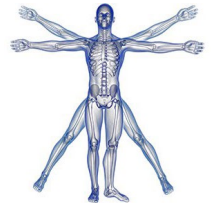




Physiology News



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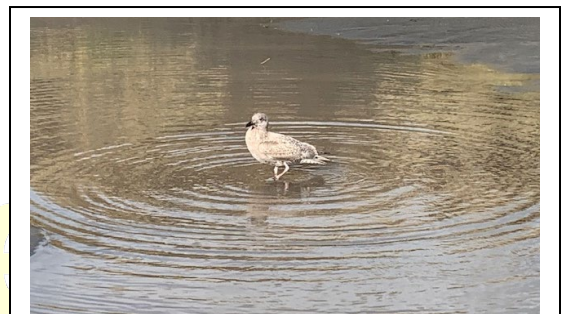
A Message from the Chair

Patricia Molina, MD, PhD

An end-of-year message:

And just like that, 2021 comes to an end and we prepare to welcome 2022. Oh, what a year it has been! Who would have predicted how successful we would be in overcoming the challenges that came our way? And if you have not already done so, I invite you to do an inventory of all your achievements and accomplishments during 2021. While doing so, I invite you to do a whole mind and body scan and check to see if it was because you were stronger, wiser, and smarter than before. I do not anticipate the answer will be positive for all of you in all three categories, and that is ok. It only highlights the fact that much of what we were able to accomplish last year was because we believed we could, we supported each other, and encouraged each other when some of us felt our load was too much. Personally, I am grateful of the support so many of you gave me. Because of you, I knew no challenge was unsurmountable. Because of your support, I found the inspiration to find ways to provide you with constant reassurance that we would be ok.

As we prepare to remove ourselves from the workplace and redirect our attention to our friends and families, keep in mind that we are all part of an extended family. That the safety network we have worked to build will only remain strong if each and every one of us commits to a common goal. That even when you think you are alone (like the bird in the picture), your actions have a ripple effect that impacts others you may not even think of!



Lonely bird at Lewis & Clark National Historic Park, Oregon Coast.

As we look to welcoming the new year, I invite you to reenergize your approach, to have faith that all will be ok, to believe in your strengths, and to gather the courage to face the challenges 2022 might bring. I am grateful and fiercely proud of being a member of the Physiology Team.

I wish you and your families, health, love, joy, and peace this Holiday Season.

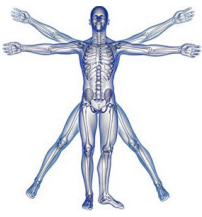
Sincerely,

Patricia

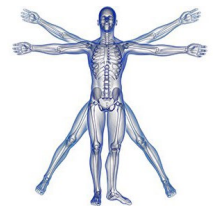
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Editor: Danielle Levitt, PhD



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Featured story:

Eat Healthfully and Have Your King Cake, Too!

By: Lauri O. Byerly, RDN, LDN, PhD

Happy 2022! I hope you had a fun holiday season that included lots of special holiday foods. I love this time of year, and I let myself indulge. I have at least one cookie every night, but I try to avoid being the one that empties the cookie pot. Huh! My family has a few cookie recipes that only appear at this time of the year. How about you? And now we roll into Mardi Gras season with wonderful King cakes. Got a favorite? I have to admit, I love the taste, and they go down so easy, but I never feel satisfied after eating all the sugar and fat. Then I feel guilty for eating too many empty calories! Depressing.

What to do? First, I remind myself that food digressions such as eating all these sweets are okay, but not all the time, and I need to get back on track. I like to examine what got me off track. Sometimes I can figure it out, and other times, I cannot. In either case, I look inward and examine my feelings and their connections to food. I know I feel best when my diet is filled with oatmeal, quinoa, lentils, black beans, amaranth, millet, bran flakes, broccoli, carrots, spinach, sweet potatoes, sugar snap peas, strawberries, pineapple, blueberry, mangos, etc., etc., etc. You get the picture. It is plant foods, a colorful plate that is 3/4ths plant foods, that gives me a sense of feeling good. Perhaps there is a physiological explanation for this too. Recent scientific evidence has associated the microbes in our gut with the nerves in our brain (1). As physiologists, you know our gut has more nerves than any other organ in our body. You also know there are more microbe cells in our gut than cells in our body (1). Weird. Our gut is a mini power generator that may send signals via those nerves to our brain. Research is still ongoing to uncover the mechanism (2). The growth of certain bacteria in our gut has been correlated to our moods like depression (3). What we eat gives the microbes in our gut a source of fuel, and, in exchange, these tiny creatures make substances, like short-chain fatty acids, vitamins, and amino acids, that our body uses (4). You can cultivate the growth of certain bacteria by eating different foods. Fiber-rich foods, like fruits, vegetables, and whole grains, promote the growth of healthy bacteria (5). The cookies, candy, and other salt, fat, and sugar-rich foods don't promote the growth of the healthy gut bacteria that can help us avoid mood shifts (6). Fruits, vegetables, and whole grains (plant foods) also provide us with polyphenols which are powerful antioxidants and anti-inflammatory agents (4).

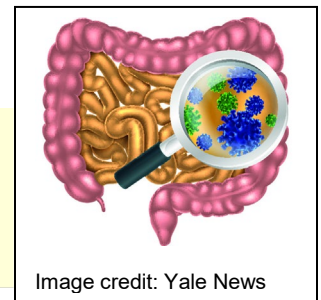


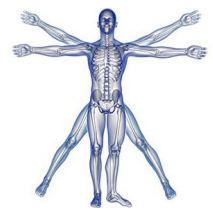
Image credit: Yale News

So, when those sweets and fat-rich foods get you down, think about eating fruits, vegetables, or whole-grain foods, a colorful plate 3/4th full of plant foods that will cultivate the growth of bacteria that send good vibes to your brain. Here are a few suggestions to help you incorporate more plant foods into your diet:

- Make your plate **colorful** - try for at least three different colors and go for the rainbow! Try to do this for most of your meals.
- Try to eat at least 30 different **plant foods** every week. A greater variety of plant foods in our diet has been associated with greater gut microbial diversity (6-8).
- Make $\frac{3}{4}$ of your plate plant foods and $\frac{1}{4}$ from animal sources.
- Check out [Choose My Plate](#). Enter your height and weight and find the plan for you. This plan can be incorporated into the DASH diet, Flexitarian diet, and Mediterranean diet. It gives you an easy, quick way to make sure you incorporate enough plant foods.
- Try the [DASH diet](#) or [Flexitarian diet](#)
- Go for the [Mediterranean lifestyle and diet](#) but avoid the alcohol. It's a depressant.



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Recognition

Taylor Templeton and **Anna Whitehead** received the Graduate Research Day Presenter Award from the LSUHSC School of Graduate Studies. (pictured, right).



Eden Gallegos was selected as the 1st place winner for the Medical Student Research Symposium and was honored with the \$1500 Mitzie Hano Wittliff Research Award.



Taylor Templeton received the Michael G. Levitzky, PhD Excellence in Teaching Award from the LSUHSC Department of Physiology. (pictured, left).

Taylor Templeton and **Jessi Cucinello-Ragland** received Trainee Professional Development Awards from the Society for Neuroscience to present virtual posters at the annual conference.

Dr. Danielle Levitt was selected for the AWIS Outstanding Young Scientist Travel Award for Fall 2021. (pictured, right). She also accepted a tenure-track faculty position at Texas Tech University beginning in fall 2022.



Kelly Lozano Ortiz was selected for the ABRCMS 2021 Presentation Award in the Immunology discipline.

Dr. Lisa Harrison-Bernard was recognized as an APS Star Reviewer for *Advances in Physiology Education*.

Dr. Steve Nelson was appointed Interim Chancellor of LSU Health New Orleans.

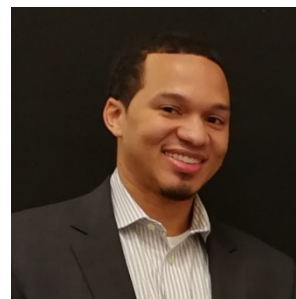
Dr. Tekeda Ferguson was appointed Program Director for Epidemiology in the School of Public Health.

Dr. Elizabeth Avegno won the ACNP travel award & ESBRA Young Investigator Symposium travel award.

Dr. Marcus Weera won the NIDA-NIAAA Early Career Investigator Showcase Award.

Dr. Patricia Molina was selected as an American Heart Association and Entergy "Women in STEM" Honoree.

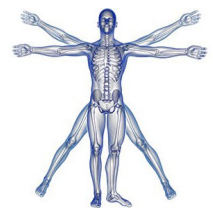
New Faces



Dr. Marcus Brown received his bachelor's degree in Mechanical Engineering from the University of Illinois and master's degree in Mechanical Engineering from Purdue University. He



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then worked as a Systems Engineer for a medical device company, Nanosphere Inc., for a few years before returning to academia to earn his Ph.D. in Biomedical Engineering at the University of Oklahoma in 2021. He is currently a postdoctoral fellow in the Drs. Jennifer Lentz's and **Nicholas Gilpin's** labs where he investigates the effects of alcohol use on hearing loss due to traumatic brain injury and noise exposure.

Quintrelé Jones received her Bachelor of Science degree in Psychology from Louisiana State University in 2020. She previously worked as a contact tracer for LSUHSC during the 2020 pandemic, and is now working with us as a student researcher in the Comprehensive Alcohol HIV/AIDS Center.



Dr. Jennifer Simkin received her doctoral degree in developmental biology from Tulane University and completed a postdoctoral fellowship at University of Kentucky in the Department of Biology. She recently

joined the department as an adjunct faculty member. Her research centers on regeneration of bone, cartilage, muscle and skin and combines clinical studies in Orthopedics with animal models of tissue regeneration.

Graduate Student Milestones

Jonquil Poret successfully completed her Preliminary Exam!

Grants

"Neuropeptide modulation promotes tissue regeneration over fibrosis". CDMRP DoD Peer Reviewed Orthopedic Program. PI: **Dr. Jennifer Simkin**.

Publications

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Vielle, C, **Montanari, C**, Pelloux, Y, and Baunez, C (2021). Evidence for a vocal signature in the rat and its reinforcing effects; a key role for the subthalamic nucleus. *Proc Biol Sci*. 288(1965): 20212260. PMID: 34905707. DOI: 10.1098/rspb.2021.2260.

Presentations

Kelly Lozano Ortiz presented an e-poster titled “Tissue senescence cell accumulation and viral loads in SIV-infected female rhesus macaques” at the ABRCMS conference in November, 2021.

Taylor Templeton presented a virtual 8-minute talk, “Stress-induced cocaine self-administration in male and female rats” at Grad Research Day LSUHSC; a virtual poster, “Predator odor stress effects on cocaine self-administration in adult male and female Wistar rats” at the Society for Neuroscience annual conference; a virtual 15-minute talk, “Predator odor stress effects on cocaine self-administration in adult male and female Wistar rats” at the ADACE

Winter Retreat; and an SGA Socratic seminar, “Disabilities in graduate school: Disparities on the path to higher education” (pictured, above).



Dr. Elizabeth Avegno presented a talk at the European Society for Biomedical Research on Alcoholism (ESBRA) meeting, “Engagement of brain stress-reward systems in alcohol-dependent mice and rats” and a poster at the American College of Neuropsychopharmacology (ACNP) meeting, “Alcohol dependence activates ventral tegmental area-central amygdala circuitry in mice and rats”.

Dr. Marcus Weera presented a virtual talk, “Neurocircuitry of stress-induced alterations in alcohol-related behaviors” at the NIDA-NIAAA Frontiers on Addiction Research Symposium 2021.

Dr. Liz Simon presented a talk titled “Alcohol-mediated metabolic dysregulation: Epigenomic adaptations” at the Alcohol Immunology Research Interest Group (AIRIG) meeting in November.

Jessi Cucinello-Ragland presented a talk titled “Alcohol amplifies neuroinflammatory IL-6 pathway signaling in the pre-frontal cortex” at the AIRIG meeting in November.

Dr. Danielle Levitt presented a virtual career talk for the Fall 2021 Girls in STEM event at Berkner High School in November.

Dr. Patricia Molina served as a panelist and gave a talk as part of the Mentorship Panel for the National Hispanic Science Network (NHSN) Early Career Leadership Committee (ECLC) December.

Professional Service

Dr. Nick Gilpin became a standing member of the V.A. Neurobiology A (NURA) Grant Review Committee; standing member (2021-2025).

Dr. Elizabeth Avegno served as a Graduate Student Research Day & medical student research virtual symposium judge.

Dr. Danielle Levitt was invited to serve on the APS Endocrinology & Metabolism Section Award Subcommittee.

Notable Events

Bre's Quaranteam secured this year's Mental Hygienists Fantasy Football league championship!



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Also congrats to **Dr. Amada Pahng** and Willard's Wistars for a close second and possible national championship to boot.

Brianna Bourgeois got married on Oct. 23, 2021. (pictured, below).



PREP Scholars collected donations to assemble Health Bags for the homeless adults and children. Donations were made to the Catholic Charities. (pictured, below).



The winners of the 2021 Door Decorating Contest were the Physiology Graduate Students with 16 votes, and honorable mention went to the PREP Scholars. (pictured, below).



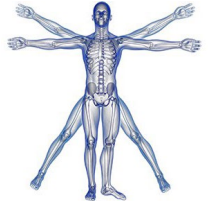
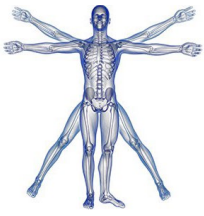
Jessi Cucinello-Ragland and their partner, Justin, are excited to announce the upcoming arrival of their rainbow baby in May. (pictured, below).



The Association for Women in Science collected Angel Tree donations for families and older individuals in need, spearheaded by **Dr. Liz Simon**. (pictured, right).



Gilpin Lab and colleagues celebrated the holidays at the bowling alley. (pictured, left).



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Four telescopes were recently used to measure the motion of stars orbiting Sagittarius A*, the supermassive black hole at the center of the Milky Way galaxy. This approach, called interferometry, allowed for a much higher-resolution “look” at the black hole by improving measurements of the stars’ motion (by about 20x) and detection of stars that aren’t visible with a single telescope. These techniques are used to test the theory of general relativity (Einstein), and so far, general relativity is still upheld!

Read more about it here: [We've seen our galaxy's huge black hole more clearly than ever before](#)



LSU Health