of 46 Patients With Five-Year Follow Up

Stewart J. Walsh, MD, Auckland, New Zealand
Bruce C. Twaddle, FRACS, Auckland, New Zealand
Michael Rosenfeldt, MD, Parnell Auckland, New Zealand
Matthew J. Boyle, MD, Durham, NC

In this prospective study of 46 patients managed arthroscopically for anterior ankle impingement, we found patient function to be significantly improved at a minimum of five years postoperatively.

4:30 PM **PAPER: 770**
Arthroscopic Treatment of Osteochondral Lesions of the Talus in Children: A Minimum Two-year Follow Up

Tomasz T. Antkowiak, MD, MS, Van Nuys, CA
Michael J. Carlson, MD, Provo, UT
Gregory R. Applegate, MD, Van Nuys, CA
Richard D. Ferkel, MD, Van Nuys, CA

Arthroscopic treatment of symptomatic osteochondral lesions of the talus in patients 18 and under demonstrated high functional outcomes and satisfaction rates at a minimum of 2 years followup.

4:36 PM **PAPER: 771**
Biomechanical Comparison of Anterior Talofibular Ligament Allograft Reconstruction to the Intact Ligament

Thomas O. Clanton, MD, Vail, CO
Nicholas A. Viens, MD, Lexington, KY
Kevin J. Campbell, BS, Vail, CO
Robert F. LaPrade, MD, PhD, Vail, CO
Coen A. Wijdicks, PhD, Vail, CO

Anatomic allograft reconstruction of the ATFL demonstrated similar strength and stiffness to the native ligament at time zero in a fresh-frozen cadaveric model.

Discussion – 6 Minutes

Friday, March 14

4:48 PM

PAPER: 772

Earlier Return to Sport after Lateral Ankle Ligament Injury Treated with Platelet-Rich Plasma

Michael Stanton, MD, Rochester, NY
 Russell LaFrance, MD, Hamilton, NY
 Brian D. Giordano, MD, Pittsford, NY
 Ilya Voloshin, MD, Rochester, NY
 John P. Goldblatt, MD, Rochester, NY
 Michael D. Maloney, MD, Rochester, NY

Platelet-Rich Plasma injection into the lateral ankle ligaments lead to a statistically significant decrease in time to return to sport as compared to placebo following acute lateral ankle sprains.

4:54 PM

PAPER: 773

Barefoot Running: The Effects of an Eight-week Barefoot Training Program

Scott M. Mullen, MD, Kansas City, KS
 E B. Toby, MD, Kansas City, KS
 Jonathan C. Cotton, MD, Tampa, FL
 Megan Bechtold, DPT, Kansas City, MO

An 8 week barefoot training program was performed to evaluate its' effects on proprioception, lower extremity strength, and the volume or size of the intrinsic musculature of the feet.

5:00 PM

PAPER: 774

Preventive Effect of Eccentric Training on Acute Hamstring Injury in Professional Baseball

Richard A. Seagrave III, MD, Kansas City, KS
 Luis Perez, MS, Kirkwood, MO
 Sean McQueeney, ATC, DPT, Surprise, AZ
 Vincent H. Key, MD, Kansas City, KS
 E. Bruce Toby, MD, Kansas City, KS
 Joshua D. Nelson, MD, Kansas City, KS

A prospective study targeting the effects of eccentric training on acute hamstring muscle injury in professional baseball players show eccentric training may decrease hamstring injury.

Discussion – 6 Minutes

5:12 PM

PAPER: 775

Effect of Muscle Weakness and Joint Inflammation on the Onset and Progression of Osteoarthritis in the Rabbit Knee

Christian Egloff, MD, Zurich, Switzerland
 Andrew Sawatsky, MSc, Calgary, Canada
 Timothy R. Leonard, Calgary, Canada
 Victor Valderrabano, MD, Basel, Switzerland
 David A. Hart, PhD, Calgary, Canada
 Walter Herzog, Calgary, Canada

Muscle weakness induces osteoarthritis in the rabbit knee. A transient intraarticular inflammatory reaction does not promote cartilage degradation either when it was combined with muscle weakness.

5:18 PM

PAPER: 776

Follistatin-like 3 (FSTL3) Mediates Exercise-Driven Bone Formation

Derrick Knapik, Columbus, OH
 Priyangi Perera, MSc, Round Rock, TX
 Jin Nam, PhD, Riverside, CA
 David C. Flanigan, MD, Columbus, OH
 Sudha Agarwal, PhD, Columbus, OH

We identified a novel molecular mechano-responsive protein, Follistatin-like 3 (FSTL3), integral for mediating exercise-dependent bone formation, strengthening and remodeling.

5:24 PM

PAPER: 777

Adipose-derived Stem Cells Promote Meniscus Regeneration

Tatsuhiko Toratani, MD, Kanazawa, Japan
 Junsuke Nakase, MD, Kanazawa, Japan
 Masahiro Kosaka, MD, Kanazawa, Japan
 Yoshinori Ohashi, MD, Kanazawa, Japan
 Hiroyuki Tsuchiya, MD, Kanazawa, Japan

The results of our study suggest that in the future, allogeneic adipose-derived stem cells may play an important role as a tool for meniscus regeneration.

Discussion – 6 Minutes

5:36 PM

PAPER: 778

Platelet-Rich Plasma is More Effective than Cortisone for Severe Chronic Hip Bursitis

Raymond R. Monto, MD, Nantucket, MA

Platelet-rich plasma treatment for severe chronic greater trochanteric bursitis provided more effective and durable clinical results than cortisone injection in this prospective randomized study.

5:42 PM

PAPER: 779

Improving Arthroscopic Knee Surgery Residency Training Using a Virtual Reality Simulator

W. Dilworth Cannon Jr, MD, Sausalito, CA
 Donald G. Eckhoff, MD, Denver, CO
 William E. Garrett Jr, MD, Bahama, NC
 Robert E. Hunter, MD, Salida, CO
 Howard J. Sweeney, MD, Northbrook, IL

Orthopaedic third year residents trained on a high fidelity virtual reality arthroscopic knee simulator performed a live surgery with significantly greater surgical skill than a control group when subsequently performing a live surgery.

Friday, March 14

5:48 PM

PAPER: 780

Orthopedic eRehab - A Multiple Case Study Analysis

Jonathan J. Paul, MD, Charlotte, NC
 Kasey Rolfes, ATC, Charlotte, NC
 Bryan R. Herron, MD, Prince Frederick, MD
 Kenneth M. Fine, MD, Rockville, MD

We propose the use of the Internet to deliver and monitor orthopedic home exercise programs to improve orthopedic patient outcomes and reduce health care costs.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 245

Adult Reconstruction Knee VII: Miscellaneous

Moderator(s): Thomas H. Eickmann, MD, Longmont, CO
 Stephen M. Howell, MD, Sacramento, CA

4:00 PM

PAPER: 781

Radiographic and Operative Outcome for PSG Compared to Conventional Instrumentation in TKA: A Multicenter RCT

Bert Boonen, MD, Weert, Netherlands
 Walter A. van der Weegen, MD, Geldrop, Netherlands
 Nanne Pieter Kort, PhD, Roosteren, Netherlands
 Martijn Schotanus, Sittard-Geleen, Netherlands
 Bart Kerens, MD, Sittard Geleen, Netherlands

Alignment results did not differ between PSG and conventional instrumentation. A small reduction in operation time and blood loss was found with the PSG system, but is unlikely of clinical significance.

4:06 PM

PAPER: 782

No Functional Benefit after TKA Performed with Patient Specific Instrumentation

Sebastian Parratte, MD, Marseille, France
 Guillaume Blanc, Marseille, France
 Matthieu Ollivier, Marseille, France
 Jean-Noel A. Argenson, MD, Marseille, France

The results of this prospective randomized study showed that patient specific instrumentation does not confer any substantial advantage in early function after TKA.

4:12 PM

PAPER: 783

Prospective Comparison of Flexion Stabilities after TKA Using the Measured Resection and Balanced Gap Techniques

Jong-Keun Seon, MD, Hwasungun
 Eun K. Song, MD, Hwasun-Gun, Jeollanam-Do
 Hasung Kim, Hwasun

This study demonstrated that the balanced gap techniques have an advantages in flexion stability than measured resection in TKA.

Discussion – 6 Minutes

4:24 PM

PAPER: 784

Barbed vs. Standard Sutures for Closure in TKA: A Multicenter Prospective Randomized Trial

Jeremy Gililand, MD, Salt Lake City, UT
 Lucas Anderson, MD, Salt Lake City, UT
 Jacob Barney, BS, Salt Lake City, UT
 Hunter Ross, BS, Salt Lake City, UT
 Christopher R. Jones, MD, Durham, NC
 Clint D. Barnett, MD, Belton, TX
 Keith R. Berend, MD, New Albany, OH
 Christopher Pelt, MD, Salt Lake City, UT
 Christopher L. Peters, MD, Salt Lake City, UT

Barbed suture provides a reasonable option for closure in TKA, as it is associated with less closure time, lower cost, and no difference in complications, clinical outcomes, or patient satisfaction.

4:30 PM

PAPER: 785

Application of Barbed Sutures in the Closure of Knee Arthroplasty: A Comparative Study

Abigail Campbell, New York, NY
 David A. Patrick Jr, BS, New York, NY
 Barthelemy Liabaud, New York, NY
 Jeffrey A. Geller, MD, New York, NY

Due to a higher risk of incision related complications, barbed sutures for superficial closure after knee arthroplasty should be avoided.

4:36 PM

PAPER: 786

◆ Topical versus Intravenous Tranexamic Acid in Total Knee Arthroplasty

Brian R. Hamlin, MD, Pittsburgh, PA
 Anthony M. DiGioia III, MD, Pittsburgh, PA
 Anton Y. Plakseychuk, MD, Pittsburgh, PA
 Timothy J. Levison, MS, Pittsburgh, PA

In this study both topical and intravenous TXA were found to be safe and effective as part of a blood management program in TKA.

Discussion – 6 Minutes

4:48 PM

PAPER: 787

Weighted versus Uniform Dose of Tranexamic Acid in Total Knee Arthroplasty: A Randomized Controlled Trial

Mark Belkin, Glenview, IL
 Zachary H. Goldstein, BA, South Bend, IN
 Brett R. Levine, MD, Chicago, IL

A prospective, randomized, controlled trial to evaluate the effectiveness of a uniform versus weighted dose of tranexamic acid in primary total knee arthroplasty.

Friday, March 14

4:54 PM

PAPER: 788

Practical Issues for the Use of Tranexamic Acid in Total Knee Arthroplasty: A Systematic Review

In Jun Koh, MD, Gyeonggi-Do, Republic of Korea
Tae Kyun Kim, MD, Seongnam-si, Republic of Korea
Chong Bum Chang, MD, PhD, Seongnamsi, Republic of Korea
Moon Jong Chang, MD, Seoul, Republic of Korea
Young Gon Na, Seongnam-Si, Republic of Korea
Seok Jin Kim, MD, Gyeonggi-Do, Republic of Korea
Sanghwa Eom, MD, Seongnamsi, Republic of Korea
Yeon Gwi Kang, MD, Seongnam-Si, Republic of Korea
Byung June Chung, MD, Seoul, Republic of Korea

Surgeon can consider incorporating the TNA use to blood-saving protocols in TKA without serious concern of adverse events, but need to adopt optimal doses, timings, and routes of TNA administrations.

5:00 PM

PAPER: 789

The Impact of Gastric Bypass Surgery Compared to Total Knee Arthroplasty on Knee Symptoms

Michael G. Zywiell, MD, Toronto, ON, Canada
Timothy Jackson, MD, MPH, Toronto, ON, Canada
Hafiz Kassam, MD, Toronto, ON, Canada
Anthony Perruccio, PhD, Toronto, ON, Canada
Todd Penner, MD, FACS, Toronto, ON, Canada
Rajiv Gandhi, MD, Toronto, ON, Canada

Surgeons should consider bariatric consultation for obese patients with knee symptoms lacking focal or degenerative pathology amenable to orthopaedic management.

Discussion – 6 Minutes

5:12 PM

PAPER: 790

Correlation of Oxidative Stress, Vitamin E and Antioxidant Capacity in Primary Knee Osteoarthritis Patients

Sittisak Honsawek, MD, PhD, Bangkok, Thailand
Aree Tanavalee, MD, Bangkok, Thailand
Saran Tantavisut, Bangkok, Thailand
Srihatach G. Ngarmukos, MD, Bangkok, Thailand
Vinai Parkpian, MD, Bangkok, Thailand

Oxidative stress parameters in plasma and synovial fluid of OA patients were significantly increased in OA, and these elevated levels were positively correlated with radiographic severity.

5:18 PM

PAPER: 791

Particles from Vitamin E-diffused HXL UHMWPE Induce Less Osteolysis Compared to Virgin HXL UHMWPE Particles In Vivo

David A. Bichara, MD, Boston, MA
Erik P. Malchau, Frederiksberg, Denmark
Nanna Sillesen, MD, Boston, MA
Selami Cakmak, MD, Istanbul, Turkey
Orhun K. Muratoglu, PhD, Boston, MA

This in vivo study suggests that VE-UHMWPE particles have reduced osteolysis potential in vivo when compared to virgin, highly cross-linked UHMWPE in a murine calvarial bone model.

An alphabetical faculty financial disclosure list can be found starting on page 312.

5:24 PM

PAPER: 792

Highly Cross-linked UHMWPE Oxidation: An Improvement Over Conventional Gamma-sterilized?

Barbara H. Currier, MChE, Hanover, NH
John H. Currier, MS, Hanover, NH
John P. Collier, DE, Hanover, NH
Michael B. Mayor, MD, Hanover, NH
Steven D. Reinitz, BA, Hanover, NH
Rayna Levine, BA, Hanover, NH
Douglas Van Citters, PhD, Hanover, NH

Oxidation in HXL tibial inserts is a concern, given oxidation-related loss of polyethylene toughness that led to fatigue damage in conventional gamma-sterilized tibial inserts.

Discussion – 6 Minutes

5:36 PM

PAPER: 793

The Outcome of Cross Linked and Standard Polyethylene in Primary Total Knee Replacement

Stephen Graves, MD, Adelaide, Australia
Richard De Steiger, MD, Richmond, Australia
David Davidson, MD, University Of Adelaide, Australia
Robyn Vial, MSc, Adelaide, Australia
Ann Tomkins
Elizabeth C. Griffith, BA, Adelaide, Australia
Kara Cashman, BSc (HONS), Adelaide, Australia
Yen-Liang Liu, Adelaide, Australia
Michelle Lorimer, Adelaide, Australia

This study demonstrated a lower rate of revision for cross linked polyethylene in primary total knee replacement, however the midterm outcomes were prosthesis specific.

5:42 PM

PAPER: 794

Extramedullary Guides versus Portable Navigation for Tibial Component Alignment: A Randomized, Controlled Trial

Denis Nam, MD, Saint Louis, MO
Elizabeth Cody, MD, New York, NY
Joseph Nguyen, MPH, New York, NY
Mark P. Figgie, MD, New York, NY
David J. Mayman, MD, New York, NY

This randomized, controlled study demonstrates that a portable, accelerometer-based navigation device.

5:48 PM

PAPER: 795

No Gender Differences Exist in Posterior Condylar Offsets of the Knee

Pramod B. Voleti, MD, Philadelphia, PA
Jason W. Stephenson, MD, Madison, WI
Paul A. Lotke, MD, Gladwyne, PA
Gwo-Chin Lee, MD, Philadelphia, PA

Using novel 3D reconstructions of MRI scans, normal male and female knees exhibit a similar ratio of posterior condylar offset to total condylar height at both the medial and lateral femoral condyles.

Friday, March 14

5:54 PM

PAPER: 827

Muscle Viability Revisited: Are We Removing Normal Muscle? A Critical Evaluation of Dogmatic Debridement

Adam Sassoon, MD, Saint Louis, MO
 John Riehl, MD, Louisville, KY
 Amy Rich, MD, Orlando, FL
 Joshua Langford, MD, Orlando, FL
 George J. Haidukewych, MD, Orlando, FL
 Gary Pearl, Orlando, FL
 Kenneth J. Koval, MD, Belle Isle, FL

Surgeons are unable to predict muscle viability by assessment of color, consistency, contractility, and capacity to bleed. Histopathologic findings of biopsies differed from surgeon assessment in 72%.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 265

Trauma VI: Social Responsibility

Moderator(s): Bogadi R. Prashanth, MD, Karnataka, India
 Frederic Wilson, MD, Phoenix, AZ

4:00 PM

PAPER: 796

Complications and Patient Reported Outcome after Hip Fracture - A Consecutive Annual Cohort Study of 664 Patients

Susanne Hansson, MD, Malmö, Sweden
 Kristina Akesson, MD, PhD, Malmö, Sweden
 Olof Leonardsson, MD, Malmö, Sweden
 Ola Rolfson, MD, PhD, Gothenburg, Sweden
 Cecilia Rogmark, MD, PhD, Malmö, Sweden

Still poor outcome in function and HRQoL after hip fractures, but patients satisfied, indicating low demands. Medical and hip complications main cause for inferior PROM, and must be avoided.

4:06 PM

PAPER: 797

Implementation of a Novel Musculoskeletal Emergency Center Reduces Time to Care for Extremity Injuries

Kamran S. Hamid, MD, MPH, Winston-Salem, NC
 Benedict U. Nwachukwu, MD, Boston, MA
 Jason E. Lang, MD, Winston-Salem, NC
 Ralph B. D'Agostino, PhD, Winston Salem, NC
 Emily Gower, PhD, Winston-Salem, NC
 Zhongyu J. Li, MD, Winston-Salem, NC
 Eben A. Carroll, MD, Winston Salem, NC
 Gary G. Poehling, MD, Winston-Salem, NC
 L A. Koman, MD, Winston-Salem, NC

A novel Musculoskeletal Emergency Center care model was implemented at a major level 1 trauma center and demonstrated reduced time to care in its first month of implementation.

4:12 PM

PAPER: 798

Solving the Pediatric Lower Extremity Vascular Trauma Dilemma: Improved Care with a Vascular Trauma Protocol

Itai Gans, BS, Philadelphia, PA
 Keith D. Baldwin, MD, Sicklerville, NJ
 L. Scott Levin, MD, Philadelphia, PA
 Michael L. Nance, MD, Philadelphia, PA
 John M. Flynn, MD, Philadelphia, PA

To improve the timeliness of vascular care and better match the skills of the practitioner to the injury, pediatric centers should consider implementation of our lower extremity vascular protocol.

Discussion – 6 Minutes

4:24 PM

PAPER: 799

The Effect of Education on Orthopaedic Surgery Residents' Ability to Evaluate a Simulated Compartment Syndrome

Michael Morris, MD, Berkley, MI
 Benjamin L. Harper, MD, Grand Rapids, MI
 Scott Hetzel, MS, Madison, WI
 Michael B. Shaheen, MD, BS, Stanford, CA
 Alan Davis, Grand Rapids, MI
 Blaise A. Nemeth, Madison, WI
 Matthew A. Halanski, MD, Madison, WI

Orthopaedic surgery residents' make fewer technical and measurement errors in objective analysis of a simulated compartment syndrome after a formal didactic, and this improvement is retained over time.

4:30 PM

PAPER: 800

Simulation Training Significantly Improves Performance in Virtual Reality Hip Fracture Fixation

Kashif Akhtar, MBBS, MEd, FRCS, Buckinghamshire, United Kingdom
 Kapil Sugand, MBBS, London, United Kingdom
 Chetan Khatri, Preston, United Kingdom
 Alvin Chen, MBBS, MSc, FRCS, London, United Kingdom
 Justin P. Cobb, MD, London, United Kingdom
 Chinmay Gupte, PhD, FRCS, London, United Kingdom

Practising hip fracture fixation on a VR simulator results in significant improvements in metrics of time taken, number of guide wire insertion attempts, number of radiographs and Tip-Apex distance.

4:36 PM

PAPER: 801

Attempted Ankle Fracture Reduction by Emergency and Orthopaedic Doctors: Junior Versus Senior Trainees

Waseem Jerjes, MD, PhD, West Yorkshire, United Kingdom
 Hiang Boon Tan, MBBS, Leeds, United Kingdom
 Peter Giannoudis, MD, FRCS, MBBS, BS, Leeds, United Kingdom

Senior orthopaedic trainees are better in improving the position of ankle fractures.

Discussion – 6 Minutes

Friday, March 14

4:48 PM

PAPER: 802

The Relationship of Obesity to Increasing Healthcare Burden in the Setting of Orthopedic Polytrauma

Heather L. Licht, MD, Temple, TX
 John Vassaur, BA, Temple, TX
 Mark Murray, Temple, TX
 Daniel Jupiter, PhD, Temple, TX
 Justin L. Regner, MD, Temple, TX
 Christopher D. Chaput, MD, Temple, TX

Higher levels of obesity are associated with higher total hospital costs, longer hospital stays, higher level of care discharge disposition, and a higher rate of surgical orthopedic intervention.

4:54 PM

PAPER: 803

Childhood Obesity Increases the Risk of Failure in the Treatment of Distal Forearm Fractures

Ronald Auer, MD, Louisville, KY
 Luke Robinson, MD, Louisville, KY
 John A. Nyland, PhD, Louisville, KY
 Gilbert Chan, MD, Crestwood, KY

Childhood obesity is correlated with an increased rate of failure for distal forearm fractures treated with closed reduction and casting.

5:00 PM

PAPER: 804

Does Malnutrition in Patients Presenting with Fractures Predict Lower Quality Measures?

Kenneth A. Egol, MD, New York, NY
 James Lee, ME, New York, NY
 Lorraine Hutzler, BA, New York, NY
 Brandon Shulman, BA, New York, NY
 Raj Karia, MPH, New York, NY

Malnourished patients treated for fractures were nearly twice as likely to acquire some combination of infection, DVT, PE, or other reason for readmission than those of normal nutritional status.

Discussion – 6 Minutes

5:12 PM

PAPER: 805

Can an Evidence-Based Treatment Algorithm for Intertrochanteric Hip Fractures Maintain Quality at a Reduced Cost?

Kenneth A. Egol, MD, New York, NY
 Alejandro Marciano, MD, New York, NY
 Lambert Lewis, MS, BS, Syracuse, NY
 Nirmal C. Tejwani, MD, New York, NY
 Toni M. McLaurin, MD, New York, NY
 Roy Davidovitch, MD, New York, NY

An evidence-based algorithm for implant selection based on the AO/OTA classification of intertrochanteric hip fractures effectively reduced costs at our institutions while maintaining quality of care.

5:18 PM

PAPER: 806

Implant Cost Awareness of Analogous Intramedullary and Plate Devices Among Orthopaedic Surgeons

Abraham Kim, MD, Santa Monica, CA
 Edward Ebramzadeh, PhD, Los Angeles, CA
 Benjamin C. Bengs, MD, Santa Monica, CA

Orthopedic surgeons are aware of the higher cost of intramedullary devices compared to their equivalent plate constructs but significantly underestimate the actual cost of intramedullary devices.

5:24 PM

PAPER: 807

A Cost Effectiveness Analysis of Fixation Options for Intertrochanteric Hip Fractures

Eric F. Swart, MD, New York, NY
 Eric C. Makhni, MD, NY City, NY
 William B. Macaulay, MD, New York, NY
 Melvin P. Rosenwasser, MD, New York, NY
 Kevin J. Bozic, MD, MBA, San Francisco, CA

This cost effectiveness analysis of IT hip fracture fixation options suggests that for fractures with questionable stability, intramedullary nails may be the more cost effective strategy.

Discussion – 6 Minutes

5:36 PM

PAPER: 808

Sleep Disturbance Following Fracture is Related to Emotional Well Being Rather than Functional Result

Brandon Shulman, BA, New York, NY
 Frank A. Liporace, MD, Englewd Clfs, NJ
 Roy Davidovitch, MD, New York, NY
 Raj Karia, MPH, New York, NY
 Kenneth A. Egol, MD, New York, NY

At one year follow-up from acute fracture treatment, poor sleep was independently associated with poor emotional status, but not associated with poor functional status.

5:42 PM

PAPER: 809

Prospective Evaluation of Posttraumatic Stress Disorder in Injured Patients with and without Orthopaedic Injury

Alan L. Jones, MD, Dallas, TX
 Ann Marie Warren, PhD, Dallas, TX
 Megan C. Reynolds, MS, Dallas, TX
 Michael L. Foreman, MD, MS, Dallas, TX
 Kenleigh Roden-Foreman, BA, Dallas, TX
 Monica Bennett, PhD, Dallas, TX
 Stephanie D. Agtarap, BA, Denton, TX

Approximately one third of 282 patients had severe PTSD symptoms at 3 and 6 months, with orthopaedic patients showing some trend toward severity improvement.

Friday, March 14

5:48 PM

PAPER: 810

Professional Demands and Stress in Orthopaedic Trauma: An Orthopaedic Trauma Association Member Survey

Brian Cunningham, MD, Phoenix, AZ
 Gilbert R. Ortega, MD, Scottsdale, AZ
 Hrayr Basmajian, MD, Loma Linda, CA
 Kelly Jackson, NP, Scottsdale, AZ

Orthopedic trauma surgeons across experience levels and practice type continue to face challenges in managing stress and family while maintaining career satisfaction.

Discussion – 6 Minutes

PAPER PRESENTATION

4:00 PM — 6:00 PM

Room 345

Spine VI: Lumbar/Miscellaneous II

Moderator(s): Hyun W. Bae, MD, Los Angeles, CA
 Scott Boden, MD, Atlanta, GA

4:00 PM

PAPER: 811

Development of a Biomechanical Model for Sacroiliac Range of Motion

William Camisa, MS, San Francisco, CA
 Bruce I. Condez, Millbrae, CA
 Jeremi M. Leasure, MS, San Francisco, CA
 Jenni M. Buckley, PhD, San Francisco, CA
 Christopher Ames, MD, San Francisco, CA
 Dimitriy G. Kondrashov, MD, San Francisco, CA

The double leg potting technique inhibits the opening of the pelvic ring which is important to the normal range of motion of the SI joint.

4:06 PM

PAPER: 812

Prevalence of Myelomalacia in Cervical Spine MRIs According to Physician Specialties

Sang D. Kim, MD, Los Angeles, CA
 Yihua Zhou, MD, PhD, Saint Louis, MO
 Katie Vo, Saint Louis, MO
 K. Daniel Riew, MD, Saint Louis, MO

We present the largest series of MRIs evaluated for prevalence of myelomalacia in patients who present to different physician specialties.

4:12 PM

PAPER: 813

The Effect of Increasing Cobb Angle and Sagittal Contour on Pulmonary Function in Adolescent Idiopathic Scoliosis

Ivana Ninkovic, MPH, MS, Minneapolis, MN
 Jennifer K. Wozniczka, MD, Minneapolis, MN
 Charles Gerald T. Ledonio, MD, Minneapolis, MN
 David W. Polly Jr, MD, Minneapolis, MN
 David J. Nuckley, PhD, Minneapolis, MN
 Ben E. Rosenstein, BS, Minneapolis, MN

We wanted to define the effect of sagittal contour and Cobb angle on thoracic volume in scoliosis patients using computer modeling to obtain volume measurements from two-dimensional x-ray images.

Discussion – 6 Minutes

4:24 PM

PAPER: 814

Biomechanical Analysis of Lumbar Segmental Motion in Cases of Lumbosacral Transitional Vertebrae

Hidetoshi Nojiri, MD, PhD, Tokyo, Japan
 Alejandro Espinoza, PhD, Chicago, IL
 Howard S. An, MD, Chicago, IL
 Gunnar B. Andersson, MD, Chicago, IL
 Nozomu Inoue, MD, Chicago, IL

We demonstrated an adjacent level effect in cases of lumbosacral transitional vertebrae, tied to biomechanical hypermobility of the segment immediately above the lumbosacral transitional vertebra.

4:30 PM

PAPER: 815

Spondylolisthesis Model: Study of Posterior Element Instability

Guy R. Fogel, MD, San Antonio, TX

Biomechanical explanation of complications in treatment of degenerative spondylolisthesis.

4:36 PM

PAPER: 816

Kinematic Analysis of Diseased and Adjacent Segments in Degenerative Lumbar Spondylolisthesis

Kevin Phan, BS, Irvine, CA
 Michael D. Daubs, MD, Las Vegas, NV
 Asher Kupperman, MD, Los Angeles, CA
 Trevor Scott, MD, Santa Monica, CA
 Jeffrey C. Wang, MD, Sherman Oaks, CA

There is compensatory motion at adjacent levels in patients with unstable degenerative spondylolisthesis at L3-4 and L4-5.

Discussion – 6 Minutes

Friday, March 14

4:48 PM

PAPER: 817

Impact of Lumbar Fusion on Healthcare Resource Utilization

Curtis Mina, MD, Louisville, KY
Leah Y. Carreon, MD, Louisville, KY
Steven D. Glassman, MD, Louisville, KY

In 66 patients with degenerative spine disorders, healthcare utilization decreased at one and two years after lumbar fusion; with no correlation between use of nonsurgical resources and ODI scores.

4:54 PM

PAPER: 818

◆ Vancomycin is Toxic to Human Mesenchymal Stem Cells In Vitro: A Pilot Study

Stacey T. Chu, BA, West Hills, CA
Nita Chen, BS, Cupertino, CA
Alexis Dang, MD, San Francisco, CA
Alfred C. Kuo, MD, San Francisco, CA
Alan B. Dang, MD, Orange, CA

Exposure of human mesenchymal stem cells to vancomycin in vitro produced statistically significant cell death in all tested conditions that our study was adequately powered to detect.

5:00 PM

PAPER: 819

Biomechanical Evaluation of Supplemental Percutaneous Lumbo-Sacroiliac Screws Following Total Sacrectomy

Vu H. Le, MD, Huntington Beach, CA
Nickul Jain, MD, Orange, CA
Nathanael D. Heckmann, MD, Long Beach, CA
Lawrence C. Wang, Orange, CA
S. S. Bederman, MD, PhD, FRCSC, Orange, CA
Alexander W. Turner, PhD, San Diego, CA
Thay Q. Lee, PhD, Long Beach, CA

Despite having a higher ultimate load, the addition of LSI screws to the commonly performed posterior instrumentation for total sacrectomy did not have any significant advantage over posterior fixation.

Discussion – 6 Minutes

5:12 PM

PAPER: 820

Cortical Screw as Rescue for Failed Lumbar Pedicle Screw Construct: A Biomechanical Analysis

Graham Calvert, MD, Madison, MS
Amir Abtahi, MD, Salt Lake City, UT
Kent N. Bachus, PhD, Salt Lake City, UT
Brandon D. Lawrence, MD, Salt Lake City, UT
Darrel S. Brodke, MD, Salt Lake City, UT

Biomechanical testing comparing cortical and pedicle trajectory screws used to rescue one another maintain adequate pullout strength and provide similar stiffness.

5:18 PM

PAPER: 821

Efficacy of BMP2 for the Treatment of Lumbar Pseudarthrosis in a Rodent Spine Model

Jing Li, Changsha, China
Michael D. Daubs, MD, Las Vegas, NV
Kevin Phan, BS, Irvine, CA
Tetsuo Hayashi, MD, Fukuoka, Japan
Akinobu Suzuki, MD, PhD, Osaka, Japan
Haijun Tian, MD, Shanghai, China
Trevor Scott, MD, Santa Monica, CA
Jeffrey C. Wang, MD, Sherman Oaks, CA

A higher dose of BMP2 appears to be necessary when attempting to obtain a successful fusion with an established pseudarthrosis.

5:24 PM

PAPER: 822

Is Surgery Effective for Lumbar Stenosis and Degenerative Spondylolisthesis in the Octogenarian Population?

Jeffrey A. Rihn, MD, Media, PA
Alan S. Hilibrand, MD, Philadelphia, PA
Wenyan Zhao, PhD, Hanover, NH
Jonathan Lurie, MD, Lebanon, NH
Alexander Vaccaro, MD, PhD, Gladwyne, PA
Todd J. Albert, MD, Philadelphia, PA
James N. Weinstein, DO, MS, Lebanon, NH

The surgical treatment of SpS and DS in patients ≥ 80 offers significant benefit compared to nonoperative treatment with no difference in the complication rate compared to patients <80 .

Discussion – 6 Minutes

5:36 PM

PAPER: 823

Ex-vivo Genetic and Signaling Studies of the Intervertebral Disc: Methods, Modeling and Investigations

Dominic Pelle, MD, Grand Rapids, MI
Jacqueline D. Peacock, PhD, Grand Rapids, MI
Scott S. Russo, MD, Grand Rapids, MI
Kenneth Easton, MD, Ada, MI
Matthew R. Steensma, MD, Byron Center, MI

We have developed a novel ex-vivo organ culture model of intact murine intervertebral discs (IVD) and optimized ex-vivo genetic recombination to investigate mechanisms of degenerative disc disease.

Friday, March 14

5:42 PM

PAPER: 824

The Effect of Aging on Healing of Posterolateral Lumbar Fusion in a Rodent Model Using BMP2

Michael D. Daubs, MD, Las Vegas, NV
 Tetsuo Hayashi, MD, Fukuoka, Japan
 Akinobu Suzuki, MD, PhD, Osaka, Japan
 Kevin Phan, BS, Irvine, CA
 Haijun Tian, MD, Shanghai, China
 Trevor Scott, MD, Santa Monica, CA
 Kunal Sukhija, Los Angeles, CA
 Bryan A. Bean, BS, Los Angeles, CA
 Jeffrey C. Wang, MD, Sherman Oaks, CA

Age delays fusion healing time when utilizing BMP2 in a rodent model.

5:48 PM

PAPER: 825

◆ Insulin-mimetic Local Therapeutic Adjuncts for Enhancing Spinal Fusion in a Rat Model

John Koerner, MD, Philadelphia, PA
 Michael Vives, MD, Mendham, NJ
 Sheldon S. Lin, MD, Newark, NJ
 Saad Chaudhary, MD, Murray Hill, NJ
 Eric Breitbart, MD, Newark, NJ
 Linda A. Uko, MS, Newark, NJ
 Paul S. Chirichella, BA, Fair Lawn, NJ

This study demonstrates the potential benefit of a local insulin-mimetic agent applied to the fusion bed in a rat posterolateral intertransverse lumbar fusion model.

Discussion – 6 Minutes

Video and Multimedia Award Programs and Selections

Video and multimedia programs are identified by viewing station number. Stations are grouped by area of anatomy. Program offerings will change on Thursday. Self-Service Stations are available near the Feature Presentation Theater.

Award Programs	Stations 1-8
Adult Reconstruction Hip	Stations 9-12
Adult Reconstruction Knee	Station 13
Foot and Ankle	Stations 14-15
Pediatrics	Station 16
Shoulder and Elbow	Stations 17-22
Spine	Station 23
Sports Medicine and Arthroscopy	Stations 24-35
Trauma	Station 36
Tumors	Station 37

Feature Presentation Theater Schedule

Academy Hall E
March 11-14

The Featured Presentation Theater will offer Annual Meeting participants the opportunity to meet with authors, who will be available to answer questions regarding their area of interest and provide insights into their own techniques. Principal authors will share their views on why their topic is of interest, and is important to them and to the field of orthopaedics. You will be able to view the program and participate in a question and answer session.

Tuesday - Wednesday

Award Programs

OVT29 Station 1

Shoulder Arthrodesis: Surgical Technique

Ryan Warth, MD, Vail, CO
Peter J. Millett, MD, MSc, Vail, CO

This surgical video demonstrates a technique for shoulder arthrodesis using modern fixation methods and implants.

(Product no. V14001, DVD-Video, 11 mins.)

OVT22 Station 2

All-Arthroscopic Patch Augmentation of a Massive Rotator Cuff Tear: Surgical Technique

Peter N. Chalmers, MD, Chicago, IL
Rachel M. Frank, MD, Chicago, IL
Anil Gupta, MD, MBA, Chicago, IL
Adam B. Yanke, MD, Chicago, IL
Scott W. Trenhaile, MD, Rockford, IL
Anthony A. Romeo, MD, Chicago, IL
Nikhil N. Verma, MD, Chicago, IL

This video describes the basic science behind all-arthroscopic repair of a massive rotator cuff tear with patch augmentation and indications and associated surgical techniques.

(Product no. V14002, DVD-Video, 13 mins.)

OVT23 Station 3

3 Critical Concepts to Understand Acute Elbow Instability

Davide Blonna, MD, Torino, Italy
Francesca Fissore, MD, Torino, Italy
Stefano Mortera, MD, Torino, Italy
Roberto Rossi, MD, Torino, Italy
Antongiulio Marmotti, MD, Torino, Italy
Filippo Castoldi, MD, Torino, Italy

This educational video focuses on the most significant treatment concepts surrounding acute elbow instability.

(Product no. V14003, DVD-Video, 17 mins.)

OVT34 Station 4

Open Latarjet with Modified Bankart Repair in Collision Athletes

Robert A. Arciero, MD, Farmington, CT
Augustus D. Mazzocca, MD, Farmington, CT

In this video, a technique for the open Latarjet coracoid transfer procedure will be highlighted.

(Product no. V14004, DVD-Video, 19 mins.)

OVT19 Station 5

Anatomy, Pathology and Physical Examination of the Scapho-Lunate and Luno-Triquetral Joints

Matthias Vanhees, MD, Stabroek, Belgium
Roger P. van Riet, MD, Wilrijk, Belgium
Frederik Verstreken, MD, Schoten, Belgium

This video will clearly demonstrate the anatomy, examination, and pathology of the scapho-lunate and luno-triquetral joints and ligaments of the wrist.

(Product no. V14005, DVD-Video, 11 mins.)

OVT08 Station 6

Approaches to the Hip: Minimally Invasive Posterolateral Total Hip Arthroplasty

Cesare Faldini, MD, Bologna, Italy
Francesco Traina, MD, Bologna, Italy
Mohammadreza Chehrassan, MD, Bologna, Italy
Raffaele Borghi, MD, Bologna, Italy
Daniele Fabbri, MD, Bologna, Italy
Matteo Nanni, MD, Bagheria, Italy
Federico Pilla, MD, Bologna, Italy
Marco Pedrini, MD, Bologna, Italy
Sandro Giannini, MD, Bologna, Italy

The modified minimally invasive postero-lateral approach provides excellent exposure for the surgeon and assistants in primary total hip arthroplasty to allow accurate placement of components in an efficient manner.

(Product no. V14006, DVD-Video, 24 mins.)

An alphabetical faculty financial disclosure list can be found starting on page 312.

OVT15 Station 7

Ultrasound-guided Plantar Fascia Release: A New Ultraminimally Invasive Surgical Technique

Manuel Villanueva, MD, PhD, Madrid, Spain
Alvaro Iborra, DPM, Madrid, Spain
Felipe Benito Del Carmen, MD, Madrid, Spain
Angel G De La Rubia, DPM, Madrid, Spain

The authors believe that ultrasound-guided release of the plantar fascia is safe, precise, it can be learned quickly, and it is not necessary to be an expert on skeletal ultrasonography.

(Product no. V14007, DVD-Video, 13 mins.)

OVT68 Station 8

A Surgical Technique for Medial Patellofemoral Ligament Reconstruction in the Skeletally Immature

Henry B. Ellis Jr, MD, Dallas, TX
Philip L. Wilson, MD, Dallas, TX

This is a technical description with short-term outcomes following anatomic reconstruction of the medial patellofemoral ligament in skeletally immature patients with patellar instability.

(Product no. V14008, DVD-Video, 11 mins.)

Tuesday - Wednesday

ADULT RECONSTRUCTION HIP

OVT01 Station 9

A Simple Method to Perform the Real Acetabulum in Chronic Dislocated Hips

Nicolas Restrepo Giraldo, MD, Pasto, Colombia

This video shows a reproducible and easy technique to find and prepare the acetabulum in Crowe III or IV dysplastic hips.

(Product no. V14009, DVD-Video, 14 mins.)

OVT02 Station 10

Modified Anterolateral Approach with Femoral Anterior Cortical Window for Revision Total Hip Arthroplasty

Amgad M. Haleem, MD, MSc, Houston, TX
Morteza Meftah, MD, Houston, TX
Brian Domingues, BA, Cypress, TX
Stephen J. Incavo, MD, Houston, TX

Revision of a metaphyseal-filling cementless femoral stem through a modified anterolateral approach with an anterior cortical window provides a reliable means for removing well-ingrown stems.

(Product no. V14010, DVD-Video, 15 mins.)

OVT03 Station 11

Behavior of the Ultra-Short Anatomic Cementless Femoral Stem in Young and Elderly Patients

Young-Hoo Kim, MD, Seoul, Korea, Republic of

An ultra-short, anatomic cementless stem in 100 younger patients (43.9 mean years) and 100 elderly patients (78.9 mean years) provided stable fixation without diaphyseal fixation at 7.6-year follow-up.

(Product no. V14011, DVD-Video, 10 mins.)

OVT07 Station 12

Approaches to the Hip: Minimally Invasive Direct Lateral Total Hip Arthroplasty

Cesare Faldini, MD, Bologna, Italy
Francesco Traina, MD, Bologna, Italy
Raffaele Borghi, MD, Bologna, Italy
Mohammadreza Chehrassan, MD, Bologna, Italy
Daniele Fabbri, MD, Bologna, Italy
Matteo Nanni, MD, Bagheria, Italy
Federico Pilla, MD, Bologna, Italy
Andrea Sambri, MD, Bologna, Italy
Sandro Giannini, MD, Bologna, Italy

The modified minimally invasive direct lateral approach provides excellent exposure in primary THA to allow accurate placement of components in an efficient manner. The tissue sparing technique reduces incidence of postoperative abductor muscle impairment.

(Product no. V14015, DVD-Video, 19 mins.)

Tuesday - Wednesday

ADULT RECONSTRUCTION KNEE

OVT10 Station 13

Balancing a Total Knee Arthroplasty with a Navigation System

Jean-yves Jenny, MD, Illkirch, France

The navigation system used provides a virtual simulation of knee reconstruction during TKR and allows choosing the best fitted procedure between measured resections and ligament balancing of the bone for a revision knee replacement.

(Product no. V14017, DVD-Video, 14 mins.)

Tuesday - Wednesday

FOOT AND ANKLE

OVT13 Station 14

Endoscopic Gastrocnemius Recession

Phinit Phisitkul, MD, Iowa City, IA
Chamnanni Rungprai, MD, Iowa City, IA
Annunziato Amendola, MD, Iowa City, IA

This video presents indications, contraindications, surgical technique, post-operative care, and outcomes of endoscopic gastrocnemius recession in 278 consecutive patients at the University of Iowa.

(Product no. V14020, DVD-Video, 6 mins.)

OVT14 Station 15

Combined Miniopen and Percutaneous Technique for Hallux Valgus Correction

Jose F. Reyes Copello, MD, Bogota, Columbia

The results of minimally invasive and percutaneous surgical procedures have been satisfactory, with a faster recovery than open surgery and good results obtained.

(Product no. V14021, DVD-Video, 13 mins.)

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Tuesday - Wednesday

PEDIATRICS

OVT67 Station 16

Open Reduction and Internal Fixation of Displaced Pediatric Lateral Condyle Fractures of the Humerus

*Tamir Bloom, MD, Newark, NJ
John Koerner, MD, Philadelphia, PA
Sanjeev Sabharwal, MD, MPH, Newark, NJ*

This video describes the technique for open reduction and internal fixation of pediatric lateral condyle fractures of the humerus.

(Product no. V14025, DVD-Video, 15 mins.)

Tuesday - Wednesday

SHOULDER AND ELBOW

OVT18 Station 17

Ulnar Nerve Transposition at the Elbow

*Randy R. Bindra, MD, FRCS, Clarendon Hills, IL
Ryan Sullivan, MD, Chicago, IL*

This video features pearls and pitfalls of anterior transposition of the ulnar nerve that will not jeopardize vascular supply.

(Product no. V14024, DVD-Video, 16 mins.)

OVT20 Station 18

Arthroscopic-Assisted Anatomic “BIPOD” for Chronic AC Joint Injuries

*Matthias Zumstein, MD, Huenibach, Switzerland
Joe De Beer, MD, Cape Town, South Africa
Stefan Schwienbacher, MD, Bern, Switzerland
Beat K. Moor, MD, Gümliigen, Switzerland*

Arthroscopic stabilization of AC joint disruptions using a combination of a 2-mm ultra-high-weight polyethylene-polyester tape and a 20-mm open-weave polyester tape.

(Product no. V14028, DVD-Video, 13 mins.)

OVT35 Station 19

Sharc-FT® Rotator Cuff Repair for a New Transosseous Suture Technique

*Paolo Baudi, MD, Modena, Italy
Michele Verdano, MD, Parma, Italy
Gabriele Campochiaro, MD, Modena, Italy
Andrea Pellegrini, MD, Rimini, Italy
Manuela Rebuzzi, MD, Pegognaga MN, Italy
Fabio Catani, MD, Modena, Italy*

This emerging technique video demonstrates arthroscopic transosseous suturing with cortical fixation to greatly reduce the problems of poor bone resistance and decreased motion at the tendon-footprint interface.

(Product no. V14029, DVD-Video, 6 mins.)

OVT21 Station 20

Circumferential Graft Around the Elbow

*Matthias Vanhees, MD, Stabroek, Belgium
Frederik Verstreken, MD, Schoten, Belgium
Roger P. van Riet, MD, Wilrijk, Belgium*

The goal of this video is to provide a stepwise surgical technique to use the circumferential graft for severe elbow instability. There are clear text instructions and the video is easily reproducible.

After watching this video, surgeons should be capable of performing this technique correctly.

(Product no. V14030, DVD-Video, 7 mins.)

OVT24 Station 21

Shoulder Hemiarthroplasty in Complex Humeral Fractures: How to Replace Anatomy and Function

*Antonio Pastrone, MD, Torino, Italy
Andrea Cimino, MD, San Mauro Torino, Italy
Michel Jean Calò, MD, Torino, Italy
Stefano Mortera, MD, Collegno, Torino, Italy
Monica Cicirello, MD, Torino, Italy
Davide Blonna, MD, Torino, Italy
Antongiulio Marmotti, MD, Torino, Italy
Filippo Castoldi, MD, Torino, Italy*

This step-by-step video features the key points so surgeons can understand the fracture and prepare for the procedure and plan for it based on the images. By following the surgical procedure, viewers can focus on the main aspects surgeons must handle to attain reconstruction of the anatomy of the proximal humerus around the prosthesis.

(Product no. V14031, DVD-Video, 13 mins.)

OVT25 Station 22

Spine Scapular Non-Union ORIF Solution

*Thomas W. Wright, MD, Gainesville, FL
Gonzalo Samitier Solis, MD, PhD, Annecy, France*

Spine scapular nonunion open reduction internal fixation solution: A novel and reproducible surgical technique based on a double-compression construct.

(Product no. V14032, DVD-Video, 8 mins.)

Tuesday - Wednesday

SPINE

OVT36 Station 23

Fixation of Odontoid Fractures with an Anterior Screw: Surgical Technique

*Manuel Valencia, MD, Santiago, Chile
Paulina De La Fuente, MD, Santiago, Chile
Selim Abara, MD, Santiago, Chile
Felipe Novoa, MD, Santiago, Chile
Andres Leiva, MD, Santiago, Chile
Arturo Olid, MD, Santiago, Chile*

The goal of this video is to show the surgical technique of anterior screw fixation in odontoid fractures.

(Product no. V14040, DVD-Video, 14 mins.)

Tuesday - Wednesday

SPORTS MEDICINE AND ARTHROSCOPY

OVT62 Station 24**Closed-Loop Double Endobutton Technique for Complete AC Joint Dislocation: A Technique Review and Demonstration**

Steven Struhl, MD, Harrison, NY
 Dylan Lowe, BA, New York, NY
 Theodore S. Wolfson, BS, New York, NY
 Catherine N. Laible, MD, New York, NY
 Mathew Hamula, BA, BS, New York, NY

This is a strong, durable synthetic construct in combination with biological augmentation to create a safe, straightforward, and effective solution for complete AC joint dislocation.

(Product no. V14066, DVD-Video, 16 mins.)

OVT63 Station 25**Arthroscopic Repair of Femoral “Peel-off” Lesion of the Posterior Cruciate Ligament: A Novel Technique**

Federica Rosso, MD, Iowa City, IA
 Salvatore Bisicchia, MD, Iowa City, IA
 Annunziato Amendola, MD, Iowa City, IA

This video introduces a novel surgical technique for PCL repair of femoral “peel-off” lesion.

(Product no. V14067, DVD-Video, 7 mins.)

OVT64 Station 26**Simultaneous Unicondylar Osteoarticular Allograft and High Tibial Osteotomy: Case Presentation and Technique**

Guillem Gonzalez-Lomas, MD, Jersey City, NJ
 Dylan Lowe, BA, New York, NY
 Alan Wayne McGee Jr, MD, BS, Leo, IN
 Theodore S. Wolfson, BS, New York, NY
 Eric J. Strauss, MD, New York, NY
 Laith M. Jazrawi, MD, Brooklyn, NY

Concomitant osteotomy and unicondylar allograft is a safe and efficient solution that prevents patients from undergoing multiple procedures to address multiple issues.

(Product no. V14068, DVD-Video, 10 mins.)

OVT65 Station 27**Distal Femoral Osteotomy and Subchondroplasty: Case Presentation and Surgical Technique**

Laith M. Jazrawi, MD, Brooklyn, NY
 Dylan Lowe, BA, New York, NY
 Mathew Hamula, BA, BS, New York, NY

The lateral opening-wedge technique for distal femoral osteotomy minimizes risk to the neurovascular structures and allows large corrections in the valgus knee.

(Product no. V14069, DVD-Video, 8 mins.)

OVT33 Station 28**Persistent Olecranon Physis in an Athlete**

Matthias Vanhees, MD, Stabroek, Belgium
 Frederik Verstreken, MD, Schoten, Belgium
 Roger P. van Riet, MD, Wilrijk, Belgium

This video shows a technique to fix a persistent olecranon physis that allows for immediate return to sports.

(Product no. V14039, DVD-Video, 20 mins.)

OVT39 Station 29**Arthroscopic Subacromial Decompression: An 8-Step Approach**

Nels E. Sampatacos, MD, Encino, CA
 Mark H. Getelman, MD, Van Nuys, CA

Video presentation of a stepwise approach to arthroscopic subacromial decompression with minimal bleeding and a well planned and controlled level of resection

(Product no. V14043, DVD-Video, 12 mins.)

OVT40 Station 30**Meniscal Allograft Transplantation**

Salvatore Bisicchia, MD, Iowa City, IA
 Federica Rosso, MD, Torino, Italy
 Annunziato Amendola, MD, Iowa City, IA

Postoperative management can vary according to associated procedures. Clinical improvement is observed in most patients with a slow decrease in function over time. Associated procedures should be performed as necessary. Based on a literature review, the overall complication rate averages 21%, and the failure rate is about 10%. There is only a slight loss of joint space in the majority of patients.

(Product no. V13044, DVD-Video, 16 mins.)

OVT43 Station 31**Open Subpectoral Biceps Tenodesis: Reliable Treatment for All Biceps Tendon Pathology**

Patrick Kane, MD, Philadelphia, PA
 Philip Hsiao, BA, Philadelphia, PA
 Bradford S. Tucker, MD, Egg Harbor Township, NJ
 Kevin B. Freedman, MD, Bryn Mawr, PA

This video demonstrates the authors' preferred treatment for open subpectoral biceps tenodesis using bone tunnel and suture fixation to manage the long head of the biceps tendon pathology.

(Product no. V14047, DVD-Video, 17 mins.)

OVT47 Station 32**Arthroscopic-Assisted Core Decompression of the Femoral Head for Osteonecrosis**

Rachel M. Frank, MD, Chicago, IL
 Anil Gupta, MD, MBA, Chicago, IL
 Joshua Harris, MD, Chicago, IL
 Frank McCormick, MD, Chicago, IL
 Richard C. Mather III, MD, Durham, NC
 Shane J. Nho, MD, Chicago, IL

Arthroscopically assisted core decompression of the femoral head is a minimally invasive technique for treatment of precollapse osteonecrosis, and potentially can delay early subchondral collapse.

(Product no. V14051, DVD-Video, 9 mins.)

OVT48 Station 33**Allograft Hip Capsulolabral Spacer for the Treatment of Capsulolabral Adhesions**

Fernando Ferro, MD, Vail, CO
 Marc J. Philippon, MD, Vail, CO
 Jeffrey Nepple, MD, Avon, CO

This video describes an innovative technique for the treatment of severe adhesions between the capsule and labrum during revision hip arthroscopy.

(Product no. V14052, DVD-Video, 14 mins.)

OVT49 Station 34**A Simple Lateral Tenodesis for Severe Rotatory Instability in ACL Deficient Knee**

Fabio Conteduca, MD, Rome, Italy
 Raffaele Iorio, MD, Rome, Italy
 Cosma Calderaro, MD, Rome, Italy
 Daniele Mazza, MD, Fiumicino, Italy
 Carmelo D'Arrigo, MD, Rome, Italy
 Andrea Ferretti, MD, Rome, Italy

Segond fracture has a significant effect on knee stability.

(Product no. V14053, DVD-Video, 8mins.)

OVT50 Station 35**Surgical Treatment of the Segond's Fracture**

Andrea Ferretti, MD, Rome, Italy
 Raffaele Iorio, MD, Rome, Italy
 Daniele Mazza, MD, Fiumicino, Italy
 Cosma Calderaro, MD, Rome, Italy
 Priscilla Di Sette, MD, Rome, Italy
 Edoardo Monaco, MD, Rome, Italy
 Fabio Conteduca, MD, Rome, Italy

The association of Segond fracture with sectioned ACL has a dramatic effect on rotatory instability of the knee.

(Product no. V14054, DVD-Video, 10 mins.)

Tuesday - Wednesday**TRAUMA****OVT71 Station 36****Distal Radius Fractures Open Reduction Internal Fixation: Case Presentation and Surgical Technique**

Kenneth A. Egol, MD, New York, NY
 Carlos Uquillas, MD, New York, NY
 Dylan Lowe, BA, New York, NY
 Mathew Hamula, BA, BS, New York, NY
 Siddharth A. Mahure, BS, Sarasota, FL

This video presents the advantages of surgical fixation of distal radius fractures over nonsurgical management, as surgery reliably restores normal anatomy.

(Product no. V14071, DVD-Video, 7 mins.)

Tuesday - Wednesday**TUMORS****OVT73 Station 37****Chondrosarcoma of the Proximal Femur Limb-Sparing Resection and Reconstruction with Modular Segmental Proximal Femur Tumor Prosthesis**

Peter Gold, BA, New York, NY
 Adem Abrham, New York, NY
 Eric Feit, BA, New York, NY
 Camilo E. Villalobos, MD, New York, NY
 Rodolfo A. Zamora SR, MD, New York, NY
 James C. Wittig, MD, New York, NY

Radical resection and prosthetic reconstruction is a safe and reliable method for the treatment of a nondisplaced pathological fracture attributable to low-grade primary chondrosarcoma.

(Product no. V14073, DVD-Video, 11 mins.)

Thursday - Saturday**Award Programs****OVT29 Station 1****Shoulder Arthrodesis: Surgical Technique**

Ryan Warth, MD, Vail, CO
 Peter J. Millett, MD, MSc, Vail, CO

This surgical video demonstrates a technique for shoulder arthrodesis using modern fixation methods and implants.

(Product no. V14001, DVD-Video, 11 mins.)

OVT22 Station 2**All-Arthroscopic Patch Augmentation of a Massive Rotator Cuff Tear: Surgical Technique***Peter N. Chalmers, MD, Chicago, IL**Rachel M. Frank, MD, Chicago, IL**Anil Gupta, MD, MBA, Chicago, IL**Adam B. Yanke, MD, Chicago, IL**Scott W. Trenhaile, MD, Rockford, IL**Anthony A. Romeo, MD, Chicago, IL**Nikhil N. Verma, MD, Chicago, IL*

This video describes the basic science behind all-arthroscopic repair of a massive rotator cuff tear with patch augmentation, indications, and associated surgical techniques.

*(Product no. V14002, DVD-Video, 13 mins.)***OVT23 Station 3****3 Critical Concepts to Understand Acute Elbow Instability***Davide Blonna, MD, Torino, Italy**Francesca Fissore, MD, Torino, Italy**Stefano Mortera, MD, Torino, Italy**Roberto Rossi, MD, Torino, Italy**Antongiulio Marmotti, MD, Torino, Italy**Filippo Castoldi, MD, Torino, Italy*

This educational video focuses on the most significant treatment concepts surrounding acute elbow instability.

*(Product no. V14003, DVD-Video, 17 mins.)***OVT34 Station 4****Open Latarjet with Modified Bankart Repair in Collision Athletes***Robert A. Arciero, MD, Farmington, CT**Augustus D. Mazzocca, MD, Farmington, CT*

In this video, a technique for the open Latarjet coracoid transfer procedure will be highlighted.

*(Product no. V14004, DVD-Video, 19 mins.)***OVT19 Station 5****Anatomy, Pathology and Physical Examination of the Scapho-Lunate and Luno-Triquetral Joints***Matthias Vanhees, MD, Stabroek, Belgium**Roger P. van Riet, MD, Wilrijk, Belgium**Frederik Verstreken, MD, Schoten, Belgium*

This video will clearly demonstrate the anatomy, examination, and pathology of the scapho-lunate and luno-triquetral joints and ligaments of the wrist.

*(Product no. V14005, DVD-Video, 11 mins.)***OVT08 Station 6****Approaches to the Hip: Minimally Invasive Posterolateral Total Hip Arthroplasty***Cesare Faldini, MD, Bologna, Italy**Francesco Traina, MD, Bologna, Italy**Mohammadreza Chehrassan, MD, Bologna, Italy**Raffaele Borghi, MD, Bologna, Italy**Daniele Fabbri, MD, Bologna, Italy**Matteo Nanni, MD, Bagheria, Italy**Federico Pilla, MD, Bologna, Italy**Marco Pedrini, MD, Bologna, Italy**Sandro Giannini, MD, Bologna, Italy*

The modified minimally invasive postero-lateral approach provides excellent exposure for the surgeon and assistants in primary total hip arthroplasty to allow accurate placement of components in an efficient manner.

*(Product no. V14006, DVD-Video, 24 mins.)***OVT15 Station 7****Ultrasound-guided Plantar Fascia Release: A New Ultraminimally Invasive Surgical Technique***Manuel Villanueva, MD, PhD, Madrid, Spain**Alvaro Iborra, DPM, Madrid, Spain**Felipe Benito Del Carmen, MD, Madrid, Spain**Angel G De La Rubia, DPM, Madrid, Spain*

The authors believe that ultrasound-guided release of the plantar fascia is safe, precise, it can be learned quickly, and it is not necessary to be an expert on skeletal ultrasonography.

*(Product no. V14007, DVD-Video, 13 mins.)***OVT68 Station 8****A Surgical Technique for Medial Patellofemoral Ligament Reconstruction in the Skeletally Immature***Henry B. Ellis Jr, MD, Dallas, TX**Philip L. Wilson, MD, Dallas, TX*

This is a technical description with short-term outcomes following anatomic reconstruction of the medial patellofemoral ligament in skeletally immature patients with patellar instability.

(Product no. V14008, DVD-Video, 11 mins.)

Thursday - Saturday**ADULT RECONSTRUCTION HIP****OVT06 Station 9****Approaches to the Hip: Minimally Invasive Direct Anterior Total Hip Arthroplasty**

Cesare Faldini, MD, Bologna, Italy
Francesco Traina, MD, Bologna, Italy
Daniele Fabbri, MD, Bologna, Italy
Mohammadreza Chehrassan, MD, Bologna, Italy
Raffaele Borghi, MD, Bologna, Italy
Matteo Nanni, MD, Bagheria, Italy
Federico Pilla, MD, Bologna, Italy
Matteo Cadossi, MD, Bologna, Italy
Sandro Giannini, MD, Bologna, Italy

The modified minimally invasive direct anterior THA provides good access to the acetabulum and femur while preserving the hip muscular attachments with no hip dislocation.

(Product no. V14014, DVD-Video, 13 mins.)

OVT05 Station 10**Skin Crease 'Bikini' Incision for Anterior Approach THR: Anatomical Considerations and Avoidance of Complications**

Michael Leunig, MD, PhD, Zurich, Switzerland
Nicola Rusca, Zurich, Switzerland

This video presents the rationale for the direct anterior approach without a fracture table and describes an anatomic step-by-step dissection performed on a cadaveric specimen.

(Product no. V14013, DVD-Video, 17 mins.)

OVT09 Station 11**Partial Two-stage Exchange for Infected Total Hip Arthroplasty**

Adolph V. Lombardi Jr, MD, New Albany, OH
Timothy Ekpo, DO, Grand Blanc, MI
Keith R. Berend, MD, New Albany, OH
Michael J. Morris, MD, New Albany, OH
Joanne B. Adams, BFA, CMI, New Albany, OH

Partial two-stage exchange including complete acetabular component removal, retention of a well-fixed femoral stem, and delayed reimplantation may be acceptable in select patients with infected THA.

(Product no. V14016, DVD-Video, 16 mins.)

OVT07 Station 12**Approaches to the Hip: Minimally Invasive Direct Lateral Total Hip Arthroplasty**

Cesare Faldini, MD, Bologna, Italy
Francesco Traina, MD, Bologna, Italy
Raffaele Borghi, MD, Bologna, Italy
Mohammadreza Chehrassan, MD, Bologna, Italy
Daniele Fabbri, MD, Bologna, Italy
Matteo Nanni, MD, Bagheria, Italy
Federico Pilla, MD, Bologna, Italy
Andrea Sambri, MD, Bologna, Italy
Sandro Giannini, MD, Bologna, Italy

The modified minimally invasive direct lateral approach provides excellent exposure in primary THA to allow accurate placement of components in an efficient manner. The tissue sparing technique reduces incidence of postoperative abductor muscle impairment.

(Product no. V14015, DVD-Video, 19 mins.)

Thursday - Saturday**ADULT RECONSTRUCTION KNEE****OVT11 Station 13****Medial Mobile-Bearing UKA with Twin-Peg Femoral Design and Enhanced Instrumentation**

Keith R. Berend, MD, New Albany, OH
Adolph V. Lombardi Jr, MD, New Albany, OH
Jason M. Hurst, MD, New Albany, OH
Michael J. Morris, MD, New Albany, OH
Joanne B. Adams, BFA, CMI, New Albany, OH
Keri L. Satterwhite, New Albany, OH
Michael A. Sneller, BS, New Albany, OH

At 2.8-year mean follow-up, a medial mobile-bearing UKA with a twin-peg femoral component had a lower manipulation rate and higher Knee Society score improvement than the earlier single-peg design.

(Product no. V14018, DVD-Video, 18 mins.)

Thursday - Saturday**FOOT AND ANKLE****OVT16 Station 14****Peroneal Tendoscopy: An Innovative Perspective for Peroneal Tendon Patology**

Antongiulio Marmotti, MD, Torino, Italy
Margherita Germano, MD, Torino, Italy
Rainero Del Din, MD, Perosa Argentina, Italy
Filippo Castoldi, MD, Torino, Italy
Federico Dettoni, MD, Torino, Italy
Roberto Rossi, MD, Torino, Italy
Davide Blonna, MD, Torino, Italy
Davide E. Bonasia, MD, Torino, Italy
Fabrizio Trucchi, MD, Collegno, Italy
Giuseppe Peretti, MD, Milan, Italy

Peroneal tendoscopy is a minimally invasive procedure for tendon visualization from the myotendinous junction to the peroneal tubercle and for the treatment of early stages of different diseases.

(Product no. V14022, DVD-Video, 13 mins.)

OVT17 Station 15**Interpositional Arthroplasty for Hallux Rigidus: Improved Technique**

Jonathan H. Oren, MD, New York, NY
Theodore S. Wolfson, BS, New York, NY
Dylan Lowe, BA, New York, NY
Mathew Hamula, BA, BS, New York, NY
Steven C. Sheskie, MD, New York, NY

The treatment of advanced hallux rigidus remains challenging. Young, active patients who want to preserve motion and avoid activity limitations are candidates for interpositional arthroplasty.

(Product no. V14023, DVD-Video, 10 mins.)

Thursday - Saturday**PEDIATRICS****OVT69 Station 16a****Cuneiform Osteotomy Through Anterior Approach Without Hip Dislocation in Slipped Capital Femoral Epiphysis**

Cesare Faldini, MD, Bologna, Italy
Francesco Traina, MD, Bologna, Italy
Marcello De Fine, MD, Bologna, Italy
Mateo Nanni, MD, Bagheria, Italy
Fabrizio Perna, MD, Bologna, Italy
Camilla Pungetti, MD, Bologna, Italy
Antonio Mazzotti, MD, Bologna, Italy
Carlotta Calamelli, MD, Bologna, Italy
Sandro Giannini, MD, Bologna, Italy

This video shows the surgical technique of cuneiform wedge osteotomy through a minimally invasive anterior approach without hip dislocation for the treatment of a slipped capital femoral epiphysis.

(Product no. V14026, DVD-Video, 16 mins.)

OVT70 Station 16b**Physcal-Sparing ACL Reconstruction Using Hamstring Autograft: Case Presentation and Surgical Technique**

Deepan Patel, MD, New York, NY
Mathew Hamula, BA, BS, New York, NY
Dylan Lowe, BA, New York, NY
Theodore S. Wolfson, BS, New York, NY
Eric J. Strauss, MD, New York, NY
David S. Feldman, MD, New York, NY
Laith M. Jazrawi, MD, Brooklyn, NY

The all-epiphyseal technique demonstrated in this video spares the physis and offers a safe, effective, and reliable solution for symptomatic ACL rupture in skeletally immature athletes.

(Product no. V14027, DVD-Video, 12 mins.)

Thursday - Saturday**SHOULDER AND ELBOW****OVT26 Station 17****Total Shoulder Arthroplasty (Technical Note and Results)**

Thomas W. Wright, MD, Gainesville, FL
Gonzalo Samitier Solis, MD, PhD, Annecy, France
Aimee Struk, MEd, MBA, ATC, Gainesville, FL

This is a detailed video-demonstration of the TSA surgical technique for shoulder OA used at the University of Florida.

(Product no. V14033, DVD-Video, 16 mins.)

OVT27 Station 18**Reconstruction of Chronic Distal Biceps Ruptures: Surgical Anatomy and Operative Technique**

Jared T. Lee, MD, Edwards, CO
Max P. Michalski, MSc, Vail, CO
Peter J. Millett, MD, MSc, Vail, CO

The surgical anatomy and technique of distal biceps tendon reconstruction with allograft is presented through a case example.

(Product no. V14034, DVD-Video, 18 mins.)

OVT28 Station 19**Latissimus Dorsi Transfer in the Modified Beach Chair Position: Surgical Technique**

Trevor Gaskill, MD, Vail, CO
Peter J. Millett, MD, MSc, Vail, CO

Surgical indications and techniques, rehabilitation, and outcomes after latissimus dorsi transfer are presented.

(Product no. V14035, DVD-Video, 13 mins.)

OVT30 Station 20**Reverse Total Shoulder Arthroplasty: Surgical Technique**

Jack Skendzel, MD, Vail, CO
Ryan Warth, MD, Vail, CO
Peter J. Millett, MD, MSc, Vail, CO

The surgical indications, technique and outcomes of reverse total shoulder arthroplasty are presented.

(Product no. V14036, DVD-Video, 15 mins.)

OVT31 Station 21**Endoscopic Evaluation of the Distal Biceps**

Matthias Vanbees, MD, Stabroek, Belgium
Frederik Verstreken, MD, Schoten, Belgium
Roger P. van Riet, MD, Wilrijk, Belgium

An endoscopic technique to evaluate the distal biceps insertion is shown in this video.

(Product no. V14037, DVD-Video, 8 mins.)

OVT32 Station 22**Arthroscopic Lateral Collateral Ligament Imbrication of the Elbow**

Matthias Vanbees, MD, Stabroek, Belgium
Frederik Verstreken, MD, Schoten, Belgium
Roger P. van Riet, MD, Wilrijk, Belgium

An all-arthroscopic technique to imbricate the lateral collateral ligament of the elbow is shown in this video.

(Product no. V14038, DVD-Video, 7 mins.)

Thursday - Saturday**SPINE****OVT37 Station 23****Surgical Treatment of Spondylolisthesis by Posterolateral Arthrodesis and Instrumentation**

Antonello Montanaro, MD, Rome, Italy
Francesco Turturro, MD, Rome, Italy
Cosma Calderaro, MD, Rome, Italy
Luca Labianca, MD, Rome, Italy
Vincenzo Di Sanzo, MD, PhD, Rome, Italy
Pierpaolo Rota, MD, Rome, Italy
Alessandro Carducci, MD, Rome, Italy
Andrea Ferretti, MD, Rome, Italy

The posterolateral arthrodesis with pedicle screw fixation, and associated laminectomy, is an effective surgical procedure to treat spondylolisthesis with a slip below 50% (Grade I and II).

(Product no. V14041, DVD-Video, 9 mins.)

Thursday - Saturday**SPORTS MEDICINE AND ARTHROSCOPY****OVT52 Station 24****Circumferential Rotator Cuff Repair Utilizing the N+4, Subclavian and High Posteromedial Portals**

Keith D. Nord, MD, Jackson, TN
Maher W. Khan, MD, Jackson, TN
Garth B. Wright, MD, Jackson, TN
Jonathon B. Taylor, BS, Jackson, TN

The N+4 portal provides access to the supraspinatus and infraspinatus. The subclavian and high posteromedial portals are also reviewed, allowing a circumferential repair with a double row.

(Product no. V14056, DVD-Video, 14 mins.)

OVT53 Station 25**ACL Reconstruction in Patient with Open Physis**

Stefano Zaffagnini, MD, Bologna, Italy
Alberto Grassi, MD, Bologna, Italy
Giulio Maria Marcheggiani Muccioli, MD, Bologna, Italy
Maurilio Marcacci, MD, Bologna, Italy

This video describes a surgical technique for ACL reconstruction that has been developed to treat ACL ruptures in growing children.

(Product no. V14057, DVD-Video, 11 mins.)

OVT54 Station 26**Arthroscopic Absorbable Suture Fixation for Tibial Spine Fractures: 24 months of Follow Up**

Michele Verdano, MD, Parma, Italy
Andrea Pellegrini, MD, Rimini, Italy
Davide Aliani, MD, Parma, Italy
Enricomaria Lunini, Podenzano, Italy
Francesco Ceccarelli, MD, Parma, Italy

Repair using this arthroscopic technique provides a significant advantage in the treatment of type III and type IV fractures of the tibial eminence by obtaining optimal arthroscopic fixation.

(Product no. V14058, DVD-Video, 4 mins.)

OVT55 Station 27**Arthroscopic Preparation and Internal Fixation of an Unstable Osteochondritis Dissecans Lesion of the Knee**

Christopher L. Camp, MD, Rochester, MN
Aaron J. Krych, MD, Rochester, MN
Michael J. Stuart, MD, Rochester, MN

This video describes a novel technique for arthroscopic treatment of OCD lesions by hinging open the lesion, thoroughly preparing the base, and obtaining multipoint fixation to maximize stability.

(Product no. V14059, DVD-Video, 7 mins.)

OVT57 Station 28**Surgical Technique for Combined Arthroscopic Bankart - Hill-Sachs Remplissage**

Walter B. McClelland, MD, Atlanta, GA
Pascal Boileau, MD, Nice, France
Charles Bessiere, MD, Nice, France

The combined procedure of arthroscopic Bankart-Hill-Sachs remplissage is safe, reliable, and valuable for patients with recurrent glenohumeral instability.

(Product no. V14061, DVD-Video, 17 mins.)

OVT58 Station 29**Transosseous Equivalent Pectoralis Major Tendon Repair**

Kevin W. Farmer, MD, Newberry, FL
Gonzalo Samitier Solis, MD, PhD, Annecy, France

Transosseous-equivalent pectoralis major tendon repair; a novel and reproducible surgical technique.

(Product no. V14062, DVD-Video, 8 mins.)

OVT38.....Station 30a**All-Arthroscopic Allograft Labral Reconstruction of the Hip**

*Dominic S. Carreira, MD, Fort Lauderdale, FL
Catalina Rodriguez, Fort Lauderdale, FL*

The shuttle technique for all-arthroscopic hip labrum reconstruction is presented for the treatment of irreparable acetabular labrum tears.

(Product no. V14042, DVD-Video, 14 mins.)

OVT41.....Station 30b**Labral Reconstruction: Iliotibial Autograft Knotless Technique**

Carl Wierks, MD, Holland, MI

Labral reconstruction of the hip using ITB autograft secured with a knotless suture-anchor technique reduces pain and improves function.

(Product no. V14045, DVD-Video, 14 mins.)

OVT45.....Station 31a**Gluteus Medius Repair with Double Row Fixation**

J W Thomas Byrd, MD, Nashville, TN

A systematic, stepwise methodology for double-row repair of the gluteus medius is detailed and illustrated with outside and inside views of the technique.

(Product no. V14049, DVD-Video, 7 mins.)

OVT46.....Station 31b**Peritrochanteric Access and Gluteus Medius Repair**

J W Thomas Byrd, MD, Nashville, TN

This emerging technique video presents entry and development of the eritrochanteric space with a systematic approach to repair gluteus medius tears; outside and inside views of the technique are illustrated.

(Product no. V14050, DVD-Video, 9 mins.)

OVT66.....Station 32a**Posterolateral Corner Primary Repair and Reconstruction Case Based**

*Mark D. Miller, MD, Charlottesville, VA
Sean Higgins, Medical Student, Charlottesville, VA
Brian C. Werner, MD, Charlottesville, VA*

This video demonstrates surgical techniques for primary repair and reconstruction of the posterolateral corner of the knee using a case-based approach.

(Product no. V14070, DVD-Video, 18 mins.)

OVT61.....Station 32b**Reconstruction of the Posterolateral Corner with Achilles Tendon Allograft**

*Scott A. Kuzma, MD, Milwaukee, WI
Roxanne Chow, MD, Rochester, MN
Michael J. Stuart, MD, Rochester, MN
Bruce A. Levy, MD, Rochester, MN*

This video presents reconstruction of the Posterolateral Corner with Achilles tendon allograft.

(Product no. V14065, DVD-Video, 18 mins.)

OVT51.....Station 33a**ACL Reconstruction With Over the Top Femoral Position and Lateral Extra-Articular Tenodesis**

*Davide E. Bonasia, MD, Torino, Italy
Umberto Cottino, MD, Torino, Italy
Filippo Castoldi, MD, Torino, Italy
Stefano Zaffagnini, MD, Bologna, Italy
Maurilio Marcacci, MD, Bologna, Italy
Roberto Rossi, MD, Torino, Italy*

The authors describe indications, surgical technique, and outcomes of the over-the-top plus lateral tenodesis ACL reconstruction procedure.

(Product no. V14055, DVD-Video, 18 mins.)

OVT42.....Station 33b**Arthroscopic ACL Reconstruction: Using Autogenous Bone-Patellar Tendon Graft -Remnant Preserving Technique**

*Sung-Jae Kim, MD, Seoul, Korea, Republic of
Sung-Hwan Kim, MD, Seoul, Korea, Republic of
Se Won Lee, MD, Seoul, Korea, Republic of
Min Jung, MD, Seoul, Korea, Republic of
Jae-Hoo Lee, MD, Seoul, Korea, Republic of
Hak-Soo Kim, MD, Seoul, Korea, Republic of
Su Keon A. Lee, MD, Seoul, Korea, Republic of*

We present a novel technique of remnant preserving ACL reconstruction using autogenous bone patellar tendon graft without a tibial bone block to decrease postoperative anterior knee pain at kneeling.

(Product no. V14046, DVD-Video, 12 mins.)

OVT44.....Station 34a**Distal Tibia Allograft for Management of Anterior Glenoid Bone Loss**

*Rachel M. Frank, MD, Chicago, IL
Sanjeev Bhatia, MD, Brookfield, WI
Peter N. Chalmers, MD, Chicago, IL
Nikhil N. Verma, MD, Chicago, IL
Brian J. Cole, MD, MBA, Chicago, IL
Anthony A. Romeo, MD, Chicago, IL
CDR (ret) Matthew T. Provencher, MD, Marina Square, Singapore*

The use of fresh osteochondral distal tibia allograft is an excellent anatomic option for the treatment of large glenoid bone defects in the setting of anterior glenohumeral instability.

(Product no. V14048, DVD-Video, 12 mins.)

OVT56Station 34b**Arthroscopic Distal Tibia Allograft for Management of Posterior Glenoid Bone Loss**

Rachel M. Frank, MD, Chicago, IL
 Peter N. Chalmers, MD, Chicago, IL
 Anil Gupta, MD, MBA, Chicago, IL
 Sanjeev Bhatia, MD, Brookfield, WI
 Brian J. Cole, MD, MBA, Chicago, IL
 Nikhil N. Verma, MD, Chicago, IL
 CDR (ret) Matthew T. Provencher, MD, Marina Square, Singapore
 Anthony A. Romeo, MD, Chicago, IL

The use of fresh osteochondral distal tibia allograft is an excellent anatomic option for the treatment of large glenoid bone defects in the setting of posterior glenohumeral instability.

(Product no. V14060, DVD-Video, 12 mins.)

OVT59Station 35a**Arthroscopic Glenoid Reconstruction (Bony Bankart)**

Steven C. Chudik, MD, Westmont, IL
 David Surprenant, PT, DPT, Forest Park, IL
 Gregory J. Barton, Oak Park, IL
 Brittany Kaim DeGreef, BS, Palos Hills, IL

This emerging technique video illustrates an arthroscopic approach to glenoid reconstruction using a novel low anterior portal and proprietary guide.

(Product no. V14063, DVD-Video, 11 mins.)

OVT60Station 35b**Arthroscopic Repair of a Posterior Bony Bankart Lesion**

Kirsten L. Poehling-Monaghan, MD, Rochester, MN
 Aaron Krych, MD, Rochester, MN
 Diane Dahm, MD, Rochester, MN

This video describes a technique for the arthroscopic fixation of a posterior bony Bankart lesion using modified portal placement to facilitate direct fracture reduction and proper suture placement.

(Product no. V14064, DVD-Video, 6 mins.)

Thursday - Saturday**TRAUMA****OVT72Station 36****Distal Humerus Fractures Open Reduction Internal Fixation: Case Presentation and Surgical Technique**

Kenneth A. Egol, MD, New York, NY
 Carlos Uquillas, MD, New York, NY
 Dylan Lowe, BA, New York, NY
 Mathew Hamula, BA, BS, New York, NY

Distal humerus fractures, particularly when intra-articular extension is present, have better outcomes when open reduction and internal fixation is employed.

(Product no. V14072, DVD-Video, 10 mins.)

Thursday - Saturday**TUMORS****OVT74Station 37****Treating a Fracture of the Pathologic Femur with the IlluminOSS Photodynamic Bone Stabilization System**

Paul A. Vegt, MD, Dordrecht, Netherlands
 Thomas Gausepohl, MD, Koln, Germany

This emerging technique video demonstrates the treatment of a diaphyseal pathological femur fracture with a polymeric intramedullary rod.

(Product no. V14074, DVD-Video, 5 mins.)

The Featured Presentation Theater will offer Annual Meeting participants the opportunity to meet with authors, who will be available to answer questions regarding their area of interest and provide insights into their own techniques. Principal authors will share their views on why their topic is of interest, and is important to them and to the field of orthopaedics. You will be able to view the program and participate in a question and answer session.

**Feature Presentation Theater Schedule
Tuesday, March 11**

Time	Feature Presentation
10:00 AM	Combined Miniopen and Percutaneous Technique for Hallux Valgus Correction <i>Jose F. Reyes Copello, MD</i>
1:00 PM	Circumferential Rotator Cuff Repair Utilizing the N+4, Subclavian and High Posteromedial Portals <i>Keith D. Nord, MD, Maher W. Khan, MD, Garth B. Wright, MD, Jonathon B. Taylor, BS</i>
1:45 PM	Total Shoulder Arthroplasty (Technical Note and Results) <i>Thomas W. Wright, MD, Gonzalo Samitier Solis, MD, PhD</i>
	Trasnosseous Equivalent Pectoralis Major Tendon Repair <i>Kevin W. Farmer, MD, Gonzalo Samitier Solis, MD, PhD</i>
	Spine Scapular Non-union ORIF Solution <i>Thomas W. Wright, MD, Gonzalo Samitier Solis, MD, PhD</i>
2:30 PM	Medial Mobile-Bearing UKA with Twin-Peg Femoral Design and Enhanced Instrumentation <i>Keith R. Berend, MD, Adolph V. Lombardi Jr, MD, Jason M. Hurst, MD, Michael J. Morris, MD, Joanne B. Adams, BFA, CMI, Keri L. Satterwhite, Michael A. Sneller, BS</i>
3:15 PM	Fixation of Odontoid Fractures with an Anterior Screw: Surgical Technique <i>Manuel Valencia, MD, Paulina De La Fuente, MD, Selim Abara, MD, Felipe Novoa, MD, Andres Leiva, MD, Arturo Olid, MD</i>

4:00 PM **Approaches to the Hip: Minimally Invasive Posterolateral Total Hip Arthroplasty**
Cesare Faldini, MD, Francesco Traina, MD, Mohammadreza Chebrassan, MD, Raffaele Borghi, MD, Daniele Fabbri, MD, Matteo Nanni, MD, Federico Pilla, MD, Marco Pedrini, MD, Sandro Giannini, MD

Approaches to the Hip: Minimally Invasive Direct Anterior Total Hip Arthroplasty
Cesare Faldini, MD, Francesco Traina, MD, Daniele Fabbri, MD, Mohammadreza Chebrassan, MD, Raffaele Borghi, MD, Matteo Nanni, MD, Federico Pilla, MD, Matteo Cadossi, MD, Sandro Giannini, MD

4:45 PM **Ulnar Nerve Transposition at the Elbow**
Randy R. Bindra, MD, FRCS, Ryan Sullivan, MD

Feature Presentation Theater Schedule Wednesday, March 12

Time	Presentation
8:30 AM	Balancing A Total Knee Arthroplasty With A Navigation System <i>Jean-yves Jenny, MD</i>
9:15 AM	Chondrosarcoma of the Proximal Femur Limb-Sparing Resection and Reconstruction with Modular Segmental Proximal Femur Tumor Prosthesis <i>Camilo E. Villalobos, MD, Rodolfo Zamora, MD, Telayah Sturdivant, BA, Adem Abrbam, BA, Peter Gold, BS, MD, James C. Wittig, MD</i>
10:00 AM	Distal Tibia Allograft for Management of Anterior Glenoid Bone Loss <i>Rachel M. Frank, MD, Sanjeev Bhatia, MD, Peter N. Chalmers, MD, Nikhil N. Verma, MD, Brian J. Cole, MD, MBA, Anthony A. Romeo, MD, Matthew T. Provencher, MD</i>
	Arthroscopic-Assisted Core Decompression of the Femoral Head for Osteonecrosis <i>Rachel M. Frank, MD, Anil Gupta, MD, MBA, Joshua Harris, MD, Frank McCormick, MD, Richard C. Mather, III, MD, Shane J. Nho, MD</i>
	Arthroscopic Distal Tibia Allograft for Management of Posterior Glenoid Bone Loss <i>Rachel M. Frank, MD, Peter N. Chalmers, MD, Anil Gupta, MD, MBA, Sanjeev Bhatia, MD, Brian J. Cole, MD, MBA, Nikhil N. Verma, MD, Matthew T. Provencher, MD, Anthony A. Romeo, MD</i>
10:45 AM	Posterolateral Corner Primary Repair and Reconstruction Case Based <i>Mark D. Miller, MD, Sean Higgins, Medical Student</i>
11:30 AM	Surgical Treatment of Spondylolisthesis by Posterolateral Arthrodesis and Instrumentation <i>Antonello Montanaro, MD, Francesco Turturro,</i>

MD, Cosma Calderaro, MD, Luca Labianca, MD, Vincenzo Di Sanzo, MD, PhD, Pierpaolo Rota, MD, Alessandro Carducci, MD, Andrea Ferretti, MD

1:00 PM **ACL Reconstruction With Over the Top Femoral Position and Lateral Extra-articular Tenodesis**
Davide E. Bonasia, MD, Umberto Cottino, MD, Filippo Castoldi, MD, Stefano Zaffagnini, MD, Maurilio Marcacci, MD, Roberto Rossi, MD

1:45 PM **Ultrasound-Guided Plantar Fascia Release: A New Ultraminimally Invasive Surgical Technique**
Manuel Villanueva, MD, PhD, Alvaro Iborra, DPM, Felipe Benito Del Carmen, MD, Angel G. De La Rubia, DPM

2:30 PM **3 Critical Concepts to Understand Acute Elbow Instability**
Davide Blonna, MD, Francesca Fissore, MD, Stefano Mortera, MD, Roberto Rossi, MD, Antonio Marmotti, MD, Filippo Castoldi, MD

3:15 PM **Open Reduction and Internal Fixation of Displaced Pediatric Lateral Condyle Fractures of the Humerus**
Tamir Bloom, MD, John Koerner, MD, Sanjeev Sabharwal, MD, MPH

4:00 PM **Meniscal Allograft Transplantation**
Salvatore Bisicchia, MD, Federica Rosso, MD, Annunziato Amendola, MD

Arthroscopic Repair of Femoral "Peel-off" Lesion of the Posterior Cruciate Ligament: A Novel Technique
Federica Rosso, MD, Salvatore Bisicchia, MD, Annunziato Amendola, MD

4:45 PM **Treating a Fracture of the Pathologic Femur with the IlluminOSS Photodynamic Bone Stabilization System**
Paul A. Vegt, MD, Thomas Gausepohl, MD

Feature Presentation Theater Schedule Thursday, March 13

Time	Presentation
8:30 AM	Endoscopic Gastrocnemius Recession <i>Phinit Phisitkul, MD, Chamnanni Rungprai, MD, Annunziato Amendola, MD</i>
9:15 AM	Arthroscopic Subacromial Decompression: An 8-Step Approach <i>Mark H. Getelman, MD, Nels E. Sampatacos, MD</i>
10:00 AM	A Simple Method to Perform the Real Acetabulum in Dislocated Hips <i>Nicolas Restrepo Giraldo, MD</i>
10:45 AM	Skin Crease 'Bikini' Incision for Anterior Approach THR: Anatomical Considerations and Avoidance of Complications <i>Michael Leunig, MD, PhD</i>

- 11:30 AM **Peroneal Tendoscopy: An Innovative Perspective for Peroneal Tendon Pathology**
Antongiulio Marmotti, MD, Margherita Germano, MD, Rainero Del Din, MD, Filippo Castoldi, MD, Federico Dettoni, MD, Roberto Rossi, MD, Davide Blonna, MD, Davide E. Bonasia, MD, Fabrizio Trucchi, MD, Giuseppe Peretti, MD
- 1:00 PM **All-Arthroscopic Allograft Labral Reconstruction of the Hip**
Dominic S. Carreira, MD
- 1:45 PM **Surgical Treatment of the Segond's Fracture**
Andrea Ferretti, MD, Raffaele Iorio, MD, Daniele Mazza, MD, Cosma Calderaro, MD, Priscilla Di Sette, MD, Edoardo Monaco, MD, Fabio Conteduca, MD
- A Simple Lateral Tenodesis for Severe Rotatory Instability in ACL Deficient Knee**
Fabio Conteduca, MD, Raffaele Iorio, MD, Cosma Calderaro, MD, Daniele Mazza, MD, Carmelo D'Arrigo, MD, Andrea Ferretti, MD
- 2:30 PM **Distal Tibia Allograft for Anterior Bone Loss in Shoulder Instability: Case Presentation and Surgical Technique**
Laith M. Jazrawi, MD, Dylan T. Lowe, BA, Mathew Hamula, BA, BS
- Distal Femoral Osteotomy and Subchondroplasty: Case Presentation and Surgical Technique**
Laith M. Jazrawi, MD, Dylan T. Lowe, BA, Mathew J. Hamula, BA, BS, Saad Sheikh, BA
- 3:15 PM **Closed-Loop Double Endobutton Technique for Complete AC Joint Dislocation: A Technique Review and Demonstration**
Steven Struhl, MD, Dylan T. Lowe, BA, Theodore S. Wolfson, BS, Catherine N. Laible, MD, Mathew Hamula, BA, BS
- 4:00 PM **Modified Anterolateral Approach with Femoral Anterior Cortical Window for Revision Total Hip Arthroplasty**
Amgad M. Haleem, MD, MSc, Morteza Meftah, MD, Brian Domingues, BS, Stephen J. Incavo, MD
- 4:45 PM **Reconstruction of the Posterolateral Corner with Achilles Tendon Allograft**
Scott A. Kuzma, MD, Roxanne Chow, MD, William M. Engasser, BA, Michael J. Stuart, MD, Bruce A. Levy, MD
- 9:15 AM **Open Subpectoral Biceps Tenodesis: Reliable Treatment for All Biceps Tendon Pathology**
Patrick Kane, MD, Philip Hsiao, BS, Bradford S. Tucker, MD, Kevin B. Freedman, MD
- 10:00 AM **Allograft Hip Capsulolabral Spacer for the Treatment of Capsulolabral Adhesions**
Marc J. Philippon, MD, Fernanco Ferro, MD, Jeffrey Nepple, MD
- 10:45 AM **All-Arthroscopic Patch Augmentation of a Massive Rotator Cuff Tear: Surgical Technique**
Peter N. Chalmers, MD, Rachel M. Frank, MD, Anil Gupta, MD, MBA, Adam B. Yanke, MD, Scott W. Trenhaile, MD, Anthony A. Romeo, MD, Nikhil N. Verma, MD
- 11:30 AM **Interpositional Arthroplasty for Hallux Rigidus: Improved Technique**
Jonathan H. Oren, MD, Theodore S. Wolfson, BSE, Dylan T. Lowe, BA, Mathew J. Hamula, BA, BS, Steven C. Sheskier, MD
- 1:00 PM **Gluteus Medius Repair with Double Row Fixation**
J W Thomas Byrd, MD
- Peritrochanteric Access and Gluteus Medius Repair**
J W Thomas Byrd, MD
- 1:45 PM **Shoulder Arthrodesis: Surgical Technique**
Ryan Warth, MD, Peter J. Millett, MD
- Reverse Total Shoulder Arthroplasty: Surgical Technique**
Ryan Warth, MD, Peter J. Millett, MD
- 2:30 PM **Partial Two-stage Exchange for Infected Total Hip Arthroplasty**
Adolph V. Lombardi Jr, MD, Timothy Ekpo, DO, Keith R. Berend, MD, Michael J. Morris, MD, Joanne B. Adams, BFA, CMI
- 3:15 PM **Open Latarjet with Modified Bankart Repair in Collision Athletes**
Robert A. Arciero, MD, Augustus D. Mazzocca, MD
- 4:00 PM **Anatomy, Pathology and Physical Examination of the Scapho-Lunate and Luno-Triquetral Joints**
Matthias Vanhees, MD, Roger P. van Riet, MD, Frederik Verstreken, MD
- Circumferential Graft Around the Elbow**
Matthias Vanhees, MD, Roger P. van Riet, MD, Frederik Verstreken, MD
- 4:45 PM **A Surgical Technique for Medial Patellofemoral Ligament Reconstruction in the Skeletally Immature**
Henry B. Ellis Jr, MD, Philip L. Wilson, MD

Feature Presentation Theater Schedule Friday, March 14

Time	Presentation
8:30 AM	ACL Reconstruction in Patient with Open Physis <i>Stefano Zaffagnini, MD, Alberto Grassi, MD, Giulio Maria Marcheggiani Muccioli, MD, Maurilio Marcacci, MD</i>

Scientific Exhibits have been grouped in the following categories:

- Adult Reconstruction HipSE01-SE14 .. Pgs. 230-231
- Adult Reconstruction KneeSE43-SE52 .. Pgs. 235-236
- Basic Research.....SE53-SE54 .. Pg. 236
- Foot and AnkleSE39-SE42 .. Pgs. 234-235
- Hand and Wrist.....SE60-SE61 .. Pg. 237
- Pediatrics.....SE28-SE30 .. Pg. 233
- Practice ManagementSE62-SE69 .. Pgs. 237-238
- Shoulder and ElbowSE31-SE38 .. Pgs. 233-234
- SpineSE15-SE18 .. Pgs. 231-232
- Sports Medicine and ArthroscopySE70-SE88 .. Pgs. 238-240
- Trauma.....SE19-SE27 .. Pgs. 232-233
- Tumor and Metabolic Bone Disease .SE55-SE59 .. Pgs. 236-237

Adult Reconstruction Hip

Scientific Exhibit SE01

Osteolysis After THA with Alumina-on-Highly-Cross-Linked Polyethylene in Young Patient

Young-Hoo Kim, MD, Seoul, Korea, Republic of
Jangwon Park, MD, Seoul, Korea, Republic of
Jun S. Kim, MD, Seoul, Korea, Republic of
Jeong-Hwan Oh, Seoul, Korea, Republic of

Tapered anatomic cementless femoral stem with Al-on-highly X-linked PE bearing in 100 pts. functioned well without osteolysis at 10.8 yrs. follow-up.

Scientific Exhibit SE02

Long-Term Results and Bone Remodeling After THA with a Short, Anatomic Cementless Stem

Jangwon Park, MD, Seoul, Korea, Republic of
Young-Hoo Kim, MD, Seoul, Korea, Republic of
Jun S. Kim, MD, Seoul, Korea, Republic of
Jeong-Hwan Oh, Seoul, Korea, Republic of

Short, metaphyseal-fitting anatomic cementless femoral stem in 500 patients provided stable fixation without diaphyseal fixation.

Scientific Exhibit SE03

Complications, Diagnosis, and Treatment of Adverse Tissue Reaction in Dual Modular Stems

Elie S. Ghanem, MD, Danville, PA
Carl T. Talmo, MD, Boston, MA
Daniel M. Ward, MD, Chestnut Hill, MA
Claire E. Robbins, PT, DPT, MS, GCS, Franklin, MA
James V. Bono, MD, Boston, MA

A series of 118 THR with a single design of cementless titanium component and a modular cobalt-chrome neck demonstrated significant incidence of revision (18%) due to adverse local tissue reaction.

Scientific Exhibit SE04

Femoral Head Modularity: Does Material Matter?

Alon Katz, MSc, Cleveland, OH
A S. Greenwald, DPhil Oxon, Cleveland Heights, OH

This in-vitro laboratory study investigates whether clinically utilized femoral head materials and their associated tapers influence the particulate and ion burden generated during activity.

Scientific Exhibit SE05

Anterior Approach Total Hip Arthroplasty: Tips and Tricks to Avoid Complications and Maximize Outcomes

Roy Davidovitch, MD, New York, NY
Jason P. Hochfelder, MD, New York, NY
James D. Slover, MD, New York, NY

This multimedia presentation aims to review the perioperative, surgical, and post-operative techniques to help avoid complications associated with the anterior approach total hip arthroplasty.

Scientific Exhibit SE06

The Extended Trochanteric Osteotomy in Primary & Revision Total Hip Arthroplasty

Paul H. Yi, BA, Chicago, IL
Darren R. Plummer, MBA, BA, Chicago, IL
Brett R. Levine, MD, Chicago, IL
Wayne G. Paprosky, MD, Winfield, IL
Craig J. Della Valle, MD, Chicago, IL
Scott M. Sporer, MD, Wheaton, IL

The ETO is a versatile technique that not only facilitates component removal, but also improves expo.

Scientific Exhibit SE07

A New Internet Enhanced Multi-Disciplinary Team Management System for Patients with Metal on Metal Hip Implants

Reshid Berber, MBBS, BSc, St Albans, United Kingdom
Harry Hothi, BEng, MSc, PhD, Stanmore, United Kingdom
Michael Khoo, MBBS, Stanmore, United Kingdom
Johann Henckel, MD, London, United Kingdom
Shiraz Sabab, MD, Middlesex, United Kingdom
Jonathan Miles, FRCS (Ortho), MBBS, London, United Kingdom
Richard Carrington, MD, Herts, United Kingdom
John Skinner, FRCS, London, United Kingdom
Alister Hart, FRCS, London, United Kingdom

An internet-enhanced multidisciplinary team approach improved management and reduced unnecessary revision surgery for patients with metal-on-metal hip arthroplasties.

Scientific Exhibit SE08**Pelvic Discontinuity: Diagnosis and Surgical Management in Revision THA**

Bryan D. Springer, MD, Charlotte, NC
 Scott M. Sporer, MD, Wheaton, IL
 Craig J. Della Valle, MD, Chicago, IL
 Thomas K. Fehring, MD, Charlotte, NC
 Allan E. Gross, MD, FRCSC, Prof, Toronto, Canada
 David G. Lewallen, MD, Rochester, MN
 Michael J. Taunton, MD, Rochester, MN
 Wayne G. Paprosky, MD, Winfield, IL

Pelvic discontinuity and its treatment is at the pinnacle of complexity in revision hip arthroplasty. Surgical techniques and outcomes of 4 common treatment methods are discussed.

Scientific Exhibit SE09**The Role of Computed Tomography in the Evaluation of Total Hip Arthroplasty and Osteolysis**

Anay R. Patel, MD, Chicago, IL
 George Ochenjele, MD, Chicago, IL
 Pat Sweeney, BA, Chicago, IL
 Richard L. Wixson, MD, Crete, IL
 S D. Stulberg, MD, Chicago, IL
 Lalit Puri, MD, Glenview, IL

Computed tomography is a useful tool in the setting of osteolysis to evaluate the stability of the acetabular component and the size and location of osteolytic lesions.

Scientific Exhibit SE10**Highly Porous Metals in Cementless Acetabular Fixation - What's the Current Evidence?**

Samik Banerjee, MBBS, MS, Baltimore, MD
 Kimona Issa, MD, Baltimore, MD
 Robert Pivec, MD, Baltimore, MD
 Bhavleen Kapadia, MD, Baltimore, MD
 Mark J. McElroy, BS, MS, Monroeville, PA
 Harpal S. Khanuja, MD, Cockeysville, MD
 Arthur L. Malkani, MD, Prospect, KY
 Michael A. Mont, MD, Baltimore, MD

Aseptic survivorship, functional outcomes, and cup stability at mid-term follow-up are excellent with the use of highly-porous metals. Primary stability is achieved evidenced by low cup migration.

Scientific Exhibit SE11**Large Diameter Metal on Metal Total Hip Arthroplasty: Dislocation Rate Good, Survival Not So Good**

Keith R. Berend, MD, New Albany, OH
 Adolph V. Lombardi Jr, MD, New Albany, OH
 Michael J. Morris, MD, New Albany, OH
 Joanne B. Adams, BFA, CMI, New Albany, OH
 Michael A. Sneller, BS, New Albany, OH

While large diameter MoM-THA have nearly eliminated dislocation as a failure mode, the high revision rate and percentage performed for adverse reaction to metal debris is concerning.

Scientific Exhibit SE12**Comparison of Three Approaches to Assess Leg Length Discrepancy in THA**

Benjamin G. Domb, MD, Oak Brook, IL
 Youssef El Bitar, MD, Springfield, IL
 Jennifer C. Stone, Westmont, IL
 Timothy J. Jackson, MD, Studio City, CA
 Dror Lindner, MD, Hinsdale, IL
 Christine E. Stake, MA, Naperville, IL

The purpose of this study was to compare leg length discrepancy in patients undergoing total hip arthroplasty using three different techniques.

Scientific Exhibit SE13**Optimizing Evidence-Based Management of Patients with Dual Taper Stem with Cobalt-Chromium Modular Neck**

Young-Min Kwon, MD, PhD, Boston, MA
 Thomas K. Fehring, MD, Charlotte, NC
 Adolph V. Lombardi Jr, MD, New Albany, OH
 C L. Barnes, MD, Little Rock, AR
 Miguel E. Cabanela, MD, Rochester, MN
 Joshua J. Jacobs, MD, Chicago, IL

This exhibit highlights diagnosis and treatment of patients with contemporary interchangeable CoCr modular neck hips, review up-to-date evidence and provide a useful resource for orthopaedic surgeons.

Scientific Exhibit SE14**Modularity in Orthopaedic Devices: At What Cost?**

William M. Mihalko, MD, PhD, Germantown, TN
 Craig J. Della Valle, MD, Chicago, IL
 Jeremy Gilbert, PhD, Syracuse, NY
 Jack E. Lemons, PhD, Birmingham, AL
 Lynne C. Jones, PhD, Baltimore, MD
 Stuart B. Goodman, MD, Redwood City, CA

Modularity is a necessity in reconstructive procedures but at the cost of debris from corrosion/wear. This exhibit reviews those issues and the standards developed to assure safe and effective devices.

Spine**Scientific Exhibit SE15****Lumbar Discs Changes with Estrogen or NPY 1 Antagonist Treatment in a Rat Osteoporosis Model**

Robert A. McGuire Jr, MD, Jackson, MS
 Michelle Tucci, Jackson, MS
 Hamed Benghuzzi, Jackson, MS

Administration of an NPY 1 receptor antagonist improved bone strength and provided the greatest evidence of increased vascularity, chondrocyte proliferation within the annulus, and the largest reduction in fat cells within the bone marrow.

Scientific Exhibit SE16

Assessment of Thoracic Spine Stability Following Decompressive Procedures: A Robotic Biomechanical Study

Thomas E. Mroz, MD, Cleveland, OH
 Mageswaran Prasath, PhD, Cleveland, OH
 Robb Colbrunn, PhD, Cleveland, OH
 Tara F. Bommer, BS, MSc, Cleveland, OH
 Andrew T. Healy, MD, University Heights, OH
 Daniel Lubelski, Beachwood, OH
 Robert F. McLain, MD, Cleveland, OH

The Rib Cage provides additional support to the thoracic spine. This study evaluated the thoracic spine stability following decompressive surgery using a novel robotic spine testing system.

Scientific Exhibit SE17

Sacro-Pelvic Fixation Using the S2 Alar-Iliac (S2AI) Screws in Adult Deformity Surgery

Sophie Strike, MD, Baltimore, MD
 Hamid Hassanzadeh, MD, Baltimore, MD
 Floreana A. Naef, Baltimore, MD
 Paul D. Sponseller, MD, Baltimore, MD
 Khaled M. Kebaish, MD, Baltimore, MD

The S2 Alar-iliac (S2AI) pelvic fixation has a low rate of technique-related complications and rare need for revision, which appears to be maintained at long term follow-up.

Scientific Exhibit SE18

Spino-Pelvic Alignment and Relationship to Sagittal Balance

Amit Jain, MD, Baltimore, MD
 Hamid Hassanzadeh, MD, Baltimore, MD
 Sophie Strike, MD, Baltimore, MD
 Khaled M. Kebaish, MD, Baltimore, MD

The aim of this study is to review the key concepts in spinopelvic alignment, interaction between the various parameters, and how they compensate with changes in sagittal balance.

Trauma**Scientific Exhibit SE19**

Cost Effective Trauma Implant Selection

Kenneth A. Egol, MD, New York, NY
 Roy Davidovitch, MD, New York, NY
 Sanjit R. Konda, MD, Charlotte, NC
 Nirmal C. Tejwani, MD, New York, NY
 Frank A. Liporace, MD, Englewood Cliffs, NJ
 Joseph D. Zuckerman, MD, New York, NY

Cost-containment strategies can maintain quality of care without increasing complications or jeopardizing outcomes.

Scientific Exhibit SE20

Bisphosphonates: How They Work and Their Role in Atypical Femur Fractures

Nirmal C. Tejwani, MD, New York, NY
 Frank A. Liporace, MD, Englewood Cliffs, NJ
 Sanjit R. Konda, MD, Charlotte, NC
 Roy Davidovitch, MD, New York, NY
 Kenneth A. Egol, MD, New York, NY

This scientific exhibit is aimed at those who are involved in the treatment of patients with osteoporosis and fractures associated with both the bony fragility and treatment related complications.

Scientific Exhibit SE21

Treatment of Femoral Neck Fractures in the Nonelderly Fit Adult

Roy Davidovitch, MD, New York, NY
 David Galos, MD, New York, NY
 Frank A. Liporace, MD, Englewood Cliffs, NJ
 Sanjit R. Konda, MD, Charlotte, NC
 Nirmal C. Tejwani, MD, New York, NY
 Kenneth A. Egol, MD, New York, NY

Femoral neck fracture in the nonelderly fit adult is a rare injury associated with high-energy trauma. We address the relevant issues and evolution of the treatment in these difficult cases.

Scientific Exhibit SE22

Traumatic Extensor Mechanism Injuries of the Knee: Diagnosis, Treatment, and Outcomes

Sanjit R. Konda, MD, Charlotte, NC
 Nirmal C. Tejwani, MD, New York, NY
 Richard S. Yoon, MD, New York, NY
 Roy Davidovitch, MD, New York, NY
 Frank A. Liporace, MD, Englewood Cliffs, NJ
 Kenneth A. Egol, MD, New York, NY

Traumatic extensor mechanism injuries of the knee require adequate diagnosis and treatment. Understanding of core treatment and rehabilitation principles allows for best functional outcome.

Scientific Exhibit SE23

Tip-Apex Distance (TAD): Comparing Dynamic Hip Screw (DHS) and Nail Fixation in Extracapsular Hip Fractures

Veenesh Selvaratnam, MBChB, MRCS, Liverpool, England, United Kingdom
 Sieh Kiew, Liverpool, United Kingdom
 Gunasekaran Kumar, Liverpool, United Kingdom

TAD in DHS depends on fracture reduction but in nail fixation TAD also depends on entry point in the greater trochanter. In this series, nail fixation had a better but insignificant mean TAD.

Scientific Exhibit SE24

Pelvic Fractures Combined With Spinal Injuries in Polytrauma Patients

Ana M. Cervan, Marbella (malaga), Spain
 Encarnacion Cruz, Marbella (málaga), Spain
 Juan Ramon Cano Sr, PhD, Marbella (málaga), Spain
 Maria Jimenez, Mijas Marbella (málaga), Spain
 Enrique Guerado, MD, Marbella (málaga), Spain

The aim of this paper is to study the effectiveness of damage

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

control diagnosis and treatment in polytraumatized patients with pelvic injuries associated with spinal fractures.

Scientific Exhibit SE25

Society of Military Orthopaedic Surgeons: Limb Salvage Outcomes With the IDEO and the Return to Run Pathway

Chad A. Krueger, MD, San Antonio, TX
 Katherine M. Bedigrew, MD, Fort Sam Houston, TX
 Joseph R. Hsu, MD, Charlotte, NC
 James A. Blair, MD, Tampa, FL
 Jeanne C. Patzkowski, MD, San Antonio, TX
 Johnny Owens, San Antonio, TX
 Ryan Blanck, Fort Sam Houston, TX

Service members who have received an IDEO and participated in the RTR have demonstrated significant improvements in function, pain, and the ability to return to work.

Scientific Exhibit SE26

Tibial Plateau Fracture Evaluation, Management and Outcomes: A Case Based Learning Platform

Richard S. Yoon, MD, New York, NY
 Roy Davidovitch, MD, New York, NY
 Nirmal C. Tejwani, MD, New York, NY
 Frank A. Liporace, MD, Englewood Cliffs, NJ
 Kenneth A. Egol, MD, New York, NY

Tibial plateau fractures are a complex group of periarticular injuries that if managed correctly, have excellent outcomes.

Scientific Exhibit SE27

Soft Tissue Principles for Orthopaedic Surgeons

Mark Gage, MD, New York, NY
 Richard S. Yoon, MD, New York, NY
 Frank A. Liporace, MD, Englewood Cliffs, NJ
 Kenneth A. Egol, MD, New York, NY
 Roy Davidovitch, MD, New York, NY
 Nirmal C. Tejwani, MD, New York, NY
 Sanjit R. Konda, MD, Charlotte, NC
 John T. Capo, MD, Hoboken, NJ

The purpose of this exhibit is to increase awareness in identifying higher risk situations, provide prophylactic strategies to avoid complications, and give an understanding on complication management.

Pediatrics

Scientific Exhibit SE28

Pediatric Orthopaedic Society of North America: Pediatric Orthopaedic Society of North America: Cast Treatment of Pediatric Fractures: A Lost Art?

Juan A. Realyvasquez, MD, Philadelphia, PA
 Kevin M. Denehy, MD, Philadelphia, PA
 Donald S. Bae, MD, Boston, MA
 Martin J. Herman, MD, Philadelphia, PA

Cast treatment of pediatric fractures is at risk for becoming a “lost art”. The purpose of this exhibit is to illustrate concepts regarding the management of common pediatric fractures.

Scientific Exhibit SE29

Patellar Dislocation in Children: Diagnosis and Treatment Using Medial Patellofemoral Ligament Reconstruction

Elizabeth Gausden, MD, New York, NY
 Peter D. Fabricant, MD, MPH, New York, NY
 Moira M. McCarthy, MD, New York, NY
 Samuel A. Taylor, MD, New York, NY
 Kenneth D. Weeks, MD, New York, NY
 Hollis Potter, MD, New York, NY
 Daniel W. Green, MD, New York, NY

This scientific exhibit will provide guidance in managing patellar instability through patient/parental counseling, technical considerations and an evidence-based algorithm for treatment.

Scientific Exhibit SE30

Pediatric Patellofemoral Instability: A Multimedia Comprehensive Review and Novel Treatment Algorithm

Rachel Shakked, BS, MD, New York, NY
 Theodore S. Wolfson, BS, New York, NY
 Mathew Hamula, BA, BS, New York, NY
 Garret Garofolo, BS, Commack, NY
 Guillem Gonzalez-Lomas, MD, New York, NY
 Eric J. Strauss, MD, New York, NY
 Laith M. Jazrawi, MD, New York, NY
 David S. Feldman, MD, New York, NY

This exhibit reviews the current literature discussing PFI in the pediatric patient and develops an evidence-based algorithm to dictate treatment and optimize outcomes.

Shoulder and Elbow

Scientific Exhibit SE31

Risk Factors for Acute Infection After Proximal Humeral Fractures: A Clinical and Microbiological Study

Davide Blonna, MD, Torino, Italy
 Nicola Barbasetti Di Prun, MD, Turin, Italy
 Enrico Bellato, MD, Torino, Italy
 Stefano Marengo, Torino, Italy
 Bruno Battiston, MD
 Alessandro Masse, MD, Orbassano, Italy
 Lorenzo Mattei, MD, Torino, Italy
 Marco Assom, MD, Rivoli-Turin, Italy
 Filippo Castoldi, MD, Torino, Italy

This study is a multicenter study with the aim of measuring the incidence and risk factors for acute infection.

Scientific Exhibit SE32

Teres Minor Fatty Atrophy: Anatomy, Surgical Technique and Outcomes of Decompression of the Nerve to Teres Minor

Nathan W. Skelley, MD, Saint Louis, MO
 Lisa M. Kruse, MD, Saint Louis, MO
 Ryan P. Donegan, MD, Lexington, KY
 Surena Namdari, MD, MSc, Philadelphia, PA
 Anchal Bansal, Saint Louis, MO
 Aaron M. Chamberlain, MD, Saint Louis, MO
 Ken Yamaguchi, MD, Chesterfield, MO

This exhibit reviews the diagnosis, management, and outcomes associated with the surgical treatment of symptomatic isolated teres minor atrophy and demonstrates a valid surgical technique.

Scientific Exhibit SE33**Scapular Winging: Surgical Management with Dynamic Muscle Transfer***Simon Lee, Chicago, IL**David Savin, MD, Chicago, IL**Daniel E. Bronsnick, MD, Chicago, IL**Benjamin Goldberg, MD, Chicago, IL*

Scapular winging is a potentially debilitating disorder which commonly resolves with non-surgical management, but good outcomes for persistent cases are possible with dynamic muscle transfers.

Scientific Exhibit SE34**Proximal Humerus Fractures 2014: Rehabilitate, Repair, Replace, or Reverse?***Brandon Shulman**Kenneth A. Egol, MD, New York, NY**Sanjit R. Konda, MD, Charlotte, NC**Nirmal C. Tejwani, MD, New York, NY**Frank A. Liporace, MD, Englewood Cliffs, NJ**Roy Davidovitch, MD, New York, NY**Joseph D. Zuckerman, MD, New York, NY*

Given the expected rise in prevalence, the importance of skilled and appropriate management of proximal humerus fractures cannot be overstated.

Scientific Exhibit SE35**Humeral Retroversion: The Complexity of Assigning Reference Axes in 3D and Its Influence on Measurement***Michael L. Pearl, MD, Los Angeles, CA**Fabian Van De Bunt, Amsterdam, Netherlands*

This exhibit explores how humeral retroversion varies depending on the chosen reference axes, comparing axes computed from rigorous geometric analysis to those selected by visual inspection.

Scientific Exhibit SE36**Tendon Transfer Options About the Shoulder***Aneet Toor, MD, Chicago, IL**Min Lu, MD, Chicago, IL**Eugene Ek, MD, PhD, Melbourne, Australia**Nina Sub, MD, Toronto, Canada**Jason L. Koh, MD, Evanston, IL**Bassem T. Elhassan, MD, Rochester, MN**Lewis L. Shi, MD, Chicago, IL*

Tendon transfers have shown promise in restoring shoulder function. This exhibit presents the key indications, surgical techniques, and outcomes of several challenging shoulder pathologies.

Scientific Exhibit SE37**Suprascapular Nerve Releases: Indications & Techniques***Edward Lin, MD, New York, NY**Mathew Hamula, BA, BS, New York, NY**Nimrod Snir, MD, New York, NY**Theodore S. Wolfson, BS, New York, NY**Garret Garofolo, BS, Commack, NY**Andrew S. Rokito, MD, New York, NY**Eric J. Strauss, MD, New York, NY**Laith M. Jazrawi, MD, New York, NY*

This scientific exhibit provides a current, standardized, and evidence-based guide for how to optimally manage these patients.

Scientific Exhibit SE38**Reverse Total Shoulder Arthroplasty: A Review of Current Concepts, Surgical Techniques, and Clinical Outcomes***Xinning Li, MD, Lexington, MA**Hanbing Zhou, MD, Worcester, MA**S. Richard Ma, MD, Columbia, MO**Josef K. Eichinger, MD, Gig Harbor, WA**Timothy A. Hartshorn, MD, Los Angeles, CA**Asheesh Bedi, MD, Ann Arbor, MI**Joshua Dines, MD, New York, NY**Gilles Walch, MD, Lyon, France*

Current concepts in reverse shoulder arthroplasty.

Foot and Ankle**Scientific Exhibit SE39****The Evolution of a Foot and Ankle Clinical Outcomes Registry***MaCalus Hogan, MD, Wexford, PA**Jeremy Y. Chan, BS, New York, NY**Srinivasan Mani, BS, New York, NY**Inga Z. Zhygalo, Prof, New York, NY**Huong Do, MA, New York, NY**John G. Kennedy, MD, New York, NY**Jonathan T. Deland, MD, New York, NY**Scott Ellis, MD, New York, NY**Charlotte B. Phillips, MPH, Portland, ME*

We will overview the design theory, development, and operation of a foot and ankle clinical outcomes registry.

Scientific Exhibit SE40**Management of Acute Traumatic Ankle Fractures in the Neuropathic Patient - Recognizing the Sweet to Avoid the Sour***Eric Tan, MD, Baltimore, MD**Benjamin E. Stein, MD, Baltimore, MD**David Eirin Oji, MD, Dublin, CA**Stuart H. Myers, MD, Denver, CO**Stuart D. Miller, MD, Baltimore, MD**Gregory P. Guyton, MD, Baltimore, MD**Lew C. Schon, MD, Baltimore, MD*

The optimal management of acute traumatic ankle fractures in the neuropathic patient is controversial. We reviewed the literature to develop a treatment algorithm for these patients.

Scientific Exhibit SE41**Everything Achilles: Knowledge Update and Current Concepts in Management**

Carlos Uquillas, MD, New York, NY
Mathew Hamula, BA, BS, New York, NY
Theodore S. Wolfson, BS, New York, NY
Garret Garofolo, BS, Commack, NY
Nimrod Snir, MD, New York, NY
Orrin H. Sherman, MD, New York, NY
Eric J. Strauss, MD, New York, NY
Laith M. Jazrawi, MD, New York, NY

This scientific exhibit consolidates available evidence to recapitulate management options and direct treatment of Achilles tendon disorders and optimize clinical outcomes.

Scientific Exhibit SE42**Surgical Treatment of Cavus Foot in Charcot-Marie-Tooth Disease. A Review of Twenty-four Cases**

Cesare Faldini, MD, Bologna, Italy
Francesco Traina, MD, Bologna, Italy
Matteo Nanni, MD, Bagheria, Italy
Antonio Mazzotti, MD, Bologna, Italy
Carlotta Calamelli, MD, Bologna, Italy
Daniele Fabbri, MD, Bologna, Italy
Camilla Pungetti, MD, Bologna, Italy
Sandro Giannini, MD, Bologna, Italy

Surgical treatment of cavus foot in Charcot-Marie-Tooth disease combining plantar fasciotomy, cuboid osteotomy, naviculocuneiform arthrodesis, dorsiflexion osteotomy of the first metatarsal and Jones procedure.

Adult Reconstruction Knee**Scientific Exhibit SE43****Knee Society: Alignment in TKA: Impact on Outcome and Role of Patient Specific Instrumentation**

Ormonde M. Mahoney, MD, Athens, GA
Robert L. Barrack, MD, Saint Louis, MO
Steven J. MacDonald, MD, London, Canada
William J. Maloney, MD, Redwood City, CA

Recognizing the impact of implant alignment on outcome of TKA, surgical techniques have evolved to improve accuracy and reduce outliers. The impact of these developments are reviewed.

Scientific Exhibit SE44**Functional Outcome of Arthroscopic Treatment for Patellar Clunk Syndrome**

Michael C. Aynardi, MD, Philadelphia, PA
James A. Costanzo, MD, Philadelphia, PA
John Peters, BS, Clarks Summit, PA
Daniel M. Kopolovich, BA, Philadelphia, PA
James J. Purtill, MD, Philadelphia, PA

Patella Clunk is fairly common following TKA; fortunately, arthroscopic treatment yields good functional results comparable to control patients undergoing primary TKA at long term follow-up.

Scientific Exhibit SE45**Principles and Results of Kinematic Alignment: An Option for Total Knee Arthroplasty**

Stephen M. Howell, MD, Sacramento, CA
Harold G. Dossett, MD, Scottsdale, AZ
Joshua D. Roth, Graduate Student, Davis, CA
Yu Gu, BS, Davis, CA
Daniel Bonny, BS, Davis, CA

These easy to follow principles, and encouraging results from published studies justify kinematic alignment as an option for TKA.

Scientific Exhibit SE46**Does Mechanical or Kinematic Alignment in TKA Cause Instability and Change Limb and Knee Alignment From Normal?**

Joshua D. Roth, Graduate Student, Davis, CA
Yu Gu, BS, Davis, CA
Daniel Bonny, BS, Davis, CA
Stephen M. Howell, MD, Sacramento, CA
Maurry L. Hull, PhD, Davis, CA

In TKA, mechanical alignment of both the limb and the tibiofemoral joint frequently causes instability and changes the alignment of the limb and knee from normal, but kinematic alignment does not.

Scientific Exhibit SE47**Comprehensive, Comparative Post-TJR Outcome Feedback To Surgeons For Quality Monitoring and Value Decisions**

Patricia Franklin, MD, MBA, MPH, Worcester, MA
Bruce Barton, PhD, Worcester, MA
Leslie Harrold, MD, MPH, Worcester, MA
Wenjun Li, PhD, Worcester, MA
Regis J. O'Keefe, MD, Rochester, NY
Jeroan Allison, MD, Worcester, MA
David C. Ayers, MD, Worcester, MA

Surgeons and hospitals need a single comprehensive source of post-discharge medical events, readmissions, and PROs to manage and monitor all patient outcomes.

Scientific Exhibit SE48**Are All-Polyethylene Tibial Components a Viable Biomechanical Alternative in UKA and TKA?**

Jean M. Brilhault, MD, Tours, France
Alessandro Navacchia, MSc, Cesena, Italy
Silvia Pianigiani, MS, Milano, Italy
Luc Labey, Leuven, Belgium
Vincenzo Parenti Castelli, Bologna, Italy
Walter Pascale, MD, Milano, Italy
Bernardo Innocenti, PhD, Bruxelles, Belgium

UKA and TKA all-polyethylene tibial components do not exhibit the same mechanical behavior as their respective metal-backed components, with higher tibial stress and increased implant micromotions.

Scientific Exhibit SE49

The Influence of Contemporary Knee Design on High Flexion Motion: A Kinematic Comparison with the Normal Knee

Edward Morra, MSME, Cleveland, OH

A S. Greenwald, DPhil Oxon, Cleveland Heights, OH

This study compares the inherent motion of six contemporary TKA systems with in-vivo kinematic data of healthy un-operated knees by employing a computational kinematic simulator.

Scientific Exhibit SE50

Ultrasound and Acoustic Monitoring a New Methodology for Diagnostic Analysis of the Knee

Richard D. Komistek, PhD, Knoxville, TN

Mohamed Mahfouz, PhD, Knoxville, TN

Ray C. Wasielewski, MD, New Albany, OH

Thibaut De Bock, Knoxville, TN

Sumesh M. Zingde, Knoxville, TN

Adrija Sharma, PhD, Knoxville, TN

Introduction of two new techniques clinicians can utilize for diagnostic purposes.

Scientific Exhibit SE51

Characteristics and Significance of Fever During 4 Weeks After Primary Total Knee Arthroplasty

Yoshimori Ishii, MD, Gyoda Saitama, Japan

Hideo Noguchi, MD, Gyoda-Shi, Japan

Mitsuhiro Takeda, MD, Gyoda, Saitama, Japan

JUNKO SATO, PhD, Gyoda, Saitama, Japan

Four weeks followup after TKA might reveal the different characteristics of postoperative fever and fever-related factors between a normal inflammatory response and early acute infection-related one.

Scientific Exhibit SE52

Rationale, Techniques, and Reliability of Aligning TKA Components Parallel to the Sagittal Kinematic Plane

Alexander Nedopil, MD, Wurzburg, Germany

Abheetinder Brar, BS, Madera, CA

Joshua D. Roth, Graduate Student, Davis, CA

Stephen M. Howell, MD, Sacramento, CA

Maximilian Rudert, MD, Würzburg, Germany

Maurry L. Hull, PhD, Davis, CA

Component malrotation minimized when thickness of both posterior femoral resections and femoral component are equal and AP axis of both tibial component and lateral tibial plateau are parallel.

Basic Research**Scientific Exhibit SE53**

The Research Development Committee: Bone Quality and Fracture Prevention

Joseph M. Lane, MD, New York, NY

Adele L. Boskey, PhD, New York, NY

Eve Donnelly, PhD, Ithaca, NY

Erin L. Ransford, Rosemont, IL

The contribution of bone quality to skeletal integrity, noninvasive assessment of bone quality, and pharmacologic and surgical management of patients with impaired bone quality will be presented.

Scientific Exhibit SE54

Contributions of the Hamann-Todd Osteological Collection to Orthopaedic Surgery

Jonathan Streit, MD, Cleveland, OH

Raymond W. Liu, MD, Cleveland, OH

Shane J. Nho, MD, Chicago, IL

Michael Salata, MD, Cleveland, OH

Daniel R. Cooperman, MD, Cleveland, OH

Victor Goldberg, MD, Gates Mills, OH

The Hamann-Todd Osteological Collection has received greater attention from orthopaedic surgeons in recent years due to our greater understanding of the consequences of abnormal anatomy.

Tumor**Scientific Exhibit SE55**

Current Concepts in the Biopsy of Musculoskeletal Tumors

Francesco Traina, MD, Bologna, Italy

Costantino Errani, MD, Bagheria, Italy

Angelo Toscano, MD, Mori (TN), Italy

Camilla Pungetti, MD, Bologna, Italy

Daniele Fabbri, MD, Bologna, Italy

Antonio Mazzotti, MD, Bologna, Italy

Davide Donati, MD, Bologna, Italy

Cesare Faldini, MD, Bologna, Italy

Proper diagnosis is imperative for the appropriate management of musculoskeletal tumors and biopsy is a critical step in the diagnosis of bone and soft tissue tumors.

Scientific Exhibit SE56

Musculoskeletal Tumor Society: 30 Years of Oncologic Expandable Prostheses: What Have We Learned?

Michael P. Mott, MD, Detroit, MI

Theodore W. Parsons III, MD, FACS, Detroit, MI

G D. Letson, MD, Tampa, FL

Joseph Benevenia, MD, Newark, NJ

Ernest U. Conrad III, MD, Seattle, WA

Michael D. Neel, MD, Memphis, TN

Successful oncologic reconstruction in the skeletally immature represents a significant challenge to produce a lifelong functioning limb for the long term survivors of their underlying malignancy.

Scientific Exhibit SE57**Five-year Results of a Prospective Clinical Trial of Antimicrobial Implants Supported with Iodine**

Hiroyuki Tsuchiya, MD, Kanazawa, Japan
Toshiharu Shirai, MD, Kanazawa, Japan
Hideji Nishida, MD, Kanazawa City, Japan
Hideki Murakami, MD, Kanazawa, Japan
Tamon Kabata, MD, Kanazawa, Ishikawa, Japan
Norio Yamamoto, MD, Kanazawa, Ishikawa, Japan
Koji Watanabe, MD, PhD, Kanazawa, Japan
Junsuke Nakase, MD, Kanazawa, Japan
Kaoru Tada, MD, Kanazawa, Japan

A clinical trial of iodine-coated implants was performed for 381 patients with postoperative infection or compromised status. The implants can be promising in the prevention and treatment of infection following orthopedic surgery.

Scientific Exhibit SE58**The Women's Health Issues Advisory Board: Orthopaedic Strategies to Manage Sex-Based Metastatic Malignancies**

Laura M. Gehrig, MD, Bismarck, ND
Margaret M. Baker, MD, Port Angeles, WA
Cordelia W. Carter, MD, Westport, CT
Erin L. Ransford, Rosemont, IL

Primary breast and prostate cancers frequently metastasize to bone. The numerous effects on the musculoskeletal system including timing of surgery for bone metastasis, and chemotherapy are presented.

Scientific Exhibit SE59**The Use of Demineralized Bone Matrix and Mesenchymal Stem Cells Concentration for the Treatment of the Bone Cysts**

Davide Donati, MD, Bologna, Italy
Luca Cevolani, MD, Bologna, Italy
Tommaso Frisoni, MD, Rimini, Italy
Chris Charoenlap, MD, Bangkok, Thailand

The use of demineralized bone matrix and mesenchymal stem cells concentration is effective for the treatment of the bone cysts.

Hand and Wrist**Scientific Exhibit SE60****Transtrapezial Approach for Fixation of Acute Scaphoid Fractures: Rationale, Surgical Technique and Results**

Frederik Verstreken, MD, Schoten, Belgium
Geert Meermans, MD

We report on the possibilities for better central screw placement through a volar approach and report on our experience and results with a transtapezial approach.

Scientific Exhibit SE61**Correlation of MRA and Arthroscopy of TFCC and Ligament Tears in the Wrist**

James R. Macdonell IV, MD, WA, DC
Megan Carroll Paulus, MD, Arlington, VA
Daria Motamedi, WA, DC
Allison Lax, MD, WA, DC
Michael Kessler, MD, Chevy Chase, MD

MRA has been shown to have high sensitivity and specificity for intra-articular wrist pathology; Correlation of arthroscopic and MRA findings may improve accuracy and highlight shortcomings of MRA.

Practice Management**Scientific Exhibit SE62****American Board of Orthopaedic Surgery Surgical Skills Task Force (SSTF): ABOS Surgical Skills Modules for PGY1**

American Board of Orthopaedic Surgery Surgical Skills Task Force (SSTF), Chapel Hill, NC
Brian O. Westerlind, BA, IA City, IA

The ABOS presents a Novel Surgical Skills Curriculum to support its' new mandates for Orthopaedic Residency Programs.

Scientific Exhibit SE63**Cost-Effective Training and Assessment Simulators for Orthopaedic Surgical Skills**

Gregory Lopez, MD, Orange, CA
David F. Martin, MD, Winston-Salem, NC
Rick W. Wright, MD, Saint Louis, MO
James Jung, BS, Irvine, CA
Peter Hahn, MD, Long Beach, CA
Ran Schwarzkopf, MD, Irvine, CA
Ranjan Gupta, MD, Orange, CA

Interactive exhibit demonstrating psychomotor orthopaedic skills training and assessment via cost-effective surgical simulators for basic motor skill training.

Scientific Exhibit SE64**Prevalence and Costs of Rehabilitation and Physical Therapy After Primary TJA**

Kevin Ong, PhD, Philadelphia, PA
Paul A. Lotke, MD, Gladwyne, PA
Edmund Lau, MS, Menlo Park, CA
Michael T. Manley, PhD, Wyckoff, NJ
Steven M. Kurtz, PhD, Philadelphia, PA

Physical therapy is utilized extensively, and in aggregate, costs the Medicare system more than \$648 million a year. Many of the PT modalities utilized remain without substantive outcome data.

Scientific Exhibit SE65

A PCR Protocol to Test for Methicillin-Resistant *S. Aureus* Carriage in Orthopaedic Trauma Patients

Richard D. Southgate, MD, Rochester, NY

Richard D. Southgate, MD, Rochester, NY

Holman Chan, MD, Henderson, NV

John P. Ketz, MD, Pittsford, NY

Catherine A. Humphrey, MD, Rochester, NY

Jonathan M. Gross, MD, Rochester, NY

John T. Gorczyca, MD, Rochester, NY

Rapid PCR amplification identified 7.4% of orthopaedic trauma patients at a single center as MRSA carriers. Results, available within 4 hours, allowed for tailoring of perioperative antibiotics.

Scientific Exhibit SE66

Medical Liability Committee: Risk Mitigation in Opioid Prescribing: Safe Prescribing and the REMS program.

David H. Sohn, JD, MD, Perrysburg, OH

Thomas B. Fleeter, MD, Reston, VA

Orthopedic surgeons must provide pain relief for patients yet avoid over-prescribing. Orthopedists need to be aware of REMS and other regulatory programs to provide safe and appropriate pain control.

Scientific Exhibit SE67

A Call To Arms: Standards Determine Medical Device Availability & Surgeons Must Contribute to the Process!

William M. Mihalko, MD, PhD, Germantown, TN

Jack E. Lemons, PhD, Birmingham, AL

A S. Greenwald, DPhil Oxon, Cleveland Heights, OH

Stuart B. Goodman, MD, Redwood City, CA

Warren O. Haggard, PhD, Bartlett, TN

Medical devices have undergone standards testing for years but now clinical trials and outcome measures are being drafted to improve and standardize clinical research.

Scientific Exhibit SE68

Demonstrating Quality in Orthopaedic Surgery

Rebecca Boas, New York, NY

Lorraine Hutzler, BA, New York, NY

Michael S. Day, MD, New York, NY

Richard Iorio, MD, New Rochelle, NY

James D. Slover, MD, New York, NY

Joseph A. Bosco III, MD, New York, NY

The ability to compete in the value based purchasing environment will lie more in the value delivery measured through quality metrics, than in the number of patients that we treat.

Scientific Exhibit SE69

Chlorhexidine Gluconate: Pre-Operative Disinfection to Reduce Infections for Surgical Subspecialties

Bhaveen Kapadia, MD, Baltimore, MD

Mark J. McElroy, BS, MS, Monroeville, PA

Kimona Issa, MD, Baltimore, MD

Samik Banerjee, MBBS, MS, Baltimore, MD

Sreenath Jagannathan, BS, Baltimore, MD

Michael A. Mont, MD, Baltimore, MD

Chlorhexidine gluconate solutions are effective in reducing surgical site infections following lower extremity total joint arthroplasty, surgical subspecialties, and central line-insertion.

Sports Medicine and Arthroscopy**Scientific Exhibit SE70**

Surgical Management of Disorders of the Long Head of the Biceps: From Overhead-throwing Athletes to Weekend Warriors

Shawn G. Anthony, MD, MBA, Boston, MA

Frank McCormick, MD, Ft Lauderdale, FL

Alec Macaulay, MD, Boston, MA

CDR (ret) Matthew T. Provencher, MD, Boston, MA

This exhibit provides a simplified algorithm for management of long head of the biceps tendon disorders in athletes with critical assessment and demonstration of current surgical techniques.

Scientific Exhibit SE71

Anterior Cruciate Ligament Reconstruction with Hamstrings: Tips and Tricks for Beginners

Roberto Buda, Bologna, Italy

Alberto Ruffilli, MD, Bologna, Italy

Francesca Vannini, MD, Bologna, Italy

Gherardo Pagliuzzi, Bologna, Italy

Marco Cavallo, MD, Bologna, Italy

Matteo Baldassarri, Bologna, Italy

Paola Capra, Lugo, Italy

Sandro Giannini, MD, Bologna, Italy

This exhibit will provide a detailed analysis of every step encompassed by ACL reconstruction procedure with hamstrings, addressing all the possible pitfalls and solutions.

Scientific Exhibit SE72

Ten Years of MOON Research and Its Impact on ACL Reconstruction and Orthopaedic Practice

Thomas S. Lynch, MD, Cleveland, OH

Kurt P. Spindler, MD, Nashville, TN

Richard D. Parker, MD, Cleveland, OH

Jack T. Andrish, MD, Cleveland, OH

Christopher C. Kaeding, MD, Columbus, OH

Rick W. Wright, MD, Saint Louis, MO

Robert G. Marx, MD, New York, NY

Eric C. McCarty, MD, Boulder, CO

Moon Group, Nashville, TN

The MOON group is more than a database regarding ACL injuries, but rather it has helped to establish a new “gold-standard” for conducting orthopaedic research while changing ACLR practice.

Scientific Exhibit SE73

Innovation in Orthopaedic Surgery - Is the Latest Always the Greatest?

Freddie H. Fu, MD, Pittsburgh, PA
Christopher D. Murawski, Stroudsburg, PA
Bruno Ohashi, MD, Pittsburgh, PA
Marcus Hofbauer, MD, Pittsburgh, PA

The purpose of this scientific exhibit is to emphasize that innovative medical devices and treatments methods must be safe, effective and economical; but, above all, they must result in no harm to patients.

Scientific Exhibit SE74

The Role of High Tibial Osteotomy and Distal Femoral Osteotomy in the Unstable and Chronic Ligament-Deficient Knee

Jack G. Skendzel, MD, Woodbury, MN
Alexander Weber, MD, Ann Arbor, MI
Travis G. Maak, MD, Salt Lake City, UT
Joshua Dines, MD, New York, NY
Robert F. LaPrade, MD, PhD, Vail, CO
Edward M. Wojtys, MD, Ann Arbor, MI
Scott A. Rodeo, MD, New York, NY
Asheesh Bedi, MD, Ann Arbor, MI

This scientific exhibit reviews the evaluation and surgical management of patients with chronic knee ligament instability and malalignment in the coronal and sagittal planes.

Scientific Exhibit SE75

Posterolateral Rotatory Instability of the Elbow: Pathoanatomy, Diagnosis and Treatment

Michael J. Alaia, MD, New York, NY
Jonathan W. Shearin, MD, New York, NY
Scott P. Steinmann, MD, Rochester, MN
Andrew A. Willis, MD, Madison, NJ
Steven J. Lee, MD, New York, NY

This exhibit is a comprehensive review of posterolateral rotatory instability of the elbow and will be able to provide surgeons with an understanding of this complex pathology and surgical treatment.

Scientific Exhibit SE76

Osteochondritis Dissecans - Etiology, Presentation, Diagnosis and Management in the Skeletally Immature

James Beckmann, MD, Salt Lake City, UT
Joshua Dines, MD, New York, NY
Asheesh Bedi, MD, Ann Arbor, MI
James Wylie, MD, Holladay, UT
Patrick Holt, MD, PhD, Salt Lake City, UT
Riley J. Williams, MD, New York, NY
Rick W. Wright, MD, Saint Louis, MO
Stephen K. Aoki, MD, Salt Lake City, UT
Travis G. Maak, MD, Salt Lake City, UT

This exhibit discusses osteochondritis dissecans in the skeletally immature patient including etiology, clinical and radiographic evaluation, and both non-operative and operative management algorithms.

Scientific Exhibit SE77

Cervical Spine Injury/Pathology as a Predictor of Outcomes in National Football League Athletes

Gregory D. Schroeder, MD, Chicago, IL
Thomas S. Lynch, MD, Cleveland, OH
Daniel Gibbs, MD, Chicago, IL
Mark Labelle, BS, Wheaton, IL
Ian Chow, BA, Chicago, IL
Jason W. Savage, MD, Chicago, IL
Wellington K. Hsu, MD, Chicago, IL
Gordon W. Nuber, MD, Chicago, IL

Pre-existing cervical spine pathology decreased an athlete's draft status and career longevity, but performance scores and numbers of games started were not affected.

Scientific Exhibit SE78

The Pivot-Shift Test: Development of an Image-Based Application to Quantify a Standardized Pivot-Shift Maneuver

Bruno Ohashi, MD, Pittsburgh, PA
Marcus Hofbauer, MD, Pittsburgh, PA
Yuichi Hoshino, MD, Kobe, Japan
Kristian Samuelsson, MD, MSc, PhD, Molndal, Sweden
Stefano Zaffagnini, MD, Bologna, Italy
Richard E. Debski, PhD, Pittsburgh, PA
James J. Irrgang, PhD, Pittsburgh, PA
Freddie H. Fu, MD, Pittsburgh, PA
Volker Musahl, MD, Pittsburgh, PA

This study aimed to report the development and validation of a novel image-based system able to easily quantify the pivot-shift test using a tablet computer.

Scientific Exhibit SE79

Bone-Patellar Tendon-Bone Allograft Biomechanics: Region and Irradiation

Adam B. Yanke, MD, Chicago, IL
Rebecca Bell, BS, Chicago, IL
Andrew Lee, MD, PhD, NY City, NY
Elizabeth Shewman, MS, Chicago, IL
Vincent Wang, Chicago, IL
Bernard R. Bach Jr, MD, River Forest, IL
Andrew Riff, MD, Chicago, IL

Biomechanical properties of patellar BTB allografts for ACL reconstruction vary significantly based on region and graft source. Low-dose irradiation does not affect failure properties.

Scientific Exhibit SE80

Clinical Outcome and Repair Integrity After Rotator Cuff Repair in Elderly Patients

Yong-Girl Rhee, MD, Seoul, Korea, Republic of
Jae Hyun Yoo, MD, Seoul
Nam-Su Cho, MD, Seoul

The retear rate increased significantly with increasing intraoperative tear size, not with increasing age. When an elderly patient is symptomatic and functionally disabled, surgery should be considered even in patients older than 70 years.

Scientific Exhibit SE81

Knee Dislocation and Multi-Ligament Knee Injury: Current Concepts in Diagnosis and Treatment

Richard Winder, MD, Rochester, MN
Gregory C. Fanelli, MD, Danville, PA
James P. Stannard, MD, Columbia, MO
Robert G. Marx, MD, New York, NY
Daniel Whelan, MD, Toronto, Canada
Peter B. MacDonald, MD, Winnipeg, Canada
Joel L. Boyd, MD, Minneapolis, MN
Michael J. Stuart, MD, Rochester, MN
Bruce A. Levy, MD, Rochester, MN

Knee dislocation and associated multi-ligament knee injury will be reviewed and operative treatment techniques will be illustrated.

Scientific Exhibit SE82

Open and Arthroscopic Anterior Shoulder Stabilization

Peter D. Fabricant, MD, MPH, New York, NY
Samuel A. Taylor, MD, New York, NY
Moira M. McCarthy, MD, New York, NY
Elizabeth Gausden, MD, New York, NY
Cathal Moran, MD, New York, NY
Richard W. Kang, MD, New York, NY
Frank A. Cordasco, MD, New York, NY

This exhibit will provide a systematic approach to facilitate diagnosis, imaging, and treatment of anterior shoulder instability in first time and recurrent shoulder dislocators.

Scientific Exhibit SE83

Meniscal Allograft Transplantation Made Simple: A How-To Guide

Nimrod Snir, MD, New York, NY
David Ding, MD, New York, NY
Theodore S. Wolfson, BS, New York, NY
Mathew Hamula, BA, BS, New York, NY
Garret Garofolo, BS, Commack, NY
Guillem Gonzalez-Lomas, MD, New York, NY
Eric J. Strauss, MD, New York, NY
Laith M. Jazrawi, MD, New York, NY

To provide a comprehensive guide to meniscal allograft transplantation in the symptomatic meniscal-deficient patient and demystify a potentially intimidating sports medicine procedure.

Scientific Exhibit SE84

Surgical Management of Acromioclavicular Joint Injuries: Where We Are in 2014

Theodore S. Wolfson, BS, New York, NY
William Rossy, MD, Hoboken, NJ
Mathew Hamula, BA, BS, New York, NY
Garret Garofolo, BS, Commack, NY
Steven Struhl, MD, New York, NY
Eric J. Strauss, MD, New York, NY
Laith M. Jazrawi, MD, New York, NY

This scientific exhibit will comprehensively review the various surgical strategies used to treat acromioclavicular joint injuries and the current state of knowledge in 2014.

Scientific Exhibit SE85

Tibial Tubercle Osteotomy: Indications, Techniques, and Outcomes

Seth Sherman, MD, Columbia, MO
Brandon Erickson, MD, Chicago, IL
Gregory L. Cvetanovich, MD, Chicago, IL
Peter N. Chalmers, MD, Chicago, IL
Jack Farr II, MD, Greenwood, IN
Bernard R. Bach Jr, MD, River Forest, IL
Brian J. Cole, MD, MBA, Chicago, IL

We performed an evidence based review to provide orthopedic surgeons with a firm understanding of the applications & limitations of TTO for the treatment of patellofemoral pain & suboptimal alignment.

Scientific Exhibit SE86

Anterior Cruciate Ligament Reconstruction in Elite Professional Athletes

Brandon Erickson, MD, Chicago, IL
Joshua Harris, MD, Bellaire, TX
Gregory L. Cvetanovich, MD, Chicago, IL
Geoffrey D. Abrams, MD, Portola Valley, CA
Bernard R. Bach Jr, MD, River Forest, IL
Nikhil N. Verma, MD, Chicago, IL
Charles A. Bush-Joseph, MD, Chicago, IL
Brian J. Cole, MD, MBA, Chicago, IL

To determine the return to sport (RTS) rate and performance upon RTS in elite athletes following ACL reconstruction, and to survey team orthopaedic surgeons on ACL reconstruction protocol.

Scientific Exhibit SE87

Advances in the Management of Massive Rotator Cuff Tears: All-Arthroscopic Patch Augmentation

Peter N. Chalmers, MD, Chicago, IL
Rachel M. Frank, MD, Chicago, IL
Anil Gupta, MD, MBA, Tampa, FL
Adam B. Yanke, MD, Chicago, IL
Scott W. Trenhaile, MD, Rockford, IL
Anthony A. Romeo, MD, Chicago, IL
Nikhil N. Verma, MD, Chicago, IL

Arthroscopic rotator cuff repair with patch augmentation utilizing sequential suture management enables successful augmentation of difficult cuff tears that would otherwise require open management.

Scientific Exhibit SE88

Advances in the Comprehensive Management of Bone Defects in Recurrent Shoulder Instability

Rachel M. Frank, MD, Chicago, IL
Sanjeev Bhatia, MD, Chicago, IL
Peter N. Chalmers, MD, Chicago, IL
Anil Gupta, MD, MBA, Tampa, FL
Anthony A. Romeo, MD, Chicago, IL
Nikhil N. Verma, MD, Chicago, IL
Brian J. Cole, MD, MBA, Chicago, IL
CDR (ret) Matthew T. Provencher, MD, Boston, MA

The majority of patients with recurrent anterior shoulder instability associated with osseous defects can be effectively treated and returned to a high level of function without recurrent instability.

The **Alternate Paper** designation indicates that this poster has been selected to be given as a paper in the event that one of the papers in the chosen session has to be withdrawn.

Adult Reconstruction Hip

Poster No. P001

Aseptic Protocol Decreases Surgical Site Infection After Hip Arthroplasty

Joseph Lamplot, BS, Chicago, IL
Gaurav A. Luther, MD, Boston, MA
Kyle Borque, MD, Chicago, IL
Hue H. Luu, MD, Chicago, IL
David W. Manning, MD, Chicago, IL

Our aseptic protocol significantly decreases SSI in a high-risk population undergoing hip arthroplasty compared to historical institutional data and contemporary comparable literature.

Poster No. P002

Effect of Contact Area and Surface Topography of Modular Tapers on Fretting Corrosion Behavior

Anna Panagiotidou, MBBS, London, United Kingdom
Jayantilal M. Meswania, PhD, Middlesex, United Kingdom
Jia Hua, Middlesex, United Kingdom
Sarah Muirhead-Allwood, FRCS, London, United Kingdom
John Skinner, FRCS, London, United Kingdom
Alister Hart, FRCS, London, United Kingdom
Gordon W. Blunn, MD, Middlesex, United Kingdom

This study has identified enhanced fretting corrosion at the modular taper junction associated with roughened surface finish and small neck tapers and points to the overall concern associated with the use of modular taper connections in orthopaedic implants.

Poster No. P003

A Randomized Controlled Trial of a Cemented vs. Cementless Femoral Component

Alternate Paper: Adult Reconstruction Hip I: Primary THR
Andrew Tice, MD, Ottawa, ON, Canada
Jae-Jin Ryu, PhD, Ottawa, ON, Canada
Paul R. Kim, MD, Ottawa, ON, Canada
Laurent Dinh, MD, Ottawa, ON, Canada
Paul E. Beaulé, MD, Ottawa, ON, Canada

When compared with patients receiving a cemented femoral hip resurfacing component, patients receiving an uncemented component had greater periprosthetic BMD.

Poster No. P004

Hip Arthroscopy Failure in Hip Dysplasia: Who Needs a Periacetabular Osteotomy?

Anchor Group, Saint Louis, MO
John C. Clohisy, MD, Saint Louis, MO
Meghan Gottlieb, Saint Louis, MO
Geneva Baca, Saint Louis, MO
Rafael J. Sierra, MD, Rochester, MN
Ernest L. Sink, MD, New York, NY
David A. Podeszwa, MD, Dallas, TX
Michael B. Millis, MD, Boston, MA
Paul E. Beaulé, MD, Ottawa, ON, Canada

Failed hip arthroscopy and the need for PAO is commonly observed 2 years after arthroscopy with persistent/recurrent symptoms and major functional limitations.

Poster No. P005

A New Method for Gait Data Analysis of Human Hip Diseases

Stefan Landgraeber, MD, Essen, Germany
Dietmar Rosenthal, Duisburg, Germany
Marcus Jager, MD, PhD, Essen, Germany
Andrés Kecskeméthy, PhD, Duisburg, Germany
Wojciech Kowalczyk, Duisburg, Germany

Phase diagrams based on knee flexion/extension and hip flexion/extension are a suitable method for hip research using gait analysis data.

Poster No. P006

◆ Intranasal Photodisinfection Therapy and Chlorhexidine Body Wipes Decreases Surgical Site Infections

Elizabeth Bryce, DMed, Vancouver, BC, Canada
Titus Wong, Vancouver, BC, Canada
Leslie Forrester, Vancouver, BC, Canada
Bassam A. Masri, MD, FRCSC, Vancouver, BC, Canada
Deborah Jeske, RN, Burnaby, BC, Canada
Kelly-Anne Barr, RN, BS, Delta, BC, Canada
Diane Roscoe, MD, Vancouver, BC, Canada

The combination of photodisinfection therapy and chlorhexidine wipes immediately pre-operatively reduces surgical site infections with the highest reduction noted for hip arthroplasty.

Poster No. P007

Longitudinal Study of Pseudotumors after Metal-on-metal Total Hip Arthroplasty using Magnetic Resonance Imaging

Masahiro Hasegawa, MD, Mie, Japan
Noriki Miyamoto, Tsu City, Japan
Shinichi Miyazaki, Mie, Japan
Hiroki Wakabayashi, Mie Prefecture, Japan
Akihiro Sudo, Prof, Tsu City, Mie, Japan

Longitudinal study assessed pseudotumor size after metal-on-metal total hip arthroplasty using magnetic resonance imaging. Among the 20 hips, six pseudotumors increased in size whereas five decreased.

Adult Reconstruction Hip**Poster No. P008**

Joint Preservation Rate at 25 Years after Rotational Acetabular Osteotomy for Developmental Hip Dysplasia

Alternate Paper: Adult Reconstruction Hip VII: Other/Complications

Ayumi Kaneuji, MD, Kahoku-Gun, Japan
Tanzo Sugimori, MD, Ishikawa, Japan
Toru Ichiseki, MD, Kahoku-Gun, Japan
Kiyokazu Fukui, MD, Kahoku-gun, Japan
Eiji Takahashi, MD, Kahokugun, Japan
Syusuke Ueda, MD, 1-1 Daigaku, Japan
Ryoji Tsuda, Kahokugun, Japan
Tadami Matsumoto, MD, Kahoku-Gun, Japan

The joint-preservation rates at 25 years after rotational acetabular osteotomy were 91% in the pre-OA group, 88% in the early OA group, and 40% in the advanced OA group when the end point was THA.

Poster No. P009

Effect of Increased Frictional Torque on the Fretting Corrosion Behavior of the Large Diameter Femoral Head

Anna Panagiotidou, MBBS, London, United Kingdom
Ben Bolland, FRCS, MBBS, Hampshire, United Kingdom
Jayantilal M. Meswania, PhD, Middlesex, United Kingdom
John Skinner, FRCS, London, United Kingdom
Fares S. Haddad, FRCS, London, United Kingdom
Alister Hart, FRCS, London, United Kingdom
Gordon W. Blunn, MD, Middlesex, United Kingdom

Increasing torque leads to increased susceptibility to fretting corrosion at the modular head/stem taper interface of total hip replacements for both head stem material combinations.

Poster No. P010

Fracture of Highly Cross-Linked Acetabular Liners: An Analysis of 75 Reports of a Single Design to the FDA

Michael P. Ast, MD, New York, NY
Thomas K. John, MD, Fair Lawn, NJ
Alejandro Gonzalez Della Valle, MD, New York, NY

After review of 75 liner fractures, polyethylene thickness of less than 4.7 mm and the use of 36 mm heads with shells less than 56 mm were found to have strong correlations with HXLPE liner fracture.

Poster No. P011

Prevalence of Radiographic Abnormalities in Senior Athletes with Well-Functioning Hips

Lucas Anderson, MD, Salt Lake City, UT
Ashley L. Kapron, BS, Salt Lake City, UT
Stephen K. Aoki, MD, Salt Lake City, UT
Mike Anderson, MS, ATC, Salt Lake City, UT
Ramon Grijalva, MD, Irvine, CA
Jill Erickson, PA, Salt Lake City, UT
Christopher L. Peters, MD, Salt Lake City, UT

This study suggests that other factors, possibly genetics or cartilotype, may play a hip preserving role in this series of high functioning senior athletes.

Poster No. P012

Patient Characteristics Affect Anatomic Location of the Femoral Artery about the Hip

Vincent M. Moretti, MD, Berwyn, IL
Michael K. Merz, MD, Chicago, IL
Samuel J. Chmell, MD, Chicago, IL

Femoral artery location is variable and can dangerously approach the anterior acetabular wall, particularly in Hispanic female patients.

Poster No. P013

Accuracy of Acetabular Correction in Periacetabular Osteotomy

Stephen T. Duncan, MD, Lexington, KY
Gail Pashos, St Louis, MO
Angela D. Keith, MS, Saint Louis, MO
Geneva Baca, Saint Louis, MO
Perry L. Schoenecker, MD, Saint Louis, MO
John C. Clohisey, MD, Saint Louis, MO

Acetabular correction during PAO is key for optimizing outcomes, occurring in the majority of cases for single radiographic parameters but less commonly for simultaneous correction of all parameters.

Poster No. P014

Short-Term Outcomes and Cost of Fast-Track Surgery for Total Hip and Knee Arthroplasty at a Tertiary Hospital

Viktor Hansen, MD, Boston, MA
Lauren M. Lebrun, MPH, Boston, MA
Elizabeth A. Jacob, BA, Boston, MA
Robert Dorman, Boston, MA
Gregory J. Pauly, Boston, MA
Henrik Malchau, MD, Boston, MA
Robert Peloquin, MD, Boston, MA
Andrew A. Freiberg, MD, Boston, MA

This study assessed clinical outcomes and costs prior to and after implementation of a fast-track surgery program for total joint replacement at a tertiary hospital.

Poster No. P015

The Effect of Implant Recall: The Patient's Perspective

Richard Washburn III, MD, Lebanon, NH
Karl Koenig, MD, MS, Lebanon, NH
Christopher A. Makarewich, MD, Salt Lake City, UT
Kevin F. Spratt, PhD, Lebanon, NH
John-Erik Bell, MD, Hanover, NH

This study evaluated patient outcome scores and survey results from patients who received a recalled total hip prosthesis.

Poster No. P016

Bundle Care Package Demonstrates Improvement in Efficiency for Primary Total Hip and Knee Arthroplasties

Alternate Paper: Adult Reconstruction Hip V: Primary THR II

Paul J. Duwelius, MD, Portland, OR
 Laura Matsen Ko, MD, Portland, OR
 Grant Branam, BSC, Lake Oswego, OR
 Cecily Froemke, MS, Portland, OR
 Venessa A. Stas, MD, FRCSC, Portland, OR
 Hans S. Moller III, MD, Sherwood, OR
 Ronda K. Williamson, Portland, OR

This bundled payment project improved the quality of care, efficiency, and cost by collaborating with care providers and administrators.

Poster No. P017

Incremental Cost and Length-of-Stay Associated with Complications of Total Hip Arthroplasty

David Jevsevar, MD, MBA, Saint George, UT
 Kevin G. Shea, MD, Boise, ID
 Steven D. Culler, PhD, Atlanta, GA
 April Simon, MSN, Atlanta, GA
 Kim Wright, RN, Glen Allen, VA

The three most resource intensive complications of THA increase hospital cost by \$13,000 and 3 days Length of Stay, doubling the cost of a hospitalization compared to MB without complication.

Poster No. P018

Effect of Corticosteroid Dosage on the Risk for Developing Osteonecrosis of the Femoral Head

Michael A. Mont, MD, Baltimore, MD
 Robert Pivec, MD, Baltimore, MD
 Kimona Issa, MD, Baltimore, MD
 Bhaveen Kapadia, MD, Baltimore, MD
 Mark J. McElroy, BS, MS, Monroeville, PA
 Samik Banerjee, MBBS, MS, Baltimore, MD

Each 10 mg/day increase in the corticosteroid dose results in a 3.6% increase in the risk for femoral head ON.

Poster No. P019

Severity of Dysplasia and Activity Level Predict Age at Periacetabular Osteotomy for Symptomatic Hip Dysplasia

Travis H. Matheney, MD, Boston, MA
 Young Jo Kim, MD, PhD, Boston, MA
 Ira Zaltz, MD, Royal Oak, MI
 John C. Clobisy, MD, Saint Louis, MO
 Michael B. Millis, MD, Boston, MA

Severity of hip dysplasia and activity level are independent predictors of age at PAO.

Poster No. P020

Hip Morphology and Pain - Cross-sectional and Longitudinal Associations; A 20-year Longitudinal Cohort Study

Geraint E. Thomas, MA, MBBS, Oxford, United Kingdom
 Rajbir N. Batra, Oxford, United Kingdom
 Andrew Judge, PhD, Oxford, United Kingdom
 Deborah Hart, MD
 Tim D. Spector, MD
 David W. Murray, MD, Oxford, United Kingdom
 Andrew J. Carr, FRCS, Headington Oxford, United Kingdom
 Nigel Arden, MD, Oxford, United Kingdom
 Sion Glyn-Jones, MA, MBBS, Oxford, United Kingdom

Measurements of hip morphology characteristic of subclinical dysplasia and FAI (LCE, Extrusion index, Alpha angle and MTH) are predictive of hip pain in a 20-year longitudinal population cohort.

Poster No. P021

Does Magnitude of Femoral Version Affect Outcomes for Femoroacetabular Impingement Surgery?

Paul R. Kuzyk, MD, FRCSC, Toronto, ON, Canada
 Michael Sellan, MD, London, ON, Canada
 Matthew Kelly, Niskayuna, NY
 Young Jo Kim, MD, PhD, Boston, MA
 Michael B. Millis, MD, Boston, MA

We assessed the effect of femoral version on outcomes after open osteochondroplasty for FAI. WOMAC scores improved for patients with normal version but not for those with extremes of femoral version.

Poster No. P022

Does the Anterior Approach Improve Acetabular Positioning and Leg Length Restoration in Total Hip Arthroplasty?

Denis Nam, MD, St Louis, MO
 Peter K. Sculco, MD, New York, NY
 Edwin P. Su, MD, New York, NY
 Michael M. Alexiades, MD, Manhattan, NY
 Mark P. Figgie, MD, New York, NY
 David J. Mayman, MD, New York, NY

The direct, anterior technique does not improve acetabular alignment or leg length restoration versus the posterolateral technique in total hip arthroplasty.

Poster No. P023

Highly Cross-linked Polyethylene Liners Exhibit Superior Wear Performance After Total Hip Arthroplasty

Alternate Paper: Adult Reconstruction Hip II: Bearing Surfaces

Koji Tsuji, MD, Gainesville, FL
 Scott A. Banks, PhD, Gainesville, FL
 Kazuo Hirakawa, MD, PhD, Kamakura, Japan

Mid-term follow-up of total hip arthroplasty patients shows exceeding improved wear performance of highly cross-linked polyethylene liners and no cases of osteolysis compared to conventional PE.

Adult Reconstruction Hip**Poster No. P024****Does Tranexamic Acid Reduce Blood Loss and Transfusion Requirements Associated with the Periacetabular Osteotomy?**

Scott A. Wingerter, MD, PhD, Leawood, KS
 Angela D. Keith, MS, Saint Louis, MO
 Perry L. Schoenecker, MD, Saint Louis, MO
 Geneva Baca, Saint Louis, MO
 John C. Clohisy, MD, Saint Louis, MO

TXA reduces transfusion rates and blood utilization without any increase in thromboembolic events when used in association with the periacetabular osteotomy for the treatment of acetabular dysplasia.

Poster No. P025**Risk Factors of Surgical Site Infection Following Total Joint Arthroplasty**

Mohammad R. Rasouli, MD, Philadelphia, PA
 Camilo Restrepo, MD, Philadelphia, PA
 Mitchell Maltenfort, PhD, Philadelphia, PA
 Javad Parvizi, MD, FRCS, Philadelphia, PA

This study has identified some risk factors for SSI following total joint arthroplasty. Implementation of strategies that could reverse some of these modifiable risk factors could lead to reduction of this complication.

Poster No. P026**What are the Outcomes of THA for Osteonecrosis in Human Immunodeficiency Virus-Infected Patients**

Kimona Issa, MD, Baltimore, MD
 Qais Naziri, MD, Brooklyn, NY
 Aditya V. Maheshwari, MD, Brooklyn, NY
 Aiman Rifai, DO, Clifton, NJ
 Ronald E. Delanois, MD, Baltimore, MD
 Vincent K. McInerney, MD, New Vernon, NJ
 Michael A. Mont, MD, Baltimore, MD

THA can offer excellent clinical and patient-reported outcomes in post-collapsed Osteonecrotic disease. However, revisions due to late-infection may be potential complications at long-term follow-up.

Poster No. P027**Successful Detection of Failed Recalled Metal-on-Metal (MoM) Hip Replacements After Surgeon Initiated Follow Up**

Nazly Carrillo-Villamizar, BS, Rochester, MN
 Hernan A. Prieto Saavedra, MD, Rochester, MN
 Robert T. Trousdale, MD, Rochester, MN
 Rafael J. Sierra, MD, Rochester, MN

Surgeon-initiated contact after a recalled metal-on-metal (MoM) hip replacement was primarily responsible for patients returning for hip evaluation and detection of complications leading to revision.

Poster No. P028**Subclinical Slipped Capital Femoral Epiphysis (SCFE) Predisposes to Cam Type Femoro-acetabular Impingement (FAI)**

Christoph E. Albers, MD, Bern, Switzerland
 Simon D Steppacher, MD, Bern, Switzerland
 Stefan Werlen, MD, Bern, Switzerland
 Klaus Siebenrock, MD, Bern, Switzerland
 Pascal C. Haefeli, MD, Bern, Switzerland
 Moritz Tannast, Bern, Switzerland

Subclinical, untreated slipped capital femoral epiphysis in childhood is as a risk factor for the development of cam type femoro-acetabular impingement.

Poster No. P029**Cemented versus Cementless Femoral Fixation in Primary Total Hip Arthroplasty in Patients Aged 75 and Older**

Alexander P. Sah, MD, Fremont, CA
 John T. Dearborn, MD, Fremont, CA

Both hybrid and cementless techniques result in comparable outcomes, but cemented fixation has a lower fracture risk and reduced blood loss.

Poster No. P030**◆ Prevalence and Perioperative Outcomes of Off-Label Total Hip and Knee Arthroplasty in the United States, 2000-2010**

Tennison Malcolm, BS, Cleveland, OH
 Nicholas K. Schiltz, BS, Cleveland, OH
 Caleb Szubski, BA, Cleveland, OH
 Alison K. Klika, MS, Cleveland, OH
 Wael K. Barsoum, MD, Cleveland, OH

Off-label total joint arthroplasty is common and these patients have greater adjusted length of stay and costs than their on-label peers, as well as elevated complication risk in most subgroups.

Poster No. P031**Relative Neck Lengthening in Complex Proximal Femoral Deformities: Technique, Complications and 5-year Results**

Christoph E. Albers, MD, Bern, Switzerland
 Joseph M. Schwab, MD, Milwaukee, WI
 Simon D Steppacher, MD, Bern, Switzerland
 Moritz Tannast, Bern, Switzerland
 Klaus Siebenrock, MD, Bern, Switzerland

Relative femoral neck lengthening allows correction of intra- and extraarticular impingement of hips with complex femoral deformities with low complication rates and improved clinical outcome.

Poster No. P032**Acetabular Component Positioning and Functional Outcomes in Patients**

Oladapo M. Babatunde, MD, New York, NY
 Skylar Johnson, New York, NY
 Kaicen Zhu, Riverdale, NJ
 Katie Peyser, BA, Great Neck, NY
 Jeffrey A. Geller, MD, New York, NY
 William B. Macaulay, MD, New York, NY

Acetubular Position has an effect on the outcomes of patients.

Poster No. P033**How Does the Intra-Operative Cup Orientation Relate with the Resultant Radiographic? - An In-Vivo Study.***George A. Grammatopoulos, MRCS, Oxford, United Kingdom**Hemant G. Pandit, FRCS, Oxford, United Kingdom**Ruy Da Assuncao, FRCS, Worthing, United Kingdom**Stephen J. Mellon, PhD**Duncan Whitwell, FRCS, Oxford, United Kingdom**Peter McLardy-Smith, FRCS, Oxford, United Kingdom**Koen A. DeSmet, MD, Gent, Belgium**Harinderjit Gill, PhD, Bath/North Somerset, United Kingdom**David W. Murray, MD, Oxford, United Kingdom*

In order to achieve a specific radiographic orientation target, surgeons should aim to implant the cup with 5° less intra-operative inclination and 8° more intra-operative anteversion.

Poster No. P034**Lumbar Spinal Canal Stenosis Impairs Functional Outcomes in Patients Undergoing Total Hip Arthroplasty***Kimona Issa, MD, Baltimore, MD**Sina Pourtaberi, MD, Paterson, NJ**Aiman Rifai, DO, Clifton, NJ**Samik Banerjee, MBBS, MS, Baltimore, MD**Vincent K. McInerney, MD, New Vernon, NJ**Mark J. McElroy, BS, MS, Monroeville, PA**Michael A. Mont, MD, Baltimore, MD*

Lumbar spinal canal stenosis impairs functional outcomes and activity levels in patients undergoing primary total hip arthroplasty.

Poster No. P035**Incidence of Projected Periprosthetic Femoral Fracture Following THA: An Analysis of International Registry Data***Robert Pivec, MD, Baltimore, MD**Kimona Issa, MD, Baltimore, MD**Bhaveen Kapadia, MD, Baltimore, MD**Steven F. Harwin, MD, New York, NY**Peter M. Bonutti, MD, Effingham, IL**Michael A. Mont, MD, Baltimore, MD*

The incidence of both intra- and post-operative fractures is low, but the number is likely to steadily increase and may potentially be higher in elderly, osteoporotic patient population.

Poster No. P036**A Single-Center Experience Using a Modular Neck System for Primary Total Hip Arthroplasty***Paul E. Beaulé, MD, Ottawa, ON, Canada**Emmanuel Illical, MD, FRCSC, Calgary, AB, Canada**Robert J. Feibel, MD, Ottawa, ON, Canada**Paul R. Kim, MD, Ottawa, ON, Canada*

Unlike previous reports, at mid-term follow-up there were no complications associated with modular femoral neck use, with only 8% of patients requiring long necks.

Poster No. P037**Evaluation of the Magnitude and Location of Cam Deformity using 3-D CT Analysis***Osman H. Khan, MD, London, United Kingdom**Johan Witt, MD, London, United Kingdom*

We demonstrate that 3-D CT analysis offers the ability to accurately determine the magnitude and extent of the cam deformity in patients with Femoroacetabular Impingement.

Poster No. P038**How Much Hip Extension does Really Occur during Gait in Patients with Total Hip Arthroplasty?***Tsung-Yuan Tsai, PhD, Boston, MA**Jing-Sheng Li, PT, MS, Boston, MA**Donna Scarborough, MS, PT, Boston, MA**Henrik Malchau, MD, Boston, MA**Harry E. Rubash, MD, Boston, MA**Guoan Li, PhD, Boston, MA**Young-Min Kwon, MD, PhD, Boston, MA*

No extension was observed in hips during gait in 20 patients with well-functioning metal-on-polyethylene total hip arthroplasty.

Poster No. P039**Cemented Cups with an Acetabular Reinforcement Ring Provide Excellent Long-term Fixation after Pelvic Irradiation****Alternate Paper: Adult Reconstruction Hip IV: Revision THA***Arnaud Felden, MD, Paris, Réunion**Philippe Anract, MD, Paris, France**Jean-Pierre Courpied, PhD, Paris, France**Antoine Babinet, Paris, France**Valerie Dumaine, New York, NY**Moussa Hamadouche, PhD, Paris, France**David J. Biau, MD, PhD, Paris, France*

Cemented cups with an acetabular reinforcement ring provides good long-term fixation after pelvic irradiation.

Poster No. P040**Variation in Cup Orientation using Conventional Cup Alignment Techniques as Measured by CT***Stephen B. Murphy, MD, Boston, MA*

Measurement of Cup Orientation using CT demonstrates that 69% of cups placed using conventional techniques are malpositioned.

Poster No. P041**The Short and "Shorter" of It: >1,750 Tapered Titanium Stems at 12 to 96 Month Follow Up***John W. Barrington, MD, Plano, TX**Roger H. Emerson Jr, MD, Dallas, TX*

This comparison study of one flat, tapered titanium stem to an even shorter version has confirmed similar >99% survivorship in both cohorts, in >1,750 THA stems at 12 to 96 (mean 42) month follow-up.

Adult Reconstruction Hip**Poster No. P042**

Preoperative Pain Catastrophization Predicts Higher Pain and Analgesia Use During Primary Hip Arthroplasty
Assad Farooq, MBBS, BS, Reading, United Kingdom
Rakesh Kucheria, FRCS, FRCS, Middlesex, United Kingdom
Salma Chaudhury, MD, PhD, High Wycombe, United Kingdom

Preoperative pain catastrophization correlated with poorer hip function and higher perioperative pain and analgesia use in this prospective study of patients undergoing primary total hip arthroplasty.

Poster No. P043

The Impact of Avascular Necrosis on the Risk of Complications Following Total Hip Replacement
Alexandra Stavrakis, MD, Los Angeles, CA
Jay R. Lieberman, MD, Los Angeles, CA
Nelson F. SooHoo, MD, Los Angeles, CA

Compare the complication rates of patients with avascular necrosis undergoing total hip arthroplasty with other patients undergoing total hip arthroplasty.

Poster No. P044

Cementless Metal-on-metal Total Hip Arthroplasty at 19 Years Follow Up
Filippo Randelli, MD, Milano, Italy
Fabrizio Pace, MD, Milan, Italy
Sara Favilla, Milan, Italy
Daniela Maglione, MD, Milanese, Italy
Lorenzo Banci, MD, Milan, Italy

The aim of the present study was to evaluate the long-term survivalship and results of Metasul metal on metal bearing in a series of 145 hips with a mean follow up of 19 years.

Poster No. P045

Impact of Metabolic Syndrome on Peri-Operative Complication Rates after Total Joint Replacement Surgery
Ran Schwarzkopf, MD, Irvine, CA
Mark Gage, MD, New York, NY
Michael Abrouk, BS, Irvine, CA
James D. Slover, MD, New York, NY

The presence of Metabolic syndrome in patients undergoing total joint arthroplasty has a statistically significant impact on surgical complication rates.

Poster No. P046

Ultrasound Examination is the First Choice for Detecting Pseudotumors after Metal-on-Metal Total Hip Arthroplasty
Kunihide Muraoka, Fukuoka, Japan
Masatoshi Naito, MD, Fukuoka, Japan
Yoshinari Nakamura, MD, Fukuoka, Japan
Tomohiro Kobayashi, MD, Fukuoka, Japan
Tomohiro Nomura, MD, Fukuoka City, Japan
Tetsuya Sakamoto, MD, Fukuoka, Japan
Tomonobu Hagio, MD, Fukuoka, Japan
Tomoko Nagano, Fukuoka-Ken, Japan
Norihito Watanabe, MD, Fukuoka-Ken, Japan

Ultrasound examination was found to have a high negative predictive value for detecting pseudotumors, making it valuable for detecting pseudotumors prior to performing magnetic resonance imaging.

Poster No. P047

Exploration & Neurolysis for Treatment of Neuropathic Pain in Patients with Sciatic Nerve Palsy Post Hip Replacement
Stephen Kyriacou, MRCS, London, United Kingdom
Philip Pastides, London, United Kingdom
Marco M. Sinisi, Middlesex, United Kingdom
Michael Fox, FRCS (Ortho), Stanmore, Middlesex, United Kingdom

A sciatic nerve palsy associated with neuropathic pain following a total hip replacement is an uncommon but devastating complication. Exploration and neurolysis can improve pain in such cases.

Poster No. P048

Highly Cross-Linked PE in THA for Osteonecrosis of the Femoral Head: Comparative Results of Patients greater than 50 versus less than 50
Kyung-Jae Lee, MD, Daegu, Republic of Korea
Byung-Woo Min, MD, Daegu, Republic of Korea
Ki-Cheor Bae, MD, Daegu, Republic of Korea
Chul-Hyun Cho, MD, PhD, Joongu, Republic of Korea
Gyo Wook Kim, Daegu, Republic of Korea

The results of highly cross-linked PE at a minimum of 5 years for the high-risk population are promising. Our results support the continued use of this type of liner in younger patient with ONFH.

Poster No. P049

Diagnosis of Deep Infection in Revision Hip Arthroplasty with a Metal-on-Metal Bearing or Corrosion
Paul H. Yi, BA, Chicago, IL
Michael B. Cross, MD, New York, NY
Mario Moric, MS, Chicago, IL
Brett R. Levine, MD, Chicago, IL
Scott M. Sporer, MD, Wheaton, IL
Wayne G. Paprosky, MD, Winfield, IL
Joshua J. Jacobs, MD, Chicago, IL
Craig J. Della Valle, MD, Chicago, IL

The diagnosis of PJI is extremely difficult in patients with metallic bearings or corrosion and the synovial fluid WBC can frequently be falsely positive.

Poster No. P050**A Novel Assessment of Driving Reaction Time Following THR Using a New Fully Interactive Driving Simulator***Allison Ruel, BA, New York, NY**Geoffrey H. Westrich, MD, New York, NY*

Because of the improved outcomes of newer hip implant systems in the immediate postoperative period, it may be safe for new THA patients to drive earlier.

Poster No. P051**Converting between High and Low Sensitivity CRP in the Assessment of Peri-Prosthetic Joint Infection***Michael T. Milone, Philadelphia, PA**Atul F. Kamath, MD, Massapequa, NY**Craig L. Israelite, MD, Philadelphia, PA*

A retrospective review showing that serum Hs-CRP and Ls-CRP are equivalent in the assessment of peri-prosthetic joint infection. A factor of 10 may be employed to convert between the two tests.

Poster No. P052**Oxidative Stability of a First Generation Highly Cross-linked UHMWPE With Up to 11 Years In Vivo***Shannon L. Rowell, Boston, MA**Keith K. Wannomae, Boston, MA**Henrik Malchau, MD, Boston, MA**Orhun K. Muratoglu, PhD, Boston, MA*

Low subsurface in vivo oxidation appears to be developing below the articular surface of highly cross-linked polyethylene liners, but show no evidence of clinical impact at this time.

Poster No. P053**50 Million-Cycle Wear Performance Evaluation of Crosslinked Vitamin E (VE)-Grafted UHMWPE Acetabular Liners***Diego A. Orozco-Villasenor, PhD, Warsaw, IN**Alicia Rufner, MSc, Warsaw, IN**David M. Miller, PhD, Warsaw, IN**Andrew A. Freiberg, MD, Boston, MA*

VE-grafted UHMWPE exhibited excellent wear and oxidative resistance properties, even after 50 million-cycles of in vitro wear testing and a combined total 5 weeks of accelerated aging.

Poster No. P054**Primary Total Hip Arthroplasty among Nonagenarian Patients: Patient Characteristics and Clinical Outcomes***Alexander Miric, MD, Los Angeles, CA**Maria C. Inacio, MS, San Diego, CA**Matthew P. Kelly, MD, Los Angeles, CA**Robert S. Namba, MD, Corona Del Mar, CA*

Despite advanced age and greater co-morbidities, nonagenarian patients can safely undergo THA with complication and readmission rates similar to younger patients, and mortality within expected rates.

Poster No. P055**Are Patient Reported Allergies a Risk Factor for Poor Outcomes in Total Hip and Knee Arthroplasty?***Christopher M. Graves, MD, Iowa City, IA**Jesse E. Otero, MD, Iowa City, IA**Melissa Willenborg, MD, Iowa City, IA**Yubo Gao, PhD, Iowa City, IA**Steve S. Liu, MD, Iowa City, IA**Richard C. Johnston, MD, Iowa City, IA**John J. Callaghan, MD, Iowa City, IA*

Patients with multiple self-reported allergies obtain less improvement in function following THR and TKR than those without. Surgeons should counsel this patient population about these findings.

Poster No. P056**How Many THA Patients can be Expected at Long-term Follow Up: A Population-Based Mortality Study***John J. Callaghan, MD, Iowa City, IA**Robert Pivec, MD, Baltimore, MD**Kimona Issa, MD, Baltimore, MD**Michael A. Mont, MD, Baltimore, MD*

Clinicians should expect to see less than half of their patients for follow up at mean 15 years if their mean patient age at which THA was performed was over 65 years.

Poster No. P057**Prevalence of Total Hip (THA) and Total Knee (TKA) Arthroplasty in the United States***Hilal Maradit-Kremers, MD, MSc, Rochester, MN**Cynthia S. Crowson, Rochester, MN**Dirk Larson, Rochester, MN**William A. Jiranek, MD, Richmond, VA**Daniel J. Berry, MD, Rochester, MN*

2010 prevalence of THA and TKA in the general population of United States.

Poster No. P058**Ischiopubic Ramus Stress Fracture After Periacetabular Osteotomy - An Under-reported Complication***Ajay Malviya, MD, Newcastle Upon Tyne, United Kingdom**Koen Liekens, MD, Gent, Belgium**Johan Witt, MD, London, United Kingdom*

We have performed a radiological and case note review of 259 consecutive patients who underwent a Bernese type periacetabular osteotomy and found a 19% incidence of stress fracture in this cohort.

Adult Reconstruction Hip**Poster No. P059****Risk Factors for Staphylococcus aureus Nasal Colonization in Spinal Fusion or Joint Arthroplasty Patients**

Kirk A. Campbell, MD, New York, NY
Colleen Cunningham, BS, New York, NY
Saqib Hasan, MD, New York, NY
Lorraine Hutzler, BA, New York, NY
Michael Phillips, MD, New York, NY
Joseph A. Bosco III, MD, New York, NY

Staphylococcus aureus nasal colonization is a risk factor for surgical site infection. We found obesity and asthma as significant risk factors for MRSA colonization in spine and total joint surgery.

Poster No. P060**Variation in Cup Orientation using Conventional Cup Alignment Techniques as Measured by CT**

William Murphy, Winchester, MA
Jens Kowal, PhD, Boston, MA
Stephen B. Murphy, MD, Boston, MA

Measurement of Cup Orientation using CT demonstrates that 69% of cups placed using conventional techniques are malpositioned.

Poster No. P061**The Incidence of and Risk Factors for 30-Day Surgical Site Infections Following Total Joint Arthroplasty**

Andrew J. Pugely, MD, Iowa City, IA
Christopher T. Martin, MD, Iowa City, IA
Yubo Gao, PhD, Iowa City, IA
John J. Callaghan, MD, Iowa City, IA

Short-term, 30-day SSIs occur in more than 1% of patients undergoing TJA. The incidence of SSI following TJA is highest among revision procedures, especially of the hip.

Poster No. P062**A Comparison of MRI Findings Surrounding Hip Arthroplasties With and Without a Modular Taper Junction**

Reshid Berber, MBBS, BSc, St Albans, United Kingdom
Suzie Cro, MSc, BS, London, United Kingdom
Keshthra Satchithananda, FRCR, London, United Kingdom
Michael Khoo, MBBS, Stanmore, United Kingdom
Ashley Matthies, BSc, London, United Kingdom
John Skinner, FRCS, London, United Kingdom
Alister Hart, FRCS, London, United Kingdom

This is the first case-control study of MRI findings of metal-on-metal hips with and without a taper. Abductor atrophy was worse in stemmed hips, but no variation in pseudotumour prevalence was seen.

Poster No. P063**10-Year Results of Alumina-on-alumina THA with Cemented Polyethylene-backed**

Noriyoshi Sawada, MD, Osaka, Japan
Kohei Yabuno, MD, Osaka City, Japan
Noriyoshi Sawada, MD, Osaka, Japan
Kohei Yabuno, MD, Osaka City, Japan

Alumina on alumina THA yielded passably mid-term(10 years) results, but it was occurred a high rate of catastrophic alumina inlay failure.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Poster No. P064**Blood Management has an Impact on Length of Stay after Total Joint Arthroplasty**

Jad Bou Monsef, MD, New York, NY
Friedrich Boettner, MD, Larchmont, NY

Blood transfusions prolong length of stay after total joint arthroplasty. Blood management of the can significantly reduce hospital stay and the total cost of joint replacement procedures.

Poster No. P065**Ceramic on Metal Total Hip Arthroplasty; Clinical Results, Metal Ion Levels and Chromosome Analysis at Two Years**

Hussain Kazi, MBChB, FRCS, Toronto, ON, Canada
Jonathan Perera, BSc(Hons), MBBS, London, United Kingdom
Elizabeth Gillott, MBBS, MRCS, London, United Kingdom
Adrian Carroll, FRCS, MBBS, Heswall, Wirral, United Kingdom
Tim Briggs, FRCS, Middlesex, United Kingdom

Use of ceramic on metal bearing is safe and efficacious in the short term. Long-term significance of elevated metal ions and chromosomal aberration is unclear.

Poster No. P066**Pre-Op THR Pain and Functional Limitation Profiles are Consistent Across U.S. Surgeons**

David C. Ayers, MD, Worcester, MA
Leslie Harrold, MD, MPH, Worcester, MA
Wenjun Li, PhD, Worcester, MA
Patricia Franklin, MD, MBA, Worcester, MA

Despite the growing numbers of THR patients, consistent and significant pain and poor function are reported in patients across 21 US sites suggesting appropriate patient selection.

Poster No. P067**What is the Clinical Relevance of Visual Inspection of the Head / Stem Taper Junctions in Large Metal-on-Metal Hips?**

Sevi Kocagoz, BS, Philadelphia, PA
Richard Underwood, PhD, Philadelphia, PA
Daniel MacDonald, Philadelphia, PA
Doruk Baykal, PhD, Philadelphia, PA
Judd Day, PhD, Philadelphia, PA
Steven M. Kurtz, PhD, Philadelphia, PA

The purpose of this study was to demonstrate the high range of variation in volumetric material removal for components that have been categorized under the same visual fretting and corrosion score.

Poster No. P068**Does Malnutrition Correlate with Septic Failure of Hip and Knee Arthroplasties?**

Rachel M. Frank, MD, Chicago, IL
Paul H. Yi, BA, Chicago, IL
Elliott R. Vann, MD, Abilene, TX
Mario Moric, MS, Chicago, IL
Craig J. Della Valle, MD, Chicago, IL

Pre-operative malnutrition is extremely common among patients undergoing revision hip and knee arthroplasty and is an independent risk factor for septic revision.

Poster No. P069**Porous Tantalum Acetabular Augments in Complex Revision THA: Results at 5-12 Years Post Surgery**

Derek R. Jenkins, MD, Concord, NH
Andrew N. Odland, MD, Rochester, MN
Rafael J. Sierra, MD, Rochester, MN
Arlen D. Hanssen, MD, Rochester, MN
David G. Lewallen, MD, Rochester, MN

Porous Tantalum Augments can be used in complex revision THA to restore hip mechanics and provide durable fixation and improved clinical outcomes at minimum 5-year followup.

Poster No. P070**Preoperative EPO Reduces Postoperative Transfusion in THA and TKA, But May Not Be Cost Effective**

Hany S. Bedair, MD, Boston, MA
Judy Yang, MD, Newton, MA
Maureen K. Dwyer, ATC, PhD, Newton, MA
Joseph C. McCarthy, MD, Newton, MA

Preoperative EPO was extremely effective at reducing the need for post-operative transfusions in high risk THA and TKA patients but was not found to be cost-effective.

Poster No. P071**A Randomized Control Trial of Two Distinct Shared Decision Making (SDM) Aids for Hip and Knee Osteoarthritis (OA)**

Jennifer Shue, MS, New York, NY
Raj Karia, MPH, New York, NY
Dennis A. Cardone, DO, New York, NY
Mehul R. Shah, MD, New York, NY
James D. Slover, MD, New York, NY

The study compared the effect of two decision aid programs on patient knowledge, decision-making participation, satisfaction, and treatment preferences in patients with advanced hip or knee arthritis.

Poster No. P072**Long-term Outcome of Multiple Lower Extremity Major Joint Arthroplasties**

John B. Meding, MD, Mooresville, IN
Merrill A. Ritter, MD, Indianapolis, IN
Jeffery L. Pierson, MD, Carmel, IN
E. Michael Keating, MD, Mooresville, IN
Kenneth Davis, MS, Mooresville, IN

The present study investigates if multiple lower extremity major joint arthroplasties predisposes patients to long term loosening or mechanical complications.

Poster No. P073**Outcomes of Total Hip Arthroplasty in Jehovah's Witnesses**

Michael A. Mont, MD, Baltimore, MD
Robert Pivec, MD, Baltimore, MD
Kimona Issa, MD, Baltimore, MD
Steven F. Harwin, MD, New York, NY
Bhaveen Kapadia, MD, Baltimore, MD
Samik Banerjee, MBBS, MS, Baltimore, MD
Mark J. McElroy, BS, MS, Monroeville, PA

Primary THA in Jehovah's Witnesses that do not accept blood transfusions was successful with no mortalities.

Poster No. P074**Periprosthetic Acetabular Fracture Following THA: Prevalence, Risk Factors and Treatment Options**

Steven F. Harwin, MD, New York, NY
Robert Pivec, MD, Baltimore, MD
Kimona Issa, MD, Baltimore, MD
Aaron J. Johnson, MD, Glen Burnie, MD
Arthur L. Malkani, MD, Louisville, KY
Michael A. Mont, MD, Baltimore, MD

Periprosthetic acetabular fractures are a rare but serious complication of total hip arthroplasty, with a potential for severe patient morbidity and mortality, particularly with type 2 fractures.

Poster No. P075**A Preoperative Score to Predict Risk of Failure after Femoroacetabular Impingement Surgery**

Claudio Diaz, MD, Santiago, Chile
Mitchell Maltenfort, PhD, Philadelphia, PA
Lesley Walinchus, Philadelphia, PA
Benjamin Hendy, BS, Philadelphia, PA
Thomas A. Novack, BS, Philadelphia, PA
Javad Parvizi, MD, FRCS, Philadelphia, PA

A risk score based on preoperative clinical variables has a reasonable ability to predict failure after FAI surgery.

Poster No. P076**Revision Surgery for Adverse Reaction to Metal Debris in Metal on Metal Hips: Surgical Experience and Early Results**

Rohit Maheshwari, FRCS, Edinburgh, United Kingdom
David Langton, Gateshead, United Kingdom
Raghavendra P. Sidaginamale, Stockton On Tees, United Kingdom
Nicholas Cooke, Billingham, United Kingdom
Antoni Nargol, FRCS, Cleveland, United Kingdom

The aim of the study is to describe our experience and outcomes of consecutive 145 MoM revision arthroplasties undertaken between 1st February 2007 and 31 March 2012.

Poster No. P077**Effect of Surgical Approach Imaging on Acetabular Alignment in Hip Arthroplasty**

John L. Masonis, MD, Charlotte, NC
Michael Ruffolo, MD, Charlotte, NC
Michael D. Bates, MD, Charlotte, NC
Susan M. Odum, PhD, Charlotte, NC
Michael M. Nogler, MD, Innsbruck, Austria
Thomas K. Fehring, MD, Charlotte, NC

Acetabular component alignment in THA improved with a direct anterior approach with or without fluoroscopy when compared to a posterior approach with or without the use of intraoperative radiography.

Adult Reconstruction Hip**Poster No. P078****Range of Motion after Dual Mobility Total Hip Arthroplasty: Femoral Head Size and Surgical Approach - Does it Matter?***Amgad M. Haleem, MD, MSc, Giza, Egypt**Sabir Ismaily, Houston, TX**Morteza Meftah, MD, New York, NY**Philip C. Noble, PhD, Houston, TX**Stephen J. Incavo, MD, Houston, TX*

Dual mobility does not provide superior range of motion post-operatively compared to large diameter (36-mm head) total hip arthroplasty as evidenced by dynamic radiography.

Poster No. P079**Does Antibiotic Loaded Cement Diminish the Risk of Aseptic Failure in Primary Hip Arthroplasty? A Systematic Review.***Miguel M. Gomez, MD, Bogota, Colombia**Adolfo M. Llinas, MD, Miami, FL**Maria P. Bautista, MD, Bogota, Colombia**Guillermo A. Bonilla Leon, MD, Bogota, Colombia*

A systematic review of the literature was performed assessing the risk of aseptic failure in hip arthroplasty comparing the use of cement with or without antibiotic at a minimum follow up of 10 years.

Poster No. P080**Non-Invasive Measurement of Post-Operative Hemoglobin in Total Joint Arthroplasty Patients***Wesley A. Clark, MD, Metairie, LA**Kristin A. Wood, NP, Boston, MA**Young-Min Kwon, MD, PhD, Boston, MA**Andrew A. Freiberg, MD, Boston, MA*

Non-Invasive measurement of hemoglobin prevented routine blood draws in arthroplasty patients.

Poster No. P081**What is the Accuracy of Intra-operative Imaging for Determining Acetabular Component Orientation?***Samik Banerjee, MBBS, MS, Baltimore, MD**James Joseph, MD, MS, Yonkers, NY**Guneet S. Sodhi, BS, Fulton, MD**Bhaveen Kapadia, MD, Baltimore, MD**Kimona Issa, MD, Baltimore, MD**Michael A. Mont, MD, Baltimore, MD**Harpal S. Khanuja, MD, Cockeysville, MD*

Acetabular cup alignment measured from intra-operative AP imaging strongly correlates with the measurements obtained from postoperative AP radiographs. However, plain radiography may be more reliable.

Poster No. P082**Potentially Retrievable Inferior Vena Cava Filters in High-Risk Patients Undergoing Joint Arthroplasty***Anay R. Patel, MD, Chicago, IL**Sabeen Dhand, MD, Chicago, IL**Geoffrey Marecek, MD, Los Angeles, CA**Robert Lewandowski, MD, Chicago, IL**Robert Ryu, Chicago, IL**S. David Stulberg, MD, Chicago, IL**Lalit Puri, MD, Glenview, IL*

Our study indicates that potentially retrievable inferior vena cava filters are a safe option for prevention of pulmonary embolism in high-risk total joint arthroplasty patients.

Poster No. P083**Outcome of the Cup Cage Construct for Reconstruction of Massive Acetabular Deficiencies***Brian Wegman, MD, Saint Louis, MO**Yasser Farid, MD, PhD, Chicago, IL**Sarkis Bedikian, DO, Chicago, IL**Donald N. Sullivan, MD, Decatur, IL**Henry A. Finn, MD, Chicago, IL*

Reconstructive options for massive acetabular deficiency with or without pelvic discontinuity are limited. The cup cage technique could provide a reliable mechanical construct in this series.

Poster No. P084**The Revision Burden of Metal-on-Metal Total Hip Arthroplasty in Cornwall, United Kingdom***Charlotte K. Angel, MBBS, BSc, Cornwall, United Kingdom**Rory Macnair, MBBS, MSc, North Wales, United Kingdom**Nicola Fuller, Cornwall, United Kingdom**Gavin Bartlett, MBBS, Truro, United Kingdom**Kim Farmer, MB, Truro, United Kingdom**Shaun A. Sexton, FRCS, Feock, Cornwall, United Kingdom*

From the results of our cohort we would recommend all patients with a metal-on-metal total hip replacement in situ are fully screened for ARMD regardless of symptoms and metal ion levels.

Poster No. P085**Modular Necks in Total Hip Arthroplasty (THA); No Clear Benefit on Restoration of Hip Geometry and Dislocation Rate***Job L. Van Susante, MD, PHD, Arnhem, Netherlands**Davey M. Gerhardt, MSc, Arnhem, Netherlands**Pepijn Bisseling, MD, Nijmegen, Netherlands**Enrico De Visser, MD, Nijmegen, Netherlands*

The use of modular necks did not reveal a significant benefit on restoration of hip geometry and dislocation rate after THA. Weight against potential concerns they are not recommended for general use.

Poster No. P086**◆ Results of “Mixing and Matching” Components from Different Manufacturers in a Total Hip Replacement**

John K. Tucker, FRCS, Norwich, United Kingdom
Martin Pickford, BSc, PhD, Southampton, United Kingdom
Peter W. Howard, UK, United Kingdom
Claire Newell, PhD, Hemel Hempstead, United Kingdom

Some surgeons choose to use components from more than one manufacturer across a THR. The results with “Hard on Soft bearings” are often excellent but other combinations can be problematic.

Poster No. P087**Cost Savings Created with Perioperative Efficiency in Total Joint Arthroplasty**

Paul J. Duweliuss, MD, Portland, OR
Laura Matsen Ko, MD, Portland, OR
Joseph Tomaro, PhD, Canonsburg, PA
Grant Branam, BSc, Lake Oswego, OR
Cecily Froemke, MS, Portland, OR

Creating an environment that allows for perioperative efficiency can allow overall cost savings without sacrificing patient care and meeting the impending total joint arthroplasty population.

Poster No. P088**Total Hip Arthroplasty with Porous Metal Implants for Post-Traumatic Arthritis After Acetabular Fracture**

Brandon J. Yuan, MD, Rochester, MN
Jonathon Spanyer, MD, Louisville, KY
Arthur L. Malkani, MD, Louisville, KY
David G. Lewallen, MD, Rochester, MN
Arlen D. Hanssen, MD, Rochester, MN

Although infection and instability remain significant concerns, porous metal components offer excellent mid-term mechanical durability in the treatment of post-traumatic OA after acetabular fracture.

Poster No. P089**Postoperative Urinary Retention following THA Performed Under Regional Anesthesia: Determination of Risk Factors**

Eric H. Tischler, BA, Philadelphia, PA
Camilo Restrepo, MD, Philadelphia, PA
Mitchell Maltenfort, PhD, Philadelphia, PA
Jennifer Oh, BA, Philadelphia, PA
Javad Parvizi, MD, FRCS, Philadelphia, PA

Determination of risk factors for postoperative urinary retention following total hip arthroplasty performed under regional anesthesia.

Poster No. P090**Decreasing Incidence of Hip Replacements for Rheumatoid Arthritis**

Eerik T. Skytta, MD, PhD, Tampere, Finland
Pirjo Honkanen, MD, Ylojarvo, Finland
Antti Eskelinen, MD, PhD, Tampere, Finland
Heini Huhtala, MSc, Tampere, Finland
Ville M. Remes, MD, Helsinki, Finland

Patients with RA receive their THRs at an older age and incidence of THRs in RA decrease, while the opposite is occurring in patients with OA.

Poster No. P091**Systemic Toxicity of Metal Ions in a Metal-on-Metal Hip Arthroplasty Population**

Catherine Van Der Straeten, MD, Ghent, Belgium
Damien A. Van Quickenborne, Laarne, Belgium
Koen A. DeSmet, MD, Gent, Belgium
Jan M. Victor, MD, Gent, Belgium

A cross-sectional study of a metal-on-metal hip population showed a higher incidence of neurotoxic symptoms with Cobalt levels >20µg/L. Patients with Co >20µg/L are at risk for systemic toxicity.

Poster No. P092**Trends in Total Hip Arthroplasty Bearing Couple Usage in the United States**

Kevin J. Bozic, MD, MBA, San Francisco, CA
Atul F. Kamath, MD, Massapequa, NY
Edmund Lau, MS, Menlo Park, CA
Kevin Ong, PhD, Philadelphia, PA
Steven M. Kurtz, PhD, Philadelphia, PA
Vanessa Chan, MPH, San Francisco, CA
Harry E. Rubash, MD, Boston, MA
Daniel J. Berry, MD, Rochester, MN
Thomas P. Vail, MD, San Francisco, CA

The use of metal-on-metal bearings and hip resurfacing have declined since their peak in 2008, with a corresponding increase in ceramic-on-polyethylene bearings.

Poster No. P093**Metal Ion Level in Patients with Dual Taper Modular THA: Sensitivity and Specificity for Predicting “Pseudotumors”**

Young-Min Kwon, MD, PhD, Boston, MA
William A. Leone, MD, Lighthouse Point, FL
Tsung-Yuan Tsai, PhD, Boston, MA
Guoan Li, PhD, Boston, MA
Harry E. Rubash, MD, Boston, MA
Andrew A. Freiberg, MD, Boston, MA

Cobalt/Chromium ratio value was most useful with sensitivity and specificity of 66% and 63% respectively as predictor of failure due to pseudotumours in patients with dual taper femoral stem.

Adult Reconstruction Hip**Poster No. P094****Socioeconomic Status and Implant Selection for Patients Undergoing Hip Arthroplasty**

Michael Olsen, MD, Toronto, ON, Canada
 Michael E. Neufeld, BS, Toronto, ON, Canada
 Michael Sellan, MD, London, ON, Canada
 Zachary Morison, MSc
 Emil H. Schemitsch, MD, Toronto, ON, Canada

This study demonstrates that patients receiving hip resurfacing arthroplasty had a higher socioeconomic status than those receiving traditional total hip arthroplasty in this single surgeon series.

Poster No. P095**Minimum Twenty-Year Follow Up of a Straight-Stemmed, Titanium-Alloy, Uncemented Femoral Component in Primary THA**

John B. Meding, MD, Mooresville, IN
 E. Michael Keating, MD, Mooresville, IN
 Philip M. Faris, MD, Mooresville, IN
 Merrill A. Ritter, MD, Indianapolis, IN
 Michael E. Berend, MD, Mooresville, IN
 Robert A. Malinzak, MD, Mooresville, IN
 Jeffery L. Pierson, MD, Carmel, IN

This femoral component provided durable long-term fixation for over two decades after THA.

Poster No. P096**Who Belongs in the Unit? Predictors of the Need for Critical Care after Total Joint Arthroplasty**

Paul M. Courtney, MD, Philadelphia, PA
 Colin Whitaker, Philadelphia, PA
 Jacob T. Gutsche, MD, Philadelphia, PA
 Eric L. Hume, MD, Wynnewood, PA
 Gwo-Chin Lee, MD, Philadelphia, PA

Risk stratification algorithms for ICU admission after total joint arthroplasty must include both intraoperative and preoperative risk factors in order to be fully predictive.

Poster No. P097**Malnutrition Increases the Risk of Acute Periprosthetic Joint Infection after Revision Hip and Knee Arthroplasty**

Paul H. Yi, BA, Chicago, IL
 Elliott R. Vann, MD, Abilene, TX
 Rachel M. Frank, MD, Chicago, IL
 Kevin Sonn, BS, Chicago, IL
 Mario Moric, MS, Chicago, IL
 Craig J. Della Valle, MD, Chicago, IL

Malnutrition is common among patients undergoing aseptic revision arthroplasty and is associated with a nearly 6x risk of acute postoperative infection.

Poster No. P098**Increased Infection Rate in Total Hip Arthroplasty after Failed Internal Fixation?**

Daniel Kendoff, MD, Hamburg, Germany
 Till O. Klatte, MD, Hamburg, Germany
 Thorsten Gehrke, MD, Hamburg, Germany

Internal fixation of the hip carries a low risk of bacterial contamination a two stage procedure with the retrieval of implants prior to a total hip arthroplasty is therefore not clinically indicated.

Poster No. P099**Descriptive Epidemiology of Symptomatic Acetabular Dysplasia: A North American Cohort**

John C. Clohisy, MD, Saint Louis, MO
 Geneva Baca, Saint Louis, MO
 Michael B. Millis, MD, Boston, MA
 Ernest L. Sink, MD, New York, NY
 Robert T. Trousdale, MD, Rochester, MN
 Ira Zaltz, MD, Royal Oak, MI
 David A. Podeszwa, MD, Dallas, TX
 Paul E. Beaulé, MD, Ottawa, ON, Canada
 Perry L. Schoenecker, MD, Saint Louis, MO

Symptomatic acetabular dysplasia occurs predominantly in young, female, caucasian patients with normal BMI. Contemporary treatment commonly includes an adjunctive femoral osteochondroplasty.

Poster No. P100**Are Ultrasound Screenings Reliable for Adverse Local Tissue Reaction after Hip Arthroplasty?**

Takashi Nishii, Osaka, Japan
 Takashi Sakai, MD, PhD, Suita, Japan
 Masaki Takao, MD, Suita, Japan
 Satoru Tamura, MD, Osaka, Japan
 Hirohito Abe, MD, Osaka, Japan
 Hidetoshi Hamada, MD, Osaka, Japan
 Nobuhiko Sugano, MD, Suita, Japan

Ultrasound can offer a satisfactory screening tool for adverse local tissue reaction around metal and polyethylene bearings, and may allow more sensitive detection of small reaction than MRI.

Poster No. P101**Occult Fractures of the Acetabulum During Primary Total Hip Arthroplasty**

Kazuhiro Hasegawa, MD, Kanazawa, Japan
 Tamon Kabata, MD, Kanazawa, Ishikawa, Japan
 Toru Maeda, MD, PhD, Kanazawa, Japan
 Yoshitomo Kajino, MD, Kanazawa, Ishikawa, Japan
 Shintaro Iwai, MD, Kanazawa, Japan
 Kazunari Kuroda, MD, Kanazawa-Shi, Japan
 Kenji Fujita, MD, Kanazawa, Japan
 Daisuke Inoue, MD, Kanazawa, Japan
 Hiroyuki Tsuchiya, MD, Kanazawa, Japan

We used CT imaging to investigate cementless primary THA in 455 hips. Periprosthetic occult fractures of the acetabulum occurred. We evaluated the locations and the risk factors for these fractures.

Poster No. P102**Characterization of Periprosthetic Femur Fractures in 5,417 Revision Total Hip Arthroplasties**

Matthew P. Abdel, MD, Eagan, MN
Matthew Houdek, MD, Rochester, MN
David G. Lewallen, MD, Rochester, MN
Daniel J. Berry, MD, Rochester, MN

Intraoperative fractures are typically non-displaced diaphyseal fractures; postoperative fractures are most commonly Vancouver AG but occur across the classification spectrum.

Poster No. P103**The Biological Effects of Metal-on-Metal Hip Implants on Osseous Tissue and Osteoclast/Osteoblast Integration**

Samer S. Mahmoud, MB BCh, MRCS, Surrey, United Kingdom
Stephen A. Jones, MD, Vale Of Glamorgan, United Kingdom
Alun John, MD, Cardiff, United Kingdom
Alastair J. Sloan, PhD, Cardiff, United Kingdom
Rachel Waddington, Cardiff, United Kingdom

This is a project investigating the effects of metal-on-metal hip implants on bone biology and Osteoclast activity utilizing bone samples retrieved from patients at the time of revision.

Poster No. P104**Do Surgeons and Third Party Payors Agree on the Criteria to Diagnose Femoroacetabular Impingement?**

John C. Clobis, MD, Saint Louis, MO
Ira Zaltz, MD, Royal Oak, MI
Geneva Baca, Saint Louis, MO
David A. Podeszwa, MD, Dallas, TX
Perry L. Schoenecker, MD, Saint Louis, MO
Daniel J. Sucato, MD, MS, Dallas, TX
Robert T. Trousdale, MD, Rochester, MN
Christopher M. Larson, MD, Edina, MN
James Ross, MD, Ann Arbor, MI

Current clinical and radiographic criteria that are imposed by insurance company policies do not necessarily adequately diagnose FAI.

Poster No. P105**Finite Element Analysis of Tapered-wedge Stem: Effects of Stem Size and Canal Geometry on Stress Distribution**

Masatoshi Oba, MD, Yokohama, Japan
Yutaka Inaba, MD, Yokohama, Japan
Masamitsu Tomioka, Yokohama, Japan
Yasuhide Hirata, MD, Yokohama, Japan
Hiroyuki Ike, MD, Yokohama Kanagawa, Japan
Naomi Kobayashi, MD, Yokohama, Japan
Tomoyuki Saito, MD, Yokohama, Japan

We investigated the biomechanical behavior of cementless tapered-wedge stems implanted in femurs with various canal geometries.

Poster No. P106**Microcomputed Tomographic Wear Analysis of Retrieved Crosslinked Acetabular Polyethylene Liners**

Pang Hee Nee, MD, Singapore, Singapore
Douglas Naudie, MD, FRCSC, London, ON, Canada
Richard W. McCalden, MD, London, ON, Canada
Steven J. MacDonald, MD, London, ON, Canada
Matthew G. Teeter, PhD, London, ON, Canada

XLPE undergoes significantly less wear than HDPE. MicroCT is a non-invasive and useful tool for documenting subclinical wear patterns, which would not be evident with damage scoring.

Poster No. P107**New Approach, New Stem, New Problems?**

William G. Hamilton, MD, Alexandria, VA
Nitin Goyal, MD, Arlington, VA
Nancy L. Parks, Alexandria, VA

More stem revisions were observed when changing approach and stem design. It is unknown whether stem design, femoral visualization, or postoperative mobilization are responsible for this trend.

Poster No. P108**Variation in Red Blood Cell Transfusions after Total Hip Arthroplasty**

Trevor Banka, MD, New York, NY
Friedrich Boettner, MD, Larchmont, NY
Yan Ma, PhD, New York, NY
Ting-Jung Pan, MPH, New York, NY
Stephen Lyman, PhD, New York, NY

Patients who have a total hip performed at an academic institution are less likely to receive a transfusion and there is no relationship between hospital volume and transfusion practices.

Poster No. P109**The Role of Hip Aspiration in the Diagnosis of Infection in Metal on Metal Hip Arthroplasty**

James S. Melvin III, MD, Charlotte, NC
Robert Cope, Charlotte, NC
Thomas K. Fehring, MD, Charlotte, NC

Synovial fluid analysis can be helpful in the diagnosis of periprosthetic infection in metal on metal total hip arthroplasty.

Poster No. P110**Are There Prognostic Factors for Complications after Revision Metal on Metal Hip Arthroplasty?**

Scott T. Ball, MD, San Diego, CA
Colin S. Yung, MBBS, Hong Kong, Hong Kong
Dustyn L. Severns, PA-C, Carlsbad, CA
Eric Y. Chang, MD, San Diego, CA
Christine Chung, MD, Solana Beach, CA
F. Craig Swenson, MD, La Jolla, CA

Complications after revision for failed MoM hip arthroplasty correlate significantly with the severity of the pre-operative MRI grade and the severity of the adverse tissue reaction seen at surgery.

Adult Reconstruction Knee**Poster No. P111**

Synovial Aspirate Characteristics: Do Successful and Failed Total Knee Arthroplasties Differ?

Peter N. Chalmers, MD, Chicago, IL

David M. Walton, MD, Chicago, IL

Scott M. Sporer, MD, Wheaton, IL

Brett R. Levine, MD, Chicago, IL

Aspiration characteristics in patients with painless, well-functioning TKAs differ from failed TKAs of various etiologies, suggesting synovial aspiration may play a role in this differentiation.

Poster No. P112

Acute Normovolemic Hemodilution in Total Knee Arthroplasty: A Prospective, Randomized, Controlled Trial

Choong H. Choi, MD, Seoul, Republic of Korea

Jin Kyu Lee, MD, Seoul, Republic of Korea

Kyu-Sung Chung, MD, Seoul, Republic of Korea

Acute normovolemic hemodilution (ANH) resulted in a significant reduction in allogeneic transfusion after unilateral total knee arthroplasty (TKA) in this prospective randomized controlled trial.

Poster No. P113

Increased Local Antibiotic Release from Bone Cement Modified by a Novel Composition

Oh Soo Kwon, MD, Daejeon, Republic of Korea

Jin Ho Lee, Daejeon, Republic of Korea

Se Heang Oh, Cheonan, Republic of Korea

Jin Ho Lee, Daejeon, Republic of Korea

Se Heang Oh, Cheonan, Republic of Korea

Hydrophilized antibiotic bone cement may provide favorable environment to control bone and joint infection by continuous antibiotic release for extended period.

Poster No. P114

Efficacy of Automated Self-Unplugging Sucker Tip: Randomized Control Trial

James B. Stiehl, MD, Salem, IL

This study evaluated a sucker in which a screen tip prevents obstruction and a burst of pressurized carbon dioxide gas clears debris from its tip. The new sucker was successful in 100% of cases.

Poster No. P115

Long-Term Results of Cruciate Retaining Total Knee Arthroplasty in Rheumatoid Arthritis

Choong H. Choi, MD, Seoul, Republic of Korea

Jin Kyu Lee, MD, Seoul, Republic of Korea

Kyu-Sung Chung, MD, Seoul, Republic of Korea

The long term survival rates for cruciate retaining total knee arthroplasty in patients with rheumatoid arthritis were satisfactory at minimum fifteen-years review.

Poster No. P116

Antero-Posterior Total Knee Arthroplasty (TKA) Stability During Stair Descent

Stephen J. Incavo, MD, Houston, TX

Pain during stair descent is a complaint of TKA, possibly the result of AP instability and quadriceps demand. Designs restoring AP knee stability were a PS insert or a CS insert with an intact PCL.

Poster No. P117

Novel 3D Gait Graphs: The Ability to Demonstrate Differences Between Knee Arthroplasty Patients

Victoria N. Gibbs, BA (Oxon), London, United Kingdom

Barry Andrews, MB, ChB, FRCS, London, United Kingdom

Rosalind C. Marshall, Medical Student, London, United Kingdom

Simon J. Harris, PhD, London, United Kingdom

Victoria L. Manning, BA, MSc, PhD, London, United Kingdom

Adeel Aqil, MBChB, MRCS Ed, London, United Kingdom

Justin P. Cobb, MD, London, United Kingdom

This study presents novel 3D graphical representations of velocity-associated gait changes using unique software to show differences between highly functioning patients and types of knee arthroplasty.

Poster No. P118

Efficacy of Preoperative Skin Preparation in Eradicating Organisms Before Total Knee Arthroplasty

Alternate Paper: Adult Reconstruction Knee I: Infection

Eric Boe, Ada, OK

Hugo B. Sanchez, MD, Fort Worth, TX

Tiffany J. Littleton, MPH, Fort Worth, TX

Terry E. Rives, Fort Worth, TX

Russell A. Wagner, MD, Fort Worth, TX

The purpose of this study was to evaluate the efficacy of chloraprep in eradicating organisms in total knee arthroplasty, isolation of organism type, and evaluation of contributing factors.

Poster No. P119

Do Five Tibial Reference Lines Frequently Align the Tibial Component Parallel to the Sagittal Kinematic Plane?

Stephen M. Howell, MD, Sacramento, CA

Abheetinder Brar, BS, Madera, CA

Joshua D. Roth, Graduate Student, Davis, CA

Maury L. Hull, PhD, Davis, CA

Because none of these six tibial reference lines reliably aligned the A-P axis of the tibial component parallel to the sagittal kinematic plane, a new reference line based on different tibial anatomic landmarks.

Poster No. P120**Allergy Assessment Provides Clinically Relevant Results in Joint Replacement Patients**

Karin Pacheco, MD, MPH, Denver, CO
 Samantha Erb, MS, Denver, CO
 Amnye Mayer, MPH, MS, Denver, CO
 Elizabeth Barker, BS, MPH, Denver, CO
 Lata Shirname-More, Denver, CO
 Vijaya Knight, MD, PhD, Denver, CO
 Raymond H. Kim, MD, Denver, CO
 Douglas A. Dennis, MD, Denver, CO

Evaluation for allergy to metal and bone cement components can improve patient outcomes in index and revision joint replacements.

Poster No. P121**◆ Identification of the Make of an Implant Using Facebook's Image Recognition**

Alternate Paper: Adult Reconstruction Knee VII: Miscellaneous
 Vineet Batta, MD, Luton, United Kingdom

The mobile application once fully developed will significantly decrease the time taken to correctly identify an implant.

Poster No. P122**Total Knee Arthroplasty (TKA) Implant Should be designed with Pivot Center Located beyond the Medial Edge of the Tibia**

Kartik Varadarajan, MS, PhD, Boston, MA
 Thomas Zumbunn, Boston, MA
 Harry E. Rubash, MD, Boston, MA
 Henrik Malchau, MD, Boston, MA
 Guoan Li, PhD, Boston, MA
 Orhun K. Muratoglu, PhD, Boston, MA

The study showed the pivot center of normal knee to be outside the medial edge of the tibia. Adopting this for TKA would enable medial pivot without over-constraining the medial femoral condyle.

Poster No. P123**A Comparison of Continuous Femoral Nerve versus Adductor Canal Block Following Total Knee Arthroplasty**

Justin Gettings, MD, Chicago, IL
 Lalit Puri, MD, Glenview, IL

Adductor canal block provides equivalent pain relief to continuous femoral nerve catheter following total knee arthroplasty, allowing for equivalent functional rehab while decreasing length of stay.

Poster No. P124**Comparison of Infiltration with Long-acting Bupivacaine to a Femoral Nerve Catheter for Total Knee Replacement**

Roger H. Emerson Jr, MD, Dallas, TX
 John W. Barrington, MD, Plano, TX

Pain control by local infiltration with long-acting bupivacaine was as effective as a continuous femoral nerve block and required less total narcotic.

Poster No. P125**The Economic Burden of the Complex Primary Joint Arthroplasty**

Robert J. Wetzel, MD, Chicago, IL
 Maximilian Meyer, BS, Chicago, IL
 Lalit Puri, MD, Glenview, IL

During a 36-month period 6% of Total Joint Arthroplasties by a single surgeon were identified as being complex, and were found to have a significantly increased equipment cost and operative time.

Poster No. P126**Perioperative Morbidity and Mortality of Same Admission Staged Bilateral Total Knee Arthroplasty****Alternate Paper: Adult Reconstruction Knee IV: Complications**

Lazaros A. Poulsides, MD, New York, NY
 Stavros G. Memtsoudis, MD, PhD, New York, NY
 Huong Do, MA, New York, NY
 Thomas P. Sculco, MD, New York, NY
 Mark P. Figgie, MD, New York, NY

Same-admission staged BTKA should be performed with caution when the orthopaedic need for simultaneous correction of deformity prevails over the medical safety.

Poster No. P127**The Influence of Obesity on Functional Outcome in Total Knee Arthroplasty**

Yong Qiang Jerry Chen, MBBS, Singapore, Singapore
 Pak Lin Chin, FRCSEd, Singapore, Singapore
 Hwei Chi Chong, Singapore, Singapore
 Darren Tay, MBBS, FRCS, Singapore, Singapore
 Shi-lu Chia, MBBS, FRCS, PhD, Singapore, Singapore
 Ngai-Nung Lo, MD, Singapore, Singapore
 Seng-Jin Yeo, FRCS, Singapore, Singapore

Morbidly obese patients have greater improvement in function when compared to those with a lower BMI.

Poster No. P128**Does Obesity Influence the Functional Outcome of Fixed Bearing Unicompartamental Knee Arthroplasty?**

Yew Lok Woo, MD, Holland Close, Singapore
 Yong Qiang Jerry Chen, MBBS, Singapore, Singapore
 Pak Lin Chin, FRCSEd, Singapore, Singapore
 Shi-lu Chia, MBBS, FRCS, Singapore, Singapore
 Darren Tay, MBBS, FRCS, Singapore, Singapore
 Ngai-Nung Lo, MD, Singapore, Singapore
 Seng-Jin Yeo, FRCS, Singapore, Singapore

Obesity does not influence functional outcome in fixed bearing unicompartamental knee arthroplasty.

Poster No. P129**Modes of Failure and Outcomes of Revision of Non-Modular Total Knee Replacements**

Luke Pugh, MD, New York, NY
 Geoffrey H. Westrich, MD, New York, NY
 Allison Ruel, BA, New York, NY
 Douglas E. Padgett, MD, New York, NY

Caution should be exercised when using NMC total knee replacement to provide additional coronal stability as there appears to be increased aseptic loosening.

Adult Reconstruction Knee**Poster No. P130**

Unicompartmental Knee Arthroplasty: 27-year Results from the Finnish Arthroplasty Register

Alternate Paper: Adult Reconstruction Knee II: Non-Prosthetic/UKA

Tuukka T. Niinimäki, MD, Oulu, Finland

Ville M. Remes, MD, Helsinki, Finland

Keijo Makela, MD, Turku, Finland

Pasi Ohtonen, MSc, Oulu, Finland

Ari Pekka Puhhto, MD, Oys, Finland

Antti Eskelinen, MD, PhD, Tampere, Finland

UKA survivorship was 89.0% at five, 79.5% at ten, and 68.0% at 15 years. The reason for the higher revision rate and decreasing number of operations is most likely multifactorial.

Poster No. P131

The Hanging Lateral Radiograph: A Simple Technique to Assist in Identifying Flexion Laxity in TKA

Thomas J. Blumenfeld, MD, Sacramento, CA

William L. Bargar, MD, Sacramento, CA

This simple radiographic technique adds one more element in diagnosing flexion instability as a possible cause of a painful total knee.

Poster No. P132

Clindamycin is Not the Optimal Antibiotic Choice for Penicillin Allergic Patients

Alternate Paper: Adult Reconstruction Knee V: Infection II

Brian R. Hamlin, MD, Pittsburgh, PA

Anthony M. DiGioia III, MD, Pittsburgh, PA

Anton Y. Plakseychuk, MD, Pittsburgh, PA

Timothy J. Levison, MS, Pittsburgh, PA

The routine use of clindamycin for antibiotic prophylaxis in penicillin allergic patients resulted in a 2.7% rate of infection.

Poster No. P133

◆ Comparison of IV and Topical Tranexamic Acid in Total Knee Arthroplasty: A Prospective Randomized Study

Jay N. Patel, BS, Greenwood, IN

Jonathon Spanyer, MD, Louisville, KY

Langan S. Smith, BS, Louisville, KY

Jiapeng Huang, MD, Louisville, KY

Madhusudhan R. Yakkanti, MD, Prospect, KY

Arthur L. Malkani, MD, Louisville, KY

Topical Tranexamic Acid administration appears to have an equivalent efficacy profile to Intravenous administration in reducing blood loss and transfusion rates following Total Knee Arthroplasty.

Poster No. P134

Comparisons of Beta-Tricalcium Phosphate and Hydroxyapatite Used in Medial Opening Wedge High Tibial Osteotomy

Jun Onodera, MD, Hokkaido, Japan

Eiji Kondo, MD, Sapporo, Japan

Tomonoro Yagi, MD, Hokkaido, Japan

Kazunori Yasuda, MD, Sapporo, Japan

The comparisons of the utility, osteoconductivity, and bioabsorbability of beta-TCP and HA spacers for MOWHTO, the beta-TCP is superior to the HA concerning osteoconductivity and bioabsorbability.

◆ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Poster No. P135

Prospective Comparison of Knotless Barbed vs. Standard Suture in Simultaneous Bilateral Knee Replacement

Alternate Paper: Adult Reconstruction Knee VI: Outcomes/Results

Alexander P. Sah, MD, Fremont, CA

Knotless barbed suture is safe and effective in total knee replacement, providing a faster closure which is durable enough to withstand early motion and seals tightly to possibly reduce infection.

Poster No. P136

Predictors of Patient-reported Outcomes After TKR Not Included in Risk Models Based on Administrative Data

Patricia Franklin, MD, MBA, Worcester, MA

Leslie Harrold, MD, MPH, Worcester, MA

Wenjun Li, PhD, Worcester, MA

Courtland G. Lewis, MD, Farmington, CT

Jeroan Allison, MD, Worcester, MA

David C. Ayers, MD, Worcester, MA

Before adopting PROs as a standard measure of TKR effectiveness, a complete understanding of pre-existing clinical factors associated with poorer pain relief and functional gain is needed.

Poster No. P137

Femoral Bow Predicts Postoperative Malalignment in Revision Total Knee Arthroplasty

Arjun Sebastian, MD, Rochester, MN

Benjamin Wilke, MD, Rochester, MN

Michael J. Taunton, MD, Rochester, MN

Robert T. Trousdale, MD, Rochester, MN

Femoral and tibial bow are variable in revision total knee arthroplasty (TKA). Increased femoral bow predicts postoperative malalignment and should be assessed prior to revision TKA.

Poster No. P138

Hybrid Fixation in Revision TKA with Porous-Coated Metaphyseal Sleeves Used with Cement

Ajit J. Deshmukh, MD, New York, NY

Prashant P. Deshmane, MD, Hartsville, SC

Parthiv A. Rathod, MD, New York, NY

Jose A. Rodriguez, MD, New York, NY

Cemented porous-coated sleeves along with press fit stems provided reproducible fixation with excellent survival at short-term follow up.

Poster No. P139

Can Levels of Antioxidants in Synovial Fluid Predict the Severity of Primary Knee Osteoarthritis?

Chayanin Anghong, MD, Pathum Thani, Thailand

Noppawan P. Morales, PhD, Bangkok, Thailand

Werasak Sutipornpalangkul, MD, Bangkok, Thailand

Anuwat Khadsongkram, MD, Pathumthani, Thailand

Piya Pinsornsak, MD, Klongluang, Thailand

Boonchana Pongcharoen, Klongluang, Thailand

Vitamin E concentration is an essential prognostic factor in primary knee osteoarthritis. The concentration of vitamin E decreased as the severity of primary knee osteoarthritis increased.

Poster No. P140**Morbid Obesity Alone Affects TKA Complications, Mortality and Resource Utilization - A Matched-Control Study**

Michele R. D'Apuzzo, MD, New York, NY
Wendy Novicoff, PhD, Charlottesville, VA
James A. Browne, MD, Charlottesville, VA

Morbid obese patients have a significantly higher risk for select postoperative complications, in-hospital mortality and increased costs when matched for comorbid medical conditions.

Poster No. P141**Patient Mortality Makes Long-Term Knee Arthroplasty Studies Difficult: Population-Based Mortality Study**

Robert Pivec, MD, Baltimore, MD
Kimona Issa, MD, Baltimore, MD
Michael A. Mont, MD, Baltimore, MD
John J. Callaghan, MD, Iowa City, IA

Expected mortality due to natural causes in the total knee arthroplasty population affects methodology for long-term implant survivorship studies.

Poster No. P142**Clinical and Patient-reported Outcomes of TKA in Sickle Cell Hemoglobinopathy: Mean Five-year Follow Up**

Kimona Issa, MD, Baltimore, MD
Steven F. Harwin, MD, New York, NY
Tiffany Tatevossian, MPH, Kansas City, MO
Marudeen Aivaz, College Park, MD
Qais Naziri, MD, Brooklyn, NY
Aditya V. Maheshwari, MD, Brooklyn, NY
Michael A. Mont, MD, Baltimore, MD

The outcomes of total knee arthroplasty in sickle cell patients are improving.

Poster No. P143**Risk Factors of Venous Thromboembolism after Knee Arthroplasty without Chemoprophylaxis**

Yool Cho, MD, Seoul, Republic of Korea
Sahngoon Lee, MD, PhD, Seoul, Republic of Korea
Eun Jin Jang, Seoul, Republic of Korea
Yunjung Kim, MPH, Seoul, Republic of Korea
Jeonghoon Ahn, Seoul, Republic of Korea
Myung C. Lee, MD, Seoul, Republic of Korea

In Asian patients, previous VTE history was strongly associated with the occurrence of VTE in patients receiving no chemoprophylaxis after knee arthroplasty.

Poster No. P144**Bisphosphonates Reduce Risk of TKA Revision, But Increase the Risk of Peri-prosthetic Fractures**

Robert S. Namba, MD, Corona Del Mar, CA
Maria C. Inacio, MS, San Diego, CA
Richard M. Dell, MD, Cypress, CA
Guy Cafri, PhD, La Jolla, CA
Stefano A. Bini, MD, San Francisco, CA
Liz Paxton, MA, San Diego, CA
Monti Khatod, MD, Santa Monica, CA

In a cohort of 43,3116 TKA patients, bisphosphonate usage reduced revision risk (HR 0.29, 95% CI 0.22-0.38) but increased peri-prosthetic fracture risk (HR=3.78, 95%CI 1.92-7.47).

Poster No. P145**Morbidly Obese Patients Have a Higher Risk of Failure Following Revision Total Knee Arthroplasty for Infection**

Chad Watts, MD, Rochester, MN
Eric R. Wagner, MD, Rochester, MN
Matthew Houdek, MD, Rochester, MN
David G. Lewallen, MD, Rochester, MN
Tad M. Mabry, MD, Rochester, MN

Following two-stage revision TKA for infection, morbidly obese patients had significantly higher rates of revision, reoperation, and reinfection, with worse clinical outcomes when compared to a matched cohort of non-obese patients.

Poster No. P146**Matched Comparison of Lateral and Medial Unicompartmental Knee Arthroplasty**

Marco A. Augart, BS, Winston-Salem, NC
Johannes F. Plate, MD, Winston Salem, NC
Thorsten M. Seyler, MD, Winston-Salem, NC
Michael Akbar, MD, Heidelberg, Germany
Daniel Bracey, MD, Winston Salem, NC
Sarah Von Thaeer, BS, Winston Salem, NC
Gary G. Poehling, MD, Winston-Salem, NC
Riyaz H. Jinnah, MD, Winston-Salem, NC

Robotic-assisted surgery provided similar clinical outcomes for patient undergoing lateral and medial unicompartmental knee arthroplasty.

Poster No. P147**Thresholds in the Timing of Knee Replacement - Should We Consider a Lower Limit to the Pre-Operative Oxford Knee Score?**

Derfel Williams, MBChB, MRCS, Oxford, United Kingdom
David J. Beard, MA, MSc, Oxford, United Kingdom
Ines Rombach, MSc, Oxford, United Kingdom
Kristina Harris, MSc, Oxford, United Kingdom
Luke Jones, MRCS, Oxford, UK, United Kingdom
Andrew J. Price, FRCS, Oxford, United Kingdom

Delaying surgery once pre-op OKS<16 provides no additional benefit to the patient, but risks compromising the final outcome.

Adult Reconstruction Knee**Poster No. P148****Bipolar Cautery Sealer Device Offers No Advantage in Reducing Blood Loss in Tourniquet Less TKA**

Mark A. Snyder, MD, Cincinnati, OH
 Kathryn L. Eten, BSN, RN, Alexandria, KY
 Pryze Smith, PhD, Cincinnati, OH

In this randomized trial in 100 tourniquet less total knee patients blood loss was not less when a bipolar sealer was used.

Poster No. P149**Prospective, Randomized Trial to Evaluate Effectiveness of a Thrombin-Based Hemostatic in Total Knee Arthroplasty**

Andres M. Alvarez, MD, Weston, FL
 Juan C. Suarez, MD, Weston, FL
 Preetesh D. Patel, MD, Sunrise, FL
 Caleb Szubski, BA, Cleveland, OH
 Nathania Figueroa, MD, Rochester, NY
 Erin E. Ely

Thrombin-based topical hemostatic decreased blood loss in primary total knee arthroplasty patients, but this did not translate to a clinical advantage in terms of decreasing transfusion requirements.

Poster No. P150**Demographic Variables Associated with Increased Postoperative Pain Following Total Knee Replacement**

Vasilios I. Sakellariou, MD, Athens, Greece
 Lazaros A. Poultsides, MD, New York, NY
 Yan Ma, PhD, New York, NY
 James Bae, MSC, New York City, NY
 Spencer Liu, MD, New York, NY
 Thomas P. Sculco, MD, New York, NY

Demographic variables including age, gender, age, ethnicity, weight and type of underlying arthritis are related to increased risk for postoperative pain.

Poster No. P151**Effects of Intraoperative Use of the Topical Hemostatic Matrix Agent Floseal in Primary Total Knee Arthroplasty**

Jonathan Krystal, MD, Bronxville, NY
 David Liebelt, MD, PhD, New York, NY
 Praveen Kadimcherla, MD, Boston, NY
 Robert Li, MD, New York, NY
 Ajay Lall, MD, New York, NY
 Yossef C. Blum, MD, New York, NY
 David M. Hirsh, MD, Bronx, NY
 Sun Jin Kim, MD, New York, NY
 Benjamin J. Levy, BS, Bronx, NY

The use of the hemostatic matrix Floseal in primary unilateral total knee arthroplasty has no significant effect on perioperative blood loss.

Poster No. P152**Obesity has no Effect on Outcomes Following Unicompartmental Knee Arthroplasty**

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 Thorsten M. Seyler, MD, Winston-Salem, NC
 Daniel Brace, MD, Winston Salem, NC
 Dan Sun, BS, Dublin, CA
 Marco A. Augart, BS, Winston-Salem, NC
 Cuneyt Tamam, MD, Winston Salem, NC
 Gary G. Poehling, MD, Winston-Salem, NC
 Riyaz H. Jinnah, MD, Winston-Salem, NC

Elevated body mass index had no influence on revision or readmission rate for patients undergoing robotic-assisted unicompartmental knee arthroplasty.

Poster No. P153**Reconstruction of Patellar Tendon Using a Y-shaped Flap Folded Back from the Vastus Lateralis Fascia**

Laszlo G. Not, MD, Pecs, Hungary
 István Naumov, DMed, PhD, Pécs, Hungary
 Laszlo Vambidy, MD, Pecs, Hungary
 Norbert Wiegand, Pécs, Hungary

Our new method for the reconstruction of ruptured patellar tendon by using a Y-shaped flap folded back from the vastus lateralis fascia, significantly improved the functional outcome of 16 patients.

Poster No. P154**Pinless Navigation Versus Conventional Total Knee Arthroplasty: A Double Blinded Randomized Controlled Trial**

Yong Qiang Jerry Chen, MBBS, Singapore, Singapore
 Pak Lin Chin, FRCSEd, Singapore, Singapore
 Zongxian Li, MBBS, Singapore, Singapore
 Chu Sheng Seng, MBBS, MRCS, Singapore, Singapore
 Andy Yew, PhD
 Darren Tay, MBBS, FRCS (Ortho), Singapore, Singapore
 Shi-lu Chia, MBBS, FRCS (Ortho), PhD, Singapore, Singapore
 Ngai-Nung Lo, MD, Singapore, Singapore
 Seng-Jin Yeo, FRCS, Singapore, Singapore

Pinless navigation reduces the proportion of outliers for lower limb alignment and implant placement in total knee arthroplasty patients.

Poster No. P155**Primary Repair of the Iatrogenic Injury of the Medial Collateral Ligament: A Modified Technique**

Samih Tarabichi, MD, Dubai, United Arab Emirates
 Ali S. Shabi, MD, Dubai, United Arab Emirates
 Usama H. Saleh, DMed, Dubai, United Arab Emirates

Intraoperative injury of the MCL is rare but yet a very important complication of TKA, we have described a new modified primary repairing technique to reduce the use of more constrained implants.

Poster No. P156**Decreased Transfusion Rates Following Revision Total Knee Arthroplasty using Tranexamic Acid**

Christopher A. Samujb, MD, Mountain Top, PA
Thomas Falls, MD, MS, Louisville, KY
Langan S. Smith, BS, Louisville, KY
Robert P. Wessel III, Louisville, KY
Arthur L. Malkani, MD, Louisville, KY

Tranexamic Acid reduces the incidence of blood transfusion in revision Total Knee Arthroplasty.

Poster No. P157**◆ Establishing a Role for Vancomycin Powder Application in Total Joint Arthroplasty for Infection Prevention**

Rabah Qadir, MD, Metairie, LA
J. Lockwood Ochsner Jr, MD, New Orleans, LA
Joseph M. Zavatsky, MD, New Orleans, LA

The addition of vancomycin powder to CoCr on UHMWPE in a wear simulator demonstrated no detrimental effects on the prostheses in vitro.

Poster No. P158**Does Morbid Obesity Affect Clinical, Patient-reported and Radiographic Outcomes of Total Knee Arthroplasty**

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Robert Pivec, MD, Baltimore, MD
Bhaveen Kapadia, MD, Baltimore, MD
Samik Banerjee, MBBS, MS, Baltimore, MD
Mark J. McElroy, BS, MS, Monroeville, PA
Michael A. Mont, MD, Baltimore, MD

TKA remains the definitive treatment of choice in end-stage arthritis in morbidly obese patients with good outcomes, however, the higher complication rate in these patients may be concerning.

Poster No. P159**The Impact of Centralized Pain on Postoperative Opioid Consumption in Lower Extremity Joint Arthroplasty**

Chad M. Brummett, MD, Ann Arbor, MI
Allison Janda, BA, Ann Arbor, MI
Christa Schueller, Lansing, MI
Alex Tsodikov, PhD, Ann Arbor, MI
Andrew G. Urquhart, MD, Ann Arbor, MI
Michelle Morris, MS, Pinckney, MI
David A. Williams, PhD, Ann Arbor, MI
Daniel J. Clauw, MD, Ann Arbor, MI

After accounting for factors associated with acute pain after knee and hip arthroplasty, the American College of Rheumatology survey independently predicted increased postoperative opioid consumption.

Poster No. P160**Nanohydroxiapatite Promote Bone Healing in Open Wedge High Tibial Osteotomy? A CT Study**

Priscilla Di Sette, Rome, Italy
Fabio Conteduca, MD, Roma, Italy
Raffaele Iorio, MD, Rome, Italy
Giuseppe Argento, MD, Rome, Italy
Lara Cristiano, Rome, Italy
Andrea Ferretti, MD, Rome, Italy

The healing of heterologous bone graft in open wedge high tibial osteotomy, in association with nanohydroxiapatite, appears to be better in terms of bone density in this trial with ct scan.

Poster No. P161**Posterior Condylar Offset of the Knee Differs Based on Race but Not Sex: An Osteological Study**

Jonathan Streit, MD, Cleveland, OH
Jordan Etscheidt, BA, University Heights, OH
Avi Goodman, BS, Cleveland Heights, OH
Victor Goldberg, MD, Gates Mills, OH

We have examined posterior condylar offset in a large number of osteological specimens to determine population norms and to look for differences based on sex and race.

Poster No. P162**Complete Superficial Medial Collateral Ligament Release Did Not Alter Mid-term Outcomes in TKA**

Pongporn Prateptongkum, MD, Bangkok, Thailand
Aree Tanavalee, MD, Bangkok, Thailand
Natdhadej Mekrunghcharas, MD, Bangkok, Thailand
Srihatach G. Ngarmukos, MD, Bangkok, Thailand
Yongsak Wangroongsub, MD, Bangkok, Thailand
Sittisak Honsawek, MD, PhD, Bangkok, Thailand

TKA with subperiosteal complete superficial MCL release and using of a posterior stabilized prosthesis did not alter mid-term clinical outcomes and knee stability.

Poster No. P163**Tranexamic Acid Decreases Incidence of Blood Transfusion in Simultaneous Bilateral Total Knee Arthroplasty**

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Langan S. Smith, BS, Louisville, KY
Janene A. Empson, RN, ONC, Louisville, KY
Deren T. Bagsby, MD, Indianapolis, IN
Jacqueline Vissing, BS, Clarksville, IN
Donald L. Pomeroy, MD, Louisville, KY
Arthur L. Malkani, MD, Louisville, KY

Tranexamic acid decreases the rate of blood transfusion in patients undergoing simultaneous bilateral Total Knee Arthroplasty.

Adult Reconstruction Knee**Poster No. P164****Surgical and Radiographic Variables Related to Increased Postoperative Pain Following Total Knee Replacement**

Vasilios I. Sakellariou, MD, Athens, Greece
Lazaros A. Poultsides, MD, New York, NY
Yan Ma, PhD, New York, NY
James Bae, MSC, New York City, NY
Spencer Liu, MD, New York, NY
Thomas P. Sculco, MD, New York, NY

Factors associated with pain after TKR include alignment and sizing of the femoral component, stuffing and tilting of the patella, and reconstitution of the joint line.

Poster No. P165**Outcomes of Cemented vs. Diaphyseal Engaging Cementless Stems in Aseptic Revision TKA**

Jeremy Gililland, MD, Salt Lake City, UT
Christian Gaffney, MD, Salt Lake City, UT
Susan M. Odum, PhD, Charlotte, NC
Christopher L. Peters, MD, Salt Lake City, UT
Walter B. Beaver, MD, Charlotte, NC

We compared the incidence of failure between cemented and diaphyseal engaging cementless stems in aseptic revision TKAs and found both types of stem can provide reliable femoral and tibial fixation.

Poster No. P166**The Flexion Gaps and the Femoral Component Rotations are All Different among Various Gap Balancing Technique**

Young Min Lee, MD, Seoul, Republic of Korea
Sahnghoon Lee, MD, PhD, Seoul, Republic of Korea
Joon Kyu Lee, MD, Seoul, Republic of Korea
Kee Yun Chung, MD, Seoul, Republic of Korea
Yool Cho, MD, Seoul, Republic of Korea
Seong Hwan Kim, MD, Daehak-Ro, Republic of Korea
Duhyun Ro, MD., Seoul, Republic of Korea
Myung C. Lee, MD, Seoul, Republic of Korea
Sang C. Seong, MD, Seoul, Republic of Korea

Different gap techniques results in unequal flexion gaps and the femoral component rotations.

Poster No. P167**Correlation of Patient Confidence in Attaining Treatment Goals and Outcomes after Knee Arthroplasty**

Carlos A. Higuera, MD, Lakewood, OH
Joseph F. Styron, MD, PhD, Westlake, OH
Gregory J. Strnad, MS, Lyndhurst, OH
Joseph P. Iannotti, MD, PhD, Cleveland, OH

Patient motivation measured as confidence to attain specific goals after knee arthroplasty correlate with shorter hospital stay and better function postoperatively.

Poster No. P168**Fluid Cell Count and Differential to Diagnose Periprosthetic Knee Infection: A Multi-Institutional Study**

Benjamin Zmistowski, BS, Philadelphia, PA
Jane Liu, Cleveland, OH
Carlos A. Higuera, MD, Lakewood, OH
Wael K. Barsoum, MD, Cleveland, OH
Joseph Mendelis, BA, Encino, CA
Craig J. Della Valle, MD, Chicago, IL
Javad Parvizi, MD, FRCS, Philadelphia, PA

Synovial fluid analysis was found to be an accurate marker of diagnosis of periprosthetic joint infection (PJI) in a multi-institutional cohort with a strict definition of PJI.

Poster No. P169**Vascular Complications in Total Knee Arthroplasty: A Newly Recognized Complication and Lessons from our Practice**

Andrew M. Star, MD, Willow Grove, PA
Richard J. Han, MD, Philadelphia, PA

Patients undergoing TKA had a complication rate of 0.14% in our high volume community-based practice, including an arterial embolic event previously not described in the literature.

Poster No. P170**The Reduction of Errors and Waste in Total Knee Arthroplasty using a Computer Based, e.Label System**

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David J. Mayman, MD, New York, NY
Alejandro Gonzalez Della Valle, MD, New York, NY
Edwin P. Su, MD, New York, NY
Michael L. Parks, MD, New York, NY
Mathias P. Bostrom, MD, New York, NY
Steven B. Haas, MD, New York, NY

The use of a computer based e.Label system dramatically reduced the incidence and cost of wasted implants in total knee arthroplasty while also preventing serious implant-related medical errors.

Poster No. P171**Relationship Between Adiponectin and Radiographic Severity in Primary Knee Osteoarthritis**

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Aree Tanavalee, MD, Bangkok, Thailand
Srihatach G. Ngarmukos, MD, Bangkok, Thailand
Saran Tantavisut, Bangkok, Thailand
Vinai Parkpian, MD, Bangkok, Thailand

Adiponectin levels in plasma and synovial fluid were inversely correlated with severity of knee OA. Adiponectin could confer increased susceptibility to knee OA and may play a potential role in OA.

Poster No. P172**Is Further Treatment Necessary for Patellar Crepitus After Total Knee Arthroplasty?**

Bo-Hyun Hwang, MD, Seoul, Republic of Korea
Su-Chan Lee, MD, Seoul, Republic of Korea
Kwang Am Jung, MD, Seoul, Republic of Korea
Chang Hyun Nam, MD, PhD, Yangcheon-G, Republic of Korea
Alvin C. Ong, MD, Linwood, NJ, Republic of Korea

Patellar crepitus is self-limited and a benign problem. All patients achieved complete symptom relief without an arthroscopic procedure or arthrotomy.

Poster No. P173**Measured Resection Technique Does Not Always Results in Rectangular Flexion Joint Gap in TKA**

Maki Itokazu, MD, Osaka, Japan
Yukihide Minoda, MD, Osaka, Japan
Mitsuhiko Ikebuchi, MD, Abeno-ku Osaka, Japan
Shigekazu Mizokawa, MD, PhD, Osaka, Japan
Taku Yoshida, MD, Osaka-city, Osaka, Japan
Kazumasa Yamamura, MD, Osaka City Osaka, Japan
Hiroaki Nakamura, MD, Osaka, Japan

Femoral rotation according to the bony land mark did not always result in rectangular flexion joint gap. Outlier ($>3^\circ$) was about 30%. Surgeons should also refer ligament balance in flexion.

Poster No. P174**3-D In Vivo Kinematics of Tri-Condylar Implant During Deep Knee Bend Activities for Japanese Population**

Shinichiro Nakamura, MD, PhD, Knoxville, TN
Richard D. Komistek, PhD, Knoxville, TN
Hiromu Ito, Kyoto, Japan
Kenji Nakamura, MD, Matsue, Shimane, Japan
Adrija Sharma, PhD, Knoxville, TN
Sumesh M. Zingde, Knoxville, TN

The knees implanted with tri-condylar TKA experienced high weight-bearing flexion, excellent posterior femoral rollback and normal axial rotation patterns.

Poster No. P175**Biomechanical Validation of Medial Pie Crusting for TKA Soft Tissue Balancing**

Erik L. Woodard, BS, Memphis, TN
John L. Williams, PhD, Memphis, TN
John R. Crockarell Jr, MD, Collierville, TN
William M. Mibalko, MD, PhD, Germantown, TN

Biomechanical evaluation of pie crusting the medial soft tissue sleeve for TKA balancing proved to be as effective as a standard release technique when evaluated biomechanically.

Poster No. P176**Effect of Design Factors on Initial Stability of Cementless Tibial Implants**

Alex P. Stoller, Fort Wayne, IN
Brett R. Levine, MD, Chicago, IL
Scott M. Sporer, MD, Wheaton, IL

Design factors affect the initial stability of cementless tibial implants; an asymmetric shape designed to maximize coverage and peripherally located porous pegs may enhance initial fixation.

Poster No. P177**Number of Surgical Procedures Needed to Eradicate Infection in Septic Arthritis of the Knee**

Omkar H. Dave, MD, Galveston, TX
Karan A. Patel, MD, Phoenix, AZ
Clark Andersen, MS, Galveston, TX
Kelly D. Carmichael, MD, Galveston, TX

With arthroscopic irrigation and debridement as the procedure of choice, most patients with septic arthritis of the knee require only one surgical procedure to eradicate infection.

Poster No. P178**Prospective Longitudinal Study of Patient Satisfaction After TKA Stratified by Demographic and Co-morbid Factors**

Robert Pivec, MD, Baltimore, MD
Kimona Issa, MD, Baltimore, MD
Kristin Given, MS, Mahwah, NJ
Kenneth A. Greene, MD, Akron, OH
Kirby Hitt, MD, Temple, TX
Steven F. Harwin, MD, New York, NY
Mark A. Kester, PhD, Mahwah, NJ
Michael A. Mont, MD, Baltimore, MD

Demographic and social factors are more likely to affect physical functioning while medical comorbidities such as neurologic or gastrointestinal disorders are likely to affect mental perceptions.

Poster No. P179**High Failure Rate of Single Peg Medialized Patella Dome in Primary Posterior Stabilized TKA**

Edward J. McPherson, MD, Los Angeles, CA
Sherif M. Sherif, Los Angeles, CA
Matthew Dipane, BA, Los Angeles, CA

We report a significant failure rate of small medialized patellar domes when used with a posterior stabilized TKA.

Poster No. P180**Impact of Reducing Spinal Bupivacaine Dose on Hospital Stay After Total Knee and Hip Replacement**

Elizabeth A. Jacob, BA, Boston, MA
Scott Pritzlaff, MD, Brookline, MA
Ashlee Holman, MD, Boston, MA
Andrew A. Freiberg, MD, Boston, MA
Robert Peloquin, MD, Boston, MA

The purpose of our study was to analyze the influence of "high dose" (> 15 mg) vs. "low dose" (<15 mg) spinal bupivacaine.

Adult Reconstruction Knee**Poster No. P181****Effect of Posterior Tibial Slope Increase in Opening Wedge High Tibial Osteotomy on Functional Outcomes**

Eun K. Song, MD, Hwasun-Gun, Republic of Korea
Jong-Keun Seon, MD, Hwasungun, Republic of Korea
Kyung Jai Lee, MD, Gwangju, Republic of Korea
Hasung Kim, Hwasun, Republic of Korea

A surgeon should keep in mind that increased posterior tibial slope may have adverse effect on clinical outcomes in patients after medial opening-wedge HTO.

Poster No. P182**◆ Povidone-iodine Inhibits Bone Cement Polymerization**

Joshua Bingham, MD, Mesa, AZ
Alexander C. McLaren, MD, Phoenix, AZ
Henry D. Clarke, MD, Phoenix, AZ
Ryan McLemore, PhD, Phoenix, AZ

PVP-1 can adversely affect both the polymerization and final strength of acrylic bone cement when exposed before setting.

Poster No. P183**Inter-observer Variation of Applied Force on the Knee during Mechanical Testing**

Patrick A. Meere, MD, New York, NY
Martin W. Roche, MD, Fort Lauderdale, FL
Peter S. Walker, PhD, New York, NY
Christopher Bell, MSc, New York, NY
Christopher R. Anderson, MSc, Sunrise, FL

Magnitude and wave signature of applied force are important when testing balancing in TKA. Applied forces to test ligamentous knee stability vary, but are reproducible by each individual surgeon.

Poster No. P184**Comparative Study of Revision TKA by using Tibial Tuberosity Osteotomy and Rectus Snip Approach**

Hasung Kim, Hwasun, Republic of Korea
Jong-Keun Seon, MD, Hwasungun, Republic of Korea
Eun K. Song, MD, Hwasun-Gun, Republic of Korea
Kyung Jai Lee, MD, Gwangju, Republic of Korea
Hyeong Won Park, Hwasun-Gun, Republic of Korea

The tibial tuberosity osteotomy can be the alternative option for rectus snip approach for the infected TKA with severe contracture.

Poster No. P185**Mortality of Elderly Patients After Two-Stage Reimplantation for Total Joint Infection: A Case Control Study**

Jonathan E. Webb, MD, Rochester, MN
David G. Lewallen, MD, Rochester, MN
Robert T. Trousdale, MD, Rochester, MN

Two-stage reimplantation for total joint infection does not significantly increase the mortality of patients over the age of 80 when compared to a matched cohort undergoing aseptic revision.

Poster No. P186**Comparison of Patellar Resurfacing and Non-Resurfacing in High Flexion Total Knee Arthroplasty**

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Young Min Lee, MD, Seoul, Republic of Korea
Seong Hwan Kim, MD, Daehak-Ro, Republic of Korea
Yool Cho, MD, Seoul, Republic of Korea
Kee Yun Chung, MD, Seoul, Republic of Korea
Joon Kyu Lee, MD, Seoul, Republic of Korea
Sang C. Seong, MD, Seoul, Republic of Korea
Sahnghoon Lee, MD, PhD, Seoul, Republic of Korea
Myung C. Lee, MD, Seoul, Republic of Korea

In high flexion TKA, patellar resurfacing resulted in higher knee scores including KSS, HSS, and less high flexion-activity related pain.

Poster No. P187**Predictors of Septic Arthritis in the Adult Population**

Robert Pivec, MD, Baltimore, MD
Dante M. Leven, DO, Brooklyn, NY
Yevgeniy Korshunov, MD, Brooklyn, NY
Ashish Patel, MD, Brooklyn, NY
William Aibinder, MD, Rochester, MN
Konstantin Vatrengo, PA-C, Brooklyn, NY
Carl B. Paulino, MD, Brooklyn, NY

The synovial fluid cell count is a useful screening tool for diagnosing septic arthritis. The cutoff of 64,000 synovial WBCs is higher than the cutoff that is often used in the orthopedic literature.

Poster No. P188**Outcome of Unicompartmental Knee Arthroplasty in Patients Under 56 Years: A Review of 74 Cases**

Brian Palumbo, MD, Boston, MA
Lee Josephs, Wellesley, MA
Joshua D. Lindsey, MD, Rochester, NY
Ran Schwarzkopf, MD, Irvine, CA
Richard D. Scott, MD, Boston, MA

This study is a review of 74 UKAs in patients under 56 years. We report good long-term survival and excellent function, yet survival was inferior to historical reports of UKA in older patients.

Poster No. P189**Progressive Changes in Tibiofemoral Subluxation and Angulation in Stages of Osteoarthritis**

Aernout Zuiderbaan, MD
Saker Khamaisy Sr, MD, New York, NY
Andrew D. Pearle, MD, New York, NY

The change of tibiofemoral subluxation and angulation in the different stages of osteoarthritis.

Poster No. P190**Factors Affecting Patellofemoral Crepitation and Clunk Following Total Knee Arthroplasty**

Juan-Vicente Peralta, MD, Leganés, Spain
Brian P. Gladnick, MD, New York, NY
Yuo-Yu Lee, MS, New York, NY
Stephen Lyman, PhD, New York, NY
Alejandro Gonzalez Della Valle, MD, New York, NY

Patients with higher postoperative flexion are at an increased risk for patellar crepitation and clunk (PCC). Radiographic parameters do not appear to contribute to the risk of developing PCC.

Poster No. P191**High Variability in Outcomes of Two-Stage Exchange to Treat Periprosthetic Joint Infection**

Benjamin Zmistowski, BS, Philadelphia, PA
Paul M. Lichstein, MD, Philadelphia, PA
Aaron Carter, MD, Miami Beach, FL
Javad Parvizi, MD, FRCS, Philadelphia, PA

The pertinent literature was reviewed to determine variation in outcomes, including eradication of infection, when utilizing two-stage exchange and attempted to adjust for known predictors of failure.

Poster No. P192**One-week Staged Total Knee Arthroplasty Protocol: A Safety Comparison of Intended and Completed Surgeries**

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Roshan P. Shah, MD, JD, Chicago, IL
Paul M. Courtney, MD, Philadelphia, PA
Sohrab Virk, MD, Columbus, OH
Craig L. Israelite, MD, Philadelphia, PA

This study identifies a significantly higher comorbidity index and complication rate among patients who do not complete a staged bilateral knee arthroplasty protocol.

Poster No. P193**The Fate of Unplanned Retention of Prosthetic Articulating Spacers for Periprosthetic Joint Infection**

Horim Choi, MD, Boston, MA
Andrew A. Freiberg, MD, Boston, MA
Henrik Malchau, MD, Boston, MA
Harry E. Rubash, MD, Boston, MA
Young-Min Kwon, MD, PhD, Boston, MA

Retained prosthetic articulating spacers for infected total hip and knee arthroplasty appeared to last and function well up to 6 years without necessarily requiring further surgical intervention.

Poster No. P194**Multi-joint Arthritis is Associated with Increased Health Resource Utilization for Patients Undergoing TKA**

Michael G. Zywiell, MD, Toronto, ON, Canada
Rushil Chaudhary, Toronto, ON, Canada
Raj Rampersaud, MD, Toronto, ON, Canada
Rajiv Gandhi, MD, Toronto, ON, Canada
Nizar Mahomed, MD, Toronto, ON, Canada
Anthony Perruccio, PhD, Toronto, ON, Canada

Multi-joint arthritis is associated with differences in in-hospital health resource utilization following TKA when compared to patients with a minimal number of symptomatic joints.

Poster No. P195**Accuracy and Reproducibility of Instrumented Tibial Trial for Ligament Balancing in Total Knee Replacement**

Christopher Bell, MSc, New York, NY
Peter S. Walker, PhD, New York, NY
Fredrick J. Kummer, PhD, New York, NY
Patrick A. Meere, MD, New York, NY

The ability to quantify ligament balancing during TKA can inform surgeons whether corrections need to be made. The reliability of an instrumented tibial trial to measure these forces was demonstrated.

Poster No. P196**Mobile vs. Fixed Bearing Medial Unicompartmental Knee Arthroplasty: A Series of 375 Patients**

Robert F. Murphy, MD, Memphis, TN
Tyler Fraser, BS, Memphis, TN
William M. Mihalko, MD, PhD, Germantown, TN

In this largest recorded single cohort series comparing mobile versus fixed bearing UKA, we found no significant difference in final clinical knee range of motion, rates of complications and survivorship between the two bearing types.

Poster No. P197**Transfer of Care During a Two-Stage Exchange for Chronic Periprosthetic Joint Infection Leads to Inferior Outcomes**

Matthew J. Dietz, MD, Morgantown, WV
Horim Choi, MD, Boston, MA
Andrew A. Freiberg, MD, Boston, MA
Hany S. Bedair, MD, Boston, MA

The transfer of care during two-stage exchange for periprosthetic joint infection leads to more surgery, longer treatment times, and higher rates of failure.

Poster No. P198**Rabbit Articular Cartilage Defects Treated by Allogenic Chondrocyte and Autologous Bone Marrow Cell**

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Myung Ku Kim, Incheon, Republic of Korea
Sang-Rim Kim, MD, PhD, Jeju, Republic of Korea
Kwang Woo Nam, MD, Jeju, Republic of Korea

Fibrin matrix with allogenic chondrocytes or autologous bone marrow cells may useful methodology to regenerate hyaline-like cartilage in full-thickness cartilage defect.

Adult Reconstruction Knee**Poster No. P199****Hand Held Navigation Improves Alignment in Total Knee Arthroplasty: A Blinded Study**

Robert A. Malinzak, MD, Mooresville, IN
 Nathaniel R. Evans, MD, Indianapolis, IN
 Merrill A. Ritter, MD, Indianapolis, IN
 Michael E. Berend, MD, Mooresville, IN

Accelerometer based surgical navigation in TKA significantly improved precision and reduced variance for TKAs performed by experienced surgeons. This technique is transferable, adds little time to the procedure.

Poster No. P200**Does Bone Quality Alter Mechanical Performances of All-Polyethylene and Metal-Backed TKA Tibial Component?**

Jean M. Brilhault, MD, Tours, France
 Silvia Pianigiani, MS, Milano, Italy
 Alessandro Navacchia, MSc, Cesena, Italy
 Luc Labey, Leuven, Belgium
 Walter Pascale, MD, Milano, Italy
 Vincenzo Parenti Castelli, Bologna, Italy
 Bernardo Innocenti, PhD, Bruxelles, Belgium

Generally, AP solution presents worse performance with respect to MB implants in terms of stress distribution in the bone and micromotions.

Poster No. P201**The Fate of the Turned Away Dissatisfied Total Knee Arthroplasty**

Kevin Bunn, MD, Chapel Hill, NC
 Daniel J. Del Gaizo, MD, Chapel Hill, NC
 Christopher W. Olcott, MD, Chapel Hill, NC

Patients with painful total knee arthroplasty of unclear etiology who are not offered revision surgery did not improve with time.

Poster No. P202**Survivorship of Total Knee Arthroplasty in Patients Under 35**

Jeffrey Stimac, MD, Crestwood, KY
 Matthew P. Abdel, MD, Eagan, MN
 Thomas J. Heyse, MD, Marburg, Germany
 Mark P. Figgie, MD, New York, NY

Patients under 35 years of age undergoing TKA experience pain relief and improvements in functionality, but have suboptimal survivorships, particularly with non-inflammatory diagnoses.

Poster No. P203**In Vivo Kinematics for Fixed or Mobile Bearing Revision Total Knee Arthroplasty**

Thibaut De Bock, Knoxville, TN
 Matthew Anderle, Denver, CO
 Douglas A. Dennis, MD, Denver, CO
 Mohamed Mahfouz, PhD, Knoxville, TN
 Richard D. Komistek, PhD, Knoxville, TN

Constrained revision total knee arthroplasty of the same design display in vivo kinematic differences between fixed and mobile bearing configurations.

Poster No. P204**Impact of Statins on Postoperative Venous Thromboembolic Events Following Total Knee and Hip Replacements**

Katharine T. Criner, MD, New York, NY
 Arianna Trionfo, MD, Philadelphia, PA

Statins in addition to conventional venous thromboembolic (VTE) chemoprophylactic therapy significantly reduced the events of VTE in post-operative total knee and total hip replacement patients.

Poster No. P205**Relationship Between Meniscal Deficiency and Anterior-posterior Laxity of the Knee**

Sally Arno, MSc, New York, NY
 Christopher Bell, MSc, New York, NY
 Ding Xia, MSc, New York, NY
 Svetlana Krasnokutsky, MD
 Jonathan Samuels, MD
 Ravinder Regatte, MD
 Peter S. Walker, PhD, New York, NY

Loss of meniscal integrity of meniscus was found to be correlated with increased displacement of the femur suggesting a decreased role of the meniscus which could accelerate cartilage degeneration.

Foot and Ankle**Poster No. P206****The Change of Tibiotalar Alignment in Sagittal Plane After Total Ankle Replacement**

Jae Ho Cho, MD, Seoul, Republic of Korea
 Woo Chun Lee, Seoul, Republic of Korea
 Tae Keun Ahn, MD, Seoul, Republic of Korea
 Young Yi, MD, Seoul, Republic of Korea
 Hong Joon Choi, MD, Seoul, Republic of Korea
 Chulhyun Park, MD, Daegu, Republic of Korea
 Dong-Il Chun, Seoul, Republic of Korea
 Kang Lee, MD, Seoul, Republic of Korea
 Jiyong Ahn, MD, Seoul, Republic of Korea

In TAR, correction of TLS angle was important for the relocation of anteriorly talus displacement in sagittal plane, while flatfoot was important for the relocation of posteriorly talus displacement.

Poster No. P207**Does Achilles Tendon Lengthening Improve the Results in Total Ankle Replacement****Alternate Paper: Foot and Ankle IV: Arthritis in Ankles**

Robin M. Queen, PhD, Durham, NC
 Robert J. Butler, DPT, PhD, Durham, NC
 Samuel B. Adams Jr, MD, Durham, NC
 Mark E. Easley, MD, Durham, NC
 James A. Nunley II, MD, Durham, NC
 James K. DeOrto, MD, Durham, NC

This study examines differences in post-operative outcomes in patients who had a concomitant Achilles lengthening procedure versus a control group without a lengthening procedure.

Poster No. P208**Correction of Valgus Deformity in Total Ankle Arthroplasty**

Constantine Demetracopoulos, MD, New Rochelle, NY
Samuel B. Adams Jr, MD, Durham, NC
James K. DeOrto, MD, Durham, NC
James A. Nunley II, MD, Durham, NC
Mark E. Easley, MD, Durham, NC

Correction of coronal alignment was achieved and maintained in patients with moderate to severe valgus malalignment.

Poster No. P209**◆ Mechanical Characterization of Achilles Tendon Using Axial Speed of Ultrasound: A Possible Clinical Application**

Joseph Fournier, Tours, France
Jean M. Brillhault, MD, Tours, France

Assessment of Achilles tendon mechanical properties with axial ultrasound velocities analysis: evaluation of a new medical quantitative ultrasound medical device.

Poster No. P210**Arterial Anatomy of the Posterior Tibial Tendon****Alternate Paper: Foot and Ankle II: Tendons, OCD, and More**

Mary C. Manske, MD, Saint Louis, MO
Kathleen E. McKeon, MD, Nashville, TN
Jeremy J. McCormick, MD, Saint Louis, MO
Jeffrey E. Johnson, MD, Saint Louis, MO
Sandra E. Klein, MD, Saint Louis, MO

On macro- and microscopic evaluation we observed a consistent hypovascular zone in the retromalleolar region of the posterior tibial tendon (PTT), supporting a vascular contribution to PTT dysfunction.

Poster No. P211**Anterior Talofibular Ligament Abnormalities on Routine Magnetic Resonance Imaging of the Ankle****Alternate Paper: Foot and Ankle III: Fracture and Flatfoot**

Patrick Kane, MD, Wilmington, DE
David I. Pedowitz, MD, Penn Valley, PA
Adam Zoga, MD, Philadelphia, PA
Steven M. Raikin, MD, Philadelphia, PA

In a review of 158 ankle MRIs performed at our institution for reasons other than lateral ankle trauma or instability, the anterior talofibular ligament was found to be abnormal nearly 63% of the time.

Poster No. P212**A Qualitative & Quantitative Anatomic Study of the Lateral Ankle Ligaments for Repair and Reconstruction Procedures**

Thomas O. Clanton, MD, Vail, CO
Kevin J. Campbell, BS, Vail, CO
Katharine Wilson, MSc, Vail, CO
Max P. Michalski, MSc, Vail, CO
Mary T. Goldsmith, MSc, Vail, CO
Coen A. Wijdicks, PhD, Vail, CO
Robert F. LaPrade, MD, PhD, Vail, CO

A qualitative and quantitative anatomic study of the origins and insertions of the lateral ankle ligaments in relation to surgically pertinent bony landmarks for repair and reconstruction procedures.

Poster No. P213**Comparison of Correction Power and Complications of Proximal First Metatarsal Osteotomies**

Reinhard Schuh, MD, Vienna, Austria
Madeleine Willegger, Vienna, Austria
Johannes Holinka, Vienna, Austria
Robin Ristl, PhD, MSc, Vienna, Austria
Reinhard Windbager, MD, Vienna, Austria
Hugo A. Wanivenhaus, MD, Vienna, Austria

A systematic review and meta-analysis on correction power and complications of proximal first metatarsal osteotomies has been performed.

Poster No. P214**A New Insight into Hallux Valgus Deformities - Precise 3D Analysis of First Metatarsal Rotation**

Shau-Huai Fu, MD, Yunlin County, Taiwan
Chih-Chien Hung, MD, Taipei City, Taiwan
Bo-Lun Chen, MD, Taipei, Taiwan
Pei-yu Chen, MD, Taipei, Taiwan
Yio-Wha Shau, MD, Taipei, Taiwan
Chung-Li Wang, MD, Taipei City, Taiwan

Concepts and findings about hallux valgus in 2D analysis could be re-examined and explained with our 3D analysis method in the future.

Poster No. P215**Receptor for Advanced Glycation End Products (RAGE) and Foot Function in Diabetic Foot Disease**

Smita Rao, PhD, PT, New York, NY
Ann Marie Schmidt, New York, NY
Thorsten Kirsch, PhD, New York, NY
Kenneth Mroczek, MD, New York, NY

This prospective cross-sectional study investigated molecular and mechanical pathways in diabetic foot disease.

Poster No. P216**Revision Rate after Major or Minor Lower Extremity Amputation in Diabetic or Peripheral Arterial Disease Patients**

Florian Wanivenhaus, MD, Zürich, Switzerland
Flavien Mauler, MD, Zürich, Switzerland
Teresa Stelzer, Zollikerberg, Switzerland
Alois Tschopp, PhD, Zurich, Switzerland
Thomas Boeni, MD, Zurich, Switzerland
Martin Berli, MD, Zürich, Switzerland

Polyneuropathy and diabetic nephropathy may be a risk factor for revision after amputation. Diabetic patients may have a higher rate of revision to a more proximal level compared to non-diabetic.

Poster No. P217**A CT Study Characterizing the Anatomy of the Uninjured Ankle Syndesmosis**

Elliot Mendelsohn, MD, Philadelphia, PA
Christopher M. Hoshino, MD, Redondo Beach, CA
Thomas G. Harris, MD, Altadena, CA

The uninjured syndesmosis is approximately 30 degrees externally rotated.

Foot and Ankle**Poster No. P218****The Effect of Dynamic vs. Static Fixation on Malreduction of Unstable Syndesmotic Injuries**

David C. Lee, MD, Long Beach, CA
 Brent G. Parks, MSc, Baltimore, MD
 Michael Tsai, BS, Baltimore, MD
 Shadpour Demehri, MD, Baltimore, MD
 John A. Carrino, MD, Baltimore, MD
 Lew C. Schon, MD, Baltimore, MD
 Stuart D. Miller, MD, Baltimore, MD

The dynamic nature of suture-button fixation for traumatic syndesmotic injuries does not provide significant improvement from a malreduced state despite movement in this cadaver study.

Poster No. P219**Diagnostic Power and Interobserver Reliability of Classifications / Measurements to Syndesmotic Injury in X-ankle**

Yon F. Dhooge, MD, Maastricht, Netherlands
 Noortje Wentink, PhD, Maastricht, Netherlands
 Luuk Theelen, MD, Maastricht, Netherlands
 Wouter Van Hemert, MD, PhD, Maastricht, Netherlands
 Bernd P. Grimm, PhD, Aachen, Germany
 Rachel Senden, PhD, Heerlen, Netherlands

X-ankle classifications and measurements showed moderate to excellent interobserver reliability but too low diagnostic power to identify syndesmotic instability.

Poster No. P220**Radiographic Study of the Fifth Metatarsal for Optimal Intramedullary Screw Fixation of Jones Fracture**

George Ochenjele, MD, Chicago, IL
 Bryant Ho, MD, Chicago, IL
 Paul Switaj, MD, Chicago, IL
 Anish R. Kadakia, MD, Glenview, IL

Computed tomography of 119 patients provides improved understanding of the anatomy of the fifth metatarsal to determine optimal screw size and length selection for fixation of Jones fractures.

Poster No. P221**Assessment of Hindfoot Alignment by Measuring Hindfoot Angulation and Translation**

Young Yi, MD, Seoul, Republic of Korea
 Woo Chun Lee, Seoul, Republic of Korea
 Jae Ho Cho, MD, Seoul, Republic of Korea
 Hong Joon Choi, MD, Seoul, Republic of Korea
 Tae Keun Ahn, MD, Seoul, Republic of Korea
 Kang Lee, MD, Seoul, Republic of Korea
 Francis Joseph V. Reyes, MD, Seoul
 Yumi Kim, MD, Gyeongido, Republic of Korea

Hindfoot alignment should be assessed by measuring both hindfoot angulation and hindfoot translation.

Poster No. P222**Hindfoot Alignment is Associated with Knee Alignment in Patients with Rheumatoid Arthritis**

Hiromu Ito, Kyoto, Japan
 Moritoshi Furu, MD, PhD, Kouka-Shi Shiga, Japan
 Masahiro Ishikawa, MD, PhD, Kyoto, Japan
 Hiroko Ogino, MD, Kyoto, Japan
 Naoki Haraguchi, MD, Kunitachi-Shi, Japan
 Hiroyuki Yoshitomi, Kyoto, Japan
 Shuichi Matsuda, MD, Kyoto, Japan

Hindfoot alignment is significantly associated with the knee alignment in patients with rheumatoid arthritis and is changeable by the correction of knee alignment at the total knee arthroplasty.

Poster No. P223**Prevalence of Vitamin D Deficiency in Patients with Foot and Ankle Injuries**

Jeremy T. Smith, MD, Jamaica Plain, MA
 Kareem Halim, Brookline, MA
 David A. Palms JR, BA, Boston, MA
 Eric M. Bluman, MD, Chestnut Hill, MA
 Christopher P. Chiodo, MD, Boston, MA

Hypovitaminosis D is common among patients with a foot or ankle injury seen at our institution. Patients with a low energy fracture of the foot or ankle are at particular risk for low vitamin D.

Poster No. P224**Comparison of Treatment Between Ilizarov External Fixation and Internal Fixation in Elderly with Pilon Fracture**

Nozaka Koji, MD, PhD, Akita, Japan

In elderly patients with periarticular fracture of the ankle, those who received Ilizarov external fixation treatment showed shorter duration of hospitalization and fewer complications compared to those who received internal fixation group.

Poster No. P225**A Randomized Study of Preoperative Preparation Solutions for Foot and Ankle Surgery Patients**

Joshua Hunter, MD, Rochester, NY
 Laura K. Dawson, DO, Fort Campbell, TN
 Katherine Ma, MD, Cortlandt Manor, NY
 Judith F. Baumhauer, MD, MPH, Rochester, NY

Our randomized, prospective study revealed that patients having orthopaedic foot surgery had fewer positive cultures if their foot was cleansed with chlorhexidine followed by isopropyl alcohol.

Hand and Wrist**Poster No. P226****Accuracy of Carpal Tunnel Injection: A Prospective Evaluation of 756 Patients****Alternate Paper: Hand and Wrist III: Nerve, Soft Tissue Reconstruction, and Pediatric Hand**

Brendan J. MacKay, MD, San Antonio, TX
 David P. Green, MD, San Antonio, TX

Our injection accuracy (75.7%) is less than reported in previously published studies, possibly indicating that carpal tunnel injection is less reliable than previously thought.

Poster No. P227**Immunomodulation of Recipient Mesenchymal Stem Cells in Composite Tissue Allotransplantation**

Ryosuke Ikeguchi, MD, Kobe, Japan
Ryosuke Kakinoki, MD, Kyoto, Japan
Tomoki Aoyama, MD, PhD, Kobe, Japan
Tadashi Yasuda, MD, Kobe, Japan
Junya Toguchida, MD, PhD, Kyoto, Japan
Shuichi Matsuda, MD, Kyoto, Japan

Mesenchymal stem cells induce T cell hyporesponsiveness and prolong graft survival in the rat composite allotransplantation model. Mesenchymal stem cells demonstrate some immunomodulatory properties.

Poster No. P228**Multiple Osteochondromatosis of the Hand - A Natural History Study**

Julie Colantoni, MD, Charlotte, NC
Raymond G. Gaston, MD, Charlotte, NC

This is a look at the presenting characteristics of multiple osteochondromatosis of the hand as well as a large, long term followup of the patients, evaluating the natural history of the disease.

Poster No. P229**Antibiotic Sensitivities in Hand Infections: Changing MRSA Drug Resistance Profiles****Alternate Paper: Hand and Wrist I: Hand**

Richard J. Tosti, MD, Philadelphia, PA
Brian Samuelsen, Rochester, MN
John R. Fowler, MD, Gibsonia, PA
Alyssa Schaffer, MD, Philadelphia, PA
Asif M. Ilyas, MD, Wayne, PA

MRSA remains the most common pathogen in hand infections and has become increasingly resistant to levofloxacin. Clindamycin resistance appears to be unacceptably high for use in empiric therapy.

Poster No. P230**The Efficacy of Surgical Preparation Solutions in Hand Surgery**

John R. Fowler, MD, Gibsonia, PA
Peter Z. Xu, BA, Pittsburgh, PA
Robert J. Goitz, MD, Pittsburgh, PA

In this prospective randomized trial, there were no differences in the effectiveness of surgical prep solutions to eliminate bacteria from the skin of patients undergoing clean, elective hand surgery.

Poster No. P231**Management and Outcomes of Scapholunate Ligament Injuries: A Retrospective Review**

Eric M. Rohman, BA, MS4, Minneapolis, MN
Julie Agel, ATC, Seattle, WA
Matthew D. Putnam, MD, Minneapolis, MN
Julie E. Adams, MD, Minneapolis, MN

Scapholunate ligament (SL) injuries is common and can be challenging to diagnose and treat. This manuscript describes our experience and outcomes following treatment of acute and chronic SL injuries.

Poster No. P232**Radiographic Follow Up During Closed Treatment of Distal Radius Fractures - How Many Weeks are Necessary?**

James Lin, MD, New York, NY
Jacob E. Tulipan, MD, Philadelphia, PA
Kiran S. Yemul, New York, NY
Robert J. Strauch, MD, New Rochelle, NY
Melvin P. Rosenwasser, MD, New York, NY

3 weeks of x-ray follow up appears sufficient both clinically & radiographically to capture patients who require operative treatment based on established guidelines for distal radius fractures.

Poster No. P233**Comparable Time to Radiographic Union in an Independent Series of Ulnar Shortening Procedures**

Howard Cottam, MD, London, United Kingdom
Sebastian Dawson-Bowling, MD, East Sussex, United Kingdom
Bijayendra Singh, FRCS, MBBS, Maidstone, United Kingdom

We demonstrate comparable radiographic union rates and time to union, for an independent series of ulnar shortening procedures, using the Ulnar Osteotomy Compression Plate™.

Poster No. P234**Osseous Anatomy of the Distal Radioulnar Joint: An Assessment Using Three Dimensional Modeling**

Parham Daneshvar, MD, Ottawa, ON, Canada
Ryan Willing, PhD, London, ON, Canada
Ruby Grewal, MD, London, ON, Canada
Graham J. King, MD, London, ON, Canada

The three dimensional assessment of the distal radioulnar joint is a useful tool in understanding the diverse anatomy of this joint.

Poster No. P235**Distal Radioulnar Joint Instability Treated with Soft Tissue Distal Radioulnar Interposition Arthroplasty**

Eric R. Wagner, MD, Rochester, MN
Sanjeev Kakar, MD, Rochester, MN

Distal radius interposition arthroplasty with soft tissue for patients with DRUJ instability. leads to good pain relief and functional outcomes in an intermediate to long-term follow-up period.

Poster No. P236**Scaphocapitate Arthrodesis in the Treatment of Kienbock's Disease****Alternate Paper: Hand and Wrist II: Wrist and Forearm**

Peter C. Rhee, MD, San Antonio, TX
Ines Lin, MD, Philadelphia, PA
Allen T. Bishop, MD, Rochester, MN
Steven L. Moran, MD, Rochester, MN
Alexander Yong Shik Shin, MD, Rochester, MN

Functional outcomes in medium term follow-up are discouraging after scaphocapitate arthrodesis for advanced stages of Kienbock's disease.

Hand and Wrist**Poster No. P237****Treatment of Stage 3- Kienböck's Disease: Predictors for Postoperative Collapse of the Lunate and Wrist Pain**

Ryosuke Kakinoki, MD, Kyoto, Japan
 Souichi Ohta, MD, Kyoto, Japan
 Takashi Noguchi, MD, Kyoto City, Japan
 Yukitoshi Kaizawa, MD, Kyoto, Japan
 Hiromu Ito, Kyoto, Japan
 Shuichi Matsuda, MD, Kyoto, Japan

Patients with stage 3 Kienböck's disease were treated using VBG and SC fusion. The lunate collapsed remarkably within the first 2 years. The preoperative DFA might be a predictor of the collapse.

Poster No. P238**Severity of Hand Osteoarthritis: A Predictor of Major Joint Involvement and Surgical Intervention**

Morteza Meftah, MD, New York, NY
 Matin Lendhey, Brooklyn, NY
 Amar S. Ranawat, MD, New York, NY
 Chitranjan S. Ranawat, MD, New York, NY

This is the first study associating the severity of hand involvement with other major joint involvement and risk of surgical intervention.

Poster No. P239**A Novel Intramedullary Proximal Interphalangeal Arthrodesis Construct Outperforms Standard Techniques**

John T. Capo, MD, Hoboken, NJ
 Paolo Caravaggi, Bologna, Italy
 Scott R. Hadley, MD, Chestnut Hill, MA
 Steven Rivero, BA, Warren, NJ
 Ben Shamian, MD, Newark, NJ

A novel intramedullary fixation device for PIP arthrodesis outperformed other common methods of fixation in biomechanical testing.

Poster No. P240**A Quantitative Analysis of the Congruity of the Hemi-hamate Arthroplasty**

Nathan W. Coleman, MD, Seattle, WA
 Jerry I. Huang, MD, Seattle, WA
 Peter Cavanagh, PhD, Seattle, WA

A novel software program was developed that can compare the congruity of two articular surfaces. The hemi-hamate arthroplasty was used as a model, demonstrating remarkable congruity.

Pediatrics**Poster No. P241****Validation of New Quantitative Measures of Perthes Disease with Long-term Functional Scores**

Harry K. Kim, MD, Dallas, TX
 Yavuz Saglam, MD, Dallas, TX
 Adriana De La Rocha, MS, Dallas, TX
 Corey S. Gill, MD, Dallas, TX

Quantitative measurements to assess hip deformity in LCPD had good inter/intra observer agreement and weak to moderate correlations with functional outcomes at 20 year follow-up.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Poster No. P242**Should Cerebral Palsy Patients Undergo Scoliosis Deformity Correction in the Winter Months?**

Burt Yaszay, MD, San Diego, CA
 Paul D. Sponseller, MD, Baltimore, MD
 Suken A. Shah, MD, Wilmington, DE
 Amer Samdani, MD, Philadelphia, PA
 Firoz Miyanji, MD, Vancouver, BC, Canada
 Jahangir Asghar, MD, Coral Gables, FL
 Tracey Bastrom, MA, San Diego, CA
 Peter O. Newton, MD, San Diego, CA
 Harms Study Group, San Diego, CA

Despite concern for increased complications in CP scoliosis patients with frequent respiratory hospitalizations, our study suggests scoliosis surgery can be safely performed during the winter.

Poster No. P243**Serial Casting in Idiopathic and Non Idiopathic Cases of Early Onset Scoliosis**

Pooya Hosseinzadeh, MD, Huntington, WV
 Joshua Philbrick, MD, Toledo, OH
 Ryan D. Muchow, MD, Lexington, KY
 Janet Walker, MD, Lexington, KY
 Todd A. Milbrandt, MD, Lexington, KY
 Henry J. Iwinski, MD, Lexington, KY
 Vishwas R. Talwalkar, MD, Lexington, KY

Serial casting shows promising results in idiopathic and non idiopathic cases of early onset scoliosis.

Poster No. P244**Challenging the Standard for Pre-Clinical Testing of Deformity Correction Surgeries**

Sean L. Borkowski, MS, Los Angeles, CA
 Sophia Sangiorgio, PhD, Los Angeles, CA
 Richard E. Bowen, MD, Los Angeles, CA
 Anthony A Scaduto, MD, Los Angeles, CA
 Juliann Kwak-Lee, MD, Pasadena, CA
 Edward Ebramzadeh, PhD, Los Angeles, CA

We developed and applied a novel preclinical testing model to evaluate surgical strategies during deformity correction surgery.

Poster No. P245**Age-based Normative Measurements of the Pediatric Pelvis**

Matthew Oetgen, MD, Chevy Chase, MD
 Steven Andelman, MD, New York, NY
 Benjamin D. Martin, MD, Washington, DC
 Nabile M. Safdar, MD, Washington, DC

CT based measurements of pediatric pelvis showed an age-dependent decrease in the width of the SI joints and pubic symphysis; while the width of the triradiate cartilage reMED stable until closure.

Poster No. P246

Total Hip Arthroplasty in the Pediatric Population

Alternate Paper: Pediatrics III: Pediatric Hip and Sports Medicine

Robert D. Russell, MD, Dallas, TX

Brigid N. Maloney, MS, Tucson, AZ

Adriana De La Rocha, MS, Dallas, TX

Michael H. Huo, MD, Dallas, TX

David A. Podeszwa, MD, Dallas, TX

Surgical indications for THA in pediatric patients with end-stage hip pathology.

Poster No. P247

Hamstring and Psoas Length of Crouch Gait in Cerebral Palsy: Comparison with Crouch Gait in Age, Sex-matched Controls

Tae Gyun Kim, Seongnam-Si, Republic of Korea

Chin Y. Chung, MD, PhD, Seongnam, Republic of Korea

Kyoung Min Lee, MD, Sungnam, Republic of Korea

Ki Hyuk Sung, MD, Kyungki, Republic of Korea

Seung Yeol Lee, MD, Seongnam, Republic of Korea

In H. Choi, MD, Seoul, Republic of Korea

Tae-Joon Cho, Seoul, Republic of Korea

Won Joon Yoo, MD, Seoul, Republic of Korea

Moon Seok Park, MD, Sungnam, Republic of Korea

Normal controls mimicking crouch gait and cerebral palsy patients with crouch gait demonstrate similar muscle length patterns.

Poster No. P248

Operative Treatment of Neuromuscular Scoliosis: The Evolution of Pelvic Fixation

Shawn S. Funk, MD, Nashville, TN

Steven A. Lovejoy, MD, Nashville, TN

Gregory A. Mencia, MD, Nashville, TN

Jeffrey E. Martus, MD, MS, Nashville, TN

Pelvic fixation is critical for successful spine fusion in neuromuscular scoliosis; the evolution of treatment has resulted in changes in technique and implants but the clinical impact is unclear.

Poster No. P249

Variations Across Institutions in Perioperative Care of Children with Cerebral Palsy Undergoing Scoliosis Surgery

Brian Scannell, MD, Charlotte, NC

Peter O. Newton, MD, San Diego, CA

Burt Yaszay, MD, San Diego, CA

Suken A. Shah, MD, Wilmington, DE

Paul D. Sponseller, MD, Baltimore, MD

Firoz Miyanji, MD, Vancouver, BC, Canada

Mark F. Abel, MD, Charlottesville, VA

Harry L. Shufflebarger, MD, Miami, FL

Tracey Bastrom, MA, San Diego, CA

Significant variation in perioperative care of CP scoliosis patients exists between institutions (e.g., blood loss, OR time, hospital stay, ICU stay). Efforts are needed to identify best practices.

Poster No. P250

Spinal Cord Monitoring Data in Pediatric Spinal Deformity Patients with Spinal Cord Pathology

Alexander W. Aleem, MD, Saint Louis, MO

Earl D. Thuet, BS, St Louis, MO

Anne Padberg, MD, Saint Louis, MO

Scott J. Lubmann, MD, Saint Louis, MO

The ability to obtain neuromonitoring data in patients with dural pathology is decreased compared to patients with idiopathic scoliosis, but may still aid in the prevention of neurologic complications.

Poster No. P251

TXA and ITM Synergistically Reduce Transfusion Rate by 80% in PSF for Scoliosis

Gideon W. Blumstein, Los Angeles, CA

Derek A. Seehausen, BA, Los Angeles, CA

Patrick Ross, MD, Los Angeles, CA

David L. Skaggs, MD, Los Angeles, CA

The combined use of tranexamic acid and intrathecal morphine in non-idiopathic patients undergoing posterior spinal fusion reduced blood product transfusion rates by 80%.

Poster No. P252

Assessment of Femoral Version: Comparing EOS Biplanar Radiography versus Computed Tomography

Michael L. Pomerantz, MD, San Diego, CA

Diana A. Glaser, PhD, San Diego, CA

Josh Doan, MS, San Diego, CA

Amy Fredrick, Zephyr Cove, NV

Sita Kumar, Cupertino, CA

Eric W. Edmonds, MD, San Diego, CA

3-Dimensional reconstructions of biplanar radiographs provided reliable and comparable information as reconstructions from computed tomography with less radiation exposure.

Poster No. P253

Comparative Analysis of Four Osteotomies Performed during Pediatric Spinal Fusion Surgery

Samuel K. Cho, MD, Palisades Pk, NJ

Lawrence G. Lenke, MD, Saint Louis, MO

Keith H. Bridwell, MD, Saint Louis, MO

Yongjung J. Kim, MD, New York, NY

Three-column osteotomies were associated with higher complication rates (16.2% for PSO (p=0.01) and 19.8% for VCR (p<0.0001)) when compared to SPO. Neurologic deficit rates showed similar trends.

Poster No. P254

Leg Length Discrepancy in the Digital Age: Transitioning Management to the EOS Machine

Michael T. Milone, Philadelphia, PA

Victor M. Ho-Fung, MD, Philadelphia, PA

Bernard D. Horn, MD, Philadelphia, PA

Richard S. Davidson, MD, Philadelphia, PA

Composite leg models are used to show discrepancies between the EOS machine and traditional imaging modalities in the assessment of limb length discrepancy, and clinical implications are discussed.

Pediatrics**Poster No. P255****A New Dystrophic Index Predicts Outcome and Complications in Patients with NF-1 Spinal Deformity**

Daniel J. Sucato, MD, MS, Dallas, TX
Yavuz Saglam, MD, Dallas, TX
Anna McClung, RN, Dallas, TX

Surgical NF-1 patients categorized by dystrophic index: high (DI>15) vs low (DI≤15) group were younger, had greater surgical time, intraop prbc, and complications; despite similar preop Cobb.

Poster No. P256**Pre-Adolescent Single Event Multilevel Surgery Outcomes in Adolescents with Spastic Diplegic Cerebral Palsy**

Kushal V. Patel, MD, Temple, TX
Douglas A. Barnes, MD, Houston, TX
Judith Linton, PT, MS, Houston, TX

The study examines mid-term outcomes of pre-adolescent single event multilevel surgery in adolescents with spastic diplegic cerebral palsy.

Poster No. P257**Evaluation by the Gross Motor Function Measure of a Pilot Aquatic Exercise Program for Children with Cerebral Palsy**

Luca Labianca, MD, Rome, Italy
Maria C. Vulpiani, MD, Rome, Italy
Mirco Fava, Sant'Egidio Alla Vibrata, Italy
Antonello Montanaro, MD, Rome, Italy
Francesco Turturro, MD, Rome, Italy
Andrea Ferretti, MD, Rome, Italy

Early rehabilitation is crucial for children with severe disabilities. Protocols for water rehab are still not well developed. We describe a new method focused on active multisensorial stimulation.

Poster No. P258**Adipose-derived Regenerative Cells Promote Bone Formation on Distraction Osteogenesis in Rats**

Issei Nomura, Kanazawa, Japan
Koji Watanabe, MD, PhD, Kanazawa, Japan
Hidenori Matsubara, MD, Kanazawa, Japan
Katsuhiko Hayashi, MD, Nagoya, Japan
Naotoshi Sugimoto, PhD
Hiroyuki Tsuchiya, MD, Kanazawa, Japan

The current study showed that autogenous ADRCs with collagen gel promoted bone formation in the distracted callus, and shortened the consolidation period in vivo.

Poster No. P259**Decreased Femoral Head Perfusion in Septic Arthritis of the Hip**

Scott B. Rosenfeld, MD, Houston, TX
Aimee Kennedy, BS, Houston, TX
Beverly A. Shirkey, PhD, Houston, TX

48% of patients with septic arthritis of the hip have decreased perfusion of the capital femoral epiphysis. This is associated with adjacent osteomyelitis and increased temperature, CRP, and ESR.

Poster No. P260**Incidence of Extensor Pollicis Longus Rupture in Elastic Intramedullary Nailing of Pediatric Forearm Fractures****Alternate Paper: Pediatrics II: Pediatric Trauma and Urgencies**

Adam K. Lee, MD, Danville, PA
John D. Beck, MD, Kirkland, WA
Joel C. Klena, MD, Danville, PA
Daniel S. Horwitz, MD, Danville, PA

This is a retrospective review of institution's data on incidence and risk factors for extensor pollicis longus rupture in elastic stable intramedullary nailing of pediatric forearm shaft fractures.

Practice Management/Rehabilitation**Poster No. P261****Comparison of Patient Quality of Life Scores and Satisfaction After Common Orthopaedic Surgical Interventions****Alternate Paper: Practice Management/Rehabilitation II: Health Care Policy and Evaluation**

Jason BT Lim, MChB, MRCSEd, Singapore, Singapore
Ngai-Nung Lo, MD, Singapore, Singapore
Andrew C. Chou, BS, Singapore, Singapore
William Yeo, Singapore, Singapore
Shi-lu Chia, MBBS, FRCS, PhD, Singapore, Singapore
Pak Lin Chin, FRCSEd, Singapore, Singapore
Darren Tay, MBBS, FRCS, Singapore, Singapore
Seng-Jin Yeo, FRCS, Singapore, Singapore

A review of four common orthopaedic interventions showed that patients who underwent primary THA reported the highest satisfaction in terms of their ratings and surgery meeting their expectations.

Poster No. P262**Transfer of Hip Arthroplasty Patients Leads to Increased Cost and Resource Utilization in the Receiving Hospital****Alternate Paper: Practice Management/Rehabilitation III: Risk Management and Quality Improvement II**

Atul F. Kamath, MD, Massapequa, NY
Daniel Austin, BA, Bryn Mawr, PA
Peter Derman, MD, New York, NY
Craig L. Israelite, MD, Philadelphia, PA

Patients transferred to the arthroplasty service at a tertiary care center are older, sicker, and associated with more complicated clinical courses and higher costs than in-system patients.

Poster No. P263**Does Co-management of TJA Patients with Hospitalists Reduce Distress Calls?****Alternate Paper: Practice Management/Rehabilitation I: Quality Improvement**

Hakan B. Hedlund, MD, Huddinge, Sweden
William J. Maloney, MD, Redwood City, CA
Stuart B. Goodman, MD, Redwood City, CA
James I. Huddleston III, MD, Redwood City, CA

A hospitalist co-management program did not influence the rate of distress calls after TJA, but did reduce transfers to a higher level of care.

Poster No. P264

Effects of Risendronate Assessed by Bone QUS: A Randomized Trial in 100 Women After Hip Fracture

Emanuele Betti, MD, Livorno, Italy

Francesco Gambini, MD, Livorno, Italy

Virginia Pedrinelli, Livorno, Italy

Federico Cataldi, Livorno, Italy

The QUS imaging is a good device to check the bone mass and help us in following patients after interthrocanteric fracture, with pharmacological support, to reduce the risk of new fragility fractures.

Poster No. P265

Increasing Medical Student Exposure to Orthopaedics - Developing an Orthopaedic Surgery Interest Group

Dayne T. Mickelson, MD, Seattle, WA

Philip Louie, BS, Kirkland, WA

Alex W. Farnand, MD, Chicago, IL

Lauren Meyer, MD, Seattle, WA

Jens R. Chapman, MD, Seattle, WA

An Orthopaedic Surgery Interest Group was established. This resulted in developing student confidence in the musculoskeletal system, increasing interest in Orthopaedics and improving match results.

Poster No. P266

Peri-Operative Patient Specific Blood and Anemia Management in Elective Total Joint Replacement Patients

John T. Anderson, MD, Wayzata, MN

Kathrine Frey, MD, Edina, MN

This new peri-operative blood and anemia management program is efficient, effective, low cost, and safe in the timely identification and treatment of anemia in surgical patients.

Poster No. P267

Effects of Commonly Used Medications on Bone Tissue Mineralization in an SaOS2 Human Bone Cell Line - An In-Vitro Study

Oleg Dolkart, PhD, Tel Aviv, Israel

Ofir Chechik, MD, Ramat Hasharon, Israel

Roy Gigi, MD, Tel Aviv, Israel

Dalia Somjen, Tel Aviv, Israel

Yadin D. Levy, MD, Tel Aviv, Israel

Moshe Salai, MD, Tel Aviv, Israel

The potentially bone-preserving effects of the drugs could be particularly relevant in the clinical setting of fracture healing and of osteoporosis treatment and prevention.

Poster No. P268

Continuous Improvements of Clinical Pathway Reduced Complications and Improved Care Provider's Perception in TKA

Seok Jin Kim, MD, Gyeonggi-Do, Republic of Korea

Sanghwa Eom, MD, Seongnamsi, Republic of Korea

Young Gon Na, Seongnam-Si, Republic of Korea

Moon Jong Chang, MD, Seoul, Republic of Korea

In Jun Koh, MD, Gyeonggi-Do, Republic of Korea

Yeon Gwi Kang, MD, Seongnam-Si, Republic of Korea

Chong Bum Chang, MD, PhD, Seongnamsi, Republic of Korea

Sang C. Seong, MD, Seoul, Republic of Korea

Tae Kyun Kim, MD, Seongnam-si, Republic of Korea

Clinical Pathway (CP) can be adopted to improve care by reducing complications in TKA patients and health-care providers' concern about its value with continuing improvements of CP contents.

Poster No. P269

Algorithms to Estimate Health Utilities from Total Joint Arthroplasty Disease-specific Measures

Susan M. Odum, PhD, Charlotte, NC

Jennifer Troyer, PhD, Charlotte, NC

Bryan D. Springer, MD, Charlotte, NC

Regression models were developed that precisely estimate health utilities from orthopedic disease specific measures and can be used by clinicians and researchers for economic cost utility analyses.

Poster No. P270

The Effects of Lower Extremity Orthopaedic Surgery on Body Weight: A Minimum Two-year Follow Up

Kyle Duchman, MD, Iowa City, IA

Yubo Gao, PhD, Iowa City, IA

Phinit Phisitkul, MD, Iowa City, IA

The number of individuals that lost clinically significant weight doubled between 1- and minimum 2-year follow-up after total knee arthroplasty.

Poster No. P271

The Quality of Orthopaedic Care in 108 Upper Extremity Malpractice Claims Filed and Claims Paid

Winston J. Warme, MD, Bellevue, WA

Linda S. Stephens, Seattle, WA

Jocelyn L. Jette, BS, Seattle, WA

Jerry I. Huang, MD, Seattle, WA

Karen Posner, PhD, Seattle, WA

Frederick A. Matsen III, MD, Seattle, WA

Upper extremity malpractice claims are most often related to substandard care of common orthopaedic conditions.

Poster No. P272**The Impact of Resident Education on Short-Term Outcomes Following Orthopaedic Surgery**

Andrew J. Pugely, MD, Iowa City, IA
 Yubo Gao, PhD, Iowa City, IA
 Christopher T. Martin, MD, Iowa City, IA
 John J. Callaghan, MD, Iowa City, IA
 John L. Marsh, MD, Iowa City, IA

Resident involvement within the surgical setting is associated with an increase of short-term morbidity after select cases in orthopaedic surgery, without an increased mortality.

Poster No. P273**Lack of Diversity in Orthopaedic Trials Conducted in the United States**

Jeremy S. Somerson, MD, San Antonio, TX
 Mohit Bhandari, MD, FRCSC, Hamilton, ON, Canada
 Clayton Vaughan, MD, Temple, TX
 Christopher Smith, MSc, Burlington, ON, Canada
 Boris A. Zelle, MD, San Antonio, TX

Orthopaedic randomized clinical trials over a four-year period were systematically reviewed; reporting of ethnicity and inclusion of minority patients in orthopaedic clinical trials is poor.

Poster No. P274**Prospective Analysis of a Novel Orthopaedic Residency Advocacy Education Program**

Jason T. Bariteau, MD, Providence, RI
 Zachary Grabel, Palm Beach Gardens, FL
 Alan H. Daniels, MD, Providence, RI
 Christopher W. DiGiovanni, MD, Providence, RI

A novel advocacy curriculum was created and implemented which significantly elevated resident understanding of the importance of health advocacy issues and their role in future of the profession.

Poster No. P275**Selecting the Best and Brightest: A Systematic Approach to Orthopaedic Surgery Resident Selection**

Mara L. Schenker, MD, Philadelphia, PA
 Keith D. Baldwin, MD, Sicklerville, NJ
 Craig L. Israelite, MD, Philadelphia, PA
 L. Scott Levin, MD, Philadelphia, PA
 Samir Mehta, MD, Philadelphia, PA
 Jaimo Ahn, MD, PhD, Philadelphia, PA

Our structured system for orthopaedic resident selection was feasible and predictable for the final rank list, and the rank meeting was a critical component in the establishment of our final rank list.

Poster No. P276**Changes in Orthopaedic Job Market Demand in the United States Over the Last Decade**

Thierry Pauyo, MD, Montreal, QC, Canada
 Patrick Scheffler, Montreal, QC, Canada
 Mitchel B. Harris, MD, Boston, MA
 Stephane Bergeron, MD, Kirkland, QC, Canada

The orthopaedic job market in the United States has changed over the last decade with decreasing demand for spine, trauma and hand and increasing practice opportunities in academics.

Poster No. P277**A Novel Predictor for 30-day Readmission Following Total Hip and Knee Arthroplasty**

Nathan W. Mesko, MD, Cleveland Heights, OH
 Keith Bachmann, MD, Shaker Heights, OH
 David Kovacevic, MD, Cleveland, OH
 Carlos A. Higuera, MD, Lakewood, OH
 Mark I. Froimson, MD, Euclid, OH
 Mary Ellen Lograsso, RN, Cleveland, OH

Care process factors during the hospital stay appear to have a significant predictive value for 30-day readmission.

Poster No. P278**Differences in Short Term Complications Between UKA and TKA: A Propensity Score Matched Analysis**

Kyle Duchman, MD, Iowa City, IA
 Yubo Gao, PhD, Iowa City, IA
 Andrew J. Pugely, MD, Iowa City, IA
 Christopher T. Martin, MD, Iowa City, IA
 John J. Callaghan, MD, Iowa City, IA

Using a large heterogenous database (ACS-NSQIP) and a propensity score matching algorithm, UKA procedures demonstrated lower short-term morbidity and mortality than TKA procedures.

Poster No. P279**Resident Education and Total Knee Arthroplasty: Is There a “July Effect”?**

Andrew J. Pugely, MD, Iowa City, IA
 Christopher T. Martin, MD, Iowa City, IA
 Yubo Gao, PhD, Iowa City, IA
 John L. Marsh, MD, Iowa City, IA
 John J. Callaghan, MD, Iowa City, IA

Resident turn-over in July did not increase short-term complications after Total Knee Arthroplasty compared to a matched-control.

Poster No. P280**Does a Pathway Lead to Consistent Length of Stay for Total Joint Replacement Patients?**

Avinash Chaurasia, Newport Beach, CA
 Ran Schwarzkopf, MD, Irvine, CA

The length of stay for total joint arthroplasty patients can be improved by analyzing many factors of 109 consecutive patients.

Poster No. P281**Non Operative Hip Fracture Management in the Elderly: Patient Characteristics & Predictors of Mortality**

Amanda V. Ly, BA, Bloomington, MN
 David M. Wright, MD, Mendota Heights, MN
 Sandy Vang, BA, St Paul, MN
 Julie A. Switzer, MD, Saint Paul, MN

Non operative hip fracture management in the elderly: patient characteristics & predictors of mortality.

Poster No. P282**Combined Email and In Office Technology Improves Patient Reported Outcomes Collection in Standard Orthopaedic Care**

Xiang Zhou, PhD, New York, NY
 Raj Karia, MPH, New York, NY
 Philip Band, PhD, New York, NY
 Richard Iorio, MD, New Rochelle, NY
 Joseph D. Zuckerman, MD, New York, NY
 James D. Slover, MD, New York, NY

Electronic collection of PRO scores as part of standard orthopaedic care is feasible, especially when both email and office-based collection methods are used.

Poster No. P283**Implementation of an Electronic Patient Based Orthopaedic Outcomes System: How “Automatic” Can the System Be?**

John M. Tokish, MD, Scottsdale, AZ
 Jaime Manansala, BA, Honolulu, HI
 Gauhar Nguyen, MA, Honolulu, HI
 WeiChin Chen, MD, Haleiwa, HI
 Adam Groth, MD, Honolulu, HI
 Craig R. Bottoni, MD, Honolulu, HI
 Joseph R. Orchowski, MD, Tripler AMC, HI

This project describes the implementation of a comprehensive patient outcomes program and describes compliance rates with keys to successful implementation.

Poster No. P284**NYS Workers’ Medical Treatment Guidelines: Variance Tracking and Guidelines Amendment Program**

John M. Olsewski, MD, Tarrytown, NY

Variance requests by Orthopaedic Surgeons were tracked for a period of 6 months to develop background material to seek permanent amendment to NYS Workers’ Compensation Guidelines.

Poster No. P285**How to Optimize Multidisciplinary Health Care**

Haseeb Nawaz, MD, Springfield, IL
 Tony Tzeng, BS, Lafayette, LA
 Blaine Manning, BS, Springfield, IL
 Jamal Saleh, Springfield, IL
 Khaled J. Saleh, MD, MSc, Springfield, IL

In the midst of health-care reforms and a changing orthopaedic patient demographic, a strategy using multispecialty and multidisciplinary teams increases the quality and efficiency of patient care.

Shoulder and Elbow**Poster No. P286****The Epidemiology of Simple Elbow Dislocations, and the Rate and Risk Factors for Early Failed Closed Reduction**

David Wasserstein, MD, MSc, North York, ON, Canada
 Ian Mayne, MD, Toronto, ON, Canada
 Chetan S. Modi, MBChB, MSc, Birmingham, United Kingdom
 Patrick Henry, MD, Portland, ME
 Nizar Mahomed, MD, Toronto, ON, Canada
 Christian Veillette, MD, Toronto, ON, Canada

The annual incidence of simple elbow dislocations in ON, Canada is 3.03/100,000 person-years with 3.7% of the cohort requiring early open reduction with or without ligament reconstruction.

Poster No. P287**Supraolecranean Arthrocentesis of the Elbow; Anatomical Study and Clinical Experience**

Jose R. Ballesteros-Betancourt, MD, Barcelona, Spain
 Raquel García-Tarriño, MD, Barcelona, Spain
 Ríos Moisés, MD, Barcelona, Spain
 Pilar Camacho, Barcelona, Spain
 Alonso Zumbado, MD, Barcelona, Spain
 Manuel Llusà-Perez, MD, PhD, Barcelona, Spain

The supraolecranean arthrocentesis achieves the elbow joint with less difficulty because the access area is much higher, causes less pain and is easily reproducible.

Poster No. P288**Elbow Contracture: A Simple Alternative Open Surgical Release**

Dean G. Sotereanos, MD, Pittsburgh, PA
 Loukia K. Papatheodorou, MD, Pittsburgh, PA

Open elbow contracture release using the “lateral column approach” combined with a minimal posterior approach is a safe and effective alternative technique improving the elbow arc of motion.

Poster No. P289**Platelet Rich Plasma Can Successfully Treat Elbow Ulnar Collateral Ligament Insufficiency in High-Level Throwers****Alternate Paper: Shoulder and Elbow I: Elbow Conditions**

Joshua Dines, MD, New York, NY
 Phillip Williams, MD, New York, NY
 Neal S. ElAttrache, MD, Los Angeles, CA
 Stan Conte, PT, San Carlos, CA
 Daryl C. Osbahr, MD, Baltimore, MD
 Todd S. Tomczyk, ATC, Pittsburgh, PA
 David M. Dines, MD, Uniondale, NY
 James P. Bradley, MD, Pittsburgh, PA
 Christopher S. Ahmad, MD, New York, NY

High-level throwers with acute damage to an isolated portion of the ulnar collateral ligament can be successfully treated by platelet rich plasma injections.

Shoulder and Elbow**Poster No. P290****Correlation of Medial Elbow Pain with Electrodiagnostic Testing for Ulnar Neuropathy at the Elbow**

Christopher S. English, MD, Downey, CA
Caleb J. Behrend, MD, Roanoke, VA
Michael J. Schreck, MD, Rochester, NY
Bradley A. Palmer, MD, Pittsburgh, PA
David Speech, MD, Rochester, NY
Warren Hammert, MD, Rochester, NY
John Elfar, MD, Rochester, NY

This study evaluates correlation of isolated medial elbow pain with ulnar nerve electrodiagnostic findings. We found a low rate of correlation and recommend against obtaining electrodiagnostics.

Poster No. P291**Distal Biceps Tendon Repair: A Biomechanical Comparison of a Screw and New Hybrid Button/Screw Technique**

Afshin Arianjam, MD, San Francisco, CA
William Camisa, MS, San Francisco, CA
Jeremi M. Leasure, MS, San Francisco, CA
William H. Montgomery III, MD, San Francisco, CA

Although the hybrid technique facilitates tensioning of the reconstructed tendon during clinical implantation, the addition of the cortical button did not significantly improve the failure strength.

Poster No. P292**The Transverse Force in the Human Forearm and its Effect on Radial Head Implants**

Jorge L. Orbay, MD, Miami, FL
Michael R. Mijares, MD, Pinecrest, FL

Forces at the PRUJ contribute to forearm pathology and implant failure. The radial head bears a force in the transverse direction that averages 18% in magnitude to the axial force applied at the wrist.

Poster No. P293**Validation of a Simple Overlay Device to Assess Radial Head Implant Overstuffing**

David R. Shukla, MB, BCh, Rochester, MN
Matthias Vanhees, MD, Stabroek, Belgium
James S. Fitzsimmons, BSc, Rochester, MN
Kai-Nan An, PhD, Rochester, MN
Shawn W. O'Driscoll, MD, Rochester, MN

This cadaveric study was done to validate the simple overlay device for measuring radial head and neck height in the laboratory setting.

Poster No. P294**Validation of the Review of Musculoskeletal System (ROMS) Questionnaire**

Thomas H. Wuerz, MD, Kenilworth, IL
Joseph P. Iannotti, MD, PhD, Cleveland, OH
Boris Bershadsky, PhD, Minneapolis, MN
Richard D. Parker, MD, Cleveland, OH
Morgan H. Jones, MD, Cleveland Heights, OH
Brian K. Brighton, MD, Charlotte, NC
Russell Stitzlein, MD, Philadelphia, PA

This study validates a brief patient-reported Review of Musculoskeletal System (ROMS) with good psychometric properties, to be potentially used for long-term clinical trials and observational studies.

Poster No. P295**Correlation Between ASES and SANE Score After Rotator Cuff or SLAP Repair**

Gregory Cunningham, Geneva, Switzerland
Alexandre Laedermann, MD, Meyrin, Switzerland
Patrick J. Denard, MD, Medford, OR
Omar Kherad, Geneva, Switzerland
Stephen S. Burkhart, MD, San Antonio, TX

The SANE score is rapidly administered, simple, comprehensible and resource-effective compared to the ASES score.

Poster No. P296**Validation of an Innovative Measurement Method of Shoulder Range of Motion Using a Smartphone**

Brian C. Werner, MD, Charlottesville, VA
Christopher Kuenze, PhD, ATC, Charlottesville, VA
Justin W. Griffin, MD, Charlottesville, VA
Matthew L. Lyons, MD, Charlottesville, VA
Cara Garrett, PA-C, Charlottesville, VA
Joe Hart, PhD, ATC, Charlottesville, VA
Stephen F. Brockmeier, MD, Charlottesville, VA

The smartphone clinometer correlates well with a standard goniometer for measuring shoulder range of motion. Good correlation was also found between different levels of providers using the smartphone.

Poster No. P297**Shoulder External Rotation Differs in Adduction and Abduction: Positron Emission Tomography Analysis**

Daisuke Kurokawa, MD, Sendai, Miyagi, Japan
Hiroataka Sano, MD, PhD, Sendai, Japan
Hideaki Nagamoto, MD, Sendai, Japan
Hiroyuki Takahashi, MD, Sendai, Japan
Nobuyuki Yamamoto, MD, Sendai, Japan
Koshi N. Kishimoto, MD, Sendai, Japan
Eiji Itoi, MD, Sendai, Japan

This study reveals in vivo that muscle activity pattern during shoulder external rotation differed in adduction and abduction by using positron emission tomography.

Poster No. P298**Melatonin Plays a Role as a Mediator of Nocturnal Pain in Patients with Shoulder Disorders**

Chul-Hyun Cho, MD, PhD, Joongu, Republic of Korea
Byung-Woo Min, MD, Daegu, Republic of Korea
Kyung-Jae Lee, MD, Daegu, Republic of Korea
Sungyun Lee, Dae-Gu, Republic of Korea
Ki-Cheor Bae, MD, Daegu, Republic of Korea

Our study suggests that melatonin plays a role as a mediator of nocturnal pain in RCT and FS, and this effect may be mediated via melatonin receptors.

Poster No. P299**Prospective Evaluation of Cognitive Outcomes After Anesthesia on Patients in the Beach Chair Position**

George K. Bal, MD, Morgantown, WV
Michael Perez, MD, Morgantown, WV
Karim Boukhemis, MD, Morgantown, WV

Whether routine use of intra-operative cerebral oxygenation monitoring should be employed for patients undergoing surgery in the beach chair position (BCP).

Poster No. P300**Comparative Study of Interscalene vs. New Technique Suprascapular Nerve Block in Postoperative Shoulder Pain**

Syed Nawaz, MRCS, Surrey, United Kingdom
Magnus Arnander, FRCS, MSc, London, United Kingdom
Eyiyemi Pearse, MA, FRCS, London, United Kingdom
David J. Tennent, MD, San Antonio, TX

This study demonstrates that the technique of suprascapular nerve blockade is not as effective as ultrasound guided interscalene block but can be an effective adjunct.

Poster No. P301**The Critical Shoulder Angle is Predictive of Rotator Cuff Tears and Shoulder Osteoarthritis**

Ulrich J. Spiegl, MD, Vail, CO
Marilee P. Horan, MPH, Vail, CO
Sean Smith, MSc, Vail, CO
Charles P. Ho, MD, PhD, Vail, CO
Peter J. Millett, MD, MSc, Vail, CO

The critical shoulder angle was highly predictive of rotator cuff tears and osteoarthritis of the shoulder and may have implications regarding clinical outcomes.

Poster No. P302**Outcomes of Operative and Conservative Treatment for Floating Shoulder Injury****Alternate Paper: Shoulder and Elbow VI: Shoulder Trauma and Miscellaneous Injuries**

Tsung-Li Lin, Taichung, Taiwan
Chun-Hao Tsai, Taichung, Taiwan

Fixation of the clavicular and scapular neck fractures simultaneously provides better results. The glenopolar angle is a useful prognostic information.

Poster No. P303**Quantitative Comparison for the Posterior Judet Approach to the Scapula With and Without Deltoid Takedown**

Tiare E. Salassa, MD, Minneapolis, MN
Brian W. Hill, MD, Saint Paul, MN
Peter A. Cole, MD, Saint Paul, MN

The modified Judet approach without takedown of the posterior deltoid muscle allows for safe exposure to 91% of the bony scapula obtained by removing the deltoid muscle.

Poster No. P304**Prevalence and Morphology of the Coracoclavicular Joint (CCJ)**

Christopher E. Talbot, MS, Biddeford, ME
Lee Sasala, BA, Cleveland Heights, OH
Shana N. Miskovsky, MD, Shaker Heights, OH

CCJ prevalence was 8.6% in our large population, found more commonly in African-Americans and bilaterally more often in females. Its presence represents a potential source of anterior shoulder pain.

Poster No. P305**Surgical Anatomy of the Sternoclavicular Joint: A Qualitative and Quantitative Anatomical Study**

Jared T. Lee, MD, Vail, CO
Kevin J. Campbell, BS, Vail, CO
Max P. Michalski, MSc, Vail, CO
Katharine Wilson, MSc, Vail, CO
Ulrich J. Spiegl, MD, Vail, CO
Coen A. Wijedicks, PhD, Vail, CO
Peter J. Millett, MD, MSc, Vail, CO

A quantitative description of surgically relevant sternoclavicular (SC) joint anatomy including surgical orientation, the size and location of SC ligaments and a 'safe zone' for posterior dissection.

Poster No. P306**Patients' Preoperative Expectations of Surgery for Frozen Shoulder**

Rupen Dattani, MD, FRCS (Ortho), Middlesex, United Kingdom
Vijayraj Ramasamy, High Wycombe, United Kingdom
Vipul Patel, MBBS, MS, Surrey, United Kingdom

ACR is a very effective procedure with a median expectation fulfillment of 85%. This high level of patient expectation fulfillment is comparable with that observed after lower limb arthroplasty.

Poster No. P307**The Association Between Adhesive Capsulitis and Metabolic Syndrome Markers**

Daniel Austin, BA, Bryn Mawr, PA
Itai Gans, BS, Philadelphia, PA
Min J. Park, MD, MSc, Menlo Park, CA
James L. Carey, MD, Villanova, PA
John D. Kelly IV, MD, Newtown Square, PA

Rates of diabetes and hypertension medications were increased in a group of patients diagnosed with adhesive capsulitis suggesting an association between this disease and the metabolic syndrome.

Shoulder and Elbow**Poster No. P308****Cadaveric Study of the Effect of In-situ Biceps Tenodesis on Glenohumeral Range of Motion**

Patrick McGahan, MD, Sacramento, CA
 Ephraim Dickinson, MD, San Francisco, CA
 William Camisa, MS, San Francisco, CA
 Hinesh V. Patel, BS, Irvine, CA
 Jeremi M. Leasure, MS, San Francisco, CA
 William H. Montgomery III, MD, San Francisco, CA

Our results show that significant changes in LHBT excursion occur through internal/external rotation and abduction and that tenodesis in the common “sling” position significantly limited ROM.

Poster No. P309**The Pathologic Long Head Biceps Tendon: A Histologic, Radiographic and Clinical Correlation Study****Alternate Paper: Shoulder and Elbow II: Shoulder Instability and Sports Medicine**

Brian C. Werner, MD, Charlottesville, VA
 Stephen F. Brockmeier, MD, Charlottesville, VA
 Eric W. Carson, MD, Charlottesville, VA

Histologic sectioning provides new insight into biceps-labral pathology. Exam, MRI and arthroscopy have respectively increasing predictive capability of histologically evident biceps degeneration.

Poster No. P310**Magnetic Resonance Imaging Poorly Predicts Superior Labral Anterior to Posterior (SLAP) Tears in Patients Over 50**

Natasha Trentacosta, MD, New York, NY
 Brian Zafonte, MD, PhD, Sacramento, CA
 Brendan Kelley, MD, Ann Arbor, MI
 Beverly Thornhill, MD, Bronx, NY
 David Gonzalez, MD, New York, NY

Analysis of preoperative shoulder MRIs with diagnoses of SLAP tears in patients aged 50 and older were found to correlate poorly with arthroscopic evaluation.

Poster No. P311**Rate and Geographic Variation of SLAP Repairs with Concomitant Rotator Cuff Repair in Patients Over 50 Years of Age**

Daniel D. Buss, MD, Edina, MN
 Leroy P. McCarty III, MD, Edina, MN
 Steven H. Stern, MD, Northfield, IL
 Ned Tervola, MA, ATC, Edina, MN
 Mitchell Schoen, BA, Edina, MN
 M. Russell Giveans, PhD, Eden Prairie, MN

Rates of SLAP repairs with rotator cuff repair in patients over the age of 50 reMED high between 2010 and 2012, despite evidence questioning the need for a combination of such procedures.

Poster No. P312**Natural History of Rotator Cuff Tears Monitored by Magnetic Resonance Imaging**

Yoshihiro Nakamura, Hiroshima, Japan
 Shin Yokoya, MD, Hiroshima, Japan
 Yohei Harada, MD, Hiroshima, Japan
 Kazuhiko Kikugawa, MD, PhD, Hiroshima, Japan
 Yu Mochizuki, MD, Hiroshima, Japan
 Mitsuo Ochi, MD, PhD, Hiroshima, Japan

To evaluate the natural history, rotator cuff tears were monitored using MRI. Medium-sized tears located in the posterior part of the superior facet were at high risk for tear progression.

Poster No. P313**Effect of the Platelet Rich Plasma and Porcine Dermal Collagen Graft Augmentation for Cuff Healing in Rabbit Model**

Oh Joo Han, MD, Seongnam, Republic of Korea
 Seok Won Chung, MD, Seoul, Republic of Korea
 Byung Wook Song, Seongnam-Si, Republic of Korea
 Yeun Ho Kim, Seongnam-Si, Republic of Korea

The enhancement of tendon-to-bone healing after local administration of autologous PRP was verified by histology and biomechanical test in the rabbit chronic rotator cuff tear model.

Poster No. P314**The Deep Layer of the Rotator Cuff Tendon Becomes Stiffer with Age: A Possible Cause of Cuff Tear**

Nobuyuki Yamamoto, MD, Sendai, Japan
 Takashi Hayakawa, Fukushima, Japan
 Takayuki Muraki, PhD, Sendai, Japan
 Hirotaka Sano, MD, PhD, Sendai, Japan
 Eiji Itoi, MD, Sendai, Japan

The rotator cuff tendons of 210 shoulders volunteers in their 10's to 70's were examined with use of ultrasound elastography. The deep layer of the rotator cuff tendons became stiffer with age.

Poster No. P315**Effect of Glenohumeral Abduction on Supraspinatus Repair Tension**

Jacqueline R. Hawthorne, Orange, Australia
 Elise Carpenter, Bathurst, Australia
 Patrick H. Lam, PhD, Sydney, Australia
 George A. Murrell, MD, Kogarah, Australia

Placing the at positions consistent with wearing small and large abduction pillows reduced tension on the repaired supraspinatus tendon by approximately 27% to 56%.

Poster No. P316**Is a Distal Clavicle Resection Necessary in Patients with Radiologic AC Joint Arthritis with Rotator Cuff Tear?**

Oh Joo Han, MD, Seongnam, Republic of Korea
 Jae Yoon Kim, Seoul, Republic of Korea
 Jun Ha Choi, MD, Seongnam-Si, Republic of Korea

Preventive arthroscopic DCR in patients of rotator cuff tear with concomitant radiologic ACJ arthritis did not guarantee better clinical or structural outcomes.

Poster No. P317

The Value of Arthroscopic Acromioplasty in the Treatment of Shoulder Impingement Syndrome; Five-year RCT Results

Saara Ketola, MD, Tampere, Finland

Eerik T. Skytta, MD, PhD, Tampere, Finland

No additional value of arthroscopic acromioplasty in the treatment of shoulder impingement syndrome.

Poster No. P318

Arthroscopic Repair of Massive Contracted Rotator Cuff Tears: Aggressive Release Do Not Improve Cuff Healing

Sung-Jae Kim, MD, Seoul, Republic of Korea

Sung-Hwan Kim, MD, Seoul, Republic of Korea

Yun-Rak Choi, MD, PhD, Seoul, Republic of Korea

Min Jung, MD, Seoul, Republic of Korea

Seong-Hun Kim, Goyang-Si, Republic of Korea

Su Keon A. Lee, MD, Seoul, Republic of Korea

Jae-Ho Yang, Seoul, Republic of Korea

Yong-Min Chun, MD, PhD, Seoul, Republic of Korea

In large to massive contracted rotator cuff tears, a complete repair with an aggressive release such as posterior interval slide may not have an increased benefit compared to partial repair without it.

Poster No. P319

Lower Trapezius Tendon Transfer for Irreparable Posterior-Superior Rotator Cuff Tears

Ryan P. Donegan, MD, Lexington, KY

Charles M. Jobin, MD, New York, NY

Aaron M. Chamberlain, MD, Saint Louis, MO

Surena Namdari, MD, MSc, Philadelphia, PA

Chi-Tsai Tang, MD, Saint Louis, MO

Leesa M. Galatz, MD, Saint Louis, MO

This study describes the technique and sonographic, electromyographic and functional results of lower trapezius tendon transfer with achilles allograft in patients with irreparable rotator cuff tears.

Poster No. P320

Rat Rotator Cuff Repair Using a Cell Sheet Composed Human Rotator Cuff Derived Cells

Harada Yoshifumi, Ashiya, Japan

Takeshi Kokubu, MD, Kobe, Japan

Yutaka Mifune, MD, Kobe, Japan

Atsuyuki Inui, MD, PhD, Kobe, Japan

Tomoyuki Muto, MD, Kobe, Japan

Fumiaki Takase, MD, Kobe, Hyogo, Japan

Issei Nagura, MD, Kobe, Japan

Masahiro Kurosaka, MD, Kobe, Japan

A cell sheet composed human rotator cuff derived cells was evaluated in a rat rotator cuff tear model. Use of a cell sheet lead to high expression of type II collagen and angiogenesis at tendon-bone junction.

Poster No. P321

Early Versus Delayed Rehabilitation in Arthroscopic Rotator Cuff Surgery: A Dual Surgeon Cohort Study

Stephen C. Weber, MD, Sacramento, CA

Edward Nickerson, Sacramento, CA

Don V. Torrey, PT, Sacramento, CA

Delayed rehabilitation after rotator cuff surgery lengthens recovery and does not improve results.

Poster No. P322

Primary vs. Revision Arthroscopic Rotator Cuff Repair - An Analysis in 350 Consecutive Patients

Aminudin M. Shamsudin, MD, Seven Hills, Australia

Karin Peters, Researcher, Rozendaal, Netherlands

Imants Rubenis, Scone, Australia

Patrick H. Lam, PhD, Sydney, Australia

George A. Murrell, MD, Kogarah, Australia

Two years after surgery patients who had revision rotator cuff repair were twice as likely to have re-torn compared to those undergoing primary repair and are associated with increased pain.

Poster No. P323

Outcome after Structural Failure of Repaired Rotator Cuff Tears

Surena Namdari, MD, MSc, Philadelphia, PA

Ryan P. Donegan, MD, Lexington, KY

Aaron M. Chamberlain, MD, Saint Louis, MO

Leesa M. Galatz, MD, Saint Louis, MO

Ken Yamaguchi, MD, Chesterfield, MO

Jay D. Keener, MD, Saint Louis, MO

Those who self-identified their occupation as being "labor-intensive" represented a special population of patients who are at high risk for poor outcome after a failed rotator cuff repair.

Poster No. P324

Relationship between Long-term Results and Size of Rotator Cuff Tears Treated Conservatively

Hiroaki Kijima, MD, Akita, Japan

Shin Yamada, MD, Akita, Japan

Nozaka Koji, MD, PhD, Akita, Japan

Hidetomo Saito, MD, Akita City, Japan

Yoichi Shimada, MD, PhD, Akita, Japan

Younger patients and patients with shoulders showing cuff tears >30 mm tended to show more significant pain or disorders of ADL at >10 years after diagnosis.

Poster No. P325

Improvement of the Postoperative Shoulder Strength After Cuff Repair: Small to Medium vs. Large to Massive Tears

Nobuyuki Yamamoto, MD, Sendai, Japan

Hiroaki Kijima, MD, Akita, Japan

Eiji Itoi, MD, Sendai, Japan

Shoulder strength recovered to a plateau of 90% at 12 months after surgery in the small tear group, whereas it recovered to a plateau of 70% to 85% at 6 months after surgery in the large tear group.

Poster No. P326**Transosseous Equivalent Double Row vs. Single Row Rotator Cuff Repair; A Randomized Controlled Trial**

Mohamed A. Imam, MSc, MD, Epsom, United Kingdom
 Ashraf Abdelkafy, MD, Ismailia, Egypt
 Nikolaos Bardakos, MD, Surrey, United Kingdom
 Mussa A. Mussa, MBBS, MD, Ismailia, Egypt
 ADEL Ghazal, MD, Ismailia, Egypt

A Randomised Controlled Trial comparing Transosseous Equivalent Double Row versus Single Row arthroscopic rotator cuff repair.

Poster No. P327**Total Shoulder Arthroplasty: A National Cost Analysis**

Evan O'Donnell, BA, New York, NY
 Oke A. Anakwenze, MD, Philadelphia, PA
 Charles M. Jobin, MD, New York, NY
 William N. Levine, MD, New York, NY
 Christopher S. Ahmad, MD, New York, NY

The national cost of total shoulder arthroplasty is increasing. Complications are the most significant driver of increased cost per case and likelihood to become a high cost patient.

Poster No. P328**Shoulder Arthroplasty for Osteoarthritis Secondary to Glenoid Dysplasia**

Benjamin J. Allen, MD, Rochester, MN
 Bradley S. Schoch, MD, Rochester, MN
 John W. Sperling, MD, MBA, Rochester, MN
 Robert H. Cofield, MD, Rochester, MN

Favorable results can be obtained with anatomic implants in the treatment of glenoid dysplasia, but complications are too frequent and alternative treatments should be considered.

Poster No. P329**Patient Pre-operative Confidence in Outcome Predicts Functionality after Total Shoulder Arthroplasty**

Joseph F. Styron, MD, PhD, Westlake, OH
 Carlos A. Higuera, MD, Lakewood, OH
 Gregory J. Strnad, MS, Lyndhurst, OH
 Joseph P. Iannotti, MD, PhD, Cleveland, OH

A patient's confidence to attain specific goals after shoulder arthroplasty correlate with better function postoperatively.

Poster No. P330**Simple and Detailed Outcome Measures Provide Similar Responsiveness in Shoulder Arthroplasty Patients**

Armodios M. Hatzidakis, MD, Denver, CO
 Christopher R. Chuinard, MD, MPH, Traverse City, MI
 Thomas B. Edwards, MD, Houston, TX
 James D. Kelly II, MD, San Francisco, CA
 Evan S. Lederman, MD, Phoenix, AZ
 Tom R Norris, MD, San Francisco, CA
 Robert J. Nowinski, DO, New Albany, OH
 Douglas Curran-Everett, PhD, Denver, CO
 Andrea Stapleford, Denver, CO

The age adjusted-Constant score, ASES score, the WOOS index, and the SANE/SSV are assessed comparatively in shoulder arthroplasty patients.

Poster No. P331**Clinical & Radiographic Comparison of Pegged & Keeled Glenoid Components at Mid-Term Follow Up: A Prospective Study**

Cyrus M. Press, MD, Alexandria, VA
 Hussein A. Elkousy, MD, Houston, TX
 Daniel P O'Connor, PhD, Houston, TX
 Gary M. Gartsman, MD, Houston, TX
 Thomas B. Edwards, MD, Houston, TX

A prospective, randomized trial of pegged and keeled glenoid components in total shoulder arthroplasty with both clinical and radiographical results at a minimum of five years.

Poster No. P332**Shoulder Arthroplasty for Humeral Head Osteonecrosis**

Bradley S. Schoch, MD, Rochester, MN
 Jonathan D. Barlow, MD, Rochester, MN
 Steven J. Hattrup, MD, Phoenix, AZ
 Robert H. Cofield, MD, Rochester, MN
 John W. Sperling, MD, MBA, Rochester, MN

For AVN, HA and TSA provided reliable pain relief, with a low incidence of revision(14%). Patients with traumatic AVN had less improvement in pain with HA than with TSA.

Poster No. P333**Should Reverse Total Shoulder Arthroplasty be the Index Procedure in Over 80 Year Old Patients?**

Iker Iriberry, MD, San Sebastián, Spain
 Michael T. Freehill, MD, Winston-Salem, NC
 Patric Raiss, MD, Heidelberg, Germany
 Pascal Boileau, MD, Nice, France
 Gilles Walch, MD, Lyon, France
 Christian Candrian, Porza, Switzerland

Should the Reverse be the index procedure? Long term outcomes of middle aged versus over 80 year old patients after anatomic shoulder replacement.

Poster No. P334**ASES: A Method of Reporting Evolving Complication Rates in Reverse Shoulder Arthroplasty by Simple Moving Average**

Alternate Paper: Shoulder and Elbow V: Shoulder Complications
 Steven J. Hattrup, MD, Phoenix, AZ
 Samuel Harmsen, MD, Phoenix, AZ
 Yu-Hui Chang, PhD, MPH, Scottsdale, AZ

A simple moving average facilitates a more accurate conversation with patients considering surgery by better representing current, improving complication trends.

Poster No. P335**What is the Effect of Postoperative Scapula Fractures on Outcomes Following Reverse Shoulder Arthroplasty?**

Mark A. Frankle, MD, Temple Terrace, FL

This complication leads to inferior clinical results compared to controls, however patients show improvement compared to their preoperative measurements, even at longer term follow-up.

Poster No. P336**Scapulohumeral Rhythm of Reverse Total Shoulder Arthroplasties During Abduction**

David R. Walker, MS, Gainesville, FL
Aimee Struk, MEd, MBA, Gainesville, FL
Thomas W. Wright, MD, Gainesville, FL
Scott A. Banks, PhD, Gainesville, FL

Scapulohumeral rhythm of reverse total shoulder arthroplasties during abduction.

Poster No. P337**Quantification of the Existing Glenohumeral Relationships in Patients Undergoing Reverse Shoulder Arthroplasty**

Mark A. Frankle, MD, Temple Terrace, FL
Andres F. Cabezas, BS, Tampa, FL
Sergio Gutierrez, PhD, Tampa, FL
Matthew J. Teusink, MD, Omaha, NE
Miguel Diaz, BS, Tampa, FL
Daniel G. Schwartz, MD, Chicago, IL
Brandon G. Santoni, PhD, Tampa, FL

This study analyzed the anatomy and glenohumeral relationships of patients who underwent reverse shoulder arthroplasty.

Poster No. P338**Glenoid Inclination and Screw Position in Reverse Shoulder Arthroplasty: A Radiographic Assessment**

Michael Pickell, MD, Kingston, ON, Canada
Ryan T. Bicknell, MD, Kingston, ON, Canada

This study showed that between x-ray and CT scan there was no agreement of measurement of glenoid inferior inclination, but there was agreement of screw length and the percentage of screw in bone.

Poster No. P339**Biomechanical Evaluation of Various Humeral and Glensphere Options in Two Reverse TSA Systems**

Robert Z. Tashjian, MD, Salt Lake City, UT

Various modifiable humeral and glensphere options can be utilized to improve shoulder ROM and stability while limiting deltoid force required for abduction.

Poster No. P340**Comparison of Functional Outcomes with Different Glensphere Sizes in Reverse Shoulder Arthroplasty****Alternate Paper: Shoulder and Elbow II: Shoulder Arthroplasty**

Vinay K. Sharma, Portage, MI
Mark C. Callanan, MD, Boston, MA
J. Michael Wiater, MD, Beverly Hills, MI
Vani J. Sabesan, MD, Kalamazoo, MI

Our results provide a comparison of different glensphere sizes (36mm, 42mm) and their corresponding biomechanical effects on clinical functionality and shoulder strength.

Poster No. P341**Analysis of Baseplate and Glensphere Position on Deltoid Tension in Reverse Total Shoulder Arthroplasty**

Jonathan W. Wright, MD, Memphis, TN
Christopher A. Potts, MD, Memphis, TN
Mark P. Smyth, MD, Memphis, TN
Frederick M. Azar, MD, Memphis, TN
Lisa A. Ferrara, PhD, Southport, NC
John W. Sperling, MD, MBA, Rochester, MN
Thomas (Quin) Throckmorton, MD, Germantown, TN

With maximally inferior offset configurations in RTSA, the deltoid may not tolerate additional lengthening to the same extent as other constructs.

Poster No. P342**Improving Rotation in Reverse Total Shoulder Arthroplasty: Latissimus Transfer versus Lateral Offset Glensphere**

Brett P. Wiater, MD, Birmingham, MI
Daphne Pinkas, MD, Pleasant Rdg, MI
Denise Koueiter, Royal Oak, MI
J. Michael Wiater, MD, Beverly Hills, MI

We found overall similar improvements in outcomes after RTSA with a lateral offset glensphere and RTSA with latissimus dorsi tendon transfer in patients with lack of external rotation preoperatively.

Poster No. P343**Propionibacterium: Evidence on the Origin of the Organism in Surgical Wounds**

Frederick A. Matsen III, MD, Seattle, WA
Susan M. Butler-Wu, PhD, Seattle, WA
Bradley C. Carofino, MD, VA Bch, VA
Jocelyn L. Jette, BS, Seattle, WA
Alexander Bertelsen, PA, Lynnwood, WA
Roger E. Bumgarner, PhD, BS, MS, Seattle, WA

Propionibacterium recovered from deep cultures of failed shoulder arthroplasties are likely to have originated in the dermis rather than from the epidermal surface.

Poster No. P344**One-stage Exchange: Salvage for Periprosthetic Shoulder Infection? A Retrospective Study of 35 Cases**

Daniel Kendoff, MD, Hamburg, Germany
Till O. Klatte, MD, Hamburg, Germany
Thorsten Gehrke, MD, Hamburg, Germany

One-stage exchange is a successful and practical treatment option in managing patients with periprosthetic shoulder infection.

Shoulder and Elbow**Poster No. P345****Shoulder Arthroplasty for the Treatment of Postinfectious Glenohumeral Arthritis**

Bradley S. Schoch, MD, Rochester, MN
 Benjamin J. Allen, MD, Rochester, MN
 Joseph Mileti, MD, Powell, OH
 John W. Sperling, MD, MBA, Rochester, MN
 Robert H. Cofield, MD, Rochester, MN

Shoulder arthroplasty for post infectious arthritis improves pain and range of motion with a low risk of reinfection; however, a high percentage of patients fail to achieve satisfactory Neer ratings.

Spine**Poster No. P346****Comparison of Radiographic Measurements by Standard Digital versus EOS Radiographs in Adult Spine Patients**

Auraam L. Ploumis, MD, PHD, Thessaloniki, Greece
 Thomas D. Cha, MD, Boston, MA
 Rojeh Melikian, MD, Cambridge, MA
 Brian E. Grottkau, MD, Reading, MA
 Kirkham B. Wood, MD, Boston, MA

A retrospective review of measurements made by four observers of 25 standard digital and 25 EOS full length standing radiographs demonstrated similar intraobserver and interobserver reliability.

Poster No. P347**Biomechanical Stability of a Stand-Alone Spacer in Two-level and Hybrid Cervical Fusion Constructs**

Ronald A. Lehman, MD, Potomac, MD
 Robert W. Tracey, MD, Great Falls, VA
 Daniel Kang, MD, Bethesda, MD
 Adam Bevevino, MD, Washington, DC
 Rachel E. Gaume, BS

Two-level SAS constructs were similar in ROM reduction in axial rotation and lateral bending, but allowed more flexion-extension than anterior cervical plate constructs.

Poster No. P348**◆ Culture Profile of Surgical Site Infections After Topical Vancomycin in Instrumented Spine Fusions**

Jeffrey Gum, MD, Louisville, KY
 Charles H. Crawford III, MD, Louisville, KY
 Lawrence G. Lenke, MD, Saint Louis, MO
 Jacob M. Buchowski, MD, MS, Saint Louis, MO
 Charles C. Edwards II, MD, Towson, MD
 Steven D. Glassman, MD, Louisville, KY
 Leah Y. Carreon, MD, Louisville, KY

There appears to be no difference in the culture profile of surgical site infections during a time frame when topical Vancomycin was used versus not used in posterior instrumented spine fusions.

Poster No. P349**Clinical Results and Functional Outcomes after Direct Intralaminar Screw Repair of Spondylolysis**

Emmanuel N. Menga, MD, Baltimore, MD
 Khaled M. Kebaish, MD, Baltimore, MD
 Amit Jain, MD, Baltimore, MD
 John A. Carrino, MD, Baltimore, MD
 Paul D. Sponseller, MD, Baltimore, MD

Direct intralaminar screw fixation of spondylolysis for patients for whom nonoperative management fails offers a low profile fixation with a successful clinical outcome and a low complication.

Poster No. P350**Platelet-Rich Plasma Effects on Healing Tissue Interfaces: Histological Analysis in a Spinal Decompression Model**

James W. Woodall Jr, MD, Palo Alto, CA
 Michelle Tucci, Jackson, MS
 Hamed Benghuzzi, Jackson, MS
 Robert A. McGuire Jr, MD, Jackson, MS

Platelet derived growth factors have an impact on soft tissue healing when introduced to the local environment following injury.

Poster No. P351**Inline Axial CT Scans Provide Larger Assessment of C2 Pedicle Diameter for Screw Placement than Standard Axial Scans**

David E. Vizurruga, MD, Greer, SC
 John J. Rhee, MD, Atlanta, GA
 Ashton Mansour, MD, Decatur, GA
 Timothy Borden, MD, Atlanta, GA

Reconstructed axial CT scans INLINE with the C2 pedicle provide significantly larger assessment of the pedicle diameter than STANDARD axial scans, influencing the feasibility of pedicle screw fixation.

Poster No. P352**Analysis of Surgeon Experience & Risk Factors on Discharge after Mini-Open Transforaminal Lumbar Interbody Fusion**

Ferdinand J. Chan, MD, Bronx, NY
 Sarah V. Stelma, BS, Bronx, NY
 Jonathan Krystal, MD, Bronxville, NY
 Alok D. Sharan, MD, New York, NY

There is a significant learning curve associated with MIS TLIF. The model described here represents an appropriate way of studying LOS variation after MIS TLIF.

Poster No. P353**A Longitudinal In Vivo Study of Lumbar Spine Degeneration - Disc Height and Facet Joint Space Width**

Hidetoshi Nojiri, MD, PhD, Tokyo, Japan
 Yusuke Oshita, MD, PhD, Yokohama Kanagawa, Japan
 Alejandro Espinoza, PhD, Chicago, IL
 Howard S. An, MD, Chicago, IL
 Gunnar B. Andersson, MD, Chicago, IL
 Nozomu Inoue, MD, Chicago, IL

This 5-year longitudinal study showed decreases measured in vivo of 7.3% in disc height and 6.8% in facet joint space width showcasing the morphological changes brought on by spine degeneration.

Poster No. P354**Two-year Retrospective Medical and Pharmacy Claims Study Following Lumbar Fusion for Degenerative Conditions**

David E. Mino, MD, WA Crossing, PA
James E. Munterich, BA, Bloomfield, CT
Eileen F. Sullivan, BS, RN, Bloomfield, CT

A database analysis of lumbar fusion (LF) patients with degenerative lumbar condition diagnostic codes was performed to determine additional lumbar related medical and pharmacy claims experience during a two year follow up.

Poster No. P355**A Review of Control Group Outcomes in Sheep Fusion Models and Recommendations for Future Studies**

Emily M. Lindley, PhD, Aurora, CO
Cameron Barton, BA, Denver, CO
Thomas Blount, BA, Omaha, NE
Evalina L Burger, MD, Aurora, CO
Christopher M. Cain, MD, Aurora, CO
Howard Seim, MD, Fort Collins, CO
Anthony S. Turner, DVM, MS, Fort Collins, CO
Vikas V. Patel, MD, Aurora, CO

We conducted a literature review and summarized the expected fusion outcomes at various postoperative time points for commonly used sheep model spine fusion control groups.

Poster No. P356**The Effects of Amicar and TXA on Lumbar Spine Fusion in an Animal Model**

Jason M. Cuellar, MD PhD, New York, NY
Andrew Yoo, BA, New York, NY
Nick M. Tovar, PhD, New York City, NY
Paulo G. Coelho, DDS, PhD, New York, NY
Ryo Jimbo, DDS, PhD, Malmö, Sweden
Stefan Vandeweghe, DDS, PhD, Gent, Belgium
Thorsten Kirsch, PhD, New York, NY
Martin Quirno, MD, New York, NY
Thomas J. Errico, MD, New York, NY

We hypothesized Amicar or TXA reduces spine fusion volume in mice in a blinded randomized study w/ micro-CT quantification. Surprisingly, Amicar dose-dependantly enhanced fusion bone volume.

Poster No. P357**More than 10-year Follow Up after Total En Bloc Spondylectomy for Spinal Tumors**

Satoshi Kato, MD, Kanazawa, Japan
Hideki Murakami, MD, Kanazawa, Japan
Satoru Demura, MD, Kanazawa, Japan
Katsuhito Yoshioka, MD, Kanazawa, Japan
Hiroyuki Hayashi, MD, Kanazawa, Japan
Kazuya Shinmura, MD, Ishikawa, Japan
Noriaki Yokogawa, MD, Ishikawa, Japan
Katsuro Tomita, MD, Kanazawa, Japan
Hiroyuki Tsuchiya, MD, Kanazawa, Japan

We evaluated the clinical outcomes with follow-up exceeding 10 years after total en bloc spondylectomy for spinal tumors. This study showed the outcomes to be favorable, even with metastatic tumors.

Poster No. P358**◆ A New Method for Clinically Assessing Pain**

Emily M. Lindley, PhD, Aurora, CO
Benjamin Spiegel, BS, Boulder, CO
Michael M. Zimkowski, MS, Aurora, CO
Mark Rentschler, Boulder, CO
Thomas Blount, BA, Omaha, NE
Kenneth Milligan, Denver, CO
Evalina L Burger, MD, Aurora, CO
Vikas V. Patel, MD, Aurora, CO

The goal of this study was to design and test a new computer-controlled instrument that can more objectively assess pain sensitivity in spine surgery patients in the clinical setting.

Poster No. P359**Preoperative Narcotic Use and its Relation to Depression and Anxiety in Patients Undergoing Spine Surgery**

Sheyan Armaghani, MD, Nashville, TN
Clinton J. Devin, MD, Nashville, TN
Dennis Lee, MD, Nashville, TN
Jesse E. Bible, MD, MHS, Nashville, TN
David N. Shau, BS, Norman, OK
Kristin Archer, PhD, Nashville, TN

Depression and anxiety are associated with increased preoperative narcotic use, underscoring the importance of thorough psychological and substance use evaluation prior to spine surgery.

Poster No. P360**The Impact of Dynamic Factors on Surgical Outcome for Ossification of the Posterior Longitudinal Ligament****Alternate Paper: Spine I: Deformity**

Keishi Maruo, MD, Nishinomiya, Japan
Tokuhide Moriyama, MD, Nishinomiya, Japan
Shinichi Inoue, MD, San Francisco, CA
Shinichi Yoshiya, MD, Nishinomiya, Hyogo, Japan

The preoperative range of motion of the C2-C7 more than 20° had 4.6 times higher risk of a poor clinical outcome after laminoplasty for ossification of posterior longitudinal ligament.

Poster No. P361**Surgical Care for Cervical Myelopathy in Patients with Parkinson's Disease - A Case Control Study****Alternate Paper: Spine V: Spine Trauma**

Joshua Schroeder, MD, New York, NY
Andrew A. Sama, MD, New York, NY
Alexander P. Hughes, MD, New York, NY
Darren R. Lebl, MD, New York, NY
Alexander Aichmair, MD, New York, NY
Frank P. Cammisa Jr, MD, New York, NY
Federico P. Girardi, MD, New York, NY

Despite a higher rate of early post-operative complications when compared to controls, the long term outcome of cervical procedures in PD patients is good a high fusion rate.

Spine**Poster No. P362****Cortical Screw Fixation versus Pedicle Screw Fixation for the Lumbar Spine in Non-Osteoporotic Bone**

Graham Calvert, MD, Madison, MS
 Kent N. Bachus, PhD, Salt Lake City, UT
 Brandon D. Lawrence, MD, Salt Lake City, UT
 Darrel S. Brodke, MD, Salt Lake City, UT

Cortical screw constructs have the same degree of initial stiffness but exhibit superior pullout strength when compared to pedicle screw constructs in non-osteoporotic lumbar spines.

Poster No. P363**Proximal Junctional Failure in Deformity Patients Increases Revisions but Doesn't Affect Outcome**

Robert A. Hart, MD, Portland, OR
 Jayme Hiratzka, MD, Portland, OR
 D. Kojo Hamilton, Portland, OR
 Praveen V. Mummaneni, San Francisco, CA
 Virginie Lafage, PhD, New York, NY
 Ian McCarthy, PhD, Plano, TX
 Richard A. Hostin, MD, Plano, TX
 Douglas C. Burton, MD, Kansas City, KS
 International Spine Study Group, Brighton, CO

Prospective Analysis of Risk Factors for Proximal Junctional Failure in Adult Deformity Patients.

Poster No. P364**Epidural Steroid Paste in Posterior Lumbar Surgery: A Retrospective Case-Control Analysis of Wound Complications**

Eva U. Asomugha, MD, Cleveland, OH
 Robert F. McLain, MD, Cleveland, OH

This is a retrospective review of patients treated with and without an epidural steroid paste to determine the incidence of postoperative wound infections and complications associated with its use.

Poster No. P365**Hematoma after Anterior Cervical Spine Surgery: Risk Factors and Outcomes**

Kevin R. O'Neill, MD, Nashville, TN
 Brian J. Neuman, MD, Baltimore, MD
 K. Daniel Riew, MD, Saint Louis, MO

Hematoma after anterior cervical surgery occurred in 17 of 2365 cases (0.7%). Risk factors were DISH, OPLL, heparin use, longer operative time, and more surgical levels. Outcomes were not affected.

Poster No. P366**An Attempt to Develop a Rodent Disc Transplantation Model Using a Rat Tail**

Haijun Tian, MD, Shanghai, China
 Michael D. Daubs, MD, Las Vegas, NV
 Trevor Scott, MD, Santa Monica, CA
 Kevin Phan, BS, Irvine, CA
 Scott Montgomery, MD, Venice, CA
 Bayan Aghdasi, MD, Clovis, CA
 Tetsuo Hayashi, MD, Fukuoka, Japan
 Jeffrey C. Wang, MD, Sherman Oaks, CA

The rat tail model for disc transplantation is technically demanding and failed in our laboratory. Poor vascular supply to the healing transplant may be the ultimate source of failure.

Poster No. P367**◆ Obesity and Wound Drainage: Are Incisional Vacuum-Assisted Closure Devices the Answer?**

Michael Knesek, MD, Ann Arbor, MI
 Mark Seeley, MD, Ann Arbor, MI
 Jeffrey D. Seybold, MD, Minneapolis, MN
 Gregory Graziano, MD, Ann Arbor, MI
 Rakesh Patel, MD, Ann Arbor, MI

A multi-center prospective randomized study on patients undergoing posterior spine surgery with a BMI>35 to evaluate utilization of VAC assisted device to reduce infection.

Poster No. P368**Dysphagia Following Anterior Cervical Discectomy and Fusion: National Incidence and Risk Factors**

Kristina Bianco, New York, NY
 Stephen P. Maier, BA, New York, NY
 Peter G. Passias, MD, Brooklyn, NY
 Michael C. Gerling, MD, Brooklyn, NY

A national database sample reveals dysphagia after ACDF correlates with large operations, teaching hospitals, large hospitals, and certain regions and increases LOS, hospital charges, and mortality.

Poster No. P369**Prevalence and Type of Cervical Deformity Among 470 Adults with Thoracolumbar (TL) Deformity**

Justin S. Smith, MD, Charlottesville, VA
 Eric O. Klineberg, MD, Sacramento, CA
 Christopher I. Shaffrey, MD, Charlottesville, VA
 Virginie Lafage, PhD, New York, NY
 Frank J. Schwab, MD, New York, NY
 Themistocles S. Protopsaltis, MD, New York, NY
 Vedat Deviren, MD, San Francisco, CA
 Robert S. Bess, MD, Castle Rock, CO
 Christopher Ames, MD, San Francisco, CA

Cervical deformity is highly prevalent (53%) among adults with TL deformity. Evaluation of TL deformity should include assessment of cervical parameters for evidence of concurrent cervical deformity.

Poster No. P370◆ **The Impact of Pedicle Dimension and Screw Size on the Accuracy of Pedicle Screw Placement in the Cervical Spine**

Osa Emohare, MBBS, PhD, Saint Paul, MN
David D. Christensen, BA, Falcon Heights, MN
Robert A. Morgan, MD, Minneapolis, MN

Navigated insertion of cervical pedicle screws can be a safe and effective method of providing osseous fixation.

Poster No. P371**Effectiveness of Postoperative Wound Drains in One- and Two-Level Cervical Spine Fusion**

Caroline Poorman, BA, New York, NY
Peter G. Passias, MD, Brooklyn, NY
Kristina Bianco, New York, NY
Michael C. Gerling, MD, Brooklyn, NY

Postoperative cervical drains are associated with longer hospital stays and operative times for one- and two-level cervical fusions with no difference in complication rates.

Poster No. P372**Comparison of Suction Curette versus Standard Discectomy in Transformaminal Lumbar Interbody Fusion**

William F. Lavelle, MD, East Syracuse, NY
Nathaniel R. Ordway, Syracuse, NY
Amir H. Fayyazi, MD, Allentown, PA
Rudolph A. Buckley, MD, Hamilton, NY
Ali Araghi, DO, Scottsdale, AZ

The improved discectomy seen with the suction curette device can potentially improve the clinical fusion rate and decrease the rate of intraoperative complications with the fewer number of passes.

Poster No. P373**30-Day Morbidity After Single Level ACDF: A Report of 2,914 Cases**

Christopher T. Martin, MD, Iowa City, IA
Andrew J. Pugely, MD, Iowa City, IA
Yubo Gao, PhD, Iowa City, IA
Sergio A. Mendoza-Lattes, MD, Iowa City, IA

Overall 30-day morbidity incidence was 3.2% following single level ACDF, with no additional risk of morbidity observed in outpatients as compared to inpatients.

Poster No. P374**The Effect of Time and Fusion Length on Motion of the Un-fused Lumbar Segments in Adolescent Idiopathic Scoliosis**

Michelle Marks, NMD, Tucson, AZ
Tracey Bastrom, MA, San Diego, CA
Maty Petcharaporn, BS, San Diego, CA
Suken A. Shah, MD, Wilmington, DE
Amer Samdani, MD, Philadelphia, PA
Randal R. Betz, MD, Philadelphia, PA
Baron Lonner, MD, New York, NY
Firoz Miyanji, MD, Vancouver, BC, Canada
Peter O. Newton, MD, San Diego, CA

Assessment of motion of the un-fused distal segments in Adolescent Idiopathic Scoliosis revealed length of follow-up does not have an effect on motion but longer fusion results in increased motion.

Poster No. P375**Outcomes of Single-Level Cervical Disc Arthroplasty versus Anterior Discectomy and Fusion: A Single Center Review**

Ronald A. Lehman, MD, Potomac, MD
Robert W. Tracey, MD, Great Falls, VA
Daniel Kang, MD, Bethesda, MD
Adam Bevevino, MD, Washington, DC
Michael Rosner, MD, Fort Belvoir, VA

In the largest non-sponsored study to date, our data suggest that both CDA and ACDF result in approximately 90% (90.1% CDA and 86.4% ACDF) of patients with complete symptomatic relief.

Poster No. P376**Reconstruction of Cervical Pathology with Pedicle Screws Inserted with Stealth Navigation and the O-arm**

Alexander Theologis, MD, San Francisco, CA
Shane Burch, MD, San Anselmo, CA

Placement of cervical pedicle screws using O-Arm and Stealth Navigation is a safe and accurate method for posterior stabilization in deformity and revision operations of the cervical spine.

Poster No. P377**Fusion Rates in Anterior Cervical Discectomy and Fusion Procedures using Mesenchymal Stem Cell Allograft**

Nomaan Ashraf, MD, New York, NY
Adam C. Fields, BA, New York, NY
Steven McAnany, MD, New York, NY
Sheeraz Qureshi, MD, New York, NY

Given the comparable fusion rate to other allografts, mesenchymal stem cell allograft can be an effective graft alternative in one and two level ACDFs.

Poster No. P378**Effect of Diabetes Mellitus in Surgical Outcomes Following Anterior Cervical Spine Fusion**

Alejandro Marquez-Lara, MD, Chicago, IL
Steven Fineberg, MD, Valhalla, NY
Sreeharsha Nandyala, BA, Aurora, IL
Kern Singh, MD, Chicago, IL

Diabetes is an independent risk factor for longer hospitalizations and cost and diabetics who underwent ACF had a greater incidence of complications and mortality.

Poster No. P379◆ **Comparison of an Oxysterol Molecule and Bone Morphogenic Protein 2 Fusion Rates in a Rabbit Lumbar Spine Model**

Trevor Scott, MD, Santa Monica, CA
Kevin Phan, BS, Irvine, CA
Scott Montgomery, MD, Venice, CA
Atti Elisa, Los Angeles, CA
Sotirios Tetradis, PhD, DDS, Los Angeles, CA
Renata Pereira, PhD
Jeffrey C. Wang, MD, Sherman Oaks, CA
Michael D. Daubs, MD, Las Vegas, NV
Farhad Parhami, PhD

This study was a randomized controlled trial comparing rhBMP2 and oxysterol 133 in a rabbit posterolateral lumbar fusion model.

Spine**Poster No. P380**

Cervical Sagittal Deformity Develops after PJK in Adult Thoracolumbar Deformity Correction

Alternate Paper: Spine VI: Lumbar/Miscellaneous II

Themistocles S. Protosaltis, MD, New York, NY

Nicolas Bronsard, MD, PhD, Nice, France

Jamie S. Terran, BS, New York, NY

Justin S. Smith, MD, Charlottesville, VA

Gregory M. Mundis, MD, San Diego, CA

Han Jo Kim, MD, New York, NY

Richard A. Hostin, MD, Plano, TX

Christopher Ames, MD, San Francisco, CA

Virginie Lafage, PhD, New York, NY

CTPA and TPA are novel global measurements which describe relative proportions of cervical and thoracolumbar deformities. PJK is prevalent and leads to cervical deformity following thoracolumbar PSO.

Poster No. P381

Development of a Non-invasive Dual-Fluoroscopic Imaging System for Measuring In-vivo Cervical Spine Motion

Thomas D. Cha, MD, Boston, MA

Jing-Sheng Li, PT, MS, Boston, MA

Tsung-Yuan Tsai, PhD, Boston, MA

Sean Driscoll, Foxborough, MA

Minfei Wu, Boston, MA

Shaobai Wang, PhD, Boston, MA

Guoan Li, PhD, Boston, MA

Kirkham B. Wood, MD, Boston, MA

A non-invasive dual-fluoroscopic imaging technique for measuring cervical 3D positions was compared to the RSA technique. DFIS can be applied in vivo motion of the cervical spine with high accuracy.

Poster No. P382

A Prospective Observational Study of Glycemic Instability from Non-diabetic Patients Undergoing Spine Surgery

Jean Langlois, MD, PARIS, France

Benjamin Bouyer, MD, Paris, France

Cyril Dauzac, Clichy, France

Beatrice Larroque, PhD, MD, Clichy, France

Pierre Guigui, Clichy, France

A vast majority of non-diabetic patients experience a significant increase in blood glucose levels in the first three days following a spine surgery.

Poster No. P383

Invasiveness Reduction of Recent Total Spondylectomy

Takayoshi Ishii, MD, Kanazawa, Japan

Hideki Murakami, MD, Kanazawa, Japan

Satoru Demura, MD, Kanazawa, Japan

Satoshi Kato, MD, Kanazawa, Japan

Katsuhito Yoshioka, MD, Kanazawa, Japan

Hiroyuki Hayashi, MD, Kanazawa, Japan

Kazuya Shimamura, MD, Ishikawa, Japan

Noriaki Yokogawa, MD, Ishikawa, Japan

Hiroyuki Tsuchiya, MD, Kanazawa, Japan

Second-generation total spondylectomy is less invasive compared to conventional total spondylectomy. Moreover, continuous efforts refined our surgical technique, which decreased its invasiveness.

Poster No. P384

Are Routine Post-operative Radiographs Required During the First Year Following Surgery for Idiopathic Scoliosis?

Alternate Paper: Spine III: Scoliosis

Sumeet Garg, MD, Aurora, CO

Emily A. Kipper, Mount Vernon, IA

Jaren Lagreca, BA, Aurora, CO

Patrick Carry, Aurora, CO

Mark A. Erickson, MD, Aurora, CO

The utility of post-op radiographs during the first year after PSF for AIS was evaluated. In the absence of unexpected pain, routine post-operative radiographs may not change management.

Poster No. P385

Cervical and Thoracic Spine Infections have High Probability of Multifocal Involvement

Jonathan Wang, MD, Sacramento, CA

Kawshayla Pathiraja, BS, San Francisco, CA

Priya Prasad, MPH, Oakland, CA

Jeremi M. Leasure, MS, San Francisco, CA

Dimitriy G. Kondrashov, MD, San Francisco, CA

The purpose of this study was to identify significant risk factors for multifocal spinal infections, compared with unifocal spinal infections.

Poster No. P386

Is Gait Analysis Useful in the Differential Diagnosis of the Level of the Lumbar Radiculopathy?

Hiroyuki Hayashi, MD, Kanazawa, Japan

Hideki Murakami, MD, Kanazawa, Japan

Satoru Demura, MD, Kanazawa, Japan

Hiroyuki Tsuchiya, MD, Kanazawa, Japan

Our gait examination system using a treadmill and motion analysis was useful in differential diagnosis of level of lumbar radiculopathy, and provided a number of advantages over conventional methods.

Poster No. P387**The Inter and Intra Observer Reliability of the Sanders Classification versus the Risser Stage**

Qasim Husain, MD, Port Monmouth, NJ
Caroline Poorman, BA, New York, NY
Richard S. Yoon, MD, New York, NY
Christopher Looze, MD, New York, NY
Peter G. Passias, MD, Brooklyn, NY
Baron Lonner, MD, New York, NY

The inter and intra observer reliability of the Sanders classification is superior to the Risser staging among residents, fellows, and attendings with respect to estimating skeletal maturity.

Poster No. P388**Regeneration of Human Annulus Fibrosus with Platelet Rich Plasma**

Konstantin Kotov, MD, Jerusalem, Israel

Regeneration of human annulus fibrosus with platelet rich plasma.

Poster No. P389**Lumbar Microdiscectomy and Lumbar Decompression Improve Functional Outcomes and Depression Scores**

David T. Anderson, MD, Charlotte, NC
Eric A. Mayer, MD, Cleveland, OH
Ajit A. Krishnaney, MD, Cleveland, OH

The current outcome data indicate that microdiscectomy and lumbar decompression not only reduce disability and pain, but also improve depressive symptoms, global health, and quality of life.

Poster No. P390**Os Odontoideum: Etiology, Presentation, Surgical Treatment and Outcomes in 279 Cases**

Deng Zhao, Beijing, China
Peter G. Passias, MD, Brooklyn, NY
Shenglin Wang, MD, Beijing, China
Chao Wang, Beijing, China

Os odontoideum patients with atlantoaxial instability or CVJ compression treated in this clinical series showed high satisfaction, functional scores, and fusion rates and low complication rates.

Poster No. P391**Changes in Foraminal Geometry with Anterior Decompression versus Keyhole Foraminotomy in the Cervical Spine**

Jacqueline Nguyen, MD, San Francisco, CA
Calvin Kuo, MD, Louisville, KY
Bryant Chu, BS, San Francisco, CA
Jeremi M. Leasure, MS, San Francisco, CA
Christopher Ames, MD, San Francisco, CA
Dimitriy G. Kondrashov, MD, San Francisco, CA

The purpose of this study is to determine which cervical decompression method most consistently increases neuroforaminal area and how that area is affected by neck position.

Poster No. P392**Allograft and Polyetheretherketone (PEEK) Cage in Anterior Cervical Discectomy and Fusion (ACDF)**

Edward Rainier G. Santos, MD, Minneapolis, MN
Sharon C. Yson, MD, Minneapolis, MN
Jonathan N. Sembrano, MD, Minneapolis, MN

In a retrospective radiographic review of 67 cases (117 levels) comparing subsidence rates of PEEK and allograft in ACDF, it seems that use of either interbody fusion device does not affect subsidence.

Poster No. P393**Lumbar Spine Posterior Subcutaneous Fat Wound Depth is a Risk Factor for Surgical Site Infection**

John Lee, MD, MS, Ann Arbor, MI
Khalid Odeh, South Lyon, MI
Rakesh Patel, MD, Ann Arbor, MI
James A. Goulet, MD, Ann Arbor, MI
Gregory Graziano, MD, Ann Arbor, MI

Body morphometry is a more relevant measure than is overall BMI with subcutaneous fat wound depth in the involved lumbar surgical levels representing a stronger risk factor for SSI than is BMI.

Poster No. P394**Cervical Radiculopathy: Incidence and Treatment of 1,420 Consecutive Cases**

Han Jo Kim, MD, New York, NY
Venu Nemani, MD, PhD, New York, NY
Chaiwat Piyaskulkaew, MD, Saint Louis, MO
K. Daniel Riew, MD, Saint Louis, MO

This study provides the first description of the incidence of cervical radiculopathy by level and operative outcomes in a large series of patients undergoing cervical decompression.

Poster No. P395**The Utility of Postoperative Radiographs after Lumbar Interbody Fusion With and Without Posterior Instrumentation**

Andrew K. Simpson, MD, Atlanta, GA
Polina Osler, MBBS, Boston, MA
Kirkham B. Wood, MD, Boston, MA

Postoperative radiographs after ALIF or combined anteroposterior lumbar fusion have limited value in asymptomatic patients, and minimizing surveillance imaging may appreciably reduce health care costs.

Poster No. P396**Revision Rate Following Thoracolumbar Fusion for Adult Deformity: Upper versus Lower Thoracic UIV**

Prokopis Annis, MD, Salt Lake City, UT
Brandon D. Lawrence, MD, Salt Lake City, UT
Michael D. Daubs, MD, Las Vegas, NV
Darrel S. Brodke, MD, Salt Lake City, UT

There was a trend for higher revision rate following thoracolumbar fusions for adult deformity, in patients with the UIV in the UT spine as compared with the LT, after a mean follow-up of 39 months.

Spine

Poster No. P397**Stiffness after Pan-Lumbar Fusion for Adult Spinal Deformity Does Not Limit Activities of Daily Living**

Jayne Hiratzka, MD, Portland, OR
 D. Kojo Hamilton, Portland, OR
 Robert S. Bess, MD, Castle Rock, CO
 Frank J. Schwab, MD, New York, NY
 Christopher I. Shaffrey, MD, Charlottesville, VA
 Eric O. Klineberg, MD, Sacramento, CA
 Justin S. Smith, MD, Charlottesville, VA
 Robert A. Hart, MD, Portland, OR
 International Spine Study Group, Brighton, CO

Patients report no increase in difficulty in the performance of ADL's as a result of increased stiffness 2 years after thoracolumbar fusion to the pelvis.

Poster No. P398**PROMIS Physical Function Item Bank Shows Value for Orthopaedic Spine Patient Care**

Man Hung, PhD, Salt Lake City, UT
 Shirley Hon, Salt Lake City, UT
 Christine Cheng, Salt Lake City, UT
 Ashley Woodbury, BS, SLC, UT
 Jeremy D. Franklin, Salt Lake City, UT
 Michael D. Daubs, MD, Las Vegas, NV
 Brandon D. Lawrence, MD, Salt Lake City, UT
 Jillian Conrad, BS, Salt Lake City, UT
 Darrel S. Brodke, MD, Salt Lake City, UT

The PROMIS physical function item bank adequately addressed spine patient outcomes as reliabilities were excellent, minimal ceiling/floor effect existed, and item bias was limited.

Poster No. P399**The Compensatory Relationship of Upper and Subaxial Cervical Motion in the Presence of Cervical Spondylosis**

Tetsuo Hayashi, MD, Fukuoka, Japan
 Michael D. Daubs, MD, Las Vegas, NV
 Akinobu Suzuki, MD, PhD, Osaka, Japan
 Trevor Scott, MD, Santa Monica, CA
 Kevin Phan, BS, Irvine, CA
 Shinji Takahashi, MD, Osaka, Japan
 Keiichiro Shiba, MD, Iizuka, Japan
 Jeffrey C. Wang, MD, Sherman Oaks, CA

446 patients were evaluated to determine the effect of loss of motion in the subaxial spine on the the upper cervical spine. Oc-C1 joint motion increased as motion in the subaxial spine decreased.

Poster No. P400**Magnetic Resonance Classification System of Cervical Intervertebral Disc Degeneration - It's Validity and Meaning**

Akinobu Suzuki, MD, PhD, Osaka, Japan
 Michael D. Daubs, MD, Las Vegas, NV
 Tetsuo Hayashi, MD, Fukuoka, Japan
 Monchai Ruangchainikom, MD, Bangkok, Thailand
 Chengjie Xiong Jr, Chongqing, China
 Kevin Phan, BS, Irvine, CA
 Trevor Scott, MD, Santa Monica, CA
 Jeffrey C. Wang, MD, Sherman Oaks, CA

A more reliable and clinically relevant grading system for cervical disc degeneration based on nucleus color and structure, disc height, and disc bulge.

Poster No. P401**Does Lumbar Paraspinal Muscle Fatty Degeneration Correlate with Aerobic Index and Oswestry Disability Index?**

Mark L. Prasarn, MD, Bellaire, TX
 Ellen Coyne, MS, Fairport, NY
 Glenn R. Rechline II, MD, Pinellas Park, FL

Patients with higher aerobic indices demonstrated lower amounts of fatty degeneration of their lumbar paraspinal musculature, and also trended towards better functional outcome scores.

Poster No. P402**Micron/Nano Modified Titanium Alloy Induces MSC Osteogenesis and Reduces Inflammatory Interleukin Production**

René Olivares-Navarrete, DDS, PhD, Richmond, VA
 Sharon L. Hyzy, MS, Richmond, VA
 Sarah Ortman, Atlanta, GA
 Jennifer Schneider, MS, Mequon, WI
 Peter F. Ullrich Jr, MD, Neenah, WI
 Zvi Schwartz, DMed, PhD, Richmond, VA
 Barbara D. Boyan, PhD, Richmond, VA

Complex micron-/nano-modified titanium alloy surfaces induce stem cell osteogenic differentiation and reduce inflammatory interleukin production.

Poster No. P403**Opportunistic Computed Tomography Screening for Osteoporosis in Acute Fractures of the Thoracic and Lumbar Spine**

Osa Emohare, MBBS, PhD, Saint Paul, MN
 Amanda Cagan, BA, Saint Paul, MN
 Alison J. Dittmer, BA, Plymouth, MN
 Robert A. Morgan, MD, Minneapolis, MN
 Martin Asis, MD, Minneapolis, MN
 Julie A. Switzer, MD, Saint Paul, MN
 David W. Polly Jr, MD, Minneapolis, MN

It is now possible to diagnose osteoporosis using incidental abdominal CT scans; applying this approach to acute fractures of the thoracic and lumbar spine demonstrates levels of osteoporosis in patients.

Poster No. P404**Prophylactic Vertebroplasty Effects of Adjacent Non-fused Segments***Sinan Kabraman, MD, Siirt, Turkey*

PV is effective to prevent adjacent segment failure. Adjacent segment disc degeneration after PV below the PV level is comparable to adjacent segment disc degeneration incidence after long fusions with no PV.

Poster No. P405**Clinical Outcome Following Single Level Cervical Disc Arthroplasty in a Military Population****Alternate Paper: Spine II: Cervical Spine***Jason M. Cage, DO, Honolulu, HI**Joseph R. Orchowski, MD, Tripler Amc, HI**Kevin Krul, MD, Kailua, HI**Kim Driftmier, MD, Honolulu, HI*

Cervical disc arthroplasty is an attractive technique for military service members with symptomatic cervical disc degeneration.

Sports Medicine/Arthroscopy**Poster No. P406****Effectiveness of Neuro-Muscular Taping in Rehabilitation after Anterior Cruciate Ligament Reconstruction***Luca Labianca, MD, Rome, Italy**Edoardo Monaco, MD, Rome, Italy**Cosma Calderaro, Rome, Italy**Barbara Maestri, MD, Rome, Italy**Andrea Ferretti, MD, Rome, Italy*

Neuro taping was used on patients who underwent ACL reconstruction to evaluate the effect on improving knee swelling and muscular strength.

Poster No. P407**Biomechanical Properties of Meniscus Repairs. Are Devices better than Sutures? A Meta-Analysis***Daniel Buckland, MS, Washington, DC**Patrick Sadoghi, Graz, Austria**Matthias D. Wimmer, MD, Bonn, Germany**Patrick Vavken, MD, Basel, Switzerland**Victor Valderrabano, MD, Basel, Switzerland**Claudio Rosso, MD, MSc, Basel, Switzerland*

We are presenting a meta-analysis on the biomechanical properties of meniscus repairs by comparing devices and sutures. The analysis includes studies from 1999 to 2013.

Poster No. P408**The Effect of Meniscectomy on Graft Failure After Anterior Cruciate Ligament Reconstruction***Takanori Akada, MD, Chiba, Japan**Akihiro Tsuchiya, MD, Funabashi, Chiba, Japan**Izumi Kanisawa, MD, Funabashi City, Chiba, Japan**Kenji Takahashi, MD, Funabashi, Japan**Tomonori Nagamine, MD, Chiba, Japan*

The purpose of this study was to determine if meniscectomy increases the risk of graft rupture.

Poster No. P409**The Effect of Medial Meniscal Injury on Rotational Instability following ACL Reconstruction***Shaun Stinton, PhD, Atlanta, GA**Jon E. Browne, MD, Leawood, KS**Cale Jacobs, PhD, Lexington, KY**Thomas Branch, MD, Atlanta, GA*

Damage to the medial meniscus results in an increased internal rotational laxity and increased anterior translational variability of the knee after ACL reconstruction which impacts outcome scores.

Poster No. P410**Mechanical Symptoms as an Indication for Knee Arthroscopy in Patients with Degenerative Meniscus Tear***Raine T. Sihvonen, MD, Tampere, Finland**Teppo L. Jarvinen, MD, PhD, Helsinki, Finland*

In patients with arthroscopically-verified degenerative meniscal tear, a pre-operative self-report of mechanical symptoms predicts a poor outcome of knee arthroscopy.

Poster No. P411**Factors Associated with Complex Meniscus Tears Requiring Suture Repair***Karen K. Briggs, MPH, Vail, CO**Lauren M. Matheny, Vail, CO**William G. Rodkey, DVM, Vail, CO**J R. Steadman, MD, Vail, CO*

Although relatively uncommon, meniscal suture repairs have drastically increased in the last 10 years. Lateral repairs were associated with MCL tears and chondral defects of the lateral compartment.

Poster No. P412**Incidence of Revision ACL or Contralateral ACL Surgery in a Large Community ACL Registry***Gregory B. Maletis, MD, Baldwin Park, CA**Maria C. Inacio, MS, San Diego, CA**Tadashi T. Funahashi, MD, Irvine, CA*

5 year survival for the index ACLR is 96.4% and the Contralateral ACL is 97.4%. Revision ACLR is more common than Contralateral ACLR when allograft or hamstring are initially used but not BPTB.

Poster No. P413**Age- and Cartilage Status -related Differences of Synovium Tissue-Derived Mesenchymal Stem Cells***Yun-Jin Choi, Seoul, Republic of Korea**Dong Beom Heo, MD, Seoul, Republic of Korea**Yong-Gon Koh, Seoul, Republic of Korea**Yoowang Choi, MD, Seoul, Republic of Korea**Dongsuk Suh, Seoul, Republic of Korea*

Age differs significantly with the respect to the proportion and expandability of SDSCs, but cartilage status does not differ significantly in almost parameter.

Sports Medicine/Arthroscopy**Poster No. P414****Does Natural FAI Damage Affect the Sealing Function of the Acetabular Labrum?**

Maureen K. Dwyer, ATC, PhD, Newton, MA
Hugh L. Jones, Houston, TX
Richard Field, MD, Epsom, United Kingdom
Joseph C. McCarthy, MD, Newton, MA
Philip C. Noble, PhD, Houston, TX

Experimental acetabular labrum tears have shown to compromise its sealing function. It has not been shown if damage from FAI has the same effect. Our study quantifies the effect of natural pathology.

Poster No. P415**Incidence of Femoral Neck Fracture after Arthroscopic Proximal Femoroplasty**

Michael K. Merz, MD, Chicago, IL
Kinzie G. Sharp, PA-C, Chicago, IL
Benjamin G. Domb, MD, Oak Brook, IL

Eleven femoral neck fractures were identified after 14,945 arthroscopic proximal femoroplasty procedures, for an incidence of .07%. All eleven did well after treatment for their fractures.

Poster No. P416**Cartilage Assessment in Femoroacetabular Impingement using T2* Mapping with Arthroscopic Verification**

Connor Ziegler, MD, Farmington, CT
Jutta Ellermann, Minneapolis, MN
Mikko J. Nissi, PhD, Minneapolis, MN
Rainer Goebel, Maastricht, Netherlands
Michael Benson, Plymouth, MN
Peter J. Holmberg, MD, Rochester, MN
Patrick M. Morgan, MD, Minneapolis, MN
John Hughes, PhD, Minneapolis, MN

T2* mapping is a viable tool for cartilage evaluation in FAI. A patient-specific projection allows anatomic localization of MRI data, facilitating pre-op evaluation and cartilage monitoring.

Poster No. P417**A Correlation of Fluoroscopic Images with Three-Dimensional CT Imaging to Identify and Treat the Entire Cam Lesion**

James Ross, MD, Ann Arbor, MI
James Ross, MD, Ann Arbor, MI
Asheesh Bedi, MD, Ann Arbor, MI
Rebecca M. Stone, ATC, Edina, MN
Elizabeth R. Sibilsky Enselman, MEd, ATC, Ann Arbor, MI
Bryan T. Kelly, MD, New York, NY
Christopher M. Larson, MD, Edina, MN

This study describes six intraoperative fluoroscopic views that correlates with specific locations along the femoral head/neck junction to assist with FAI surgery.

Poster No. P418**A Vessel Preserving Posterior Surgical Hip Dislocation through the Posterolateral Approach**

Peter K. Sculco, MD, New York, NY

Computer Tomography based Patient specific acetabular guides with notch fit geometry can reliably recreate the Preoperative Plan.

• The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Poster No. P419**Iliopsoas Tendinitis After Hip Arthroscopy**

Farshad Adib, MD, Boston, MA
William P. Hennrikus, BA, Boston, MA
Adam Nasreddine, BS, MA, Boston, MA
Mininder S. Kocher, MD, MPH, Boston, MA
Yi-Meng Yen, MD, Boston, MA

Iliopsoas tendinitis is a complication after hip arthroscopy. In this study %25 of patients had it and it was more common in females. Different anterior portal placement does not affect the incidence.

Poster No. P420**The Prevalence of Coronal Knee Malalignment in Healthy Young Adults and its Association to BMI and Body Height**

Hershkovich Oded, MD, Kefar - Haoranim, Israel
Ran Thein, MD, Kadima, Israel
Barak Gordon, MD, Shoham, Israel
Shay A. Tenenbaum, MD, Herzliya, Israel

There is a strong association between BMI and knee varus valgus mal-alignment (KVVM) in both underweight and overweight young adults.

Poster No. P421**Endoscopic Treatment of Ischiofemoral Impingement**

Hal D. Martin, DO, Dallas, TX
Munif A. Hatem, OK City, OK
Robroy L. Martin
Ian Palmer, PhD, Dallas, TX

Our results support the endoscopic treatment of the lesser trochanter partial resection via deep gluteal space in patients with ischiofemoral impingement.

Poster No. P422**Does Labral Takedown Affect Results of Arthroscopic Acetabuloplasty and Labral Repair?**

John M. Redmond, MD, Westmont, IL
Youssef El Bitar, MD, Springfield, IL
Christine E. Stake, MA, Naperville, IL
Benjamin G. Domb, MD, Oak Brook, IL

This study compares outcomes for patients undergoing arthroscopic acetabuloplasty with and without labral takedown with a minimum two year follow up.

Poster No. P423**Influence of Pelvic Tilt on Acetabular Parameters and Range of Motion in Patients with Femoroacetabular Impingement**

James Ross, MD, Ann Arbor, MI
Jeffrey Nepple, MD, Saint Louis, MO
Marc J. Philippon, MD, Vail, CO
Bryan T. Kelly, MD, New York, NY
Christopher M. Larson, MD, Edina, MN
Asheesh Bedi, MD, Ann Arbor, MI

This study demonstrates the importance of pelvic tilt when analyzing radiographs as well as the influence on range of motion.

Poster No. P424**Intraoperative Fluoroscopic Imaging in Hip Arthroscopy: Implications for Evaluation of Acetabular Morphology**

Lorenz Buchler, MD, Bern, Switzerland
Joseph M. Schwab, MD, Milwaukee, WI
Patrick Whitlock, Landenberg, PA
Martin Beck, MD, Luzern, Switzerland
Moritz Tannast, Bern, Switzerland

Intraoperative evaluation of acetabular morphology in hip arthroscopy with fluoroscopic imaging correctly displays lateral coverage but underestimates total anterior coverage.

Poster No. P425**Comparison of T2 Mapping, dGEMRIC and Proton Density MRI as Imaging Modalities to Detect Chondral Lesions of the Hip**

Sara Martinez-Martos, Brisbane, Australia
Jonathan Bare, Windsor, Australia
Andrew H. Rotstein, Prahran, Australia
Justin Roebert, MB, ChB, Prahran, Australia
Matthew K. Shumack, BS, Melbourne, Australia

The dGEMRIC technique has a higher prediction capacity and accuracy than T2 Mapping on analyzing the quality of articular cartilage.

Poster No. P426**Equivalent Outcomes for T-Capsulotomy with Plication Compared to Interportal Capsulotomy for FAI**

Rachel M. Frank, MD, Chicago, IL
Garth Walker, Chicago, IL
Frank McCormick, MD, Ft Lauderdale, FL
Michael Berman, BA, Chicago, IL
Michael D. Hellman, MD, Chicago, IL
Shane J. Nho, MD, Chicago, IL

Hip arthroscopy with T-capsulotomy provides increased visualization, faster operative times, and is associated with equivalent, if not improved, early outcomes following hip arthroscopy for FAI.

Poster No. P427**Prospective Comparative Study of ACL Reconstruction Between Using Hamstring Autograft and Soft Tissue Allograft**

Jong-Keun Seon, MD, Hwasungun, Republic of Korea
Eun K. Song, MD, Hwasun-Gun, Republic of Korea
Hasung Kim, Hwasun, Republic of Korea
Kyung Jai Lee, MD, Gwangju, Republic of Korea

The hamstring autograft in ACL reconstruction showed fewer complications including failure and better arthroscopic findings compared with soft tissue allograft group after mid-term follow-up.

Poster No. P428**Risk Factors for Chronic Exertional Compartment Syndrome in a Physically-Active Military Population**

Brian Waterman, MD, El Paso, TX
Jet J. Liu, MD, Houston, TX
Ronald Newcomb, MD, El Paso, TX
Andrew J. Schoenfeld, MD, Ann Arbor, MI
Justin D. Orr, MD, El Paso, TX
Philip J. Belmont Jr, MD, El Paso, TX

Sex, age, race, military rank, and branch of service were all important factors associated with the incidence of CECS in this physically active population.

Poster No. P429**The Effects of Ulnar Collateral Ligament Reconstruction on Major League Pitching Performance**

Robert A. Keller, MD, Detroit, MI
Matthew J. Steffes, BS, Detroit, MI
David Zhou, BA, Royal Oak, MI
Vasilios Moutzouros, MD, Northville, MI

MLB pitchers have a significant decline in pitching performance after UCL reconstruction compared to pre-surgical statistics. Also, early MLB experience may be a risk for UCL injury.

Poster No. P430**Knee Flexion Under Weight-Bearing Conditions Causes Compression, Not Opening of Meniscal Repairs**

Kendall D. Hamilton, MD, Grand Rapids, MI
Michael Hogen, BS, Houston, TX
Hugh L. Jones, Houston, TX
Jonathan Gold, BS, Houston, TX
Philip C. Noble, PhD, Houston, TX
Patrick C. McCulloch, MD, Houston, TX

Fear of tear separation after meniscal repair causes some to avoid accelerated rehab protocols. Using RSA, our study shows no gapping under the physiological loads of gait.

Poster No. P431**Identification of Synovial Fluid Biomarkers for Cartilage Pathology and Associated Outcomes in Knee Arthroscopy**

Vanessa G. Cuellar, MD, New York, NY
Jason M. Cuellar, MD PhD, New York, NY
Thorsten Kirsch, PhD, New York, NY
Priya Mukhopadhyay, BS, Bronx, NY
Laith M. Jazrawi, MD, New York, NY
Eric J. Strauss, MD, New York, NY

Synovial fluid levels of MCP-1 and IL-6 are strong predictors of severe cartilage lesions independent of other injuries, and predict worse clinical outcomes at 1 year after knee arthroscopy.

Sports Medicine/Arthroscopy**Poster No. P432****MPFL Tears in the Setting of Multi-ligament Knee Injuries Rarely Cause Patellar Instability**

Benjamin J. Allen, MD, Rochester, MN
 Scott A. Kuzma, MD, Milwaukee, WI
 Bruce A. Levy, MD, Rochester, MN
 Michael J. Stuart, MD, Rochester, MN
 Mark Collins, Rochester, MN
 Aaron J. Krych, MD, Rochester, MN
 Diane L. Dahm, MD, Rochester, MN

MPFL tears in the setting of multi-ligamentous knee injuries can be effectively treated non-operatively without sequelae of patellofemoral instability.

Poster No. P433**Latarjet Coracoid Transfer to Revise Failed Arthroscopic Instability Repairs****Alternate Paper: Sports Medicine/Arthroscopy V: Shoulder II**

Gregory P. Nicholson, MD, Chicago, IL
 Anil Gupta, MD, MBA, Tampa, FL
 Zain Rahman, MA, Chicago, IL
 Benjamin G. Bruce, MD, Providence, RI
 Frank McCormick, MD, Ft Lauderdale, FL

Latarjet coracoid transfer can be a predictable revision option in failed arthroscopic instability repairs with anteroinferior glenoid bone erosion and altered anatomy.

Poster No. P434**“Subcritical” Glenoid Bone Loss Increases Redislocation Rates in Primary Arthroscopic Bankart Repair**

James S. Shaha, MD, Kailua, HI
 Jay B. Cook, MD, Kailua, HI
 Daniel Song, MD, APO, AE
 Douglas J. Rowles, MD, Aiea, HI
 Craig R. Bottoni, MD, Honolulu, HI
 Steve Shaha, Draper, UT
 John M. Tokish, MD, Scottsdale, AZ

Patients undergoing primary arthroscopic stabilization with “subcritical” glenoid bone loss of 17.1% are at a higher risk to have recurrent instability than those with lesser amounts of bone loss.

Poster No. P435**The Paracrine Effect of Adipose-derived Stem Cells (ADSCS) Prevent Osteoarthritis Progression**

Kazunari Kuroda, MD, Kanazawa-Shi, Japan
 Tamon Kabata, MD, Kanazawa, Ishikawa, Japan
 Toru Maeda, MD, PhD, Kanazawa, Japan
 Yoshitomo Kajino, MD, Kanazawa, Ishikawa, Japan
 Shintaro Iwai, MD, Kanazawa, Japan
 Kenji Fujita, MD, Kanazawa, Japan
 Kazuhiro Hasegawa, MD, Kanazawa, Japan
 Daisuke Inoue, MD, Kanazawa, Japan
 Hiroyuki Tsuchiya, MD, Kanazawa, Japan

Intra-articularly injected adipose-derived stem cells (ADSCs) home to synovium, secrete a factor having chondro-protective effects, and inhibit cartilage degeneration in a rabbit osteoarthritis model.

Poster No. P436**Facilitated Tendon-Bone Healing by Local Delivery of Adipose-Derived Regenerative Cells**

Masahiro Kosaka, MD, Kanazawa, Japan
 Junsuke Nakase, MD, Kanazawa, Japan
 Yoshinori Ohashi, MD, Kanazawa, Japan
 Hiroyuki Tsuchiya, MD, Kanazawa, Japan

Local administration of Adipose-derived regenerative cells promoted the healing process at the tendon-bone junction after anterior cruciate ligament reconstruction in a rabbit model.

Poster No. P437**Trans-Subscapularis Portal versus Low Anterior Portal for 5:30 Anchor Placement: A Cadaveric Study With CT Analysis**

Tim Dwyer, MBBS, Toronto, ON, Canada
 Massimo Petrera, MD, Turi, Italy
 Lawrence White, MD, Toronto, ON, Canada
 David Wasserstein, MD, MSc, North York, ON, Canada
 Christian Veillette, MD, Toronto, ON, Canada
 Jaskarndip Chahal, MD, Toronto, ON, Canada
 Darrell J. Ogilvie-Harris, MD, Toronto, ON, Canada
 John Theodoropoulos, MD, FRCSC, North York, ON, Canada

The TSS portal allows a lower anchor placement on the glenoid face, and also allows a more tangential placement of anchors in the coronal plane, potentially reducing the risk of cortical perforation.

Poster No. P438**◆ Engineered Knee Meniscus with Integration Potential for Replacing Partially Removed Menisci****Alternate Paper: Sports Medicine/Arthroscopy VI: Knee II**

Eleftherios Makris, MD, Davis, CA
 Regina F. Macbarb, BS, Davis, CA
 Nikolaos K. Paschos, MD, Davis, CA
 Jerry C. Hu, PhD, Davis, CA
 Kyriacos A. Athanasiou, PhD, Davis, CA

Collagen crosslinking through lysyl oxidase is a novel method toward developing biomechanically robust meniscus implants that possesses integration potential for replacing partially removed menisci.

Poster No. P439**Clinical Outcome and Glenoid Morphologic Change after Arthroscopic Osseous Bankart Repair: A 5 to 8 Year Follow Up****Alternate Paper: Sports Medicine/Arthroscopy II: Shoulder I**

Soichiro Kitayama, Funabashi, Japan
 Hiroyuki Sugaya, MD, Chiba, Japan
 Norimasa Takahashi, MD, Funabashi, Japan
 Nobuaki Kawai, MD, Chiba, Japan
 Morihito Tokai, MD, Funabashi, Chiba, Japan
 Kazutomo Onishi, MD, Chiba, Japan

Mid to long term clinical outcome and glenoid morphologic change after arthroscopic osseous Bankart repair was evaluated using X-rays and 3DCT in patients with significant glenoid bone loss.

Poster No. P440**Ulnar Collateral Ligament Reconstruction: A Cadaveric Biomechanical Study of Two Popular Repair Techniques**

Matthew Nugent, MD, Grants Pass, OR
 Alexander C. McLaren, MD, Phoenix, AZ
 Ryan McLemore, PhD, Phoenix, AZ
 Evan S. Lederman, MD, Phoenix, AZ
 Brian Cunningham, MD, Phoenix, AZ
 Anikar Chhabra, MD, Paradise Valley, AZ

Biomechanical study of two popular UCL reconstruction techniques tested in both cyclic loading and single load to failure.

Poster No. P441**Clinical Outcomes after Distal Biceps Reconstruction with Allograft****Alternate Paper: Sports Medicine/Arthroscopy I: Elbow, Hand, Cartilage**

Nimrod Snir, MD, New York, NY
 Mathew Hamula, BA, BS, New York, NY
 Theodore S. Wolfson, BS, New York, NY
 Robert J. Meislin, MD, New York, NY
 Eric J. Strauss, MD, New York, NY
 Laith M. Jazrawi, MD, New York, NY

Late reconstruction for chronic distal biceps rupture using allograft tissue is a safe and effective solution for symptomatic patients with functional demands in forearm supination and elbow flexion.

Poster No. P442**Peroneal Nerve Injury in Multiligament Knee Injury: Comparative Outcomes after Posterior Tibial Tendon Transfer**

Brian C. Werner, MD, Charlottesville, VA
 Grant Norte, MEd, ATC, Charlottesville, VA
 Michael Hadeed III, Alexandria, VA
 Joseph S. Park, MD, Charlottesville, VA
 Joe Hart, PhD, ATC, Charlottesville, VA
 Mark D. Miller, MD, Charlottesville, VA

Posterior tibial tendon transfer is an excellent option to improve gait, restore active dorsiflexion and eliminate orthosis use for peroneal nerve injury in the setting of multiligament knee injury.

Poster No. P443**Safety of Third Generation Artificial Turf in Male Elite Professional Soccer Players**

Alessandro Ciompi, MD, Roma, Italy
 Riccardo Maria Lanzetti, Roma, Italy
 Domenico Lupariello, Matera, Italy
 Angelo De Carli, MD, Rome, Italy
 Andrea Ferretti, MD, Rome, Italy

Our study assesses that there are no difference in injury incidence in artificial and natural turf.

Poster No. P444**Cost Benefit Analysis of Athletic Team Coverage by an Orthopaedic Practice****Alternate Paper: Sports Medicine/Arthroscopy VII: Head, Foot, Miscellaneous**

Brandon Eck, BS, Egg Hbr Township, NJ
 Fotios P. Tjoumakaris, MD, Ocean View, NJ
 Luke S. Austin, MD, Linwood, NJ
 Matthew D. Pepe, MD, Linwood, NJ
 Kevin B. Freedman, MD, Bryn Mawr, PA
 Katherine M. Bagnato, OTC, ATC, Egg Harbor Township, NJ
 Bradford S. Tucker, MD, Ocean City, NJ

This investigation was a cost/benefit analysis of local sports coverage by an orthopaedic sports medicine practice.

Poster No. P445**Transfer of Surgical Skills: The Importance of Arthrosimulation Training for Orthopaedic Surgery Residents**

Marie D. Mousseau, MD, MSc, Montreal, QC, Canada
 Michelle Laprade, Longueuil, QC, Canada
 Laurence Marck, Montreal, QC, Canada
 Monika Volesky, MD, Montreal, QC, Canada
 Veronique Godbout, MD, FRCSC, Montreal, QC, Canada

We evaluated the efficacy of an arthrosimulation resident training program on skills transfer in the operating room, with results favouring formal simulation training during residency.

Poster No. P446**What is the Safest Method of Spine Boarding a Cervical Spine Injured Football Player? A Biomechanical Cadaveric Study**

Mark L. Prasarn, MD, Bellaire, TX
 MaryBeth Horodyski, EdD, ATC, Gainesville, FL
 Matthew J. DiPaola, MD, Dayton, OH
 Christian P. DiPaola, MD, Worcester, MA
 Gianluca Del Rossi, PhD, Tampa, FL
 Bryan P. Conrad, Gainesville, FL
 Glenn R. Rechline II, MD, Pinellas Park, FL

The least amount of motion at an unstable cervical spine injury is produced with use of the six-plus person lift technique of spine boarding when moving an injured football player.

Poster No. P447**Computer-Based Pre-operative Planning for Surgical Treatment of Femoro-Acetabular Impingement**

Newton Chan, Houston, TX
 Christoph H. Fuchs, Houston, TX
 Ricardo L. Valle, MD, Frederick, MD
 Mark S. Adickes, MD, Houston, TX
 Philip C. Noble, PhD, Houston, TX

A standardized osteochondroplasty plan with resection depths of 2mm, 4mm, and 6mm improved internal rotation of the hip and restored normal alpha angles and anterior offsets.

Sports Medicine/Arthroscopy**Poster No. P448**

◆ Scaffold Augmentation with Adipose Stem Cell-Derived Tenocytes Improves Tendon Remodeling
 Gregory P. Colbath, MD, Spartanburg, SC
 Grace Margaret A. Dion, Charleston, SC
 Dan Simionescu, PhD, Clemson, SC
 Theodore F. Schlegel, MD, Greenwood Village, CO
 Richard J. Hawkins, MD, Greenville, SC

This investigation of differentiation of adipose derived stem cells into tenocytes could be achieved via the application of BMP-12 on a collagen scaffold seeded with ADSC-derived tenocytes would improve tendon healing after surgery.

Poster No. P449

Measuring Tibial Tuberosity-Trochlear Groove Distance on CT: Where to Begin?

Ariel Williams, MD, Baltimore, MD
 Mibo J. Tanaka, MD, Clayton, MO
 John J. Elias, PhD, Akron, OH
 Shadpour Demehri, MD, Baltimore, MD
 Gaurav K. Thawait, MD, Baltimore, MD
 John A. Carrino, MD, Baltimore, MD
 Andrew J. Cosgarea, MD, Lutherville, MD

In patients with patellofemoral instability, one common method for measuring TTTG on CT fails to detect nearly half of those who might be considered candidates for tuberosity medializing osteotomy.

Poster No. P450

Intraarticular Platelet-Rich Plasma versus Hyaluronic Acid to Treat Degenerative Knee

Giuseppe Filardo, MD, Bologna, Italy
 Elizaveta Kon, MD, Italy, Italy
 Alessandro Di Martino, MD, Bologna, Italy
 Berardo Di Matteo, Med Student, Bologna, Italy
 Silvio Patella, MD, Bologna, Italy
 Francesco Perdisa, MD, Bologna, Italy
 Luca Andriolo, MD, Bologna, Italy
 Francesco Tentoni, Riccione, Italy
 Maurilio Marcacci, MD, Bologna, Italy

A randomized double blind controlled trial to evaluate and compare the effectiveness of both Platelet-Rich Plasma and Hyaluronic Acid used to approach knee degenerative pathology.

Poster No. P451

Scapular Kinematics Before and After Posterior Capsular Stretching in Asymptomatic Baseball Pitchers

Andrea Pellegrini, MD, Rimini, Italy
 Pietro M. Tonino, MD, Maywood, IL
 Paolo Paladini, MD, Cattolica, Italy
 Fabrizio Campi, MD, Cattolica, Italy
 Giuseppe Porcellini, MD, Cattolica, Italy

This study highlights effectiveness of shoulder rehabilitation in terms of prevention. Posterior capsule stretching have a key role in the improvement and restore of normal scapula kinematics.

Poster No. P452

Rotational Alignment of the Knee in Relation to Cam Deformity of the Proximal Femur

Jonathan Streit, MD, Cleveland, OH
 Jeremy Gebhart, MD, Cleveland, OH
 Asheesh Bedi, MD, Ann Arbor, MI
 Charles A. Bush-Joseph, MD, Chicago, IL
 Shane J. Nho, MD, Chicago, IL
 Michael Salata, MD, Cleveland, OH

We found a relationship between the cam deformity and rotational alignment of the knee using an osteological collection.

Poster No. P453

Molecular Changes after Shockwave Therapy in Osteoarthritic Knee in Rats

Ching-Jen Wang, MD, Kaohsiung, Taiwan

ESWT produces molecular changes consistent with improvement in subchondral bone remodeling and chondroprotective effect in articular cartilage in ACLT and MM OA knee in rats.

Poster No. P454

Superficial Medial Collateral Ligament Anatomic Augmented Repair versus Anatomic Reconstruction

Alternate Paper: Sports Medicine/Arthroscopy IV: Knee I

Coen A. Wijdicks, PhD, Vail, CO
 Max P. Michalski, MSc, Vail, CO
 Matthew Rasmussen, BS, Vail, CO
 Mary T. Goldsmith, MSc, Vail, CO
 Nicholas I. Kennedy, Yakima, WA
 Martin C. Lind, MD, Aarhus N, Denmark
 Lars Engebretsen, MD, Oslo, Norway
 Robert F. LaPrade, MD, PhD, Vail, CO

Results suggest that both an anatomic sMCL augmented repair and an anatomic sMCL reconstruction improve knee kinematics compared to a deficient sMCL and provide equivalent joint stability.

Poster No. P455

Quantification of Trochlea via Computed Tomography in Chronic Patellofemoral Instability Patients

Sangmin R. Shin, MD, Jamaica Plain, MA
 Akira Murakami, MD, Boston, MA
 Robert Ruef, MD, Boston, MA
 Anthony A. Schepsis, MD, Beverly, MA
 Cory Edgar, MD, PhD, Boston, MA

This study is to report a novel technique to quantify trochlea volume and length via computed tomography. There were statistically significant differences between normal control and dysplastic cohort.

Poster No. P456**Relationship Between Socioeconomic Factors and the Time to ACL Surgery in Children and Adolescents**

Justin T. Newman, MD, Aurora, CO
Patrick Carry, Aurora, CO
Elizabeth B. Terhune, BA, Aurora, CO
Murray D. Spruiell, MD, Denver, CO
Austin Heare, MD, Aurora, CO
Meredith Mayo, MD, Aurora, CO
Armando F. Vidal, MD, Denver, CO

A commercial insurance plan, increased household income and older age are associated with a significant increase in the rate at which ACL reconstruction occurs following ACL injury.

Poster No. P457**Long-term Results of Untreated Articular Cartilage Defects at Anterior Cruciate Ligament Reconstruction**

K D. Shelbourne, MD, Indianapolis, IN
Rodney W. Benner, MD, Indianapolis, IN
Tinker Gray, MA, ELS, Indianapolis, IN

ACL reconstructed patients with isolated chondral defects had a higher rate of osteoarthritis than control patients, but there was no difference in IKDC subjective scores at 14 years follow-up.

Poster No. P458**Inter and Intra-observer Reliability of Elbow Valgus Stress Radiography in Pitchers: A Comparison of Three Methods**

Ryan W. Hess, MD, Columbia, SC
Jeremy Bruce, MD, Chattanooga, TN
Patrick W. Joyner, MD, Chesapeake, VA
James R. Andrews, MD, Gulf Breeze, FL

The inter and intraobserver reliability for elbow valgus stress radiography in injured pitchers is good to excellent. The 2-line method may provide more reproducible results.

Poster No. P459**Use of Human Placental-derived Adherent Stromal Cells Improves Healing in a Preclinical Model of Tendon Injury**

S. Richard Ma, MD, Columbia, MO
Michael Schaer, MD, New York, NY
Marco L. Sisto, BA, New York, NY
Katherina Y. Chen, MS, Flushing, NY
Hongsheng Wang, PhD, New York, NY
Efrat Zahavi Goldstein, MSc, Haifa, Israel
Lilly Ying, VBS, New York, NY
Xiang-Hua Deng, MD, New York, NY
Scott A. Rodeo, MD, New York, NY

Human placental-derived adherent stromal cells demonstrated the potential to improve the tendon healing response following injury in this preclinical model of tendinopathy.

Poster No. P460**◆ The Effect of Allogeneic Mesenchymal Stem Cells and PRP Treatments on Rat Medial Collateral Ligament Injury**

Danica D. Vance, BS, Miami, FL
David Ajibade, MD, Orangeburg, SC
Lauren Vernon, MS, Coral Gables, FL
Erika Rangel, Miami, FL
Rosemeire M. Kanashiro-Takeuchi, DVM, PhD, Miami, FL
Andrew Rosenberg, Miami, FL
Joshua Hare, MD, Miami, FL
Lee D. Kaplan, MD, Miami, FL
Bryson P. Lesniak, MD, Miami, FL

The addition of MSCs and/or PRP to an acutely injured MCL increases cellularity and collagen fibers regeneration.

Poster No. P461**The Effect of an Acetabular Labral Tear, Repair, Resection and Reconstruction on Hip Fluid Pressurization**

Jeffrey Nepple, MD, Saint Louis, MO
Kevin J. Campbell, BS, Vail, CO
Coen A. Wijdicks, PhD, Vail, CO
Kyle Jansson, Vail, CO
Grant Dornan, MSc, Vail, CO
Robert F. LaPrade, MD, PhD, Vail, CO
Marc J. Philippon, MD, Vail, CO

Labral tears and partial resections decrease intra-articular fluid pressurization. Improvements in pressurization occur with labral repairs and labral reconstructions with iliotibial band.

Poster No. P462**Synthetic Biphasic Scaffolds Outperform Microfracture in the Knee; A Prospective Cohort Study at 5-year Follow Up**

Danyal Nawabi, MD, FRCS (Orth), New York, NY
Kristofer Jones, MD, Los Angeles, CA
Nadja A. Farshad-Amacker, MD, New York, NY
Joseph Nguyen, MPH, New York, NY
Hollis Potter, MD, New York, NY
Russell F. Warren, MD, New York, NY
Riley J. Williams, MD, New York, NY

Clinical results with synthetic biphasic scaffolds are equivalent to microfracture at early clinical follow-up, but demonstrate superior clinical results over time.

Poster No. P463**Characterization of Acetabular Articular Cartilage Dimensions Using Reformatted MRI**

Stephanie Pun, MD, San Jose, CA
Andreas M. Hingsammer, MD, Boston, MA
Young Jo Kim, MD, PhD, Boston, MA

Dysplastic acetabula are proportionally smaller than control and pincer acetabula, whereas pincer acetabula have disproportionately larger articular cartilage surfaces anteriorly and posteriorly.

Sports Medicine/Arthroscopy**Poster No. P464**

A Three-Dimensional Assessment of Residual Deformity Prior to Revision Arthroscopic FAI Surgery

Alternate Paper: Sports Medicine/Arthroscopy III: Hip/Pelvis

Asheesh Bedi, MD, Ann Arbor, MI

James Ross, MD, Ann Arbor, MI

Bryan T. Kelly, MD, New York, NY

Christopher M. Larson, MD, Edina, MN

Residual femoral and acetabular deformity is common in patients with refractory pain after arthroscopic corrective FAI surgery and was present in all cases in this current series.

Poster No. P465

The Prevalence of Pincer-type Morphologies in Symptomatic Femoroacetabular Impingement

Jeffrey Nepple, MD, Saint Louis, MO

Ira Zaltz, MD, Royal Oak, MI

Young Jo Kim, MD, PhD, Boston, MA

Michael B. Millis, MD, Boston, MA

Daniel J. Sucato, MD, MS, Dallas, TX

David A. Podeszwa, MD, Dallas, TX

John M. Martell, MD, Chicago, IL

John C. Clohisy, MD, Saint Louis, MO

Recognition of the subtype of pincer-type morphology is important for appropriate operative treatment.

Trauma**Poster No. P466**

Split-Thickness Skin Grafts for Residual Limb Coverage and Preservation of Amputation Length

Elizabeth Polfer, MD, Silver Spring, MD

Scott M. Tintle, MD, Oakton, VA

Jonathan A. Forsberg, MD, Silver Spring, MD

Benjamin K. Potter, MD, Bethesda, MD

Split thickness skin grafts for closure of amputations results in significantly increased reoperation rates, but is ultimately successful in salvaging residual limb length and amputation levels.

Poster No. P467

◆ Development and Evaluation of a Biofilm-Dispersive Scaffold

Chad A. Krueger, MD, San Antonio, TX

Carlos J. Sanchez Jr, PhD, JBSA Ft Sam Houston, TX

Edna M. Prieto, Nashville, TN

Desiree R. Romano, MS, JBSA Ft Sam Houston, TX

Katarzyna Zienkiewicz, Nashville, TN

Kevin Akers, MD, Fort Sam Houston, TX

Scott Guelcher, PhD, Nashville, TN

Joseph C. Wenke, PhD, San Antonio, TX

D-AAs have broad-spectrum activity, are not harmful to cells, their local delivery significantly reduces biofilm after bacterial contamination and work synergistically with antibiotics.

Poster No. P468

Retrograde Negative Pressure Reaming for Harvesting Autologous Bone Graft in the Treatment of Tibial Nonunions

Corey Rosenbaum, MD, Jacksonville, FL

Anthony Bell, MD, Jacksonville, FL

Anthony M. Harris, MD, Jacksonville, FL

Michael Suk, MD, Danville, PA

A retrograde technique may be preferred over an antegrade approach when obtaining autogenous bone graft for tibial nonunion treatment with advantages being a single incision, no hip pain, decreased blood loss, and shorter operative time.

Poster No. P469

Does Fracture Care Make Money for the Hospital? An Analysis of Revenue and Cost for Treatment of Common Fractures

Alternate Paper: Trauma VI: Social Responsibility

Conor P. Kleweno, MD, Seattle, WA

Robert V. O'Toole, MD, Baltimore, MD

Jeromie Ballreich, BA, MS, Baltimore, MD

Andrew N. Pollak, MD, Baltimore, MD

The purpose of this study was to determine the relative profitability to the hospital for a selection of common fractures in a state-regulated all payer reimbursement system.

Poster No. P470

Effectiveness of Vitamin D Therapy in Orthopaedic Trauma Patients

Brett D Crist, MD, Columbia, MO

Daniel S. Robertson, MD, Columbia, MO

Gregory J. Della Rocca, MD, PhD, Columbia, MO

David A. Volgas, MD, Columbia, MO

James P. Stannard, MD, Columbia, MO

Treatment of vitamin D deficiency or insufficiency did improve vitamin D-25HO levels but did not guarantee normal levels.

Poster No. P471

The Orthopaedic Trauma Association Classification for Open Fractures: Predicting Need for Amputation

Jason M. Mckean, MD, Denver, CO

Jiandong Hao, MD, PhD, Centennial, CO

Benoit Herbert, MD, Denver, CO

Hannah J. Gissel, BA, Denver, CO

Corey E. Henderson, MS, BS, BA, Denver, CO

Douglas Gibula, BS, Denver, CO

David J. Hak, MD, Denver, CO

Cyril Mauffrey, MD, MRCS, Denver, CO

The OTA classification of open fractures is able to predict limb amputation in adults.

Poster No. P472**Does Radiation Exposure Effect Vision and Eye Health?**

Andre R. Spiguel, MD, Gainesville, FL
Patricia Babb, Saint Louis, MO
Mark J. Jo, MD, Montrose, CA
Mary Migneco, OD, Saint Louis, MO
Christopher McAndrew, MD, Saint Louis, MO
Michael J. Gardner, MD, Saint Louis, MO
William M. Ricci, MD, St Louis, MO

This study suggests a correlation between a surgeon's radiation exposure and the development of eye problems. Efforts to minimize use of fluoroscopy and to protect the eyes are recommended.

Poster No. P473**Three Versus Four Screws: A Biomechanical Comparison of Vertical Femoral Neck Fracture Fixation**

Jason Rotstein, MD, Buffalo Grove, IL
Vijay B. Thangamani, MD, Hinsdale, IL
Robert J. Wetzell, MD, Chicago, IL
Paul Switaj, MD, Chicago, IL
Brian M. Weatherford, MD, Columbia, MD
Li-Qun Zhang, PhD, Chicago, IL
Bradley R. Merk, MD, Chicago, IL

In OTA 31-B2.3 vertical femoral neck fractures treated with screw fixation, a fourth screw placed in lag fashion perpendicular to the fracture does not confer a significant biomechanical advantage.

Poster No. P474**Outcomes of the Patients with Cultured Pathogens at the Time of Nonunion Surgery**

David P. Taormina, MS, New York, NY
James Lee, ME, New York, NY
Alejandro Marciano, MD, New York, NY
Raj Karia, MPH, New York, NY
Kenneth A. Egol, MD, New York, NY

Positive OR culture at any point during the management of long bone nonunion was a prognostic indicator of impaired healing and poorer long term functional outcomes in this study.

Poster No. P475**Functional Knee Outcomes in Suprapatellar and Infrapatellar Tibial Nailing: Does Approach Matter?**

Alternate Paper: Trauma II: Knee/Tibia
Paul M. Courtney, MD, Philadelphia, PA
Anthony J. Boniello, BS, Katonah, NY
Derek J. Donegan, MD, Philadelphia, PA
Jaimo Ahn, MD, PhD, Philadelphia, PA
Samir Mehta, MD, Philadelphia, PA

There is no difference in functional knee scores between a suprapatellar approach and traditional infrapatellar nailing for diaphyseal tibia fractures.

Poster No. P476**Box-Loop Ligament Reconstruction of the Elbow for Medial and Lateral Instability**

Patrick R. Finkbone, MD, Rochester, MN
Shawn W. O'Driscoll, MD, Rochester, MN

This study describes an MCL and LCL reconstruction technique utilizing a "box-loop" design where the donor tendon is passed through the humerus and ulna and tied back to itself creating a loop.

Poster No. P477**Bone Defect at Upper Limb Level Treated by Induced Membrane Technique Prospective Multicenter Evaluation****Alternate Paper: Trauma V: Upper Extremity**

Laurent Obert, MD

Using induced membrane technique is possible in emergency or in septic condition where bone defect can not be solved by shortening.

Poster No. P478**Tip-apex Distance (TAD): Comparing Dynamic Hip Screw (DHS) and Nail Fixation in Extracapsular Hip Fractures**

Gunasekaran Kumar, Liverpool, United Kingdom
Veenesh Selvaratnam, MBChB, MRCS, Liverpool, United Kingdom
Sieh Kiew, Liverpool, United Kingdom

TAD in DHS depends on fracture reduction. In nail fixation TAD not only depends on fracture reduction but also depends on entry point in the greater trochanter.

Poster No. P479**One Visit, One Brace: Patient and Parent Satisfaction After Treatment for Pediatric Distal Radius Buckle Fractures**

Megan H. Kuba, MD, Honolulu, HI
Krister P. Freese, MD, Honolulu, HI
Byron H. Izuka, MD, Aiea, HI

Treatment of distal radius buckle fractures using a removable brace and no further clinical or radiographic follow-up is safe and effective and results in high patient and parent satisfaction.

Poster No. P480**Combat-Related Amputees: Severely Injured, Disabled and Unable to Return to Duty**

Richard K. Hurley JR, MD, Fort Sam Houston, TX
Joseph C. Wenke, PhD, San Antonio, TX
Chad A. Krueger, MD, San Antonio, TX

Combat-related amputees are severely injured, disabled and unable to return to duty.

Trauma**Poster No. P481****Controlled-Release Antimicrobial Coatings Prevent Hardware Infection**

Katherine M. Bedigrew, MD, Fort Sam Houston, TX
Stefanie Shiels, PhD, Fort Sam Houston, TX
Carlos J. Sanchez Jr, PhD, JBSA Ft Sam Houston, TX
Christopher Loose, PhD, Cambridge, MA
Hao Wang, PhD, Cambridge, MA
Mark Stachowski, PhD, Cambridge, MA
Joseph C. Wenke, PhD, San Antonio, TX

Metal implant-related infections are reduced using a sustained-release, broad-spectrum antimicrobial coating on titanium implants in both an in vitro and in vivo rat implant-related infection model.

Poster No. P482**◆ Bone Morphogenetic Protein: Is it Only Pixie Dust? A Meta-Analysis.**

Sarah M. Yannascoli, MD, Philadelphia, PA
Mara L. Schenker, MD, Philadelphia, PA
Derek J. Donegan, MD, Philadelphia, PA
Keith D. Baldwin, MD, Sicklerville, NJ
Jaimo Ahn, MD, PhD, Philadelphia, PA
Samir Mehta, MD, Philadelphia, PA

BMP was not found to improve union rate or healing times in acute fractures, but was found to have higher union rates for the FDA-approved nonunion indication.

Poster No. P483**Anterior Femoral Curvature: Its Relation to Age and Bone Health**

Leo Carroll, Vancouver, BC, Canada
Kevin F. Deasy, BS, Ballincollig, Ireland
Eoin O'Malley, BS, Cork, Ireland
Michael O'Keeffe, Cork, Ireland
James A. Harty, MD, Cork, Ireland

The curvature of 626 femurs (313 patients) was measured from standardized CT images, and the relation of femoral curvature to age, gender, bone density, and cortical thickness was evaluated.

Poster No. P484**Excellent Results with Treatment of Tibia Fractures Using Far Cortical Locking (FCL) Implants**

Christopher D. Rice, MD, Madison, WI
Thomas Christensen, MD, Reno, NV
Michael Bottlang, PhD, Portland, OR
Daniel C. Fitzpatrick, MD, Eugene, OR
Erik Kubiak, MD, Salt Lake City, UT

Excellent Results with Treatment of Bicondylar Tibia Plateau (41C) Fractures using Far Cortical Locking (FCL) Implants.

Poster No. P485**Predictors of Residential Drift Following Treatment for Fracture Neck of Femur**

Shashi K. Nanjayan, MBBS, MRCS, DERBY, United Kingdom
Joby John, FRCS Orth, Nottingham, United Kingdom
Girish N. Swamy, MBBS, Derby, United Kingdom
Konstantinos Mitsiou, MBBS, Derby, United Kingdom
Amol Tambe, FRCS, MS, Derby, United Kingdom
Tarek Abuzakuk, FRCS (Ortho), Dubai, United Arab Emirates

We discuss the key predictors of residential drift following treatment after fracture neck of femur.

Poster No. P486**Frequency and Treatment Trends for Periprosthetic Fractures About Total Knee Arthroplasty in the United States**

Brent Roster, MD, Beaverton, OR
Amer J. Mirza, MD, Portland, OR
Matthew Dehart, BS, Portland, OR

Hospital admissions related to periprosthetic fractures about a total knee arthroplasty were identified and examined using the Nationwide Inpatient Sample database for the years 2006-2010.

Poster No. P487**Operative versus Non-operative Treatment of Femoral Fractures in Spinal Cord Injury Patients**

Julius A. Bishop, MD, Palo Alto, CA
Paola Suarez, MPH, Menlo Park, CA
Lisa Diponio, MD, Ann Arbor, MI
Doug Ota, MD, Palo Alto, CA
Catherine Curtin, MD, Palo Alto, CA

This study did not find increased rates of morbidity or mortality amongst SCI patients treated surgically for femur fractures.

Poster No. P488**Increased MRSA Infections in Open Fractures Compared to Closed Fractures**

Antonia Chen, MD, MBA, Philadelphia, PA
Nadeem R. Kolia, Pittsburgh, PA
Verena M. Schreiber, MD, Pittsburgh, PA
Wesley WA, RN, Pittsburgh, PA
Brian Mosier, MD, Pittsburgh, PA
Courtney Saltarski, MPH, Pittsburgh, PA
Nalini Rao, MD, Pittsburgh, PA
Gregory T. Altman, MD, Pittsburgh, PA
Andrew R. Evans, MD, Pittsburgh, PA

There is a greater number of MRSA infections in open fractures versus closed fractures.

Poster No. P489**Post-Operative Opioid Administration Inhibits Bone Healing in an Animal Model**

Jesse Chrastil, MD, Salt Lake City, UT
Christopher Sampson, BS, Salt Lake City, UT
Kevin B. Jones, MD, Salt Lake City, UT
Thomas F. Higgins, MD, Salt Lake City, UT

This animal fracture model demonstrates opioids (the current gold standard in postoperative analgesia) inhibit callus strength and decrease callus maturation and remodeling at 8 weeks postoperatively.

Poster No. P490**A Prognostic Model to Predict Successful Limb Salvage in Open Calcaneus Fractures**

Adam Bevevino, MD, Washington, DC
Jonathan F. Dickens, MD, West Point, NY
Theodora C. Dworak, MD, Bethesda, MD
Wade T. Gordon, MD, Bethesda, MD
Benjamin K. Potter, MD, Bethesda, MD
Jonathan A. Forsberg, MD, Silver Spring, MD

Predicting successful salvage of open calcaneus fractures is difficult. This report demonstrates a clinical useful artificial neural network able to accurately anticipate amputation or salvage.

Poster No. P491**Total Hip Arthroplasty for Fracture Results in Increased Bone Loss and a Higher Incidence of Periprosthetic Fracture**

Tobias Mann, MD, MSc, Rochester, NY
Max Gordon, MD, Stockholm, Sweden
Olle Muren, MD, Stockholm, Sweden
Olof Skoldenberg, MD, Stockholm, Sweden

Total hip arthroplasty for hip fracture is associated with increased bone loss and a higher incidence of late-occurring periprosthetic fractures, compared with elective arthroplasty.

Poster No. P492**When Do Distal Radius Fractures Most Likely Displace: Long-term Follow Up of Closed Reduction and Casting**

Andrew Jawa, MD, Cambridge, MA
Joey LaMartina II, MD, Boston, MA
Paul Tornetta III, MD, Boston, MA

Using regression analysis of a large dataset of radiographic measurements, we found the majority of displacement in distal radius fractures occurs in the first 6 weeks, but continues for up to 1 year.

Poster No. P493**Femoral Head Osteonecrosis Following Anatomic Stable Fixation of Femoral Neck Fractures: An in-vivo MRI Study****Alternate Paper: Trauma III: Femur/Hip**

Lionel E. Lazaro, MD, New York, NY
Jonathan Dyke, PhD, New York, NY
Nadja A. Farshad-Amacker, MD, New York, NY
Jacqueline F. Birnbaum, BA, Basking Ridge, NJ
David L. Helfet, MD, New York, NY
Hollis Potter, MD, New York, NY
Dean G. Lorch, MD, New York, NY

Despite high incidence of ON on MRI, excellent radiographic and functional outcomes were obtained by maintaining anatomical reduction with a length- and angle-stable construct.

Poster No. P494**Assisted Self-reduction Versus Traction-counter Traction in Management of Anterior Shoulder Dislocation**

Francesco Turturro, MD, Rome, Italy
Antonello MTro, MD, Rome, Italy
Cosma Calderaro, Rome, Italy
Luca Labianca, MD, Rome, Italy
Vincenzo Di Sanzo, MD, PhD, Rome, Italy
Alessandro Carducci, Rome, Italy
Pierpaolo Rota, Rome, Italy
Andrea Ferretti, MD, Rome, Italy

Traction and intravenous sedation or anaesthesia can be avoided in the treatment of anterior shoulder dislocation using the assisted self-reduction method.

Poster No. P495**Can All Tibial Shaft Fractures Weight Bear Following Intramedullary Nailing? A Randomized Clinical Trial**

Steven C. Gross, MD, Charlotte, NC
David P. Taormina, MS, New York, NY
David Galos, MD, New York, NY
Kenneth A. Egol, MD, New York, NY
Nirmal C. Tejwani, MD, New York, NY

This prospective randomized study was designed to examine the potential benefits or risks associated with postoperative weight-bearing versus non-weight-bearing.

Poster No. P496**Antibiotics Within an Hour Dramatically Decrease Infection of Type III Tibia Fractures**

William D. Lack, MD, Chicago, IL
Madhav A. Karunakar, MD, Charlotte, NC
Marc Angerame, MD, Charlotte, NC
Rachel Seymour, PhD, Charlotte, NC
Stephen H. Sims, MD, Charlotte, NC
James F. Kellam, MD, Charlotte, NC
CAPT (ret) Michael J. Bosse, MD, Charlotte, NC

Early antibiotics dramatically decrease the infection rate for type III tibia fractures, with the results supporting an evidenced based timeframe of one hour for antibiotics following open fracture.

Poster No. P497**Any Cortical Bridging Predicts Healing of Distal Femur Fractures**

William D. Lack, MD, Chicago, IL
CAPT (ret) Michael J. Bosse, MD, Charlotte, NC
Rachel Seymour, PhD, Charlotte, NC
Stephen H. Sims, MD, Charlotte, NC
Madhav A. Karunakar, MD, Charlotte, NC
James F. Kellam, MD, Charlotte, NC

Distal femur fractures are associated with a significant rate of nonunion. Assessment for any cortical bridging at four months accurately and reliably predicts the final healing outcome.

Trauma**Poster No. P498****Minimally Invasive Plate Osteosynthesis and Intramedullary Nailing in the Proximal and Distal Tibia Fractures***Sung-Wook Choi, Jeju, Republic of Korea**Myung Ku Kim, Incheon, Republic of Korea**Joon S. Kang, MD, Incheon, Republic of Korea**Kwang Woo Nam, MD, Jeju, Republic of Korea**Yong-Geun Park, MD, Jeju, Republic of Korea*

Conventional IM nailing with only interlocking technique showed higher incidence of malalignment and deformity than MIPO for the treatment of the proximal or distal third fracture of the tibial shaft.

Poster No. P499**Radial Head and Neck Fractures: Nonsurgical Treatment of Mason II Type Fractures***Matteo Guzzini, MD, Rome, Italy**Antonio Vadala, MD, Rome, Italy**Alessandro Maria Agrò, MD, Rome, Italy**Carolina Civitenga, MD, Rome, Italy**Cristina Dominedò, Rome, Italy**Andrea Ferretti, MD, Rome, Italy*

Nonsurgical treatment of isolated Mason type II fractures can provide a good or excellent mid-term functional outcome when there is no block to elbow motion at first examination after injury.

Poster No. P500**Intramedullary Nailing of Tibial Shaft Fractures: Size Matters***Derek J. Donegan, MD, Philadelphia, PA**Sheriff D. Akinleye, Queens Village, NY**Keith D. Baldwin, MD, Sicklerville, NJ**Samir Mehta, MD, Philadelphia, PA*

Achieving union consistently after intramedullary nailing of tibia fractures continues to be problematic. Intramedullary nailing allows for healing through a biologically sensitive relative stability.

Poster No. P501**Pediatric Talar Fractures***Christiane G. Kruppa, Bochum, Germany**Tyler Snoop, MD, Kalamazoo, MI**Debra Sietsema, PhD, Byron Center, MI**Clifford B. Jones, MD, FACS, Grand Rapids, MI*

Although potential remodeling of the foot is present, severe long term complications occur following talar fractures and may require joint arthrodesis even in pediatric populations.

Poster No. P502**Perfusion Assessment after Pediatric Supracondylar Humerus Fracture with Near Infrared Spectroscopy***Brian Scannell, MD, Charlotte, NC**James B. Jackson, MD, Salt Lake City, UT**Rachel Seymour, PhD, Charlotte, NC**Brian K. Brighton, MD, Charlotte, NC**Steven L. Frick, MD, Orlando, FL*

Near infrared spectroscopy compared perfusion after supracondylar humerus fracture in forearm muscle compartments of injured/uninjured arms. Increased perfusion was seen in the injured extremities.

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

Poster No. P503**Re-reduction for Re-displacement of Both Bone Forearm Shaft Fractures in Children***Shital N. Parikh, MD, Cincinnati, OH**Viral V. Jain, MD, MBBS, MS, Cincinnati, OH**Emily A. Eismann, MS, Cincinnati, OH*

Re-reduction of forearm shaft fractures in children is an effective and safe option to surgical stabilization after failure of initial closed reduction.

Poster No. P504**Are 2.7 mm Recon Plates Stable Enough for Anteroinferior Plating of Displaced Midshaft Clavicle Fractures?***Martin Hoffmann, MD, Bochum, Germany**Alex Gilde, BS, Grand Rapids, MI**Clifford B. Jones, MD, FACS, Grand Rapids, MI**Debra Sietsema, PhD, Byron Center, MI*

Nonunion and hardware failure rates are low when following modern surgical techniques with longer plates.

Poster No. P505**Management of Acute Achilles Tendon Rupture: A Meta Analysis of Outcomes***Chinyelu Menakaya, MBBS, MRCS, Yorkshire, United Kingdom**Rishi Malhotra, MBBS, Leeds, Yorkshire, United Kingdom**Muhammad Ali Shah, MBBS, High Wycombe, United Kingdom**Helen Ingoe, Northumberland, United Kingdom**Timothy Boddice, MBBS, MSc, Hull, United Kingdom**J. Martin Bland, Heslington, United Kingdom**Amr Mohsen, FRCS, MSc, Hull, United Kingdom*

There is no statistically significant difference between operative and non-operative repair of ATR at 6, 12 and 24 months. At 3 months better function was noted with operative repair.

Poster No. P506**Determination of Sagittal Alignment Measurements in Distal Femurs***Martin Hoffmann, MD, Bochum, Germany**Clifford B. Jones, MD, FACS, Grand Rapids, MI**Debra Sietsema, PhD, Byron Center, MI*

Two different methods of measuring sagittal alignment of the femoral condyles were confirmed utilizing plain radiographic images when Blumensaat's line is obscured.

Poster No. P507**Can Initial Laboratory Data be Predictive of Surgical Debridements for Acute Septic Arthritis?***Joshua Hunter, MD, Rochester, NY**Jonathan M. Gross, MD, Rochester, NY**Simon L. Amsdell, MD, Rochester, NY**John T. Gorczyca, MD, Rochester, NY*

Acute septic arthritis in a native joint may require multiple surgeries for treatment. Initial laboratory data may be predictive of patients who will fail a single surgical debridement.

Poster No. P508

Has the Optimal Starting Point for Retrograde Nailing Changed with Current Retrograde Femoral Nail Design?

Benjamin Service, MD, Orlando, FL
Nathan Turnbull, MD, Orlando, FL
William Kang, MD, New Orleans, LA
Joshua Langford, MD, Orlando, FL
George J. Haidukewych, MD, Orlando, FL
Kenneth J. Koval, MD, Belle Isle, FL

This study measured the optimal starting point in relation to the Blumensaat line for current-design retrograde nails and examined the necessary distal nail bend needed for a posterior starting point.

Poster No. P509

Cemented vs. Cementless Hip Hemiarthroplasties with Well-Designed Stems: A Case Control Matched Study

George A. Grammatopoulos, MRCS, Oxford, United Kingdom
Hannah A. Wilson, MA, Reading, United Kingdom
Benjamin J. Kendrick, MBBS, FRCS
Claire Pulford, MBBS, Oxford, United Kingdom
Janet Lippett, Reading, United Kingdom
Mark Deakin, Freeland, Oxfordshire, United Kingdom
Antonio J. Andrade, MBBS, MSc, Berkshire, United Kingdom
Gregoris Kambouroglou, MD, London, United Kingdom

Comparable results post hip hemiarthroplasties are seen between cemented and uncemented stems of proven design.

Poster No. P510

Minimally Invasive Stabilization of Upper Limb Pathological Fractures with an Intramedullary Polymer

Dietmar Pennig, MD, Koln, Germany
Steffen Heck, MD, Cologne, Germany
Sascha Gick, MD, Cologne, Germany

Minimally invasive treatment of pathological fractures using an intramedullary polymer implant is suitable to manage pathological fractures affecting one/more sections of long bones in the upper limb.

Poster No. P511

Radiation Exposure from C-arm Fluoroscopy during Orthopaedic Trauma Operations

Rita Baumgartner, BS, San Francisco, CA
Omar Bakr, BS, San Francisco, CA
Nathan Singh, San Francisco, CA
Utku Kandemir, MD, San Francisco, CA
Meir Marmor, MD, San Francisco, CA
Saam Morshed, MD, San Francisco, CA

Radiation exposure to surgeons, operating room personnel, and patients during orthopaedic trauma operations on various fracture sites was measured using real-time dosimetry devices.

Poster No. P512

Osteosynthesis vs. Total Elbow Arthroplasty for the Treatment of Distal Humeral Fractures in Elderly Patients

Pierre Mansat, MD, PhD, Toulouse, France
Philippe Clavert, MD, PhD, Illkirch, France
Francois Sirveaux, PhD, Nancy, France
Laurent Obert, MD, Besancon, France
Jean-Louis Charissoux, MD, PhD, Limoges, France
Laurent Pidhorz, MD, Le Mans, France
Thierry Fabre, Bordeaux Cedex, France

Osteosynthesis remains the standard of treatment of distal humerus fractures AO-type C. Total elbow arthroplasty can be an alternative option in older patients, with fracture comminution.

Poster No. P513

Comparison of Screws with K-wires for Fixation of Pediatric Lateral Condyle Fractures

Shawn R. Gilbert, MD, Birmingham, AL
Ashley R. Estes, MD, Vestavia, AL
Ryne S. Schlitz, BS, Trussville, AL
Paul MacLennan, PhD, MPH, Birmingham, AL

Use of screw fixation for lateral condyle fractures was associated with faster time to union, no non-unions and fewer complications.

Poster No. P514

Opioid Use, Pain Intensity and Satisfaction with Pain Relief After Fracture Surgery

Arjan G. Bot, MD, Heerbugowaard, Netherlands
Stijn Bekkers, BS, Nijmegen, Netherlands
Paul M. Arnstein, PhD, RN, Boston, MA
R. M. Smith, MD, Boston, MA
David C. Ring, MD, Boston, MA

Patients that take more opioids report greater pain intensity and less satisfaction with pain relief. Greater self-efficacy was the best determinant of satisfaction with pain relief.

Poster No. P515

Mortality After Acetabular Fracture in the Elderly: A Multicenter Study of 451 Patients

Joshua L. Gary, MD, Houston, TX
Ebrahim Paryavi, MD, MPH, Baltimore, MD
Steven D. Gibbons, MD, Dallas, TX
Michael J. Weaver, MD, Boston, MA
Jordan Morgan, BS, Somerville, MA
Scott P. Ryan, MD, Boston, MA
Adam J. Starr, MD, Dallas, TX
Robert V. O'Toole, MD, Baltimore, MD

When adjusting for medical comorbidities, there are no differences in mortality between nonoperative, percutaneous, ORIF and acute total hip arthroplasty as treatment for geriatric acetabular fracture.

Poster No. P516

Far Cortical Locking Screws Show Promise in Clinical Setting

John D. Adams Jr, MD, Greenville, SC
Stephanie L. Tanner, MS, Greenville, SC
Kyle J. Jeray, MD, Greenville, SC

This clinical study demonstrates encouraging results in distal femur fractures treated with far cortical locking screws.

Trauma**Poster No. P517****Reliability of the Cortical Step Sign in Higher Energy Femur Fracture Patterns***John Amirault, MD, Winnipeg, MB, Canada*

Using fluoroscopic examination of femur fracture model rotational malreduction, the reliability of the cortical step sign in femur fractures lacking cortical continuity is demonstrated as poor.

Poster No. P518**Narcotic Use and Postoperative Doctor Shopping in the Orthopaedic Trauma Population***Brent J. Morris, MD, Nashville, TN**Justin Zumsteg, MD, Nashville, TN**Kristin Archer, PhD, Nashville, TN**Brian Cash, BS, Nashville, TN**Hassan R. Mir, MD, Nashville, TN*

There is a high prevalence of doctor shopping in the orthopaedic trauma patient population (20.8%). Doctor shopping leads to a longer duration of narcotic use and increased MED per day.

Poster No. P519**◆ Intra-articular Celecoxib-Loaded OPF Scaffolds Reduce Joint Contracture in a Rabbit Model of Arthrofibrosis***Diren Arsoy, MD, Rochester, MN**Mitsuyasu Iwasawa, MD, PhD, Tokyo, Japan**Kai-Nan An, PhD, Rochester, MN**Michael J. Yaszemski, MD, PhD, Rochester, MN**Scott P. Steinmann, MD, Rochester, MN**Joaquin Sanchez-Sotelo, MD, Rochester, MN**Bernard F. Morrey, MD, Fayetteville, TX*

Intra-articular delivery of Celecoxib via an OPF hydrogel scaffold reduced knee contracture in a rabbit model of arthrofibrosis.

Poster No. P520**Utility of Post-Operative Hip Radiographs in Patients Treated with Hip Hemiarthroplasty for Femoral Neck Fractures***Bryce T. Wolf, MD, El Prado, NM**Aron Chacko, Winchester, MA**Jordan Morgan, BS, Somerville, MA**Edward Rodriguez, MD, Medfield, MA**Paul T. Appleton, MD, Boston, MA*

Abnormal radiographs do not change treatment course in the presence of a normal history and examination in patients treated with hip hemiarthroplasty for low energy femoral neck fractures.

Poster No. P521**Outcomes of Operative Treatment of Unstable Ankle Fracture - Metallic vs. Biodegradable Implants***Jung Ho Noh, MD, PhD, Gangwon-Do, Republic of Korea**Young Hak Roh, MD, Incheon, Republic of Korea**Moo Kyung Oh, MD, Chuncheon, Republic of Korea**Jun Suk Lee, MD, Seoul, Republic of Korea*

The outcomes of biodegradable implants for ankle fracture were inferior to those of metallic implant.

Poster No. P522**Elution Profiles of Two Methods of Antibiotic Nail Preparations***Matthew Karek, MD, Royal Oak, MI**Rahul Vaidya, MD, Tecumseh, Canada**Nancy M. Jackson, Southfield, MI**Jeffrey Flynn, Southfield, MI**David C. Markel, MD, Southfield, MI*

A look at the antibiotic elution from antibiotic tibial nails and factors affecting it in two methods of preparations. We measured elution, curing temps, bacteriocidal activity, and porosity.

Poster No. P523**Radiographic Outcomes of Closed Femur Fractures Treated with the SIGN Nail in the Developing World***Sasha Carsen, MD, MBA, Brighton, MA**Sam S. Park, MD, Toronto, ON, Canada**David A. Simon, MD, Ottawa, ON, Canada**Robert J. Feibel, MD, Ottawa, ON, Canada*

Femur fractures treated with the SIGN Nail have incidence of malalignment equal to developed-world norms. Risks for malalignment include proximal and distal fractures, and delay from injury to surgery.

Poster No. P524**Thyroxin Level Control in Hypothyroid Patients and Ankle Fracture Healing****Alternate Paper: Trauma I: Ankle/Pilon***Waseem Jerjes, MD, PhD, West Yorkshire, United Kingdom**Hiang Boon Tan, MBBS, Leeds, United Kingdom**Peter Giannoudis, MD, FRCS, MBBS, Leeds, United Kingdom*

Hypothyroid patients with poor thyroxin level control sustaining ankle fractures are more likely to suffer from fracture healing problems including delayed union.

Poster No. P525**Cell Saver Use in Acetabular Surgery - Does Approach Matter?****Alternate Paper: Trauma IV: Pelvis/Acetabulum***Reza Firoozabadi, MD, Seattle, WA**Alan Swenson, MD, BS, Seattle, WA**Jonathan G. Eastman, MD, Sacramento, CA**Milton L. Routt Jr, MD, Houston, TX*

Anterior approach for acetabular ORIF have significantly increased blood loss compared to the posterior approach. Cell Saver utilization is increased in anterior approach cases.

Tumor/Metabolic Disease**Poster No. P526****Long-Term Outcomes of Intramedullary Vascularized Fibulas with Massive Bone Allograft***Matthew Houdek, MD, Rochester, MN**Eric R. Wagner, MD, Rochester, MN**Steven L. Moran, MD, Rochester, MN*

Massive allografts supplemented with free fibula flaps provide an excellent option for reconstruction of large bony defects in the lower extremity following limb salvage surgery.

Poster No. P527**Detection of MDM2 Amplification in Soft Tissue Sarcoma by Fluorescent in situ Hybridization**

Hiroaki Kimura, MD, PhD, Kanazawa, Japan
 Norio Yamamoto, MD, Kanazawa, Ishikawa, Japan
 Hideji Nishida, MD, Kanazawa City, Japan
 Akibiko Takeuchi, MD, Kanazawa, Japan
 Kentaro Igarashi, Kanazawa, Japan
 Shingo Shimozaki, MD, Kanazawa, Japan
 Takashi Kato, MD, Kanazawa, Japan
 Yu Aoki, Kanazawa, Japan
 Hiroyuki Tsuchiya, MD, Kanazawa, Japan

MDM2 gene amplification in soft tissue sarcomas was examined with Fluorescent in situ hybridization.

Poster No. P528**Expression of Transporter Protein-1 in Osteosarcoma**

Tadahiko Kubo, MD, PhD, Hiroshima, Japan
 Shoji Shimose, MD, PhD, Hiroshima, Japan
 Jun Fujimori, MD
 Mitsuo Ochi, MD, PhD, Hiroshima, Japan

Glucose transporter protein-1, one of the key factors in glucose metabolism, might be a new beneficial marker to assess tumor prognosis in osteosarcoma.

Poster No. P529**Radiation Dosimetry of Intraoperative 3D Imaging vs. CT for Radiofrequency Ablation of Osteoid Osteomas**

Sameer Naranje, MBBS, MS, Minneapolis, MN
 Edward Y. Cheng, MD, Minneapolis, MN
 E R. Ritenour, PhD, Minneapolis, MN

The use of intraoperative O arm™ imaging was associated with statistically significant less radiation exposure when compared to that of the radiology suite based CT technique with equal efficacy.

Poster No. P530**Unicameral Bone Cyst Treatment: Systematic Review and Meta-analysis**

Muayad Kadhim, MD, Philadelphia, PA
 Mibir Thacker, MD, Wilmington, DE
 Amjed Kadhim, MD, Wilmington, DE
 Laurens Holmes, PhD, DrPH, Wilmington, DE

Evidence in unicameral bone cyst treatment indicates that active treatment for UBC provided variable healing rates more favorable relative to conservative treatment.

Poster No. P531**Risk Factors for Acute Surgical Site Infections in Orthopaedic Oncology Patients****Alternate Paper: Tumor/Metabolic Disease II: Spine and Pelvic Tumors/Periprosthetic Issues**

Daniel M. Lerman, MD, Park City, UT
 Alan T. Blank, MD, MS, New York, NY
 Jessica I. Billig, BA, New York, NY
 Raj Karia, MPH, New York, NY
 Timothy Rapp, MD, New York, NY

We reviewed our orthopaedic oncology patients to determine risk factors for the development of an acute surgical site infection as defined by the CDC's diagnostic criteria.

Poster No. P532**IL-1 Receptor Type 1 Deficiency in Mice with Chronic Multifocal Osteomyelitis Reveals Targets for Osteolysis**

Jesse E. Otero, MD, Iowa City, IA
 Xinyu Bing, Iowa City, IA
 Alexander G. Bassuk, Iowa City, IA
 Douglas C. Fredericks, Coralville, IA
 Yousef Abu-Amer, MD, Saint Louis, MO
 Suzanne Cassel, Iowa City, IA
 Fayyaz S. Sutterwala, MD, PhD, Coralville, IA
 Polly Ferguson, MD, Iowa City, IA

Mice with chronic multifocal osteomyelitis possess a mutation in PSTPIP2 which engenders severe autoimmune skeletal destruction. IL-1 Receptor deletion abrogates the osteolytic phenotype.

Poster No. P533**The New Treatment of Osteosarcoma by Sustained-release Tearubicin Conjugated Endothelial Progenitor Cells**

Yohei Kawakami, MD, Hyogo, Japan
 Tomoyuki Matsumoto, MD., PhD, Kobe, Japan
 Ryosuke Kuroda, MD, Kobe, Japan

This new hybrid treatment of transplanting PLGA conjugated EPCs exert as biphasic antitumor potency, firstly vascular remodeling to reduce of hypoxia in tumors and secondly drug delivery system.

Poster No. P534**Does Immediately Following a Dirty Case with a Clean Case Predict Infection?**

Sean Baran, MD, Rochester, MN
 Rishikesan Ramaesh, Edinburgh, United Kingdom
 Kariline Bringe, MD, Seattle, WA
 Alexander Yong Shik Shin, MD, Rochester, MN
 Sanjeev Kakar, MD, Rochester, MN

Surgical site infection in cases with type I wounds performed immediately following cases with type IV wounds does not appear to be a result of direct cross-contamination.

Poster No. P535**Hyaluronan is a Useful Prognostic Marker and a Possible Therapeutic Target in Patients with MPNSTs**

Kunihiko Ikuta, Nagoya, Japan
 Naohisa Futamura, MD, Aichi, Japan
 Hiroshi Urakawa, Nagoya, Japan
 Eisuke Arai, Nagoya, Japan
 Eiji Kozawa, MD, Nagoya, Japan
 Shunsuke Hamada, Nagoya City, Japan
 Satoshi Tsukushi, MD, Nagoya, Japan
 Naoki Ishiguro, MD, Nagoya, Japan
 Yoshihiro Nishida, Nagoya, Japan

HA expression in MPNST tissues is useful to identify patients with poor survival. MU might be a promising agent for the treatment of MPNST.

Tumor/Metabolic Disease**Poster No. P536****Immunotherapy Based on Dendritic Cells for Patients with Malignant Bone and Soft Tissue Tumors**

Hideji Nishida, MD, Kanazawa City, Japan
 Norio Yamamoto, MD, Kanazawa, Ishikawa, Japan
 Akihiko Takeuchi, MD, Kanazawa, Japan
 Yoshikazu Tanzawa, PhD, Kanazawa, Japan
 Hiroaki Kimura, MD, PhD, Kanazawa, Japan
 Shinji Miwa, MD, Ishikawa, Japan
 Kentaro Igarashi, Kanazawa, Japan
 Kentaro Igarashi, Kanazawa, Japan
 Hiroyuki Tsuchiya, MD, Kanazawa, Japan

38 patients with malignant bone and soft tissue tumor were treated with immunotherapy based on dendritic cells (DCs). Although improvement of clinical efficacy requires further research, DC immunotherapy.

Poster No. P537**Post-operative Flap Complication of Soft Tissue Sarcoma Arising in Thigh and Pelvic Girdle**

Yoshihiro Nishida, Nagoya, Japan
 Satoshi Tsukushi, MD, Nagoya, Japan
 Hiroshi Urakawa, Nagoya, Japan
 Eiji Kozawa, MD, Nagoya, Japan
 Eisuke Arai, Nagoya, Japan
 Naohisa Futamura, MD, Aichi, Japan
 Naoki Ishiguro, MD, Nagoya, Japan

Among cases with soft tissue sarcomas arising in groin and pelvic girdle, post-operative wound complications are predicted for the cases with large tumor size and groin localization.

Poster No. P538**Establishing the Critical Steps in Open Biopsy: A Delphi Consensus Study**

Brian L. Seeto, MD, Toronto, ON, Canada
 Peter Ferguson, MD, Toronto, ON, Canada

Using Delphi methodology, a consensus of the critical steps required for an orthopaedic trainee to demonstrate competency in performing open biopsies of musculoskeletal tumours was established.

Poster No. P539**Prognostic Value of 18F-FDG PET (FDG PET) in Patients with Primary Soft Tissue Sarcomas (STS)**

Kosuke Matsuo, Yokohama, Japan
 Takayuki Kamiishi, Yokohama, Japan
 Kengo Harigane, MD, Yokohama, Japan
 Yusuke Kawabata, MD, Yokohama, Japan
 Takehiko Kawabata, MD, Kamakura, Japan
 Tomoyuki Saito, MD, Yokohama, Japan

Although CT navigation system has been widely used in the area of orthopaedic surgery.

Poster No. P540**Intramedullary Nailing of Femoral Diaphyseal Metastases: Is it Really Necessary to Protect the Femoral Neck?****Alternate Paper: Tumor/Metabolic Disease I: Sarcoma and Metastatic Disease**

Bryan S. Moon, MD, Houston, TX
 Patrick P. Lin, MD, Houston, TX
 Robert L. Satcher Jr, MD, Houston, TX
 Justin Bird, MD, Houston, TX
 Valerae O. Lewis, MD, Houston, TX

Our findings do not support the ubiquitous use of cephalomedullary implants in this patient population for the sole purpose of prophylactic femoral neck stabilization.

Poster No. P541**Should MRI for Tumors of the Musculoskeletal System Be Performed in a Sarcoma Designated Health Care Center?**

Krista Goulding, MD, Birmingham, United Kingdom
 Mark Pahuta, MD, Ottawa, ON, Canada
 Adnan Sheikh, Ottawa, ON, Canada
 Gina Di Primio, MD, Ottawa, ON, Canada
 Nicholas Kolanko, Ottawa, ON, Canada
 Marcos L. Sampaio, MD, Ottawa, ON, Canada
 Mark Schweitzer, Dix Hills, NY
 Joel M. Werier, MD, Ottawa, ON, Canada

A significant discordance (33%) in MRI interpretation exists between referring centres and sarcoma-designated units.

Poster No. P542**Does a Golf Ball Affect the Route to Diagnosis for Soft Tissue Tumors?**

Krista Goulding, MD, Birmingham, United Kingdom
 Robert J. Grimer, FRCS, Worcester, United Kingdom

The Golf Ball intervention showed a trend toward increased incidence of referrals for suspected soft tissue neoplasm, but showed no change in STS referrals, size or symptom duration.

Poster No. P543**Thromboembolism after Intramedullary Nailing for Metastatic Bone Lesions**

Brandon J. Shallop, BS, Philadelphia, PA
 Alexandria O. Starks, BA, Philadelphia, PA
 Alan H. Lee, MD, Brookline, MA
 Marco Ferrone, MD, Boston, MA
 John E. Ready, MD, Boston, MA
 Simon Greenbaum, BA, Bronx, NY
 David S. Geller, MD, New York, NY
 John A. Abraham, MD, Philadelphia, PA

The purpose is to define the risk of DVT in a series of intramedullary nails performed for metastatic lesions to long bones, and determine the optimal post operative anticoagulation protocol.

Poster No. P544**◆ Acridine Orange Therapy as a New Less-invasive Surgery for Recurrent or Aggressive Giant Cell Tumor of Bone**

Takao Matsubara, MD, *Tsu City, Japan*
 Katsuyuki Kusuzaki, MD, *Kyoto, Japan*
 Akibiko Matsumine, MD, PhD, *Tsu City, Japan*
 Kunihiko Asanuma, MD, *Tsu, Japan*
 Tomoki Nakamura, MD, PhD, *Tsu-City, Japan*
 Akibiro Sudo, Prof., *Tsu City, Mie, Japan*

Acridine Orange Therapy supported by photodynamic therapy, to aggressive or recurrence giant cell tumor of bone provided excellent limb function by preserving normal bones without local recurrence.

Poster No. P545**Compressive Endoprosthetic Osteointegration Fixation for Limb Salvage of the Extremity: Five-year Follow Up**

Michael Monument, MD, *Salt Lake City, UT*
 Nicholas Bernthal, MD, *Venice, CA*
 Austin Bowles, MS, *Pittsburgh, PA*
 Kevin B. Jones, MD, *Salt Lake City, UT*
 R. Lor Randall, MD, *Salt Lake City, UT*

Compressive Endoprosthetic Osteointegration Fixation: 5 year follow-up.

Guest Nation France**Poster No. P546****Subtalar Joint Damage Associated with Lengthening Calcaneal Osteotomy for Adult Flatfoot**

Eric Toullec, MD, *Bordeaux, France*
 François Bonnel, Prof, *Montpellier, France*
 Hervé Bouin, MD, *Bordeaux, France*
 Jean-Alain Colombier, MD, *Saint Jean, France*

Some anatomic shapes of the subtalar surfaces of the calcaneus are necessarily damaged in the Evans calcaneal lengthening osteotomy but without arthritic evolution in a short term follow up.

Poster No. P547**Are the Results of TKA for Isolated Patellofemoral Arthritis as Good as for Tibiofemoral Arthritis?**

Dominique Saragaglia, MD, *Claix, France*
 Roch Mader, MD, *Échirolles, France*

The results of TKA for isolated patellofemoral osteoarthritis are as good as those for medial femorotibial osteoarthritis. We did not find any particular morbidity related to the femoropatellar joint.

Poster No. P548**“En Bloc” Resection of Sacral Chordomas with Anterior and Posterior Approach; About 29 Cases**

Arnaud Dubory, *Le Kremlin-Bicêtre, France*
 Charles Court, MD, *Kremlin Bicetre, France*
 Gilles Missenard, MD, *Paris, France*
 Benoit Lambert, *Kremlin Bicetre, France*

Comparing our results with literature, “En bloc” resection by combined approach seems to be a relevant treatment for SC invading the high sacrum above S3.

Poster No. P549**Effect of Adiponectin on Chondrocyte Functions in Osteoarthritis**

Didier Mainard, *Nancy, France*
 Jean-Baptiste Gross, MD, *Nancy, France*
 David Moulin, PhD, *Vandoeuwre-les-Nancy, France*
 Arnaud Bianchi, *Vandoeuwre-Les Nancy, France*
 Pascale Pottie, PhD, *Vandoeuwre-les-Nancy, France*
 Jean-Yves Jouzeau, PharmD, PhD, *Vandoeuwre-les-Nancy, France*
 Nathalie Presle, PhD, *Vandoeuwre-les-Nancy, France*

The current findings indicate that obesity does not modulate the production of adiponectin in OA cartilage.

Poster No. P550**Dual-Mobility Cups in Primary Total Hip Arthroplasty: The French Experience**

Michel-Henri Fessy, MD, PhD, *Pierre Bénite, France*
 Anthony Viste, *Pierre Benite, France*
 Antoine Combes, MD, *Pierre-Benite, France*

The use of DM prevents the risk of recurrent and late dislocation. Survivorship correlates with reports of National Registers using conventional devices.

Poster No. P551**Closed Reduction with Traction for Developmental Dysplasia of the Hip in Children Aged Between One and Five Years**

Virginie Rampal, *Nice, France*
 Marc Sabourin, *Paris, France*
 Philippe Wicart, *Paris, France*

The accuracy of the reduction & associated low complication rate justify the use of the Petit-Morel technique as the treatment of choice for developmental dysplasia of the hip in patients age 1 to 5.

Poster No. P552**Evaluation of the Intervertebral Disc in Type A Thoracolumbar Fractures**

Hugues Pascal-Moussellard, *Paris, France*
 Guillaume Mercy, MD, *Paris, France*
 Philippe Loriaut, MD, *Paris, France*

Disc structural integrity is preserved in Magerl type A fractures and morphological changes correspond to a creeping of the discal tissue in the vertebral endplate depression.

Poster No. P553**A Rare Injury of the Elbow: The Coronoid Fracture**

Thierry Fabre, MD, *Bordeaux, France*
 Thierry C. Begue, MD, *Clamart, France*
 François Loubignac, *Toulon, France*

The treatment is mostly surgical with reduction and stable osteosynthesis who can allow early physicaltherapy for best functional result.

Guest Nation France**Poster No. P554****ISIS: An Easy Score to Predict Arthroscopic Bankart Repair Result; A Prospective Series with Minimum 3-year Follow Up**

Herve Thomazeau, MD, Rennes, France
Olivier Courage, MD, Le Havre, France
Johannes Barth, MD, Echirrolles, France
Pascal Boileau, MD, Nice, France
Christophe Charousset, Paris, France
Philippe Hardy, PhD, Boulogne, France
Geoffroy Nourissat, MD, Paris, France

Instability Severity Index Score helps to predict anterior arthroscopic Bankart results. In this series, pre-operative 2 points score is the safe level.

Poster No. P555**Computer Aided Orthopaedic Surgery**

Philippe Merloz, MD, Grenoble, France
Philippe Cinquin, La Tronche, France
Jean-yves Jenny, MD, Illkirch, France
Stéphane Lavallee, PhD, Saint Martin D'uriage, France
Alexandre Moreau-Gaudry, La Tronche Cedex, France
Dominique Saragaglia, MD, Claix, France
Eric Stindel, MD, Brest, France
Jocelyne Troccaz, PhD, La Tronche Cedex, France

ECCAMI is a collaborative platform bringing together clinicians, researchers and manufacturers. It is dedicated to improving and developing computer-assisted medical interventions.

ORS Posters**Poster No. P556****Bearing Wear in Large Head Metal-on-Metal Hip Prostheses is Associated with Taper Wear**

Florian Witt, Hamburg, Germany
Bart H. Bosker, Zwolle, Netherlands
Nicholas E. Bishop, Hamburg, Germany
Harmen B. Ettema, Zwolle, Netherlands
Cees CPM Verheyen, Zwolle, Netherlands
Michael M. Morlock, Hamburg, Germany

Severe corrosion of titanium taper junctions in large diameter THA is related to wear of the articulating surfaces.

Poster No. P557**Three-Dimensional In Vivo Tibiofemoral Skeletal Kinematics after Lateral or Medial Meniscectomy during Decline Walking**

Liyang Zheng, PhD, Pittsburgh, PA
Carey Robert, BS, Pittsburgh, PA
Harner D. Christopher, MD, Pittsburgh, PA
Scott Tashman, PhD, Pittsburgh, PA
Xudong Zhang, PhD, Pittsburgh, PA

This in vivo biomechanics study indicated that meniscectomy compromises tibiofemoral joint stability, while its specific functional manifestation could vary.

Poster No. P558**Normal and Misaligned Talonavicular Fusion Alters Cadaveric Foot Pressure and Kinematics**

Elizabeth P Wahl, BA, Seattle, WA
William R Ledoux, Ph.D, Seattle, WA
Eric C. Whittaker, MS, Seattle, WA
Brian K. Cook, Seattle, WA
Bruce J. Sangeorzan, MD, Seattle, WA

Talonavicular fusion does not reduce motion of the remaining triple joint complex, but normal and misaligned fusions shift plantar pressure.

Poster No. P559**Effect Of The Horizontal Extension Technique On The Cross-Sectional Area Of The Carpal Tunnel**

Shouta Kaneko, OTR, MSc, Eniwa, Japan
Sadako Tsubota, OTR, Eniwa, Japan
Takako Chikenji, OTR, PhD, Eniwa, Japan
Yoshikazu Ikemoto, MD, PhD, Eniwa, Japan
Yuki Saito, RPT, Eniwa, Japan
Yukihiro Osanami, OTR, Eniwa, Japan
Eiichi Uchiyama, MD, PhD, Eniwa, Japan

Horizontal extension technique (HET) changed carpal tunnel structure. Flexibility of the structure may be affected by HET.

Poster No. P560**Pharmacological Profile of the Photo-cross-linked Hyaluronate Gel (Gel-One)**

Keiji Yoshioka, Tokyo, Japan
Yousuke Yasuda, Tokyo, Japan
Tomochika Kisukeda, Tokyo, Japan
Risa Nodera, Tokyo, Japan
Yoshitaka Tanaka, PhD, Tokyo, Japan
Kenji Miyamoto, Tokyo, Japan

Single-dose intra-articular injection of Gel-200 exerted chondroprotective and anti-inflammatory effects, suggesting the multimodal function by Gel-One against symptomatic knee OA.

Poster No. P561**Lumbar Spine Intervertebral Centers of Rotation During Lifting Motion**

George Kontogiannis, BS, Pittsburgh, PA
Ameet Aiyangar, PhD, Pittsburgh, PA
William Anderst, MS, Pittsburgh, PA
Xudong Zhang, PhD, Pittsburgh, PA

This study provides the newest knowledge on lumbar spine segmental motion ICRs from in vivo functional data.

Poster No. P562

Neural Regeneration in Spinal Cord Injury using Combination of Photoreactive Gelatin and Fusion Protein of Hepatocyte Growth Factor

Kentaro Yamane, MD, Okayama, Japan
Tetsuro Mazaki, MD, Okayama, Japan
Aki Yoshida, Okayama, Japan
Yasuhiro Yoshida, DDS, PhD, Okayama, Japan
Mariko Nakamura, DDS, PhD, Okayama, Japan
Takashi Kitajima, PhD, Tokyo, Japan
Yoshihiro Ito, PhD, Tokyo, Japan
Akihiro Matsukawa, MD, PhD, Okayama, Japan
Toshifumi Ozaki, MD, PhD, Okayama, Japan

The combinational therapy of photoreactive gelatin and collagen-binding Hepatocyte growth factor showed therapeutic effects on mouse spinal cord transection model.

BOS Posters**Poster No. P563**

(LLRS) Late Amputation or Limb Salvage: Trading Disabilities for Similar Outcomes?

Jessica C. Rivera, MD, Fort Sam Houston, TX
Chad A. Krueger, MD, San Antonio, TX
Joseph R. Hsu, MD, Charlotte, NC
Joseph C. Wenke, PhD, San Antonio, TX

Disability and life time cost is higher for soldiers with amputation versus those with limb salvage.

Poster No. P564

AAHS Chondroitinase and Insulin-like Growth Factor Promote Nerve Regeneration after Limb Transplantation

Natalya Kostereva, MD, Pittsburgh, PA
Yong Wang, Pittsburgh, PA
Jignesh V. Unadkat, MD, Pittsburgh, PA
Rami R. Zanoun, MD, Pittsburgh, PA
Vijay Gorantla, MD, Pittsburgh, PA

Chondroitinase ABC and IGF1 augment nerve regeneration after limb transplantation.

Poster No. P565

Prospective Randomized Repair of the Pronator Quadratus Following Volar Plate Fixation of Distal Radius Fractures

Richard J. Tosti, MD, Philadelphia, PA
Asif M. Ilyas, MD, Wayne, PA

Prospective randomized evaluation of repair of the PQ following volar plate fixation of the distal radius yields no significant difference in range of motion, grip strength, or DASH and VAS scores.

Poster No. P566

Regional Block Anesthesia Improves Outcome in Patients Undergoing Proximal Humerus Fracture Repair

Kenneth Egol, MD, New York, NY
Jordanna Forman, BS, New York, NY
Crispin Ong, MD, Elmhurst, NY
Raj Karia, MPH, New York, NY
Andrew Rosenberg, New York, NY
Joseph Zuckerman, New York, NY

Recent literature has focused on the use of regional anesthesia for repair of traumatic fx. These studies demonstrated the benefits of the approach with respect to clinical and functional outcomes.

Allied Health Posters**Poster No. P567**

American Fracture Association

Geoffrey M. Miller, MD, El Segundo, CA
Diana D. Carr, MD, Sebring, FL
Judy L. Wright, MD, Bloomington, IL
Alfonso E. Pino, MD, Dublin, TX
Jose G. Ramon, MD, Belleville, IL

The American Fracture Association was founded in 1938 to improve fracture care. We are particularly interested in practical solutions for the difficult cases seen by community orthopedists.

Poster No. P568

National Association of Orthopaedic Technologists

Sean B. Conkle, OTC, Bethlehem, PA
Bruce Davis, Indianapolis, IN

Established in 1982, the National Association of Orthopaedic Technologists (NAOT) is dedicated to the continued educational development of orthopaedic allied health care professionals.

Poster No. P569

The Orthopaedic Physician's Assistant and Orthopaedic Assistants: Two Names, One Profession

Jason S. Mazza, MSc, OTC, Trinity, FL
Frank E. Greaves, OPA-C, OTC, Richmond, TX
Paul Trevino, OPA, Mc Allen, TX
Evilio Prendes, OPA-C, RMA, Hialeah, FL

ASOPA is an organization for physician extenders who specialize in orthopaedic board-certified surgery.

Nursing and Allied Health Program Continuing Education Nurses

A total of 32 contact hours are being offered through NAON; 4.0 contact hours for each NUR course and for the CAST1 and CAST2 courses. Each session is provider approved by the California Board of Registered Nursing, Provider Number CEP3432, for 4.00 contact hours for each NUR course and 8.00 contact hours each for the CAST1 and CAST2 courses. The National Association of Orthopaedic Nurses is accredited as a provider of continuing nursing education by the American Nurses' Credentialing Center's Commission on Accreditation

Orthopaedic Technologists

Applying to the National Board for Certification of Orthopaedic Technologists for approval of a total of 32 contact hours or 4 contact hours for each NUR session and 8 contact hours each for the CAST1 and CAST2 courses.

Physician Assistants

Applying to the American Academy of Physician Assistants (AAPA) for Category 1 CME credit from the AOA Council on Continuing Medical Education, Prescribed credit from the AAFP and AMA Category 1 CME credit for the PRA from organizations accredited by the ACCME. Total number of contact hours: 32.

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General

Certificates for sessions will be available online once a participant completes a session. A link to the evaluation will be distributed to participants via email following each session. Please be sure to give your correct e-mail address when registering for the courses. Once participants complete the evaluation, a contact hour certificate will be available to print. To receive any certificate other than nursing, please visit the registration counter in front of the session. For credit that may be acceptable to state medical associations, specialty societies or state boards of medical licensure, please contact those organizations. NAON, AAOS and NAOT make every effort to have the course approved for credit prior to the course dates. It is not always possible to obtain approval in advance of a program.

CAST1 – Casting and Splinting – Fundamentals

Tuesday, March 11, 2014

8:15 AM – 5:45 PM

Room R06

Course Co-Chairs:

Cynthia Henderson, OTC, CO

Continuing Education Committee Chair, National Association of Orthopaedic Technologists

Harpal S. Khanuja, MD, AAOS Allied Health Program Director

Overview

This course will feature presentations about innovations in immobilization, casting complication causes and solutions, and the casting procedure. Demonstration and return demonstration will include application and removal of a short arm cast, thumbspica cast, short leg cast, and a sugar tong splint.

Program

8:15 AM	Casting Complications Sean Conkle, OTC
8:45 AM	Demonstration: Short Arm Cast Cynthia Henderson, OTC, CO
9:05 AM	Demonstration: Thumb Spica Cast Nicole Williams, OTC, MBA
9:30 AM	Break
9:45 AM	Casting Demonstration/Return Demonstration: Short Arm and Thumb Spica: Casts Cynthia Henderson, OTC, CO Sean Conkle, OTC Nicole Williams, OTC, MBA Robyn Masseth, OTC Kristie Woolems, OTC
11:45 AM	Demonstration: Sugar Tong Splint Kristie Woolems, OTC
12:05 PM	Casting Demonstration/Return Demonstration: Sugar Tong Splint Cynthia Henderson, OTC, CO Sean Conkle, OTC Nicole Williams, OTC, MBA Robyn Masseth, OTC Kristie Woolems, OTC
12:30 PM	Lunch (lunch not provided)
1:30 PM	Demonstration: Short Leg Cast Robyn Masseth, OTC
2:15 PM	Casting Demonstration/Return Demonstration: Short Leg Cast Cynthia Henderson, OTC, CO Sean Conkle, OTC Nicole Williams, OTC, MBA Robyn Masseth, OTC Kristie Woolems, OTC
5:00 PM	History and Innovations in Immobilization Cynthia Henderson, OTC, CO
5:45 PM	Adjournment

CAST2 – Casting and Splinting – Advanced**Wednesday, March 12, 2014****8:15 AM – 5:45 PM****Room R06***Course Co-Chairs:**Cynthia Henderson, OTC, CO**Continuing Education Committee Chair, National Association of Orthopaedic Technologists**Harpal S. Khanuja, MD, AAOS Allied Health Program Director***Overview**

This course will feature presentations about necessary supplies and procedures for advanced casting. Demonstration and return demonstration will include Meunster, PTB, Pediatric Hip Spica, and Ponsetti Serial Casts.

Program

- 8:15 AM** **Demonstration: Muenster Cast**
Cynthia Henderson, OTC, CO
- 9:00 AM** **Demonstration: Patellar Tendon-bearing (PTB) Cast**
Sean Conkle, OTC
- 9:45 AM** **Break**
- 10:00 AM** **Casting Demonstration/Return Demonstration: Muenster and Patellar Tendon-bearing Casts**
Cynthia Henderson, OTC, CO
Sean Conkle, OTC
Nicole Williams, OTC, MBA
Robyn Masseth, OTC
Kristie Woolems, OTC
- 12:30 PM** **Lunch (lunch not provided)**
- 1:30 PM** **Demonstration: Pediatric Hip Spica Cast**
Nicole Williams, OTC, MBA
- 2:30 PM** **Casting Demonstration/Return Demonstration: Pediatric Hip Spica Cast**
Cynthia Henderson, OTC, CO
Sean Conkle, OTC
Nicole Williams, OTC, MBA
Robyn Masseth, OTC
Kristie Woolems, OTC
- 3:30 PM** **Break**
- 3:45 PM** **Demonstration: Ponseti Serial Casting**
Robyn Masseth, OTC
- 4:15 PM** **Hands-On Workshop**
Cynthia Henderson, OTC, CO
Sean Conkle, OTC
Nicole Williams, OTC, MBA
Robyn Masseth, OTC
Kristie Woolems, OTC
- 5:45 PM** **Adjournment**

NUR1 – Non-surgical Approaches to Orthopaedic Conditions / Unusual Orthopaedic Conditions I**Thursday, March 13, 2014****7:30 AM – 12:00 PM****Room R03***Course Co-Chairs:**Lynn D. Burkett, RN, BSN, MBA, ONC**Gary C. Canner, MD***Overview**

Some orthopaedic conditions call for conservative management prior to surgical consideration. Others may justify treatment by non-surgical methods and surgery, or by non-surgical methods alone. In addition, there are some conditions that are unusual or rarely noted in the orthopaedic specialty. This session will focus on some of the current nonsurgical approaches and unusual conditions that require special attention for orthopaedic patients.

Program

- 7:30 AM** **Welcome**
Jan Foecke, MS, RN, ONC
NAON Director of Programs
NAON Administrator, Approver and Provider Units
Harpal S. Khanuja, MD
AAOS Allied Health Program Director
Pam Cupec, MS, RN, ONC, CRRN, ACM
2013-2014 NAON President
- Introductions**
Lynn D. Burkett, RN, BSN, MBA, ONC
Gary C. Canner, MD
- 7:45 AM** **The Cause and Prevention of Spinal Fractures in an Indy Car**
Terry Trammel, MD
- 8:30 AM** **Do Obesity and Racial, Ethnic and Gender Disparities Impact Arthritis?**
Mary O'Connor, MD
Marj Kulesa, BSN, RN, ONC
- 9:30 AM** **Break**
- 9:45 AM** **Fracture Liaison Service (FLS)**
Debra L. Sietsema, PhD, RN
- 10:15 AM** **Prevention of Infections in the Operating Room**
Jeffrey Anglen, MD
- 10:45 AM** **Implementation of a Nurse-initiated Hypotensive Protocol**
Karen Moran, RN, BSN
Ann Phillips, RN, BSN, PCCN
- 11:15 AM** **Benign Bone Tumors**
Patti Piasecki, MS, RN, ONC
- 12:00 PM** **Adjournment**

**NUR2 – Unusual Orthopaedic Conditions II /
Pharmacology Related to Orthopaedics****Thursday, March 13, 2014****1:30 PM – 6:00 PM****Room R03***Course Co-Chairs:**Nadine Trznadel, MSN, RN, CNS, ONC**Thomas Gleason, MD***Overview**

There are some conditions that are unusual or rarely noted in the orthopaedic specialty. In addition, Pharmacology is often part of the treatment plan for patients with orthopaedic conditions and medical co-morbidities. This session will address healthcare reform, fragility hip fractures, and vertebral fractures along with the benefits and risks of analgesics, anticoagulants, bisphosphonates, and other medications used in the adult orthopaedic patient.

Program

1:30 PM	Welcome Jan Foecke, MS, RN, ONC <i>NAON Director of Programs</i> <i>NAON Administrator, Approver and Provider Units</i> Harpal S. Khanuja, MD <i>AAOS Allied Health Program Director</i> Pam Cupec, MS, RN, ONC, CRRN, ACM <i>2013-2014 NAON President</i>
	Introductions Nadine Trznadel, MSN, RN, CNS, ONC Thomas Gleason, MD
1:45 PM	Orthopaedic Team Practice and Healthcare Reform Patricia Marriott, PA-C, MPAS, DPAAPA
2:15 PM	Fast Track Care of the Patient with Fragility Hip Fracture: The Swedish Model Ami Hommel, PhD, CNS, RN KG Thorngren, MD
3:15 PM	Osteoporotic Vertebral Compression Fractures Thomas Gleason, MD
3:45 PM	Break
4:00 PM	Current Deep Vein Thrombosis (DVT) Prophylaxis in the Total Joint Arthroplasty Patient Wayne Goldstein, MD
4:30 PM	Improving Patients' Perception of Pain Management Michele Hughes, APN, RN, MSN, ONP-C Pauline B. Elliott, RN, ONC
5:00 PM	Bisphosphonate Risks: An Evidence-based Review Diane Kimpel, MS, APRN
5:30 PM	Perioperative Medication Management in the Adult Orthopaedic Surgical Patient Christine McMorrow, MSN, AGPCNP-BC, ONC Eric Greenberg Pharm.D., CGP, BCPS
6:00 PM	Adjournment

NUR3 – Surgical Approaches to Orthopaedic Conditions I**Friday, March 14, 2014****7:30 AM – 12:00 PM****Room R03***Course Co-Chairs:**Nadine Trznadel, MSN, RN, CNS, ONC**Steven Mardjetko, MD, FAAP***Overview**

Surgery is an important management option for many orthopaedic conditions. A variety of procedures will be addressed, including those for sports injuries, pediatric spinal deformities, foot and ankle conditions, limb length discrepancies, hip fractures, infected total knee arthroplasty, and metal-on-metal hip arthroplasty.

Program

7:30 AM	Welcome Jan Foecke, MS, RN, ONC <i>NAON Director of Programs</i> <i>NAON Administrator, Approver and Provider Units</i> Harpal S. Khanuja, MD <i>AAOS Allied Health Program Director</i> Pam Cupec, MS, RN, ONC, CRRN, ACM <i>2013-2014 NAON President</i>
	Introductions Nadine Trznadel, MSN, RN, CNS, ONC Steven Mardjetko, MD
7:45 AM	Replantation Surgery in the Upper Extremity Leon Benson, MD
8:15 AM	Pediatric Spinal Deformities Steven Mardjetko, MD, FAAP
8:45 AM	Foot and Ankle Surgeries Armen Kelikian, MD
9:15 AM	Limb Lengthening in 2014: Look Ma, No Fixator! John Herzenberg, MD
9:45 AM	Break
10:00 AM	Hip Fractures: Surgeon's Perspectives Steven Smith, MD
10:30 AM	Infected Total Knee Arthroplasty – Trends and Advances Janine Bodden, MSN, NP-C, RN, ONC, RNFA Michael Kelly, MD Yair Kissin, MD
11:15 AM	Metal-on-Metal Total Hip Arthroplasty Jill Branson, RN, BSN Alexander Gordon, MD
12:00 PM	Adjournment

♦ The FDA has not cleared the drug and/or medical device for the use described in this presentation (i.e. the drug or medical device is being discussed for an off label use). For full information refer to page 15.

NUR4 – Surgical Approaches to Orthopaedic Conditions II**Friday, March 14, 2014****1:30 PM – 6:00 PM****Room R03***Course Co-Chairs:**Lynn D. Burkett, RN, BSN, MBA, ONC**Gary C. Canner, MD***Overview**

Surgery is an important management option for many orthopaedic conditions. A variety of procedures will be addressed, including those for hip conditions, injuries requiring replantation, shoulder conditions, pediatric cervical spine issues, anterior cruciate ligament tears, and sports injuries in adolescents.

Program

- 1:30 PM** **Welcome**
 Jan Foecke, MS, RN, ONC
NAON Director of Programs
NAON Administrator, Approver and
Provider Units
 Harpal S. Khanuja, MD
AAOS Allied Health Program Director
 Pam Cupec, MS, RN, ONC, CRRN, ACM
2013-2014 NAON President
- 1:45 PM** **Anterior Total Hip Arthroplasty**
 Mickey Haryanto, RN-BC, ONC, MBA
 Kevin Mitts, MD
- 2:30 PM** **Being a Team Physician: Treatment of Emergent Sports Medicine Injuries**
 Bashir Zikria, MD
- 3:00 PM** **Recent Advances in Shoulder Reconstruction**
 Gary Canner, MD
- 3:30 PM** **Pediatric Cervical Spine Trauma**
 Anne Stuedemann, MSN, RN, CPNP
- 4:00 PM** **Break**
- 4:15 PM** **Anterior Cruciate Ligament (ACL) Tears in Sports**
 Steven Soffer, MD
- 4:45 PM** **Considerations in Surgical Treatment of Sarcoma**
 Ruth McGillion, RN, BSN, ONC
 Kim Rich, MS, RN-BC, GNP-BC, FNP-BC
- 5:30 PM** **Adolescent Sports Injuries**
 Brent Bankston, MD
- 6:00 PM** **Adjournment**

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AAOS 2014 Annual Meeting
Agenda
- Monday, March 10, 2014
- Tuesday, March 11, 2014
- Wednesday, March 12, 2014
- Thursday, March 13, 2014
- Friday, March 14, 2014

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Each participant in the Annual Meeting has been asked to disclose if he or she has received something of value from any pharmaceutical, biomaterial or orthopaedic device equipment company and/or supplier. The Academy has identified the options to disclose as follows:

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- AAOS Policy for a Fellow or Member Who Fails to Disclose Conflicts of Interest When Required
- AAOS Policy for a Fellow or Member Who Fails to Disclose Conflict of Interests Accurately and Completely

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The product code **ADVA** following an exhibit company listing indicates that the exhibitor is a member of the Advanced Medical Technology Association and subscribes to its Code of Ethics that govern member relationships with health care professionals, including orthopaedic surgeons. AdvaMed is the world's largest trade association representing manufacturers of medical devices, equipment, diagnostic products and health information systems. AdvaMed members produce nearly ninety percent of the health care technology purchased annually in the U.S. and more than fifty percent purchased annually around the world. AdvaMed is a leader in compliance. Its *Code of Ethics on Interactions with Health Care Professionals* provides ethical and legal standards that are critical to the medical device industry's ability to continue its collaboration with health care professionals. This Code of Ethics went into effect in January 2004. The AdvaMed Code of Ethics may be found at [www.aaos.org/IndustryRelationships](http://www5.aaos.org/industryrelationships/standards.cfm) or <http://www5.aaos.org/industryrelationships/standards.cfm>

The product code **PhRMA** following an exhibit company listing indicates that the exhibitor is a member of the Pharmaceutical Research and Manufacturers of America. PhRMA represents the country's leading research-based pharmaceutical and biotechnology companies. Its members develop and market new medicines to enable patients to live longer, healthier and more productive lives. The PhRMA *Code of Ethics on Interactions with Health Care Professionals* went into effect in July 2002. The PhRMA Code of Ethics may be found [www.aaos.org/IndustryRelationships](http://www5.aaos.org/industryrelationships/standards.cfm) or <http://www5.aaos.org/industryrelationships/standards.cfm>

PRODUCT LISTINGS

For your convenience, the technical exhibiting companies are listed alphabetically and the products/services they offer are identified by the following codes.

ADVA	AdvaMed Member
AM	Anatomical Model
AO	Allied Organizations
AS	Arthroscopic Systems
BLD	Blood Products
BNE	Bone Products
BB	Business to Business/OEM
CS	Casting Supplies & Equipment
COM	Computer Hardware/Software
DEV	Devices
DI	Diagnostic Equipment
EDU	Education – Patient and Physician
EMR	Electronic Medical Records
FPD	Facility Planning & Design
FIN	Financial Planning/Investments
FRST	First-Time Exhibitor
IMG	Image Guiding/Navigation Systems
I	Implants
MKT	Market Research Services
MS	Medical Supplies
MRI	MRI
O	Orthoses
OTH	Other
PH	Pharmaceuticals
PHRM	PhRMA Member
PR	Physician Recruitment
PM	Practice/Office Management
P	Prostheses
PUB	Publishers
REHB	Rehabilitation/Exercise Equipment
SF	Shoes & Foot Supplies
SG	Soft Goods (Supports)
SURG	Surgical Equipment
SI	Surgical Instruments
T	Tissue Products
XRAY	X-Ray

Electronic Skills Pavilion – Booth 4563

It is totally free, no ticket needed! Presentations that showcase current technology products and applications developed for the orthopaedic surgeon take place in the Electronic Skills Pavilion.

Wednesday, March 12

9:30 - 10:15 AM

Managing your Internet Reputation

Presenter: Christian Veillette, MD

The Internet has now become the biggest sounding board for your patients so reputation management needs to be an important part of the process to any successful orthopaedic practice. Find out what your patients learn about you when they search online and how you can control it.

Wednesday, March 12

10:15 - 11:30 AM

Social Media for the Orthopaedic Surgeon

Presenter: Christian Veillette, MD

Learn techniques to tap into the power of social media to discover needed services, improve customer service, gather feedback on treatment and gaining business intelligence.

Wednesday, March 12

11:30 AM - 12:15 PM

Killer Apps

Presenter: Ira H. Kirschenbaum, MD

Discuss the most current and timely apps. These are apps that will have a surgeon saying “I can’t live without this” or “This is absolutely necessary for my practice.”

Wednesday, March 12

1:30 - 2:15 PM

Filmless Radiography: PACS & the Totally Electronic Office

Presenter: A. Herbert Alexander, MD

Discuss components of filmless radiology (FR), the importance PACS, office design, conversion issues and importance of integrating the practice manager, EHR, and PACS.

Wednesday, March 12

2:30 - 3:15 PM

Implementation and Utilization of Voice-Recognition Software: A Study in Patience, Persistence and Payoff

Presenter: Michael A. Raub, MD

Participants will understand the cost and times associated with traditional transcription; and learn costs and techniques of implementation of voice recognition software.

Wednesday, March 12

3:30 - 4:15 PM

Four Apps That Will Change the Way You Practice

Presenter: John P. Andrawis, MD

Four mobile health apps that will improve the doctor-patient relationship, interaction with staff, education, and ultimately improve patient care and satisfaction.

Thursday, March 13

9:30 - 10:15 AM

Office Websites: How to Save Time and Money

Presenter: David L. Nelson, MD

Office websites should be integrated into your office workflow in a way to save you time and money. All patients should be directed there for new patient forms, directions to the office, and instructional material to make the office visit more productive for the patient and for you.

Thursday, March 13

10:30 - 11:15 AM

Defending Your Internet Reputation

Presenter: David L. Nelson, MD

You need to understand and control your Internet reputation. More patients than ever will research you online before they call for an appointment. Do you know what they are reading about you?

Thursday, March 13

11:30 AM - 12:15 PM

Educational iPad Apps for Orthopaedic Surgeons

Presenter: Orrin Franko, MD

Attend this live demonstration of apps for patient education (pre-operative counseling, physical therapy, disease education) and professional learning (free journals, textbook references, and current research).

Thursday, March 13

1:30 - 2:15 PM

Must-have Smartphone Apps for Orthopaedic Surgeons

Presenter: Orrin Franko, MD

Attend this live demonstration of the must-have apps for your practice for clinics, education, and productivity.

Thursday, March 13

2:30 - 3:15 PM

Innovations in Digital Media Presentation

Presenter: Andrew J. Pastor, MD

Learn how to enhance your academic lectures by using new and exciting presentation format known as Prezi.

Thursday, March 13

3:30 - 4:15 PM

Search Engine Marketing for Your Practice

Presenter: Christian Veillette, MD

Learn key search engine marketing techniques to make sure you are getting the most targeted traffic from your office website.

Friday, March 14 9:30 - 10:15 AM

Useful iPhone/iPad Apps in Your Practice and Life

Presenter: Scott F. M. Duncan, MD, MPH, MBA

A review of real life scenarios in how surgeons can utilize certain Apps on the iPhone and iPad in their professional and personal lives. Live demonstration of Epic EMR client, Dictamus and Dragon dictation options, Dr. Goniometer, FRAX, MedCalc Pro, AO surgery reference, PubMed App, Tripit, and more.

Friday, March 14 10:30 - 11:15 AM

Five Secrets to Getting New Patients with Your Website

Presenter: C. Noel Henley, MD

Is your website bringing in new patients each month? Can you honestly claim your website pays for itself every year? Five concrete ways your orthopaedic practice website can and should be bringing in new patients every month.

Friday, March 14 11:30 AM - 12:15 PM

On the Horizon: iPads and Smartphones to Enhance Your Practice

Presenter: Orrin Franko, MD

Learn about cutting edge technologies to enhance patient care, sync data between medical devices, and expand your “virtual” practice network.

Friday, March 14 1:30 - 2:15 PM

Movies Speak a Million Words - Take Your Movie from Camera to PowerPoint

Presenter: Randipsingh R. Bindra, MD

Live demonstration of the key steps of editing and encoding your captured video into a slick movie that can be inserted into a PowerPoint presentation.

Friday, March 14 2:30 - 3:15 PM

Maintaining Privacy: Navigating HIPAA in Medical Health App Implementation

Presenters: John P. Andrawis, MD and Michaela Bantilan

HIPAA basics to avoid unanticipated exposure of risk and liabilities when implementing medical health apps and smartphones into your practice.



Technical Exhibits

Ask an Expert Sessions – Booth 7143

TIME	TOPIC	EXPERTS	
Wednesday, March 12			
10:30 – 11:15 AM	HIP	Allan E. Gross, MD, FRCS	Prof. Leo A. Whiteside, MD
11:30 AM – 12:15 PM	SPINE	Todd J. Albert, MD	Sheeraz Qureshi, MD
1:30 – 2:15 PM	HAND & ELBOW	David L. Nelson, MD	David C. Ring, MD
2:30 – 3:15 PM	HIP & KNEE	Pierre J. Hoffmeyer, MD	Steven A. Stuchin, MD
3:30 – 4:15 PM	TRAUMA	Fernando de la Huerta, MD	Lawrence X. Webb, MD
Thursday, March 13			
9:30 – 10:15 AM	KNEE	Fares Haddad, MD, FRCS	Robert T. Trousdale, MD
10:30 – 11:15 AM	SHOULDER	Carl J. Basamania, MD	Christian Gerber, MD
11:30 AM – 12:15 PM	HIP	Thorsten Gehrke, MD	Allan E. Gross, MD, FRCS
1:30 – 2:15 PM	TUMOR	Edward Y. Cheng, MD	Ilya Iofin, MD
2:30 – 3:15 PM	FOOT & ANKLE	Judith F. Baumhauer, MD, MPH	Lew C. Schon, MD
3:30 – 4:15 PM	HIP & KNEE	David G. Lewallen, MD	Aaron G. Rosenberg, MD, FACS
Friday, March 14			
9:30 – 10:15 AM	SPORTS MEDICINE	Bernard R. Bach, Jr., MD	Michael D. Maloney, MD
10:30 – 11:15 AM	HAND	Edward Diao, MD	William H. Seitz, Jr., MD
11:30 AM – 12:15 PM	PEDIATRIC	Brian Snyder, MD, PhD	Stuart L. Weinstein, MD
1:30 – 2:15 PM	SHOULDER	Scott P. Steinmann, MD	Joseph D. Zuckerman, MD
2:30 – 3:15 PM	HIP & KNEE	Daniel J. Berry, MD	Clive P. Duncan, MD, FRCS

Take this opportunity to present a perplexing case to an expert in orthopaedics. We invite you to bring your HIPAA compliant case challenges on a flash drive 10 minutes prior to the start of the session and present them for diagnosis and recommendation. We encourage audience participation to complement the exchange of ideas. Pick a session and participate. No ticket needed, sessions are totally free!



Exhibitor Listing as of January 14, 2014.

The American Academy of Orthopaedic Surgeons invites you to visit the technical exhibits as a part of your educational experience at the annual meeting. The products displayed in the technical exhibits area and the uses suggested by the manufacturer do not represent an endorsement nor imply that the products have been evaluated or approved by the American Academy of Orthopaedic Surgeons.

COMPANY BOOTH NO.

3D Medical ExFix, LLC 450

Pelham, AL 35124
Phone: (205)987-0935
Web: www.3dmedicalconcepts.com
Product Codes: FRST, SF, SI

3-Point Products Inc. 5131

Stevensville, MD 21666
Phone: (410)604-6393
Web: www.3pointproducts.com
Product Codes: MS, O, REHB, SG

A

AAOS Advocacy Booth 4213

Washington, DC 20002
Phone: (202)548-4150
Web: www.aaos.org
Product Codes: EDU, OTH

AAOS Exhibit Hall Resource Center 5519

Rosemont, IL 60018
Phone: (800)626-6726
Web: www.aaos.org
Product Codes: EDU, PM, PUB

aap Implantate AG 3037

Berlin, 12099
Germany
Phone: 49-30750190
Web: www.aap.de
Product Codes: BB, BNE, I, SI, T

Abrexix 641

Brea, CA 92821
Phone: (888)933-9991
Web: www.novitasmedical.com
Product Codes: BB, DEV, MS, O, OTH

AccelLAB Inc. 3832

Boisbriand, QC J7H 1N8
Canada
Phone: (450)435-9482
Web: www.accellab.com
Product Codes: AM, BB, DEV, DI, IMG, MRI, PH, T, XRAY

COMPANY BOOTH NO.

Accutek Testing Laboratory 2131

Fairfield, OH 45014-2200
Phone: (513)984-4112
Web: www.accutektesting.com
Product Codes: OTH

Acell, Inc. 5021

Columbia, MD 21046
Phone: (800)826-2926
Web: www.acell.com
Product Codes: DEV

ACIGI Relaxation/Fujiiryoki 1241

Fremont, CA 94538
Phone: (510)651-9088
Web: www.drfsuji.com
Product Codes: REHB

Active Implants Corporation 6049

Memphis, TN 38120
Phone: (901)762-0352
Web: www.activeimplants.com
Product Codes: DEV, I

Acumed 5549

Hillsboro, OR 97124
Phone: (888)627-9957
Web: www.acumed.net
Product Codes: ADVA, I, SI

Advanced Biologics 1557

Carlsbad, CA 92008
Phone: (800)272-0267
Web: www.advancedbiologics.com
Product Codes: BNE, DEV

Advanced Endoscopy Devices, Inc. 533

Canoga Park, CA 91303
Phone: (818)227-2720
Web: www.aed.md
Product Codes: AS, SI

Advanced Orthopaedic Solutions, Inc. 5349

Torrance, CA 90501
Phone: (310)533-9966
Web: www.aosortho.com
Product Codes: DEV, I, SI

AdvancedMD Software 4720

South Jordan, UT 84095
Phone: (801)984-9500
Web: www.advancemd.com
Product Codes: EMR, FRST, PM

Aerobiotix 7020

Miamisburg, OH 45342
Phone: (937)416-1977
Web: www.aerobiotix.com
Product Codes: FRST, OTH, SURG

COMPANY BOOTH NO.

Aesculap Implant Systems 1049

Center Valley, PA 18034
Phone: (800)258-1946
Web: www.aesculapimplantsystems.com
Product Codes: ADVA, DEV, I, IMG

Aesculap, Inc. 1249

Center Valley, PA 18034
Phone: (800)258-1946
Web: www.aesculapusa.com
Product Codes: SI, SURG

Ai-Medic Co., Ltd. 6122

Tokyo, 105-0012
Japan
Phone: 81-364358358
Web: www.ai-medic.co.jp
Product Codes: I, SI

AIP Precision Machining 1340

Daytona Beach, FL 32114
Phone: (386)405-7202
Web: www.aipdaytona.com
Product Codes: DEV, I, IMG, OTH, SI, SURG, XRAY

Alexion 6815

Cheshire, CT 06410
Phone: (230)271-6499
Product Codes: BNE, FRST, PH

Alignmed 1541

Santa Ana, CA 92705
Phone: (866)987-5433
Web: www.ebilife.com
Product Codes: OTH, SG

Allen Medical Systems 1341

Acton, MA 01720
Phone: (800)433-5774
Web: www.allenmedical.com
Product Codes: AS, DEV, SURG

AllMeds 4641

Oak Ridge, TN 37830
Phone: (888)343-6337
Web: www.allmeds.com
Product Codes: EMR, PM

AlloSource 1441

Centennial, CO 80111
Phone: (720)873-0213
Web: www.allosource.org
Product Codes: BNE, OTH, T

Allotech Co., Ltd. 6812

Namyangju-si, Gyeonggi-Do 472-883
South Korea
Phone: 82-315557308
Web: www.allotech.kr
Product Codes: SI

Alpinion Medical Systems 2639

Bothell, WA 98021
Phone: (425)949-4900
Web: www.alpinionusa.com
Product Codes: DI, FRST, OTH

COMPANY	BOOTH NO.	COMPANY	BOOTH NO.	COMPANY	BOOTH NO.
AME/Orthotec International	3331	AMSURG	4633	ARGOmedical AG	1331
Miami, FL 33155 Phone: (305)662-2855 Web: www.artroscopia.net Product Codes: AS, I, SI, SURG		Nashville, TN 37215 Phone: (615)665-1283 Web: www.amsurg.com Product Codes: BB, EDU, FPD, FRST, MKT, OTH, PR		Cham, Zug, 6330 Switzerland Phone: 41-417414018 Web: www.argomedical.com Product Codes: DEV, I	
American 3B Scientific	4322	Anatomy Gifts Registry	7130	Army Medical Recruiting	4519
Tucker, GA 30084 Phone: (888)326-6335 Web: www.3bscientific.com Product Codes: AM, EDU, REHB, SG		Hanover, MD 21076 Phone: (800)300-5433 Web: www.anatomygifts.org Product Codes: AM, BNE, EDU, FRST, T		Fort Knox, KY 40121 Phone: (888)550-2769 Web: www.goarmy.com Product Codes: PR	
American Association of Orthopaedic Executives	4654	Apex Tools and Orthopedics	4412	ARP Wave LLC	632
Indianapolis, IN 46240 Phone: (800)247-9699 Web: www.aaoe.net Product Codes: PM		Guangzhou, 511356 China Phone: 86-2082986918 x112 Web: www.apexitool.net Product Codes: DEV, FRST, I, MS, SI, SURG		Apple Valley, MN 55124 Phone: (952)431-9708 Web: www.arpwave.com Product Codes: DEV, PR, REHB	
American Express OPEN	4421	ApexNetwork Physical Therapy	4656	Arteriocyte Medical Systems	1734
New York, NY 10285 Phone: (212)640-2000 Web: www.open.com Product Codes: FIN		Highland, IL 62249 Phone: (217)663-8892 Web: www.apexnetworkpt.com Product Codes: OTH, PM, REHB		Hopkinton, MA 01748 Phone: (508)497-8950 Web: www.arteriocyte.com Product Codes: BLD, DEV, SI	
American Imaging	2738	Applied Medical	1356	Arthrex, Inc.	6029
Boca Raton, FL 33432 Phone: (561)620-3600 Web: www.ncvus.com Product Codes: DI, FRST		Rancho Santa Margarita, CA 92688 Phone: (949)713-8000 Web: www.appliedmedical.com Product Codes: SI, SURG		Naples, FL 34108 Phone: (239)643-5553 Web: www.arthrex.com Product Codes: AS, BLD, DEV, EDU, I, IMG, SI, SURG, T	
American Journal of Orthopedics	5719	Aprima Medical Software	4530	ArthroCare	1130
Parsippany, NJ 07054 Phone: (973)290-8228 Web: www.amjorthopedics.com Product Codes: PUB		Carrollton, TX 75006 Phone: (866)960-6890 Web: www.aprima.com Product Codes: EMR, PM		Austin, TX 78735 Phone: (512)391-3900 Web: www.arthrocare.com Product Codes: ADVA, DEV, I, SI	
American Medical Endoscopy, Inc.	841	APS Materials, Inc.	6013	ArthroPlastics, Inc.	1942
Doral, FL 33122 Phone: (305)436-0599 Web: www.endoscopia.com Product Codes: AS, BNE, DEV, I, P, SI, SURG		Dayton, OH 45405 Phone: (937)278-6547 Web: www.apsbioimaging.com Product Codes: I, OTH		Chagrin Falls, OH 44022 Phone: (440)247-5131 Web: www.arthroplastics.com Product Codes: AS, MS, SG, SI, SURG	
American Society of Orthopaedic Assistant	4119A	Aptiv Solutions	7019	Arthrosurface, Inc.	6529
Indianapolis, IN 46240 Phone: (800)280-2390 Web: www.asopa.org Product Codes: AO		Reston, VA 20190 Phone: (703)483-6400 Web: www.aptivsolutions.com Product Codes: ADVA, DEV, FRST, OTH, PH		Franklin, MA 02038 Phone: (866)261-9294 Web: www.arthrosurface.com Product Codes: ADVA, AS, BNE, DEV, I, P, SI, SURG	
AmnioX Medical	5842	Arcam AB	4072	Arzst	4853
Marietta, GA 30067 Phone: (888)709-2140 Web: www.amnioxmedical.com Product Codes: I, T		Molndal, SE 431 37 Sweden Phone: 46-317103200 Web: www.arcam.com Product Codes: BNE, I		Napoles, DF 03810 Mexico Phone: 52-5590001335 Web: www.arzst.com Product Codes: BNE, DEV, I, SI	
Amplitude	1571	Arcamed, LLC	6520	Asociacion Argentina de Ortopedia y Traumatologia	4123A
Valence, 26000 France Phone: 33-623612061 Web: www.amplitude-ortho.com Product Codes: I, IMG		Indianapolis, IN 46241 Phone: (317)375-7733 Web: www.arcamed.com Product Codes: BB, DEV, SURG		Buenos Aires, 1018 Argentina Phone: 54 11 4801-8532 Web: www.aaot.org.ar Product Codes: AO	

COMPANY BOOTH NO.

Aspen Medical Products 3231
Irvine, CA 92618
Phone: (949)681-0200
Web: www.aspenmp.com
Product Codes: DEV, O, SG

Assut Europe s.p.a. 5737
Roma, 00173
Italy
Phone: 39-863517956
Web: www.assuteurope.com
Product Codes: DEV, I, O, SURG

Aston Medical SAS 331
Saint Etienne, 42000
France
Phone: 33-477930004
Web: www.aston-medical.com
Product Codes: I

Austen Bioinnovation Institute in Akron 3967
Akron, OH 44308
Phone: (330)572-1673
Web: www.abiakron.org
Product Codes: AM, BB, EDU, FRST, OTH

Autocam Medical 6053
Grand Rapids, MI 49512-4122
Phone: (616)541-8080
Web: www.autocam-medical.com
Product Codes: BB, DEV, I, SI

Auxilium Pharmaceuticals, Inc. 134
135
Chesterbrook, PA 19087
Phone: (484)321-5900
Web: www.auxilium.com
Product Codes: PH

Avalign Technologies 4231
Lake Forest, IL 60045
Phone: (317)859-2300
Web: www.avaligntech.com
Product Codes: DEV, I, SI, SURG

AVICENNE 3164
Puteaux, 92800
France
Phone: 33-147784600
Web: www.avicenne.com
Product Codes: I, MKT, P, SI, SURG

AxoGen, Inc. 5818
Alachua, FL 32615
Phone: (888)296-4361
Web: www.axogeninc.com
Product Codes: I, T

B

Bacterin 6641
Belgrade, MT 59714
Phone: (406)388-0480
Web: www.bacterin.com
Product Codes: BNE, DEV

COMPANY BOOTH NO.

Baitella AG 837
Zurich, 8050
Switzerland
Phone: 41-443058000
Web: www.fisso.com
Product Codes: DEV, MS, SURG

Bal Seal Engineering, Inc. 2141
Foothill Ranch, CA 92610
Phone: (949)460-2100
Web: www.balseal.com
Product Codes: BB, OTH

Bank of America Practice Solutions 4658
Westerville, OH 43082
Phone: (800)428-2847
Web: www.bankofamerica.com
Product Codes: FIN, PM

Bauerfeind USA, Inc. 930
Marietta, GA 30066
Phone: (770)429-8477
Web: www.bauerfeindusa.com
Product Codes: O, P, SF, SG

BAUI Biotech Co., Ltd. 6918
New Taipei City, 24872
Taiwan
Phone: 886-289769538
Web: www.baui.com.tw
Product Codes: FRST, I, SI

Baxano Surgical, Inc. 1635
Raleigh, NC 27615
Phone: (919)800-0020
Web: www.baxanosurgical.com
Product Codes: ADVA, DEV, I, SI

Baxter Healthcare Corporation 1030
Deerfield, IL 60015
Phone: (224)948-2913
Web: www.baxterbiosurgery.com
Product Codes: BNE, DEV

BBL Medical Facilities 4431
Albany, NY 12203
Phone: (888)450-4225
Web: www.bblmedicalfacilities.com
Product Codes: FPD

Becker Orthopedic 3949
Troy, MI 48083
Phone: (800)521-2192
Web: www.beckerorthopedic.com
Product Codes: O

Beijing AKEC Medical Co., Ltd. 6112
Beijing, 102200
China
Phone: 86-1080109581
Web: www.ak2003.com.cn
Product Codes: I, P

COMPANY BOOTH NO.

Beijing Chunlizhengda Medical Instruments Co., Ltd. 3732
Beijing, 100021
China
Phone: 86-1058611761
Web: www.clzd.com
Product Codes: DEV, I, P

Beijing Fule Science & Technology Development Co., Ltd. 5139
Beijing, 101204
China
Phone: 86-01060999862
Web: www.fulekeji.com
Product Codes: BNE, I, MS, O, P, SI

Benvenue Medical 7212
Santa Clara, CA 95054
Phone: (408)454-9304
Web: www.benvenuemedical.com
Product Codes: DEV, FRST, I

Berkeley Advanced Biomaterials, Inc. 1433
Berkeley, CA 94710
Phone: (510)883-0500
Web: www.ostetic.com
Product Codes: BNE, DEV, I, T

Better Walk Inc. 357
Memphis, TN 38103
Phone: (614)551-9543
Web: www.bwcrutches.com
Product Codes: DEV, FRST, REHB

BioAccess 2554
Baltimore, MD 21224
Phone: (410)675-8586
Web: www.bioaccess.com
Product Codes: SI, SURG

Biocomposites 6521
Wilmington, NC 28405
Phone: (910)350-8015
Web: www.biocomposites.com
Product Codes: BNE, DEV, I

BioD, LLC 4932
Memphis, TN 38120
Phone: (901)417-7868
Web: www.biodlogics.com
Product Codes: T

Biodynamic Research Corporation (BRC) 7221
San Antonio, TX 78249
Phone: (210)691-0281
Web: www.brconline.com
Product Codes: FRST, PR

Biologic Therapies, Inc. 6148
Ocala, FL 34482
Phone: (352)304-5149
Web: www.biologictherapies.com
Product Codes: BB, BNE, DEV, OTH, SI, SURG, T

COMPANY	BOOTH NO.
Biomatlante Vigneux de Bretagne, 44360 France Phone: 33-228020009 Web: www.biomatlante.com Product Codes: BB, BNE, I	2967
Biomet Warsaw, IN 46581 Phone: (574)267-6639 Web: www.biomet.com Product Codes: ADVA, BLD, BNE, DEV, EDU, I, PM, SI, T	1749
BioPro, Inc. Port Huron, MI 48060 Phone: (810)982-7777 Web: www.bioproimplants.com Product Codes: I, SI	2041
Bioretec Ltd Tampere, 33720 Finland Phone: 358-207789500 Web: www.bioretec.com Product Codes: DEV, I	2130
BIOTECK S.p.A. Arcugnano, VI 36057 Italy Phone: 39-0444289366 Web: www.bioteck.com Product Codes: BNE	3330
Bioventus Durham, NC 27703 Phone: (800)396-4325 Web: www.bioventusglobal.com Product Codes: DEV	5819
Bird & Cronin Eagan, MN 55121 Phone: (651)683-8089 Web: www.birdcronin.com Product Codes: O, REHB, SF, SG, SI	1235
BK Meditech Co., Ltd. Seoul, 135-270 Korea, Republic of Phone: 82-25712500 Web: www.bkmeditech.com Product Codes: I, SI	1531
Bledsoe Brace Systems Grand Prairie, TX 75051 Phone: (972)647-0884 Web: www.bledsoebrace.com Product Codes: DEV, MS, SG	5929
BLOXR Salt Lake City, UT 84123 Phone: (801)590-9880 Web: www.bloxr.com Product Codes: DEV, FRST, OTH, XRAY	2538

COMPANY	BOOTH NO.
Blue Belt Technologies Plymouth, MN 55441 Phone: (763)452-4950 Web: www.bluebelttech.com Product Codes: I, IMG, SURG	735
Blue Star Radiology Irving, TX 75063 Phone: (214)647-6161 Web: www.bluestarimaging.com Product Codes: OTH	5820
BM Korea Co., Ltd. Gunpo-Si, Gyunggi-Do 435-832 South Korea Phone: 82-314519294 EXT 212 Web: www.bmkmedi.com Product Codes: DEV, FRST, I, SI	7031
BME San Antonio, TX 78245 Phone: (210)881-0018 Web: www.bme-tx.com Product Codes: DEV, I	6534
Bodycote Melrose Park, IL 60160 Phone: (262)347-5897 Web: www.bodycote.com Product Codes: OTH	6719
Bone & Joint Journal (formerly JBJS (Br)) London, WC2N 6ET United Kingdom Phone: 44-2077820010 Web: www.boneandjoint.org.uk Product Codes: PUB	5613
Bone Foam Inc. Plymouth, MN 55447 Phone: (763)559-1830 Web: www.bonefoam.com Product Codes: SURG	3955
Bonutti Technologies Effingham, IL 62401 Phone: (217)342-3412 Web: www.bonuttitechnologies.com Product Codes: DEV, I, O, REHB, SURG	1941
Bradshaw Medical, Inc. Kenosha, WI 53144 Phone: (262)925-1374 Web: www.bradshaw-medical.com Product Codes: SI	5913
Brainlab Westchester, IL 60154 Phone: (708)409-1343 Web: www.brainlab.com Product Codes: DEV, IMG, SI	3869, 3973

COMPANY	BOOTH NO.
Brasseler USA Savannah, GA 31419 Phone: (800)569-6738 Web: www.brasselerusa.com Product Codes: BNE, SI, SURG	1841
Breg Carlsbad, CA 92010 Phone: (800)897-2734 Web: www.breg.com Product Codes: ADVA, DEV, O, P, PM, SG	1649
Brownmed Spirit Lake, IA 51360 Phone: (816)581-7001 Web: www.brownmed.com Product Codes: O, SG	4313
BSN Medical Charlotte, NC 28209 Phone: (800)552-1157 Web: www.bsnmedical.com Product Codes: CS, SG	1735
Buxton BioMedical, Inc. East Hanover, NJ 07936 Phone: (973)560-4848 Web: www.buxtonbio.com Product Codes: CS, SI	1931

C

C&A Tool Engineering, Inc. Churubusco, IN 46723 Phone: (260)693-2167 Web: www.catool.com Product Codes: BB, DEV, I, P, SI	3436
C2F Implants Nogent, 52800 France Phone: 33-325027289 Web: www.c2f-implants.com Product Codes: I, P, SI	167
Cannuflow, Inc. San Jose, CA 95110 Phone: (408)764-0220 Web: www.cannuflow.com Product Codes: DEV	4230
Captiva Spine, Inc. Jupiter, FL 33477 Phone: (877)772-5571 Web: www.captivaspine.com Product Codes: BB, BNE, DEV, I, SI	6512
CarboFix Orthopedics, Inc. Champaign, IL 61822-1409 Phone: (800)408-0120 Web: www.carbo-fix.com Product Codes: I	241

COMPANY	BOOTH NO.
CARE San Diego, CA 92109 Phone: (617)921-4642 Web: www.careforpatients.com Product Codes: COM, EDU, OTH, PM	4512
CareCloud Miami, FL 33126 Phone: (305)775-1195 Web: www.carecloud.com Product Codes: EMR, FRST, PM	4413
CareCredit Costa Mesa, CA 92626 Phone: (800)300-3046 Web: www.carecredit.com Product Codes: FRST, OTH	4423
CareFusion San Diego, CA 92130 Phone: (888)876-4287 Web: www.carefusion.com Product Codes: MS, OTH, SI	1136
Case Medical South Hackensack, NJ 07606 Phone: (201)313-1999 Web: www.casemed.com Product Codes: AS, DEV, MS, SURG	6721
Cases By Source, Inc. Mahwah, NJ 07430 Phone: (201)831-0005 Web: www.casesbysource.com Product Codes: BB, MS	1536
Cayenne Medical Scottsdale, AZ 85260 Phone: (480)502-3661 Web: www.cayennemedical.com Product Codes: AS, DEV, I	1430
CDC Design, Inc. Floresville, TX 78114 Phone: (512)940-5989 Web: www.cdcdesigninc.com Product Codes: AM	1549
Cellright Technologies, LLC Universal City, TX 78148 Phone: (210)659-9353 Web: www.cellrighttechnologies.com Product Codes: BNE, I, T	2270
CeramTec Medical Products Plochingen, D-73207 Germany Phone: (248)506-5299 Web: www.bioloxx.com Product Codes: DEV, I	3757
Cerapedics, Inc. Westminster, CO 80021 Phone: (303)974-6275 Web: www.cerapedics.com Product Codes: BNE, DEV	4136

COMPANY	BOOTH NO.
Ceterix Orthopaedics Menlo Park, CA 94025 Phone: (650)316-8660 Web: www.ceterix.com Product Codes: ADVA, DEV, FRST, SI, T	7123
CG Bio Seoul, Gangnam-Gu 135-715 Korea, Republic of Phone: 82-025508597 Web: www.cgbio.co.kr Product Codes: BNE, FRST, I, T	261
Changzhou Hengjie Medical Devices Co., Ltd. Changzhou, 213164 China Phone: 86-13775080393 Web: www.hjyl.cn Product Codes: I, MS, SI	4331
Changzhou Waston Medical Appliance Co., Ltd. Changzhou, 213164 China Phone: 86-51986522226 Web: www.wastonmedical.com Product Codes: BB, BNE, I, MS, SI	1334
ChartLogic, Inc. Salt Lake City, UT 84107 Phone: (801)365-1820 Web: www.chartlogic.com Product Codes: COM, EDU, EMR, PM,	4441
Checkpoint Surgical, LLC Cleveland, OH 44122 Phone: (877)478-9106 Web: www.checkpointsurgical.com Product Codes: ADVA, DEV, SI, SURG	6055
Chinese Orthopaedic Association Beijing, 1018 China Web: www.coachina.org Product Codes: AO	4218A
ChM Sp. z o.o. Juchnowiec Koscielny, 16-061 Poland Phone: 48-857131320 Web: www.chm.eu Product Codes: I, SI	6113
ChoiceSpine, LP Knoxville, TN 37919 Phone: (865)246-3333 Web: www.choicespine.net Product Codes: I	132

COMPANY	BOOTH NO.
Citiefte S.r.l. Bologna, 40012 Italy Phone: 39-3666446930 Web: www.citiefte.com Product Codes: DEV, I, SI	1663
Clinical Resolution Lab, Inc. Brea, CA 92821 Phone: (800)566-9687 Web: www.clinicalresolution.com Product Codes: BLD, DEV, FRST, T	7213
CME/1st-Dragon St Petersburg, FL 33704 Phone: (813)928-7166 Web: www.1st-dragon.com Product Codes: COM, FRST,	4657
Collagen Matrix, Inc. Oakland, NJ 07436 Phone: (201)405-1477 Web: www.collagenmatrix.com Product Codes: DEV	3234
Collect Rx Rockville, MD 20850 Phone: (301)230-2440 Web: www.collectrx.com Product Codes: FIN, PM	4756
Community Health Systems Franklin, TN 37067 Phone: (800)367-6813 Web: www.chsmedcareers.com Product Codes: PR	4623
Community Tissue Services Kettering, OH 45420 Phone: (800)684-7783 Web: www.communitytissue.org Product Codes: T	651
Compulink Business Systems, Inc. Westlake Village, CA 91361 Phone: (800)456-4522 Web: www.compulinkadvantage.com Product Codes: COM, EMR, PM	4568
ConforMIS Bedford, MA 01730 Phone: (781)345-9001 Web: www.conformis.com Product Codes: I	149
ConMed Utica, NY 13502 Phone: (800)237-0169 Web: www.conmed.com Product Codes: AS, COM, DEV, EDU, I, SI, SURG, T	2249

COMPANY	BOOTH NO.	COMPANY	BOOTH NO.	COMPANY	BOOTH NO.	
Consensus Orthopedics	5835	Custom Fab, Inc.	1543	DePuy Synthes Spine	4049	
El Dorado Hills, CA 95762 Phone: (916)355-7100 Web: www.consensusortho.com Product Codes: ADVA, DEV, I, SI		Garden Grove, CA 92841 Phone: (714)891-9119 Web: www.customfabinc.com Product Codes: SG		Raynham, MA 02767 Phone: (508)880-8100 Web: www.depuysspine.com Product Codes: SI, SURG		
ContainMed, Inc.	1034	Custom Orthopaedic Solutions	6441	DePuy Synthes Trauma	4049	
Speedway, IN 46224 Phone: (317)487-8800 Web: www.containmed.com Product Codes: SURG		Cleveland, OH 44106 Phone: (216)445-0814 Web: www.customorthoedics.com Product Codes: AM, EDU, IMG, SI		West Chester, PA 19380 Phone: (610)719-5000 Web: www.depuyssynthes.com Product Codes: DEV, EDU, I, SI		
Conventus Orthopaedics, Inc.	6413	Cybertech Medical	5657	DeRoyal	4041	
Maple Grove, MN 55369 Phone: (763)515-5000 Web: www.conventusortho.com Product Codes: DEV, I, SI		La Verne, CA 91750 Phone: (800)220-4224 Web: www.cybertechmedical.com Product Codes: O		Powell, TN 37849 Phone: (888)938-7828 Web: www.deroyal.com Product Codes: I, MS, REHB, SG		
Corentec Co., Ltd.	773	Cytonics Corporation	5830	Designs for Vision, Inc.	3035	
Cheonan-Si, Chungcheongnam-do, 331-822 Korea, Republic of Phone: 82-415857114 Web: www.corentec.com Product Codes: I, SI		Jupiter, FL 33458 Phone: (561)575-4451 Web: www.cytonics.com Product Codes: BLD, OTH		Ronkonkoma, NY 11779 Phone: (631)585-3300 Web: www.DesignsForVision.com Product Codes: SURG		
CORFLEX INC.	3148	D			DeSoutter Medical Ltd	1141
Manchester, NH 03109 Phone: (603)623-3344 Web: www.corflex.com Product Codes: O, SG		Danco Anodizing	1840	Aylesbury, Bucks, HP22 5WF United Kingdom Phone: 44-1442860300 Web: www.de-soutter.com Product Codes: CS, SI		
Corin Group	2949	Darco International	1741	Devicix, LLC	3630	
Gloucestershire, GL7 1YJ United Kingdom Phone: 44-441285659866 Web: www.coringroup.com Product Codes: ADVA, DEV, I, SI		Huntington, WV 25701 Phone: (304)522-4883 Web: www.darcointernational.com Product Codes: SF, SG		Eden Prairie, MN 55344 Phone: (952)368-0073 Web: www.devicix.com Product Codes: AS, BNE, COM, DEV, DI, I, IMG, SI, SURG		
Covidien	3749	Data Trace Publishing	5223	DGIMed Ortho	1333	
Mansfield, MA 02048 Phone: (800)962-9888 Web: www.covidien.com Product Codes: ADVA, DEV, MS, SI, SURG		Towson, MD 21204 Phone: (410)494-4994 Web: www.datatrace.com Product Codes: PUB		Minnetonka, MN 55343 Phone: (952)582-6700 Web: www.dgimedortho.com Product Codes: DEV, I, SI, SURG		
Cura Surgical, Inc.	3073	Del Medical, Inc.	2534	Diagnostic Instruments, Inc.	2838	
Geneva, IL 60134 Phone: (630)232-2510 Web: www.curasurgical.com Product Codes: MS		Bloomington, IL 60108 Phone: (800)800-6006 Web: www.delmedical.com Product Codes: DI, XRAY		Arnold, MD 21012 Phone: (410)421-5550 Web: www.ultrasoundmsk.com Product Codes: DI, IMG		
Curexo Technology Corporation	3859	Delphi of TeamHealth	4736	Directed Manufacturing, Inc.	3438	
Fremont, CA 94539 Phone: (510)249-2300 Web: www.robodoc.com Product Codes: SURG		Morrisville, NC 27560 Phone: (866)885-5522 Web: www.delphihip.com Product Codes: PR		Pflugerville, TX 78660 Phone: (512)520-6802 Web: www.directedmfg.com Product Codes: DEV, I, SI, SURG		
Current Concepts Institute	5520	DePuy Synthes Joint Reconstruction	4049	DJO Global	1349	
Cleveland, OH 44114 Phone: (216)295-1900 Web: www.ccjr.com Product Codes: EDU		Warsaw, IN 46581 Phone: (800)473-3789 Web: www.depuy.com Product Codes: ADVA, DEV, EDU, I, PHRM, SI		Vista, CA 92081 Phone: (760)734-3125 Web: www.djoglobal.com Product Codes: DEV, I, MS, P, REHB, SF, SG, SI, SURG		

COMPANY BOOTH NO.

DragonBio Implants 7029
Shenzhen, 518057
China
Phone: 86-75581886815
Web: www.dragonbio.com
Product Codes: BB, BNE, FRST, I, IMG, MRI, SI, SURG, XRAY

Dry Corp, LLC 5252
Wilmington, NC 28405
Phone: (910)791-0009
Web: www.drycorp.com
Product Codes: CS, MS, P

DryCast, LLC 6154
Mahwah, NJ 07430
Phone: (646)561-2881 EXT 101
Web: www.drycast.com
Product Codes: CS, FRST, MS, SF

DSM Biomedical 3133
Exton, PA 19341
Phone: (484)713-2100
Web: www.dsm.com/medical
Product Codes: OTH

DTC Healthcom 4634
White Plains, NY 10606
Phone: (718)466-8132
Web: www.dtchealthcom.com
Product Codes: COM, EMR

Dynamic Techno Medicals Pvt. Ltd. 7235
Aluva, Kerala 683101
India
Phone: 91-4842837788
Web: www.dynamictechnomedicals.com
Product Codes: FRST, O, P, REHB, SF, SG

E

East Coast Orthotic and Prosthetic Corporation 931
Deer Park, NY 11729
Phone: (888)400-8934
Web: www.ec-op.com
Product Codes: O, P, SF

Ebone 3131
Kenosha, WI 53144
Phone: (262)553-2111
Web: www.medicalties.com
Product Codes: EDU, OTH

ECA Medical Instruments 6955
Thousand Oaks, CA 91320
Phone: (805)376-2509
Web: www.ecamedical.com
Product Codes: FRST, SI

eClinicalWorks 4734
Westborough, MA 01581
Phone: (508)836-2700
Web: www.eclinicalworks.com
Product Codes: EMR, PM

COMPANY BOOTH NO.

Element Orthopedics 7022
Eden Prairie, MN 55344
Phone: (651)775-2964
Product Codes: BNE, DEV, FRST, I

Ellipse Technologies, Inc. 7222
Irvine, CA 92618
Phone: (949)837-3600
Web: www.ellipse-tech.com
Product Codes: FRST, I

ElliptiGO Inc. 635
Solana Beach, CA 92075
Phone: (858)876-8677
Web: www.elliptigo.com
Product Codes: DEV, OTH, REHB

Elliquence LLC 2449
Baldwin, NY 11510
Phone: (516)277-9000
Web: www.elliquence.com
Product Codes: DEV, SURG

Elsevier 5213, 5315
Philadelphia, PA 19103
Phone: (215)239-3900
Web: www.us.elsevierhealth.com
Product Codes: PUB

Emdat 4632
Madison, WI 53715
Phone: (608)270-6400
Web: www.emdat.com
Product Codes: COM, FRST, PM

Emovi, Inc. 6015
Laval, QC H7P 4W5
Canada
Phone: (514)907-6296
Web: www.emovi.ca
Product Codes: DEV, REHB

Empirical Testing Corp. 5449
Colorado Springs, CO 80923
Phone: (719)264-9937
Web: www.empiricaltesting.com
Product Codes: OTH

Endolab GmbH 5731
Thansau/Rohrdorf, 83101
Germany
Phone: 49-80312313230
Web: www.endolab.org
Product Codes: BB, I, OTH

Endotec Inc. 4241
Irvine, CA 92618
Phone: (800)323-9890
Web: www.endotec.com
Product Codes: DEV, I

Engineered Medical Solutions 3939
Phillipsburg, NJ 08865
Phone: (908)329-9123
Web: www.scintillantlight.com
Product Codes: SI, SURG

COMPANY BOOTH NO.

Ensinger 3135
Washington, PA 15301
Phone: (724)746-6050
Web: www.ensinger-ind.com
Product Codes: SI, SURG

EOS Electro Optical Systems 6213
Novi, MI 48377
Phone: (248)306-0143
Web: www.eos.info
Product Codes: AM, BB, CS, DEV, I, O, P, SI, SURG

EOS Imaging 2335
Cambridge, MA 02138
Phone: (678)564-5400
Web: www.eos-imaging.com
Product Codes: DI, XRAY

EPM Endo Plant Muller GmbH 3934
Kleinwallstadt, Bayern, 63839
Germany
Phone: 49-602225419
Web: www.epm-mueller.de
Product Codes: COM, SI

Ergoactives 535
Aventura, FL 33180
Phone: (305)776-8837
Web: www.ergoactives.com
Product Codes: DEV, MS

Ermi, Inc. 359
Atlanta, GA 30324
Phone: (404)687-0505
Web: www.getmotion.com
Product Codes: DEV

Esaote North America 2231
Indianapolis, IN 46250
Phone: (800)428-4374
Web: www.esaoteusa.com
Product Codes: DI, IMG, MRI

Etex Corporation 3034
Cambridge, MA 02139
Phone: (617)577-7270
Web: www.etexcorp.com
Product Codes: BNE, T

Eurocoating S.p.A. 1530
Pergine Valsugana, 38057
Italy
Phone: 39-0461518901
Web: www.eurocoating.it
Product Codes: I, P

European Federation of Orthopaedics and Traumatology (EFORT) 4115A
Zurich, CH-8005
Switzerland
Phone: 41-444484402
Web: www.efort.org
Product Codes: AO

COMPANY	BOOTH NO.	COMPANY	BOOTH NO.	COMPANY	BOOTH NO.
Evonik Corporation	1350	Flow-FX LLC	5834	Gauthier Biomedical, Inc.	5557
Parsippany, NJ 07054 Phone: (973)929-8000 Web: www.evonik.com Product Codes: BB, I, OTH		Mokena, IL 60448 Phone: (219)670-0410 Product Codes: DEV, I		Grafton, WI 53024 Phone: (866)546-0010 Web: www.gauthierbiomedical.com Product Codes: SI	
Exactech, Inc.	2261	Footmaxx, Inc.	5852	GE Healthcare	2837
Gainesville, FL 32653 Phone: (800)392-2832 Web: www.exac.com Product Codes: ADVA, BLD, BNE, DEV, I, IMG, SI, T		Roanoke, VA 24035 Phone: (800)779-3668 Web: www.footmaxx.com Product Codes: O		Milwaukee, WI 53201 Phone: (262)544-3011 Web: www.gehealthcare.com Product Codes: DEV, DI, EMR, MRI, PM, SURG, XRAY	
Exscribe, Inc.	4549	FORE - Foundation For Orthopaedic Research and Education	5712	Gensco Laboratories	4066
Bethlehem, PA 18015 Phone: (610)419-2050 Web: www.exscribe.com Product Codes: COM, EMR, PM		Tampa, FL 33637 Phone: (813)910-3667 Web: www.foreonline.org Product Codes: BB, EDU, OTH		Miramar, FL 33027 Phone: (855)743-6726 Web: www.genscolabs.com Product Codes: PH	
Extremity Medical, LLC	1035	Forecreu America, Inc.	6051	GermedUSA	4950
Parsippany, NJ 07054 Phone: (973)588-8980 Web: www.extremitymedical.com Product Codes: DEV, I		Chicago, IL 60634 Phone: (773)539-8501 Web: www.forecreu.com Product Codes: I, SI		Garden City Park, NY 11040 Phone: (516)358-2180 Web: www.germedusa.com Product Codes: SI	
F		Francis Lamont Innovations Ltd	6715	Gibraltar Laboratories Inc	4323
FCS Medical	4134	Hathersage, Derbyshire, S32 1DP United Kingdom Phone: 44-1433650178 Web: www.fiuk.com Product Codes: BB, DEV, PR, SI, SURG		Fairfield, NJ 07004 Phone: (973)227-6882 Web: www.gibraltarlabsinc.com Product Codes: FRST, OTH	
Saint Louis, MO 63114 Phone: (314)222-6112 Web: www.fcsmedical.com Product Codes: EDU, FRST, OTH		FUJIFILM Medical Systems USA, Inc.	2239	Globus Medical	6849
Ferring Pharmaceuticals	3767	Stamford, CT 06902 Phone: (203)324-2000 Web: www.fujiprivatepractice.com Product Codes: DI, XRAY		Audubon, PA 19403 Phone: (610)930-1800 Web: www.globusmedical.com Product Codes: ADVA, DEV, I, SI	
Parsippany, NJ 07054 Phone: (973)796-1600 Web: www.euflexxa.com Product Codes: DEV, PHRM		Fused Innovation	436	GMReis	2455
FH Orthopedics	541	Neenah, WI 54956 Phone: (920)486-5147 Web: www.fi-3d.com Product Codes: FRST, SURG		Campinas, S. Paulo 13069-320 Brazil Phone: 55-1937659900 Web: www.gmreis.com.br Product Codes: I, MS, P, SI	
Heimsbrunn, 68990 France Phone: 33-389819092 Web: www.fhorthopedics.com Product Codes: I, P		FusionOne Electronic Healthcare	4637	GPI Prototype	6120
Fidia Pharma	973	Roselle, IL 60172 Phone: (630)815-4818 Web: www.fusiononeinc.com Product Codes: EMR		Lake Bluff, IL 60044 Phone: (847)615-8900 Web: www.gpiprototype.com Product Codes: AM, DEV, EDU, I, SI, SURG	
Parsippany, NJ 07054 Phone: (908)342-5281 Web: www.hyalgan.com Product Codes: DEV, PHRM		Fx Solutions	1537	GraMedica	1630
Flagship Surgical, LLC	3535	VIRIAT, 01440 France Phone: 33-474553555 Web: www.fx solutions.fr Product Codes: DEV, I, P, SI		Macomb, MI 48042 Phone: (586)677-9600 Web: www.gramedica.com Product Codes: I	
Warren, NJ 07059 Phone: (888)633-5843 Web: www.flagshipsurgical.com Product Codes: AS, BB, DEV, MS, SF, SG, SI, SURG		G		Greatbatch Medical	1363
Flower Orthopedics	7015	Game Ready	6541	Minneapolis, MN 55441 Phone: (763)951-8207 Web: www.greatbatchmedical.com Product Codes: ADVA, I, SI	
Horsham, PA 19044 Phone: (215)394-8909 Web: www.flowerortho.com Product Codes: FRST, I		Concord, CA 94520 Phone: (888)426-3732 Web: www.gameready.com Product Codes: ADVA, DEV, REHB		Greenway Medical Technologies	4463
				Carrollton, GA 30117 Phone: (678)390-7270 Web: www.greenwaymedical.com Product Codes: EMR	

COMPANY BOOTH NO.

Group Health Permanente 4537
Seattle, WA 98109
Phone: (206)448-6192
Web: www.grouphealthphysicians.org
Product Codes: PR

Groupe Lepine 1669
Genay, 69727
France
Phone: 33-472330295
Web: www.groupe-lepine.com
Product Codes: I, P, SG, T

Gruppo Bioimpianti SRL 1041
Peschiera Borromeo, Milano, 20068
Italy
Phone: 39-0251650371
Web: www.bioimpianti.it
Product Codes: DEV, I, SI

GS Medical 3734
Soquel, CA 95073
Phone: (831)477-1307
Web: www.gsmedicalusa.com
Product Codes: ADVA, DEV, I, SI

gSource, LLC 1551
Emerson, NJ 07630
Phone: (201)599-2277
Web: www.gsource.com
Product Codes: BB, SI

H

Halifax Biomedical Inc. 4064
Boston, MA 02142
Phone: (425)418-2774
Web: www.halifaxbiomedical.com
Product Codes: DI, FRST, SI, XRAY

Hames Orthotech 458
Florence, AL 35630
Phone: (256)766-3338
Web: www.hamesorthotech.com
Product Codes: FRST, O, SG

Hand Biomechanics Lab, Inc. 1265
Sacramento, CA 95825
Phone: (916)923-5076
Web: www.handbiolab.com
Product Codes: DEV

Hans Biomed USA, Inc. 1064
Englewd Clfs, NJ 07632
Phone: (201)224-2333
Web: www.hansbiomed.com
Product Codes: BNE, T

Hapad, Inc. 1730
Bethel Park, PA 15102
Phone: (412)835-1234
Web: www.hapad.com
Product Codes: SG

COMPANY BOOTH NO.

Harvest Technologies Corp. 939
Plymouth, MA 02360
Phone: (508)732-7500
Web: www.harvesttech.com
Product Codes: BLD, BNE, DEV

Hitachi Medical Systems America, Inc. 2435
Twinsburg, OH 44087
Phone: (800)800-3106
Web: www.hitachimed.com
Product Codes: DI, IMG, MRI

HNM Medical 4135
Miami, FL 33179
Phone: (866)291-8498
Web: www.hnmmedical.com
Product Codes: AS, SI

Holmed Corporation 4054
South Easton, MA 02375
Phone: (781)856-0900
Web: www.holmed.net
Product Codes: SI, SURG

Hologic 2341
Bedford, MA 01730
Phone: (781)999-7300
Web: www.hologic.com
Product Codes: BNE, DEV, DI, MRI, XRAY

Hospital For Joint Diseases at NYU Langone Medical Center 5318
New York, NY 10003
Phone: (212)598-6000
Web: www.orthosurgery.med.nyu.edu/
Product Codes: EDU

Hospital for Special Surgery 5714
New York, NY 10021
Phone: (212)606-1000
Web: www.hss.edu
Product Codes: EDU

I

I.T.S. GmbH/I.T.S. USA 6219
Maitland, FL 32751
Phone: (407)971-8054
Web: www.its-implant.com
Product Codes: I

Iconacy Orthopedic Implants 6818
Warsaw, IN 46582
Phone: (574)269-4266
Web: www.iconacy.com
Product Codes: I

iCRco, Inc. 2743
Torrance, CA 90505
Phone: (310)921-9559
Web: www.icrcompany.com
Product Codes: DI

COMPANY BOOTH NO.

iData Research Inc. 5139
Vancouver, BC V5Z 4J7
Canada
Phone: (604)266-6933
Web: www.idataresearch.com
Product Codes: MKT

I-Flow, LLC, a Kimberly-Clark Health Care Company 6449
Lake Forest, CA 92630
Phone: (800)448-3569
Web: www.myON-Q.com
Product Codes: DEV

IHI Ionbond Inc. 6118
Madison Heights, MI 48071
Phone: (248)398-9100
Web: www.ionbond.com
Product Codes: AS, BLD, BNE, DEV, I, SURG, T

IlluminOss Medical 4232
East Providence, RI 02914
Phone: (401)714-0008
Web: www.illuminoss.com
Product Codes: FRST

IMDS - Innovative Medical Device Solutions 457
Ft Worth, TX 76177
Phone: (407)770-0272
Web: www.imds.net
Product Codes: AS, BB, CS, DEV, I, SI, SURG, T

IMEDICOM Co., Ltd 1634
Gunpo, Gyeonggi, 435-824
Korea, Republic of
Phone: 82-314791156
Web: www.imedicom.co.kr
Product Codes: SI

I-Ming Sanitary Materials Co., Ltd. 1732
Changhua, 51446
Taiwan
Phone: 886-48819638
Web: www.supports.com.tw
Product Codes: O, REHB

Implanet 3965
Martillac, 33650
France
Phone: 33-557995555
Web: www.implanet.com
Product Codes: DEV, FRST, I, P

Implantcast-USA 6429
Arlington, TX 76013
Phone: (817)226-9900
Product Codes: I

COMPANY	BOOTH NO.	COMPANY	BOOTH NO.	COMPANY	BOOTH NO.
IMT-USA, LLC Lino Lakes, MN 55014 Phone: (651)493-9634 Web: www.imt-medicalusa.com Product Codes: DEV, SI, SURG	5729	Instratek, Inc. Houston, TX 77058 Phone: (281)892-8020 Web: www.instratek.com Product Codes: DEV, I, SI	4234	IOT - Innovative Orthopedic Technologies, LLC Houston, TX 77043 Phone: (409)658-1017 Web: www.iotiot.com Product Codes: SI, SURG	4418
Incisive Surgical, Inc. Plymouth, MN 55447 Phone: (952)591-2543 Web: www.insorb.com Product Codes: DEV, OTH, SI	3936	INSURGICAL Power Tools Austin, TX 78759 Phone: (512)318-2980 Web: www.insurgical.com Product Codes: BNE, DEV, OTH, SI, SURG	4930	ISTO Technologies, Inc. Saint Louis, MO 63132 Phone: (314)995-6049 Web: www.istotech.com Product Codes: BNE, DEV, PH	6749
Industrias Medicas Sampedro S.A.S Medellin, Colombia Phone: 57-43013939 Web: www.imsampedro.com Product Codes: AM, BB, BNE, DEV, I, SI, SURG	4036	In'tech Medical Memphis, TN 38103 Phone: (901)375-1109 Web: www.intech-medical.com Product Codes: BB, DEV, I, SI, SURG	649	J	
INEX Surgical Inc. Niles, IL 60714 Phone: (847)674-2595 Web: www.inexsurgical.com Product Codes: AS, DEV, DI, O, SI, SURG	3332	Integra Plainsboro, NJ 08536 Phone: (609)275-0500 Web: www.integralife.com Product Codes: ADVA, BNE, DEV, I, SI, SURG, T	567	JAAOS 6300 N River Rd Rosemont, IL 60018 Phone: (800)626-6726 Web: www.jaaos.org Product Codes: PUB	5519
Infinite Therapeutics Kingston, NH 03848 Phone: (603)347-6006 Web: www.infinitymassagechairs.com Product Codes: OTH, REHB	452	International Titanium Association Northglenn, CO 80234 Phone: (303)404-2221 Web: www.titanium.org Product Codes: FRST, OTH	337	Jackson & Coker Alpharetta, GA 30022 Phone: (800)272-2707 Web: www.jacksoncoker.com Product Codes: PM	4522
Inion Inc Weston, FL 33327 Phone: (954)659-9224 Web: www.inion.com Product Codes: DEV, I, SI	6729	Intralign Scottsdale, AZ 85251 Phone: (508)916-2628 Web: www.intralign.com Product Codes: FRST, OTH	4430	Janssen Pharmaceuticals, Inc. Raritan, NJ 08869 Phone: (908)218-6000 Web: www.janssenpharmaceuticalsinc.com Product Codes: PH, PHRM	4048
Innomed, Inc. Savannah, GA 31404 Phone: (912)236-0000 Web: www.innomed.net Product Codes: CS, SI, SURG	1065	Intrauma SRL Rivoli, TO 10098 Italy Phone: 39-0119539496 Web: www.intrauma.com Product Codes: I, SI	2262	Jaypee Highlights Medical Publisher Panama City Panama Phone: 507-3010496 Web: www.jphmedical.com Product Codes: PUB	5122
Innovative Medical Equipment, LLC 7119 Cleveland, OH 44124 Phone: (440)646-1286 Web: www.therma-zone.com Product Codes: DEV, FRST, MS, OTH, REHB		Intrepid Orthopedics Broadview Heights, OH 44147 Phone: (440)465-4321 Web: www.intrepidorthopedics.com Product Codes: DEV, FRST, I, SI	6914	Jeil Medical Corporation Seoul, 152-728 South Korea Phone: 82-28503898 Web: www.jeilmed.co.kr Product Codes: I	3166
Innovative Medical Products Plainville, CT 06062 Phone: (800)467-4944 Web: www.impmedical.com Product Codes: DEV, MS, SG, SI, SURG	6349	Invibio Biomaterial Solutions Conshohocken, PA 19428 Phone: (484)342-6004 Web: www.invibio.com Product Codes: BB, DEV, I, OTH	3935	Jewel Precision Cedar Grove, NJ 07009 Phone: (973)857-5545 Web: www.jewelprecision.com Product Codes: DEV	4037
Innovision, Inc. Memphis, TN 38132 Phone: (901)370-5700 Web: www.innovisionus.com Product Codes: DEV, I, SURG	3337	Invivolink Nashville, TN 37212 Phone: (866)478-8981 Web: www.invivolink.com	4731	Jiangsu Ideal Medical Science & Technology Co., Ltd. Zhnagjiagang, 215625 China Phone: 86-51258550488 Product Codes: AM, BB, BNE, FIN, FRST, I, MKT, MS, PM, SI, SURG	6854

COMPANY BOOTH NO.

JJ International Instruments 5848
Raleigh, NC 27613
Phone: (919)264-4292
Web: www.myjjonline.com
Product Codes: SI

Joined Orthopaedic Innovators Netherlands 7021
Nijmegen, 6524LH
Netherlands
Phone: 31-628225657
Web: www.jointortho.org
Product Codes: BB, BNE, DEV, FRST, I, SI, SURG, T

Joint Restoration Foundation 6021
Centennial, CO 80111
Phone: (877)255-6727
Web: www.jrfortho.org
Product Codes: DEV, T

Joslin Orthopedic Gear 2268
San Diego, CA 92103
Phone: (415)656-3500
Web: www.arm sling.com
Product Codes: DEV, MS, SG

JRI Orthopaedics Ltd 2264
Sheffield, South Yorkshire, S35 2PY
United Kingdom
Phone: 44-1142573200
Web: www.jri-ltd.co.uk
Product Codes: EDU, I, P

K

K2M, Inc. 6949
Leesburg, VA 20175
Phone: (703)777-3155
Web: www.k2m.com
Product Codes: ADVA, BNE, DEV, I, SI, SURG

Kallus Orthopedics Ltd. 7129
Istanbul, 34235
Turkey
Phone: 90-5336296101
Web: www.ligamendo.com
Product Codes: FRST, I

Kao Chen Enterprise Co., Ltd. 5836
Taichung, 43444
Taiwan
Phone: 886-426308728
Web: www.softguards.com
Product Codes: O, REHB, SG

Kapp Surgical Instrument Inc. 1640
Cleveland, OH 44128
Phone: (800)282-5277
Web: www.kappsurgical.com
Product Codes: I, MS, SI

KareOutcomes 4469
Saint Paul, MN 55109
Phone: (612)354-8484
Web: www.kareoutcomes.com
Product Codes: COM, PM

COMPANY BOOTH NO.

Karl Storz Endoscopia-Latino America 934
Miami, FL 33126
Phone: (305)262-8980
Product Codes: FRST

Karl Storz Endoscopy-America, Inc. 1057
El Segundo, CA 90245
Phone: (800)421-0832
Web: www.karlstorz.com
Product Codes: AS, COM, DEV, SI, SURG

Kasios 4040
L'Union, 31240
France
Phone: 33-534273323
Web: www.kasios.com
Product Codes: BNE, I

Keeler Instruments 630
Broomall, PA 19008
Phone: (610)353-4350
Web: www.keelerusa.com
Product Codes: SI

Kilgore International Inc. 1348
Coldwater, MI 49036
Phone: (517)279-9000
Web: www.kilgoreinternational.com
Product Codes: AM, EDU

Kinamed, Inc. 2941
Camarillo, CA 93012
Phone: (805)384-2748
Web: www.kinamed.com
Product Codes: DEV, I, SI, SURG

Kinesio Holding Corporation 138
Albuquerque, NM 87110
Phone: (855)488-8273
Web: www.kinesiotaping.com
Product Codes: EDU, FRST, MS, REHB

KM Medical Software Ltd 4533
Cork,
Ireland
Phone: 353-870508529
Web: www.imeddoc.com
Product Codes: COM, EMR

Kneebourne Therapeutic LLC 3941
Noblesville, IN 46060
Phone: (317)225-5956
Web: www.eliteseat.com
Product Codes: DEV, REHB

Konica Minolta Medical Imaging 2641
Wayne, NJ 07470
Phone: (973)633-1500
Web: www.medical.konicaminolta.us
Product Codes: DI

COMPANY BOOTH NO.

Koros USA, Inc. 1031
Moorpark, CA 93021
Phone: (805)529-0825
Web: www.korosusa.com
Product Codes: SI

KYOCERA Medical Corporation 4033
Osaka, 532-0003
Japan
Phone: 81-663501059
Web: kyocera-md.jp
Product Codes: DEV, I, MS, P

L

L3 Healthcare Design Inc. 440
Altamonte Springs, FL 32713
Phone: (407)865-6160
Product Codes: FPD

LDR 2034
Austin, TX 78750
Phone: (512)344-3300
Web: www.ldrspine.com
Product Codes: DEV

LH Medical Corporation 6019
Fort Wayne, IN 46804
Phone: (260)432-5670
Web: www.lhindustries.com
Product Codes: I, SI

Life Instrument Corporation 748
Braintree, MA 02184
Phone: (781)849-0109
Web: www.lifeinstruments.com
Product Codes: SI, SURG

LifeLink Tissue Bank 531
Tampa, FL 33634
Phone: (800)683-2400
Web: www.lifelinktb.org
Product Codes: BNE, T

LifeNet Health 6119
Virginia Beach, VA 23453
Phone: (800)847-7831
Web: www.accesslifenethealth.org
Product Codes: BNE, I, T

Lilly USA, LLC 4341
Indianapolis, IN 46285
Phone: (317)276-2000
Web: www.lilly.com
Product Codes: PH, PHRM

LimaCorporate Spa 1371
San Daniele Del Friuli, UD 33038
Italy
Phone: 39-0432945511
Web: www.limacorporate.com
Product Codes: DEV, I, P, SI

COMPANY BOOTH NO.

Llambri Precision, S.L. 4335
Barcelona, 08907
Spain
Phone: 34-932649623
Web: www.llambri.com
Product Codes: SI

Locum Leaders, Inc. 4433
Alpharetta, GA 30005
Phone: (877)562-8656
Web: www.locumleaders.com
Product Codes: BB, EDU, FRST, PR

LocumTenens.com 4555
Alpharetta, GA 30009
Phone: (800)562-8663
Web: www.locumtenens.com
Product Codes: PR

Lumitex MD 1431
Strongsville, OH 44136
Phone: (440)243-8401
Web: www.lumitexmd.com
Product Codes: BB, DEV, MS, OTH, SI, SURG

M

M.J. Markell Shoe Co., Inc. 1842
Yonkers, NY 10701
Phone: (914)963-2258
Web: www.markellshoe.com
Product Codes: O, SF, SG

Madison Ortho Inc. 1073
San Juan, PR 00909
Phone: (787)945-5800
Web: www.madisonortho.com
Product Codes: I, P

Maestro 5713
Kalamazoo, MI 49007
Phone: (800)319-2122
Web: www.meetmaestro.com
Product Codes: BB, EDU

Magnus Magnetica, LLC 6823
Los Angeles, CA 90039
Phone: (775)375-5411
Web: www.deltapulse.net
Product Codes: DEV, FRST, REHB

Mammon International Corp. 1650
Taipei City, 10579
Taiwan
Phone: 886-227174777
Web: www.mammonmedical.com.tw
Product Codes: O, SF, SG

MAQUET 548
Wayne, NJ 07470
Phone: (888)880-2874
Web: www.maquet.com
Product Codes: ADVA, SI, SURG

COMPANY BOOTH NO.

Maramed Orthopedic Systems 6723
Hialeah, FL 33016
Phone: (305)823-8300
Web: www.maramed.com
Product Codes: AS, O, P, SF

Marasco & Associates, Healthcare Architects & Consultants 4419
Denver, CO 80203
Phone: (303)832-2887
Web: www.mahca.com
Product Codes: FPD

Mastin Medical Co. Ltd. 5135
Hangzhou, 311106
China
Phone: 86-15658166600
Web: www.rejoin-medical.com
Product Codes: DEV, I, SI

Materialise 6839
Leuven, 3001
Belgium
Phone: (734)259-6445
Web: www.materialise.com/ortho
Product Codes: AM, COM, DEV, OTH, SI

Mathys Ltd Bettlach 3431
Bettlach, 2544
Switzerland
Phone: 41-326441258
Web: www.mathysmedical.com
Product Codes: I, P, SI

Maxx Health Inc. 3440
Lakeland, FL 33811
Phone: (484)598-3291
Web: www.maxxhealthinc.com
Product Codes: DEV, I

McGinley Orthopaedic Innovations, LLC 2463
Casper, WY 82604
Phone: (877)621-2355
Web: www.mcginleyorthopaedicinnovations.com
Product Codes: DEV, FRST, SI, SURG

MD Logic EHR 4541
Duluth, GA 30097
Phone: (770)497-1560
Web: www.mdlogic.com
Product Codes: COM, EMR

Medacta International 765
Castel San Pietro, CH-6874
Switzerland
Phone: 41-916966060
Web: www.medacta.com
Product Codes: I, P

Medartis, Inc. 6621
Exton, PA 19341
Phone: (610)961-6101
Web: www.medartis.com
Product Codes: I

COMPANY BOOTH NO.

MedCure, Inc. 3631
Portland, OR 97230
Phone: (866)560-2525
Web: www.medcure.org
Product Codes: T

MedFix International, LLC 235
Tucson, AZ 85719
Phone: (520)398-5467
Web: www.medfix.com
Product Codes: BB, DEV, I, MS, SI, SURG

Medical Compression Systems, Inc. 873
Alexandria, VA 22302
Phone: (703)589-3525
Web: www.mcsmed.com
Product Codes: DEV, MS

Medical Consultants Network 4732
Seattle, WA 98101
Phone: (206)343-6100
Web: www.mcn.com
Product Codes: PR

Medical Education Research Institute 3830
Memphis, TN 38104
Phone: (901)722-8001
Web: www.meri.org
Product Codes: BB

Medical Modeling Inc. 734
Golden, CO 80401
Phone: (888)273-5344
Web: www.medicalmodeling.com
Product Codes: AM

Medical Products Resource 2030
Burnsville, MN 55337
Phone: (952)277-1259
Web: www.m-p-r.com
Product Codes: SG, SI, SURG

MedicMicro 5735
Sainte-Croix, 1450
Switzerland
Phone: 41-245577583
Web: www.medicmicro.ch
Product Codes: DEV, SI

Medin Corporation 1641
Passaic, NJ 07055
Phone: (973)779-2400
Web: www.medin.com
Product Codes: BB, OTH

Meditech Group, LLC 1940
New City, NY 10956
Phone: (845)639-9509
Web: www.meditechny.com
Product Codes: CS, MS, O, P, SF, SG

COMPANY	BOOTH NO.
Medmix Systems AG Rotkreuz, 6343 Switzerland Phone: 41-417980680 Web: www.medmix.ch Product Codes: BB, DEV, MS, PH, SI, T	634
MedNet Technologies Melville, NY 11747-4989 Phone: (516)285-2200 Web: www.mednet-tech.com Product Codes: COM, PM	4540
MEDS Management Group Costa Mesa, CA 92626 Phone: (949)681-7293 Product Codes: FRST, OTH, PM	7218
MedShape, Inc. Atlanta, GA 30318 Phone: (877)343-7016 Web: www.medshape.com Product Codes: DEV, I	1135
Medstrat, Inc Downers Grove, IL 60515 Phone: (630)960-8700 Web: www.medstrat.com Product Codes: DI	441
Medtronic Memphis, TN 38132 Phone: (800)876-3133 Web: www.medtronic.com Product Codes: ADVA, DEV, I, IMG, SI, SURG	5249
Medyssey Spine Elk Grove Vlg, IL 60007 Phone: (847)982-0100 Web: www.medyssey.com Product Codes: I, SI	5812
Merete Medical, Inc. New Windsor, NY 12553 Phone: (914)967-1532 Web: www.merete-medical.com Product Codes: BB, I, P, SI, SURG	2973
Merge Healthcare Chicago, IL 60654 Phone: (312)565-6868 Web: www.merge.com Product Codes: COM, DI, EMR, IMG, PM	4649
Metal Craft Elk River, MN 55330 Phone: (800)964-1395 Web: www.metal-craft.com Product Codes: FRST, I, SI	6913
Metasurg Houston, TX 77084 Phone: (281)398-5656 Web: www.metasurg.com Product Codes: FRST, I, SI	7228

COMPANY	BOOTH NO.
Miami Anatomical Research Center Miami, FL 33172 Phone: (305)716-0966 Web: www.marctraining.com Product Codes: FRST, OTH	5417
MicroAire Surgical Instruments Charlottesville, VA 22911 Phone: (434)975-8000 Web: www.microaire.com Product Codes: SI	3741
Micron Products Fitchburg, MA 01420 Phone: (978)602-1482 Web: www.micronproducts.com Product Codes: CS, I, SI	1358
Microport Arlington, TN 38002 Phone: (901)867-4681 Web: www.microport.com.cn/english Product Codes: I	665
Microsurgery Instruments, Inc. Bellaire, TX 77402 Phone: (713)664-4707 Web: www.microsurgeryusa.com Product Codes: SI, SURG	2234
Millennium Research Group Toronto, ON M4W 3R8 Canada Phone: (416)364-7776 Web: www.mrg.net Product Codes: MKT	3152
Millstone Medical Outsourcing Fall River, MA 02720 Phone: (508)679-8384 Web: www.millstonemedical.com Product Codes: BB, BNE, COM, DEV, I, OTH, SI, T	657
MiMedx Marietta, GA 30062 Phone: (770)691-9100 Web: www.mimedx.com Product Codes: T	1173
Ministry Health Care Stevens Point, WI 54481 Phone: (800)420-2622 Web: www.ministryhealth.org Product Codes: PR	4621
Mitek Sports Medicine Raynham, MA 02767 Phone: (508)880-8100 Web: www.depuymitex.com Product Codes: MS, SURG	4049

COMPANY	BOOTH NO.
Mizuho America, Inc. Union City, CA 94587 Phone: (510)324-4500 Web: www.mizuho.com Product Codes: DEV, FRST, I, SI	1267
Mizuho OSI Union City, CA 94587 Phone: (800)777-4674 Web: www.mizuhosi.com Product Codes: MS, SG, SURG	3437 3539
Mobile Workforce Inc. Port Orchard, WA 98366 Phone: (360)895-7500 Web: www.mobile-workforce.com Product Codes: BB, COM, EDU, PM	4722
Models Plus, Inc. Kingsford Heights, IN 46346 Phone: (800)522-4044 Web: www.bonemodels.com Product Codes: AM	5751
Modernizing Medicine, Inc. Boca Raton, FL 33431 Phone: (561)880-2998 Web: www.modmed.com Product Codes: COM, EMR	4737
MTF Edison, NJ 08837 Phone: (800)433-6576 Web: www.mtf.org Product Codes: BNE, I, T	4141
Musculoskeletal Clinical Regulatory Advisers, LLC Washington, DC 20005 Phone: (202)552-5800 Web: www.mcra.com Product Codes: OTH	4318
My Rehab Pro, LLC Louisville, KY 40291 Phone: (502)291-8899 Web: www.myrehabpro.com Product Codes: COM, FRST, OTH	6553
N	
Nadia International, Inc. Austin, TX 78749 Phone: (512)301-3888 Web: www.ronadro.com Product Codes: OTH	2548
National Association of Orthopaedic Nurses Chicago, IL 60611 Phone: (800)289-6266 Web: www.orthonurse.org Product Codes: EDU	5219

COMPANY BOOTH NO.

National Association of Orthopaedic Technologists - NAOT 4222B

Indianapolis, IN 46240
Phone: (317)205-9484
Web: www.naot.org
Product Codes: AO

National Athletic Trainers' Association 5415

Dallas, TX 75247
Phone: (214)637-6282
Web: www.nata.org
Product Codes: OTH

Neoligaments 3735

West Yorkshire, LS19 7UE
United Kingdom
Phone: 44-1132387202
Web: www.neoligaments.com
Product Codes: P

Neortho North America LLC 6549

Fort Myers, FL 33913
Phone: (239)225-0701
Web: www.neorthonorthamerica.com
Product Codes: I

NEOSTEO 659

Reze, 44400
France
Phone: 33-0236569670
Web: www.neosteo.com
Product Codes: I

NeuMed 1934

West Trenton, NJ 08628
Phone: (609)896-3444
Web: www.neumedinc.com
Product Codes: DEV, O

Neuro Resource Group 4038

Plano, TX 75074
Phone: (972)665-1810
Web: www.interx.com
Product Codes: DEV, REHB

Neurotech 2135

Minnetonka, MN 55343
Phone: (952)582-6719
Web: www.neurotech.us
Product Codes: O, REHB

NewClip USA 6739

Haute Goulaine, 44115
France
Phone: 33-228212323
Web: www.newcliptechnics.com
Product Codes: DEV, I

Nextech 4749

Tampa, FL 33609
Phone: (813)425-9200
Web: www.nextech.com
Product Codes: COM, EMR, PM

COMPANY BOOTH NO.

NextGen Healthcare Information Systems, Inc. 4449

Horsham, PA 19044
Phone: (215)657-7010
Web: www.nextgen.com
Product Codes: COM, EMR, PM

Nextremity Solutions, LLC 6921

Red Bank, NJ 07701
Phone: (732)383-7901
Web: www.nextremitysolutions.com
Product Codes: FRST, I

NIH Osteoporosis & Related Bone Diseases 5220

Bethesda, MD 20892
Phone: (800)624-2663
Web: www.bones.nih.gov
Product Codes: BNE, OTH

Nordson Micromedics 2238

Saint Paul, MN 55121
Phone: (651)452-1977
Web: www.nordsonmicromedics.com
Product Codes: DEV

Norman Noble, Inc. 1437

Highland Heights, OH 44143
Phone: (216)761-5387
Web: www.nnoble.com
Product Codes: BB

NovaBone Products LLC 1251

Alachua, FL 32615
Phone: (386)462-7660
Web: www.novabone.com
Product Codes: BNE, DEV, I

NovoSource, Inc. 7219

Dayton, OH 45402
Phone: (800)668-6165
Web: www.novosource.net
Product Codes: FRST, I

Nueterra 4659

Leawood, KS 66211
Phone: (913)387-0510
Web: www.nueterra.com
Product Codes: FPD, PM, PR

NuTech 6855

Birmingham, AL 35216
Phone: (205)290-2158
Web: www.nutechmedical.com
Product Codes: BNE, I, T

Nutramax Laboratories, Inc. 4031

Edgewood, MD 21040
Phone: (800)925-5187
Web: www.nutramaxlabs.com
Product Codes: OTH

COMPANY BOOTH NO.

O

Oberd 4757

Columbia, MO 65201
Phone: (573)442-7101
Web: www.oberd.com
Product Codes: COM, FRST, MKT, PM

ODI North America 3835

Tampa, FL 33610
Phone: (813)443-4905
Web: www.ODI-NA.com
Product Codes: I, SI

OH MY Products 7118

Fishers, IN 46040
Phone: (317)731-3669
Web: www.ohmyproducts.com
Product Codes: FRST, OTH

OHK Medical Devices 969

Grandville, MI 49418
Phone: (866)503-1470
Web: www.hemaclear.com
Product Codes: BLD, DEV, SURG

Oiservice CT & MR 2631

Deerfield Beach, FL 33442
Phone: (888)673-5151
Web: www.oxford-instruments.com/ct-mr
Product Codes: DI, FRST, MRI

Olive Medical 3969

Salt Lake City, UT 84120
Phone: (866)300-1148
Web: www.olivemedical.com
Product Codes: DEV, IMG, SURG

Olympus Biotech Corporation 2935

Hopkinton, MA 01748
Phone: (508)416-5200
Web: www.olympusbiotech.com
Product Codes: BNE

Omega Surgical Instruments Inc.2149

Grand Blanc, MI 48439
Phone: (810)695-9800
Web: www.omegasurgical.com
Product Codes: CS, DEV, SI

OMNI 4939

East Taunton, MA 02718
Phone: (800)448-6664
Web: www.omnils.com
Product Codes: DEV, I, IMG

Opedix 7035

Scottsdale, AZ 85250
Phone: (480)513-8345
Web: www.opedix.com
Product Codes: FRST, REHB, SG

COMPANY	BOOTH NO.
Operating Room Innovations, Inc. Coronado, CA 92118 Phone: (619)261-9526 Web: www.orinnovations.com Product Codes: FRST, MS	7136
Operation Walk USA Rosemont, IL 60018 Phone: (847)384-4245 Web: www.opwalkusa.com Product Codes: AO	4115B
Orchid Orthopedic Solutions Holt, MI 48842 Phone: (517)694-2300 Web: www.orchid-ortho.com Product Codes: BB, DEV, I, OTH, SI	6829
Oriental Resources Development Limited Hsinchu County, 303 Taiwan Phone: 886-345555136 Web: www.ord.feg.com.tw/en/ Product Codes: BNE, FRST, I	6819
Origin Healthcare Solutions Chicago, IL 60606 Phone: (800)358-6443 Web: www.originhs.com Product Codes: COM, FRST, OTH, PM	4612
Ortech Data Centre Inc. London, ON N6B 2L5 Canada Phone: (226)663-5399 Web: www.ortechsystems.com Product Codes: COM, PM	4557
OrthAlign, Inc. Aliso Viejo, CA 92656-4107 Phone: (949)715-2424 Web: www.orthalign.com Product Codes: ADVA, IMG	5813
Ortho Development Draper, UT 84020 Phone: (801)553-9991 Web: www.odev.com Product Codes: DEV, I	2959
Ortho Executive Reading, RG1 4SA United Kingdom Phone: 44-7500555508 Web: www.orthoexec.co.uk Product Codes: BB, FRST, MKT, OTH	6920
Ortho Solutions Limited Maldon, Essex, CM9 6FF United Kingdom Phone: 44-1621843599 Web: www.orthosolutions.com Product Codes: BNE, DEV, EDU, I, MS, P, SI, SURG	6613

COMPANY	BOOTH NO.
Ortho-Care Raytown, MO 64138 Phone: (800)821-1303 Web: www.orthocare.com Product Codes: CS, SG	3059
OrthoCircle Savannah, GA 31406 Phone: (888)463-5803 Web: www.ortho-circle.com Product Codes: FRST, SI	140
Orthofix Lewisville, TX 75056 Phone: (800)527-0404 Web: www.orthofix.com Product Codes: ADVA, DEV	4929
OrthoMed, Inc. Portland, OR 97202 Phone: (503)234-9691 Web: www.orthomedinc.com Product Codes: I, MS, SI, SURG	5141
Orthopaedic Innovation Centre Winnipeg, MB R2K 2M9 Canada Phone: (204)926-1290 Web: www.orthoinno.com Product Codes: BB, DEV, I, P	3959
Orthopaedic Solutions Center Decines, 69150 France Phone: 33-472025696 Web: www.my-osc.eu Product Codes: I, P, SI	448
Orthopaedics Overseas Washington, DC 20036 Phone: (202)296-0928 Web: www.hvousa.org Product Codes: AO	4123B
OrthoPediatrics Warsaw, IN 46582 Phone: (877)268-6339 Web: www.orthopediatrics.com Product Codes: DEV, I, SI	3834
Orthopedic Analysis LLC Oak Park, IL 60302 Phone: (312)733-7121 Web: www.orthopedicanalysis.com Product Codes: OTH	341
Orthopedic Design & Technology Magazine Ramsey, NJ 07446 Phone: (201)880-2243 Web: www.odtmag.com Product Codes: PUB	5317

COMPANY	BOOTH NO.
Orthopedic Sciences, Inc. Seal Beach, CA 90740 Phone: (562)799-5550 Web: www.orthosciences.com Product Codes: AS, DEV, I	5919
Orthorebirth Co., Ltd. Yokohama City, Kanagawa, 2240033 Japan Phone: 81-455323650 Web: www.orthorebirth.com Product Codes: BNE	637
OrthoScan Scottsdale, AZ 85250 Phone: (480)503-8010 Web: www.orthoscan.com Product Codes: DEV, DI, IMG, SURG, XRAY	2531
Orthosensor, Inc. Dania Beach, FL 33004 Phone: (888)756-7846 Web: www.orthosensor.com Product Codes: DEV, EMR, I, IMG, SI	6929
OrthoView Jacksonville, FL 32256 Phone: (800)318-0923 Web: www.orthoview.com Product Codes: COM, DEV, I, OTH, P	5238
ORTHOWORLD Inc. Chagrin Falls, OH 44023 Phone: (440)543-2101 Web: www.orthoworld.com Product Codes: PUB	5416
Osiris Therapeutics, Inc. Columbia, MD 21046 Phone: (443)545-1800 Web: www.osiris.com Product Codes: T	6528
OSNovation Systems, Inc. Santa Clara, CA 95054 Phone: (888)519-2297 Web: www.osnovation.com Product Codes: FRST, MS	7217
Ossur Americas Foothill Ranch, CA 92610 Phone: (800)233-6263 Web: www.ossur.com Product Codes: DEV, EDU, O, P, PM, SG	3239
OsteoMed Addison, TX 75001 Phone: (972)677-4600 Web: www.osteomed.com Product Codes: ADVA, BNE, DEV, I, SI	3049
OTIS Biotech Inc., Ltd. Siheung-Si, Kyunggi-Do 429-853 South Korea Phone: 82-314144615 Web: www.otisbiotech.com Product Codes: I	1257

COMPANY	BOOTH NO.	COMPANY	BOOTH NO.	COMPANY	BOOTH NO.
Otto Bock Healthcare	5657	PCC Structurals	5149	Practice Flow Solutions	4730
Minneapolis, MN 55447 Phone: (800)328-4058 Web: www.ottobockus.com		Portland, OR 97206 Phone: (503)794-2099 Web: www.pccstructurals.com Product Codes: DEV, I, SI		Norcross, GA 30092 Phone: (678)983-0229 Web: www.practiceflowsolutions.com Product Codes: FPD, PM	
Oxford Performance Materials, LLC	2133	PCI HealthDev	4754	PracticeLink.com	4630
South Windsor, CT 06074 Phone: (860)698-9300 Web: www.oxfordpm.com Product Codes: DEV, I		Dallas, TX 75225 Phone: (866)936-3089 Web: www.healthdev.com Product Codes: FIN, FPD, OTH		Hinton, WV 25951 Phone: (800)776-8383 Web: www.practicelink.com Product Codes: EDU, PR, PUB	
P		Pega Medical, Inc.	3230	PracticeMatch Services	4415
P & M Corporate Finance	4636	Laval, QC H7W 5J8 Canada Phone: (450)688-5144 Web: www.pegamedical.com Product Codes: ADVA, DEV, I, SI		Saint Louis, MO 63141 Phone: (800)489-1440 Web: www.practicematch.com Product Codes: PR	
Southfield, MI 48076 Phone: (248)223-3300 Web: www.pmf.com Product Codes: BB, FIN, MKT		Perioptix, a DenMat Company	935	Pro-Dex Inc.	3773
Pacific Instruments, Inc.	5828	Lompoc, CA 93436 Phone: (888)775-3424 Web: www.perioptix.com Product Codes: SURG		Irvine, CA 92614 Phone: (949)769-3200 Web: www.pro-dex.com Product Codes: AS, DEV, SI, SURG	
Honolulu, HI 96815 Phone: (808)941-8880 Web: www.pacificinstruments.biz Product Codes: BB, DEV, SI		Phillips Precision Medcraft	5230	Promimic AB	7237
Pacira Pharmaceuticals, Inc.	7135	Elmwood Park, NJ 07407 Phone: (201)797-8820 Web: www.phillipsmedcraft.com Product Codes: DEV, I, OTH, SI, SURG		Gothenburg, 41292 Sweden Phone: 46-317728022 Web: www.promimic.com Product Codes: BNE, DEV, FRST, I, OTH	
Parsippany, NJ 07054 Phone: (908)528-7374 Web: www.pacira.com Product Codes: EDU, FRST, PH		Phoenix Ortho	4518	ProScan Reading Services	2542
Panasonic	2930	Ovilla, TX 75154 Phone: (800)843-8179 Web: www.phoenixortho.net Product Codes: EMR		Cincinnati, OH 45213 Phone: (513)229-7115 Web: www.proscan.com Product Codes: OTH	
Newark, NJ 07102 Phone: (201)293-9799 Web: www.panasonic.com/healthcare Product Codes: AS, IMG, OTH		Physician Assistants in Orthopaedic Surgery	5516	Pulse Lavage AB	1936
Paradigm BioDevices	6648	Glendale, AZ 85318 Phone: (800)804-7267 Web: www.paos.org Product Codes: OTH		Uppsala, 752 29 Sweden Phone: 46-18555505 Web: www.pulselavage.com Product Codes: SI	
Rockland, MA 02370 Phone: (781)982-9950 Web: www.paradigmbiodevices.com Product Codes: BNE, SI		Physician Owned Surgery Centers	4531	Purac Biomaterials	2139
Paragon Medical	3339	Bakersfield, CA 93301 Phone: (281)558-5240 Product Codes: FPD, PM		Tucker, GA 30084 Phone: (470)545-7100 Web: www.puracbiomaterials.com Product Codes: BB, I, PH	
Pierceton, IN 46562 Phone: (574)594-2140 Web: www.paragonmedical.com Product Codes: I, SI, SURG		Pivot Medical	5840	Puracon GmbH	7134
Paramed Medical Systems, Inc.	2831	Sunnyvale, CA 94089 Phone: (408)774-1452 EXT 106 Web: www.pivotmedical.com Product Codes: DEV, I		Rosenheim, 83026 Germany Phone: 49-80319005870 Web: www.puracon.com Product Codes: FRST, OTH	
Morton Grove, IL 60053 Phone: (866)840-7565 Web: www.paramedmedicalsystems.com Product Codes: DI, MRI		Planmed, Inc.	2834	Pyxidis	2163
Parcus Medical, LLC	3430	Roselle, IL 60172 Phone: (630)894-2200 Web: www.planmed.com Product Codes: DI, XRAY		Doylestown, PA 18902 Phone: (215)230-7307 Web: www.pyxidis-medical.com Product Codes: BB, DEV, OTH	
Sarasota, FL 34243 Phone: (941)755-7965 Web: www.parcusmedical.com Product Codes: AS, I, SI, SURG					

COMPANY BOOTH NO.

Q

QAL Medical 6822
Marinette, WI 54143
Phone: (888)430-1625
Web: www.qalmedical.com
Product Codes: DEV, REHB

QTC Medical Services, a Lockheed Martin Co. 4614
Diamond Bar, CA 91765
Phone: (813)802-9477
Web: www.qtcm.com
Product Codes: PR

Quadrant Engineering Plastic Products 4831
Reading, PA 19612
Phone: (610)320-6600
Web: www.quadrantplastics.com
Product Codes: DEV, DI, I, SI, SURG, XRAY

Quantum Medical Imaging, LLC 2443
Ronkonkoma, NY 11779
Phone: (631)567-5800
Web: www.quantummedical.net
Product Codes: XRAY

Quinn Medical 1535
San Clemente, CA 92673
Phone: (949)784-0310
Web: www.quinnmedical.com
Product Codes: DEV

Quintus Composites 5749
Camp Verde, AZ 86322
Phone: (928)567-3383
Web: www.quintus-inc.com
Product Codes: OTH, SI

R

Radlink 2740
Gardena, CA 90248
Phone: (310)808-6586
Web: www.radlink.com
Product Codes: DI, FRST

Razek Equipamentos Ltda. 1335
Sao Carlos, SP 13570-460
Brazil
Phone: 55-1621072345
Web: www.razek.com.br
Product Codes: AS, SI, SURG

Regen Lab 267
Le Mont Sur Lausanne, 1052
Switzerland
Phone: 41-218640111
Web: www.regenlab.com
Product Codes: BLD

COMPANY BOOTH NO.

Research for Life, LLC 4319
Phoenix, AZ 85034
Phone: (480)940-1310
Web: www.researchforlife.org
Product Codes: T

Residency Select 5121
Manalapan, NJ 07726
Phone: (888)409-2468
Web: www.residencyselect.com
Product Codes: EDU, FRST, PR

Response Ortho LLC 1364
Edgewater, NJ 07020
Phone: (201)203-5773
Web: www.responseortho.com
Product Codes: COM, DEV, I, OTH, SI

RISystem AG 6919
Davos Platz, 7270
Switzerland
Phone: 41-815115602
Web: www.oskit.biz
Product Codes: DEV, EDU, FRST, I

rms Surgical 3634
Anoka, MN 55303
Phone: (763)427-4161
Web: www.junoinc.com
Product Codes: I, SI, SURG

Rochling Engineering Plastics 1068
Dallas, NC 28034
Phone: (704)884-3506
Web: www.roechling-plastics.us
Product Codes: MS, SI, SURG

Rose Micro Solutions 349
West Seneca, NY 14224
Phone: (716)608-0009
Web: www.rosemicrosolutions.com
Product Codes: MS, SI, SURG

Rosemont Media, LLC 4534
San Diego, CA 92109
Phone: (800)491-8623
Web: www.rosemontmedia.com
Product Codes: PM

RTI Surgical 5937
Alachua, FL 32615
Phone: (386)418-8888
Web: www.rtibiology.com
Product Codes: ADVA, BNE, I, T

S

SAGE 5412
Thousand Oaks, CA 91320
Phone: (805)410-7239
Web: www.sagepub.com
Product Codes: PUB

COMPANY BOOTH NO.

Sanatmetal Ltd. 1565
Eger, 3300
Hungary
Phone: 36-36512900
Web: www.sanatmetal.com
Product Codes: I, P, SI

SanDance Technology, LLC 4714
Princeton, NJ 08540
Phone: (908)229-5365
Product Codes: COM, FRST

Sawbones/Pacific Research Labs 3134
Vashon, WA 98070
Phone: (206)463-5551
Web: www.sawbones.com
Product Codes: AM, AS, EDU

SBM Inc. 2171
Winchester, MA 01890
Phone: (781)369-1782
Web: www.s-b-m.us
Product Codes: BNE, I

Schaerer Medical USA 141
Cincinnati, OH 45226
Phone: (513)561-2241
Web: www.schaerermedicalusa.com
Product Codes: SURG

Seabrook International 4058
Seabrook, NH 03874
Phone: (603)760-1520
Web: www.seabrookinternational.com
Product Codes: DEV, FRST, I, SI

SH Medical Corp. 1631
Miami, FL 33122
Phone: (305)406-2222
Web: www.shmedical.com/
Product Codes: AS, DI, SI, SURG

Shandong Hangwei Orthopedics Medical Instrument Co., Ltd. 3172
Weifang City, 261061
China
Phone: 86-5368215983
Product Codes: FRST, SI

Shanghai Bojin Electric Instrument & Device Co., Ltd. 3731
Shanghai, 200436
China
Phone: 86-2166308078
Web: www.bojin-medical.com
Product Codes: BNE, XRAY

Sharma Surgical and Engg. Pvt. Ltd. 161
Vadodara, Gujarat 391760
India
Phone: 91-2652511993
Web: www.ssepl.com
Product Codes: I

COMPANY BOOTH NO.

Shimadzu Medical Systems USA 2840

Torrance, CA 90502
Phone: (800)228-1429
Web: www.shimadzu.com/medical
Product Codes: DI

Shoulder Options, Inc. 4839

Waxhaw, NC 28173
Phone: (704)512-0000
Web: www.shoulderoptions.com
Product Codes: I, SI

Showa Ika Kohgyo Co., Ltd. 1937

Toyohashi Aichi, 441-8026
Japan
Phone: 81-532321543
Web: www.showaika.com
Product Codes: I, SI

Shukla Medical 2035

Piscataway, NJ 08854
Phone: (732)474-1770
Web: www.shuklamedical.com
Product Codes: SI

SI-BONE, Inc. 4921

San Jose, CA 95128
Phone: (408)207-0700
Web: www.si-bone.com
Product Codes: DEV

SICOT 4218B

Brussels, BE 1050
Belgium
Phone: 32-26486823
Web: www.sicot.org
Product Codes: AO

Siemens Healthcare 4821

Malvern, PA 19355
Phone: (610)219-6300
Web: www.siemens.com
Product Codes: ADVA, AS, COM, DI, EDU, FPD, IMG, MRI, PHRM, SURG, XRAY

SIGN Fracture Care International 4214B

Richland, WA 99354
Phone: (509)371-1104
Web: www.signfracturecare.org
Product Codes: AO

Simbionix USA Corporation 3633

Cleveland, OH 44103
Phone: (216)229-2040
Web: www.simbionix.com
Product Codes: AM, COM, EDU, OTH

Sinai Hospital of Baltimore, Rubin Inst. for Advanced Orthopedics 5615

Baltimore, MD 21215
Phone: (410)601-9000
Web: www.rubininstitute.com
Product Codes: COM, EDU, PR, PUB

COMPANY BOOTH NO.

Single Source Surgical, LLC 965

Lutz, FL 33558
Phone: (877)323-7373
Web: www.singlesourcesurgical.com
Product Codes: FRST, T

Skeletal Dynamics 6313

Miami, FL 33176
Phone: (305)596-7585
Web: www.skeletaldynamics.com
Product Codes: DEV, EDU, I, P, SI

Skye Orthobiologics LLC 7220

Redondo Beach, CA 90278
Phone: (310)796-5680
Web: www.skyeorthobiologics.com
Product Codes: BNE, I, T

SLACK Incorporated 5421

Thorofare, NJ 08086
Phone: (856)848-1000
Web: www.Healio.com
Product Codes: PUB

Small Bone Innovations, Inc. 2248

Morrisville, PA 19067
Phone: (215)428-1791
Web: www.totalsmallbone.com
Product Codes: ADVA, DEV, I

Smith & Nephew Inc. 5229

Cordova, TN 38016
Phone: (901)396-2121
Web: www.smith-nephew.com
Product Codes: ADVA, AS, DEV, EDU, I, SI, SURG

Smith & Nephew Advanced Wound Management 5229

St. Petersburg, FL 33716
Phone: (727)392-1261
Web: www.smith-nephew.com

Sociedad Colombiana de Cirugia Ortopedica y Traumatologia - Grupo Corporativo - SCCOT 4222A

Bogota, 10
Colombia
Phone: 57-3157862902
Web: www.sccot.org.co
Product Codes: AO

Sociedade Brasileira de Ortopedia e Traumatologia - SBOT 4212A

Sao Paulo, 01424
Brazil
Phone: 55-1121375413
Web: www.sbot.org.br
Product Codes: AO

COMPANY BOOTH NO.

Socrates Ortho 4435

Rozelle, NSW 2039
Australia
Phone: 61-416271011
Web: www.socratesortho.com
Product Codes: COM, PM

Solana Surgical, LLC 6513

Memphis, TN 38119
Phone: (855)214-1860
Web: www.solanasurgical.com
Product Codes: ADVA, I, SI, T

Solvay 4131

Alpharetta, GA 30005
Phone: (800)621-4557
Web: www.solvayspecialtypolymers.com
Product Codes: OTH

Sonoma Orthopedic Products 2254

Santa Rosa, CA 95403
Phone: (707)526-1335
Web: www.sonomaorthopedics.com
Product Codes: BNE, DEV, I

Sontec Instruments, Inc. 4219

Centennial, CO 80112
Phone: (303)790-9411
Web: www.sontecinstruments.com
Product Codes: SI

Soothe 7113

Bradenton, FL 34209
Phone: (941)792-2688
Web: www.soothepharmacy.com
Product Codes: BB, EDU, FRST, MS, PH

Southcoast Hospitals Group 4514

N Dartmouth, MA 02747
Phone: (508)985-2112
Web: www.southcoast.org
Product Codes: FRST, PR

Southern Spine 7018

Macon, GA 31201
Phone: (478)745-0000
Web: www.southernspine.net
Product Codes: FRST, I

Span Link International, LLC 936

Deer Park, NY 11729
Phone: (631)392-1432
Web: www.fortebrace.com
Product Codes: O, SE, SG

Spinal Simplicity LLC 6419

Lenexa, KS 66214
Phone: (913)451-4414
Web: www.spinalsimplicity.com
Product Codes: DEV, I, SI

COMPANY BOOTH NO.

Spine Pain Management, Inc. 2739
Houston, TX 77007
Phone: (713)521-4220
Web: www.spinepaininc.com
Product Codes: COM, DI, EDU, FRST, XRAY

Spineway 3057
Ecully, 69130
France
Phone: 33-472770152
Web: www.spineway.com
Product Codes: I, P

Spiracur 4948
Sunnyvale, CA 94089
Phone: (408)701-5300
Web: www.spiracur.com
Product Codes: DEV, SI

Springer 5721
New York, NY 10013
Phone: (212)460-1500
Web: www.springer.com
Product Codes: PUB

SRSsoft 4457
Montvale, NJ 07645
Phone: (201)802-1300
Web: www.srssoft.com
Product Codes: COM, EMR, IMG, PM

Stability Biologics 6518
Nashville, TN 37203
Phone: (855)267-5551
Web: www.stabilitybio.com
Product Codes: BNE, T

Staff Care, Inc. 4615
Irving, TX 75063
Phone: (800)876-0500
Web: www.staffcare.com
Product Codes: PR

STAT Design, LLC 7131
Morris Plains, NJ 07950
Phone: (973)216-6449
Web: www.statdesignllc.com
Product Codes: BB, DEV, FRST, I, OTH, P, SI

Stelkast 431
Mc Murray, PA 15317
Phone: (724)941-6368
Web: www.stelkast.com
Product Codes: DEV, I

Stellen Medical, LLC 2169
Saint Paul, MN 55110
Phone: (651)426-1496
Web: www.stellenmedical.com
Product Codes: I, T

COMPANY BOOTH NO.

Stemcup Medical Products AG 5234
Zurich, 8048
Switzerland
Phone: 41-491719789699
Web: www.stemcup.ch
Product Codes: I

STERIS Corporation 3141
Mentor, OH 44060
Phone: (800)548-4873
Web: www.steris.com
Product Codes: ADVA, FPD, SURG

Steute Meditech, Inc. 3065
Ridgefield, CT 06877
Phone: (203)244-6300
Web: www.steute-meditech.com
Product Codes: AS, DI, IMG, MRI, SI, SURG, XRAY

StrenuMed Inc. 3737
Ventura, CA 93003
Phone: (805)477-1000
Web: www.strenumed.com
Product Codes: BB, SI, SURG

Stryker Endoscopy 2549
San Jose, CA 95138
Phone: (800)435-0220
Web: www.stryker.com/endoscopy
Product Codes: AS, COM, EMR, I, IMG, SG, SI, SURG, T

Stryker Instruments 2549
Kalamazoo, MI 49001
Phone: (800)253-3210
Web: www.stryker.com
Product Codes: ADVA, BLD, CS, DEV, IMG, MS, SI, SURG

Stryker MAKO 2549
Fort Lauderdale, FL 33317
Phone: (954)927-2044
Web: www.makosurgical.com
Product Codes: DEV, I

Stryker Orthopaedics 2549
Mahwah, NJ 07430
Phone: (201)831-5000
Web: www.stryker.com
Product Codes: ADVA, AS, BLD, BNE, DEV, EDU, I, OTH, PM, SI

SunMedica, Inc. 6555
Redding, CA 96003
Phone: (530)229-1600
Web: www.sunmedica.com
Product Codes: DEV, MS, SG

Surface Dynamics, LLC 1535
Cincinnati, OH 45246
Phone: (513)772-6635
Web: www.sdbiocoatings.com
Product Codes: BNE, DEV, I

COMPANY BOOTH NO.

SurgCenter Development 740
Pismo Beach, CA 93448
Phone: (402)779-6135
Web: www.surgcenter.com
Product Codes: FRST, PR

Surgical Affiliates Management Group, Inc. 4712
Sacramento, CA 95814
Phone: (916)441-0400
Web: www.samgi.com
Product Codes: PR

Surgical Devices Inc. 363
Athens, GA 30601
Phone: (866)640-2875
Web: www.surgicaldevices.com
Product Codes: SURG

Surgical Planning Associates, Inc. 2232
Boston, MA 02120
Phone: (617)277-4434
Web: www.hipsextant.com
Product Codes: DEV, I, IMG, SI

Surgical Power, Inc. 3156
Warsaw, IN 46582
Phone: (574)267-8207
Web: www.surgicalpower.com
Product Codes: SI, SURG

Surgical Specialties Corporation 2151
Reading, PA 19606
Phone: (877)991-1110
Web: www.quilldevice.com
Product Codes: DEV, SI

SurgiMate 4631
New York, NY 10024
Phone: (800)580-1960
Web: www.surgimate.com
Product Codes: EMR, PM

Surgionix Ltd. 6423
Auckland, 0757
New Zealand
Phone: 64-94769246
Web: www.surgionix.com
Product Codes: DEV, SI, SURG

Surgitel/General Scientific Corp. 2230
Ann Arbor, MI 48103
Phone: (800)959-0153
Web: www.surgitel.com
Product Codes: SI, SURG

Suzhou Sunan Zimmered Medical Instrument Co., Ltd. 456
Zhangjiagang, Jiangsu, 215626
China
Phone: 86-18651128828
Web: www.zimede.com
Product Codes: BNE, FRST, I, MS, O, SI

COMPANY	BOOTH NO.	COMPANY	BOOTH NO.	COMPANY	BOOTH NO.
Suzhou Xinrong Best Medical Instrument Co., Ltd.	6820	Technicality, Inc.	1253	The Journal of Bone and Joint Surgery, Inc.	5321
Zhangjiagang, 215625 China Phone: 86-51258100786 Product Codes: FRST, I, SI		Addison, IL 60101 Phone: (800)322-2844 Web: www.tmsmed.net Product Codes: I, SI		Needham, MA 02492 Phone: (781)449-9780 Web: www.jbjs.org Product Codes: EDU, PUB	
Swarm Interactive	4453	Tecomet	1834	The Medcom Group, Ltd.	6530
Chapel Hill, NC 27514 Phone: (954)873-2434 Web: www.swarminteractive.com Product Codes: COM, EDU		Wilmington, MA 01887 Phone: (978)642-2400 Web: www.tecomet.com Product Codes: BB, DEV, I, SI, SURG		Windsor, CO 80550 Phone: (970)674-3032 Web: www.medcomgroup.com Product Codes: FRST, MS, REHB	
Symmetry Medical Inc.	4949	Tecres Spa	5829	The Perry Initiative	4119B
Warsaw, IN 46582 Phone: (574)267-8700 Web: www.symmetrymedical.com Product Codes: AS, BB, DEV, I, SI, SURG		Sommacamagna (VR), 37066 Italy Phone: 39-0459217311 Web: www.tecres.it Product Codes: BNE, DEV, P		San Francisco, CA 94117 Phone: (302)319-1113 Web: www.perryinitiative.org Product Codes: AO	
Synergie Ingenierie Medicale (synimed)	6435	TeDan Surgical Innovations	6249	The Royal College of Orthopaedic Surgeons of Thailand (RCOST)	4214A
Chamberet, 19370 France Phone: 33-555983138 Web: www.synimed.com Product Codes: BNE, I, P		Sugar Land, TX 77478 Phone: (713)726-0886 Web: www.tedansurgical.com Product Codes: DEV		Bangkok, Bangkok, Huay Kwang 10320 Thailand Product Codes: AO	
Synergy Surgicalists	4655	Teknimed	5248	ThermoTek, Inc	2155
Bozeman, MT 59715 Phone: (406)581-8899 Web: www.synergysurgicalists.com Product Codes: FRST, PM, PR		L'Union, 31240 France Phone: 33-534251060 Web: www.teknimed.com Product Codes: BNE, DEV, I, P		Flower Mound, TX 75028 Phone: (972)874-4949 Web: www.thermotekusa.com Product Codes: DEV, MS, REHB, SI	
Syntec Scientific Corporation	4130	Tekscan, Inc.	4034	THI - Total Healthcare Innovation GmbH	2031
Chang Hua, 50971 Taiwan Phone: 886-47987099 Web: www.syntec.com.tw Product Codes: I, SI		South Boston, MA 02127 Phone: (617)464-4500 Web: www.tekscan.com Product Codes: COM, DI, O, OTH, REHB		Feistritz Im Rosental, 9181 Austria Phone: 43-422830100 Web: www.thigmbh.at Product Codes: DEV, OTH, SURG, T	
Systemedx Healthcare Technology	4535	Teleflex	3069	Thieme Publishers, Inc.	5512
Cullman, AL 35058 Phone: (256)739-1398 Web: www.systemedxortho.net Product Codes: COM, EMR, PM		Durham, NC 27709 Phone: (866)246-6990 Web: www.teleflex.com Product Codes: BNE, DEV, SI		New York, NY 10001 Phone: (800)782-3488 Web: www.thieme.com Product Codes: PUB	
T					
Tasarimmed Medical Equipments	7121	Teleflex Medical OEM	3067	Thortex	5153
Istanbul, 34055 Turkey Phone: 90-2126742244 Web: www.tasarimmed.com.tr Product Codes: DEV, FRST, I, MS, SI, SURG		Gurnee, IL 60031 Phone: (847)596-3100 Web: www.teleflexmedicaloem.com Product Codes: BB, OTH		Portland, OR 97230 Phone: (503)654-5726 Web: www.thortexinc.com Product Codes: DEV, FRST, I, SI	
TDM Co., Ltd.	3730	Tenex Health, Inc.	5850	Tianjin Walkman Biomaterial Co., Ltd.	6755
Gwangju-Si, Gwangju-Si 500-706 Korea, Republic of Phone: 82-626027468 Web: www.tradimedics.com Product Codes: DEV, I		Lake Forest, CA 92630 Phone: (855)283-6366 Web: www.fastprocedure.com Product Codes: DEV, DI, IMG, SI, SURG, T		Tianjin, 301609 China Phone: 86-2268660777 Web: www.walkman.com.cn Product Codes: BNE, FRST, I, SI	
		Terason	2830	Tianjin ZhengTian Medical Instrument Co., Ltd.	6729
		Burlington, MA 01803 Phone: (781)270-4143 Web: www.terason.com Product Codes: DI		Beijing, 100082 China Phone: 86-1082292929 Web: www.ztmed.cn Product Codes: I, SI	

COMPANY BOOTH NO.

Tiemann Surgical 3841
 Hauppauge, NY 11788
 Phone: (800)843-6266
 Web: www.georgetiemann.com
 Product Codes: SI, SURG

Tissue Banks International 462
 Baltimore, MD 21201
 Phone: (410)752-3800
 Web: www.tbionline.org
 Product Codes: BNE, I, T

Tissue Regenix 7013
 San Antonio, TX 78258
 Phone: (210)279-0745
 Web: www.tissueregenix.com
 Product Codes: FRST, T

Toby Orthopaedics LLC 4068
 Miami Beach, FL 33141
 Phone: (866)979-8629
 Web: www.tobyortho.com
 Product Codes: BNE, I, SI

Top Shelf Orthopedics 4434
 Tracy, CA 95304
 Phone: (866)592-0488
 Web: www.topshelforthopedics.com
 Product Codes: O, REHB, SG

Tornier 5849
 Bloomington, MN 55437
 Phone: (952)426-7600
 Web: www.tornier.com
 Product Codes: ADVA, AS, DEV, I, P, SI

Total Plastics 1038
 Kalamazoo, MI 49004
 Phone: (260)489-3656
 Web: www.totalplastics.com
 Product Codes: BB, DEV, I, O, P, SI

Townsend Design 3639
 Bakersfield, CA 93313
 Phone: (661)837-1795
 Web: www.townsenddesign.com
 Product Codes: O, REHB

Triangle 7128
 Upper Saddle River, NJ 07458
 Phone: (201)825-1212
 Web: www.trianglemfg.com
 Product Codes: DEV, FRST, I, SI

TriMed, Inc. 1657
 Santa Clarita, CA 91355
 Phone: (800)633-7221
 Web: www.trimedortho.com
 Product Codes: I

True Tool Innovations 7023
 Croydon, NH 03773
 Phone: (603)863-1079
 Web: www.trueinnovations.com
 Product Codes: BB, BNE, FRST

COMPANY BOOTH NO.

Tyy Consulting 4513
 Las Vegas, NV 89103
 Phone: (800)218-0253
 Web: www.tyyconsulting.com
 Product Codes: PH

U

U&I Corporation 741
 Uijeongbu-Si, Gyeonggi-Do 480-859
 Korea, Republic of
 Phone: 82-318520102
 Web: www.youic.com
 Product Codes: I, MS, SI

UBS Financial Services Inc. 4550
 Oakbrook Terrace, IL 60181
 Phone: (630)572-2287
 Web: www.ubs.com/team/tategroup
 Product Codes: FIN

Ulrich Medical USA 3235
 Chesterfield, MO 63005
 Phone: (800)519-0268
 Web: www.ulrichmedicalusa.com
 Product Codes: DEV, SI

Understand.com 4536
 Reno, NV 89503
 Phone: (775)851-3420
 Web: www.understand.com
 Product Codes: COM, EDU, PM

Union Surgical, LLC 3837
 Philadelphia, PA 19107
 Phone: (215)521-3004
 Web: www.unionsurgical.com
 Product Codes: I, SI

United Endoscopy 831
 Corona, CA 92879
 Phone: (951)270-3400
 Web: www.endoscope.com
 Product Codes: AS, DI, MS, SI, SURG

United Ortho 4849
 Fort Wayne, IN 46803
 Phone: (800)227-8748
 Web: www.unitedortho.com
 Product Codes: O, SG

United Orthopedic Corporation 6149
 Taipei, 23452
 Taiwan
 Phone: 886-229294567
 Web: www.uoc.com.tw
 Product Codes: I, P, SI

University of St. Augustine 5413
 Saint Augustine, FL 32080
 Phone: (800)241-1027
 Web: www.usa.edu
 Product Codes: EDU

COMPANY BOOTH NO.

University of Tennessee Physician Executive MBA Program 5715
 Knoxville, TN 37996
 Phone: (865)974-1772
 Web: www.pemba.utk.edu
 Product Codes: EDU

US Orthopedics, Inc. 5741
 Pompano Beach, FL 33060
 Phone: (954)210-7775
 Web: www.usorthopedic.com
 Product Codes: DEV, I, SI

V

Velocity Orthopedics, Inc. 6922
 Rancho Cucamonga, CA 91730
 Phone: (909)987-4343
 Web: www.velocityorthopedics.com
 Product Codes: AS, DEV, FRST, SI

Venel 4552
 Omaha, NE 68138
 Phone: (402)763-8725
 Web: www.venel.com
 Product Codes: EDU, MKT, OTH

Veritas Health LLC 4758
 Deerfield, IL 60015
 Phone: (847)607-8577
 Web: www.arthritis-health.com
 Product Codes: BB, EDU, PUB

Vilex, Inc. 4938
 Mc Minnville, TN 37110
 Phone: (800)521-5002
 Web: www.vilex.com
 Product Codes: DEV, I, SI

Virtamed AG 6713
 Schlieren, Zuerich, 8952
 Switzerland
 Phone: 41-445009690
 Web: www.virtamed.com
 Product Codes: AM, BB, COM, EDU

VirtualScopics 2842
 Rochester, NY 14625
 Phone: (585)249-6231
 Web: www.virtualscopics.com
 Product Codes: DI, IMG, MRI, XRAY

VisionScope Technologies 2540
 Littleton, MA 01460
 Phone: (888)808-8357
 Web: www.myvsi.com
 Product Codes: AS, DI

Vivorte, Inc. 6821
 Louisville, KY 40204
 Phone: (270)307-5266
 Web: www.vivorte.com
 Product Codes: FRST, I, T

COMPANY BOOTH NO.

Vomaris Wound Care, Inc. 7223
Chandler, AZ 85226
Phone: (480)921-4948
Web: www.procellera.com
Product Codes: DEV, FRST

VQ OrthoCare 6319

Irvine, CA 92614
Phone: (800)266-6969
Web: www.vqorthocare.com
Product Codes: ADVA, BNE, DEV, EDU, MS, O, REHB, SG

VSMPO-Tirus, US 351

Leetsdale, PA 15056
Phone: (724)251-9400
Web: www.vsmo-tirus.com
Product Codes: BB, I

W**Waldemar Link GmbH & Co. KG** 3849

Hamburg, 22339
Germany
Phone: 49-539950
Web: www.linkhh.de
Product Codes: DEV, I, P, SI

Weatherby Healthcare 4548

Salt Lake City, UT 84121
Phone: (800)586-5022
Web: www.weatherbyhealthcare.com
Product Codes: PR

Webb Dordick, Rare Medical Books 5313

Somerville, MA 02145
Phone: (617)776-1365
Product Codes: PUB

Weigao Orthopaedic Device Co., Ltd. 4337

Weihai City, 264203
China
Phone: 86-6315788927
Web: www.en.wegortho.com
Product Codes: BB, I, SI

Wellbe.me 7122

Madison, WI 53717
Phone: (800)960-4118
Web: www.wellbe.me
Product Codes: BB, COM, EDU, FRST

Westlake Plastics 1835

Lenni, PA 19052
Phone: (610)459-1000
Web: www.westlakeplastics.com
Product Codes: BB

COMPANY BOOTH NO.

Whale Imaging 2439

Beijing P.R., 100176
China
Phone: 86-01067892355
Web: www.whaleimaging.com
Product Codes: DI

White Towel Services Inc 7214

Fort Worth, TX 76155
Phone: (866)938-8693
Web: www.wtowel.com
Product Codes: CS, FRST, OTH, PM

Whitney Medical Solutions 933

Niles, IL 60714
Phone: (847)470-9300
Web: www.whitneymedicalsolutions.com
Product Codes: DEV, MS, SI

Whittemore Enterprises, Inc. 3531

Rancho Cucamonga, CA 91730
Phone: (909)980-2452
Web: www.wemed1.com
Product Codes: AS, I, SI, SURG

Wiltrom Co., Ltd. 756

Hsinchu, 31053
Taiwan
Phone: 886-35828999
Product Codes: FRST, I

Wolters Kluwer Health 5513

Philadelphia, PA 19103
Phone: (215)521-8300
Web: www.lww.com
Product Codes: PUB

Wright Medical Technology 749

Arlington, TN 38002
Phone: (901)867-9971
Web: www.wmt.com
Product Codes: DEV, SI, T

Wuhu Ruijin Medical Instrument & Device Co., Ltd. 758

Wuhu, 241000
China
Phone: 86-5535905318
Web: www.whruijin.com
Product Codes: DEV, FRST, SURG

Wynn Pharm 1648

Freehold, NJ 07728
Phone: (732)409-1005
Web: www.wynnpharm.com
Product Codes: PH

X**X-NOV Medical Technology** 7120

Porrentruy, 2900
Switzerland
Phone: 33-624625046
Web: www.xnov.com
Product Codes: FRST, I, P, SI

COMPANY BOOTH NO.

X-Spine Systems, Inc. 6939

Miamisburg, OH 45342
Phone: (937)847-8400
Web: www.x-spine.com
Product Codes: I

Y**Your Practice Online, LLC** 4437

Irvine, CA 92612
Phone: (877)388-8569
Web: www.yourpracticeonline.net
Product Codes: BB, COM, EDU, PM

Z**Ziehm Imaging** 2539

Orlando, FL 32811
Phone: (407)615-8560 EXT 164
Web: www.ziehm.com
Product Codes: SURG, XRAY

Zigg Design LLC 4833

Logan, UT 84321
Phone: (435)757-4956
Web: www.ziggdesign.com
Product Codes: AS, BB, DEV, I, SI, SURG

Zimmer 3149

Warsaw, IN 46580
Phone: (800)613-6131
Web: www.zimmer.com
Product Codes: ADVA, BLD, BNE, DEV, EDU, I, IMG, MS, SG, SI, SURG

ZipLine Medical, Inc. 6813

Campbell, CA 95008
Phone: (405)684-0747
Web: www.ziplinemedical.com
Product Codes: DEV, FRST, MS, SURG

ZyDoc Transcription 4714

Islandia, NY 11749
Phone: (631)273-1963
Web: www.zydoc.com
Product Codes: EMR, PM

AdvaMed Member - ADVA

Acumed.....	5549
Aesculap Implant Systems.....	1049
Aptiv Solutions.....	7019
ArthroCare.....	1130
Arthrosurface, Inc.....	6529
Baxano Surgical, Inc.....	1635
Biomet.....	1749
Breg.....	1649
Ceterix Orthopaedics.....	7123
Checkpoint Surgical, LLC.....	6055
Consensus Orthopedics.....	5835
Corin Group.....	2949
Covidien.....	3749
DePuy Synthes Joint Reconstruction.....	4049
Exactech, Inc.....	2261
Game Ready.....	6541
Globus Medical.....	6849
Greatbatch Medical.....	1363
GS Medical.....	3734
Integra.....	567
K2M, Inc.....	6949
MAQUET.....	548
Medtronic.....	5249
OrthAlign, Inc.....	5813
Orthofix.....	4929
OsteoMed.....	3049
Pega Medical, Inc.....	3230
RTI Surgical.....	5937
Siemens Healthcare.....	4821
Small Bone Innovations, Inc.....	2248
Smith & Nephew Inc.....	5229
Solana Surgical, LLC.....	6513
STERIS Corporation.....	3141
Stryker Instruments.....	2549
Stryker Orthopaedics.....	2549
Tornier.....	5849
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Allied Organization - AO

American Society of Orthopaedic Assistant.....	4119A
Asociacion Argentina de Ortopedia y Traumatologia.....	4123A
Chinese Orthopaedic Association.....	4218A
European Federation of Orthopaedics and Traumatology (EFORT).....	4115A
National Association of Orthopaedic Technologists - NAOT.....	4222B
Operation Walk USA.....	4115B
Orthopaedics Overseas.....	4123B
SICOT.....	4218B
SIGN Fracture Care International..	4214B
Sociedad Colombiana de Cirugia Ortopedica y Traumatologia SCCOT.....	4222A
Sociedade Brasileira de Ortopedia e Traumatologia - SBOT.....	4212A
The Perry Initiative.....	4119A

The Royal College of Orthopaedic Surgeons of Thailand (RCOST)4214A

Anatomical Models - AM

AccelLAB Inc.....	3832
American 3B Scientific.....	4322
Anatomy Gifts Registry.....	7130
Austen BioInnovation Institute in Akron.....	3967
CDC Design, Inc.....	1549
Custom Orthopaedic Solutions.....	6441
EOS Electro Optical Systems.....	6213
GPI Prototype.....	6120
Industrias Medicas Sampedro S.A.S.	4036
Jiangsu Ideal Medical Science & Technology Co., Ltd.....	6854
Kilgore International Inc.....	1348
Materialise.....	6839
Medical Modeling Inc.....	734
Models Plus, Inc.....	5751
Sawbones/Pacific Research Labs.....	3134
Simbionix USA Corporation.....	3633
Virtamed AG.....	6713

Arthroscopic Systems - AS

Advanced Endoscopy Devices, Inc.	533
Allen Medical Systems.....	1341
AME/Orthotec International.....	3331
American Medical Endoscopy, Inc.	841
Arthrex, Inc.....	6029
ArthroPlastics, Inc.....	1942
Arthrosurface, Inc.....	6529
Case Medical.....	6721
Cayenne Medical.....	1430
ConMed.....	2249
Devicix, LLC.....	3630
Flagship Surgical, LLC.....	3535
HNM Medical.....	4135
IHI Ionbond Inc.....	6118
IMDS - Innovative Medical Device Solutions.....	457
INEX Surgical Inc.....	3332
Karl Storz Endoscopy-America, Inc..	1057
Maramed Orthopedic Systems.....	6723
Orthopedic Sciences, Inc.....	5919
Panasonic.....	2930
Parcus Medical, LLC.....	3430
Pro-Dex Inc.....	3773
Razek Equipamentos Ltda.....	1335
Sawbones/Pacific Research Labs.....	3134
SH Medical Corp.....	1631
Siemens Healthcare.....	4821
Smith & Nephew Inc.....	5229
Steute Meditech, Inc.....	3065
Stryker Endoscopy.....	2549
Stryker Orthopaedics.....	2549
Symmetry Medical Inc.....	4949
Tornier.....	5849
United Endoscopy.....	831
Velocity Orthopedics, Inc.....	6922
VisionScope Technologies.....	2540

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Blood Products - BLD

Arteriocyte Medical Systems.....	1734
Arthrex, Inc.....	6029
Biomet.....	1749
Clinical Resolution Lab, Inc.....	7213
Cytonics Corporation.....	5830
Exactech, Inc.....	2261
Harvest Technologies Corp.....	939
IHI Ionbond Inc.....	6118
OHK Medical Devices.....	969
Regen Lab.....	267
Stryker Instruments.....	2549
Stryker Orthopaedics.....	2549
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Bone Products - BNE

aap Implantate AG.....	3037
Advanced Biologics.....	1557
Alexion.....	6815
AlloSource.....	1441
American Medical Endoscopy, Inc.	841
Anatomy Gifts Registry.....	7130
Arcam AB.....	4072
Arthrosurface, Inc.....	6529
Arztt.....	4853
Bacterin.....	6641
Baxter Healthcare Corporation.....	1030
Berkeley Advanced Biomaterials, Inc.	1433
Biocomposites.....	6521
Biologic Therapies, Inc.....	6148
Biomatlante.....	2967
Biomet.....	1749
BIOTECK S.p.A.....	3330
Brasseler USA.....	1841
Captiva Spine, Inc.....	6512
Cellright Technologies, LLC.....	2270
Cerapedics, Inc.....	4136
CG Bio.....	261
Changzhou Waston Medical Appliance Co., Ltd.....	1334
Devicix, LLC.....	3630
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Element Orthopedics.....	7022
Etex Corporation.....	3034
Exactech, Inc.....	2261
Hans Biomed USA, Inc.....	1064
Harvest Technologies Corp.....	939
Hologic.....	2341
IHI Ionbond Inc.....	6118
Industrias Medicas Sampedro S.A.S.	4036
INSURGICAL Power Tools.....	4930
Integra.....	567
ISTO Technologies, Inc.....	6749
Jiangsu Ideal Medical Science & Technology Co., Ltd.....	6854
Joined Orthopaedic Innovators Netherlands.....	7021
K2M, Inc.....	6949

Kasios	4040
LifeLink Tissue Bank.....	531
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NIH Osteoporosis & Related Bone Diseases.....	5220
NovaBone Products LLC	1251
NuTech	6649
Olympus Biotech Corporation	2935
Oriental Resources Development Limited.....	6819
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Paradigm BioDevices, Inc.....	6648
Promimic AB.....	7237
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SBM Inc.	2171
Shanghai Bojin Electric Instrument & Device Co., Ltd.....	3731
Skye Orthobiologics LLC.....	7220
Sonoma Orthopedic Products	2254
Stability Biologics.....	6518
Stryker Orthopaedics	2549
Surface Dynamics, LLC.....	1534
Suzhou Sunan Zimmered Medical Instrument Co., Ltd.....	456
Synergie Ingenierie Medicale (synimed)	6435
Tecres Spa	5829
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Teleflex.....	3069
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Tissue Banks International	462
Toby Orthopaedics, Inc.....	4068
True Tool Innovations.....	7023
VQ OrthoCare.....	6319
Zimmer	3149

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aap Implantate AG.....	3037
Abrexis	641
AccellAB Inc.	3832
AMSURG	4633
Arcamed, LLC	6520
Austen BioInnovation Institute in Akron.....	3967
Autocam Medical.....	6053
Bal Seal Engineering, Inc.	2141
Biologic Therapies, Inc.	6148
Biomatlante.....	2967
C&A Tool Engineering, Inc.....	3436
Captiva Spine, Inc.	6512
Cases By Source, Inc.	1536
Changzhou Waston Medical Appliance Co., Ltd.	1334
DragonBio Implants.....	7029
Endolab GmbH.....	5731
EOS Electro Optical Systems.....	6213

Evonik Corporation	1350
Flagship Surgical, LLC.....	3535
FORE - Foundation For Orthopaedic Research and Education	5712
Francis Lamont Innovations Ltd	6715
gSource, LLC	1551
IMDS - Innovative Medical Device Solutions	457
Industrias Medicas Sampedro S.A.S.	4036
In-tech Medical	649
Invibio Biomaterial Solutions.....	3935
Jiangsu Ideal Medical Science & Technology Co., Ltd.....	6854
Joined Orthopaedic Innovators Netherlands.....	7021
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Maestro	5713
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Norman Noble, Inc.....	1437
Orchid Orthopedic Solutions	6829
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Veritas Health LLC.....	4758
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VSMPO-Tirus, US.....	351
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Casting Supplies & Equipment - CS

BSN Medical.....	1735
Buxton BioMedical, Inc.	1931
DeSoutter Medical Ltd.....	1141
Dry Corp, LLC	5252
DryCast, LLC	6154
EOS Electro Optical Systems.....	6213
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Ortho-Care	3059
Stryker Instruments.....	2549
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Computer Hardware/ Software - COM

CARE	4512
CareCloud	4413
ChartLogic, Inc.	4441
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ConMed.....	2249
Devicix, LLC.....	3630
DTC Healthcom	4634
Emdat	4632
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KareOutcomes	4469
Karl Storz Endoscopy-America, Inc.	1057
KM Medical Software Ltd	4533
Materialise	6839
MD Logic EHR.....	4541
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Merge Healthcare	4649
Millstone Medical Outsourcing.....	657
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Modernizing Medicine, Inc.	4737
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NextGen Healthcare Information Systems, Inc.....	4449
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Origin Healthcare Solutions	4612
Ortech Data Centre Inc.....	4557
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Sinai Hospital of Baltimore, Rubin Inst. for Advanced Orthopedics.....	5615
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Spine Pain Management, Inc.	2739
SRSoft	4457
Stryker Endoscopy	2549
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Tekscan, Inc.	4034
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Abrexis	641
AccellAB Inc.	3832
Acell, Inc.....	5021
Active Implants Corporation.....	6049

Advanced Biologics	1557	Devicix, LLC.....	3630	Lumitex MD.....	1431
Advanced Orthopaedic Solutions, Inc.	5349	DGIMed Ortho.....	1333	Magnus Magnetica, LLC	6823
Aesculap Implant Systems	1049	Directed Manufacturing, Inc.....	3438	Mastin Medical Co. Ltd.....	5135
AIP Precision Machining.....	1340	DJO Global.....	1349	Materialise	6839
Allen Medical Systems	1341	Element Orthopedics.....	7022	Maxx Health Inc.....	3440
American Medical Endoscopy, Inc.	841	ElliptiGO Inc.	635	McGinley Orthopaedic Innovations, LLC	2463
Apex Tools and Orthopedics.....	4412	Elliquence LLC	2449	MedFix International, LLC.....	235
Aptiv Solutions	7019	Emovi, Inc.....	6015	Medical Compression Systems, Inc. ...	873
Arcamed, LLC	6520	Endotec Inc.	4241	MedicMicro	5735
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Arthrex, Inc.	6029	Exactech, Inc.....	2261	Millstone Medical Outsourcing.....	657
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Arthrosurface, Inc.	6529	Ferring Pharmaceuticals	3767	NeuMed.....	1934
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Autocam Medical.....	6053	Francis Lamont Innovations Ltd	6715	NovaBone Products LLC	1251
Avalign Technologies.....	4231	Fx Solutions	1537	OHK Medical Devices	969
Bacterin.....	6641	Game Ready	6541	Olive Medical	3969
Baitella AG	837	GE Healthcare	2837	Omega Surgical Instruments Inc.....	2149
Baxano Surgical, Inc.	1635	Globus Medical.....	6849	OMNI.....	4939
Baxter Healthcare Corporation.....	1030	GPI Prototype	6120	Orchid Orthopedic Solutions	6829
Beijing Chunlizhengda Medical Instruments Co., Ltd.	3732	Gruppo Bioimpianti SRL	1041	Ortho Development	2959
Benvenue Medical	7212	GS Medical	3734	Ortho Solutions Limited	6613
Berkeley Advanced Biomaterials, Inc.	1433	Hand Biomechanics Lab, Inc.....	1265	Orthofix.....	4929
Better Walk Inc.	357	Harvest Technologies Corp.	939	Orthopaedic Innovation Centre	3959
Biocomposites	6521	Hologic	2341	OrthoPediatrics	3834
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While in the Exhibit Hall

Morial Convention Center

Wednesday and Thursday, 9:00 AM – 5:00 PM

Friday, 9:00 AM – 4:00 PM

Unopposed Exhibit Time daily from 12:30 to 1:30 PM

AAOS Redemption Centers

Booths 275, 1275, 5759, and 7049

Check your registration packet for special coupons, redeemable exclusively in the Exhibit Hall. Be sure to pick up your complimentary tote bag and AAOS t-shirt. Drop off your tickets on Thursday and Friday for special prize drawings of airline tickets, hotel room for next year’s Annual Meeting, GoPro Cameras and iPads.

Beverage Breaks

Booths 1273, 4842, and 7055

Complimentary beverages are served in the exhibit hall on Wednesday and Thursday from 3:30 to 4:00 PM between scientific sessions, and on Friday at 10:00 AM.

Food Service

Enjoy complimentary food and beverage items supplied by many of the exhibitors in their booth. Food service areas located throughout the exhibit hall will offer a variety of food and beverage options for purchase.

AAOS Bistro

The AAOS Bistro provides a comfortable setting for exhibitors and attendees to eat, meet and network. Located directly on the show floor with an all-inclusive buffet lunch and available table reservations, Wednesday through Friday from 11:00 AM to 2:30 PM. Tickets can be purchased in Lobby G.

New! Beignet Social

Booths 1273, 4842, and 7055

Be sure to stop by the exhibit hall on Friday from 2:00-3:30 PM for a Louisiana favorite, beignets.

Seating Areas

Park benches are placed throughout the exhibit hall and additional seating is available at the food service areas and in the Academy Lounge located in Exhibit Hall G.

Navigating the Exhibit Hall

- Stop at Internet Connections kiosks located in the lobby areas to view a listing of all exhibitors, their contact and product information, and create and print your personal *My Expo Plan*.
- Pick up an updated floor plan and exhibitor listing at the *You Are Here* signs located at delect entrances to the Exhibit Hall. These signs and maps are color coded to help you find your way around the exhibit hall.
- Booth numbers are located on the aisle carpet and aisle numbers are on signs hanging overhead.
- There’s no need to tote a bulging bag or cram papers in your suitcase when you leave. Simply present your badge to exhibitors whose literature you want to receive. After scanning the bar code, exhibitors will be able to mail materials directly to you after the meeting, enabling you to spend more time in face-to-face discussions with vendors.

AAOS Evidence-Based Quality and Value Initiatives

Appreciation Breakfast Thursday, March 13
6:30 - 8:00 AM
Hilton Riverside
Versailles Ballroom

AAOS Now Forum: Stem Cells in Orthopaedics

Invited Forum Monday, March 10
12:00 - 5:00 PM
Hilton Riverside
Grand Salon 9 & 12

AAOS Program Committees

Meeting Wednesday, March 12
7:00 - 7:45 AM
Morial Convention Center
Room 279

AAOS Women's Health Issues Advisory Board

Meeting Wednesday, March 12
11:30 AM - 3:30 PM
Morial Convention Center
Room 224

Advocacy Resources Committee

Meeting Wednesday, March 12
4:00 - 6:00 PM
Morial Convention Center
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Annual Meeting Committee

Breakfast Meeting Saturday, March 15
7:30 - 9:30 AM
Morial Convention Center
Room 279

Biological Implants Committee

Breakfast Meeting Thursday, March 13
6:00 - 8:00 AM
Morial Convention Center
Room 220

Biomedical Engineering Committee

Breakfast Meeting Friday, March 14
6:00 - 8:00 AM
Morial Convention Center
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Board of Councilors

Executive Committee Tuesday, March 11
3:30 - 6:00 PM
Morial Convention Center
Room 224

Orientation Meeting Wednesday, March 12
2:00 - 5:00 PM
Hilton Riverside
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Economic Issues Committee Thursday, March 13
3:30 - 5:30 PM
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4:30 - 6:30 PM
Hilton Riverside
Versailles Ballroom

Business Meeting Friday, March 14
7:00 - 11:30 AM
Hilton Riverside
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State Orthopaedic Societies Committee Friday, March 14
1:30 - 3:30 PM
Hilton Riverside
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Board of Specialty Societies

Communications Committee Thursday, March 13
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Education Committee Thursday, March 13
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Candidate, Resident and Fellow Committee

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6:30 - 8:30 AM
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Room 223

Central Evaluation Committee

Business Meeting and Lunch Thursday, March 13
12:00 - 1:30 PM
Morial Convention Center
Room 214

Central Instructional Course Committee

Meeting Saturday, March 15
11:30 AM - 1:00 PM
Morial Convention Center
Room 278

Communications Cabinet

Meeting Thursday, March 13
2:00 - 4:00 PM
Hilton Riverside
Jefferson

Evaluation Committees (OSIE)

Business Meeting Friday, March 14
12:00 PM - 1:30 PM
Morial Convention Center
Room 214

Evaluation Leadership

Meeting and Lunch Wednesday, March 12
11:30 AM - 12:30 PM
Hilton Riverside
Grand Salon 21 & 24

Evaluation New Member Orientation and Workshop

Meeting Wednesday, March 12
1:00 - 4:00 PM
Hilton Riverside
Grand Salon 21 & 24

Exhibits Committee

Meeting Tuesday, March 11
4:00 - 6:00 PM
Morial Convention Center
Room 278

Meeting Wednesday, March 12
6:30 - 9:00 AM
Morial Convention Center
Room 278

Health Care Systems Committee

Meeting Thursday, March 13
10:00 AM - 12:00 PM
Morial Convention Center
Room 274

International Committee

Meeting Thursday, March 13
12:00 - 2:30 PM
Morial Convention Center
Room 224

International President's Breakfast and World Opinion Forum

Breakfast Meeting Wednesday, March 12
6:30 - 9:30 AM
Morial Convention Center
Great Hall B

JAAOS Deputy Editors

Breakfast Meeting Friday, March 14
7:00 - 8:00 AM
Morial Convention Center
Room 223

Leadership Development Committee

Luncheon Friday, March 14
12:00 - 2:00 PM
Morial Convention Center
Room 223

Leadership Fellows Program

Graduation and Orientation Friday, March 14
6:00 - 8:00 AM
Hilton Riverside
Grand Salon 15 & 18

Alumni Reception Friday, March 14
6:00 - 7:00 PM
Hilton Riverside
Grand Salon 9 & 12

Medical Liability Committee

Meeting Wednesday, March 12
1:30 - 3:30 PM
Morial Convention Center
Room 223

Membership Committee Meeting

Breakfast Meeting Wednesday, March 12
7:30 - 9:30 AM
Morial Convention Center
Room 274

OrthoInfo Editorial Board

Breakfast Meeting Friday, March 14
7:00 - 9:00 AM
Morial Convention Center
Room 212

Orthopaedic Learning Center

Board of Directors Meeting Saturday, March 15
6:30 - 8:30 AM
Morial Convention Center
Room 223

PAC Luncheon

Luncheon Wednesday, March 12
11:30 AM - 1:30 PM
Morial Convention Center
Great Hall B

Patient Education Committee

Breakfast Meeting Thursday, March 13
7:00 AM - 9:00 AM
Morial Convention Center
Room 274

Patient Safety Committee

Breakfast Meeting Wednesday, March 12
6:00 AM - 8:00 AM
Morial Convention Center
Room 220

Periodicals

Reception Friday, March 14
6:00 - 8:00 PM
Hilton Riverside
Grand Salon 15 & 18

State Societies Executive Directors

Luncheon Friday, March 14
11:00 AM - 1:00 PM
Morial Convention Center
Room 224

Affiliate Committee Meeting Hotels

Astor Crowne Plaza
739 Canal at Bourbon
Street
New Orleans, LA 70130
Ph: (504) 962-0500

New Orleans Marriott
555 Canal Street
New Orleans, LA 70130
Ph: (504) 581-1000

Harrah's
228 Poydras Street
New Orleans, LA 70130
Ph: (504) 533-6000

Ritz Carlton
921 Canal Street
New Orleans, LA 70112
Ph: (504) 524-1331

Hilton Riverside
Two Poydras Street
New Orleans, LA 70130
Ph: (504) 561-0500

Sheraton New Orleans
500 Canal Street
New Orleans, LA 70130
Ph: (504) 525-2500

Hyatt Place
881 Convention Center
Boulevard
New Orleans, LA 70130
Ph: (504) 524-1881

W New Orleans
333 Poydras Street
New Orleans, LA 70130
Ph: (504) 525-9444

Inter-Continental
444 St. Charles Avenue
New Orleans, LA 70130
Ph: (504) 525-5566

Westin Canal Place
100 Iberville Street
New Orleans, LA 70130
Ph: (504) 566-7006

Loews
300 Poydras & S. Peters
Street
New Orleans, LA
Ph: (504) 595-3300

Windsor Court
300 Gravier Street
New Orleans, LA 70130
Ph: (504) 523-6000



Photo courtesy of Jen Amato, New Orleans Convention & Visitors Bureau



Photo courtesy of Chris Granger, New Orleans Convention & Visitors Bureau

"Orthopedics" Editorial Board

Luncheon Thursday, March 13
12:00 - 2:00 PM
Windsor Court
Gallery

Abbott Society

Reception Thursday, March 13
6:00 - 9:00 PM
Antoine's Restaurant
713 Rue St. Louis Street

Albany Medical Center

Alumni Reception Friday, March 14
6:00 - 8:00 PM
Sheraton New Orleans
Evergreen

American Association of Hip and Knee Surgeons (AAHKS)

Board of Directors Meeting Wednesday, March 12
5:30 - 8:30 PM
Hilton Riverside
Grand Salon 3 & 6

Communication Committee Saturday, March 15
12:00 - 1:00 PM
Morial Convention Center
Room 213

EBM Committee Saturday, March 15
12:00 - 1:00 PM
Morial Convention Center
Room 220

Membership Committee Saturday, March 15
12:00 - 1:00 PM
Morial Convention Center
Room 223

Publications Committee Saturday, March 15
12:00 - 1:00 PM
Morial Convention Center
Room 224

HP Committee Saturday, March 15
12:00 - 1:00 PM
Morial Convention Center
Room 279

American Association of Latino Orthopaedic Surgeons (AALOS)

Annual Luncheon Friday, March 14
12:00 - 2:00 PM
Hilton Riverside
Grand Salon 15 & 18

American Orthopaedic Association (AOA)

Officer's Meeting Tuesday, March 11
3:00 - 4:00 PM
Hilton Riverside
Ascot

Own the Bone Steering Committee Meeting Tuesday, March 11
4:00 - 6:00 PM
Hilton Riverside
Magnolia

CIC Project Team: Rural MSK Care Wednesday, March 12
9:00 - 10:30 AM
Hilton Riverside
Eglinton and Winton

CORD Education Committee Meeting Wednesday, March 12
10:30 AM - 12:30 PM
Hilton Riverside
Magnolia

Academic Leadership Committee Meeting Wednesday, March 12
12:30 - 2:00 PM
Hilton Riverside
Windsor

Finance and Investment Committee Meeting Wednesday, March 12
2:00 - 3:00 PM
Hilton Riverside
Magnolia

Finance Committee Meeting Wednesday, March 12
3:00 - 4:00 PM
Hilton Riverside
Magnolia

Development Committee Meeting Wednesday, March 12
4:00 - 6:00 PM
Hilton Riverside
Prince of Wales

Nominating Committee Meeting Wednesday, March 12
4:00 - 6:00 PM
Hilton Riverside
Chequers

Fellowships Alumni Reception Wednesday, March 12
6:00 - 7:00 PM
Hilton Riverside
Jefferson Ballroom

Young Leaders Committee Meeting Thursday, March 13
7:00 - 8:00 AM
Hilton Riverside
Prince of Wales

Critical Issues Committee Meeting Thursday, March 13
11:00 AM - 2:00 PM
Hilton Riverside
Magnolia

Leadership Development
Committee Meeting Thursday, March 13
1:30 - 3:00 PM
Hilton Riverside
Newberry

Fellowships Coordinating
Committee Meeting Thursday, March 13
2:00 - 2:45 PM
Hilton Riverside
Ascot

Executive Committee Meeting Thursday, March 13
3:00 - 5:30 PM
Hilton Riverside
Magnolia

CORD Accreditation &
Compliance Committee Meeting Friday, March 14
10:30 AM - 12:00 PM
Hilton Riverside
Ascot

CORD Conference Meeting Friday, March 14
7:00 - 10:00 AM
Hilton Riverside
Grand Ballroom D

CORD Governing
Committee Meeting Friday, March 14
12:00 - 1:30 PM
Hilton Riverside
Ascot

OMeGA Board/RC Meeting Friday, March 14
10:00 - 11:00 AM
Hilton Riverside
Newberry

American Orthopaedic Foot & Ankle Society (AOFAS)

Post-Graduate Education &
Training Committee Thursday, March 13
3:00 - 4:00 PM
Hilton Riverside
Grand Salon 3 & 6

Awards & Scholarships
Committee Thursday, March 13
4:00 - 5:00 PM
Hilton Riverside
Grand Salon 7 & 10

Health Policy Committee Thursday, March 13
4:00 - 5:00 PM
Hilton Riverside
Grand Salon 3 & 6

Fellowship Match Committee Thursday, March 13
2:00 - 3:00 PM
Hilton Riverside
Grand Salon 3 & 6

Humanitarian Services
Committee Thursday, March 13
3:00 - 4:00 PM
Hilton Riverside
Grand Salon 7 & 10

Education Committee Friday, March 14
7:00 - 8:00 AM
Hilton Riverside
Grand Salon 3 & 6

CPT/RUC Committee Friday, March 14
8:15 - 9:15 AM
Hilton Riverside
Grand Salon 3 & 6

Public Education Committee Friday, March 14
8:15 - 9:15 AM
Hilton Riverside
Grand Salon 7 & 10

IFFAS Council Meeting Friday, March 14
11:00 AM - 12:30 PM
Hilton Riverside
Grand Salon 3 & 6

FAI Managerial Board Friday, March 14
1:00 - 2:00 PM
Hilton Riverside
Grand Salon 7 & 10

OFAR Managerial Board Friday, March 14
10:00 - 11:00 AM
Hilton Riverside
Grand Salon 7 & 10

OEF Board Meeting Friday, March 14
3:00 - 4:00 PM
Hilton Riverside
Grand Salon 3 & 6

AOFAS Board Meeting Friday, March 14
4:00 - 6:00 PM
Hilton Riverside
Grand Salon 3 & 6

F&A Fellowship Faculty
Meeting Saturday, March 15
6:00 - 7:00 AM
Morial Convention Center
Room 208-209

Member Reception Saturday, March 15
5:00 - 7:00 PM
Morial Convention Center
Great Hall B Pre-Function

American Orthopaedic Society for Sports Medicine (AOSSM)

Health Policy & Ethics
Committee Thursday, March 13
11:00 AM - 12:00 PM
Hilton Riverside
Ascot

Fellowship
Committee Thursday, March 13
12:00 - 1:00 PM
Hilton Riverside
Eglinton and Winton

Publications Committee	Thursday, March 13 12:00 - 1:30 PM Hilton Riverside Prince of Wales	Hall of Fame Committee	Friday, March 14 12:00 - 1:00 PM Hilton Riverside Cambridge
Education & Industry Relations Committee	Thursday, March 13 12:30 - 1:30 PM Hilton Riverside Chequers	Fellowship Directors	Friday, March 14 1:30 - 3:00 PM Hilton Riverside Grand Salon 19 & 22
Council of Delegates	Thursday, March 13 12:30 - 2:00 PM Hilton Riverside Grand Salon 9 & 12	Enduring Education Committee	Friday, March 14 3:00 - 5:00 PM Hilton Riverside Chequers
Fellowship Match Committee	Thursday, March 13 1:00 - 2:00 PM Hilton Riverside Marlborough B	American Shoulder and Elbow Surgeons (ASES)	
Public Relations Committee	Thursday, March 13 2:00 - 3:00 PM Hilton Riverside Eglinton and Winton	JSES Board of Trustees Meeting	Friday, March 14 10:00 AM - 12:30 PM Hilton Riverside Magnolia
Education Committee	Thursday, March 13 2:00 - 4:00 PM Hilton Riverside Marlborough A	Executive Committee Meeting	Friday, March 14 12:30 - 4:00 PM Hilton Riverside Magnolia
Research Committee	Thursday, March 13 2:00 - 4:00 PM Hilton Riverside Melrose	American Society for Surgery of the Hand (ASSH)	
Traveling Fellowship Committee	Friday, March 14 7:00 - 8:30 AM Hilton Riverside Marlborough A	AFSH Board of Trustees Meeting	Friday, March 14 7:00 - 9:30 AM Hilton Riverside Elmwood
PICME Committee	Friday, March 14 8:00 - 9:30 AM Hilton Riverside Chequers	Executive Committee Meeting	Friday, March 14 1:00 - 2:30 PM Hilton Riverside Elmwood
Nominating Committee	Friday, March 14 9:00 - 10:30 AM Hilton Riverside Cambridge	ASSH/AAHS President's Reception	Friday, March 14 6:00 - 7:30 PM Hilton Riverside Grand Salon 21 & 24
STOP Outreach Committee	Friday, March 14 10:30 AM - 12:00 PM Hilton Riverside Marlborough A	American Sports Medicine Fellowship Society	
OKO Committee	Friday, March 14 10:30 - 11:30 AM Hilton Riverside Chequers	Reception	Friday, March 14 6:00 - 8:00 PM Ritz-Carlton Broadmoor
		Andrews Institute	
		Reception	Friday, March 14 6:00 - 8:00 PM Ritz-Carlton Broadmoor
		Arkansas Orthopaedic Society	
		Alumni Dinner	Thursday, March 13 7:00 - 10:00 PM The House of Blues 225 Decatur Street

Arthroscopy Association of North America (AANA)

Fellowship Committee Meeting Thursday, March 13
7:00 - 8:00 AM
Hilton Riverside
Eglinton and Winton

AANA/ISAKOS Lunch Thursday, March 13
12:00 - 2:00 PM
Hilton Riverside
Grand Salon 15

International Committee Meeting Thursday, March 13
12:00 - 2:00 PM
Hilton Riverside
Grand Salon 18

Council on Education Thursday, March 13
4:00 - 5:00 PM
Hilton Riverside
Marlborough B

Research Committee Meeting Friday, March 14
7:00 - 8:00 AM
Hilton Riverside
Cambridge

MOC Task Force Friday, March 14
12:00 - 2:00 PM
Hilton Riverside
Marlborough A

Association of Residency Coordinators in Orthopaedic Surgery (ARCOS)

Educational Event Tuesday, March 11
8:00 AM - 1:00 PM
New Orleans Marriott
Mardi Gras C

Reception Tuesday, March 11
6:00 PM - 9:00 PM
New Orleans Marriott
Mardi Gras A-B

Breakfast and Lunch Wednesday, March 12
6:00 AM - 2:00 PM
New Orleans Marriott
Mardi Gras A-C

11th Annual Meeting Wednesday, March 12
7:00 AM - 5:00 PM
New Orleans Marriott
Mardi Gras D

Breakfast and Lunch Thursday, March 13
6:00 AM - 2:00 PM
New Orleans Marriott
Mardi Gras A-C

11th Annual Meeting

Thursday, March 13
7:00 AM - 5:00 PM
New Orleans Marriott
Mardi Gras D

Breakfast and Lunch

Friday, March 14
6:00 AM - 2:00 PM
New Orleans Marriott
Mardi Gras A-C

11th Annual Meeting

Friday, March 14
7:00 AM - 4:00 PM
New Orleans Marriott
Mardi Gras D

Association of Veteran's Administration Orthopaedic Surgeons

Focus Group Thursday, March 13
12:00 - 3:00 PM
Astor Crowne Plaza
Astor Ballroom III

Balboa Orthopaedics Navy Alumni Association

Alumni Reception Friday, March 14
7:00 - 9:00 PM
Westin Canal Place
Magnolia II

Beaumont Health System

Alumni Reception Friday, March 14
6:00 - 9:00 PM
Royal Sonesta Hotel, Regal Suite
300 Bourbon Street

Boston University Orthopaedic Surgical Associates

Alumni Reception Thursday, March 13
6:00 - 9:00 PM
Windsor Court
Gallery C

Brown/Rhode Island Hospital

Alumni Reception Friday, March 14
6:00 - 9:00 PM
Ritz Carlton
Mercier

California Orthopaedic Association

Board of Directors Meeting Thursday, March 13
6:30 - 10:00 AM
New Orleans Marriott at the
Convention Center
River Bend Ballroom I
859 Convention Center Blvd

Canadian Orthopaedic Association

Reception Thursday, March 13
6:00 - 9:00 PM
Harrahs
Vieux Carre Ballroom

Cincinnati Sports Medicine and Orthopaedic Center

Alumni Reception Thursday, March 13
6:00 - 9:00 PM
Westin Canal
Plimsoll Club

Cleveland Clinic

Alumni Reception Friday, March 14
6:00 - 8:00 PM
Harrahs
Fulton Street I-II

Drexel University College of Medicine

Alumni Reception Thursday, March 13
6:00 - 7:30 PM
New Orleans Marriott
Galvez

Emory Orthopaedics - Kelly Society

Alumni Reception Friday, March 14
6:00 - 8:00 PM
Astor Crowne Plaza
Toulouse B

Federation of Spine Associations (FOSA)

Executive Board Meeting Saturday, March 15
11:30 AM - 1:30 PM
Morial Convention Center
Room 349

Florida Orthopaedic Society

Board of Directors Meeting Thursday, March 13
3:00 - 5:00 PM
New Orleans Marriott
Regent

Foot Club

Luncheon Saturday, March 15
12:00 - 1:30 PM
Hyatt Place New Orleans
Meeting Place 1 & 2

Freiberg Society

Reception Thursday, March 13
6:30 - 9:00 PM
Hyatt Place New Orleans
Meeting Place 2

George Washington University

Alumni Reception Friday, March 14
6:30 - 8:30 PM
Westin Canal Place
Executive Room

Georgetown Alumni

Reception Friday, March 14
6:00 - 8:00 PM
Hyatt Place New Orleans
Meeting Place 1 & 2

Harvard Orthopaedic Residency Alumni

Reception Friday, March 14
6:00 - 8:00 PM
Windsor Court
La Chinoiserie B

Henry Ford Hospital

Alumni Reception Friday, March 14
6:00 - 8:00 PM
Arnaud's Restaurant,
Count's Ballroom
813 Rue Bienville

Hip Society

Board of Directors Meeting Thursday, March 13
6:00 - 8:00 AM
Morial Convention Center
Room 224

Hospital for Special Surgery

Alumni Hospitality Suite Thursday, March 13
11:00 AM - 2:00 PM
Hampton Inn & Suites
Convention Center
Fulton - 2nd Floor

Alumni Hospitality Suite Friday, March 14
11:00 AM - 2:00 PM
Hampton Inn & Suites
Convention Center
Fulton - 2nd Floor

Class Representative and
International Ambassador
Meeting Friday, March 14
4:30 - 5:30 PM
The Pelican Club
312 Exchange Place

Alumni Reception Friday, March 14
6:00 - 8:00 PM
The Pelican Club
312 Exchange Place

Hughston Society

Reception Friday, March 14
6:00 - 8:00 PM
Ritz-Carlton
Broadmoor

ICRS Executive & General Board

Meeting Friday, March 14
12:00 - 7:00 PM
Harrah's
Satchmo Room

Indiana University

Alumni & Friends Reception Thursday, March 13
6:00 - 8:00 PM
Renaissance Arts
Lobby Art Gallery
700 Tchoupitoulas Street

International Geriatric Fracture Society

Breakfast Friday, March 14
7:30 - 9:00 AM
New Orleans Marriott
Bonaparte

International Society for Technology in Arthroplasty (ISTA)

Board of Directors Meeting Wednesday, March 12
4:00 - 8:00 PM
Hyatt Place New Orleans
Meeting Place 2

International Society of Arthroplasty Registries (ISAR)

Meeting Thursday, March 13
4:00 - 7:00 PM
Sheraton New Orleans
Nottoway

Iranian-American Orthopedic Association

Alumni Meeting Thursday, March 13
7:00 - 9:00 PM
Bourbon House
144 Bourbon Street
Please call or text (914)393-3906
to confirm

Irish American Orthopaedic Society (IAOS)

Reception Friday, March 14
6:00 - 9:00 PM
New Orleans Marriott
Balcony N

J. Robert Gladden Orthopaedic Society (JRGOS)

Board of Directors Meeting Thursday, March 13
6:00 - 10:00 AM
Hilton Riverside
Grand Salon 19 & 22

Annual Luncheon Thursday, March 13
1:00 - 3:00 PM
Hilton Riverside
Grand Ballroom D

Medical Student Symposium Thursday, March 13
Workshop 3:30 - 5:30 PM
Hilton Riverside
Grand Salon 21 & 24

Medical Student Networking Thursday, March 13
Reception 6:00 - 7:30 PM
Hilton Riverside
Grand Salon 15 & 18

Trilogy Breakfast Friday, March 14
9:00 - 10:30 AM
Hilton Riverside
Grand Salon 21 & 24

Knee Society

Executive Board Meeting Friday, March 14
6:00 - 8:00 AM
Morial Convention Center
Room 224

Lake Tahoe Sports Medicine Fellowship

Alumni Reception Friday, March 14
6:00 - 8:00 PM
InterContinental Hotel
New Orleans
Oak

Lenox Hill Hospital

Alumni and Staff Reception Thursday, March 13
6:00 - 8:00 PM
Harrah's
Salon II

Loma Linda University

Reception Thursday, March 13
6:00 - 8:30 PM
Hyatt Place New Orleans
Atrium Dining Room

Long Island Jewish Medical Center Alumni

Cocktail Reception Friday, March 14
6:00 - 7:30 PM
Westin Canal Place
River Room

Louisiana State University – New Orleans

Alumni Reception Thursday, March 13
6:30 - 8:30 PM
Astor Crowne Plaza
Grand Ballroom A-B

Loyola University Medical Center – Sofield Alumni

Alumni Reception Friday, March 14
6:00 - 8:00 PM
Astor Crowne Plaza
Grand Ballroom A

LSU Health Sciences Center Shreveport

Alumni Reception Thursday, March 13
6:00 - 8:00 PM
Galatoire's Restaurant
209 Bourbon Street
Wine Room

Mayo Clinic - Orthopedics

Alumni Reception Friday, March 14
6:00 - 9:00 PM
Westin Canal Place
The Plimsoll Club

Medical College of Virginia

Alumni Reception Thursday, March 13
6:00 - 8:00 PM
Windsor Court
Board Room

Medical College of Wisconsin

Alumni Reception Friday, March 14
6:00 - 8:00 PM
The Ritz-Carlton
Union Terrace A

Medical University of South Carolina

2014 Annual Alumni
Reception Friday, March 14
7:00 - 10:00 PM
Hyatt Place New Orleans
Atrium Dining Room

Meniscus Transplantation Study Group

Annual Meeting Thursday, March 13
1:00 - 3:30 PM
Hyatt Place New Orleans
Meeting Place 1 & 2

Mid-America Orthopaedic Association

Finance Committee Friday, March 14
9:30 - 10:30 AM
Loews New Orleans
Beauregard

Board of Directors Friday, March 14
10:30 AM - 2:00 PM
Loews New Orleans
Beauregard

Mount Sinai Orthopaedics

Alumni Reception Thursday, March 13
6:30 - 8:30 PM
W Hotel New Orleans
Studio 56

New York Medical College

Alumni Reception Thursday, March 13
6:00 - 8:00 PM
New Orleans Marriott
Beauregard

Northwestern University Orthopaedic Alumni

Reception Thursday, March 13
6:30 - 8:30 PM
New Orleans Marriott
Mardi Gras A-C

NYOH Alumni Association/Columbia Orthopaedics

Cocktail Reception Friday, March 14
6:00 - 9:00 PM
Windsor Court
La Chinoiserie A

NYU Hospital for Joint Diseases

Alumni Reunion Friday, March 14
6:00 - 9:00 PM
Hilton New Orleans Riverside
River/Port/Starboard

Orthopaedic Laser Society of North America

Annual Meeting Thursday, March 13
6:00 - 7:30 AM
W Hotel New Orleans
Studio 3

Orthopaedic Trauma Association (OTA)

Military Committee Wednesday, March 12
7:00 - 8:00 AM
Hilton Riverside
Marlborough A

Classification & Outcomes
Committee Wednesday, March 12
8:00 - 11:00 AM
Hilton Riverside
Grand Salon 13

Research Committee Wednesday, March 12
9:00 - 10:30 AM
Hilton Riverside
Marlborough A

Think Tank Wednesday, March 12
10:30 AM - 12:00 PM
Hilton Riverside
Marlborough A

Education Committee
Meeting Wednesday, March 12
12:00 - 2:00 PM
Hilton Riverside
Grand Salon 3 & 6

Evidence Based Value,
Quality & Safety
Committee Meeting Wednesday, March 12
4:00 - 5:30 PM
Hilton Riverside
Cambridge

Online Project Team Meeting Wednesday, March 12
4:30 - 5:30 PM
Hilton Riverside
Grand Salon 13

Board of Directors Meeting Wednesday, March 12
6:00 - 10:00 PM
Hilton Riverside
Marlborough

Membership Committee Meeting	Thursday, March 13 6:30 - 7:30 AM Hilton Riverside Newberry
Fellowship Committee Meeting	Thursday, March 13 9:00 - 10:00 AM Hilton Riverside Grand Salon 13 & 16
COTA Meeting	Thursday, March 13 9:00 - 11:00 AM Hilton Riverside Melrose
Fellowship Directors Meeting	Thursday, March 13 10:00 - 11:00 AM Hilton Riverside Grand Salon 13 & 16
HWB Meeting	Thursday, March 13 11:00 AM - 2:30 PM Hilton Riverside Grand Ballroom C
Fund Development Committee Meeting	Thursday, March 13 12:00 - 1:00 PM Hilton Riverside Grand Salon 24
Public Relations Committee	Thursday, March 13 12:00 - 1:00 PM Hilton Riverside Grand Salon 21
Disaster Management Committee Meeting	Thursday, March 13 1:00 - 2:00 PM Hilton Riverside Grand Salon 16
COT Meeting	Thursday, March 13 2:00 - 3:00 PM Hilton Riverside Grand Salon 13
Practice Management Committee Meeting	Thursday, March 13 2:00 - 3:00 PM Hilton Riverside Elmwood
International Relations Committee Meeting	Friday, March 14 8:00 - 9:00 AM Hilton Riverside Belle Chasse
Humanitarian Committee Meeting	Friday, March 14 9:00 - 10:00 AM Hilton Riverside Belle Chasse

Health Policy	Friday, March 14 12:45 - 1:45 PM Hilton Riverside Prince of Wales
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Orthopaedics Overseas Annual Luncheon

Luncheon	Friday, March 14 12:00 - 2:00 PM New Orleans Marriott at the Convention Center Blaine Kern E-F
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Pediatric Orthopaedic Society of North America (POSNA)

Board of Directors Meeting	Wednesday, March 12 9:00 AM - 3:00 PM Hilton Riverside Grand Salon 15 & 18
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Penn State Hershey Bone and Joint Institute Alumni & Friends

Reception	Friday, March 14 6:30 - 8:30 PM Loews New Orleans Terrebonne
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Piedmont Orthopedic Society

Mid-Winter Meeting	Friday, March 14 6:30 - 8:30 PM Sheraton New Orleans Lagniappe
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Rush Affiliated Network Orthopaedic Residency Program

Alumni Social	Friday, March 14 6:00 - 9:00 PM Ritz Carlton LaSalle
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Rutgers Robert Wood Johnson Medical School

Alumni Reception	Friday, March 14 6:00 - 7:30 PM New Orleans Marriott Galvez
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Ruth Jackson Orthopaedic Society (RJOS)

Board Meeting	Tuesday, March 11 12:00 - 3:30 PM Hilton Riverside Grand Salon 15 & 18
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2014 Annual Meeting	Tuesday, March 11 5:00 - 9:30 PM Hilton Riverside Jefferson Ballroom
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2014 Breakfast Business Meeting	Wednesday, March 12 6:30 - 9:00 AM Hilton Riverside Jefferson Ballroom
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Leadership and Career Skills
for Emerging Orthopaedists

Wednesday, March 12
10:00 AM - 1:00 PM
Hilton Riverside
Belle Chasse

Perry/RJOS Outreach
Workshop

Wednesday, March 12
4:00 - 8:00 PM
Hilton Riverside
Versailles Ballroom

Saint Louis University School of Medicine

Alumni Reception

Friday, March 14
6:00 - 9:00 PM
Windsor Court
Library

Sandia Orthopaedic Alumni Society

Annual Reception

Friday, March 14
6:30 - 9:30 AM
Omni Royal Orleans
621 St. Louis Street

SCOI Sports Medicine

Fellowship Reception

Friday, March 14
7:00 - 10:00 PM
New Orleans Marriott
Balcony J

Scripps Clinic LER Fellows

Alumni Reception

Thursday, March 13
6:00 - 8:30 PM
Harrah's
Satchmo Room

SFORP Annual Alumni Reception

Alumni Reception

Friday, March 14
6:00 - 9:00 PM
New Orleans Marriott
Bonaparte

Société Internationale de Chirurgie Orthopédique et de Traumatologie (SICOT)

US Section Luncheon

Friday, March 14
12:30 - 2:00 PM
Hilton Riverside
Windsor

St. Luke's Roosevelt - Orthopaedics

Alumni Reception

Friday, March 14
7:00 - 9:00 PM
Astor Crowne Plaza
Grand Ballroom B

Summa Health System/Akron City Hospital

Alumni Reception

Thursday, March 13
6:00 - 9:00 PM
New Orleans Marriott
Balcony N

SUNY Stony Brook Department of Orthopaedics

Alumni Reception

Friday, March 14
6:00 - 8:00 PM
New Orleans Marriott
Jackson

The Association of Bone and Joint Surgeons (ABJS)

CORR Editorial Board
Meeting

Wednesday, March 12
7:00 - 8:00 AM
Hilton Riverside
Belle Chasse

CORR Publishers Meeting

Wednesday, March 12
8:30 AM - 2:30 PM
Hilton Riverside
Ascot

Executive Committee/
CORR Board of Trustees

Thursday, March 13
11:30 AM - 5:00 PM
Hilton Riverside
Windsor

CORR Reception

Friday, March 14
7:00 - 10:00 PM
Royal Sonesta
The Fleur de Lis Suite &
Courtyard

The Herodicus Society

Reception

Friday, March 14
7:00 - 9:00 PM
Ritz-Carlton
Audubon

The Ohio State University Orthopaedic Alumni/ Columbus Orthopaedic Society

Reception

Thursday, March 13
6:00 - 8:00 PM
New Orleans Marriott
Balcony K

Tufts Univ. School of Medicine/Tufts Medical Center & New England Baptist Orthopaedics

Alumni Reception

Friday, March 14
6:30 - 9:00 PM
InterContinental Hotel
New Orleans
Pelican I-II

UCLA Orthopaedic Surgery

Alumni Reception

Friday, March 14
6:00 - 8:00 PM
Sheraton New Orleans
Esterwood

Union Memorial Hospital

Alumni Reunion Thursday, March 13
6:00 - 8:00 PM
New Orleans Marriott
Iberville

University at Buffalo

Alumni Reception Friday, March 14
6:30 - 8:30 PM
New Orleans Marriott
Balcony K

University of Alabama at Birmingham

Alumni Reception Thursday, March 13
6:00 - 8:30 PM
Ritz-Carlton
The Library Lounge

University of Arkansas

Alumni Dinner Thursday, March 13
7:00 - 10:00 PM
The House of Blues
225 Decatur Street

University of California - San Francisco

Alumni Reception Thursday, March 13
6:00 - 9:00 PM
Antoine's Restaurant
713 Rue St. Louis Street

University of Chicago

Alumni Reception Friday, March 14
6:30 - 8:30 PM
Inter-Continental Hotel
New Orleans
Magnolia

University of Florida - Alumni, Friends and Family

Reception Thursday, March 13
6:30 - 9:30 PM
Pat O'Brien's, 624 Bourbon Street
Briars Suite

University of Iowa

Alumni Reception Friday, March 14
6:00 - 8:00 PM
Windsor Court
Gallery

University of Kansas

Alumni Dinner Thursday, March 13
6:30 - 10:00 PM
Red Fish Grill, 115 Bourbon Street
Lake Room

University of Kansas - Wichita

Alumni Reception Thursday, March 13
6:30 - 8:30 PM
New Orleans Marriott
Audubon

University of Louisville

Alumni Reception Thursday, March 13
6:00 - 8:00 PM
Courtyard New Orleans/
Convention Center
300 Julia Street
Meeting Room A

University of Maryland

Alumni Reception Thursday, March 13
7:00 - 10:00 PM
W New Orleans
Studio 2

University of Massachusetts

Alumni Reception Friday, March 14
6:00 - 9:00 PM
Harrah's
Salon 1

University of Miami

Alumni Reception Friday, March 14
6:00 - 8:00 PM
Sheraton New Orleans
Edgewood

University of Minnesota

Alumni Reception Friday, March 14
6:00 - 8:00 PM
Loews New Orleans
St. Landry

University of Missouri Orthopedic Association

Annual Reception Thursday, March 13
6:30 - 8:30 PM
New Orleans Marriott
Beauregard

University of North Carolina

Alumni Reception Thursday, March 13
6:00 - 9:00 PM
Mulate's Party Hall
201 Julia Street

University of Pennsylvania

Alumni Reception Friday, March 14
6:00 - 9:00 PM
Windsor Court
Board Room

University of Rochester

Alumni Reception
Friday, March 14
7:00 - 10:00 PM
Loews New Orleans
Beauregard

**University of Southern California -
Graduate Orthopaedic Society (SOGOS)**

Alumni Reception
Friday, March 14
6:00 - 9:00 PM
Arnaud's Restaurant
813 Rue Bienville

University of Texas

Alumni Reception
Wednesday, March 12
6:00 - 8:30 PM
Ritz-Carlton
French Quarter Bar

University of Toronto

Alumni Reception
Wednesday, March 12
7:00 - 10:00 PM
Astor Crowne Plaza
Bienville

University of Utah

Alumni Reception
Thursday, March 13
6:00 - 8:30 PM
Arnaud's
813 Rue Bienville

University of Virginia

Alumni Reception
Thursday, March 13
6:30 - 8:30 PM
Astor Crowne Plaza
Astor Ballroom I

University of Wisconsin

Alumni Reception
Thursday, March 13
6:00 - 8:00 PM
W Hotel New Orleans
Studio 1

Vanderbilt Orthopaedic Society

Alumni Reception
Friday, March 14
6:30 - 9:00 PM
New Orleans Marriott
Balcony L

Washington University - J. Albert Key Society

Alumni Reception
Friday, March 14
6:30 - 8:30 PM
Ritz Carlton
Crescent View

Washington University - Fox Pediatric

Semi-Annual Meeting
Tuesday, March 11
4:00 - 6:00 PM
Harrah's New Orleans
Fulton - Salon I

**Wayne State University School of Medicine
Orthopaedic Surgery**

Alumni Reception
Thursday, March 13
6:00 - 10:00 PM
New Orleans Marriott
Bacchus

West Virginia University

Alumni Reception
Friday, March 14
6:00 - 7:30 PM
Sheraton New Orleans
Oakley

Western Michigan University

Alumni Reception
Thursday, March 13
6:00 - 8:00 PM
New Orleans Marriott
Jackson

Willis C. Campbell Club

Alumni Reception
Friday, March 14
6:30 - 8:30 PM
Hilton Riverside New Orleans
Marlborough

Yale Orthopedic Association

Reception
Thursday, March 13
6:00 - 8:00 PM
New Orleans Marriott
Balcony I

Active Fellows

A

Sharif Ashanti Abdus-Salaam, MD
 Kristopher T. Abeln, MD
 Timothy S. Achor, MD
 Brent M. Adcox, MD
 Jessica Pelow Aidlen, MD
 Nauman J. Akhtar, MD, MBA
 Omar H. Akhtar, MD
 Mir H. Ali, MD, PhD
 Basil Jamal Alwattar, MD
 Cody Neal Anderson, MD
 Scott Allen Anderson, MD
 Michael Jonathan Angel, MD
 Ivan Josef Antosh, MD
 Alexios Apazidis, MD
 Amber B. Aragon, MD
 Gregory Troy Ardoin, MD
 Marshal S. Armitage, MD
 Brandon Shane Asbury, MD
 Luke Stanford Austin, MD
 John B. Ayres, MD

B

Lucas J. Bader, MD
 Sepideh Baghian, MD
 Babak Barcohana, MD
 Joseph Barker, MD
 Clint Douglas Barnett, MD
 Rahul Basho, MD
 Aaron Baxter, MD
 Jason R. Baynes, MD
 Matthew D. Beal, MD
 Hany S. Bedair, MD
 S. Samuel Bederman, MD, PhD, FRCSC
 Benjamin B. Bedford, MD
 Andrew W. Beharrie, MD
 Joseph Bellapianta, MD
 Julius A. Bishop, MD
 Benjamin T. Bissell, MD
 Lisa Rose Blackrick, MD
 Brian J. Blake, MD
 Kenneth S. Bode, MD
 Matthew J. Bollier, MD
 William Seth Bolling, MD
 Rajshri M. Bolson, MD
 George Robert Booker, MD
 Karen June Boselli, MD
 Jesse Cole Botker, MD
 Andrea Legath Bowers, MD
 Jason J. Boyer, MD
 David A. Brcka, MD
 Gregory Thomas Brebach, MD
 Marcus S. Briones, MD
 Kenneth Ryan Brooks, MD
 Gabriel Dean Brown, MD

James Andrew Browne, MD
 Victoria Lee Bruegel, MD
 Nathaniel Bryan, MD
 Robert R. Buber, MD
 Andrew B. Bullington, MD
 Justin Voich Bundy, MD
 Erica Marie Burns, MD
 Jamey Walcott Burrow, MD
 Matthew L. Busbee, MD
 James Alton Bynum, MD

C

Edwin Richard Cadet, MD
 Roberto D. Calderon, MD
 Briana Lynn Calore, MD
 Michael Louis Caravelli, MD
 Roy Cardoso, MD
 John Carlisle, MD
 Brent Dixon Carlson, MD
 Emily E. Carmody Soni, MD
 Kimberly Carney Young, MD
 Jason Joseph Caron, MD
 Brian J. Carr, MD
 William Joseph Carroll III, MD
 Joaquin A. Castaneda, MD
 Ryan James Caufield, MD
 Robert Christopher Chadderton, MD
 Daniel B. Chan, MD
 Daniel Steven Chan, MD
 Keith W. Chan, MD
 Simon Chao, MD
 Adam J. Chase, MD
 Saad Chaudhary, MD
 Neal C. Chen, MD
 Sam Chen, MD
 Todd E. Chertow, MD
 Sunny C.F. Cheung, MD
 Daniel J. Chivas, MD
 Robert Hyun Cho, MD
 Gene Choi, MD
 Jason Craig Clark, MD
 Roger Massa Componovo, MD
 Augustine H. Conduah, MD
 Chad Stephen Conner, MD
 Jack A. Conoley, MD
 Clayton Bernard Conrad, MD
 Nicholas Cook, MD
 John Ryan Cotton, MD
 William D. Crenshaw, MD
 Colin Victor Crickard, MD
 William Wood Cross III, MD
 Justin S. Cummins, MD
 Adnan Cutuk, MD
 John K. Czerwein, MD

D

Erica E. Dafford, MD

Kevin Allan Dahl, MD
 Michael T. Daines, MD
 Gregory Hampton Dairyko, MD
 Jean-Claude Gregoire D'Alleyrand, MD
 Aileen M. Danko, MD
 Jason J. Davis, MD
 Joseph P. DeAngelis, MD
 Robert C. Decker, MD
 Amalia Maria DeComas, MD
 Charles Adam DeCook, MD
 Gregory K. Deirmengian, MD
 John M. Delgado, MD
 Javier Delgado-Candelario, MD
 Alejandro Gonzalez Della Valle, MD
 Gabriel Leese Dersam, MD
 Shaunak Subhash Desai, MD
 Chetan S. Deshpande, MD
 Yasmin Dhar, MD
 Veronica Asela Diaz, MD
 Glenn R. Diekmann, MD
 Gregory David Dikos, MD
 Nicholas DiNicola, MD
 Mark M. Dolan, MD
 Dirk W. Dolbeare, MD
 Thomas Joseph Douglas, MD
 Kristopher Lee Downing, MD
 Matthew L. Drake, MD
 Tucker Andrew Drury, MD
 Jules A. Dumais, MD
 William Dunbar, MD
 John Patrick Dunleavy, MD
 Thomas Richard Duquin, MD
 Craig Hyatt Dushey, MD
 Daniel Richard Dziadosz, MD

E

Jose J. Echenique, Jr, MD
 Todd Brian Edmiston, MD
 Scott A. Eisenhuth, MD
 John Paul S. Elton, MD
 Cynthia Lynn Emory, MD
 Bryan C. Fagan, MD
 Ryan Andrew Fan, MD
 Kevin W. Farmer, MD
 Najam Geerman Fasihi, MD
 Edward Feliciano, MD
 Stephen Edward Fern, MD

F

Michael L. Fernandez, MD
 Justin Michael Ferrara, MD
 Craig J. Finlayson, MD
 Keith Stephen Flak, MD
 Nicholas David Fletcher, MD
 John Harris Flint, MD
 Jared R. H. Foran, MD
 David Michael Foulk, MD

Jenny Frances, MD
 Jeremy Stephen Frank, MD
 Juan C. Frisancho, MD

G

John Luke Gaffey II, MD
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 Sumeet Garg, MD
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 Troy Michael Gorman, MD
 Alan H. Gotesman, MD
 Charan Gowda, MD
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 Ian Martin Gradisar, MD
 Kathryn Simpson Grannatt, MD
 Bradley Patrick Graw, MD
 David Daniel Greenberg, MD
 Frederick O'Neal Gregg, DO
 Raymond Michael Greiwe, MD
 Nicolas Enrique Grisoni, MD
 Patrick D. Guin, MD
 Krishna Y. Gumidyal, MD

H

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 Zachary Craig Hamby, MD
 Stephen Anthony Hanff, MD
 Chad M. Hanson, MD
 Sanaz Hariri, MD
 Colin Harris, MD
 David John Harris, MD

Alicia Karin Harrison, MD
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 Travis Michael Hendry, MD
 R. Frank Henn III, MD
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R

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U

John H. Udall, MD

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 Robert John Wylie, MD

Y

Jeffrey Jon-Michael Yaste, MD
 Daniel J. Yoo, MD
 Brett H. Young, MD
 Pavel V. Yufit, MD

Z

Lukas Peter Zebala, MD
 Lee Michael Zuckerman, MD
 Mark Richard Zunkiewicz, MD

**Associate Member –
Basic Science**

Gregory S. Lewis, PhD
 Charles M. Turkelson, PhD

**Associate Member –
Orthopaedic**

Antony Kallur Antony, MD
 Yasser Farid, MD, PhD
 Ryhor Harbacheuski, MD
 Bennie G.P. Lindeque, MD
 Vinayak Sathe, MD
 Jonathan N. Sembrano, MD
 Ashish Shah, MD
 Bohus Svagr, MD
 Vladimir Tress, MD

**Associate Member –
Osteopathic**

Michael Bagley, DO
 Randa Bascharon, DO
 Daniel J. Brandenstein, DO
 William Campbell, DO
 Barry L. Clark, DO
 Matthew B. Colligan, DO
 Christopher Copeland, DO
 Richard Lee Crank, DO
 Brad A. Cucchetti, DO
 Sarang N. Desai, DO
 Dana Robert Desser, DO
 Carl P. DiLella, DO
 Bart L. Eastwood, DO
 David Harkins, DO
 Meredith C. Heisey, DO
 William John Jackson, DO
 Mark Krahe, DO
 James Lebolt, DO
 Rickland Lawrence Likes, DO
 Andrew J. Marcantonio, DO
 Mark E. McNemar, DO
 Anne Marie Meo, DO
 Eric Brandon Metz, DO
 Charles Orth, DO
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 Rodrigo Ramirez Figueroa, MD
 Henry Raunir Flores Aguirre, FRCS (Ortho)
 Juan Mauricio Ottolenghi, Sr, MD
 Luz Angela Velez, MD
 Jose Luis Gelo, MD

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 Thomas Darby Earle Treseder, FRACS
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 Buddhika Balalla, MBBS, FRACS
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 Robert Michael Sharp, MD
 Matthew Alfredson, FRACS
 Sandeep Tewari, FRACS, MBBS, MS
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 Gavin Clark, FRACS, MBBS

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 Regina Hois, MD
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Bahrain

Rashad Abubars, MD
 Husain Qasim Ali, MBBS

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 Syed Zakir Hossain, MD

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Member Name	Date of Death	City, State	Member Name	Date of Death	City, State
George S. E. Aitken, MD	2/13/12	Durham, NC	J. Bruce Galloway, MD	5/9/09	Asheville, NC
S. William Allred MD	3/5/13	Salt Lake City, UT	James A. Ghadially, MD	8/11/12	Houston, TX
Marcos Enrique Amongero, MD	8/19/13	Dayton, OH	Robert G. Gitchell, MD	12/18/12	Ames, IA
Miguel Arroyo Chavez, MD	Unknown	Mexico, DF, MEX	Franklin Glockner, MD	3/23/11	Hinsdale, MA
George N. Austin, MD	2/8/07	Alexandria, VA	William A. Grana, MD, MPH	2/1/13	Tucson, AZ
Frederick L. Behling, MD	7/10/13	Portola Vally, CA	George D. Griffin, MD	6/1/12	Palo Alto, CA
Mordecai E. Berkowitz, MD	7/7/13	Gloucester, MA	Kevin D. Harrington, MD	1/7/13	Mill Valley, CA
Frank A. Bersani, MD	3/14/13	Skaneateles, NY	Arthur R. Hartwig, MD	11/14/11	Woodside, CA
Dan R. Bigelow, MD	1/20/12	Winnipeg, MB, CAN	Felix Heimberg, MD	1/4/13	Lunenburg, MA
Herbert E. Block, MD	1/9/13	Fort Worth, TX	Harry N. Herkowitz, MD	6/7/13	West Bloomfield, MI
Thomas A. Brady, MD	April 2011	Richland, MI	George Monroe Hill, MD	5/28/13	Birmingham, AL
Michael A. Browne, MD	1/5/13	Jupiter, FL	Daniel T. Hinkin, MD	8/5/13	Manhattan, KS
F. Robert Brueckmann, MD	8/20/12	Zionsville, IN	Janaleigh Hoffman, MD	8/25/12	Fremont, CA
Frank S. Bryan, MD	2/18/12	Carlisle, PA	Eugene D. Horrell, MD	10/14/13	Spearfish, SD
J. W. Burnett, MD	5/23/13	Crystal, MN	Lon Wesley Howard, MD	10/27/12	Littleton, NH
George N. Byram Jr, MD	6/20/12	New Orleans, LA	David M. Huibregtse, MD	9/2/13	Janesville, WI
Ruben D. Cabrera, MD	2004	Burke, VA	James M. Hunter, MD	2/16/13	Birchrunville, PA
John N. Callander, MD	6/9/13	San Francisco, CA	Willard S. Hunter, MD	11/21/12	Tempe, AZ
Robert W. Carson, MD	12/22/12	Woodside, CA	Arnold M. Illman, MD	9/20/13	Massapequa, NY
Bennett W. Caughran, MD	1/20/13	Chattanooga, TN	Perry D. Inhofe, MD	11/10/13	Tulsa, OK
Harold H. Chakales, MD	12/13/11	Houston, TX	Paul J. Jorden, MD	4/28/13	Wheaton, IL
D. Robert Chapman, MD	1/28/13	Winnsboro, TX	Arthur D. Kassel, MD	Unknown	Novato, CA
Ronald S. Chassner, MD	5/15/13	Miami, FL	Edward T. Kelley Jr, MD	1/18/12	Petaluma, CA
George Cierny III, MD	6/24/13	La Jolla, CA	Richard E. Kendrick, MD	11/29/12	Modesto, CA
Bennie J. Clayburgh, MD	1/21/13	Grand Forks, ND	Kenneth W. Kengla, MD	1/7/13	Newport Beach, CA
Jonathan Cohen, MD	2003	Brighton, MA	Daryl L. Kirkby, MD	Unknown	Phoenix, AZ
Michael Collopy, MD	4/16/13	Brookfield, WI	Richard M. Klaus, MD	12/20/12	Atlanta, GA
Thomas G. Colmey, MD	9/19/12	River Forest, IL	Frederick Raymond Klepsch, MD	8/3/13	Crown Point, IN
William B. Comai, MD	1/23/13	Battle Creek, MI	Daniel F. Klinar, MD	6/6/13	Kingsport, TN
Ray W. Covington, MD	5/14/13	Waco, TX	Thomas A. Koenig, MD	8/23/13	Northport, NY
Joseph Edmund Cronkey, MD	10/16/12	Scranton, PA	Alfred E. Kristensen, MD	9/10/13	Jacksonville, FL
Tore Dalen, MD	Unknown	Sundsvall, SWE	Melvin G. Kunkel, MD	2/1/13	Duncan, BC, CAN
Kenneth R. Duff, MD	1/28/10	New Braunfels, TX	Howard A. Kurzner, MD	3/26/09	Miami, FL
Thomas S. Dunstan, MD	10/19/12	Ludington, MI	Theodore R. Lamot III, MD	Unknown	Ventura, CA
Selim F. El-Attrache, MD	7/24/13	Mount Pleasant, PA	Joseph T. Leach, MD	2/2/11	Columbus, OH
Charles H. Emich, MD	5/21/13	Alexandria, VA	Ralph T. Lidge, MD	1/26/13	Barrington, IL
Gregory M. Engel, MD	12/6/12	Bellevue, WA	Robert F. Lindberg, MD	4/30/13	Ketchum, ID
Jerry E. Enis, MD	8/14/13	Miami, FL	Robert C. Lockwood, MD	6/1/12	Marcellus, NY
Jaime Escorcica, MD	7/1/13	Bogota, COL	Ralph Dean Luther, MD	Unknown	Greenacres, WA
Philip M. Evanski, MD	7/29/13	New Hope, PA	Douglas B. Mains, MD	12/9/13	Wheaton, IL
George N. Ewing Jr, MD	4/10/10	Sacramento, CA	Joseph R. Mariotti, MD	10/5/13	Pinole, CA
Don Leroy Eycler, MD	1/19/13	Warm Springs, GA	David A. McQueen, MD	2/25/13	Wichita, KS
Gael R. Frank, MD	8/26/12	Kansas City, MO	Ronald K. Miller, MD	1/11/12	Council Bluffs, IA
Richard M. Fry, MD	1/23/13	Gainesville, FL	William J. Mills Jr, MD	12/4/11	Anchorage, AK
Gregory John Fulchiero, MD	7/7/13	Altoona, PA	William B. Moore, MD	2012	Santa Fe, NM
William R. Fuqua, MD	8/30/12	Owensboro, KY	Page W. Nelson, MD	4/2/13	Pearland, TX

Member Name	Date of Death	City, State
William H. Newman, MD	12/28/12	Chicago, IL
Harold H. Niekamp, MD	1/17/12	Houghton Lake, MI
Jay Nogi, MD	3/21/13	Glen Allen, VA
Fridtjof E. Nussbaumer, MD	12/10/12	Fayetteville, NY
Calvin M. Oba, MD	1/29/13	Scottsbluff, NE
Robert W. Palmer, MD	5/20/13	Gaithersburg, MD
Richard F. Pawlowski, MD	Unknown	Scottsdale, AZ
Maurice F. Perll, MD	1/6/12	Mexico, MO
Jacquelin Perry, MD	3/11/13	Downey, CA
Gregory A. Peters, MD	7/20/12	Grand Rapids, MI
Rudolf A. Pyka, MD	1/23/13	Redlands, CA
Clifford C. Raisbeck Jr, MD	3/29/13	Sausalito, CA
Brady F. Randolph Jr, MD	1/4/13	Hamilton, OH
George I. Raybin, MD	4/11/13	Pilesgrove, NJ
Thomas A. Redden, MD	7/21/12	Santa Monica, CA
Bruce Matthew Reitberg, MD	8/13/12	Henderson, NV
Robert Norman Richards, MD	2008	Grand Forks, ND
C. Dayton Riddle Jr, MD	1/17/13	Greenville, SC
J. Howard Ritchie, MD	2013	Lethbridge, AB, CAN
Thomas D. Rizzo, MD	11/2/10	Sea Island, GA
Noel B. Rogers, MD	5/25/11	Jacksonville, NC
M. Laurens Rowe Jr, MD	12/30/10	Fairport, NY
Charles J. Ruth, MD	2/7/11	Fremont, CA
Alvina O. Sabanas, MD	1/8/08	Peoria, AZ
Joseph Schlonsky, MD	9/30/12	New Albany, OH

Member Name	Date of Death	City, State
Gregory H. Schwab, MD	8/22/13	San Diego, CA
Linzy Scott Jr, MD	7/23/12	Atlanta, GA
Harold F. Shuster, MD	2004	Bozman, MD
Gene R. Smith, MD	2/27/13	San Antonio, TX
Charles F. Snyder Jr, MD	4/2/13	Bethlehem, PA
Arlen Kent Snyder, MD	4/14/13	Canandaigua, NY
Martin L. Sorger, MD	5/5/13	Montclair, NJ
George E. Spencer Jr, MD	5/23/13	Mount Dora, FL
Mark A. Taylor, MD	August 2012	Hollidaysburg, PA
Clifford H. Turen, MD	1/16/13	Dover, DE
Clifford G. Vernick, MD	2/12/13	Santa Fe, NM
Charles E. Vilmer, MD	5/11/12	Polo, MO
Earl K. Wallace Jr, MD	Unknown	Charleston, SC
Donald R. Watson, MD	12/8/13	Las Cruces, NM
Phil A. Webb, MD	11/1/12	Englewood, CO
Theodore Walter Werning, MD	Unknown	Sonora, CA
Eric H. Widell Jr, MD	12/3/12	Las Vegas, NV
Alan H. Wilde, MD	5/25/12	Broadview Heights, OH
Lawrence H. Wilk, MD	5/31/13	Corpus Christi, TX
Jack L. Winters, MD	8/11/13	Metairie, LA
E. Paul Woodward, MD	3/2/03	San Diego, CA
Richard N. Wrenn, MD	Unknown	Charlotte, NC
Henry A. Yancey, MD	10/17/13	Richmond, VA
Lewis A. Yocum, MD	5/25/13	Los Angeles, CA

STANDARDS OF PROFESSIONALISM**Orthopaedic Surgeon-Industry Relationships**

Adopted April 18, 2007; Amended April 23, 2012

AAOS Standards of Professionalism (SOPs) establish the minimum standards of acceptable conduct for orthopaedic surgeons. Violations of any SOP may result in professional compliance actions against an AAOS Fellow or Member found in violation. Not prepared using a systematic review, SOPs are developed through a consensus process and are ultimately adopted as official AAOS statements by the two-thirds vote of the AAOS Fellowship casting ballots.

The primary focus of the orthopaedic profession is care of the patient. As part of their lifetime commitment to patients, orthopaedic surgeons must maintain specialized knowledge and skills through participation in continuing medical education (CME) programs, seminars, and professional meetings. Often, these professional functions are sponsored by the manufacturers of medical devices, biologics, drugs and other items use in the care of the patient (Product). These businesses play an important role in the support of CME events and the development of new technologies. This collaborative effort ensures that patients have the best outcomes through the invention and testing of new technology, research and evaluation of existing technology, and continued education of orthopaedic surgeons.

Cooperative relationships between orthopaedic surgeons and industry benefit patients. Orthopaedic surgeons are best qualified to provide innovative ideas and feedback, conduct research trials, serve on scientific advisory boards, and serve as faculty to teach the use of new technology. Orthopaedic surgeons, in an effort to improve patient care, rely on industry to bring their creative ideas to fruition. A collaborative relationship between orthopaedic surgeons and industry is necessary to improve patient care, but must be carefully scrutinized to avoid pitfalls of improper inducements, whether real or perceived.

A potential conflict of interest exists when professional judgment concerning the well being of the patient has a reasonable chance of being influenced by other interests of the physician. Disclosure of a conflict of interest is required in communications to patients, the public and colleagues. Orthopaedic surgeons, like all physicians, have an ethical obligation to present themselves and the services they provide to patients in a clear and accurate manner.

When faced with a potential conflict of interest that cannot be resolved, an orthopaedic surgeon should consult with colleagues or an institutional ethics committee to determine whether there is an actual or potential conflict of interest and how to address it.

These Standards of Professionalism draw from the aspirational *Code of Medical Ethics and Professionalism for Orthopaedic Surgeons* that appears in bold italics. The statements that follow the **aspirational** Code establish the **mandatory** minimum standards of acceptable conduct for orthopaedic surgeons when engaged in relationships with industry. Violations of these minimum standards may serve as grounds for a formal complaint to and action by the AAOS as outlined in the AAOS Bylaws Article VIII.

The Standards of Professionalism on Orthopaedic Surgeon - Industry Relationships apply to all AAOS Fellows and Members. Only an AAOS Fellow or Member may file complaints of an alleged violation of these Standards of Professionalism regarding another AAOS Fellow or Member.

Aspirational: AAOS Code of Medical Ethics and Professionalism for Orthopaedic Surgeons, I.A.:

The orthopaedic profession exists for the primary purpose of caring for the patient. The physician-patient relationship is the central focus of all ethical concerns.

Mandatory Standards:

1. An orthopaedic surgeon shall, while caring for and treating a patient, regard his or her responsibility to the patient as paramount.
2. An orthopaedic surgeon shall prescribe products or other treatments primarily on the basis of medical considerations and patient needs, regardless of any direct or indirect interests in or benefit from industry.

Aspirational: AAOS Code of Medical Ethics and Professionalism for Orthopaedic Surgeons, II. C.:

The orthopaedic surgeon should obey all laws, uphold the dignity and honor of the profession, and accept the profession's self-imposed discipline. Within legal and other constraints, if the orthopaedic surgeon has a reasonable basis for believing that a physician or other health care provider has been involved in any unethical or illegal activity, he or she should attempt to prevent the continuation of this activity by communicating with that person and/or identifying that person to a duly-constituted peer review authority or the appropriate regulatory agency. In addition, the orthopaedic surgeon should cooperate with peer review and other authorities in their professional and legal efforts to prevent the continuation of unethical or illegal conduct.

Mandatory Standard:

3. An orthopaedic surgeon shall comply with all relevant federal and state conflict of interest and fraud and abuse laws.

Aspirational: AAOS Code of Medical Ethics and Professionalism for Orthopaedic Surgeons, III.A.:

The practice of medicine inherently presents potential conflicts of interest. When a conflict of interest arises, it must be resolved in the best interest of the patient. The orthopaedic surgeon should exercise all reasonable alternatives to ensure that the most appropriate care is provided to the patient. If the conflict of interest cannot be resolved, the orthopaedic surgeon should notify the patient of his or her intention to withdraw from the relationship.

Mandatory Standards:

4. An orthopaedic surgeon shall, when treating a patient, resolve conflicts of interest in accordance with the best interest of the patient, respecting a patient's autonomy to make health care decisions.
5. An orthopaedic surgeon shall notify the patient of his or her intention to withdraw from the patient-physician relationship, in a manner consistent with state law, if a conflict of interest cannot be resolved in the best interest of the patient.

Aspirational: AAOS Code of Medical Ethics and Professionalism for Orthopaedic Surgeons, III.C.:

When an orthopaedic surgeon receives anything of significant value from industry, a potential conflict exists which should be disclosed to the patient. When an orthopaedic surgeon receives inventor royalties from industry, the orthopaedic surgeon should disclose this fact to the patient if such royalties relate to the patient's treatment. It is unethical for an orthopaedic surgeon

to receive compensation of any kind from industry for using a particular product. Fair market reimbursement for reasonable administrative costs in conducting or participating in a scientifically sound research clinical trial is acceptable.

Mandatory Standards:

6. An orthopaedic surgeon shall decline subsidies or other financial support from industry, except that an orthopaedic surgeon may accept non-monetary items which benefit patients or serve an educational function and which have a fair market value of less than \$100.
7. An orthopaedic surgeon who has influence in selecting a particular product or service for an entity shall disclose any relationship with industry to colleagues, the institution and other affected entities.
8. An orthopaedic surgeon shall disclose to the patient any financial arrangements with industry that relate to the patient's treatment, including the receipt of inventor royalties, stock options or paid consulting arrangements with industry.
9. An orthopaedic surgeon shall accept no direct financial inducements from industry for utilizing a particular product or for switching from one manufacturer's product to another.
10. An orthopaedic surgeon shall enter into consulting agreements with industry only when such arrangements are established in advance and in writing to include evidence:
 - That there is an actual need for the service;
 - That the provision of the service will be verified;
 - That the compensation for services provided by the orthopaedic surgeon is based on fair market value;
 - That the compensation for services provided by the orthopaedic surgeon is not based on the volume or value of business he or she generates; and
 - That reimbursement for reasonable and actual expenses, such as modest meals, travel and lodging, incurred by the orthopaedic surgeon is based on appropriate need and accurate documentation.
11. An orthopaedic surgeon shall consult at only those meetings that are conducted in clinical, educational, or conference settings conducive to the effective exchange of basic science and/or clinical information.

Aspirational: AAOS Code of Medical Ethics and Professionalism for Orthopaedic Surgeons, IV.A.:

The orthopaedic surgeon continually should strive to maintain and improve medical knowledge and skill and should make available to patients and colleagues the benefits of his or her professional attainments. Each orthopaedic surgeon should participate in continuing medical educational activities.

Mandatory Standards:

12. An orthopaedic surgeon shall accept no financial support from industry to attend industry-related social functions where there is no educational element.
13. An orthopaedic surgeon who is attending a CME event shall accept no industry financial support for attendance at a CME event. Residents and orthopaedists-in-training may accept an industry grant to attend a CME event if they are selected by their training institution or CME sponsor and the payment is made by the training program or CME sponsor. The industry entity funding the grant shall have no influence in the selection of the individual recipients. Bona fide faculty members at a CME event may accept industry-supported

reasonable honoraria, travel expenses, lodging and modest meals from the conference sponsors.

14. An orthopaedic surgeon, when attending an industry-sponsored non-CME educational event, shall accept only tuition, travel and modest hospitality, including meals and receptions. The time and focus of the event must be for the presentation of bona fide scientific, educational or business information or training.
15. An orthopaedic surgeon, when attending an industry-sponsored non-CME educational event, shall accept no financial support for meals, hospitality, travel, or other expenses for his or her guests or for any other person who does not have a bona fide professional interest in the information being shared at the meeting.

Aspirational: AAOS Code of Medical Ethics and Professionalism for Orthopaedic Surgeons, III.D.:

An orthopaedic surgeon reporting on clinical research or experience with a given procedure or product must disclose any financial interest in that procedure or product if the orthopaedic surgeon or any institution with which that orthopaedic surgeon is connected has received anything of value from its inventor or manufacturer.

Mandatory Standards:

16. An orthopaedic surgeon, when reporting on clinical research or experience with a given procedure or product, shall disclose any financial interest in that procedure or product if he or she or any institution with which he or she is connected has received anything of value from its inventor, manufacturer, or distributor.
17. An orthopaedic surgeon who is an investigator shall make his or her best efforts to ensure at the completion of an industry-sponsored study that relevant research results are reported and reported truthfully and honestly with no bias or influence from funding sources, regardless of positive or negative findings.

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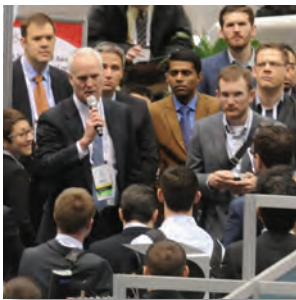
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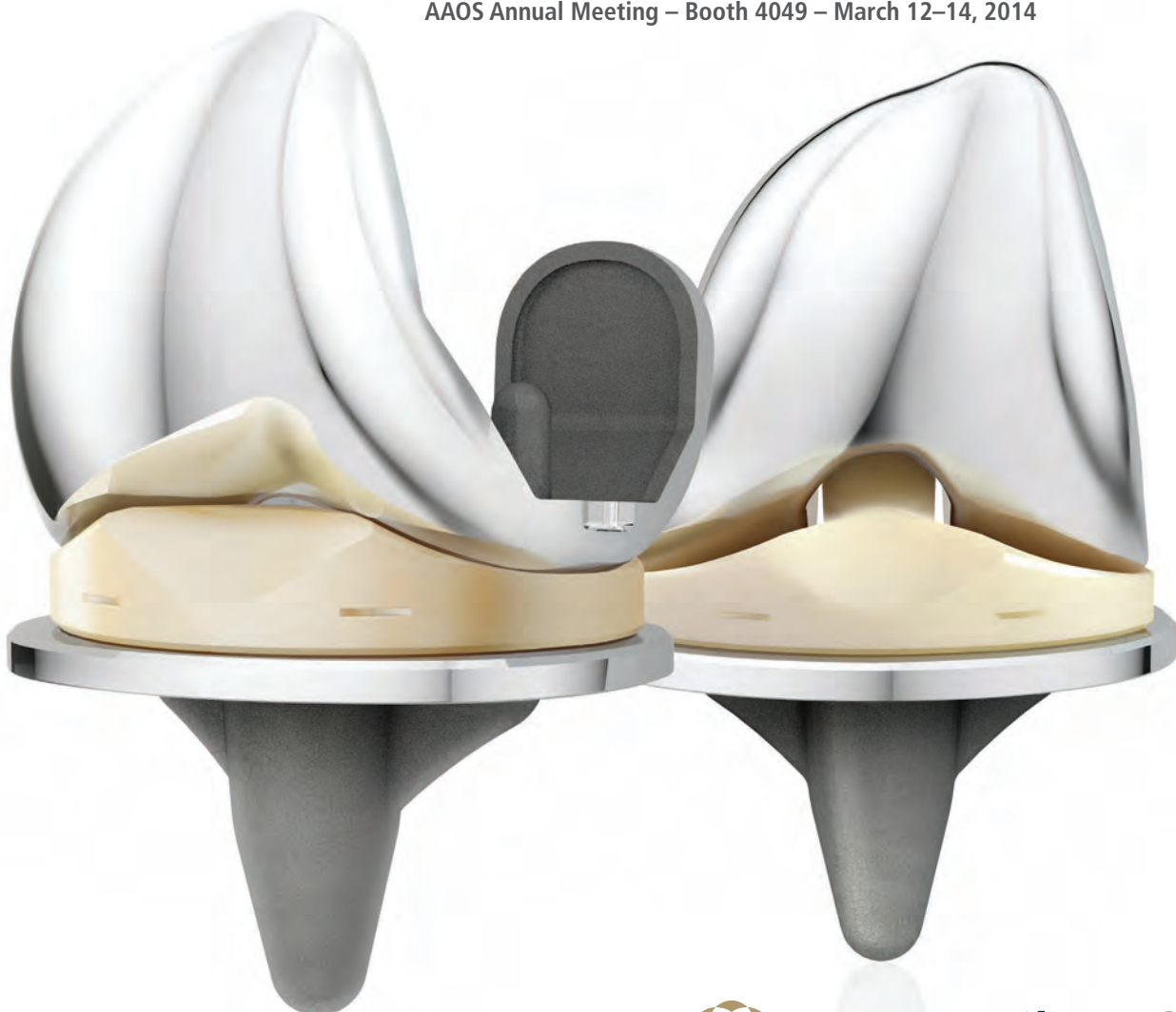


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