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MISSOURI PHYSIOLOGICAL SOCIETY
An independent chapter of APS

Quarterly mophys newsletter

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mophys annual meeting September 30th, 2023 in St. Louis



Registration and abstract submission will open on August 15th!

Visit the [mophys website](#) for more detailed information.

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Keynote from John Thyfault at mophys 2023



We are excited to announce Dr. John Thyfault as the keynote speaker of the mophys 2023 meeting! Dr. Thyfault advances research in metabolism and exercise physiology as a Professor at the University of Kansas Medical Center and Scientist at Kansas City VA Medical Center-Research Service, besides his appointments

as the Director of KU Diabetes Institute, Co-director of the Kansas Center for Metabolism and Obesity Research, and Scientific Director in the Children's Mercy Hospital. Using clinical and translational approaches, Dr. Thyfault's research focuses on metabolism from mitochondria to the whole body and how exercise (and lack of it) influences health. His research has been shared and cited in hundreds of publications, and its importance has been recognized through multiple funding agencies. Join us to hear Dr. Thyfault's lab's latest achievements at the [mophys conference 2023 in St. Louis!](#)

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Pictures from 2023 APS summit

The inaugural APS summit was held in April this year and those attending the meeting were able to see world-class talks, dive into poster sessions showing the newest research findings, and network with old colleagues from the field. Following the opening general session, the welcome reception was a blast for many years to remember. You can find some [pictures of APS 2023](#) on our mophys webpage.

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Publishing in APS journals

mophys is an independent chapter of the American Physiological Society (APS), and one of our goals is to share the important research that we do, not only with each other, but also with physiologists around the world. One of the ways that you can do this is to publish your work in one of the 16 prestigious APS journals. If you are interested, you can find information on picking the right journal, instructions to authors, and the peer review process on the [APS journal authors](#) page.

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Student event: mophys trivia night

Time to hone those physiology skills! This fall, mophys will be hosting a student physiology trivia night! All lovers and learners of physiology are welcome to join! The first event will be held in Columbia, MO and will be an in-person event, so please watch your emails and the [mophys site](#) for more information coming soon!



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News from MO schools



Research activities at ATSU-KCOM. At Kirksville College of Osteopathic Medicine of A.T. Still University, 80 students and 25 faculty members (and also 2 off-campus mentors) are participating in a research elective (ELEC5117) this summer. This is a research elective that our osteopathic medical students can take during their summer break and/or the fall semester. Students complete at least 80 hours of contact time in this research elective. For the Master of Science in Biomedical Sciences, six students (Tayte Hansen, Jennifer Pham, Michael Land, Hailey Schmitz, Brianna Stanfield and Justine Farrell) defended their theses in May and June on the Kirksville Campus.



New Programs at Missouri S&T. We recently reorganized our curriculum to include 3 focus areas for our Biological Sciences Bachelor's degree: Cell and Molecular Biology, Health Sciences, and Ecology, Environment, and Conservation. Human and comparative anatomy and physiology are part of the curriculum for both Cell and Molecular Biology and Health Sciences. We also offer an undergraduate certificate in BioInnovation and minors in Bioinformatics and Biomedical Engineering. The new Biomedical Engineering Design Team is an interdisciplinary team on campus. Even though it was only established in spring of 2023, the team is already [winning competitions](#).



Missouri State
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Our Anatomy and Physiology track continues to grow and we're excited for the fall.



Representatives from SLU and the meeting planning committee are continuing to finalize plans for our mophys annual meeting to be held Saturday September 30th. Backed by generous donations from both SLU and WashU departments, this is sure to be a meeting you will not want to miss! Both the Cardinals and STL City soccer club are in town that weekend, so hopefully you will hang out and make a weekend out of the trip to STL! -We have reserved a block of rooms at a nearby hotel, and more details will be provided soon. There will be two other physiological meetings in St. Louis this fall, including the "Saint Louis Translational Pain Research Forum" held in collaboration with the SLU Institute of Translational Neuroscience, the WashU Department of Anesthesiology, and the University of Health Science and Pharmacy (UHSP) on September 22nd and 23rd. Also, the SLU Institute for Translational Neuroscience will hold their inaugural research symposium on Friday November 3rd. More information on these meetings will be forthcoming.



Evaluation of Repeated Testing in Anatomy & Physiology I courses. Andrew Linsenbardt, Associate Professor of Biology and Chair of the Division of Math & Science at Missouri Valley College, is evaluating his use of D2L Brightspace, a learning management system used by the institution. He is seeking to correlate various engagement metrics from nearly 200 of his students taking Anatomy & Physiology I over the past four semesters to determine how effective repeated testing is in learning material presented throughout a given session. His intent is to deliver the findings as a continuing education seminar to his peers prior to the beginning of the semester this Fall.



Luis Martinez-Lemus Receives the 2023 Benjamin W. Zweifach Award. Luis Martinez-Lemus, professor in the Department of Medical Pharmacology and Physiology, will receive the Benjamin W. Zweifach Award from The Microcirculatory Society at their World Congress in Beijing. The award is given

every 5 years and it celebrates the career of an outstanding international researcher who has made significant contributions to our knowledge of microcirculation. Dr. Martinez-Lemus will receive a medal and address the World Congress of Microcirculation on Friday, September 22, sharing the story of his influential career.

AI software can provide 'roadmap' for biological discoveries. Dong Xu, Curators Distinguished Professor in the Department of Electrical Engineering and Computer Science at the University of Missouri, and colleagues updated their protein localization prediction model, MULocDeep, with the ability to provide more targeted predictions, including specific models for animals, humans and plants. Predicting a protein's location within a cell can help researchers unlock a plethora of biological information that's critical for developing future scientific discoveries related to drug development and treating diseases like epilepsy.



UNIVERSITY OF MISSOURI-KANSAS CITY

School of Science and Engineering 4th Quarter Update (April – June 2023). In this fourth quarter:

- 5 articles were published in peer reviewed journals
- 3 NIH grants were awarded totaling over 1.2 million for 4-5 years
- 3 Grants awarded from Non-NIH funding opportunities
- 8 presentations were given in and out of the country, including Iowa, California, Maine, and Montreal.

Follow the link for more detailed information:

<https://myroo.umkc.edu/task/all/news>.



Nominations for a new Retention and Inclusion of Scholars for Excellence (RISE) Fellows. The Department of Cell Biology and Physiology at Washington University School of Medicine would like to solicit your nominations for a new Retention and Inclusion of Scholars for Excellence (RISE) Fellows program in the department.

As you are likely well aware, recent findings indicate that the lack of historically excluded and underrepresented minority (HEU) faculty members in US medical schools cannot be explained by a lack of available HEU talent, but is driven by the poor transition of HEU talent into faculty positions (Gibbs, eLife 2016). We have created the RISE program to help address this transition. This program seeks to hire outstanding senior graduate students or early-stage postdoctoral fellows from HEU backgrounds into a three-year mentored Faculty Fellow period followed by a direct transition into a WashU Assistant Professor position in the Department of Cell Biology and Physiology (see <https://sites.wustl.edu/risefellows/> more information). Important features of the program will include immediate faculty status, advocates and mentors, generous salary and flexible funding, and ongoing professional development (e.g., in grant writing and management).

We would love your help in identifying candidates for this program. At this stage, we are hoping to make candidates aware of the program, answer any questions they might have, and encourage them to apply—now or in future years. Please feel free to contact Amber Stratman at a.stratman@wustl.edu with any questions.

 mophys will promote your local meetings to a chapter-wide audience. Just send us some basic information about your meeting and we will display it on the mophys website and include it in the mophys newsletters. This is a great way to draw more attention to your school and your science!

All it takes is an email to: contact@mophys.org

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A message from the mophys committees

Communications committee:

Safa from the University of Missouri-Columbia recently joined the communications committee to help us broadcast the latest news of your research and teaching in physiology.

Just send an email to contact@mophys.org with any information that you'd like to promote among the mophys society. These may be:

- exciting events in MO
- important news about your MO-based school
- a major accomplishment in research or teaching
- open job positions

We will promote these news in the mophys newsletter and/or on our webpage.

Follow us on Twitter [@Mo_Phys](#) and on Instagram [@missouriphysiologicalsociety!](#)

Annual meeting committee:

The annual mophys meeting is less than 3 months away! This year's meeting will be held on September 30th at St. Louis University, with Keynote speaker Dr. John Thyfault. Registration and abstract submission will open August 15th. Be on the lookout for more details in a separate email and [on our website](#). Both the Cardinals and STL City soccer club are in town that weekend, so plan to hang out and make a weekend out of your trip to STL! Come join us to have mo phun with mophys 😊

Membership committee:

Thus far, in 2023, 23 new members have joined! The membership committee continues to recruit and expand the membership base to provide MO great connections and opportunities, but we need your help! Please spread the news of mophys to your friends and colleagues and let them know there are several ways to get involved, including volunteer and conference opportunities.

Membership options: [click here](#)
email: membership@mophys.org

Nominations committee:

We would like to welcome Brett Berke as our new ambassador at Truman State University. Brett is succeeding Daniela Ostrowski, who

is taking a new position at A.T. Still University. Best of luck in your new position Daniela!

Lastly, your institute's ambassadors also comprise the nominations committee. If you would like to nominate yourself or someone else for next year's position of mophys President-Elect, please get in touch with your ambassador or let the committee know (nominations@mophys.org).

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Publications from mophys members

Here are the recent publications from our mophys members:

- **Langen KR, Dantzer HA, De Barcellos-Filho PG, Kline DD.** Hypoxia augments TRPM3-mediated calcium influx in vagal sensory neurons. *Autonomic Neuroscience* 247: 103095, 2023. doi: 10.1016/j.autneu.2023.103095.
- **Manrique-Acevedo C, Soares RN, Smith JA, Park LK, Burr K, Ramirez-Perez FI, McMillan NJ, Ferreira-Santos L, Sharma N, Olver TD, Emter CA, Parks EJ, Limberg JK, Martinez-Lemus LA, Padilla J.** Impact of sex and diet-induced weight loss on vascular insulin sensitivity in type 2 diabetes. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology* 324: R293–R304, 2023. doi: 10.1152/ajpregu.00249.2022.
- **Osuka Y, Takeshima N, Kojima N, Kohama T, Fujita E, Kusunoki M, Imai A, Kitabayashi Y, Brechue WF, Sasai H.** Qualitative assessment of standing motion with kinect™ is a useful additional diagnostic marker for sarcopenia. *Archives of Gerontology and Geriatrics* 108: 104915, 2023. doi: 10.1016/j.archger.2022.104915.
- **Power G, Padilla J.** (Re)modeling high-salt diet-induced hypertension in mice. *American Journal of Physiology-Heart and Circulatory Physiology* 324: H470–H472, 2023. doi: 10.1152/ajpheart.00093.2023.

- **Rushing KA, Bolyard ML, Kelty T, Wieschhaus N, Pavela G, Rector RS, Plaisance EP.** Dietary ketone ester attenuates the accretion of adiposity and liver steatosis in mice fed a high-fat, high-sugar diet. *Front Physiol* 14: 1165224, 2023. doi: 10.3389/fphys.2023.1165224.
- **Sheng Z-F, Zhang H, Phaup JG, Zheng P, Kang X, Liu Z, Chang H-M, Yeh ETH, Johnson AK, Pan H-L, Li D-P.** Corticotropin-releasing hormone neurons in the central nucleus of amygdala are required for chronic stress-induced hypertension. *Cardiovascular Research* 119: 1751–1762, 2023. doi: 10.1093/cvr/cvad056.
- **Sleat DE, Banach-Petrosky W, Larrimore KE, Nemtsova Y, Wiseman JA, Najafi A, Johnson D, Poole TA, Takahashi K, Cooper JD, Lobel P.** A mouse mutant deficient in both neuronal ceroid lipofuscinosis-associated proteins CLN3 and TPP1. *J of Inher Metab Disea* 46: 720–734, 2023. doi: 10.1002/jimd.12619.
- **Yu Q, Guo Q, Jin S, Gao C, Zheng P, Li D-P, Wu Y.** Melatonin suppresses sympathetic vasomotor tone through enhancing GABAA receptor activity in the hypothalamus. *Front Physiol* 14: 1166246, 2023. doi: 10.3389/fphys.2023.1166246.
- **Zhang H, Zhou J-J, Shao J-Y, Sheng Z-F, Wang J, Zheng P, Kang X, Liu Z, Cheng ZJ, Kline DD, Li D-P.** Hypothalamic Corticotropin-Releasing Hormone Contributes to Hypertension in Spontaneously Hypertensive Rats. *J Neurosci* 43: 4513–4524, 2023. doi: 10.1523/JNEUROSCI.2343-22.2023.
- **Zhang L, Xia X, Wu H, Liu X, Zhu Q, Wang M, Hao H, Cui Y, Li D-P, Chen S-Y, Martinez-Lemus LA, Hill MA, Xu C, Liu Z.** Helicobacter pylori infection selectively attenuates endothelial function in male mice via exosomes-mediated ROS production. *Front Cell Infect Microbiol* 13: 1142387, 2023. doi: 10.3389/fcimb.2023.1142387.

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Upcoming Meetings at a Glance:

- **Sept. 22-23, 2023** Translational Pain Research Forum ([Saint Louis, MO](#))
- **Sept. 30, 2023** 2023 mophys annual meeting ([Saint Louis, MO](#))
- **Nov. 3, 2023** Neuroday 2023 ([Saint Louis, MO](#))
- **Nov. 11, 2023** IBRS ([Kirksville, MO](#))

[Click here](#) for full details.

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