People inspired solutions.

Knee solutions every step of the way.

Please join us at our booth for the introduction of the Rotating Platform Tibial Base and Anatomic Patella to the ATTUNE® Knee System, and learn more about how these technologies deliver STABILITY IN MOTION®. When it comes to knee replacement, we’re with you every step of the way.

AAOS Annual Meeting – Booth 4049 – March 12–14, 2014

Introducing Rotating Platform

*DePuy Synthes Joint Reconstruction is a division of DePuy Orthopedics, Inc. ©DePuy Synthes Joint Reconstruction, a division of DOI 2014
Next Generation Platform Technology
has been utilized in the creation of the GLOBAL UNITE Platform Shoulder System. Modular proximal bodies allow the surgeon to treat proximal humeral fractures as well as provide the ability to adjust both joint tensioning and version if a conversion to a reverse shoulder arthroplasty is required.

Surgical Efficiency
within the Operating Room has been improved with streamlined instrumentation and implants that provide intra-operative flexibility.

Based on Biomechanical Principles, the GLOBAL UNITE System provides solutions to meet both Fracture and Reverse indications with a single system.
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**

<table>
<thead>
<tr>
<th>Date</th>
<th>Course Details</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 7</td>
<td>Std. Anterior Approach for THA Course</td>
<td>Orlando, FL</td>
</tr>
<tr>
<td>March 20</td>
<td>Std. Anterior Approach for THA Course</td>
<td>Henderson, NV</td>
</tr>
<tr>
<td>March 21</td>
<td>Std. Anterior Approach for THA Course</td>
<td>Henderson, NV</td>
</tr>
<tr>
<td>Apr 4</td>
<td>Anterior Approach for Revisions Course</td>
<td>Long Beach, CA</td>
</tr>
<tr>
<td>May 8</td>
<td>Fellows Std. Anterior Approach for THA Course</td>
<td>Chicago, IL</td>
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<tr>
<td></td>
<td>(INVITATION ONLY)</td>
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</tr>
<tr>
<td>May 9</td>
<td>Std. Anterior Approach for THA Course</td>
<td>Chicago, IL</td>
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<tr>
<td>June 13</td>
<td>Advanced Anterior Approach Course</td>
<td>Atlanta, GA</td>
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<tr>
<td>Sep 19</td>
<td>Std. Anterior Approach for THA Course</td>
<td>Denver, CO</td>
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<td>Oct 17</td>
<td>Anterior Approach for Revisions Course</td>
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<tr>
<td>Nov 14</td>
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**CORAIL® Learning Center**

<table>
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<th>Date</th>
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<tbody>
<tr>
<td>Apr 2–4</td>
<td>CORAIL® Hip Annecy International Symposium</td>
<td>Annecy, France</td>
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<tr>
<td>June 25–27</td>
<td>CORAIL Hip Annecy International Symposium</td>
<td>Annecy, France</td>
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<td>Oct 8–10</td>
<td>CORAIL Hip Annecy International Symposium</td>
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**Additional Professional Education Programs**

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<tbody>
<tr>
<td>Apr 24–25</td>
<td>WW Current Advancements Symposium</td>
<td>Chicago, IL</td>
</tr>
</tbody>
</table>

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

*DePuy Synthes Joint Reconstruction is a division of DePuy Orthopaedics, Inc. ©DePuy Synthes Joint Reconstruction, a division of DOI 2014
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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”

• Welcome to France as the Guest Nation
• Recognition of Industry Donors
• Chief Executive Officer Report
• Kappa Delta & OREF Awards

Business Meetings
Thursday, March 13, 9:00 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

Ceremonial Meeting
Thursday, March 13, 10:00 AM

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

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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
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
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. Buchholz, 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-Presidential Address – David D. Teuscher, MD
6. Introduction of Frederick M. Azar, MD, Incoming President
7. 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

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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. Burkhardt, 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. Tefey, 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

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# Daily Schedule

## Tuesday, March 11

<table>
<thead>
<tr>
<th>Education</th>
<th>Location - Morial Convention Center</th>
<th>Time</th>
</tr>
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<tbody>
<tr>
<td><strong>Instructional Courses</strong></td>
<td>See Schedule or pages 52-216 for room numbers</td>
<td>8:00 – 10:00 AM</td>
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<tr>
<td></td>
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<td>8:00 – 11:00 AM</td>
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<td>1:30 – 3:30 PM</td>
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<td>4:00 – 6:00 PM</td>
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<tr>
<td><strong>Symposia &amp; Paper Presentations</strong></td>
<td>See pages 52-216 for room numbers</td>
<td>8:00 – 10:00 AM</td>
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<td>10:30 AM – 12:30 PM</td>
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<td>4:00 – 6:00 PM</td>
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<tr>
<td><strong>Posters</strong></td>
<td>Academy Hall BC</td>
<td>8:00 AM – 6:00 PM</td>
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<tr>
<td><strong>Scientific Exhibits</strong></td>
<td>Academy Hall D</td>
<td>8:00 AM – 6:00 PM</td>
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<tr>
<td><strong>Orthopaedic Video Theater</strong></td>
<td>Academy Hall E</td>
<td>8:00 AM – 6:00 PM</td>
</tr>
<tr>
<td><strong>Coding Basics for Starting Your Practice #190</strong></td>
<td>Great Hall B</td>
<td>8:00 – 11:00 AM</td>
</tr>
<tr>
<td><strong>Practice Management Symposium for Practicing Orthopaedic Surgeons #199</strong></td>
<td>Rivergate Room</td>
<td>8:00 AM – 5:00 PM</td>
</tr>
<tr>
<td><strong>Nursing and Allied Health Course – CAST1</strong></td>
<td>Room R06</td>
<td>8:15 AM – 5:45 PM</td>
</tr>
<tr>
<td><strong>Practice Management Symposium for Orthopaedic Residents #191</strong></td>
<td>Great Hall B</td>
<td>12:00 – 5:30 PM</td>
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<tr>
<td><strong>The Top 10 Coding Issues Made by Practicing Orthopaedic Surgeons #192</strong></td>
<td>Room 345</td>
<td>1:30 – 4:30 PM</td>
</tr>
<tr>
<td><strong>Community Orthopaedic Surgeon Workshop #193</strong></td>
<td>Room 353</td>
<td>1:30 – 5:30 PM</td>
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## General

| **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

<table>
<thead>
<tr>
<th>Education</th>
<th>Location - Morial Convention Center</th>
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<td></td>
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<td>10:30 AM – 12:30 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:30 – 3:30 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4:00 – 6:00 PM</td>
</tr>
<tr>
<td><strong>Nursing and Allied Health Course – CAST2</strong></td>
<td>Room R06</td>
<td>8:15 AM – 5:45 PM</td>
</tr>
</tbody>
</table>

## Exhibit Hall

| **Technical Exhibits**                              | Halls B-I                                       | 9:00 AM – 5:00 PM            |
| **AAOS Advocacy Booth**                             | Hall F, Booth 4213                             | 9:00 AM – 5:00 PM            |
### Daily Schedule

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

*No educational activities are scheduled.

### THURSDAY, MARCH 13

<table>
<thead>
<tr>
<th>Event</th>
<th>Location - Morial Convention Center</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posters</td>
<td>Academy Hall BC</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Scientific Exhibits</td>
<td>Academy Hall D</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Orthopaedic Video Theater</td>
<td>Academy Hall E</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Nursing and Allied Health Courses – NUR1 &amp; NUR2</td>
<td>Room R03</td>
<td>7:30 AM – 12:00 PM 1:30 PM – 6:00 PM</td>
</tr>
<tr>
<td>Instructional Courses</td>
<td>See Schedule or pages 52-216 for room numbers</td>
<td>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</td>
</tr>
<tr>
<td>Symposia &amp; Paper Presentations</td>
<td>See pages 52-216 for room numbers</td>
<td>8:00 – 10:00 AM 10:30 AM – 12:30 PM 1:30 – 3:30 PM 4:00 – 6:00 PM</td>
</tr>
<tr>
<td><strong>Exhibit Hall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Exhibits</td>
<td>Halls B-I</td>
<td>9:00 AM – 5:00 PM</td>
</tr>
<tr>
<td>AAOS Advocacy Booth</td>
<td>Hall F, Booth 4213</td>
<td>9:00 AM – 5:00 PM</td>
</tr>
<tr>
<td>AAOS Exhibit Hall Resource Center</td>
<td>Hall G, Booth 5519</td>
<td>9:00 AM – 5:00 PM</td>
</tr>
<tr>
<td>Ask an Expert Sessions</td>
<td>Hall I, Booth 7143 See page 362 for schedule</td>
<td>9:30 AM – 4:15 PM</td>
</tr>
<tr>
<td>Electronic Skills Pavilion</td>
<td>Hall F, Booth 4563 See page 360 for schedule</td>
<td>9:30 AM – 4:15 PM</td>
</tr>
<tr>
<td>Unopposed Exhibit Time*</td>
<td>Halls B-I</td>
<td>12:30 – 1:30 PM</td>
</tr>
<tr>
<td>Complimentary Beverage Break</td>
<td>Halls B-I, Booths 1273, 4842, and 7055</td>
<td>3:30 – 4:00 PM</td>
</tr>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ready Rooms</td>
<td>Rooms 228 and 252</td>
<td>6:30 AM – 6:00 PM</td>
</tr>
<tr>
<td>Registration – Physician</td>
<td>Lobby B, E, &amp; H</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
</tbody>
</table>

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## Daily Schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Location</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration – Social Program</td>
<td>Lobby A</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Job Placement Center</td>
<td>Academy Hall B</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Resource Center</td>
<td>Academy Hall E</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Guest Nation Booth – France</td>
<td>Lobby G</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>American Board of Orthopaedic Surgery Booth</td>
<td>Lobby G</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>American Joint Replacement Registry Booth</td>
<td>Lobby G</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Orthopaedic Learning Center Booth</td>
<td>Lobby G</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Orthopaedic Research &amp; Education Foundation Booth</td>
<td>Lobby G</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Business Meetings</td>
<td>La Nouvelle Ballroom</td>
<td>9:00 AM</td>
</tr>
<tr>
<td>Ceremonial Meeting</td>
<td>La Nouvelle Ballroom</td>
<td>10:00 AM</td>
</tr>
<tr>
<td>Forum for Young Orthopaedic Surgeons with the American Board of Orthopaedic Surgery</td>
<td>Room 349</td>
<td>10:30 AM – 12:30 PM</td>
</tr>
<tr>
<td>Presidential Guest Speakers</td>
<td>La Nouvelle Ballroom</td>
<td>11:00 AM</td>
</tr>
</tbody>
</table>

*No educational activities are scheduled.

### FRIDAY, MARCH 14

#### Education

<table>
<thead>
<tr>
<th>Event</th>
<th>Location - Morial Convention Center</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poster Award Ceremony and Breakfast</td>
<td>Academy Hall BC</td>
<td>7:00 AM</td>
</tr>
<tr>
<td>Posters</td>
<td>Academy Hall BC</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Scientific Exhibits</td>
<td>Academy Hall D</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Orthopaedic Video Theater</td>
<td>Academy Hall E</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Nursing and Allied Health Courses – NUR3 &amp; NUR4</td>
<td>Room R03</td>
<td>7:30 AM – 12:00 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:30 PM – 6:00 PM</td>
</tr>
<tr>
<td>Instructional Courses</td>
<td>See Schedule or pages 52-216 for room numbers</td>
<td>8:00 – 10:00 AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:30 AM – 12:30 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:30 – 3:30 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4:00 – 6:00 PM</td>
</tr>
<tr>
<td>Symposia &amp; Paper Presentations</td>
<td>See pages 52-216 for room numbers</td>
<td>8:00 – 10:00 AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:30 AM – 12:30 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:30 – 3:30 PM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4:00 – 6:00 PM</td>
</tr>
<tr>
<td>Orthopaedic Review Course</td>
<td>Great Hall A</td>
<td>8:00 AM – 5:35 PM</td>
</tr>
</tbody>
</table>

#### Exhibit Hall

<table>
<thead>
<tr>
<th>Event</th>
<th>Location - Morial Convention Center</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Exhibits</td>
<td>Halls B-I</td>
<td>9:00 AM – 4:00 PM</td>
</tr>
<tr>
<td>AAOS Advocacy Booth</td>
<td>Hall F, Booth 4213</td>
<td>9:00 AM – 4:00 PM</td>
</tr>
<tr>
<td>AAOS Exhibit Hall Resource Center</td>
<td>Hall G, Booth 5519</td>
<td>9:00 AM – 4:00 PM</td>
</tr>
<tr>
<td>Ask an Expert Sessions</td>
<td>Hall I, Booth 7143</td>
<td>9:30 AM – 3:15 PM</td>
</tr>
<tr>
<td></td>
<td>See page 362 for schedule</td>
<td></td>
</tr>
<tr>
<td>Electronic Skills Pavilion</td>
<td>Hall F, Booth 4563</td>
<td>9:30 AM – 3:15 PM</td>
</tr>
<tr>
<td></td>
<td>See page 360 for schedule</td>
<td></td>
</tr>
<tr>
<td>Complimentary Beverage Breaks</td>
<td>Halls B-I, Booths 1273, 4842, and 7055</td>
<td>10:00 – 10:30 AM</td>
</tr>
<tr>
<td>Unopposed Exhibit Time*</td>
<td>Halls B-I</td>
<td>12:30 – 1:30 PM</td>
</tr>
<tr>
<td>Beignet Social</td>
<td>Halls B-I, Booths 1273, 4842, and 7055</td>
<td>2:00 – 3:30 PM</td>
</tr>
</tbody>
</table>

#### General

<table>
<thead>
<tr>
<th>Event</th>
<th>Location - Morial Convention Center</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready Rooms</td>
<td>Rooms 228 and 252</td>
<td>6:30 AM – 6:00 PM</td>
</tr>
<tr>
<td>Registration – Physician</td>
<td>Lobby B, E, &amp; H</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Registration – Social Program</td>
<td>Lobby A</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Job Placement Center</td>
<td>Academy Hall B</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Resource Center</td>
<td>Academy Hall E</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Guest Nation Booth – France</td>
<td>Lobby G</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>American Board of Orthopaedic Surgery Booth</td>
<td>Lobby G</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Education</th>
<th>Location - Morial Convention Center</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty Day</td>
<td>See page 34</td>
<td>Times vary</td>
</tr>
<tr>
<td>Posters</td>
<td>Academy Hall BC</td>
<td>7:00 AM – 3:00 PM</td>
</tr>
<tr>
<td>Scientific Exhibits</td>
<td>Academy Hall D</td>
<td>7:00 AM – 3:00 PM</td>
</tr>
<tr>
<td>Orthopaedic Video Theater</td>
<td>Academy Hall E</td>
<td>7:00 AM – 3:00 PM</td>
</tr>
</tbody>
</table>

**SATURDAY, MARCH 15**

**General**

<table>
<thead>
<tr>
<th>Education</th>
<th>Location - Morial Convention Center</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready Rooms</td>
<td>Rooms 228 and 252</td>
<td>6:00 AM – 5:30 PM</td>
</tr>
<tr>
<td>Registration – Physician</td>
<td>Lobby B, E, &amp; H</td>
<td>6:30 AM – 5:30 PM</td>
</tr>
<tr>
<td>Registration – Social Program</td>
<td>Lobby A</td>
<td>7:00 AM – 12:00 PM</td>
</tr>
<tr>
<td>Job Placement Center</td>
<td>Academy Hall B</td>
<td>7:00 AM – 3:00 PM</td>
</tr>
<tr>
<td>Resource Center</td>
<td>Academy Hall E</td>
<td>7:00 AM – 3:00 PM</td>
</tr>
</tbody>
</table>

*No educational activities are scheduled.*

**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.
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:

<table>
<thead>
<tr>
<th>Checked In OR Register at the Meeting on:</th>
<th>Maximum Daily Credit</th>
<th>Maximum Meeting Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, March 11</td>
<td>Up to 10 Credits</td>
<td>35 Credits</td>
</tr>
<tr>
<td>Wednesday, March 12</td>
<td>Up to 8.5 Credits</td>
<td>25 Credits</td>
</tr>
<tr>
<td>Thursday, March 13</td>
<td>Up to 8.5 Credits</td>
<td>16.5 Credits</td>
</tr>
<tr>
<td>Friday, March 14</td>
<td>Up to 8 Credits</td>
<td>8 Credits</td>
</tr>
</tbody>
</table>

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™:

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

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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.

© 2014 American Academy of Orthopaedic Surgeons
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

© 2014 American Academy of Orthopaedic Surgeons
1. Ambassador Hotel
2. Astor Crowne Plaza
3. Best Western Plus St. Christopher
4. Bienville House Hotel
5. Bourbon Orleans
6. Cotton Exchange
7. Country Inn & Suites
8. Courtyard by Marriott
9. Courtyard Iberville
10. Courtyard French Quarter
11. Dauphine Orleans
12. Doubletree New Orleans
13. Drury Inn & Suites
14. Embassy Suites
15. Four Points by Sheraton
16. French Quarter Chateau
17. Hampton Inn & Suites Conv Ctr.
18. Hampton Inn & Suites Downtown/French Quarter Area
19. Harrah’s New Orleans
20. Hilton Garden Inn New Orleans
21. Hilton Garden Inn French Quarter
22. Hilton New Orleans Riverside
23. Hilton New Orleans St. Charles
24. Holiday Inn Superdome
25. Hotel Le Marais
26. Hotel Mazarin
27. Hotel Modern
28. Hotel Monteleone
29. Hyatt French Quarter
30. Hyatt Place
31. Intercontinental New Orleans
32. International House
33. JW Marriott
34. La Quinta Inn
35. Le Pavillon Hotel
36. Loews New Orleans
37. Maison Dupuy Hotel
38. New Orleans Marriott
39. New Orleans Marriott Convention Center
40. Omni Royal Crescent
41. Omni Royal Orleans
42. Queen & Crescent Hotel
43. Renaissance French Quarter
44. Renaissance Pere Marquette
45. Residence Inn
46. The Ritz-Carlton
47. Roosevelt New Orleans
48. Royal St. Charles
49. Royal Sonesta
50. The Saint Hotel
51. Sheraton New Orleans
52. SpringHill Suites
53. Staybridge Suites
54. St. James Hotel
55. The Blake Hotel
56. W New Orleans
57. W New Orleans French Quarter
58. Westin Canal Place
59. Whitney Wyndham
60. Windsor Court
61. Wyndham Baronne Plaza
62. Wyndham French Quarter
63. Wyndham Riverfront
### Hotel Shuttle Bus Routes

#### Hotel and Airport Shuttle Schedule

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

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## Hotel Shuttle Bus Routes

| Route # | Hotel                          | Boarding Location at Convention Center | Boarding Location at Hotel                                      |
|---------|-------------------------------|----------------------------------------|----------------------------------------------------------------
| Route 2 | Mason 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                                | @ DoublesTree 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 7 | 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.
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.

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

www.aaos.org/PAC
**2013-14 Annual Meeting Committee**

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  University Place, WA  
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  ORS Representative
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  Allied Health Representative
- Francois D. Lalonde, MD  
  Orange, CA  
  Leadership Fellowship Program Member
- Guido Marra, MD  
  Chicago, IL  
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  Roanoke, VA  
  Exhibits Chair
- CDR (ret) Matthew T. Provencher, MD  
  Boston, MA  
  Member-At-Large
- Jason J. Scalise, MD  
  Phoenix, AZ  
  Member-At-Large
- Nathan W. Skelley, MD  
  St. Louis, MO  
  Resident Member
- Ruth L. Thomas, MD  
  Little Rock, AR  
  BOS Representative
- Thomas (Quin) Throckmorton, MD  
  Germantown, TN  
  2015 Central IC Chair

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

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**IMPROVING LIVES**  
by supporting excellence in orthopaedic research

“Am I going to be able to walk again without help?”  
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](http://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

[www.oref.org/donate14](http://www.oref.org/donate14)
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: 7:00 AM – 12:00 Midnight
  - Pharmacy Hours: Monday – Sunday: 9:00 AM – 6:00 PM

- **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.thecupsstorelocal.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

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Airline Information
If you need to make, change, or reconfirm your reservation, please contact the airline directly. 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.airportshtutleneworleans.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
Thursday ...................................................... 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
SIGN Fracture Care International ................................ Booth 4214B
Sociedad Colombiana de Cirugia Ortopedica y Traumatologia – Grupo Corporativo - SCCOT ........................................ Booth 4222A
Sociedad Espanola de Cirugia Ortopedica y Traumatologiq – 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 - Friday ................................................. 9:00 AM – 5:30 PM  
Wednesday – Friday ............................................. 7:00 AM – 6:00 PM  
Saturday ......................................................... 7:00 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:**  
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 B and Academy Hall 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 G and Hall I  
**Hours of Operation:**  
Wednesday – Thursday ........................................... 9:00 AM – 5:00 PM  
Friday ................................................................. 9:00 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:**  
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, Lobby A, E, 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  

**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 – Saturday ............................................. 6:30 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-injured 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:**  
Wednesday ..................................................... 12:00 – 1:30 PM  
Thursday ......................................................... 6:00 – 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 2015 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 (SOFCOT), and remarks by the President of the Société Française de Chirurgie Orthopédique et Traumatologique (SOFCOT) 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 – 6:00 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:
  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.
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.
General Information

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.

<table>
<thead>
<tr>
<th>Car Company</th>
<th>Meeting Code</th>
<th>Phone</th>
<th>Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertz</td>
<td>CV# 02KS0019</td>
<td>(800)654-2240</td>
<td><a href="http://www.hertz.com">www.hertz.com</a></td>
</tr>
<tr>
<td>Avis</td>
<td>J095822</td>
<td>(800)331-1600</td>
<td><a href="http://www.avis.com">www.avis.com</a></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Hours:</th>
<th>Resource Center</th>
<th>Exhibit Hall Booth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday</td>
<td></td>
<td>Closed</td>
</tr>
<tr>
<td>Wednesday – Thursday</td>
<td>8:00 AM – 6:00 PM</td>
<td>9:00 AM – 5:00 PM</td>
</tr>
<tr>
<td>Friday</td>
<td>7:00 AM – 6:00 PM</td>
<td>9:00 AM – 4:00 PM</td>
</tr>
<tr>
<td>Saturday</td>
<td>7:00 AM – 3:00 PM</td>
<td>Closed</td>
</tr>
</tbody>
</table>

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

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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 $.30 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 a personal My Expo Plan.

Lead System
There’s no need to tote a bulging bag or crum 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.
**General Information**

<table>
<thead>
<tr>
<th>Academy Executive Staff</th>
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</thead>
<tbody>
<tr>
<td>Chief Executive Officer</td>
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<tr>
<td>Chief Operating Officer</td>
</tr>
<tr>
<td>Chief Financial Officer</td>
</tr>
<tr>
<td>General Counsel, Corporate Secretary</td>
</tr>
<tr>
<td>Medical Director</td>
</tr>
<tr>
<td>Chief Technology Officer</td>
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<table>
<thead>
<tr>
<th>Academy Senior Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director, Convention and Meeting Services</td>
</tr>
<tr>
<td>Director, Electronic Media, Evaluation Programs, Course Operations and Practice Management</td>
</tr>
<tr>
<td>Director, Facilities Management</td>
</tr>
<tr>
<td>Director, Human Resources</td>
</tr>
<tr>
<td>Director, Information Services and Member Services &amp; Customer Relations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Convention and Meeting Services Staff</th>
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</thead>
<tbody>
<tr>
<td>Board of Directors</td>
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<tr>
<td>Education</td>
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<td>Housing and Shuttle</td>
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<tr>
<td>Operations</td>
</tr>
<tr>
<td>Registration</td>
</tr>
<tr>
<td>Social Program and Committee Meetings</td>
</tr>
</tbody>
</table>

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

© 2014 American Academy of Orthopaedic Surgeons
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](http://www.aaos.org/tours) or on-site at Morial Convention Center, Lobby A to register for Social Program tours and seminars.

**Registration Hours:**
- Monday: 2:00 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

<table>
<thead>
<tr>
<th>Time</th>
<th>Tour</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:30 PM - 3:30 PM</td>
<td>Louisiana Swamp Tour</td>
<td>$70</td>
</tr>
<tr>
<td>1:00 PM - 4:00 PM</td>
<td>French Quarter Walking Tour</td>
<td>$50</td>
</tr>
<tr>
<td>1:30 PM - 4:30 PM</td>
<td>New Orleans City Tour</td>
<td>$45</td>
</tr>
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</table>

### Wednesday, March 12

<table>
<thead>
<tr>
<th>Time</th>
<th>Tour</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM - 10:00 AM</td>
<td>Locals Overview of the Big Easy</td>
<td>Complimentary</td>
</tr>
<tr>
<td>8:00 AM - 10:00 AM</td>
<td>Life After Orthopaedics: 10 Years or More, then What?</td>
<td>$70</td>
</tr>
<tr>
<td>9:00 AM - 1:00 PM</td>
<td>Behind the Scenes of Mardi Gras</td>
<td>$75</td>
</tr>
<tr>
<td>9:00 AM - 2:30 PM</td>
<td>Big Easy Venture</td>
<td>$95</td>
</tr>
<tr>
<td>9:30 AM - 12:30 PM</td>
<td>Garden District Gems</td>
<td>$55</td>
</tr>
<tr>
<td>10:00 AM - 2:30 PM</td>
<td>French Quarter walking tour with Jazz Brunch</td>
<td>$135</td>
</tr>
<tr>
<td>10:30 AM - 12:30 PM</td>
<td>Life After Orthopaedics: 5 Years or More, then What?</td>
<td>$70</td>
</tr>
<tr>
<td>12:30 PM - 5:30 PM</td>
<td>Oak Alley and Laura Plantations</td>
<td>$85</td>
</tr>
<tr>
<td>1:00 PM - 5:00 PM</td>
<td>National World War II Museum</td>
<td>$65</td>
</tr>
<tr>
<td>1:00 PM - 4:30 PM</td>
<td>Airboat Swamp Tour</td>
<td>$130</td>
</tr>
<tr>
<td>1:30 PM - 4:30 PM</td>
<td>Culinary History Tour</td>
<td>$125</td>
</tr>
<tr>
<td>2:00 PM - 5:00 PM</td>
<td>New Orleans Rum Tour</td>
<td>$60</td>
</tr>
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### Thursday, March 13

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

### Friday, March 14

<table>
<thead>
<tr>
<th>Time</th>
<th>Tour</th>
<th>Price</th>
</tr>
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<tbody>
<tr>
<td>9:00 AM - 4:00 PM</td>
<td>Belles and Bayous</td>
<td>$150</td>
</tr>
<tr>
<td>9:00 AM - 2:30 PM</td>
<td>Big Easy Venture</td>
<td>$95</td>
</tr>
<tr>
<td>9:30 AM - 1:00 PM</td>
<td>Airboat Swamp Tour</td>
<td>$130</td>
</tr>
<tr>
<td>10:00 AM - 2:00 PM</td>
<td>Cookin’ New Orleans Style</td>
<td>$90</td>
</tr>
<tr>
<td>12:30 PM - 3:30 PM</td>
<td>Louisiana Swamp Tour</td>
<td>$70</td>
</tr>
<tr>
<td>1:00 PM - 5:00 PM</td>
<td>Behind the Scenes of Mardi Gras</td>
<td>$75</td>
</tr>
<tr>
<td>1:30 PM - 4:30 PM</td>
<td>Culinary History Tour</td>
<td>$125</td>
</tr>
<tr>
<td>2:00 PM - 5:00 PM</td>
<td>Haunted History Tour</td>
<td>$70</td>
</tr>
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</table>

### Saturday, March 15

<table>
<thead>
<tr>
<th>Time</th>
<th>Tour</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 AM - 12:00 PM</td>
<td>French Quarter Walking Tour</td>
<td>$50</td>
</tr>
<tr>
<td>9:00 AM - 12:00 PM</td>
<td>Garden District Gems</td>
<td>$55</td>
</tr>
</tbody>
</table>
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Your Source for Lifelong Orthopaedic Learning

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Saturday 7:00 AM – 3:00 PM

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SAVE 10%
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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.
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™

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™

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)

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

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™

Musculoskeletal Tumor Society
Morial Convention Center, Room 347
7:30 AM – 4:00 PM
6.75 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™

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

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

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 Vashisht, 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

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.
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**

![Zimmer Logo]

**Platinum Level – $100,000-$199,999**

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<tr>
<td>Biomet</td>
<td>Lilly USA, LLC</td>
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<tr>
<td>DePuy Synthes Joint Reconstruction</td>
<td>WellPoint</td>
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**Gold Level – $50,000-$99,999**

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<tr>
<td>Arthrex, Inc.</td>
<td>Smith &amp; Nephew Inc.</td>
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<tr>
<td>DePuy Synthes Trauma</td>
<td>Stryker</td>
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<td>OrthoPediatrics</td>
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**Silver Level – $10,000-$49,999**

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<tr>
<td>American Association of Hip and Knee Surgeons</td>
<td>Medtronic</td>
</tr>
<tr>
<td>American Orthopaedic Society for Sports Medicine</td>
<td>MicroPort Scientific Group</td>
</tr>
<tr>
<td>Arthroscopy Association of North America</td>
<td>National Institute of Arthritis and Musculoskeletal and Skin Diseases</td>
</tr>
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<td>Baxter Healthcare Corporation</td>
<td>NYU HJD</td>
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<tr>
<td>BioMarin Pharmaceutical</td>
<td>Orthopaedic Trauma Association</td>
</tr>
<tr>
<td>Biomet Spine and Bone Healing Technologies</td>
<td>Otto Bock Healthcare</td>
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<td>Pediatric Orthopaedic Society of North America</td>
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<td>DePuy Synthes Spine</td>
<td>Pega Medical, Inc.</td>
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<td>DJO Global</td>
<td>Scoliosis Research Society</td>
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<td>Ellipse Technologies</td>
<td>Shriners Hospitals for Children</td>
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<td>EOS Imaging</td>
<td>Sociedad Española de Cirugía Ortopédica y Traumatología (SECOT)</td>
</tr>
<tr>
<td>Foundation for Orthopaedic Trauma</td>
<td>Stryker Spine</td>
</tr>
<tr>
<td>Foundation of Orthopedics and Complex Spine</td>
<td>Stryker Trauma</td>
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<tr>
<td>KCI</td>
<td>Synthes USA</td>
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<td>K2M, Inc.</td>
<td>Wright Medical</td>
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<td>MAQUET</td>
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Bronze Level – $1,000-$9,999

Acumed
Advanced Biologics
Aesculap Implant Systems
Alexandra’s Playground
American Association of Orthopaedic Executives
American Orthopaedic Foot & Ankle Society
American Shoulder and Elbow Surgeons
American Society for Surgery of the Hand
American Society of Orthopaedic Assistants
American Spinal Injury Association
Association of Residency Coordinators in Orthopaedic Surgery
Baxano Surgical
Bonutti Technologies
Endo Pharmaceuticals
Richard E. Gayle, MD
Geneva Foundation
Dr. Stuart and Lisa Hirsch
Hospital for Special Surgery
Dr. Stephen and Sonny Hurst
Indonesian Orthopaedic Association
Integra Foundation
J. Robert Gladden Orthopaedic Society

Dr. Frank and Lawson Kelly
Limb Lengthening and Reconstruction Society
Massachusetts General Hospital
National Association of Orthopaedic Nurses
New England Baptist Hospital
Newton-Wellesley Hospital Charitable Foundation
Northeast Florida Orthopaedic Society
NuVasive
Orchid Orthopedic Solutions
OrthoHelix Surgical Designs
Orthopaedic Nurses Certification Board
Orthopaedic Research Society
Paragon Medical
Permanente Medical Group
Pro-Dex, Inc.
Sandra Lee Reidel, MD
Ruth Jackson Orthopaedic Society
Société Internationale de Chirurgie Orthopédique et de Traumatologie (SICOT)
William B. Stetson, MD
Symmetry Medical
Tecres S.P.A.
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 Sports Medicine
Buxton Biomedical
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DePuy Synthes Joint Reconstruction
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GE/OEC Medical Systems
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Integra
Kinamed, Inc.
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Kraft Medical
Medtronic
Mitek Sports Medicine
Mölnlycke Healthcare
Musculoskeletal Transplant Foundation
NuVasive

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Orthosonics
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Smith & Nephew, Inc.
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Stryker Instruments
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What is Best of AAOS?

The most highly-rated instructional courses, symposia, and most popular poster tours of the AAOS 2014 Annual Meeting...

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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

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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.

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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, Newbury, 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. Papanicolaou, 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. Ket, MD, Pittsford, NY
Ronald A. Navarro, MD, Rolling Hills, CA
Christopher Pelt, MD, Salt Lake City, UT
J. Michael Witzer, MD, Beverly Hill, MI
Mark W. Zawadsky, MD, Washington, DC
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<td>David C. Ayers, MD, Worcester, MA, Chair</td>
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<td>John Antoniou, MD, Montreal, QC, Canada</td>
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<td>Michael J. Archibeck, MD, Albuquerque, NM</td>
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<td>Paul E. Beaule, MD, Ottawa, ON, Canada</td>
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<td>George F. Chimento, MD, Metairie, LA</td>
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<td>John C. Clohisy, MD, Saint Louis, MO</td>
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<td>John M. Cuckler, MD, Burnsville, NC</td>
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<td>Michael R. Dayton, MD, Aurora, CO</td>
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<td>Harry A. Demos, MD, Charleston, SC</td>
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<td>Joseph F. Fetto, MD, New York, NY</td>
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<td>Kevin B. Fricke, MD, Alexandria, VA</td>
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<td>Kevin L. Garvin, MD, Omaha, NE</td>
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<td>Andrew H. Glassman, MD, Columbus, OH</td>
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<td>Ricardo A. Gonzales, MD, Hopkinton, NH</td>
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<td>William B. Kurtz, MD, Nashville, TN</td>
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<td>William B. Macaulay, MD, New York, NY</td>
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<td>David W. Manning, MD, Chicago, IL</td>
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<td>Richard W. McCalder, MD, London, ON, Canada</td>
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<td>Michael A. Mont, MD, Baltimore, MD</td>
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<td>Amar S. Ranawat, MD, New York, NY</td>
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<td>Abhindrajeet Sandhu, Walnut Creek, CA</td>
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<td>Peter F. Sharkey, MD, Media, PA</td>
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<td>Kipling P. Sharpe, MD, Gilbert, AZ</td>
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<td>James D. Slover, MD, New York, NY</td>
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<td>Scott M. Sporer, MD, Wheaton, IL</td>
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<td>Andrew M. Star, MD, Willow Grove, PA</td>
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<td>Edward J. Stolarski, MD, Sarasota, FL</td>
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<td>Creighton C. Tubb, MD, Olympia, WA</td>
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<td>James P. Waddell, MD, Toronto, ON, Canada</td>
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<td>Steven T. Woolson, MD, Palo Alto, CA</td>
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<td><strong>Adult Reconstruction Knee</strong></td>
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<td>Michael A. Kelly, MD, Hackensack, NJ, Chair</td>
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<td>David Backstein, MD, Toronto, ON, Canada</td>
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<td>Thomas J. Blumenfeld, MD, Sacramento, CA</td>
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<td>Geoffrey F. Dervin, MD, Ottawa, ON, Canada</td>
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<td>Thomas H. Eickmann, MD, Longmont, CO</td>
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<td>David A. Fisher, MD, Indianapolis, IN</td>
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<td>Jeffrey A. Geller, MD, New York, NY</td>
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<td>William L. Griffin, MD, Charlotte, NC</td>
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<td>Stephen M. Howell, MD, Sacramento, CA</td>
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<td>Gregg R. Klein, MD, Paramus, NJ</td>
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<td>Phillip F. Ludkowski, MD, Arlington Heights, IL</td>
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<td>Robert A. Malinzak, MD, Mooresville, IN</td>
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<td>John L. Mazonis, MD, Charlotte, NC</td>
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<td>Craig G. Mohler, MD, Eugene, OR</td>
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<td>Juan J. Rodrigo, MD, Waco, TX</td>
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<td>Alexander P. Sah, MD, Fremont, CA</td>
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<td>Vernon F. Sechrest, MD, San Diego, CA</td>
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<td>Alfred J. Tria, Jr, MD, Princeton, NJ</td>
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<td>Marc E. Umasl, MD, Miami Beach, FL</td>
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<td>Geoffrey H. Westrich, MD, New York, NY</td>
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<td>Russell E. Windsor, MD, New York, NY</td>
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<td><strong>Foot and Ankle</strong></td>
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<td>Daniel C. Farber, MD, Baltimore, MD, Chair</td>
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<td>Jamal Ahmad, MD, Philadelphia, PA</td>
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<td>Michael S. Aronow, MD, West Hartford, CT</td>
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<td>John A. DiPreta, MD, Albany, NY</td>
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<td>Patrick B. Ebeling, MD, Burnsville, MN</td>
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<td>Narendra G. Gurbani, MD, Downey, CA</td>
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<td>Sandra E. Klein, MD, Saint Louis, MO</td>
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<td>Brain C. Toolan, MD, Flossmoor, IL</td>
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<td><strong>Hand and Wrist</strong></td>
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<td>Fraser J. Leversedge, MD, Durham, NC, Chair</td>
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<td>Jeffrey A. Greenberg, MD, Indianapolis, IN</td>
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<td>Joseph E. Imbriglia, MD, Wexford, PA</td>
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<td>Charles F. Leinberry, MD, Chester Springs, PA</td>
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<td>John S. Taras, MD, Philadelphia, PA</td>
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<td><strong>Pediatrics</strong></td>
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<td>Ken J. Noonan, MD, Madison, WI, Chair</td>
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<td>Amy L. McIntosh, MD, Rochester, MN</td>
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<td>William M. Mirenda, MD, Danville, PA</td>
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<td>Kristan Pierz, MD, Hartford, CT</td>
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<td>Tim Schrader, MD, Atlanta, GA</td>
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<td>Thomas A. Malvitz, MD, Grand Rapids, MI, Chair</td>
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<td>Catherine G. Hawthorne, MD, Gallup, NM</td>
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<td>Paul Saiz, MD, Las Cruces, NM</td>
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<td>Frank A. Cordasco, MD, New York, NY</td>
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<td>John G. Costouros, MD, Los Gatos, CA</td>
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<td>Joshua Dines, MD, New York, NY</td>
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<td>Mark A. Franklin, MD, Temple Terrace, FL</td>
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<td>Reuben Gobezie, MD, Mayfield Heights, OH</td>
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<td>Gordon I. Groh, MD, Asheville, NC</td>
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<td>Samer S. Hasan, MD, PhD, Cincinnati, OH</td>
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<td>G. Russell Huffman, MD, Philadelphia, PA</td>
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<td>Robert B. Litchfield, MD, London, ON, Canada</td>
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<td>Patrick J. McMahon, MD, Pittsburgh, PA</td>
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<td>Wesley M. Nottage, MD, Laguna Hills, CA</td>
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<td>Kaveh R. Sajadi, MD, Lexington, KY</td>
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<tr>
<td>Robert Z. Tashjian, MD, Salt Lake City, UT</td>
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<td><strong>Spine</strong></td>
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<tr>
<td>Norman B. Chutkan, MD, Augusta, GA, Chair</td>
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<tr>
<td>Hyun W. Bae, MD, Los Angeles, CA</td>
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<td>Patrick J. Cahill, MD, Philadelphia, PA</td>
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<td>Theodore J. Choma, MD, Columbia, MO</td>
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<td>William F. Donaldson III, MD, Pittsburgh, PA</td>
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<td>John C. France, MD, Morgantown, WV</td>
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<td>Michael C. Gerling, MD, Brooklyn, NY</td>
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<td>Hubert L. Gooch, MD, Asheville, NC</td>
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<td>Carl N. Graf, MD, Barrington, IL</td>
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<td>William Francis Lavelle, MD, East Syracuse, NY</td>
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<td>Michael J. Lee, MD, Seattle, WA</td>
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<td>Ronald A. Lehman, MD, Potomac, MD</td>
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<td>Mark D. Rahm, MD, Temple, TX</td>
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<td>Afshin Razi, MD, New York, NY</td>
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<td>Vincent J. Silvaggio, MD, Pittsburgh, PA</td>
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<tr>
<td>Joseph D. Smucker, MD, Iowa City, IA</td>
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<td>F. Todd Wetzel, MD, Wilmington, DE</td>
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<td>Burt Yaszay, MD, San Diego, CA</td>
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<td><strong>Sports Medicine and Arthroscopy</strong></td>
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<tr>
<td>Dean K. Matsuda, MD, Los Angeles, CA, Chair</td>
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<tr>
<td>Richard L. Angelo, MD, Woodinville, WA</td>
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<tr>
<td>Champ Baker III, MD, Columbus, GA</td>
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</tbody>
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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. Pfel, 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. Krieger, MD, Philadelphia, PA
Edward M. Perez, MD, Memphis, TN
Yvonne M. Mutha, MD, Wichita, KS
Gilbert R. Ortega, MD, Scottsdale, AZ
Edward P. Reesr, MD, Portland, OR

Tumor and Metabolic Disease
Jeffrey S. Kneisl, MD, Charlotte, NC, Chair
James B. Hayden, MD, Lake Oswego, OR
Thomas J. Schatschmidt, 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, Wilminton, DE
Ernest L. Sink, MD, New York, NY
Lewis E. Zions, MD, Pacific Palisades, CA

Practice Management
A. Herbert Alexander, MD, Ketchum, ID, Chair
Robert H. Blotter, MD, Marquette, MI
J. Abbot 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.

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

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. Beatty, MD, Memphis, TN
Edward N. Hanley, Jr., MD, Charlotte, ND
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 Dumbar, MD, PhD, Halifax, NS, Canada
Cyril Mauffrey, MD, MRCVS, 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 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
Joaquín 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 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.

Faculty Development Course 6: Principles of Teaching Across Differences in Culture and Language
Wednesday, March 12, 2014, 4:00 PM – 5:00 PM
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. Beatty, 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 HIPPA 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 1: 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. Lattanzag, 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 2: 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 3: 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
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
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 orthoportal.
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
- **RVUs: What They Are and Why They Matter** – Fred Meyer, MD
- **How To Succeed In Practice By Really Trying** – Karen Zupko, MD
- **How to Read a Financial Statement** – William Creevy, MD
- **How to Run an Efficient Office** – Gail Chorney, MD
- **Dictating and Documenting for ICD-10** – R. Dale Blasier, MD
- **Maximizing Medicare Reimbursement Works, RVU's, 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
- RVUs: What They Are and Why They Matter – Fred Meyer, MD
- How To Succeed In Practice By Really Trying – Karen Zupko, MD
- 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 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, MD
- 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, MD
- 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:

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

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

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

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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:

<table>
<thead>
<tr>
<th>Title and Moderator</th>
<th>Symposium and Live Webcast</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Managing Surgical Pain in the Opioid Epidemic Era (B)</strong></td>
<td>Tuesday: 10:30 AM – 12:30 PM Theater C</td>
</tr>
<tr>
<td><strong>Moderator: David L. Nelson, MD</strong></td>
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</tr>
<tr>
<td><strong>New Paradigms and State of the Art Treatment of Osteonecrosis of the Femoral Head (C)</strong></td>
<td>Tuesday: 1:30 – 3:30 PM La Nouvelle Ballroom</td>
</tr>
<tr>
<td><strong>Moderator: Rafael J. Sierra, MD</strong></td>
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</tr>
<tr>
<td><strong>Complex Shoulder Instability: Around the World in 120 Minutes (F)</strong></td>
<td>Tuesday: 4:00 – 6:00 PM La Nouvelle Ballroom</td>
</tr>
<tr>
<td><strong>Moderator: Pascal Boileau, MD</strong></td>
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<tr>
<td><strong>Metal on Metal and Modular Corrosion: Clinical Impact of Tribocorrosion (L)</strong></td>
<td>Wednesday: 10:30 AM – 12:30 PM La Nouvelle Ballroom</td>
</tr>
<tr>
<td><strong>Moderator: Young-Min Kwon, MD, PhD</strong></td>
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<tr>
<td><strong>Obesity, Orthopaedics, and Outcomes (M)</strong></td>
<td>Wednesday: 10:30 AM – 12:30 PM Theater C</td>
</tr>
<tr>
<td><strong>Moderator: George V. Russell, Jr, MD</strong></td>
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<tr>
<td><strong>How Do I Perform a Revision Total Knee Arthroplasty (O)</strong></td>
<td>Wednesday: 1:30 – 3:30 PM Theater C</td>
</tr>
<tr>
<td><strong>Moderator: Steven J. MacDonald, MD</strong></td>
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<tr>
<td><strong>Hot Topics and Controversies in Shoulder Surgery: 2014 (T)</strong></td>
<td>Thursday: 4:00 – 6:00 PM La Nouvelle Ballroom</td>
</tr>
<tr>
<td><strong>Moderator: John W. Sperling, MD, MBA</strong></td>
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<tr>
<td><strong>Complex Skeletal Reconstruction in Infection, Post Trauma, and Tumor (U)</strong></td>
<td>Thursday: 4:00 – 6:00 PM Theater C</td>
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<tr>
<td><strong>Moderator: Joseph Benevenia, MD</strong></td>
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<tr>
<td><strong>Health Care Reform: How Can We Adapt?</strong></td>
<td>Friday: 8:00 – 10:00 AM La Nouvelle Ballroom</td>
</tr>
<tr>
<td><strong>Moderator: Thomas J. Grogan, MD and Craig Butler, MD</strong></td>
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<tr>
<td><strong>The Multiple Ligament Injured and Dislocated Knee (X)</strong></td>
<td>Friday: 8:00 – 10:00 AM Theater C</td>
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<tr>
<td><strong>Moderators: Gregory C. Fanelli, MD, and Bruce A. Levi, MD</strong></td>
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</tr>
<tr>
<td><strong>Hot Topics and Controversies in Revision Total Hip Arthroplasty (Z)</strong></td>
<td>Friday: 10:30 AM – 12:30 PM La Nouvelle Ballroom</td>
</tr>
<tr>
<td><strong>Moderator: Paul F. Lachiewicz, MD</strong></td>
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</tr>
<tr>
<td><strong>Shoulder Surgery, Getting it Right! An ARS Symposium (AA)</strong></td>
<td>Friday: 10:30 AM – 12:30 PM Theater C</td>
</tr>
<tr>
<td><strong>Moderator: Kevin D. Plancher, MD, MS</strong></td>
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<tr>
<td><strong>Lessons of the Outcomes of ACL Reconstruction Surgery from International Registries (CC)</strong></td>
<td>Friday: 1:30 – 3:30 PM Theater C</td>
</tr>
<tr>
<td><strong>Moderator: Scott A. Rodeo, MD</strong></td>
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</tbody>
</table>
Tuesday, March 11

**SPECIAL SESSIONS – PRACTICE MANAGEMENT FOCUS**

**190**

**Coding Basics for Starting Your Practice**

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:

- 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**

**8:00 AM — 5:00 PM**

**Rivergate Room**

**Practice Management Symposium for Orthopaedic Surgeons (199)**

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

I. Measuring the Value of Orthopaedic Care: Study Approach and Key Findings
   John R. Tongue, MD, Tualatin, OR

II. Benchmarking for Performance: Using Data to Make Smarter Decisions
    Michael McCaslin, CPA, Indianapolis, IN

     Craig R. Mahoney, MD, West Des Moines, IA

IV. Part 2: Physicians, Leadership and Alignment: New Models of Healthcare Delivery
    Michael Q. Freehill, MD, Edina, MN

V. Top 10 Business Mistakes and How to Avoid Them
   Karen Zupko, Chicago, IL

VI. 30 Tech Tips in 30 Minutes
    Marion Jenkins, Greenwood Village, CO

VII. Making Use of Meaningful Use
     Jonathan L. Schaffer, MD, Cleveland, OH

VIII. Patient Safety - Everyone’s Business: An Orthopaedic Surgeon Perspective
     Michael J. Lee, MD, Seattle, WA

IX. The Growth Prescription: Research, Communication and Execution
    Bill Champion, Omaha, NE

X. HIPAA Highlights: What You Need to Know
   Kathleen L. DeBruhl, Esq, New Orleans, LA

XI. Making Use of Meaningful Use
    Richard Dell, Cypress, CA

XII. Make Sure You Get Paid on October 1, 2014 - ICD-10 Readiness
    Louis F. McIntyre, MD, White Plains, NY

**SYMPOSIUM**

**12:00 PM — 5:00 PM**

**Great Hall B**

**Resident Practice Management Symposium (191)**

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

I. Finding the Right Job: How to Evaluate Practice Opportunities
   Ryan M. Dopirak, MD, Manitowoc, WI

II. Negotiating Physician Employment Agreements
    Kathleen L. DeBruhl, Esq, New Orleans, LA

III. Compensation Formulas: Pros and Cons of Different Methods
    Michael McCaslin, CPA, Indianapolis, IN

IV. How to Succeed in Practice by Really Trying
    Karen Zupko, Chicago, IL

V. Dictating and Documenting ICD-10: Coding
    R.D. Blasier, MD, Little Rock, AR

VI. How to Read a Financial Statement
    William R. Crevey, MD, Boston, MA

**FREE**

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Tuesday, March 11

**SYMPOSIUM**
8:00 AM — 10:00 AM  
Theater B

**Surgical Tips and Tricks to Perform Common Elbow Procedures (A)**  
*Modrator: 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) Trockmorton, 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 Arthroplasty as an Option in Unreconstructable Acute Fractures or Failed Fracture Fixation About the Hip and Knee in the Active Elderly**  
*Moderator: Richard E. Kyle, MD, Minneapolis, MN  
Paul J. Duzelius, 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 How to Perform a Primary Total Knee Arthroplasty: Video Vignettes**  
*Moderator: Raymond H. Kim, MD, Denver, CO  
Guo-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 Magnetic Resonance Imaging of the Knee and Shoulder**  
*Co-Moderators: Dennis C. Crawford, MD, Portland, OR  
Erik W. Foss, MD, Portland, OR  
Carl S. Winalski, 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.

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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.
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
Eric J. Wall, MD, Cincinnati, OH
Peter M. Waters, MD, Boston, MA
Room 350
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
William N. Levine, MD, New York, NY
Thomas W. Bauer, MD, PhD, Cleveland, OH
Seth S. Leopold, MD, Seattle, WA
Room 218
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
Suman G. Krishnan, MD, Dallas, TX
Stephen S. Burkhart, MD, San Antonio, TX
E. L. Cain Jr, MD, Birmingham, AL
Mark D. Lazarus, MD, Philadelphia, PA
Room 260
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
Thomas F. Higgins, MD, Salt Lake City, UT
Jeremy J. McCormick, MD, Saint Louis, MO
Room 221
Topics include the diabetic patient, severe osteoporosis, syndesmotic injuries, posterior malleolus fractures, and techniques to improve outcomes.

INSTRUCTIONAL COURSE LECTURE
8:00 AM — 11:00 AM

182
Sports Medicine Review Course
Moderator: Ashesh Bedi, MD, Ann Arbor, MI
Joshua Dines, MD, New York, NY
Volker Musahl, MD, Pittsburgh, PA
Anthony Colucci, DO, FACEP, South Lyon, MI
Room 353
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
Todd J. Albert, MD, Philadelphia, PA
John A. Bendo, MD, New York, NY
Frank J. Schub, MD, New York, NY
Alexander Vaccaro, MD, PhD, Gladwyne, PA
Room 271
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
Andrew H. Schmidt, MD, Minneapolis, MN
J. Tracy Watson, MD, Saint Louis, MO
Robert E. Ostrum, MD, Chapel Hill, NC
Clifford B. Jones, MD, FACS, Grand Rapids, MI
Room 207
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
11:15 AM — 12:30 PM

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

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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 Nuneley, 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  
Anais 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 Szubs, 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.

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. Tannton, 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 E. 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 Hauker, 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.

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.

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, Geneve, Switzerland
Pierre J. Hoffmeyer, MD, Geneve, 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.

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
Andrew 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.
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. McCauley, 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.

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.

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.

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.

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.

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 Hearns, 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.

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.
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
Keichi 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 the returned to the MLB.

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
Shaun 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 Biomatrices
Jason L. Dragoo, 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 Demside, 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 assess 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 Prescribing
    Jeffrey A. Rodgers, MD, West Des Moines, IA
IV. Managing Opioids in a Teaching Hospital
    Loree Kallainen, 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

10:30 AM — 12:30 PM
INSTRUCTIONAL COURSE LECTURE

121  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  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  Soft Tissue Coverage Every Orthopod Should Know
Moderator: Nader Pakzima, 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 injures, 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  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.
### 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

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.

### 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

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.

### 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

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.

### 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

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

### 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

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.

### 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

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.

### Management of Pelvic Fractures
**Moderator:** Milton L. Routt Jr, MD, Houston, TX  
Raymond D. Wright Jr, MD, Lexington, KY  
Mark C. Reilly, MD, Newark, NJ

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

### 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. Lamonti, MD, PhD, Cleveland, OH

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.

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*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.*

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Tuesday, March 11

PAPER PRESENTATION

10:30 AM — 12:30 PM  
Theater A

Shoulder and Elbow I: Elbow Conditions

Moderator(s): Russell Hatfifn, 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 Alizadehkhaiyat, 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.

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  
Shaun 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.

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

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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 Velllette, 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
Sherif Hassan, MD, Parlin, NJ
Brent G. Parks, MSc, Baltimore, MD
Janet A. Yu-Yabiro, PhD, Baltimore, MD
Wiemi Douoguih, 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

* 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

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**

*Sera 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.

**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
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
α-Defensin: A Novel Synovial Fluid Biomarker for PJI that Outperforms the Leukocyte Esterase Test Strip
Carl A. Deirmengian, MD, Wynnewood, PA
Keith Kardos, PhD, Wynnewood, PA
Patrick Kilmartin, BS, MS, Wynnewood, PA
Kevin Schiller, BS, Wynnewood, PA
Alexander Cameron, Wynnewood, PA
Dana Geiser, BS, Philadelphia, PA
Javad Parvizi, MD, FRCS, Philadelphia, PA

The α-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. LaBr, MSc, Rochester, MN
Tad M. Mabry, MD, Rochester, MN
James Steckelberg, MD, Rochester, MN
Daniel J. Berry, MD, Rochester, MN
Arlen D. Hansen, 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. LaBr, MSc, Rochester, MN
Tad M. Mabry, MD, Rochester, MN
James Steckelberg, MD, Rochester, MN
Daniel J. Berry, MD, Rochester, MN
Arlen D. Hansen, 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
Hilal Maradit-Kremers, MD, MSc, Rochester, MN
Laura Lewallen, MD, Rochester, MN
Brian D. LaBr, MSc, Rochester, MN
Tad M. Mabry, MD, Rochester, MN
James Steckelberg, MD, Rochester, MN
Daniel J. Berry, MD, Rochester, MN
Arlen D. Hansen, 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

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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 Debghan, 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.

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 BABBB, 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.

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
Chamnann Rungprai, MD, Iowa City, IA
Jessica Goetz, PhD, Iowa City, IA
John E. FEMINO, Iowa City, IA
Amunziato Amendola, MD, Iowa City, IA
Phimit 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. Lazarо, MD, New York, NY
David L. Helfet, MD, New York, NY
Dean G. Lorich, 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.

11:42 AM  PAPER: 070
Comparison of Modern Locked Plating and Antiglide 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 Calcaneotalotibial 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.

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 co-morbid 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.

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**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 Lowery 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. Kebaish, 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**

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**

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, Kremmen, Germany

- The success of a TKA is more dependent upon surgical technique than prosthetic design. Different approaches may complement 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**

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**

Moderator: Carol D. Morris, MD, MS, New York, NY
Benjamin K. Potter, MD, Bethesda, MD
Valerio L. 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

- 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. Haefkins, MD, Greenville, SC
Robert B. Litchfield, MD, London, ON, Canada
Nick G. Mohtadi, MD, Calgary, Canada
John E. Kuhn, MD, Nashville, TN

- 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 Bouleau, MD, Nice, France
Luc Favard, MD, Tours, France
Jon J. Warner, MD, Boston, MA
Gregory P. Nicholson, MD, Chicago, IL
Gilles Walsh, MD, Lyon, France

- 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

- 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

- Target orthopaedists who treat spinal conditions in the elderly, from osteoporosis and fractures, to degenerative deformities.

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INSTRUCTIONAL COURSE LECTURE

1:30 PM — 3:30 PM

150  Hip Arthroscopy: Tales from the Crypt
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
Room 226

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
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
Room 347

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  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
Room 207

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  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
Room 210

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  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
Room 217

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 Room 345 

The Top 10 Coding Issues Facing Practicing Orthopaedic Surgeons  
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 Room 353 

Community Orthopaedist Workshop  
Moderator: Dwight W. Burney III, MD, Albuquerque, NM  
Annunziato Amendola, MD, Iowa City, IA  
Daniel J. Berry, MD, Rochester, MN  
Thomas K. Fehring, MD, Charlotte, NC  
Shepard R. Hurwitz, MD, Chapel Hill, NC  
William J. Robb III, MD, Winnetka, IL  
John R. Tongue, MD, Tualatin, OR  
Paul Tornetta 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  
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, MBChB, 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.

1:54 PM  
PAPER: 555  
Distributed Analysis of Hip Implants Using Five International Registries: Pioneering Study of Bearing Surfaces  
Ove N. Furuens, 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  
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.

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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  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-Huean 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.

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 Drompt, 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
Tilmann Pfizner, 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.

2:42 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 Patterson, Toronto, ON, Canada
Michael D. McKee, MD, Toronto, ON, Canada
Bheshma 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 Carancano, 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
Jeppe Rasmussen, MD, Brondby, Denmark
Stig Broson, 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.

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 Kawai, MD, Hyogo, Japan
Koji Takayama, MD, PhD, Kobe, Japan
Yuichi Hoshino, MD, Kobe, Japan
Kouki Nagamune, PhD, Fukushima, Japan
Masahiro Kurosaka, MD, Kobe, Japan
Despite 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 Nehrer, 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.

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.

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* 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.
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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 Plateau Fractures: A Cheaper Alternative to External Fixation
Aaron M. Perdue, MD, Nashville, TN
Jordan C. Apfeld, MD, Nashville, TN
Vasanth Sathyakumar, 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, Marshall, 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.

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.

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
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.

An alphabetical faculty financial disclosure list can be found starting on page 312.
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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. Steimann, MD, Rochester, MN

IV. Corocoid Transfer: Past, Present and Future
Gilles Walsh, MD, Lyon, France

V. Arthroscopic Latarjet Procedure
Laurent Lafort, 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

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SYMPHOSUM
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

SYMPHOSUM
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 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
     Mohit Bhandari, MD, FRCS, Hamilton, Canada
VIII. Indirect Lateral Malleolar Fractures: Lateral or Antiglide?
    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
Room 217
Getting Your Work Published and Achieving the Highest Impact
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 an insight into how to review papers including a section on identifying research fraud.

4:00 PM — 6:00 PM
Room 260
The Painful Metal on Metal Hip Arthroplasty: Evaluation and Management
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.

INDICATIONS AND TECHNIQUES FOR BI- AND UNICOMPARTMENTAL KNEE ARTHROPLASTY
Moderator: Adolph V. Lombardi Jr, MD, New Albany, OH
Jess H. Lonner, MD, Philadelphia, PA
Keith R. Berend, MD, New Albany, OH
Fred D. Cashner, MD, New York, NY
Interest in partial knee arthroplasty has resurfaced 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.
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.

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163 Nuts and Bolts of Foot and Ankle Injuries in the Athlete
Moderator: J. Chris Goetze, MD, Edina, MN
Thomas O. Clanton, MD, Vail, CO
Steven L. Haddad, MD, Glenview, IL
Robert B. Anderson, MD, Charlotte, NC
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 Haasman, MD, New York, NY
Filip Stockmans, MD, PhD, Heule-Kortrijk, Belgium
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
Sukon A. Shab, MD, Wilmington, DE
Laurel C. Blakemore, MD, Broad Run, VA
Patrick J. Cahill, MD, Philadelphia, PA
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: Naveen Duggal, MD, Manlius, NY
Ryan Graue, Cambridge, MA
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 throughout and safety in your operating room.

167 How About That Proximal Biceps Tendon?
Moderator: Richard J. Haeckins, MD, Greenville, SC
Robert H. Bell, MD, Akron, OH
Robert T. Burks, MD, Salt Lake City, UT
Peter B. MacDonald, MD, Winnipeg, MB, Canada
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. Dunes, MD, Uniondale, NY
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
Clanton J. Devlin, MD, Nashville, TN
Chris A. Corbett, MD, Omaha, NE
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 E. LaPrade, MD, PhD, Vail, CO
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
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

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
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
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
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.

4:24 PM
Antifibrinolytics in Adult Spinal Deformity Surgery: A Prospective Randomized Controlled Trial
Thomas Cheriyan, 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
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
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
Virgine 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

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

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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.

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
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. Beren, MD, San Francisco, CA
Morsi Khashan, Jaffa Tel Aviv, Israel
Takabito 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. Hir, 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.

PAPER PRESENTATION

4:00 PM — 6:00 PM

Foot and Ankle I: Forefoot and Outcomes
Room 245

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
Louell 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
Sriniwasan 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
Sriniwasan 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 Lessor 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.

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
Sriniwasan 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. Ishikawa, 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.

5:12 PM  PAPER: 115
Validation of the Foot and Ankle Outcome Score for Hallux Rigidus
MaCalus Hogan, MD, Wexford, PA
Sriniwasan 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.

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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.

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 Overreamed 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

* 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

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 332
Moderator: Frank A. Liporace, MD, Englewood Cliffs, NJ
Brett R. Levine, MD, Chicago, IL
Erik Kubisak, 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 207
Moderator: Christopher M. Larson, MD, Edina, MN
John C. Clohisy, MD, Saint Louis, MO
Bryan T. Kelly, MD, New York, NY
Michael Lernig, PhD, Zurich, Switzerland

Complications and early treatment failures are seen after arthroscopic and open joint preservation procedures. Contemporary strategies to avoid and manage suboptimal outcomes discussed.

203 Revision TKA: Step by Step Video Techniques
Room 208
Moderator: Rafael J. Sierra, MD, Rochester, MN
Raymond H. Kim, MD, Denver, CO
Michael P. Bolognesi, MD, Durham, NC
William L. Griffin, MD, Charlotte, NC

To learn and apply the techniques of measured resection and gap balancing for unicompartmental and total knee arthroplasty.

204 Osteotomy and Arthrodesis of the Forefoot and Hindfoot
Room 218
Moderator: Simon Lee, MD, Chicago, IL
Todd A. Irwin, MD, Ann Arbor, MI
Jeremy J. McCormick, MD, Saint Louis, MO
Phinut Phisitkul, MD, Iowa City, IA
Kenneth Hunt, MD, Redwood City, CA

Will review common surgical techniques for correction of hallux valgus and total knee arthrodesis.

205 Hand and Wrist Problems General Orthopaedists Treat (or should treat): Diagnostic and Operative Tips
Room 226
Moderator: Nader Paksima, DO, New York, NY
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 Current Perspectives in Distal Radius Fixation
Room 271
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 Update in Pediatric Musculoskeletal Infections: When it Is, When it Isn’t and What to Do
Room 276
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 Life After Orthopaedics: 10 Years or More, Then What?
Room 356
Moderator: Dempsey S. Springfield, MD, Boston, MA
Joseph S. Barr Jr, MD, Boston, MA
Cynthia R. 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 The Unstable Elbow: Current Concepts in Diagnosis and Treatment
Room 356
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 Massive Rotator Cuff Tears: Arthroscopy to Arthroplasty
Room 221
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.

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

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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  
Peter S. Rose, MD, Rochester, MN  
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  
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. Matsuda, MD, Chesterfield, MO  
Asheesh Bedi, MD, Ann Arbor, MI  
An evidence-based approach to reviewing the challenges and controversies in the diagnosis, treatment and outcome for 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. Duwelius, MD, Portland, OR  
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  
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  
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  
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

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.

*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

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, BEng, 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.

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 Ciompì, MD, Roma, Italy
Domenico Luptario, Matera, Italy
Alessandro Maria Agrò, MD, Rome, Italy
Giuseppe Argento, MD, Rome, Italy
Angelo De Cardi, 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, Vaive, 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.

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 Canavan, MD, Turin, Italy
Umberto Mariotti, Milan, Italy
Marco Assom, MD, Rivoli-Turin, Italy
Umberto Cottino, Fecetto 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
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. Neviaser, MD, Washington, DC
Michael T. Benke, MD, Bloomfield, NJ
Andrew Neviaser, MD, Washington, DC
the open Bankart provides a durable, reliable stabilization for recurrent anterior dislocation of the shoulder.

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

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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, BESc, 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 Vlassakov, 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.

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 Mub, MD, Birmingham, MI
Mark Rodgers
Reuben Gobezie, 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

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.

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**Wednesday, March 12**

**8:06 AM**

**PAPER: 137**

**Efficacy of Antifibrinolytics on Surgical Bleeding in Orthopaedic Surgery: A Meta-Analysis**

- Thomas Cherian, 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.

**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
- Gene 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 Hatzler, 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.

**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 Hatzler, 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 E. 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.

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

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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.

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 2.5% 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 (0.23%) 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. Royle, 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. Royle 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.

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 Asbraft, MD, Garland, TX
David W. Polly Jr, MD, Minneapolis, MN
Yaser M. Baghdadi, MD, Rochester, MN
Michael J. Yasemski, 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.

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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
Mubareem 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
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. Luhrmann, 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 Pavelek, 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.

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
Jabangir Asghar, MD, Coral Gables, FL
Amer Saimdani, 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.
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
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.

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 digitrum tendons,
but also changes of quality of these structures contributed to
pathogenesis of trigger fingers with PIP joint contracture.

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.

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**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.

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**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.

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**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.

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**9:36 AM**

**PAPER: 178**

Gilding 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.

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**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.

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**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.

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* 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**
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 Studies 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 Oswalt, 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

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INSTRUCTIONAL COURSE LECTURE

10:30 AM — 11:30 AM
FD4 The Art of Using PowerPoint for Effective Presentations
Moderator: Roy W. Sanders, Tampa, FL
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
William J. Maloney, MD, Redwood City, CA
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
Michael E. Berend, MD, Mooresville, IN
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
Gregory C. Berlet, MD, Westerville, OH
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
Moderator: J. Mark Melhorn, MD, Wichita, KS
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
Moderator: A. Lee Osterman, MD, Villanova, PA
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
Steven L. Frick, MD, Orlando, FL
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
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.

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229  
**Lumbar Spinal Stenosis: Today and Tomorrow**  
Moderator: Darrel S. Brodke, MD, Salt Lake City, UT  
D. Greg Anderson, MD, Morestown, NJ  
Theodore J. Choma, MD, Columbus, MO  
Brandon D. Lawrence, MD, Salt Lake City, UT  

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**  
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  

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  
Shaun W. O’Driscoll, MD, Rochester, MN  
Robert N. Hotchkiss, MD, New York, NY  

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  

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  

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 Walsh, MD, Lyon, France  
Thomas R. Duquin, MD, Buffalo, NY  
Jay D. Keener, MD, Saint Louis, MO  

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  

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.

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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 unicompartmental knee reconstruction may demonstrate operated-limb joint moments during stair ascent typical of healthy individuals.

10:54 AM  PAPER: 184
Osteoarthritis Progression in Untreated Compartment, Comparing Open Wedge Tibial Osteotomy and Unicondylar 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 Flozeat-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

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.

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

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

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

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

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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. Sgarlione, 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, Chungbuk Kunsan, Republic of Korea
Won Hyoun Shin, Seoul, Republic of Korea
Ji Sun Shin, BS, Seoul, Republic of Korea
Hyang Kim, PhD, Seoul, Republic of Korea
Kang Sun 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.

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 Bruzzi, MD, Torino, Italy
Federico Dettori, MD, Torino, Italy
Davide E. Bonasia, MD, Torino, Italy
Marco Assom, MD, Rovoli-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. Loury 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 Kiebiak, 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. Tjomakaris, 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.

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 Yeranosian, 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.

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.

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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.

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 Francescchi, 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 Zamponga, MD, Rome, Italy  
Sebastiano Vasta, MD  
Nicola Maffulli, MD, PhD, London, United Kingdom  
Vincenzo Denaro, MD, Rome, Italy  
The open subpectoral tenodesis is a is an easy and reproducible technique, leading to better clinical and cosmetic results when compared to the high arthroscopic tenodesis.

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.

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  
Praavan 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.
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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.

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 Ahmadinia, 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.

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.
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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 Khayatzadeh, 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.

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 Yuge, MD, Iizuka, Japan
Osamu Kawano, MD
Tsuneki Takeo, 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
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
Felasia M. Wodajo, MD, Arlington, VA

10:30 AM
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
Multiple Primary Malignancies with High Grade Soft Tissue Sarcoma in Patients Over 45 Years
Eiji Kozawa, MD, Nagoya, Japan
Yoshibiro Nishida, Nagoya, Japan
Satoshi Tsukushi, MD, Nagoya, Japan
Hiroshi Urakawa, Nagoya, Japan
Eisuke Arai, Nagoya, Japan
Hideshi Sugura, MD, Nagoya City, Japan
Naobisa 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
Prognostic Significance of Histological Invasion in High Grade Soft Tissue Sarcomas
Satoshi Tsukushi, MD, Nagoya, Japan
Yoshibiro Nishida, Nagoya, Japan
Hiroshi Urakawa, Nagoya, Japan
Eisuke Arai, Nagoya, Japan
Eiji Kozawa, MD, Nagoya, Japan
Naobisa 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.

10:54 AM
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 Muwa, MD, Ishikawa, Japan
Kentaro Igarashi, Kanazawa, Japan
Hiroyuki Tsueiya, MD, Kanazawa, Japan

The low expression of PPARγ significantly correlated with the better metastasis-free survival in patients with myxoid liposarcoma, suggesting its usefulness as a prognostic marker.

11:00 AM
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
Low-dose Chemotherapy or Intentional Marginal Resection Following Meloxicam Treatment for Patients with Desmoid
Yoshibiro Nishida, Nagoya, Japan
Satoshi Tsukushi, MD, Nagoya, Japan
Hiroshi Urakawa, Nagoya, Japan
Eiji Kozawa, MD, Nagoya, Japan
Eisuke Arai, Nagoya, Japan
Naobisa 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.

11:18 AM
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.

• 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.
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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
Seungchae 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.

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
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.

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.
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  
Seungbeol 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, Cesentino, 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.

**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. Callahan, 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. Callahan, 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.

242 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 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 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 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 Jevsevar, 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 Benbim, 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
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.

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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
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
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  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 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.

1:30 PM — 3:30 PM  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 Morrison, 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 Kadak, MD, Bergen, Norway
Leif I. Havelin, MD, Bergen, Norway
Kristin Haugan, MA, Trondheim, Norway
Birgitte Espenhaug, 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.

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
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 Brampton, 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.

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 Roussos, MD  
Alexis Bonvin, MD, Geneva, Switzerland  
Laurent-Panayiotis Christofiopoulos, 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.

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.

* 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

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 Garfield Roberts, MBBS, Oxford, United Kingdom
Anthony 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 Hovie, 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 Lehal, 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

1:30 PM — 3:30 PM
Room 245

Foot and Ankle II: Tendons, OCD, and More

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. Greco, BA, Tbronwood, 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.

Discussion – 6 Minutes

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.
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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
Ryuos 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.

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 Joong Choi, MD, Seoul, Republic of Korea
Chulhyun Park, MD, Daegu, Republic of Korea
Dong-II 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
Jiyoung 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.

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
Liuang 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
Chang-Seok Kim, MD, Cheonan, Republic of Korea
Chulhoon Kim, MD, Cheongju, Republic of Korea
Hyun-Choil Won, MD, Cheongju, Republic of Korea
Kyoung J. Park, MD, Cheonan, 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

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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
Bhavveen Kapadia, MD, Baltimore, MD
Bradley M. Lamm, DPM, Lutherville Timonium, MD
Lynne C. Jones, PEd, 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.

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
Ifikhar Ahmed, MBBS, MSc, Kingston Upon Hull, United Kingdom
Amr Mobs, 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 Angervine, 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.

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.
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2:00 PM  PAPER: 275
Symptomatic Atypical Femoral Fractures are Related to Underlying Hip Geometry
David P. Taormina, MS, New York, NY
Alejandro Marcano, 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.

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
Niloofer Dehghan, MD, Toronto, ON, Canada
Milena Vicente, RN, Toronto, ON, Canada
Christine Schenitsch, Toronto, ON, Canada
Brad Petrisor, MD, Hamilton, Canada
Hans J. Kreder, MD, Toronto, ON, Canada
Emil H. Schenitsch, 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 Koenmer, 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, MBChB, Leeds, United Kingdom
Suribabu Gadipati, 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.

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

This study demonstrated that dynamic fixation of a locking plate with Far Cortical Locking (FLC) 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.

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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.

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, MBBC, MSc, Cairo, Egypt
M. Ham Hmohamed, 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 Georgopooulo, 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.

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
Sarah C. Korupulo, 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. Beaw, MD, Memphis, TN
Jeffrey R. Sauser, 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.

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

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.

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.

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.

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.

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.

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.

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
Raakh 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.

INSTRUCTIONAL COURSE LECTURE

4:00 PM — 6:00 PM
261 Complications after Total Hip Arthroplasty: Current Strategies for Prevention and Treatment
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
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
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
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.

Discussion – 6 Minutes
Wednesday, March 12

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.

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. Kozan, 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.

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.

All Things Clavicle: From AC to SC and All Points In Between
Moderator: Gordon L. Grob, 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.

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.

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.

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.

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.

Acetabular Fractures: A Problem-Oriented, Case-Based Approach
Moderator: Berton R. Moed, MD, Saint Louis, MO
Michael D. Stover, MD, Chicago, IL
Mark S. Vrahos, 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.

* 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

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.

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. Leucallen, 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%.

An alphabetical faculty financial disclosure list can be found starting on page 312.
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 Krishna, BA, Chicago, IL
Mary J. Kwasy, 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.

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
Kimon 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. Slower, 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 Sprouson, MD, Warwickshire, United Kingdom
Paul E. Partington, MD, Corbridge, United Kingdom
Ian Carluke, MB ChB, Ashington, United Kingdom
Kevin Emmerson, FRCS Orth, Newcastle Upon Tyne, United Kingdom
Seif S. Asead, 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.

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.

* 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.
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.

Mechanically Assisted Taper Corrosion in Modular Total Knee Arthroplasty
Christina M. Arnhold, Philadelphia, PA
Daniel MacDonald, Philadelphia, PA
Mariya Tohفfافو، 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.

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.

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.

The Adductor Ratio: A New Tool for Joint Line Reconstruction in Revision Total Knee Arthroplasty
Thomas Snyckx, 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.

Use of a Hydro-Dissecting Device as a Novel Tool for Biofilm Dispersal from Metal Implants
Constantinos Ketonis, MD, PhD, Philadelphia, PA
Sana Dastgheib, 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.
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
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.

Incidence of Patella Clunk Syndrome in a Fixed Versus Mobile Bearing Posterior-Stabilized Total Knee Arthroplasty
Nimrod Smir, 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.

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.

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, Tehran, 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.

How Much of Cement Depth Guarantees Stem Stability in Revision Knee Arthroplasty with Hybrid Fixation Technique?
Dubyun 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
Sahngboon 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.

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. Schenber, 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.

Porous Tantalum Tibial Cones in Revision Total Knee Arthroplasty: Minimum Five-Year Follow Up
Atul F. Kamath, MD, Massapequa, NY
Arlen D. Hansen, 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%.

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
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.
An alphabetical faculty financial disclosure list can be found starting on page 312.
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, MSE, 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 Bonnevialle, MD, Toulouse Cedex, France
Michel Rongieres, MD, Blagnac, France
Michel F. Mansat, MD, Toulouse Cedex, France
Philippe Chiron, MD, Toulouse Cedex, France
Paul Bonnevialle, MD, Toulouse, France

Perilunate dislocation and fracture-dislocation of the wrist are severe wrist trauma with often numerous sequelae with follow-up. Early diagnosis and anatomic reduction are prerequisite to a satisfactory functional result.

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, Rochester, MN
Luis R. Scheker, 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.

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.
5:48 PM  
PAPER: 345 
Percutaneous Fixation Leads to Consolidation in Selected Cases of Delayed Union of the Scaphoid Waist
Matthias Vanhees, 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.

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.

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 calcaneal 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, Fort Sam Houston, 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
Hang 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.

Discussion – 6 Minutes

4:54 PM  PAPER: 353
Effect of Chronic Heavy Smoking on Ankle Fracture Healing
Waseem Jerjes, MD, PhD, West Yorkshire, United Kingdom
Hang 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.

Discussion – 6 Minutes

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 Torretta 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. Orlans, BA, MA, Boston, MA
Paul Torretta 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.

Discussion – 6 Minutes

5:18 PM  PAPER: 356
The Quality and Utility of Routine Immediate Postoperative Radiographs Following Ankle Fracture Surgery
Elizabet A. Martin, MD, Rochester, NY
Sara L. Miniacci, 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.

Discussion – 6 Minutes

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

* 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.

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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.

Outcomes of the Calcaneal Scarf Ostetotomy 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.

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.
Thursday, March 13

INSTRUCTIONAL COURSE LECTURE

8:00 AM — 10:00 AM

301  Innovative Techniques in Revision Total Hip Arthroplasty
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 Arthroplasty
Moderator: Bryan D. Springer, MD, Charlotte, NC
Thomas K. Feiring, 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 Prevention
Moderator: William V. Arnold, MD, Jenkintown, PA
Paul Stoodley, PhD, Columbus, OH
Mark Shirreffs, PhD, Baltimore, MD
Toben 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 Arthritis
Moderator: Timothy R. Daniels, MD, FRCSC, Toronto, ON, Canada
Alistair 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  Is “Medical Clearance” Enough? Understanding Medical Issues That Can Affect Your Patients’ Outcomes
Moderator: William M. Mihalko, MD, PhD, Germantown, TN
Khaled J. Saleh, MD, MSc, FRCS, 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  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), Lanchashire, United Kingdom

Current concepts for diagnosis and treatment of scaphoid fractures and nonunions including arthroscopic percutaneous vascularized and non-vascularized techniques.

307  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  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

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>309</td>
<td><strong>Arthroscopic Rotator Cuff Repair: Indication and Technique</strong></td>
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<tr>
<td></td>
<td><strong>Moderator:</strong> Felix H. Savoie III, MD, New Orleans, LA</td>
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<td>Jeffrey S. Abrams, MD, Princeton, NJ</td>
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<td>Joshua Dines, MD, New York, NY</td>
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<td>Peter J. Millett, MD, MSc, Vail, CO</td>
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<td>Room 226</td>
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<td>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.</td>
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| 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. McElvany, 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   | **Adult Spinal Deformity: Surgical Planning and Complications**        |
|       | **Moderator:** Robert A. Hart, MD, Portland, OR                         |
|       | Robert S. Bess, MD, Castle Rock, CO                                    |
|       | Darrel S. Brodky, 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                               |
|       | Room 210                                                               |
|       | 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). |

| 316   | **The Art of the Orthopaedic Lecture**                               |
|       | **Moderator:** James H. Beaty, MD, Memphis, TN                         |
|       | James J. McCarthy, MD, Cincinnati, OH                                  |
|       | Room 217                                                               |
|       | 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   | **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                                       |
|       | Stephen F. Brockmeier, MD, Charlottesville, VA                       |
|       | Room 352                                                               |
|       | 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

Moderator: Harpal S. Khanna, MD, Cockeysville, MD
Dwight W. Burney III, MD, Albuquerque, NM
Mary L. O’Connor, MD, Jacksonville, FL
Kristy L. Weber, MD, Philadelphia, PA

TeamSTEPPS is an evidence-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 B. 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. Poulsides, MD, New York, NY
Stavros G. Mentsoudis, MD, PhD, New York, NY
Huang 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.

* 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.
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
Amit Singla, MBBS, MS, New Delhi, India
Vishuva Malik, Delhi, India
Dr. Chandrakala, New Delhi, India
Ganesan Karthikeyan, MBBS, MD, New Delhi, India
Dr. Rajni Safaya, New Delhi, India

Emboli load is dependent on tourniquet time regardless of whether intramedullary canal is breached or not.

Discussion – 6 Minutes

Implications of Outpatient vs. Inpatient Total Joint Arthroplasty on Hospital Readmission Rates

David N. Vegari, MD, Philadelphia, PA
Jeffrey G. Mokris, 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.

Discussion – 6 Minutes

In-Hospital Complications and UTIs Increased in Obese Patients Undergoing TKA

Matthew P. Abdel, MD, Eagan, MN
Michael P. Ast, MD, New York, NY
Yu-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

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

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. Khamejia, 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.

Discussion – 6 Minutes

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 Parviz, 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.

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Thursday, March 13

8:24 AM  
PAPER: 379
Long-term Outcomes of Operative and Nonoperative Treatment of Congenital Coxa Varum  
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. Clohisy, 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 Arthroscopy Does Not Improve Outcome for Adolescents with Hip Dysplasia Undergoing a PAO  
Daniel J. Sucato, MD, MS, Dallas, TX  
David A. Podszus, MD, Dallas, TX  
Adriana De La Rocha, MS, Dallas, TX  
John C. Clohisy, 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 arthroscopy 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.

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. Clohisy, 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.

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
Keruyn 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.

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
Keruyen Jones, MD, Akron, OH
Azam Egbbal, 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

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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.

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.

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.

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.
Thursday, March 13

9:24 AM  PAPER: 402
The Effect of Orthopaedic Advertising and Self Promotion on a Naïve Population
Stephen Mohney, 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.

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.

8:00 AM — 10:00 AM  PAPER PRESENTATION
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.

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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 Gofan, MD, Boylston, MA
Marc J. Philippion, 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, Japan
Toshiba 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
Ashesh 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
Ashesh 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.
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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, 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, BMBCh, 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
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
Moderator: Adolph V. Lombardi Jr, MD, New Albany, OH
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
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.
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324 Shared Decision Making and Informed Consent: Understanding the Goals and the Responsibility of the Orthopaedic Surgeon
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
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
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
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
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
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
Moderator: Thomas J. Errocco, MD, New York, NY
Robert S. Bess, MD, Castle Rock, CO
Varghese 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
Moderator: Chadwick C. Prodromos, MD, Glenview, IL
Roland P. Jakob, MD, Mötzer, 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
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.
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#### 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  
Valerie O. Lewis, MD, Houston, TX  
Thomas J. Scharschmidt, 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
**Moderator:** John W. Sperling, MD, MBA, Rochester, MN  
Leesa M. Galatz, MD, Saint Louis, MO  
Bruce S. Miller, MD, MS, Ann Arbor, MI  

**Room 217**

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.

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*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.*

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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, PhD, 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.

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.

11:18 AM  PAPER: 427  Determination of Serum Deoxypyridinoline Allows Diagnosis of Aseptic Loosening after Total Joint Replacement  Stefan Landegraeb, MD, Essen, Germany  Sebastian Warvas, 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 Deoxypyridinoline 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 Huang, MS, Redwood City, CA  Susanna 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.

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.
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.

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.

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.

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.
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#### 10:42 AM
**PAPER: 438**
**Driving Performance after Total Shoulder Arthroplasty**
Garret Garofolo, BS, Commack, NY  
Matthew 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  
Katherine Doynes, 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  

Deltoitd 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. Kob, 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 shoulder 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 Nebregall, Boston, MA  
Charles R. Bragdon, PhD, Boston, MA  
Henrik Malchau, MD, Boston, MA  
Reuben Gobeze, 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.
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.

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.

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.

PAPER: 449
Revision Rate and Reasons for Revision Following Resurfacing Shoulder Replacement in Patients with Osteoarthritis
Jeppe Rasmussen, MD, Brondby, 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.

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 Brigtstocke, 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.

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 Bonazza, MD, Bologna, Italy
Stefano Della Villa, MD, Bologna, Italy
Maurilio Marzacci, 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.

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.

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 Abdunabi, 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 E. 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, 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.

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 Schaeer, 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. Kadrmas, MD, Helotes, TX

Bone marrow stimulation by subchondral microfracture effect on meniscal healing in a goat model.

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 (MAC) in the Knee
David Stelzeneder, MD, Vienna, Austria
Martin Brix, CM, Vienna, Austria
Catharina Chiari, MD, Vienna, Austria
Ulrich Koller, MD, Vienna, Austria
Ronald Dorratka, MD, Vienna, Austria
Stefan Nehrer, MD, Krems, Austria
Stephan Domayer, Dedham, MA

The first long term results after MAC of the knee demonstrate that it 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. Bottone, 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. Ronales, 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.

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. Stedman, 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 Duyer, MBBS, Toronto, ON, Canada
Jaskarnsp Chahal, MD, Toronto, ON, Canada
Amir Khoshbin, MD, Toronto, ON, Canada
Rajiv Gandhi, MD, Toronto, ON, Canada
Nizar Mabomde, 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.

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 Cooley, Baltimore, MD
Young M. Lee, BS, Nashville, TN
William T. Ohremskey, 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 Blyden, 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 Garbel, 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.

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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.

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 Sathiyakumar, Nashville, TN
Anna E. Garcia, BS, Nashville, TN
Young M. Lee, BS, Nashville, TN
William T. Obremskey, MD, MPH, Nashville, TN
Amir A. Jahanmir, MD, Nashville, TN
Jesse Ehrenfeld, 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.

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.

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.

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Thursday, March 13

11:42 AM | PAPER: 475
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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
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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
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Financial Impact of a Multi-Disciplinary Pre-Operative Risk Stratification Program for Joint Arthroplasty
Neil L. Duplantier, MD, New Orleans, LA
David Briki, 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.

12:06 PM | PAPER: 478
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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
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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
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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, Lucern, 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*

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**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. Strode, 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 — 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. Patrosky, MD, Winfield, IL*

*Richard W. McCallen, 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, FRCS, 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. Bobay, 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.

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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-life patient presentations, including OCD, patellofemoral pain, post-meniscectomy pain, and incidental defects found during arthroscopy. We will focus on patient selection and indications, leaving ample time for discussion.

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. Vrabas, MD, Boston, MA
Case based course focuses on the management of femoral neck and pertrochanteric fracture. Attention is given to surgical tips and tricks.

Advances in Treatment and Understanding of Musculoskeletal Infections
Moderator: David W. Louenberg, MD, Redwood City, CA
J. Tracy Watson, MD, Saint Louis, MO
L. Scott Levin, MD, Philadelphia, PA
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 TeamSTEPPS
Moderator: Harpal S. Khanuja, MD, Cockeysville, MD
Dwight W. Runey III, MD, Albuquerque, NM
Mary L. 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.

Adult Reconstruction Knee V: Infection
Moderator(s): Robert A. Malinzak, MD, Mooresville, IN
Alexander P. Safi, MD, Fremont, CA
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.

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. Goe, 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.

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.

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.

* 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

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 Jänz, MD, Berlin, Germany  
Philipp Von Roth, MD, Berlin, Germany  
Tobias Winkler, MD, Berlin, Germany  
Tilmann Pützner, 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 Staavrakis, 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.

2:18 PM  
**PAPER: 487**  
**Articulating vs. Static Antibiotic Spacers in Revision Total Knee Arthroplasty - 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 Duyer, MBA, Toronto, ON, Canada  
Paul R. Kucyk, MD, FRSCS, 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.

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.

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

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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.

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 Ansonge Jr, MA, Bern, Switzerland
Salvatore Tomagra, Bern, Switzerland
Lorenz Buchler, MD, Bern, Switzerland
Lorin M. Benneker, MD, Bern, Switzerland
KlausSiebenrock, MD, Bern, Switzerland
Marius Keel, MD, Bern, 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 Calpan, 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.

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 E. 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. Quinnan, 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.
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. Scolaro, 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.

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
Hitodoshi 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.

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 Kurzdziel, 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 Wannenhaus, MD, Zürich, Switzerland
Tony Chen, PhD, New York, NY
Erik Attsa, BS, New York, NY
Nikolaus B. Binder, MD PhD, NY City, NY
Miguel 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.

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. Albajary 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.

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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-neovascular 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.

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 Cacchi, 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.

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
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 Magdes, 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
Morihito 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

1:30 PM — 3:30 PM  **PAPER PRESENTATION**
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 Yaszy, 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
Behroz A. Akharnia, 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

* 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

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

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

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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 Sandani, 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 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.

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.

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. Krengel 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

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**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 subspeciality 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

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

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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. Cashner, 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 Re-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
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 HIPPA 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
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
Moderator: Arthur L. Malkani, MD, Louisville, KY
Thomas K. Febrin, 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.

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<table>
<thead>
<tr>
<th>Room</th>
<th>Session</th>
<th>Title</th>
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<tr>
<td>262</td>
<td>363</td>
<td>Osteochondral Lesions of the Talus: Current Treatment Dilemmas</td>
<td>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.</td>
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<tr>
<td>207</td>
<td>364</td>
<td>Tendinopathy of the Upper Extremity: Evaluation, Treatment and Evidence Based Care</td>
<td>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.</td>
</tr>
<tr>
<td>262</td>
<td>365</td>
<td>The Kids You See on Call: Pearls for Managing Urgent Pediatric Orthopaedics</td>
<td>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 supraventricular. 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.</td>
</tr>
<tr>
<td>207</td>
<td>366</td>
<td>Anatomy of a Medical Liability Lawsuit: Practical Issues in Malpractice Avoidance</td>
<td>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.</td>
</tr>
<tr>
<td>262</td>
<td>367</td>
<td>Reverse Total Shoulder Arthroplasty for Management of Acute Fracture and the Sequelae of Proximal Humeral Fractures</td>
<td>Deal with both the controversies and surgical techniques tips an pearls associated with the use of reverse total shoulder replacement for a complex set of problems associate with trauma to shoulder.</td>
</tr>
<tr>
<td>207</td>
<td>368</td>
<td>Fractures of the Proximal Humerus: Reduce and Pin, Plate or Replace</td>
<td>Will discuss in detail means for correct diagnosis, choice of treatment, and rehabilitation to ensure best outcome for fracture treatment.</td>
</tr>
<tr>
<td>208</td>
<td>369</td>
<td>Adult Lumbar Scoliosis: State-of-the-Art Treatment (Operative and Non-Operative)</td>
<td>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.</td>
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<tr>
<td>260</td>
<td>370</td>
<td>Biceps Tendon: Problems and Surgical Techniques</td>
<td>Discuss contemporary management of long head biceps tendon pathology including tenotomy vs. tenodesis, management of SLAP lesions, and proximal versus distal tenodesis.</td>
</tr>
<tr>
<td>347</td>
<td>371</td>
<td>Complex Trauma to Shoulder Girdle Including Clavicle, Scapula and Proximal Humerus: Current Concepts in Diagnosis and Treatment</td>
<td>Current concepts in treatment of acute and chronic trauma to the shoulder girdle including the clavicle, scapula and proximal humerus will be presented comprehensively.</td>
</tr>
</tbody>
</table>

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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

Trauma experts detail technical tips for common challenges in community orthopaedic fracture care, including intramedullary nailing, locked plate applications, tibial plateau and hip fractures.

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 Petriglano, MD, Santa Monica, CA

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

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
Kath Croxford, MS, Toronto, ON, Canada
Richard Jenkinson, 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
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
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
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
Factors Affecting Readmission Rates Following Primary Total Hip Arthroplasty
Rachel E. Mednick, 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.
Bisphosphonates Reduce the Risk of Revision Following Total Hip Arthroplasty
Monti Khator, 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

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.

Discussion – 6 Minutes

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 Shab, BA, Oak Brook, IL
Craig Silverton, 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.

Discussion – 6 Minutes

Wound Complications with Therapeutic Anticoagulation after Total Joint Arthroplasty
Ryan Nunley, MD, Saint Louis, MO
James A. Keeney, MD, Saint Louis, MO
John C. Clohisy, 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

Is Closed Suction Drainage Effective in Recovery of Hip Joint Function After Total Hip Arthroplasty?
Gaku Koyano, MD, PhD, Tokyo, Japan
Tetsuya Juneo, MD, PhD, Tokyo, Japan
Daishuke 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.

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 Silverton, 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.

Thrombosis Prevention Using a Portable Compression Device in Total Hip Arthroplasty
Clifford W. Colwell Jr, MD, La Jolla, CA
Mark I. Fromston, 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. Buebler, 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

4:00 PM — 6:00 PM  PAPER PRESENTATION
Room 245

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. Bottom, 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

• 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

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 Abdullian, 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

Glennohumeral 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. Uhochak, MD, Cornell, 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
Jaiharan 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. Bottomi, 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 Silva, 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, Rome, Italy
Alessandro Ciompi, MD, Roma, Italy
Richardo Maria Lanzetti, Roma, Italy
Domenico Lupariello, Materia, 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.

5:36 PM  PAPER: 568
The Arthroscopic Latarjet Procedure - An Update
Claudio Rosso, MD, MSc, Basel, Switzerland
Vito Bongiorno, MD, Annecy, France
Simon Fogerty, 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 Kral, 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

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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 Hearns, MA, New York, NY  
Lorenz 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

4:48 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, Gyenggi-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.

4:24 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.

4:44 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.

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.

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.

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 Abdelkafi, Ismailia, Egypt  
Ahmed M. Mutawally, MD, Suez, Egypt  
Khaled Aboelhassn, 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 myoprosthetic fitting.

**Discussion – 6 Minutes**

4:00 PM — 6:00 PM  Room 345
**Spine IV: Lumbar/Miscellaneous**
**Moderator(s): Ronald A. Lehman, MD, Potomac, MD  F.Todd Wetzel, MD, Wilmington, DE**

4:06 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.

4:09 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) µCT  
Kraig A. Kristof, MD, Sylvania, OH  
Tristan Maerz, MS, Royal Oak, MI  
Michael D. Newton, BS, Warren, MI  
Olesya Motchylyak, 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-µCT 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.

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, Fukuioka, Japan  
Raed M. Alobaidaan, 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  
Hideo Murakami, MD, Kanazawa, Japan  
Satoshi Kato, MD, Kanazawa, Japan  
Katsuhiro Yoshioka, MD, Kanazawa, Japan  
Hiroyuki Hayashi, MD, Kanazawa, Japan  
Kazuya Shinnura, 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  
Sukin A. Shab, 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.

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  
Hideo Murakami, MD, Kanazawa, Japan  
Satoru Demura, MD, Kanazawa, Japan  
Toshinari Shira, MD, Kanazawa, Japan  
Satoshi Kato, MD, Kanazawa, Japan  
Katsuhiro Yoshioka, MD, Kanazawa, Japan  
Kazuya Shinnura, 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  
Kravtsoff 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 spondylolisthesis in patients with degenerative spondylolisthesis.

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

An Efficacy Study of Institutional Protocol for Deep Vein Thrombosis Associated with Spinal Surgery
Noribiko 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
Toshikazu 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.

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.

Modulating the Effect of BMP-2 through Delivery in a Nanocapsule
Haijun Tian, MD, Shanghai, China
Michael D. Dawbs, MD, Las Vegas, NV
Scott Montgomery, MD, Venice, CA
Trevor Scott, MD, Santa Monica, CA
Bayan Agbdasi, MD, Clavius, 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

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.

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.

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.

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

* 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.
EDUCATIONAL PROGRAMS

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. Neurovascular 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 Engbrehtsen, 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

An alphabetical faculty financial disclosure list can be found starting on page 312.
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 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 Processes 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, Winnetka, IL

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**INSTRUCTIONAL COURSE LECTURE**
8:00 AM — 9:00 AM

**FD11**
*Y*

**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.

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**INSTRUCTIONAL COURSE LECTURE**
8:00 AM — 10:00 AM

**401**
Let’s Do a Direct Anterior Hip Replacement (without a special table)

**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 Replacement

**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 Athlete

**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.

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*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.*
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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
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, FRCS, Toronto, ON, Canada
Ross M. Wilkins, MD, Evergreen, CO
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
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
Will present approaches to the diagnosis and management of Perthes disease.

408  Coding and Reimbursement Update 2014
Moderator: R D. Blasier, MD, Little Rock, AR
Louis F. McIntyre, MD, White Plains, NY
Bernard A. Pfeifer, MD, Chatham, MA
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. Beigessner, MD, Seattle, WA
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
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
K. Daniel Riew, MD, Saint Louis, MO
Ahmad Nassr, MD, Rochester, MN
K. Daniel Riew, MD, Saint Louis, MO
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 Osteoarthrosis
Moderator: Elizabeth A. Arendt, MD, Minneapolis, MN
Donald C. Fithian, MD, El Cajon, CA
David Dejour, MD, Lyon, France
Diane L. Dahl, MD, Rochester, MN
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
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
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: Pathophysioloical Concepts, Treatment and Outcomes
Moderator: John C. Clohisy, MD, Saint Louis, MD
Christopher L. Peters, MD, Salt Lake City, UT
J.W. Thomas Byrd, MD, Nashville, TN
Paul E. Beaule, MD, Ottawa, ON, Canada
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
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 Lautermann, MD, Lexington, KY
Bert Mandelbaum, MD, Santa Monica, CA
Frank R. Noyes, MD, Cincinnati, OH
Nicholas A. Sgaglione, 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 malalignment.

ORTHOPEADIC REVIEW COURSE
8:00 AM — 5:35 PM

490  Orthopaedic Review Course
Moderator: David L. Skaggs, MD, Los Angeles, CA
Albert J. Ahoulafya, 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. Puolakkka, 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 Pyntsen, 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 resurfacing 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
Keshtbra Satchibhananda, FRCR, London, United Kingdom
Michael Khoo, MBBS, Stanmore, United Kingdom
Thomas M. Parsons, Banbury, United Kingdom
John Skinner, FRCS, London, United Kingdom
Alister Hart, FRCR, 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
Edvard Ebrahimzadeh, PhD, Los Angeles, CA
Sophia Sangiorgio, PhD, Los Angeles, CA
Zhen Lu, Los Angeles, CA
Tiem-an Park, PhD, 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
Harmijn B. Ettema, Lierderholtbuis, 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
Kshitij Kumar 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.

9:06 AM  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
John Skinner, FRCS, London, United Kingdom
Alistair 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. De Smet, 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
Tiemo 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 Jungala, 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.

9:30 AM  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
Alistair 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.

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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 pseudotumors 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

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.

Discussion – 6 Minutes

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 arthroplasty should be considered in cases of refractory postoperative pain.

Discussion – 6 Minutes

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 Farinas-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

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.

Discussion – 6 Minutes

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.

Discussion – 6 Minutes

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. Sparling, 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. Arnhold, Philadelphia, PA  
Gerald R. Williams Jr, MD, Philadelphia, PA  
Charles L. Getz, MD, Newton Square, PA  
Matthew J. Krazy, 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.

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 arthroplasty, 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.

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.

*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.*

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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

8:12 AM  
PAPER: 633
Age at Walking in Infants Treated with Idiopathic Clubfoot
Davida Packer, MD, Bonita Springs, FL
Lewis E. Zions, 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

8:06 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.

8:36 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. Macbow, MD, Lexington, KY
Henry J. Iwinski, MD, Lexington, KY
Vishwas K. 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 Hemiepiphysiodesis 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 hemiepiphysiodesis 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.

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.

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.

9:48 AM  PAPER: 644
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.
Conflict of Interest in the Assessment of Botulinum Toxin A Injections in Patients with Cerebral Palsy
Moon Seok Park, MD, Sungnam, Republic of Korea
Kyoung Min Lee, MD, Sungnam, Republic of Korea
Ki Hyuk Sung, MD, Kynung, 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.

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 Hearns, 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.

Percutaneous Acetabuloplasty Compared with Surgery for High Grade Periacetabular Carcinoma Metastases
Matthew Colman, MD, Salt Lake Cty, 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. Hornick, 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.

Acetabular Reconstructions for Metastatic Disease in the Era of Cost Containment
Nicholas Berenthal, MD, Venice, CA
Shawn L. Price, MD, Louisvile, 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.

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.

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.

Quality of Life After En-Bloc Resection of Malignant Tumors of the Mobile Spine
Matthew Colman, MD, Salt Lake Cty, UT
Syed M. Karim, BS, Boston, MA
Kevin A. Raskin, MD, Boston, MA
Francis J. Hornick, 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

PAPER: 651
8:36 AM
The Effect of Supplemental Bone Grafting in Periarticular Bone Tumors
Joseph Benevenia, MD, Newark, NJ
Jeffrey Moore, Califton, 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

PAPER: 652
8:48 AM
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.

Discussion – 6 Minutes

PAPER: 653
8:54 AM
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. Romanick, 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.

PAPER: 654
9:00 AM
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

PAPER: 655
9:12 AM
Gait Outcomes Post Lower Extremity Tumor Resection and Endoprosthetic Reconstruction
Eileen Fowler, PhD, Los Angeles, CA
Nicholas Bernttal, 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.

Discussion – 6 Minutes

PAPER: 656
9:18 AM
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.

Discussion – 6 Minutes

PAPER: 657
9:24 AM
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

* 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**

**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 complications 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**

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**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 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

* 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

INSTRUCTIONAL COURSE LECTURE

10:30 AM — 11:30 AM
FD12 Getting Your Great Ideas Supported - Effective Techniques for Women in Orthopaedics
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
Room 226
Pete Caccavallo, MD, Fishers, IN
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 Pianaolagus: From Adolescent to Adulthood
Moderator: Jenny Frances, MD, New York, NY
Room 276
Vincent S. Mosca, MD, Seattle, WA
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
Room 262
Lisa K. Cannada, MD, Saint Louis, MO
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
Room 350
Charles Eaton, MD, Jupiter, FL
Don Lalonde, MD, St John, Canada
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 fasciectomy and fasciectomy 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
Room 347
Ira Zaltz, MD, Royal Oak, MI
Peter L. Gambacorta, DO, Clarence Ctr, NY
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.
Friday, March 14

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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>10:30 AM</td>
<td><strong>Complications in Hip Arthroscopy</strong></td>
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<td>Moderator: Paul E. Beaula, MD, Ottawa, ON, Canada</td>
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<td>John C. Clohisy, MD, Saint Louis, MO</td>
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<td>JW Thomas Byrd, MD, Nashville, TN</td>
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<td>Focus on the current surgical treatment options for fractures of the talus and calcaneus.</td>
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<td>10:30 AM</td>
<td><strong>Bone and Soft Tissue Tumors for the General Orthopedic Surgeon: How to Diagnose, Manage and Avoid Errors</strong></td>
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<td>Moderator: G.D. Letson, MD, Tampa, FL</td>
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<td>H. T. Temple, MD, Miami, FL</td>
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<td>Carol D. Morris, MD, MS, New York, NY</td>
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<td>John P. Dormans, MD, Philadelphia, PA</td>
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<td>Intended for the general orthopedic surgeon to help work up, diagnose and manage musculoskeletal lesions, avoid errors, and to refer when appropriate.</td>
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<td>10:30 AM</td>
<td><strong>Techniques and Decision Making in Common Fractures: A Case Based Small Group Session</strong></td>
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<td>Moderator: Paul Tornetta III, MD, Boston, MA</td>
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<td>Daniel S. Horwitz, MD, Danville, PA</td>
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<td>Clifford B. Jones, MD, FACS, Grand Rapids, MI</td>
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<td>Stephen Kottmeier, MD, Stony Brook, NY</td>
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<td>Case based teaching with discussion, questions and answers for various trauma cases.</td>
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**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

**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.
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 years. At early follow-up (<3 months) patients will not see a clinical improvement in function.

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 3 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, MBCchB, MRCS, Oxford, United Kingdom  
Kristina Harris, MSc, Oxford, United Kingdom  
Ines Rombach, MSc, 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.

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, MBCchB, 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.
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 Schwarkzof, 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 Pullido, 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. Hansen, 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 Bupivicaine: 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.

10:54 AM
**PAPER: 679**
**Comparison Study of Different Approach for Proximal Humeral Fractures**
Jinmyoung Dan, MD, Kyeung-Buk
Seung-Hee Kim, Gumisi
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 deltoïd-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?**
Marcshall 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
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.

11:42 AM
**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
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.

An alphabetical faculty financial disclosure list can be found starting on page 312.
**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 Meruin, 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  
Perluigi 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.

**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. Albhausen, 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.

**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.
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 remained 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 Biffl criteria have a higher incidence of BCVI(19%) but a significant incidence of 11% also exists with non-Biffl 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.

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
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.

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
Kandal 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. Rechtine 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

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 Ruangchaimkom, 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

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Friday, March 14

PAPER PRESENTATION

10:30 AM — 12:30 PM
Room 345

Foot and Ankle IV: Arthritis in Ankles
Moderator(s): Michael S. Aronson, MD, West Hartford, CT
David I. Fedowitz, 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 R. 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 Tibiototalcaneal/Pantalar Fusion versus Total Ankle Replacement with Subtalar Fusion
Maryse Bouchard, MD, FRSCS, Seattle, WA
Mara Jones, MD, Toronto, ON, Canada
Sydney 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, FRSCS, Toronto, ON, Canada
Both total ankle replacement with subtalar fusion and tibiotalcaneal/pantalar fusion significantly improve pain and disability from ankle/hindfoot arthritis, with no difference in complications.

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, Efftetikon, 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. Tennon, MD, Chapel Hill, NC
Champani Rungrai, 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
Ammunziato Amendola, MD, Iowa City, IA
The extraosseous talus 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.

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
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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
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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, Ylöjarvi, 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.

11:42 AM | PAPER: 715
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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
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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
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
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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.

12:06 PM | PAPER: 718
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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
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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
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The Impact of Obesity on the Outcome of Total Ankle Replacement
Maryse Bouchard, MD, FRCSC, Ms, Seattle, WA
Amit Amin, FRCS, Harrow, UK, United Kingdom
Ellie Pinski, 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.
**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. Mikalko, 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 Accepted**

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

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.

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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 218

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. Chiolo, 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 E. 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. Orbie, MD, Miami, FL
Diego L. Fernandez, MD, Bern, 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. Khansia, MD, Cockeyville, MD
C. Lowry Barnes, MD, Little Rock, AR
Tricia Marriot 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. Kubin, 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 Witter, 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.

* 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

450 Complication Management in Minimally Invasive Spine Surgery
Moderator: Sheeraz Qureshi, MD, New York, NY
Kern Singh, MD, Chicago, IL
Saad Chaubhary, MD, Murray Hill, NJ
Adam L. Wollowick, MD, New York, NY

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
Kern Singh, MD, Chicago, IL
Saad Chaubhary, MD, Murray Hill, NJ

Room 350
Bradley K. Weiner, MD, Houston, TX

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. Provencer, 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 Lovechio, 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.
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, Chunbuk Kunsan, Republic of Korea
Won Hyoong 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, FRCS, Toronto, ON, Canada
Scott Ellis, MD, New York, NY
Jeremy D. Franklin, Salt Lake City, UT
Daniel Latt, MD, PhD, Tucson, AZ
Nelson F. SoolHoo, 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 J. 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. 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

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. Shab, 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.

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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.

**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 F. Taormina, MS, New York, NY
David Galos, MD, New York, NY
Kenneth A. Ego, 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.

**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 Ciompì, MD, Roma, Italy
Riccardo Maria Lancetti, 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.

**3:06 PM**
PAPER: 063
A Randomized Controlled Trial of Early vs Delayed Weightbearing After Surgical Fixation of Unstable Ankle Fractures
Niloofer 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.
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 6,900 patients demonstrates that while the majority of patients maintain their weight after lower extremity arthroplasty, those who lose weight demonstrate superior clinical outcomes.

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
Alasdaire Santini, Liverpool, United Kingdom
Vinu 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.

2:18 PM  PAPER: 727
Direct Anterior Hip Yields Faster Voluntary Cessation of All Walking Aids in a Randomized Trial
J. Bobannon 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

* 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.
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, FRCS, Singapore, Singapore
Shi-Lu Chia, MBBS, FRCS, 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, Philadelphia, PA
Carl A. Deirmengian, MD, Philadelphia, PA
Gregory K. Deirmengian, MD, Philadelphia, 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.

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
Tori Maeda, MD, PhD, Kanazawa, Japan
Yoshitomo Kajino, MD, Kanazawa, Japan
Shintaro Iwai, MD, Kanazawa, Japan
Kazumari Kuroda, MD, Kanazawa-Shi, Japan
Kenji Fujita, MD, Kanazawa, Japan
Kazuhiko 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 Trunnion Surface Topography between 11 Different Commercially Available Hip Replacement Stems
Selin Munir, 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
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  
Kattia 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.

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.

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  
Kathryn Samuelson, BS, Edina, MN

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.

*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

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, MD, Chicago, IL
Jacqueline M. Thomas, BS, Des Plaines, IL
James E. Hammond, DO, Suffolk, VA
Deepa Gupta, MD, Chicago, IL
Elizabeth Sheuerman, 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
Uncortical 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
Kyoung 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
Sangboon 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.

3:06 PM  PAPER: 748
Outcome Assessment of Long Thoracic Nerve Decompression at the Axillary Region
Ahmed Al Mandhari, MD, Liverpool, United Kingdom
Omid Alizadehkhaiyat, 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
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. Caintalan, MD, Irvine, CA
Maria C. Incio, 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.

1:54 PM  PAPER: 754
The Association between Cruciate Ligament Injury and Development of Post-traumatic Osteoarthritis
Richard Nordenwall, MD, Stockholm, Sweden
Shahram Bahmanyar, PhD, MD, Stockholm, Sweden
Johanna Adam, Stockholm, Sweden
Ville Mattila, Stockholm, Sweden
Li Fellander-Tsai, MD, Stockholm, Sweden


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
Yoshi Kawakami, MD, Hyogo, Japan
Koji Takayama, MD, PhD, Kobe, Japan
Yuichi Hoshino, MD, Kobe, Japan
Kouki Nagamune, PhD, Fukushima, 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.

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.

* 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.
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**  
The 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.

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. Sibvena, MD, Tampere, Finland  
Mika P. Paavola, MD, Helsinki, Finland  
Antti Malmivuoara, 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.

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, MRCS, 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 mensical 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.
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
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.
Friday, March 14

**462** 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. Gallyagh, MD, Iowa City, IA  
J. Bohannon Mason, MD, Charlotte, NC  

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  

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  
Lee C. Schon, MD, Baltimore, MD  
Vinod K. Panchbhavi, MD, FACS, Galveston, TX  

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  

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. Sobn, JD, MD, Perryville, OH  

Targeted at the busy clinician, this course presents practical information on important legal topics to help mitigate risk, and enhance your medical practice.

**467** 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** 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** “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** 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

Surgical Exposure Trends and Controversies in Extremity Fracture Care

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.

Periarticular Fractures of the Lower Extremity: IM Nail versus Plate

Moderator: Robert A. Probe, MD, Temple, TX
Kyle F. Dickson, MD, Bellare, 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
Amil S. Ranawat, MD, New York, NY

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.

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. DeMeeo, 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.

4:12 PM
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
Jennifer 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
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
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
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.

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 Sadowsky, 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
Tatsuhiro 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 Buritis
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
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

4:00 PM — 6:00 PM
Room 245

Adult Reconstruction Knee VII: Miscellaneous
Moderator(s): Thobnas H. Eickmann, MD, Longmont, CO
Stephen M. Howell, MD, Sacramento, CA

4:48 PM
Barbed vs. Standard Sutures for Closure in TKA: A Multicenter Prospective Randomized Trial
Jeremy Gilillard, MD, Salt Lake Cry, 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.

4:36 PM
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
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, Seongnam-Si, Republic of Korea*
*Yeong 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. Zywiel, MD, Toronto, ON, Canada*
*Timothy Jackson, MD, MPH, Toronto, ON, Canada*
*Hafiz Kassam, MD, Toronto, ON, Canada*
*Anthony Perruccio, PhD, Toronto, ON, Canada*
*Todd Pemer, 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.

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-HXL UHMWPE particles have reduced osteolysis potential in vivo when compared to virgin, highly cross-linked UHMWPE in a murine calvarial bone model.

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 Catters, 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.

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 Lin, 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. Figge, 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.

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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%.

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 Leonardsso, MD, Malmö, Sweden
Ola Rolfson, MD, PhD, Gotthenburg, 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.

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.

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.

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.

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.

Attempted Ankle Fracture Reduction by Emergency and Orthopaedic Doctors: Junior Versus Senior Trainees
Waseem Jerjes, MD, PhD, West Yorkshire, United Kingdom
Huang 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.

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

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 Rieu, 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. Woznica, 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.

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.

• 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.

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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, FRSCC, 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.

5:12 PM  
**PAPER: 820**  
**Cortical Screw as Rescue for Failed Lumbar Pedicle Screw Construct: A Biomechanical Analysis**  
*Graham Calvert, MD, Madison, MS*  
*Amir Ahtabi, 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*  
*Wenyen 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.

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*  
*Matthieu 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

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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
Antonigio 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
Mohammdreza Chebrassan, MD, Bologna, Italy
Raffaele Borgi, 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 posterolateral 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.)
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 Chehraasnan, MD, Bologna, Italy
Daniele Fabbrri, 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
Chammnni 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.)
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 Zimmer, MD, Huenibach, Switzerland
Joe De Beer, MD, Cape Town, South Africa
Stefan Schwienbacher, MD, Bern, Switzerland
Beat K. Moor, MD, Gumiligen, 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
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 Vanhee, MD, Stabroek, Belgium
Frederik Verstreken, MD, Schoten, Belgium
Roger F. 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


(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
Persistant 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.)
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.)

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.)

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, 8 mins.)

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
Eduardo 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.)

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.)

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.)

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 Morlerta, 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 Vanbeers, 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 Trani, MD, Bologna, Italy
Mohammadreza Chehrassan, MD, Bologna, Italy
Raffaele Borghi, MD, Bologna, Italy
Daniele Fabbrì, 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 Ultriminimally 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.)

* 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 - 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
Matteo Cadosi, 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.)

**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.)

**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 Pathology
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. Shekster, 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
Carlo 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
Physeal-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-epiphysial technique demonstrated in this video spares the physs and offers a safe, effective, and reliable solution for symptomatic ACL rupture in skeletally immature athletes.
(Product no. V14027, DVD-Video, 12 mins.)

SHOULDER AND ELBOW

OVT26 ......................................................... Station 17
Total Shoulder Arthroplasty (Technical Note and Results)
Thomas W. Wright, MD, Gainesville, FL
Gonzalo Samiter 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 Warrh, 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.)

* 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.

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OVT31 ................................................................. Station 21
Endoscopic Evaluation of the Distal Biceps
Matthias Vanhees, 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 Vanhees, 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 N4+, Subclavian and High Posteromedial Portals
Keith D. Nord, MD, Jackson, TN
Maher W. Khan, MD, Jackson, TN
Garth B. Wright, MD, Jackson, TN
Jonathan B. Taylor, BS, Jackson, TN
The N4+ 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 Phys
Stefano Zaffagnini, MD, Bologna, Italy
Alberto Grassi, MD, Bologna, Italy
Giulio Maria Marcheggianni Maccioli, 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 Caccarelli, 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 multpoint 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 Boslan, 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
Trasnosseous Equivalent Pectoralis Major Tendon Repair
Kevin W. Farmer, MD, Newberry, FL
Gonzalo Samiter Solis, MD, PhD, Ameci, France
Tran-osseous-equivalent pectoralis major tendon repair; a novel and reproducible surgical technique.
(Product no. V14062, DVD-Video, 8 mins.)

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

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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.)

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.)

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.)

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.)

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.)

Reconstruction of the Posterolateral Corner with Achilles Tendon Allograft
Scott A. Kazma, 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.)

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.)

Arthroscopic ACL Reconstruction: Using Autogenous Bone-Patellar Tendon Graft -Remnant Preserving Technique
Sung-Jae Kim, MD, Seoul, Korea, Republic of
Sung-Huean 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.)

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.)
An alphabetical faculty financial disclosure list can be found starting on page 312.
### Educational Programs

**Approaches to the Hip: Minimally Invasive Posterolateral Total Hip Arthroplasty**

Cesare Faldini, MD, Francesco Traina, MD, Mohammadreza Chehrassan, 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 Chehrassan, MD, Raffaele Borghi, MD, Matteo Nanni, MD, Federico Pilla, MD, Matteo Cadossi, MD, Sandro Giannini, MD

### Feature Presentation Theater Schedule

**Wednesday, March 12**

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>8:30 AM</td>
<td>Balancing A Total Knee Arthroplasty With A Navigation System</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Chondrosarcoma of the Proximal Femur Limb-Sparing Resection and Reconstruction with Modular Segmental Proximal Femur Tumor Prosthesis</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Distal Tibia Allograft for Management of Anterior Glenoid Bone Loss</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Posterolateral Corner Primary Repair and Reconstruction Case Based</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>Surgical Treatment of Spondylolisthesis by Posterolateral Arthrodesis and Instrumentation</td>
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**4:00 PM**

* Approaches to the Hip: Minimally Invasive Posterolateral Total Hip Arthroplasty
* Approaches to the Hip: Minimally Invasive Direct Anterior Total Hip Arthroplasty

**4:45 PM**

* Ulnar Nerve Transposition at the Elbow

**7:00 PM**

* ACL Reconstruction With Over the Top Femoral Position and Lateral Extra-articular Tenodesis
* Ultrasound-Guided Plantar Fascia Release: A New Ultraminimally Invasive Surgical Technique

**8:00 PM**

* 3 Critical Concepts to Understand Acute Elbow Instability
* Open Reduction and Internal Fixation of Displaced Pediatric Lateral Condyle Fractures of the Humerus
* Meniscal Allograft Transplantation
* Arthroscopic Repair of Femoral “Peel-off” Lesion of the Posterior Cruciate Ligament: A Novel Technique

**9:00 PM**

* Treating a Fracture of the Pathologic Femur with the IlluminOSS Photodynamic Bone Stabilization System

### Thursday, March 13

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>8:30 AM</td>
<td>Endoscopic Gastrocnemius Recession</td>
</tr>
<tr>
<td>9:15 AM</td>
<td>Arthroscopic Subacromial Decompression: An 8-Step Approach</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>A Simple Method to Perform the Real Acetabulum in Dislocated Hips</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Skin Crease ‘Bikini’ Incision for Anterior Approach THR: Anatomical Considerations and Avoidance of Complications</td>
</tr>
</tbody>
</table>
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 Second’s Fracture
Andrea Ferretti, MD, Raffaele Iorio, MD, Daniele Mazza, MD, Cosma Calderaro, MD, Priscilla Di Sette, MD, Edoardo Monaco, MD, Fabio Conteduca, 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

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 Posterior Corner with Achilles Tendon Allograft
Scott A. Kuzma, MD, Roxanne Chow, MD, William M. Engasser, BA, Michael J. Stuart, MD, Bruce A. Levy, MD

Feature Presentation Theater Schedule
Friday, March 14

Time Presentation
8:30 AM ACL Reconstruction in Patient with Open Phyxis
Stefano Zaffagnini, MD, Alberto Grassi, MD, Giulio Maria Marcheggiani Muccioli, MD, Maurilio Maracci, 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, Fernando Ferro, MD, Jeffrey Neppe, 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 Shoulder Arthrodesis: Surgical Technique
Ryan Warth, MD, Peter J. Millett, MD

1:45 PM 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, Angustus D. Mazzocca, MD

4:00 PM Anatomy, Pathology and Physical Examination of the Scapho-Lunate and Luno-Triquetral Joints
Matthew 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
Scientific Exhibits have been grouped in the following categories:

- Adult Reconstruction Hip ............. SE01-SE14 .. Pgs. 230-231
- Adult Reconstruction Knee ............ SE43-SE52 .. Pgs. 235-236
- Basic Research ...................... SE53-SE54 .. Pg. 236
- Foot and Ankle ...................... SE39-SE42 .. Pgs. 234-235
- Hand and Wrist ...................... SE60-SE61 .. Pg. 237
- Pediatrics .......................... SE28-SE30 .. Pg. 233
- Practice Management ............... SE62-SE69 .. Pgs. 237-238
- Shoulder and Elbow ................ SE31-SE38 .. Pgs. 233-234
- Spine ...................... SE15-SE18 .. Pgs. 231-232
- Sports Medicine and Arthroscopy ... SE70-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 Sabah, MD, Middlesex, United Kingdom
Richard Carrington, MD, Herts, United Kingdom
John Skinner, FRCS (Ortho), MBBS, 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. Febring, 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 Pivc, MD, Baltimore, MD
Robert Kapadia, MD, Baltimore, MD
Mark J. McElroy, BS, MS, Monroeville, PA
Harpal S. Khanuja, MD, Cockeyeville, 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. Febring, 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. Bonner, 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-Ilic (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.

Scientific Exhibit SE19
Cost Effective Trauma Implant Selection
Kenneth A. Egol, MD, New York, NY
Roy Davidson, 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 Davidson, 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 Davidson, 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 Davidson, 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
Veennesh 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 (malaga), Spain
Juan Ramon Cano Sr, PhD, Marbella (malaga), Spain
Maria Jimenez, Mijas Marbella (malaga), Spain
Enrique Guerado, MD, Marbella (malaga), 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.
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 Davidsight, MD, New York, NY
Nirmal C. Tejwani, MD, New York, NY
Frank A. Liporace, MD, Englewood Cliffs, NJ
Kenneth A. Ego, 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. Ego, MD, New York, NY
Roy Davidsight, 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.

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. Denery, 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
Matthew Hamula, BA, BS, New York, NY
Garret Garofalo, BS, Commack, NY
Gudem 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 Marenco, Torino, Italy
Bruno Battiston, MD
Alessandro Massa, 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, Philadelphia, PA
Aaron Bansa, 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. Tejuwani, 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 Grofofo, BS, Commack, NY
Andrew S. Rokito, MD, New York, NY
Eric J. Strauss, MD, New York, NY
Laith M. Jazzawi, 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
Hannah 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.

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 Mami, 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. Guayton, 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.

**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, Blacks Summit, PA
Daniel M. Kopolovich, BA, Philadelphia, PA
James J. Purtil, 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
Maury 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, Brussels, 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 Mabfouz, 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
Yoshinori Ishii, MD, Gyoda Saitama, Japan
Hideo Noguchi, MD, Gyoda, Saitama, 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, Wurzburg, Germany
Maury 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.

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
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.

* 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.
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 transtrapezial 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 Jagannath, 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 Pagliacci, 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.

* 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.
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. Waitys, 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 Chou, 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, PhD, Molndal, Sweden
Stefano Zaffagnini, MD, Bologna, Italy
Richard E. Debski, PhD, Pittsburgh, PA
James L. Irriang, 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 Sheiman, 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. Jazaeri, 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. Jazaeri, 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. Coetz精神ovich, 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. Coetz精神ovich, 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 Bhatta, 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 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.
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. Liu, 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 Panagiotioud, MBBS, London, United Kingdom  
Jayantilal M. Meswania, PhD, Middlesex, United Kingdom  
Jia Hua, Middlesex, United Kingdom  
Sarah Muirhead-Alluood, 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. Beaule, 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. Beaule, 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 Landgraebner, MD, Essen, Germany  
Diether Rosenthal, Duisburg, Germany  
Marcus Jager, MD, PhD, Essen, Germany  
André Keskenmèth, 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 Koscoe, 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  
Noriko 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 Kanenji, MD, Kahoku-Gun, Japan
Tanio Sugimori, MD, Ishikawa, Japan
Toru Ichiseki, MD, Kahoku-Gun, Japan
Kiyokazu Fukuji, MD, Kahoku-gun, Japan
Eiji Takahashi, MD, Kabokugun, Japan
Syusuke Ueda, MD, 1-1 Daigaku, Japan
Ryooji 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. Clohisy, 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. Pandy, 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.

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**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. Matheny, MD, Boston, MA  
Young Jo Kim, MD, PhD, Boston, MA  
Ira Zaltz, MD, Royal Oak, MI  
John C. Clohisy, 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 MTIH) 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. Scalco, 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. Schonecker, 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. Rasoouli, 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
Aditya V. Maheshwari, MD, Brooklyn, NY
Aman 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. Sab, 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**

Cemented versus Cementless Femoral Fixation in Primary Total Hip Arthroplasty in Patients Aged 75 and Older

Alexander P. Sab, 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. 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

Acetabular Position has an effect on the outcomes of patients.
Poster No. P033
How Does the Intra-Operative Cup Orientation Relate with the Resultant Radiographs? - An In-Vivo Study.
George A. Grammatopoulos, MRCS, Oxford, United Kingdom
Heming G. Pandit, FRCS, Oxford, United Kingdom
Ray Da Assuncao, FRCS, Worthing, United Kingdom
Stephen J. Mellor, 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 Pourtaheri, MD, Paterson, NJ
Aiman Rifai, DO, Clifton, NJ
Samik Banerjee, MBBS, MS, Baltimore, MD
Vincent K. McNerney, 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 Illicic, 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.
Posters

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 Binci, 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

Kan Schwarzkopf, MD, Irvine, CA
Mark Gage, MD, New York, NY
Michael Aroub, 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
Yoshimasa Nakamura, MD, Fukuoka, Japan
Tomohiro Kobayashi, MD, Fukuoka, Japan
Tomohiro Nomura, MD, Fukuoka City, Japan
Tetsuya Sakamoto, MD, Fukuoka, Japan
Tomonobu Hago, MD, Fukuoka, Japan
Tomoko Nagano, Fukuoka-Ken, Japan
Noribito 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.

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*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.*

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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, MD, 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
Keshtra Satchibananda, FRCR, London, United Kingdom
Michael Khoo, MBBS, Stannmore, United Kingdom
Ashley Mattbies, 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.

**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.
Posters

**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. Odlund, 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. Shab, 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 Pivee, MD, Baltimore, MD  
Kimon 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, Mooresville, 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 Pivee, MD, Baltimore, MD  
Kimon Issa, MD, Baltimore, MD  
Aaron J. Johnson, MD, Glen Burnie, MD  
Arthur L. Makani, 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. Febrin, 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
Harpreet S. Khamija, 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. Duwelius, 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
Micahel E. Neufeld, BS, Toronto, ON, Canada
Michael Sellan, MD, London, ON, Canada
Zachary Morison, MSc
Emil H. Schenmisch, 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

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
Guo-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 Gebhrke, 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. Beaula, 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

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
Torn Maeda, MD, PhD, Kanazawa, Japan
Yoshitomo Kajino, MD, Kanazawa, Ishikawa, Japan
Shintaro Iwai, MD, Kanazawa, Japan
Kazumari 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.

* 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. 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. Clohisy, 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 biomechanic 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, FRCS, London, ON, Canada
Richard W. McCalen, 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 was 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
E. Craig Stevenson, 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
Kyu-Sung Chung, MD, Seoul, 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
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
Annyce 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 Zumbrunn, Boston, MA
Harry E. Rubash, MD, Boston, MA
Henrik Malchau, MD, Boston, MA
Guoan Li, PhD, Boston, MA
Orhan 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. 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-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, Singapore, Singapore
Ngi-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 unicompartmental 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
Ngi-nung Lo, MD, Singapore, Singapore
Seng-Jin Yeo, FRCS, Singapore, Singapore

Obesity does not influence functional outcome in fixed bearing unicompartmental 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**  
Unicompartamental Knee Arthroplasty: 27-year Results from the Finnish Arthroplasty Register  
*Alternative Paper: Adult Reconstruction Knee II: Non-Prosthetic/UKA*  
Tuukka T. Niinimaki, MD, Oulu, Finland  
Ville M. Rostas, MD, Helsinki, Finland  
Keijo Makele, MD, Turku, Finland  
Pasi Ohtonen, MSc, Oulu, Finland  
Ari Pekka Pullto, MD, Oisy, 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. Barg, 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  
*Alternative Paper: Adult Reconstruction Knee VI: Infection II*  
Brian R. Hamlin, MD, Pittsburgh, PA  
Anthony M. DeGioia III, MD, Pittsburgh, PA  
Anton Y. Plasecky, 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 Omadera, MD, Hokkaido, Japan  
Eiji Kondo, MD, Sapporo, Japan  
Tomonori 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.

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*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.*

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**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
Sahngboon Lee, MD, PbD, 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, 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% 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 Thaer, BS, Winston Salem, NC
Gary G. Poehling, MD, Winston-Salem, NC
Riaz H. Jinnah, MD, Winston-Salem, NC

Robotic-assisted surgery provided similar clinical outcomes for patients 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 Szabiski, 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. Sakellarou, 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 Kadimchera, MD, Boston, NY
Robert Li, MD, New York, NY
Ajay Lall, MD, New York, NY
Yossef C. Blum, MD, New York, NY
David M. Hirsch, 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
Johannes F. Plate, MD, Winston Salem, NC
Thorsten M. Seyler, MD, Winston-Salem, NC
Daniel Bracey, MD, Winston Salem, NC
Dan Sun, BS, Dublin, CA
Marco A. Augart, BS, Winston-Salem, NC
Caneyt 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 Vamhidy, 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-ju Chia, MBBS, FRCS (Ortho), PhD, Singapore
Ngai-Ning 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. Shahi, 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. Samujh, 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  
Kimona Issa, MD, Baltimore, MD  
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 Prateeptongkum, MD, Bangkok, Thailand  
Aree Tanavalee, MD, Bangkok, Thailand  
Natdhadej Mekrungcharas, MD, Bangkok, Thailand  
Sribatch G. Ngarmukos, MD, Bangkok, Thailand  
Yongsak Wangroongsak, 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  
Christopher A. Samujh, MD, Mountain Top, PA  
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, MS, 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
Sahngboon Lee, MD, PhD, Seoul, Republic of Korea
Kee Yoon Chung, MD, Seoul, Republic of Korea
Yool Cho, MD, Seoul, Republic of Korea
Seong Hwan Kim, MD, Daehak-Ro, Republic of Korea
Myung C. Lee, MD, Seoul, Republic of Korea
Sang C. Seong, MD, Seoul, Republic of Korea

Different gap techniques result 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
Carlos A. Higuera, MD, Lakewood, OH
Wael K. Barsoum, MD, Cleveland, OH
Joseph Mendelis, BA, Encino, CA
Craig J. Della Valle, MD, Chicago, IL

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. 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 arthroscopy.

Poster No. P173
Measured Resection Technique Does Not Always Result in Rectangular Flexion Joint Gap in TKA
Maki Itokazu, MD, Osaka, Japan
Yukihide Minoda, MD, Osaka, Japan
Mitsukito Ikebuchi, MD, Abeno-ku Osaka, Japan
Shigekazu Mizokawa, MD, PhD, Osaka, Japan
Taku Yoshiida, MD, Osaka-city, Osaka, Japan
Kazumasa Yamamura, MD, Oska City Osaka, Japan
Hiroaki Nakamura, MD, Osaka, Japan

Femoral rotation according to the bony landmark did not always result in rectangular flexion joint gap. Outlier (>3°) 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. Crockarel, Jr, MD, Collierville, TN
William M. Mihalko, 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, Mahwah, NJ
Kirby Hitt, MD, Temple, TX
Steven F. Harwin, MD, New York, NY
Mark A. Kester, MD, 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, Hwasan-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, Hwasan, Republic of Korea
Jong-Keun Seon, MD, Hwasungun, Republic of Korea
Eun K. Song, MD, Hwasan-Gun, Republic of Korea
Kyung Jai Lee, MD, Gwangju, Republic of Korea
Hyeong Won Park, Hwasan-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**
Dubyun Ro, MD., Seoul, Republic of Korea
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
Sabngboon 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 Aiailer, MD, Rochester, MN
Konstantin Vatrenko, 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
Yoo-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
Hasson Alosh, MD, Philadelphia, PA
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. Zywiel, 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 Fibrin Matrix with Allogenic Chondrocytes or Autologous Bone Marrow Cells May Useful Methodology to Regenerate Hyaline-Like Cartilage in Full-Thickness Cartilage Defect.
Sung Wook Choi, Jeju, Republic of Korea
Myung Ku Kim, Inchon, Republic of Korea
Sang-Rim Kim, MD, 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. Mallinak, 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. Brihaut, 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
Swetlana 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
James A. Nunley II, MD, Durham, NC
James K. DeOrio, 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 Dometropoulos, MD, New Rochelle, NY
Samuel B. Adams Jr, MD, Durham, NC
James K. DeOrio, MD, Durham, NC
James A. Nonley 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. Brilhault, 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. Widrickis, 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 Windhager, 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
Shan-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**
Receiver 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, Zollikemberg, 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.

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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
Shahpour 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, Gyeonggido, Republic of Korea

Hindfoot alignment should be assessed by measuring both hindfoot angulation and hindfoot translation.

Hand and Wrist

**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.

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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
Alternate Paper: Hand and Wrist I: Hand
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
Alternate Paper: Hand and Wrist II: Wrist and Forearm
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
Kirin 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.

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

Poster No. P237
Treatment of Stage 3- Kienböck’s Disease: Predictors for Postoperative Collapse of the Lunatum and Wrist Pain
Ryosuke Kakinoki, MD, Kyoto, Japan
Souichi Ohta, MD, Kyoto, Japan
Takashi Noguchi, MD, Kyoto City, Japan
Yukitoshi Kaizawa, MD, Kyoto, Japan
Hiromi 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
Matt Lendheyl, Brooklyn, NY
Amar Sandani, MD, New York, NY
Chitrabhanu 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 L. 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.

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 Miyani, MD, Vancouver, BC, Canada
Jabangir 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. Tadwalkar, 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
Jullian Kwak-Lee, MD, Pasadena, CA
Edward Ebromzadeh, 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 remained stable until closure.
Poster No. P246
Total Hip Arthroplasty in the Pediatric Population
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, Sangnam, 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. Mencio, 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 Yasay, MD, San Diego, CA
Suken A. Shah, MD, Wilmington, DE
Paul D. Sponseller, MD, Baltimore, MD
Firooz Miyani, MD, Vancouver, BC, Canada
Mark F. Abell, MD, Charlottesville, VA
Harry L. Shufflebarger, MD, Miami, FL
Tracey Baxstrom, 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 (DI15 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 Tarturro, 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
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
Jason BT Lim, MBChB, MRCS, Singapore, Singapore
Ngai-Ning Lo, MD, Singapore, Singapore
Andrew C. Chou, BS, Singapore, Singapore
William Yeo, Singapore, Singapore
Shi-Lin Chin, 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
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?
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.

*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. 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 intertrochanteric 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, Seongnam-si, 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, Seongnam-si, 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
Joselyn 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, Haliawa, HI  
Adam Groth, MD, Honolulu, HI  
Craig R. Bottoni, MD, Honolulu, HI  
Joseph R. Orbszuski, 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 Navez, MD, Springfield, IL  
Tony Teng, BS, Lafayette, LA  
Blaine Manning, BS, Springfield, IL  
Jamal Salib, 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, MBCch, 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-Bettencourt, MD, Barcelona, Spain  
Raquel Garcia-Tarreño, MD, Barcelona, Spain  
Ríos Moisés, MD, Barcelona, Spain  
Pilar Camacho, Barcelona, Spain  
Alonso Zambado, MD, Barcelona, Spain  
Manuel Llusa-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  
Joshua Dines, MD, New York, NY  
Neal S. ElAttrache, MD, Los Angeles, CA  
Stan Conte, PT, San Carlos, CA  
Daryl C. Oshahry, 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. Bebrend, MD, Roanoke, VA
Michael J. Schreck, MD, Rochester, NY
Bradley A. Palmer, MD, Pittsburgh, PA
David Speach, 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
Jeremy 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 Vanbees, 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. Ianotti, MD, PhD, Cleveland, OH
Boris Bershady, 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, Geneve, Switzerland
Alexandre Laedermann, MD, Meyrin, Switzerland
Patrick J. Denard, MD, Medford, OR
Omar Kherad, Geneve, 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
Hirotaka 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 Naveed, MRCs, Surrey, United Kingdom
Magnus Arnander, FRCS, MSc, London, United Kingdom
Eyyiemi 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. Miskosky, 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. Wijdicks, 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
James L. Carey, MD, Villanova, PA
John D. Kelly IV, MD, Newtown Square, PA

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
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.

* 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. 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 Mijume, MD, Kobe, Japan
Atsuyuki Inui, MD, PhD, Kobe, Japan
Tomoyuki Muto, MD, Kobe, Japan
Fumiaki Takase, MD, Kobe, Hyogo, Japan
Iseki 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.

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

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**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
Musa A. Musa, 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. Choinard, MD, MPH, Traverse City, MI
Thomas B. Edwards, MD, Houston, TX
James D. Kelly II, MD, San Francisco, CA
Evans S. Lederman, MD, Phoenix, AZ
Tom R Norris, MD, San Francisco, CA
Douglas Carran-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 Iriberri, MD, San Sebastián, Spain
Michael T. Freehill, MD, Winston-Salem, NC
Patrice Raiss, MD, Heidelberg, Germany
Pascal Boulot, 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
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 Glenosphere Options in Two Reverse TSA Systems
Robert Z. Tashjian, MD, Salt Lake City, UT
Various modifiable humeral and glenosphere 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 Glenosphere 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 glenosphere sizes (36mm, 42mm) and their corresponding biomechanical effects on clinical functionality and shoulder strength.

Poster No. P341
Analysis of Baseplate and Glenosphere 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 Glenosphere
Brett P. Wiater, MD, Birmingham, MI
Daphne Pinkas, MD, Pleasant Rdg, MI
Denise Koeiter, Royal Oak, MI
J. Michael Wiater, MD, Beverly Hills, MI
We found overall similar improvements in outcomes after RTSA with a lateral offset glenosphere 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 Gebcke, 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.

Poster No. P346
Comparison of Radiographic Measurements by Standard Digital versus EOS Radiographs in Adult Spine Patients
Avraam 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.

Spine

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
Laurence 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 was 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
Amir 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 Benguzzi, 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
Comparison of Radiographic Measurements by Standard Digital versus EOS Radiographs in Adult Spine Patients
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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 was versus not used in posterior instrumented spine fusions.
**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  
Eivalina 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  
Pauo 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 Querno, 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 Domura, MD, Kanazawa, Japan  
Katsuhito Yoshioka, MD, Kanazawa, Japan  
Hiroyuki Hayashi, MD, Kanazawa, Japan  
Kazuya Shimmura, 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. Zimkowiski, MS, Aurora, CO  
Mark Rentschler, Boulder, CO  
Thomas Blount, BA, Omaha, NE  
Kenneth Milligan, Denver, CO  
Eivalina 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  
Keishi Maruo, MD, Nishinomiya, Japan  
Tokuhide Moriyama, MD, Nishinomiya, Japan  
Shinichi Inoue, MD, San Francisco, CA  
Shinichi Yoshita, 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  
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 Aichman, 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
Virginsie Lafage, PhD, New York, NY
Ian McCarthy, PhD, Plano, TX
Edward 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 Discetomy 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.

* 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. 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. Shab, MD, Wilmington, DE
Amer Samdani, MD, Philadelphia, PA
Randal R. Betz, MD, Philadelphia, PA
Baron Lonner, MD, New York, NY
Firooz Miyahni, 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 Discotomy 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 Bekevino, 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 Tetrads, 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.

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Spine

**Poster No. P380**
Cervical Sagittal Deformity Develops after PJK in Adult Thoracolumbar Deformity Correction
Alternate Paper: Spine VI: Lumbar/Miscellaneous II
Themistocles S. Protopsaltis, 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
Kirsham 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 Danzic, 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
Katsuhiro Yoshioka, MD, Kanazawa, Japan
Hiroyuki Hayashi, MD, Kanazawa, Japan
Kazuya Shinmura, MD, Ishikawa, Japan
Noriaki Yokogawa, MD, Ishikawa, Japan
Hiroyuki Tsujiya, 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 Tsujiya, 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.

*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. 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 Lowe, 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 Keyhold 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  
Dimitry 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 Rainer G. Santos, MD, Minneapolis, MN  
Sharon C. Yson, MD, Minneapolis, MN  
Jonathan A. 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. Laurence, 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
Jayme Hiratzka, MD, Portland, OR
D. Kojo Hamilton, Portland, OR
Robert S. Bess, MD, Castle Rock, CO
Frank J. Schwab, MD, New York, NY
Christopher J. Shaffrey, MD, Charlottesville, VA
Eric O. Kluneberg, MD, Sacramento, CA
Justin S. Smith, MD, Charlotte, 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
Koichi Shiba, MD, Itzuku, 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 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 Ruangchaimikom, 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. Rechtine 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 Assis, 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.

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Poster No. P404
Prophylactic Vertebroplasty Effects of Adjacent Non-fused Segments
Sinan Kahraman, 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: Sports Medicine
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.

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 swallowing 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 Sadoughi, 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
Akihiro Tsuchiya, MD, Funabashi, Chiba, Japan
Izumi Kaminawa, MD, Funabashi City, Chiba, Japan
Kenji Takahashi, MD, Funabashi, Japan
Tomo Nori 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 meniscal 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 Contalateral 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 Sub, 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.
Educational Programs

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. Merc, 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
Asha 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.

**Poster No. P419**
Iliopsoas Tendinitis After Hip Arthroscopy
Farshad Adib, MD, Boston, MA
William P. Henrikus, 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, Sbham, Israel
Shay A. Tenenbaum, MD, Herzlyia, 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 ischioltemoral 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
Asha 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.

* 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.

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**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. Roitstein, 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  
Kyoung 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. Caellar, MD, New York, NY  
Jason M. Caellar, 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.
MPFL tears in the setting of multi-ligamentous knee injuries can be effectively treated non-operatively without sequelae of patellofemoral instability.

Latarjet coracoid transfer can be a predictable revision option in failed arthroscopic instability repairs with anteroinferior glenoid bone erosion and altered anatomy.

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.

Intra-articularly injected adipose-derived stem cells (ADSCs) home to synovium, secret a factor having chondro-protective effects, and inhibit cartilage degeneration in a rabbit osteoarthritis model.
**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
Nimrod Snir, MD, New York, NY
Mathew Hamula, BA, BS, New York, NY
Theodore S. Wolfsong, 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 Lancetti, 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 Harbor Township, NJ
Fotios P. Tjoumakaris, MD, Ocean View, NJ
Luke S. Austin, MD, Limewood, NJ
Matthew D. Pepe, MD, Limewood, NJ
Kevin B. Freedman, MD, Bryn Mawr, PA
Katherine M. Bagnato, OTG, 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 March, Montreal, QC, Canada
Monika Volesky, MD, Montreal, QC, Canada
Veronica Godbout, MD, FRSC, Montreal, QC, Canada

We evaluated the efficacy of an arthrosimulation resident training program on skills transfer in the operating room, with results favourable 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 Honodyski, 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. Rechtine 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. Dixon, 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
Milo J. Tanaka, MD, Clayton, MO
John J. Elias, PhD, Akron, OH
Shadpour Demeahi, MD, Baltimore, MD
Gaurav K. Thawani, 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
Silloso Patella, MD, Bologna, Italy
Francesco Perdina, MD, Bologna, Italy
Luca Andriolo, MD, Bologna, Italy
Francesco Tentoni, Riccione, Italy
Maurilio Marconcini, 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. Tomino, 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
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.

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Educational Programs

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 Schaefer, MD, New York, NY
Marco L. Sisto, BA, New York, NY
Katherine 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. Mills, MD, Boston, MA
Daniel J. Sicato, MD, MS, Dallas, TX
David A. Podesser, 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-AAAs 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
Jerome 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
Corey E. Henderson, MS, BS, BA, Denver, CO
Corey J. Gissel, 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. Wetzel, 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 Marcano, 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. Bonello, 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
Shaun 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 been 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
Jaemo Abu, 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 Kubiat, 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 Misiou, MBBS, Derby, United Kingdom
Amol Tambe, FRCS, MS, Derby, United Kingdom
Tarek Abuazuk, 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. Allman, 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 Chrestil, 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.

*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. 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 salvages 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. Lorich, 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
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.
Educational Programs

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, Inchon, 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 Agro, MD, Rome, Italy
Carolina Cisterniga, 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 Snoap, 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.

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.

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Poster No. P508
Has the Optimal Starting Point for Retrograde Nailing Changed with Current Retrograde Femoral Nail Design?
Benjamin Service, MD, Orlando, FL
Nathan Turnbill, 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, Kohn, 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 Macleman, 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, Heerhugowaard, 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 Rob, MD, Incheon, Republic of Korea
Moo Kyung Oh, MD, Chunchon, 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
Hai Hang 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.

*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. 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
Hideo Nishida, MD, Kanazawa City, Japan
Akihiko Takeuchi, MD, Kanazawa, Japan
Kentarou 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 armTM 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
Mihir Thacker, MD, Wilmington, DE
Amnej Kadhim, MD, Wilmington, DE
Lauren 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
Susan Cassel, 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
Ryohei 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, Ednburgh, United Kingdom
Karoline Bringe, MD, Seattle, WA
Alexander Yong Shik Shin, MD, Rochester, MN
Sanjeev Kacker, 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
Kunihiro Ikuta, Nagoya, Japan
Naohisa Futamura, MD, Aichi, Japan
Hiroshi Uraoka, Nagoya, Japan
Eisuke Arai, 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 Tanaka, 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
Yoshito 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 Matsu, Yokohama, Japan
Takayuki Kamiishi, Yokohama, Japan
Kengo Harigane, MD, Yokohama, Japan
Yusuke Kawabata, MD, Yokohama, Japan
Takehiko Kawabata, MD, Kanakura, 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?
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. Sampao, 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
Akihiro Matsumine, MD, PhD, Tsu City, Japan
Kunihiro Asanuma, MD, Tsu, Japan
Tomoki Nakamura, MD, PhD, Tsu-City, Japan
Akihiro 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, Claiix, 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, Vandoeuvre-les-Nancy, France
Arnaud Bianchi, Vandoeuvre-les-Nancy, France
Pascale Pottie, PhD, Vandoeuvre-les-Nancy, France
Jean-Yves Jouzeau, PharmD, PhD, Vandoeuvre-les-Nancy, France
Nathalie Presle, PhD, Vandoeuvre-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 Bénite, 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 Loriot, 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, Echelollres, France
Pascal Boileau, MD, Nice, France
Christophe Charouisset, 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 Jeny, MD, Illkirch, France
Stéphane Lavalle, PhD, Saint Martin D’uriaiie, France
Alexandre Moreau-Gauudy, La Tronche Cedex, France
Dominique Saragaglia, MD, Clais, 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, Zvolle, Netherlands
Nicholas E. Bishop, Hamburg, Germany
Harmen B. Ettrema, Zvolle, Netherlands
Cees CPM Verbeyen, Zvolle, 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

Liyen 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)

Keiij 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
Akibiro 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.

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
Natalyia 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.
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. Khanna, 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, thumb spica 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

* 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.
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 Muenster, PTB, Pediatric Hip Spica, and Ponseti 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 Piasciki, MS, RN, ONC

12:00 PM  Adjournment

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

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**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  
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

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**

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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
Introductions
Lynn D. Burkett, RN, BSN, MBA, ONC
Gary C. Canner, MD

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
Call for Abstracts

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Las Vegas, Nevada
March 24-28

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All presenters and co-authors must disclose financial relationships in the AAOS Orthopaedic Disclosure Program.
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Abstracts will not be graded without all disclosures.

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<th>Annual Meeting Committee</th>
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</table>

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<thead>
<tr>
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<th>Position</th>
<th>Company/Institution</th>
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<tbody>
<tr>
<td>William N. Levine, MD</td>
<td>Chair</td>
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</tr>
<tr>
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<td>Member</td>
<td>1 - Biomet; 3B - Biomet, Zimmer</td>
</tr>
<tr>
<td>David M. Dines, MD</td>
<td>Member</td>
<td>1 - Biomet; 3B - Biomet, Zimmer</td>
</tr>
<tr>
<td>Felix H. Savoie III, MD</td>
<td>Member</td>
<td>2 - Mitek, Smith &amp; Nephew; 5 - Mitek</td>
</tr>
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<table>
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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Robert V. Dawe, MD</td>
<td>Chair</td>
<td>4 - SpineWave</td>
</tr>
<tr>
<td>Charles J. Banta II, MD</td>
<td>Member</td>
<td>1 - Biomet; 3B - Biomet, Spinal USA</td>
</tr>
<tr>
<td>Eric O. Klineberg, MD</td>
<td>Member</td>
<td>2 - DePuy Synthes Spine, AO Spine; 5 - OREF, DePuy Synthes Spine</td>
</tr>
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<td>Member</td>
<td>2 - Globus Medical, Stryker; 3B - Stryker; 5 - Globus Medical</td>
</tr>
<tr>
<td>Paul D. Sponseller, MD</td>
<td>Member</td>
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<tbody>
<tr>
<td>Samuel D. Young III, MD</td>
<td>Chair</td>
<td>3B - Ferring Pharmaceuticals, Biomimedeca, Eleven Blade Solutions; 4 - Cool Systems, Inc., Cradle Medical, Inc., Biomimedeca, Eleven Blade Solutions; 5 - Ferring Pharmaceuticals, Smith &amp; Nephew; 7 - Wolters Kluwer Health Lippincott Williams &amp; Wilkins</td>
</tr>
<tr>
<td>Jonathan E. Buzzell, MD</td>
<td>Member</td>
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</tr>
<tr>
<td>John M. Cackler, MD</td>
<td>Member</td>
<td>3B - Iconacy, J&amp;J, DePuy</td>
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<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Company/Institution</th>
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<tbody>
<tr>
<td>Marco Rizzo, MD</td>
<td>Chair</td>
<td>5 - SBI, TriMed</td>
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<td>Thomas R. Hunt III, MD</td>
<td>Member</td>
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<td>Member</td>
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<tr>
<td>Matthew J. Meanor, MD</td>
<td>Member</td>
<td>1 - Abbott, Eli Lilly, Johnson &amp; Johnson, Pfizer</td>
</tr>
<tr>
<td>Peter M. Murray, MD</td>
<td>Member</td>
<td>1 - Abbott, Eli Lilly, Johnson &amp; Johnson, Pfizer</td>
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<tr>
<td>Richard R. Steinberg, MD</td>
<td>Member</td>
<td>4 - Johnson &amp; Johnson; 7 - Merck</td>
</tr>
<tr>
<td>Anthony A. Stans, MD</td>
<td>Chair</td>
<td>3B - Synthes</td>
</tr>
<tr>
<td>Richard E. Bowen, MD</td>
<td>Member</td>
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</tr>
<tr>
<td>Shevaa Mackie Doyle, MD</td>
<td>Member</td>
<td>1 - Abbott, Amgen Co., Bristol-Myers Squibb, Johnson &amp; Johnson, Merck, Pfizer, Sanofi-aventis</td>
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<tr>
<td>Richard W. Kruse, DO</td>
<td>Member</td>
<td>3C - Synthes</td>
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<tr>
<td>Ernest L. Sink, MD</td>
<td>Member</td>
<td>3B - Pivot</td>
</tr>
<tr>
<td>Lewis E. Zions, MD</td>
<td>Member</td>
<td>3B - Abbott, Amgen Co., Bristol-Myers Squibb, Johnson &amp; Johnson, Merck, Pfizer, Sanofi-aventis</td>
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**Practice Management Instructional Course Committee**

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<tr>
<th>Name</th>
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<tr>
<td>A. Herbert Alexander, MD</td>
<td>Chair</td>
<td>1 - Arthrex, Inc.</td>
</tr>
<tr>
<td>Robert H. Blottor, MD</td>
<td>Member</td>
<td>1 - Biomet; 3C - Biomet, Zimmer</td>
</tr>
<tr>
<td>J. Abbott Byrd III, MD</td>
<td>Member</td>
<td>1 - Biomet; 4 - Cool Align Spine</td>
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<tr>
<td>Stanley H. Dysart, MD</td>
<td>Member</td>
<td>2 - Ferring Pharmaceuticals</td>
</tr>
<tr>
<td>Erick M. Santos, MD</td>
<td>PhD, Member</td>
<td>4 - DePuy, A Johnson &amp; Johnson Company, Pfizer</td>
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**Trauma Instructional Course Committee**

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<tr>
<th>Name</th>
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<tr>
<td>Paul J. Dougherty, MD</td>
<td>Chair</td>
<td>5 - Zimmer, Smith &amp; Nephew</td>
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<tr>
<td>Cory A. Collinge, MD</td>
<td>Member</td>
<td>1 - Biomet, Smith &amp; Nephew, Advanced Orthopedic Solutions, Synthes; 3B - Biomet, Stryker, Smith &amp; Nephew</td>
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<tr>
<td>Kurt J. Ehert, MD</td>
<td>Member</td>
<td>3 - Synthes</td>
</tr>
<tr>
<td>Madhav A. Karunakar, MD</td>
<td>Member</td>
<td>5 - DePuy Synthes Spine</td>
</tr>
<tr>
<td>Judith Siegel, MD</td>
<td>Member</td>
<td>7 - Wolters Kluwer Health Lippincott Williams &amp; Wilkins</td>
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**Tumor Instructional Course Committee**

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<tr>
<th>Name</th>
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<tr>
<td>Carol D. Morris, MD, MS</td>
<td>Chair</td>
<td>1 - DePuy, A Johnson &amp; Johnson Company; 2 - Medtronic; 3B - Medtronic, Stryker, Zimmer</td>
</tr>
<tr>
<td>Joseph Benevenia, MD</td>
<td>Member</td>
<td>2 - Musculoskeletal Transplant Foundation; 3C - Merete, NJOS; 5 - Biomet, Musculoskeletal Transplant Foundation, Synthes</td>
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<tr>
<td>David S. Geller, MD</td>
<td>Member</td>
<td>1 - Medtronic; 3B - Medtronic, Stryker, Zimmer; 5 - DePuy, A Johnson &amp; Johnson Company</td>
</tr>
<tr>
<td>Michael P. Mont, MD</td>
<td>Member</td>
<td>3B - Ferring Pharmaceuticals, Biomimedeca, Eleven Blade Solutions; 4 - Cool Systems, Inc., Cradle Medical, Inc., Biomimedeca, Eleven Blade Solutions; 5 - Ferring Pharmaceuticals, Smith &amp; Nephew; 7 - Wolters Kluwer Health Lippincott Williams &amp; Wilkins, Saunders/MosbyElsevier</td>
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**Adult Reconstruction Hip Program Committee**

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<tr>
<th>Name</th>
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<th>Company/Institution</th>
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<tr>
<td>David Christopher Ayers, MD</td>
<td>Chair</td>
<td>1 - DePuy, A Johnson &amp; Johnson Company</td>
</tr>
<tr>
<td>John Antoniou, MD</td>
<td>Member</td>
<td>3B - DePuy, A Johnson &amp; Johnson Company</td>
</tr>
<tr>
<td>Michael J. Archibeck, MD</td>
<td>Member</td>
<td>1 - Wright Medical Technology, Inc.; 3B - Biocomposites, DJ Orthopaedics, Janssen, Joint Active Systems, Medtronic, Stryker, TissueGene, Wright Medical Technology, Inc.; 5 - DJ Orthopaedics, Joint Active Systems, National Institutes of Health (NIAMS &amp; NICHD), Stryker, Tissue Gene, Wright Medical Technology, Inc.</td>
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**Hand and Wrist Instructional Course Committee**

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<tr>
<th>Name</th>
<th>Position</th>
<th>Company/Institution</th>
</tr>
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<tbody>
<tr>
<td>Anthony A. Stans, MD</td>
<td>Chair</td>
<td>1 - Stryker, Wright Medical Technology, Inc.; 3B - Biocomposites, DJ Orthopaedics, Janssen, Joint Active Systems, Medtronic, Stryker, TissueGene, Wright Medical Technology, Inc.; 5 - DJ Orthopaedics, Joint Active Systems, National Institutes of Health (NIAMS &amp; NICHD), Stryker, Tissue Gene, Wright Medical Technology, Inc.</td>
</tr>
<tr>
<td>Richard W. McCalden, MD</td>
<td>Member</td>
<td>1 - Zimmer, Smith &amp; Nephew; 5 - Smith &amp; Nephew, JNJ, DePuy, Stryker</td>
</tr>
<tr>
<td>Michael A. Mont, MD</td>
<td>Member</td>
<td>1 - Stryker, Wright Medical Technology, Inc.; 3B - Biocomposites, DJ Orthopaedics, Janssen, Joint Active Systems, Medtronic, Stryker, TissueGene, Wright Medical Technology, Inc.; 5 - DJ Orthopaedics, Joint Active Systems, National Institutes of Health (NIAMS &amp; NICHD), Stryker, Tissue Gene, Wright Medical Technology, Inc.</td>
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<tr>
<td>Andrew H. Glassman, MD</td>
<td>Member</td>
<td>1 - Innomed; 2, 3B - Exactech, Inc., Pipeline Orthopaedics; 5 - Stryker</td>
</tr>
<tr>
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<td>Member</td>
<td>(n); Submitted on: 06/04/2012</td>
</tr>
<tr>
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<td>Member</td>
<td>2, 3B - ConforMIS</td>
</tr>
<tr>
<td>William B. Macaulay, MD</td>
<td>Member</td>
<td>3B - Johnson &amp; Johnson; 4 - OrthAlign; 5 - Pfizer, Wright Medical Technology, Inc.</td>
</tr>
<tr>
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<td>Member</td>
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</tr>
<tr>
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<td>Member</td>
<td>2, 3B - Smith &amp; Nephew; 5 - Smith &amp; Nephew, JNJ, DePuy, Stryker</td>
</tr>
<tr>
<td>Michael A. Mont, MD</td>
<td>Member</td>
<td>1 - Stryker, Wright Medical Technology, Inc.; 3B - Biocomposites, DJ Orthopaedics, Janssen, Joint Active Systems, Medtronic, Stryker, TissueGene, Wright Medical Technology, Inc.; 5 - DJ Orthopaedics, Joint Active Systems, National Institutes of Health (NIAMS &amp; NICHD), Stryker, Tissue Gene, Wright Medical Technology, Inc.</td>
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Felix Enrique Villalobos, MD: 2 - Sanofi-Aventis
Manuel Villanueva, MD, PhD...........................................n
Kelly Vince, MD: 1, 2, 3B - Zimmer
Nazeem Virani, MD, MPH...........................................n
Sohrab Virk, MD...........................................n
Pietro Virolainen, MD: 2 - DePuy, A Johnson & Johnson Company, Stryker, Biomet; 3B - Astra-Zeneca, Bayer; 5 - Zimmer, Stryker, Smith & Nephew
Eugene R. Viscusi, MD: 2 - Cadence Pharmaceuticals; 3B - AcelRx, Cadence, Cubist, Salix, Par Eis; 5 - AcelRx, Adolor
Jacqueline Vissing, BS...........................................n

Faculty disclosure listed as entered in the AAOS Disclosure Database as of October 1, 2013.

The codes after the name are identified as 1 - Royalties; 2 - Speakers Bureau/paid presentations; 3a - Employee; 3b - Paid consultant; 3c - Unpaid consultant; 4 - Stock or stock options;
5 - Research or institutional support as a principal investigator has been received; 6 - Other financial or material support; 7 - Royalties, financial or material support from publishers; n - No conflicts to disclose

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<table>
<thead>
<tr>
<th>Name</th>
<th>Disclosures</th>
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<tbody>
<tr>
<td>Norio Yamamoto, MD</td>
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<tr>
<td>Kazumasa Yamamura, MD</td>
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<tr>
<td>Jae-Ho Yang, MD</td>
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<tr>
<td>Judy Yang, MD</td>
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<tr>
<td>Adam Blair Yanke, MD</td>
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<tr>
<td>Sarah Marie Ynnascoli, MD</td>
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<tr>
<td>Paul F. Yannopoulos, BA</td>
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<tr>
<td>Jeffrey Yao, MD</td>
<td>1 - Arthrex, Inc.; 2 - Arthrex, Inc., Trimed; 3B - Smith &amp; Nephew, Arthrex, Inc.; 7 - Saunders/Mosby-Elsevier</td>
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<tr>
<td>Noriaki Yokogawa, MD</td>
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<td>Yi-Qun Zhang, PhD</td>
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<td>Li-Qun Zhang, PhD</td>
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<td>Tinghua Zhang, MSc</td>
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<td>Hanbing Zhou, MD</td>
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<td>Inga Zhygalo Zhygalo, Prof</td>
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<td>Connor Ziegler, MD</td>
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<td>Katarzyna Zienkiewicz</td>
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<td>Michael Martin Zimowski, MS</td>
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<td>Ryan M. Zimmerman, MD</td>
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<td>Sumesh M. Zingde</td>
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<td>Lewis Evan Zions, MD</td>
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<tr>
<td>Dan Ariel Zlotow, MD</td>
<td>1 - Exactech, Inc.; 4 - Hip Innovation Technology, Neostem; 6 - Orthomet; 7 - SLACK Incorporated, Wolters Kluwer Health - Lippincott Williams &amp; Wilkins</td>
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<td>Richard S. Zaretski, MD</td>
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<td>Toshiki Yasuda, MD</td>
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<tr>
<td>Kazunori Yasuda, MD</td>
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<tr>
<td>Tadashi Yasuda, MD</td>
<td>5 - Chugai Pharmaceutical Company</td>
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<tr>
<td>Yoshio Yasuda, MD</td>
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<td>Toshiro Yasuda, MD</td>
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<td>Adolph J. Yates Jr., MD</td>
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<tr>
<td>Michael J. Yasenksmzki, MD</td>
<td>3B - Medtronic</td>
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<tr>
<td>Muharrem Yazici, MD</td>
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<tr>
<td>Todd Samuel Yecies, BS</td>
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<td>Kiran S. Yemul</td>
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<td>Yi-Meng Yen, MD</td>
<td>3A - Agios Pharmaceuticals; 3B - Smith &amp; Nephew, Orthopediatrics, Arthrex, Inc.</td>
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<tr>
<td>Aaron Michael Yengo-Kahn, BS</td>
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<tr>
<td>Seng-Jin Yeo, FRCSc</td>
<td>2, 3C - SIGN, Lewis G. Zirkle Jr., MD; 3C - SIGN; 2 - Biomet Sports Medicine; 3B - BIOSMART; 1 - Exactech, Inc.</td>
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<td>Michael Yeranosian, MD</td>
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<td>Andrew Yoo, BA</td>
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<td>Brad J. Yoo, MD</td>
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<td>Dana Yoo, PhD</td>
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<td>Won Joon Yoo, MD</td>
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<td>Kang Sup Yoon, MD</td>
<td>5 - K-STEM CELL</td>
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<td>Richard S. Yoon, MD</td>
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<td>Sun Jung Yoon, MD</td>
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<td>Petya Yorgova, MS</td>
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<td>Taku Yoshida, MD</td>
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<td>Harada Yoshifumi</td>
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<tr>
<td>James A.S. Young, FRCS</td>
<td>2 - Acumed, LLC; 3B - Acumed, LLC, Biomimetic, Cartiva; 5 - Biomimetic, ComMed Linvatec, Wright Medical Technology, Inc., Synthes, Integra Foundation, Celsite, Sistop, Acumed, Smith &amp; Nephew</td>
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<td>Maew Young, MD</td>
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<td>Lee Young-Gil</td>
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<td>Itaru Yuge, MD</td>
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<td>Coli Shing-Yat Yung, MBBS</td>
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<td>Janet A. Yu-Yahiro, PhD</td>
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<td>Stefano Zaffagnini, MD</td>
<td>6 - I + s.r.l.; 7 - Springer</td>
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<td>Brian Zafonte, MD</td>
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<td>Efrat Zahavi Goldstein, MSc</td>
<td>4 - Pluristem</td>
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<td>Razi Zaidi</td>
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<td>Charalampos Zalavras, MD</td>
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<td>Ira Zaltz, MD</td>
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<td>Rodolfo Antonio Zamora Sr., MD</td>
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<td>Biagio Zampogna, MD</td>
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<td>Rami R. Zanoun</td>
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<td>Joseph M. Zavatsky, MD</td>
<td>3B - Biomet, DePuy, A Johnson &amp; Johnson Company; 4 - Innovative Surgical Solutions, Safe Wire</td>
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<td>Lewis Zink, MD</td>
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<tr>
<td>Efrat Zahavi Goldstein, MSc</td>
<td>4 - Innovative Surgical Solutions, Safe Wire</td>
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<td>Michael Zimowski, BS</td>
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<td>Adam Zoga, MD</td>
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<td>Thomas Zumbrunn, MD</td>
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<td>Justine Zumsteg, MD</td>
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<td>Mathias Zumstein, MD</td>
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<tr>
<td>Karen Zupko, BS</td>
<td>3B - Understand.com, Zimmer; 4 - Modernizing Medicine</td>
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<td>Michael G. Zywiel, MD</td>
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<td>David Zurakowski PhD</td>
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<td>Matthias Zurakowski, MD</td>
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Technical Exhibits

Hours:
Wednesday and Thursday
9:00 AM – 5:00 PM

Friday
9:00 AM – 4:00 PM
While in the Exhibit Hall

**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 select 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.

**VISIT THE TECHNICAL EXHIBITS**
Morial Convention Center
Wednesday and Thursday, 9:00 AM – 5:00 PM
Friday, 9:00 AM – 4:00 PM
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.

AAOS is the sole provider of Continuing Medical Education (CME) credits at the annual meeting between the hours of 7:30 AM to 6:00 PM. CME credit is not provided for presentations in the exhibit hall or time spent viewing the technical exhibits.

- Over 650 companies will be featured
- Over 125 first-time exhibitors will be participating
- Specialty Areas:
  - Allied Organization Displays .......... Booths 4115-4222
  - Diagnostic Equipment ..................... Booths 2231-2837
  - First-Time Exhibitors ..................... Booths 6813-7243
  - Practice Productivity Exhibits .......... Booth 4413-4757
  - Publishers and Educators Row ......... Booths 5121-5721
- Unopposed Exhibit Time daily from 12:30 to 1:30 PM

**ANNUAL MEETING SPONSORS**
The American Academy of Orthopaedic Surgeons wishes to thank the following companies for their financial support of the 2014 Annual Meeting.
- Arthrex, Inc.
- Biomet
- Bioventus
- DePuy Synthes
- DJO, LLC
- Lilly USA, LLC
- MAQUET
- Otto Bock Healthcare
- Smith & Nephew
AAOS EXHIBITS COMMITTEE

The Exhibits Committee is responsible for evaluating the companies that exhibit at the annual meeting. The committee also reviews the exhibits on-site for content, presentation and compliance with FDA guidelines. During the annual meeting, Joseph T. Moskal, MD, chair of the committee, can be reached onsite at the AAOS Exhibits Office located in Room 235 of Morial Convention Center.

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
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James V. Nepola, MD, Iowa City, IA
Rick F. Papandrea, MD, Waukesha, WI
John M. Schwartz, MD, FACS, New York, NY
John R. Tenny, MD, Dallas, TX
Scott D. Weiner, MD, Akron, OH

EXHIBITORS’ ADVISORY COUNCIL

A Technical Exhibitors’ Advisory Council has been established to serve in an advisory capacity to the Academy on issues affecting exhibitors. You are encouraged to contact the Council members with your concerns.

Jill Best, Zimmer
Marie Bukowski, Wright Medical Technology, Secretary
Denise Cyr, Aesculap Implant Systems
Janet Gensingen, Symmetry Medical
Bonnie Kerrigan, Covidien
Michael Librot, Medin Corporation
Brent Mellecker, FusionOne, Inc.
Barbara Sharpe, Stryker Instruments, Chair
Linda A. Smith, Medartis, Inc. Vice-Chair
Alissa Stokes, Exactech, Inc.

EXHIBITOR LISTINGS

AdvaMed and PhRMA

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 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

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 or http://www5.aaos.org/industryrelationships/standards.cfm
### 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.

<table>
<thead>
<tr>
<th>Wednesday, March 12</th>
<th>9:30 - 10:15 AM</th>
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<tbody>
<tr>
<td>Managing your Internet Reputation</td>
<td>9:30 - 10:15 AM</td>
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<tr>
<td>Presenter: Christian Veillette, MD</td>
<td>9:30 - 10:15 AM</td>
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<tr>
<td>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.</td>
<td>9:30 - 10:15 AM</td>
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<tr>
<th>Thursday, March 13</th>
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<tbody>
<tr>
<td>Office Websites: How to Save Time and Money</td>
<td>9:30 - 10:15 AM</td>
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<tr>
<td>Presenter: David L. Nelson, MD</td>
<td>9:30 - 10:15 AM</td>
</tr>
<tr>
<td>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.</td>
<td>9:30 - 10:15 AM</td>
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<tr>
<th>Wednesday, March 12</th>
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<tbody>
<tr>
<td>Social Media for the Orthopaedic Surgeon</td>
<td>10:15 - 11:30 AM</td>
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<tr>
<td>Presenter: Christian Veillette, MD</td>
<td>10:15 - 11:30 AM</td>
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<tr>
<td>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.</td>
<td>10:15 - 11:30 AM</td>
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<tr>
<th>Thursday, March 13</th>
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<tr>
<td>Defending Your Internet Reputation</td>
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<tr>
<td>Presenter: David L. Nelson, MD</td>
<td>10:30 - 11:15 AM</td>
</tr>
<tr>
<td>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?</td>
<td>10:30 - 11:15 AM</td>
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<tbody>
<tr>
<td>Killer Apps</td>
<td>11:30 AM - 12:15 PM</td>
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<tr>
<td>Presenter: Ira H. Kirschenbaum, MD</td>
<td>11:30 AM - 12:15 PM</td>
</tr>
<tr>
<td>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.”</td>
<td>11:30 AM - 12:15 PM</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Thursday, March 13</th>
<th>11:30 AM - 12:15 PM</th>
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</thead>
<tbody>
<tr>
<td>Educational iPad Apps for Orthopaedic Surgeons</td>
<td>11:30 AM - 12:15 PM</td>
</tr>
<tr>
<td>Presenter: Orrin Franko, MD</td>
<td>11:30 AM - 12:15 PM</td>
</tr>
<tr>
<td>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).</td>
<td>11:30 AM - 12:15 PM</td>
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<table>
<thead>
<tr>
<th>Wednesday, March 12</th>
<th>1:30 - 2:15 PM</th>
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<tbody>
<tr>
<td>Filmless Radiography: PACS &amp; the Totally Electronic Office</td>
<td>1:30 - 2:15 PM</td>
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<tr>
<td>Presenter: A. Herbert Alexander, MD</td>
<td>1:30 - 2:15 PM</td>
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<tr>
<td>Discuss components of filmless radiology (FR), the importance of PACS, office design, conversion issues and importance of integrating the practice manager, EHR, and PACS.</td>
<td>1:30 - 2:15 PM</td>
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<tr>
<th>Thursday, March 13</th>
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<tbody>
<tr>
<td>Must-have Smartphone Apps for Orthopaedic Surgeons</td>
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<tr>
<td>Presenter: Orrin Franko, MD</td>
<td>1:30 - 2:15 PM</td>
</tr>
<tr>
<td>Attend this live demonstration of the must-have apps for your practice for clinics, education, and productivity.</td>
<td>1:30 - 2:15 PM</td>
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<tr>
<th>Wednesday, March 12</th>
<th>2:30 - 3:15 PM</th>
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<tbody>
<tr>
<td>Implementation and Utilization of Voice-Recognition Software: A Study in Patience, Persistence and Payoff</td>
<td>2:30 - 3:15 PM</td>
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<tr>
<td>Presenter: Michael A. Rauh, MD</td>
<td>2:30 - 3:15 PM</td>
</tr>
<tr>
<td>Participants will understand the cost and times associated with traditional transcription; and learn costs and techniques of implementation of voice recognition software.</td>
<td>2:30 - 3:15 PM</td>
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<tr>
<th>Thursday, March 13</th>
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<tr>
<td>Innovations in Digital Media Presentation</td>
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<tr>
<td>Presenter: Andrew J. Pastor, MD</td>
<td>2:30 - 3:15 PM</td>
</tr>
<tr>
<td>Learn how to enhance your academic lectures by using new and exciting presentation format known as Prezi.</td>
<td>2:30 - 3:15 PM</td>
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<th>Wednesday, March 12</th>
<th>3:30 - 4:15 PM</th>
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<tbody>
<tr>
<td>Four Apps That Will Change the Way You Practice</td>
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<tr>
<td>Presenter: John P. Andrawis, MD</td>
<td>3:30 - 4:15 PM</td>
</tr>
<tr>
<td>Four mobile health apps that will improve the doctor-patient relationship, interaction with staff, education, and ultimately improve patient care and satisfaction.</td>
<td>3:30 - 4:15 PM</td>
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<thead>
<tr>
<th>Thursday, March 13</th>
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<tbody>
<tr>
<td>Search Engine Marketing for Your Practice</td>
<td>3:30 - 4:15 PM</td>
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<tr>
<td>Presenter: Christian Veillette, MD</td>
<td>3:30 - 4:15 PM</td>
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<tr>
<td>Learn key search engine marketing techniques to make sure you are getting the most targeted traffic from your office website.</td>
<td>3:30 - 4:15 PM</td>
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Friday, March 14
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
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
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
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
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.
### Ask an Expert Sessions – Booth 7143

<table>
<thead>
<tr>
<th>TIME</th>
<th>TOPIC</th>
<th>EXPERTS</th>
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<tr>
<td>10:30 – 11:15 AM</td>
<td>HIP</td>
<td>Allan E. Gross, MD, FRCSC</td>
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<td>Prof. Leo A. Whiteside, MD</td>
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<td>SPINE</td>
<td>Todd J. Albert, MD</td>
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<td>Sheeraz Qureshi, MD</td>
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<td>1:30 – 2:15 PM</td>
<td>HAND &amp; ELBOW</td>
<td>David L. Nelson, MD</td>
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<td>David C. Ring, MD</td>
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<td>HIP &amp; KNEE</td>
<td>Pierre J. Hoffmeyer, MD</td>
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<td>Steven A. Stuchin, MD</td>
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<td>3:30 – 4:15 PM</td>
<td>TRAUMA</td>
<td>Fernando de la Huerta, MD</td>
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<td>Lawrence X. Webb, MD</td>
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<td><strong>Thursday, March 13</strong></td>
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<td>9:30 – 10:15 AM</td>
<td>KNEE</td>
<td>Fares Haddad, MD, FRCS</td>
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<td>Robert T. Trousdale, MD</td>
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<td>SHOULDER</td>
<td>Carl J. Basamania, MD</td>
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<td>Christian Gerber, MD</td>
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<td>Thorsten Gehrke, MD</td>
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<td>Allan E. Gross, MD, FRCSC</td>
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<td>1:30 – 2:15 PM</td>
<td>TUMOR</td>
<td>Edward Y. Cheng, MD</td>
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<td>Ilya Iofin, MD</td>
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<td>2:30 – 3:15 PM</td>
<td>FOOT &amp; ANKLE</td>
<td>Judith F. Baumhauer, MD, MPH</td>
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<td>Lew C. Schon, MD</td>
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<td>David G. Lewallen, MD</td>
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<td>Aaron G. Rosenberg, MD, FACS</td>
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<td><strong>Friday, March 14</strong></td>
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<tr>
<td>9:30 – 10:15 AM</td>
<td>SPORTS MEDICINE</td>
<td>Bernard R. Bach, Jr, MD</td>
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<td>Michael D. Maloney, MD</td>
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<tr>
<td>10:30 – 11:15 AM</td>
<td>HAND</td>
<td>Edward Diao, MD</td>
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<td>William H. Seitz, Jr, MD</td>
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<td>PEDIATRIC</td>
<td>Brian Snyder, MD, PhD</td>
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<td>Stuart L. Weinstein, MD</td>
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<td>1:30 – 2:15 PM</td>
<td>SHOULDER</td>
<td>Scott P. Steinmann, MD</td>
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<td>Joseph D. Zuckerman, MD</td>
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<td>2:30 – 3:15 PM</td>
<td>HIP &amp; KNEE</td>
<td>Daniel J. Berry, MD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clive P. Duncan, MD, FRCSC</td>
</tr>
</tbody>
</table>

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!
<table>
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<th>COMPANY</th>
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<th>ADDRESS</th>
<th>CITY, STATE ZIP CODE</th>
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<th>WEBSITE</th>
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<td>Accutek Testing Laboratory</td>
<td>2131</td>
<td>Fairfield, OH 43014-2200</td>
<td>Phone: (513)984-4112</td>
<td>Web: <a href="http://www.accutektesting.com">www.accutektesting.com</a></td>
<td>Product Codes: OTH</td>
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<td>Acell, Inc.</td>
<td>5021</td>
<td>Columbia, MD 21046</td>
<td>Phone: (800)826-2926</td>
<td>Web: <a href="http://www.acell.com">www.acell.com</a></td>
<td>Product Codes: DEV</td>
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<tr>
<td>ACIGI Relaxation/Fujiiryoki</td>
<td>1241</td>
<td>Fremont, CA 94538</td>
<td>Phone: (510)651-9088</td>
<td>Web: <a href="http://www.acimed.net">www.acimed.net</a></td>
<td>Product Codes: DEV, I</td>
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<tr>
<td>Active Implants Corporation</td>
<td>6049</td>
<td>Memphis, TN 38120</td>
<td>Phone: (901)762-0352</td>
<td>Web: <a href="http://www.activeimplants.com">www.activeimplants.com</a></td>
<td>Product Codes: DEV, I</td>
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<tr>
<td>Acumed</td>
<td>5549</td>
<td>Hillsboro, OR 97124</td>
<td>Phone: (888)627-9957</td>
<td>Web: <a href="http://www.acumed.net">www.acumed.net</a></td>
<td>Product Codes: ADVA, I, SI</td>
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<td>Advanced Biologics</td>
<td>1557</td>
<td>Carlsbad, CA 92008</td>
<td>Phone: (800)272-0267</td>
<td>Web: <a href="http://www.advancedbiologics.com">www.advancedbiologics.com</a></td>
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<td>Advanced Endoscopy Devices, Inc.</td>
<td>533</td>
<td>Canoga Park, CA 91303</td>
<td>Phone: (818)227-2720</td>
<td>Web: <a href="http://www.aed.md">www.aed.md</a></td>
<td>Product Codes: A5, SI</td>
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<td>Advanced Orthopaedic Solutions, Inc.</td>
<td>5349</td>
<td>Torrance, CA 90501</td>
<td>Phone: (310)533-9966</td>
<td>Web: <a href="http://www.aosortho.com">www.aosortho.com</a></td>
<td>Product Codes: DEV, I, SI</td>
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<td>AdvancedMD Software</td>
<td>4720</td>
<td>South Jordan, UT 84093</td>
<td>Phone: (801)984-9500</td>
<td>Web: <a href="http://www.advancedmd.com">www.advancedmd.com</a></td>
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<td>Aerobiotix</td>
<td>7020</td>
<td>Miamisburg, OH 45342</td>
<td>Phone: (937)416-1977</td>
<td>Web: <a href="http://www.aerobiotix.com">www.aerobiotix.com</a></td>
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<td>Aesculap Implant Systems</td>
<td>1049</td>
<td>Center Valley, PA 18034</td>
<td>Phone: (800)258-1946</td>
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<td>Aesculap, Inc.</td>
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<td>Ai-Medic Co., Ltd.</td>
<td>6122</td>
<td>Tokyo, 105-0012</td>
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<td>AlMed Inc.</td>
<td>1340</td>
<td>Daytona Beach, FL 32114</td>
<td>Phone: (386)405-7202</td>
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<td>Alignmed</td>
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<td>Namyangju-si, Gyenoggi-Do 472-883</td>
<td>South Korea</td>
<td>Phone: 82-315537308</td>
<td>Web: <a href="http://www.allotech.kr">www.allotech.kr</a></td>
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<td>Bothell, WA 98021</td>
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<td>Web: <a href="http://www.alpinionusa.com">www.alpinionusa.com</a></td>
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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.
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<td>Aspen Medical Products</td>
<td>3231</td>
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<tr>
<td>Irvine, CA 92618</td>
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<tr>
<td>Phone: (949)681-0200</td>
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<td>Web: <a href="http://www.aspenmp.com">www.aspenmp.com</a></td>
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## Technical Exhibits

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<tr>
<td>Engineered Medical Solutions</td>
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<tr>
<td>Phillipsburg, NJ 08865</td>
<td>Phone: (908)329-9123</td>
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<td>Web: <a href="http://www.scintillantlight.com">www.scintillantlight.com</a></td>
<td>Product Codes: SI, SURG</td>
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<td>Ensinger</td>
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<tr>
<td>Washington, PA 15301</td>
<td>Phone: (724)746-6050</td>
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<td>EOS Electro Optical Systems</td>
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<tr>
<td>Novi, MI 48377</td>
<td>Phone: (248)306-0143</td>
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<td>Web: <a href="http://www.eos.info">www.eos.info</a></td>
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<tr>
<td>EOS Imaging</td>
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<tr>
<td>Cambridge, MA 02138</td>
<td>Phone: (617)564-5400</td>
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<td>Product Codes: DI, XRAY</td>
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<td>EPM Endo Plant Muller GmbH</td>
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<tr>
<td>Kleinwallstadt, Bayern, 63839</td>
<td>Germany</td>
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<tr>
<td>Phone: 49-602225419</td>
<td>Web: <a href="http://www.epm-muller.de">www.epm-muller.de</a></td>
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<td>Ergoactive</td>
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<td>Aventura, FL 33180</td>
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<td>Web: <a href="http://www.ergoactive.com">www.ergoactive.com</a></td>
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<td>Atlanta, GA 30324</td>
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<td>Web: <a href="http://www.getmotion.com">www.getmotion.com</a></td>
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<td>Esaote North America</td>
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<tr>
<td>Indianapolis, IN 46250</td>
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<td>Web: <a href="http://www.esaoteusa.com">www.esaoteusa.com</a></td>
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<td>Eurocoating S.p.A.</td>
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<tr>
<td>Pergine Valsugana, 38057</td>
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<tr>
<td>Phone: 39-0461518901</td>
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<td>European Federation of Orthopaedics and Traumatology (EFORT)</td>
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<tr>
<td>Zurich, CH-8005</td>
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<tr>
<td>Phone: 41-444484402</td>
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<td>Evonik Corporation</td>
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<tr>
<td>Parsippany, NJ 07054</td>
<td>Phone: (973)929-8000</td>
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<td>Web: <a href="http://www.evonik.com">www.evonik.com</a></td>
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<td>ExACTech, Inc.</td>
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<td>Gainesville, FL 32653</td>
<td>Phone: (800)392-2832</td>
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<tr>
<td>Exscribe, Inc.</td>
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<tr>
<td>Bethlehem, PA 18015</td>
<td>Phone: (610)419-2050</td>
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<td>Product Codes: COM, EMR, PM</td>
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<td>Extremity Medical, LLC</td>
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<tr>
<td>Parsippany, NJ 07054</td>
<td>Phone: (973)588-8980</td>
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<tr>
<td>FCS Medical</td>
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<td>Saint Louis, MO 63114</td>
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<td>Web: <a href="http://www.fcsmedical.com">www.fcsmedical.com</a></td>
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<td>Ferring Pharmaceuticals</td>
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<td>Parsippany, NJ 07054</td>
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<td>FH Orthopedics</td>
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<td>Heimsbrunn, 68990</td>
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<td>Phone: 33-389819092</td>
<td>Web: <a href="http://www.fhorthopedics.com">www.fhorthopedics.com</a></td>
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<td>Fidia Pharma</td>
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<td>Phone: (908)342-5281</td>
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<td>Flower Orthopedics</td>
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<td>Horsham, PA 19044</td>
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<td>Web: <a href="http://www.flowerortho.com">www.flowerortho.com</a></td>
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<td>Flow-FX LLC</td>
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<tr>
<td>Mokena, IL 60448</td>
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<td>Footmaxx, Inc.</td>
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<tr>
<td>Roanoke, VA 24035</td>
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<td>FORE - Foundation For Orthopaedic Research and Education</td>
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<td>Tampa, FL 33637</td>
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<td>Forecreu America, Inc.</td>
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<tr>
<td>Chicago, IL 60634</td>
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<td>Web: <a href="http://www.forecreu.com">www.forecreu.com</a></td>
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<td>Francis Lamont Innovations Ltd6715</td>
<td>Hathersege, Derbyshire, S32 1DP</td>
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<td>United Kingdom</td>
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<td>FUIJIFILM Medical Systems USA, Inc.</td>
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<tr>
<td>Stamford, CT 06902</td>
<td>Phone: (203)324-2000</td>
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<td>Web: <a href="http://www.fujiprivatepractice.com">www.fujiprivatepractice.com</a></td>
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<td>Fused Innovation</td>
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<tr>
<td>Neenah, WI 54956</td>
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<td>Web: <a href="http://www.fusion3d-com">www.fusion3d-com</a></td>
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<td>FusionOne Electronic Healthcare</td>
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<tr>
<td>Roselle, IL 60172</td>
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<td>Web: <a href="http://www.fusiononeinc.com">www.fusiononeinc.com</a></td>
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<td>VIRIAT, 01440</td>
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<td>Phone: 33-474553555</td>
<td>Web: <a href="http://www.fxsolutions.fr">www.fxsolutions.fr</a></td>
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<tr>
<td>Game Ready</td>
<td>6541</td>
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<tr>
<td>Concord, CA 94520</td>
<td>Phone: (888)426-3732</td>
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<td>GauThier Biomedical, Inc.</td>
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<td>Grafton, WI 53024</td>
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<td>Milwaukee, WI 53201</td>
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<td>Genso Laboratories</td>
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<td>Miramar, FL 33027</td>
<td>Phone: (855)743-6726</td>
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<td>Web: <a href="http://www.genscolabs.com">www.genscolabs.com</a></td>
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<td>Gibraltar Laboratories Inc</td>
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<tr>
<td>Fairfield, NJ 07004</td>
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<td>Globus Medical</td>
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<td>GMReis</td>
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<td>Campinas, S. Paulo 13069-320</td>
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<tr>
<td>Phone: 55-1937659900</td>
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<td>GPl Prototype</td>
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<td>Lake Bluff, IL 60044</td>
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<td>GraMedica</td>
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<td>Greatbatch Medical</td>
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<td>Greenway Medical Technologies</td>
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<td>Carrollton, GA 30117</td>
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<td>Web: <a href="http://www.greenwaymedical.com">www.greenwaymedical.com</a></td>
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<td>Group Health Permanente</td>
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<td>Plymouth, MA 02360</td>
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<td>Phone: (508)732-7500</td>
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<td>Web: <a href="http://www.harvesttech.com">www.harvesttech.com</a></td>
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<tr>
<td>Peschiera Borromeo, Milano, 20068 Italy</td>
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<td>Phone: 39-0251650371</td>
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<td>Emerson, NJ 07630</td>
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<tr>
<td>Phone: (201)599-2277</td>
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<td>Halifax Biomedical Inc.</td>
<td>4064</td>
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<tr>
<td>Boston, MA 02142</td>
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</tr>
<tr>
<td>Phone: (425)418-2774</td>
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<td>Hames Orthotech</td>
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<td>Florence, AL 35630</td>
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<td>Phone: (256)766-3338</td>
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<td>Hand Biomechanics Lab, Inc.</td>
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<tr>
<td>Sacramento, CA 95825</td>
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<tr>
<td>Phone: (916)923-5076</td>
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<td>Phone: (201)224-2333</td>
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<td>Berthel Park, PA 15102</td>
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<td>Phone: (412)835-1234</td>
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<td>Plymouth, MA 02360</td>
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<td>America, Inc.</td>
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<tr>
<td>Twinsburg, OH 44087</td>
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<td>Miami, FL 33179</td>
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<tr>
<td>Zhuhai, China</td>
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<tr>
<td>Phone: 86-5125850488</td>
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<tr>
<td>Raleigh, NC 27613</td>
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<tr>
<td>Phone: (919)264-4292</td>
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<td>Phone: 31-628223657</td>
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<td>Centennial, CO 80111</td>
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<tr>
<td>San Diego, CA 92103</td>
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<td>Phone: (415)656-3500</td>
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<tr>
<td>United Kingdom</td>
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<td>Phone: 44-1142573200</td>
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<td>Istanbul, 34235</td>
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<td>Phone: 886-426308728</td>
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<tr>
<td>Cleveland, OH 44128</td>
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<td>Phone: (800)282-5277</td>
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<td>Saint Paul, MN 53109</td>
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<td>Phone: (612)334-8444</td>
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<tr>
<td>Miami, FL 33126</td>
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<tr>
<td>El Segundo, CA 90245</td>
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<td>Phone: (800)421-0832</td>
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<tr>
<td>Coldwater, MI 49036</td>
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<td>Phone: (517)279-9000</td>
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<tr>
<td>Camarillo, CA 93012</td>
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<td>Phone: (805)384-2748</td>
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<td>Albuquerque, NM 87110</td>
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<tr>
<td>Phone: (855)488-8273</td>
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<td>Cork, Ireland</td>
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<td>Phone: 353-870508529</td>
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<tr>
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<td>Phone: (805)529-0825</td>
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<td>Phone: (800)847-7831</td>
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<td>Web: <a href="http://www.accesslifenethealth.org">www.accesslifenethealth.org</a></td>
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<tr>
<td>Alpharetta, GA 30005</td>
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<td>Phone: (877)562-8656</td>
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<tr>
<td>Strongsville, OH 44136</td>
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<td>Phone: (440)243-8401</td>
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<td>Yonkers, NY 10701</td>
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<td>Phone: (914)963-2258</td>
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<td>Madison Ortho Inc.</td>
<td>1073</td>
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<tr>
<td>San Juan, PR 00909</td>
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<tr>
<td>Phone: (787)945-5800</td>
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<td>Phone: (269)319-2122</td>
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<tr>
<td>Los Angeles, CA 90039</td>
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<td>Alachua, FL 32615</td>
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<td>Phone: (386)462-7660</td>
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<td>Phone: (800)923-5187</td>
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<td>Tampa, FL 33610</td>
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<td>Phone: (813)443-4905</td>
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<td>Phone: (508)416-5200</td>
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<td>Phone: (810)695-9800</td>
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<td>Phone: (800)328-4058</td>
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<td>Web: <a href="http://www.ottobockus.com">www.ottobockus.com</a></td>
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<td>Oxford Performance Materials, LLC 2133</td>
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<tr>
<td>South Windsor, CT 06074</td>
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<tr>
<td>Phone: (860)698-9300</td>
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<td>Phone: (248)223-3300</td>
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<td>Phone: (201)293-9799</td>
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<td>Rockland, MA 02370</td>
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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.
About our Members and Volunteers
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
Room 223

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
Room 220

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
Grand Salon 9 & 12

Economic Issues Committee Thursday, March 13
3:30 - 5:30 PM
Morial Convention Center
Room 224

Committee on State Legislative and Regulatory Issues Business Meeting Thursday, March 13
4:30 - 6:30 PM
Hilton Riverside
Versailles Ballroom

Business Meeting Friday, March 14
7:00 - 11:30 AM
Hilton Riverside
Grand Ballroom A

State Orthopaedic Societies Committee Friday, March 14
1:30 - 3:30 PM
Hilton Riverside
Versailles Ballroom

Board of Specialty Societies
Communications Committee Thursday, March 13
6:00 - 8:00 AM
Hilton Riverside
Jasperwood

Education Committee Thursday, March 13
6:00 - 8:00 AM
Hilton Riverside
Rosedown

Fellowship Match Oversight Committee Thursday, March 13
6:00 - 8:00 AM
Hilton Riverside
Marlborough

Health Policy Committee Thursday, March 13
6:00 - 8:00 AM
Hilton Riverside
Oak Alley

Research Committee Thursday, March 13
6:00 - 8:00 AM
Hilton Riverside
Belle Chasse

Business Meeting Friday, March 14
6:00 - 8:00 AM
Hilton Riverside
Grand Ballroom B

Candidate, Resident and Fellow Committee
Breakfast Meeting Thursday, March 13
6:30 - 8:30 AM
Morial Convention Center
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<td>Thursday, March 13 12:00 - 1:30 PM</td>
<td>Morial Convention Center Room 214</td>
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<tr>
<td><strong>Central Instructional Course Committee</strong></td>
<td>Saturday, March 15 11:30 AM - 1:00 PM</td>
<td>Morial Convention Center Room 278</td>
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<td><strong>Communications Cabinet</strong></td>
<td>Thursday, March 13 2:00 - 4:00 PM</td>
<td>Hilton Riverside Jefferson</td>
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<td><strong>Evaluation Committees (OSIE)</strong></td>
<td>Friday, March 14 12:00 PM - 1:30 PM</td>
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<td><strong>Evaluation Leadership</strong></td>
<td>Wednesday, March 12 11:30 AM - 12:30 PM</td>
<td>Hilton Riverside Grand Salon 21 &amp; 24</td>
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<td>Wednesday, March 12 1:00 - 4:00 PM</td>
<td>Hilton Riverside Grand Salon 21 &amp; 24</td>
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<td><strong>Exhibits Committee</strong></td>
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<td>Morial Convention Center Room 278</td>
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<td>Wednesday, March 12 6:30 - 9:00 AM</td>
<td>Morial Convention Center Room 278</td>
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<td><strong>Health Care Systems Committee</strong></td>
<td>Thursday, March 13 10:00 AM - 12:00 PM</td>
<td>Morial Convention Center Room 274</td>
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<td><strong>International Committee</strong></td>
<td>Thursday, March 13 12:00 - 2:30 PM</td>
<td>Morial Convention Center Room 224</td>
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<td><strong>International President’s Breakfast and World Opinion Forum</strong></td>
<td>Wednesday, March 12 6:30 - 9:30 AM</td>
<td>Morial Convention Center Great Hall B</td>
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<td><strong>JAAOS Deputy Editors</strong></td>
<td>Friday, March 14 7:00 - 8:00 AM</td>
<td>Morial Convention Center Room 223</td>
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<td><strong>Leadership Development Committee</strong></td>
<td>Friday, March 14 12:00 - 2:00 PM</td>
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<td><strong>Leadership Fellows Program</strong></td>
<td>Friday, March 14 6:00 - 8:00 AM</td>
<td>Hilton Riverside Grand Salon 15 &amp; 18</td>
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<td><strong>Medical Liability Committee</strong></td>
<td>Wednesday, March 12 1:30 - 3:30 PM</td>
<td>Morial Convention Center Room 223</td>
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AAOS Committee Meetings

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Thursday, March 13
7:00 AM - 9:00 AM
Morial Convention Center
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Patient Safety Committee
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Wednesday, March 12
6:00 AM - 8:00 AM
Morial Convention Center
Room 220

Periodicals
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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

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<tbody>
<tr>
<td>Astor Crowne Plaza</td>
<td>739 Canal at Bourbon Street</td>
<td>(504) 962-0500</td>
</tr>
<tr>
<td>New Orleans Marriott</td>
<td>555 Canal Street</td>
<td>(504) 581-1000</td>
</tr>
<tr>
<td>Harrah’s</td>
<td>228 Poydras Street</td>
<td>(504) 533-6000</td>
</tr>
<tr>
<td>New Orleans Marriott</td>
<td>500 Canal Street</td>
<td>(504) 525-2500</td>
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<td>(504) 524-1881</td>
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<td>444 St. Charles Avenue</td>
<td>(504) 525-5566</td>
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<tr>
<td>Loews</td>
<td>300 Poydras &amp; S. Peters Street</td>
<td>(504) 595-3300</td>
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Photo courtesy of Jen Amato, New Orleans Convention & Visitors Bureau

© 2014 American Academy of Orthopaedic Surgeons
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<tr>
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<td>Breakfast and Lunch</td>
<td>Thursday, March 13</td>
<td>6:00 AM - 2:00 PM</td>
<td>New Orleans Marriott Mardi Gras A-C</td>
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<tr>
<td><strong>Association of Veteran’s Administration Orthopaedic Surgeons</strong></td>
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<tr>
<td>Focus Group</td>
<td>Thursday, March 13</td>
<td>12:00 - 3:00 PM</td>
<td>Astor Crowne Plaza</td>
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<tr>
<td><strong>Balboa Orthopaedics Navy Alumni Association</strong></td>
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<tr>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>7:00 - 9:00 PM</td>
<td>Westin Canal Place Magnolia II</td>
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<tr>
<td><strong>Beaumont Health System</strong></td>
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<tr>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 9:00 PM</td>
<td>Royal Sonesta Hotel, Regal Suite 300 Bourbon Street</td>
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<tr>
<td><strong>Boston University Orthopaedic Surgical Associates</strong></td>
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<tr>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 9:00 PM</td>
<td>Windsor Court Gallery C</td>
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<tr>
<td><strong>Brown/Rhode Island Hospital</strong></td>
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<tr>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 9:00 PM</td>
<td>Ritz Carlton Mercier</td>
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<tr>
<td><strong>California Orthopaedic Association</strong></td>
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<tr>
<td>Board of Directors Meeting</td>
<td>Thursday, March 13</td>
<td>6:30 - 10:00 AM</td>
<td>New Orleans Marriott at the Convention Center River Bend Ballroom I 859 Convention Center Blvd</td>
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<tr>
<td><strong>Canadian Orthopaedic Association</strong></td>
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<tr>
<td>Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 9:00 PM</td>
<td>Harrah's Vieux Carre Ballroom</td>
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<tr>
<td>Event</td>
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<tr>
<td><strong>Cincinnati Sports Medicine and Orthopaedic Center</strong></td>
<td>Alumni Reception: Thursday, March 13, 6:00 - 9:00 PM, Westin Canal Plimsoll Club</td>
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<tr>
<td><strong>Cleveland Clinic</strong></td>
<td>Alumni Reception: Friday, March 14, 6:00 - 8:00 PM, Harrah's Fulton Street I-II</td>
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<tr>
<td><strong>Drexel University College of Medicine</strong></td>
<td>Alumni Reception: Thursday, March 13, 6:00 - 7:30 PM, New Orleans Marriott Galvez</td>
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<tr>
<td><strong>Emory Orthopaedics - Kelly Society</strong></td>
<td>Alumni Reception: Friday, March 14, 6:00 - 8:00 PM, Astor Crowne Plaza Toulouse B</td>
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<tr>
<td><strong>Federation of Spine Associations (FOSA)</strong></td>
<td>Executive Board Meeting: Saturday, March 15, 11:30 AM - 1:30 PM, Morial Convention Center Room 349</td>
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<tr>
<td><strong>Florida Orthopaedic Society</strong></td>
<td>Board of Directors Meeting: Thursday, March 13, 3:00 - 5:00 PM, New Orleans Marriott Regent</td>
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<tr>
<td><strong>Foot Club</strong></td>
<td>Luncheon: Saturday, March 15, 12:00 - 1:30 PM, Hyatt Place New Orleans Meeting Place 1 &amp; 2</td>
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<tr>
<td><strong>Freiberg Society</strong></td>
<td>Reception: Thursday, March 13, 6:30 - 9:00 PM, Hyatt Place New Orleans Meeting Place 2</td>
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<tr>
<td><strong>George Washington University</strong></td>
<td>Alumni Reception: Friday, March 14, 6:30 - 8:30 PM, Westin Canal Place Executive Room</td>
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<tr>
<td><strong>Georgetown Alumni</strong></td>
<td>Reception: Friday, March 14, 6:00 - 8:00 PM, Hyatt Place New Orleans Meeting Place 1 &amp; 2</td>
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<tr>
<td><strong>Harvard Orthopaedic Residency Alumni</strong></td>
<td>Reception: Friday, March 14, 6:00 - 8:00 PM, Windsor Court La Chinoiserie B</td>
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<tr>
<td><strong>Henry Ford Hospital</strong></td>
<td>Alumni Reception: Friday, March 14, 6:00 - 8:00 PM, Arnaud's Restaurant, Count's Ballroom 813 Rue Bienville</td>
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<tr>
<td><strong>Hip Society</strong></td>
<td>Board of Directors Meeting: Thursday, March 13, 6:00 - 8:00 AM, Morial Convention Center Room 224</td>
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<tr>
<td><strong>Hospital for Special Surgery</strong></td>
<td>Alumni Hospitality Suite: Thursday, March 13, 11:00 AM - 2:00 PM, Hampton Inn &amp; Suites Convention Center Fulton - 2nd Floor</td>
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<tr>
<td><strong>Hughston Society</strong></td>
<td>Alumni Reception: Friday, March 14, 6:00 - 8:00 PM, The Pelican Club 312 Exchange Place</td>
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<tr>
<td><strong>ICRS Executive &amp; General Board</strong></td>
<td>Meeting: Friday, March 14, 12:00 - 7:00 PM, Harrah's Satchmo Room</td>
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<tr>
<td><strong>Indiana University</strong></td>
<td><strong>International Geriatric Fracture Society</strong></td>
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<tr>
<td><strong>Alumni &amp; Friends Reception</strong></td>
<td><strong>Breakfast</strong></td>
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<tr>
<td>Thursday, March 13</td>
<td>Friday, March 14</td>
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<td>6:00 - 8:00 PM</td>
<td>7:30 - 9:00 AM</td>
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<tr>
<td>Renaissance Arts Lobby Art Gallery 700 Tchoupitoulas Street</td>
<td>New Orleans Marriott Bonaparte</td>
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<tr>
<th><strong>International Society for Technology in Arthroplasty (ISTA)</strong></th>
<th><strong>Medical Student Networking Reception</strong></th>
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<tbody>
<tr>
<td><strong>Board of Directors Meeting</strong></td>
<td><strong>Thursday, March 13</strong></td>
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<tr>
<td>Wednesday, March 12</td>
<td>6:00 - 7:30 PM</td>
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<tr>
<td>4:00 - 8:00 PM</td>
<td>Hilton Riverside</td>
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<tr>
<td>Hyatt Place New Orleans Meeting Place 2</td>
<td>Grand Salon 15 &amp; 18</td>
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<tr>
<th><strong>International Society of Arthroplasty Registries (ISAR)</strong></th>
<th><strong>Trilogy Breakfast</strong></th>
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<tr>
<td><strong>Meeting</strong></td>
<td><strong>Friday, March 14</strong></td>
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<tr>
<td>Thursday, March 13</td>
<td>9:00 - 10:30 AM</td>
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<tr>
<td>4:00 - 7:00 PM</td>
<td>Hilton Riverside</td>
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<tr>
<td>Sheraton New Orleans Nottoway</td>
<td>Grand Salon 21 &amp; 24</td>
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<tr>
<th><strong>Iranian-American Orthopedic Association</strong></th>
<th><strong>Knee Society</strong></th>
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<tr>
<td><strong>Alumni Meeting</strong></td>
<td><strong>Executive Board Meeting</strong></td>
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<tr>
<td>Thursday, March 13</td>
<td>Friday, March 14</td>
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<tr>
<td>7:00 - 9:00 PM</td>
<td>6:00 - 8:00 AM</td>
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<tr>
<td>Bourbon House 144 Bourbon Street</td>
<td>Morial Convention Center Room 224</td>
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<td>Please call or text (914)393-3906 to confirm</td>
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<tr>
<th><strong>Irish American Orthopaedic Society (IAOS)</strong></th>
<th><strong>Lake Tahoe Sports Medicine Fellowship</strong></th>
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<tbody>
<tr>
<td><strong>Reception</strong></td>
<td><strong>Alumni Reception</strong></td>
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<tr>
<td>Friday, March 14</td>
<td>Friday, March 14</td>
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<td>6:00 - 9:00 PM</td>
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<tr>
<td>New Orleans Marriott Balcony N</td>
<td>InterContinental Hotel New Orleans Oak</td>
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<tr>
<th><strong>J. Robert Gladden Orthopaedic Society (JRGOS)</strong></th>
<th><strong>Lenox Hill Hospital</strong></th>
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<tbody>
<tr>
<td><strong>Board of Directors Meeting</strong></td>
<td><strong>Alumni and Staff Reception</strong></td>
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<tr>
<td>Thursday, March 13</td>
<td>Thursday, March 13</td>
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<tr>
<td>6:00 - 10:00 AM</td>
<td>6:00 - 8:00 PM</td>
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<tr>
<td>Hilton Riverside Grand Salon 19 &amp; 22</td>
<td>Hyatt Place New Orleans Atrium Dining Room</td>
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<tr>
<th><strong>Annual Luncheon</strong></th>
<th><strong>Long Island Jewish Medical Center Alumni</strong></th>
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<tbody>
<tr>
<td>Thursday, March 13</td>
<td><strong>Cocktail Reception</strong></td>
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<tr>
<td>1:00 - 3:00 PM</td>
<td>Friday, March 14</td>
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<tr>
<td>Hilton Riverside Grand Ballroom D</td>
<td>6:00 - 7:30 PM</td>
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<tr>
<td>Westin Canal Place River Room</td>
<td>Astor Crowne Plaza Grand Ballroom A-B</td>
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<tr>
<th><strong>Medical Student Symposium Workshop</strong></th>
<th><strong>Louisiana State University – New Orleans</strong></th>
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<tr>
<td>Thursday, March 13</td>
<td><strong>Alumni Reception</strong></td>
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<tr>
<td>3:30 - 5:30 PM</td>
<td>Thursday, March 13</td>
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<tr>
<td>Hilton Riverside Grand Salon 21 &amp; 24</td>
<td>6:30 - 8:30 PM</td>
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<tr>
<td>Galatoire’s Restaurant 209 Bourbon Street Wine Room</td>
<td>Astor Crowne Plaza Grand Ballroom A</td>
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<tr>
<th><strong>Loma Linda University</strong></th>
<th><strong>Loyola University Medical Center – Sofield Alumni</strong></th>
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<tbody>
<tr>
<td><strong>Reception</strong></td>
<td><strong>Alumni Reception</strong></td>
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<tr>
<td>Thursday, March 13</td>
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<td>6:00 - 8:30 PM</td>
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<tr>
<td>Hyatt Place New Orleans Atrium Dining Room</td>
<td>Astor Crowne Plaza Grand Ballroom A</td>
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<tr>
<th><strong>LSU Health Sciences Center Shreveport</strong></th>
<th><strong>LSU Health Sciences Center Shreveport</strong></th>
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<tr>
<td><strong>Alumni Reception</strong></td>
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<td>6:00 - 8:00 PM</td>
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<td>Galatoire’s Restaurant 209 Bourbon Street Wine Room</td>
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<tr>
<td><strong>Mayo Clinic - Orthopedics</strong></td>
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<tr>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
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<tr>
<td><strong>Medical College of Virginia</strong></td>
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<tr>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
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<tr>
<td><strong>Medical College of Wisconsin</strong></td>
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<tr>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
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<tr>
<td><strong>Medical University of South Carolina</strong></td>
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<tr>
<td>2014 Annual Alumni Reception</td>
<td>Friday, March 14</td>
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<tr>
<td><strong>Meniscus Transplantation Study Group</strong></td>
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<tr>
<td>Annual Meeting</td>
<td>Thursday, March 13</td>
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<tr>
<td><strong>Mid-America Orthopaedic Association</strong></td>
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<td>Finance Committee</td>
<td>Friday, March 14</td>
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<td>Board of Directors</td>
<td>Friday, March 14</td>
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<tr>
<td><strong>Mount Sinai Orthopaedics</strong></td>
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<td>Alumni Reception</td>
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<tr>
<td><strong>New York Medical College</strong></td>
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<td>Alumni Reception</td>
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<tr>
<td><strong>Northwestern University Orthopaedic Alumni</strong></td>
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<td>Reception</td>
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<td><strong>NYOH Alumni Association/Columbia Orthopaedics</strong></td>
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<td>Cocktail Reception</td>
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<td><strong>NYU Hospital for Joint Diseases</strong></td>
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<td>Alumni Reunion</td>
<td>Friday, March 14</td>
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<tr>
<td><strong>Orthopaedic Laser Society of North America</strong></td>
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<td>Annual Meeting</td>
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<tr>
<td><strong>Orthopaedic Trauma Association (OTA)</strong></td>
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<tr>
<td>Military Committee</td>
<td>Wednesday, March 12</td>
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<td>Classification &amp; Outcomes Committee</td>
<td>Wednesday, March 12</td>
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<td>Research Committee</td>
<td>Wednesday, March 12</td>
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<td>Think Tank</td>
<td>Wednesday, March 12</td>
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<td>Education Committee</td>
<td>Wednesday, March 12</td>
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<tr>
<td>Meeting</td>
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<td>Evidence Based Value, Quality &amp; Safety</td>
<td>Wednesday, March 12</td>
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<tr>
<td>Committee Meeting</td>
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<td>Online Project Team Meeting</td>
<td>Wednesday, March 12</td>
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<td>Board of Directors Meeting</td>
<td>Wednesday, March 12</td>
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<tr>
<td>Membership Committee Meeting</td>
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<td>Fellowship Committee Meeting</td>
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<tr>
<td>COTA Meeting</td>
<td>Thursday, March 13</td>
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<tr>
<td>Fellowship Directors Meeting</td>
<td>Thursday, March 13</td>
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<td>HWB Meeting</td>
<td>Thursday, March 13</td>
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<td>Fund Development Committee Meeting</td>
<td>Thursday, March 13</td>
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<td>Public Relations Committee Meeting</td>
<td>Thursday, March 13</td>
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<td>Disaster Management Committee Meeting</td>
<td>Thursday, March 13</td>
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<td>COT Meeting</td>
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<td>Practice Management Committee Meeting</td>
<td>Thursday, March 13</td>
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<td>International Relations Committee Meeting</td>
<td>Friday, March 14</td>
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<td>Humanitarian Committee Meeting</td>
<td>Friday, March 14</td>
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<tr>
<td>Health Policy</td>
<td>Friday, March 14</td>
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<tr>
<td>Orthopaedics Overseas Annual Luncheon</td>
<td>Friday, March 14</td>
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<tr>
<td>Pediatric Orthopaedic Society of North America (POSNA) Board of Directors Meeting</td>
<td>Wednesday, March 12</td>
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<tr>
<td>Penn State Hershey Bone and Joint Institute Alumni &amp; Friends Reception</td>
<td>Friday, March 14</td>
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<tr>
<td>Piedmont Orthopedic Society Mid-Winter Meeting</td>
<td>Friday, March 14</td>
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<tr>
<td>Rush Affiliated Network Orthopaedic Residency Program Alumni Social</td>
<td>Friday, March 14</td>
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<tr>
<td>Rutgers Robert Wood Johnson Medical School Alumni Reception</td>
<td>Friday, March 14</td>
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<tr>
<td>Ruth Jackson Orthopaedic Society (RJOS) Board Meeting</td>
<td>Tuesday, March 11</td>
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<tr>
<td>2014 Annual Meeting</td>
<td>Tuesday, March 11</td>
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<tr>
<td>2014 Breakfast Business Meeting</td>
<td>Wednesday, March 12</td>
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</table>
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

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

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<table>
<thead>
<tr>
<th>University</th>
<th>Event Type</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Union Memorial Hospital</td>
<td>Alumni Reunion</td>
<td>Thursday, March 13</td>
<td>6:00 - 8:00 PM</td>
<td>New Orleans Marriott Iberville</td>
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<tr>
<td>University at Buffalo</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:30 - 8:30 PM</td>
<td>New Orleans Marriott Balcony K</td>
</tr>
<tr>
<td>University of Alabama at Birmingham</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 8:30 PM</td>
<td>Ritz-Carlton The Library Lounge</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>Alumni Dinner</td>
<td>Thursday, March 13</td>
<td>7:00 - 10:00 PM</td>
<td>The House of Blues 225 Decatur Street</td>
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<tr>
<td>University of California - San Francisco</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 9:00 PM</td>
<td>Antoine's Restaurant 713 Rue St. Louis Street</td>
</tr>
<tr>
<td>University of Chicago</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:30 - 8:30 PM</td>
<td>Inter-Continental Hotel New Orleans Magnolia</td>
</tr>
<tr>
<td>University of Florida - Alumni, Friends and Family</td>
<td>Reception</td>
<td>Thursday, March 13</td>
<td>6:30 - 9:30 PM</td>
<td>Pat O'Brien's, 624 Bourbon Street Briars Suite</td>
</tr>
<tr>
<td>University of Iowa</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 8:00 PM</td>
<td>Windsor Court Gallery</td>
</tr>
<tr>
<td>University of Kansas</td>
<td>Alumni Dinner</td>
<td>Thursday, March 13</td>
<td>6:30 - 10:00 PM</td>
<td>Red Fish Grill, 115 Bourbon Street Lake Room</td>
</tr>
<tr>
<td>University of Kansas - Wichita</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:30 - 8:30 PM</td>
<td>New Orleans Marriott Audubon</td>
</tr>
<tr>
<td>University of Louisville</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 8:00 PM</td>
<td>Courtyard New Orleans/Convention Center 300 Julia Street Meeting Room A</td>
</tr>
<tr>
<td>University of Maryland</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>7:00 - 10:00 PM</td>
<td>W New Orleans Studio 2</td>
</tr>
<tr>
<td>University of Massachusetts</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 9:00 PM</td>
<td>Harrah's Salon 1</td>
</tr>
<tr>
<td>University of Miami</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 8:00 PM</td>
<td>Sheraton New Orleans Edgewood</td>
</tr>
<tr>
<td>University of Minnesota</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 8:00 PM</td>
<td>Loews New Orleans St. Landry</td>
</tr>
<tr>
<td>University of Missouri Orthopedic Association</td>
<td>Annual Reception</td>
<td>Thursday, March 13</td>
<td>6:30 - 8:30 PM</td>
<td>New Orleans Marriott Beauregard</td>
</tr>
<tr>
<td>University of North Carolina</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 9:00 PM</td>
<td>Mulate's Party Hall 201 Julia Street</td>
</tr>
<tr>
<td>University of Pennsylvania</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 9:00 PM</td>
<td>Windsor Court Board Room</td>
</tr>
<tr>
<td>University of Rochester</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>7:00 - 10:00 PM</td>
<td>Loews New Orleans</td>
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</tr>
<tr>
<td>University of Southern California - Graduate Orthopaedic Society (SOGOS)</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 9:00 PM</td>
<td>Arnaud’s Restaurant</td>
</tr>
<tr>
<td>University of Texas</td>
<td>Alumni Reception</td>
<td>Wednesday, March 12</td>
<td>6:00 - 8:30 PM</td>
<td>Ritz-Carlton</td>
</tr>
<tr>
<td>University of Toronto</td>
<td>Alumni Reception</td>
<td>Wednesday, March 12</td>
<td>7:00 - 10:00 PM</td>
<td>Astor Crowne Plaza</td>
</tr>
<tr>
<td>University of Utah</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 8:30 PM</td>
<td>Arnaud’s</td>
</tr>
<tr>
<td>University of Virginia</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:30 - 8:30 PM</td>
<td>Astor Crowne Plaza</td>
</tr>
<tr>
<td>University of Wisconsin</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 8:00 PM</td>
<td>W Hotel New Orleans</td>
</tr>
<tr>
<td>Vanderbilt Orthopaedic Society</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:30 - 9:00 PM</td>
<td>New Orleans Marriott</td>
</tr>
<tr>
<td>Washington University - J. Albert Key Society</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:30 - 8:30 PM</td>
<td>Ritz Carlton</td>
</tr>
<tr>
<td>Washington University - Fox Pediatric</td>
<td>Semi-Annual Meeting</td>
<td>Tuesday, March 11</td>
<td>4:00 - 6:00 PM</td>
<td>Harrah’s New Orleans</td>
</tr>
<tr>
<td>Wayne State University School of Medicine Orthopaedic Surgery</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 10:00 PM</td>
<td>New Orleans Marriott</td>
</tr>
<tr>
<td>West Virginia University</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:00 - 7:30 PM</td>
<td>Sheraton New Orleans</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>Alumni Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 8:00 PM</td>
<td>New Orleans Marriott</td>
</tr>
<tr>
<td>Willis C. Campbell Club</td>
<td>Alumni Reception</td>
<td>Friday, March 14</td>
<td>6:30 - 8:30 PM</td>
<td>Hilton Riverside New Orleans</td>
</tr>
<tr>
<td>Yale Orthopedic Association</td>
<td>Reception</td>
<td>Thursday, March 13</td>
<td>6:00 - 8:00 PM</td>
<td>New Orleans Marriott</td>
</tr>
</tbody>
</table>
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Troy Michael Gorman, MD
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<td>Kenneth R. Duff, MD</td>
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<td>Richard M. Fry, MD</td>
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<td>Gregory John Fulchiero, MD</td>
<td>7/7/13</td>
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<td>William B. Moore, MD</td>
<td>2012</td>
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<tr>
<td>William R. Fuqua, MD</td>
<td>8/30/12</td>
<td>Owensboro, KY</td>
<td>Page W. Nelson, MD</td>
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<tr>
<td>William H. Newman, MD</td>
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<td>Chicago, IL</td>
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<tr>
<td>Harold H. Niekamp, MD</td>
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<td>Houghton Lake, MI</td>
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<td>Jay Nogi, MD</td>
<td>3/21/13</td>
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<td>Fridtjof E. Nussbaumer, MD</td>
<td>12/10/12</td>
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<td>Calvin M. Oba, MD</td>
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<td>Maurice F. Perl, MD</td>
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<td>Lewis A. Yocum, MD</td>
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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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