

Physiology News

January-March 2025 Volume 8 Issue 1

Dear All,

I have spent time reflecting on the current challenges we face as NIH undergoes review and restructuring, and policies directed at enhancing diversity in the biomedical workforce are eliminated. I recognize this has caused anxiety and uncertainty for many. In preparing to address the Black Physiologists Conference participants, I crafted thoughts using the metaphor of a caterpillar becoming a butterfly. I was inspired by a quote attributed to Maya Angelou; "We delight in the beauty of the butterfly but rarely admit the changes it has gone through to achieve that beauty". This got me to thinking of the stages in transformation, and how we can use them to inspire us to find stage-appropriate encouragement. Here is my message; according to different career stages, that I hope will resonate with you and provide a positive framework to continue to grow during these challenging times.

The Caterpillar Stage. *Build skills and prepare for what is next, even if the world feels uncertain. Keep learning and building your expertise, even when funding or policy support is shaky. Seek mentors and networks—find other caterpillars munching the same leaf. Be strategic with time and energy—identify skills that will prepare you for diverse professional opportunities (e.g., data science, science communication, grant writing, policy).*

The Egg Phase. *Choose your “leaf” carefully—find research areas or institutions that align with your values. Stay open to pivoting and going in different directions.*

The Chrysalis Stage. *Even when it feels like nothing is happening, change is underway. Use this period of pause (slow funding cycles, political roadblocks, delayed study sections) for reflection and reinvention. Protect your mental health. Advocate quietly if needed and when appropriate. Some work is invisible until the butterfly emerges.*

The Butterfly Stage. *When the time is right, emerge with purpose, clarity, and direction. When opportunity strikes (a fellowship, a policy shift, a new collaboration), be ready to act. Share your science—be visible, vocal, and public-facing. The world needs your voice. Support others emerging behind you. Be a mentor, build inclusive spaces, and push for better systems.*

In closing, remember that the caterpillar thought the world was ending, but all along it was transforming into a butterfly. We will get through this. Now more than ever, we must use our collegial network to support and encourage us each day.

Sincerely,

Patricia

Inside this edition Editor, Liz Simon

Chair's message	1	Professional services	3
Parting words (Joshua Edavettal)	2	Publications	3-4
Trainee corner	2	Presentations	4-5
New faces and Farewell	3	Posters	5
Grants	3	Notable events	5
Recognition	3		

Physiology News

Parting words

Joshua Edavettal, MD/PhD trainee (successfully defended PhD dissertation)



I have spent the past four years as a graduate student in the Physiology Department, beginning at the height of COVID, when even caring for lab animals was uncertain, and the world felt deeply unstable. Midway through, we endured hurricanes, a relocation, and the grueling, but not uncommon, trials of research and graduate education. It is a process that's uniquely difficult, and yet somehow, always difficult. But now, four years later, I've nearly crossed the finish line; I defended my dissertation on April 3rd, and it is officially submitted. This work sparked a love for cardiac physiology that I know I'll carry with me for a long time. Soon, I'll return to medical school to continue my training, and I'm looking forward to experiencing clinical cardiology and cardiothoracic surgery. I am deeply grateful for the education, mentorship, and community I found here, and I'm honored to have written this for our newsletter.

My research focused on how the heart responds to chronic and heavy alcohol consumption, and whether those effects differ between males and females. Using rodent models, we developed a reliable way to study alcohol-induced heart damage and recovery. We found that abstaining from alcohol can significantly, and in some cases, fully, restore heart function, and that the patterns of damage differ by sex. Curious about the underlying causes, we examined the heart's mitochondria but, surprisingly, found no major changes, though there's still more to uncover. While the science itself was fascinating, I was also fortunate to learn how to perform heart function measures, evaluate cardiac structure and function, and, most importantly, how to think like a scientist.

During my time here, I've learned more than just science; I've learned how the scientific world operates, and how I could work within it. This department produces exceptional scientists - people I'm proud to have learned from, grown with, and graduated beside. Here, excellence isn't just encouraged, it's the standard, and those expectations transform and shape not just our environment, but our perspectives and the way we interact with each other. I thank the community, and the friends, who challenged and supported me along the way. I hope you continue to pursue excellence and to foster collaboration; we should never forget why the work matters.

Trainee corner

Taylor Fitzpatrick Schmidt and **Josh Edavettal** successfully defended their PhD dissertations. Proud of your achievements. Both go back to medical school in the summer.

Eden Gallegos, **Stephanie Lee**, and **Nicholas Harris** passed their preliminary exams and are officially PhD candidates!

NIH PREP Scholar **Trinity Martin** (Edwards Lab) earned and accepted a generous offer from the Biomedical Sciences PhD Program at Tulane University. Trinity will also be presenting at the Research Society on Alcohol (RSA) meeting this summer before continuing her ascendant trajectory toward a pharmaceutical career in the neurosciences.

Physiology News

New faces

Amanda Pahng, PhD was appointed Assistant Professor-Research, Physiology. Dr. Pahng is no stranger to us. Her office is CSRB 601F.



Kyle Gallegos, PhD student, joined the Vita Lab!

Farewell

Andrea Jones will be leaving LSUHSC on 5/8/25 to start a new job as Senior IACUC Protocol Analyst at Tulane University.

Grants

Elizabeth Avegno was awarded the LSUHSC REF new project application “Early life stress and adolescent alcohol have long-term additive effects on behavior and brain.”

Recognition

Eden Gallegos was awarded the **2025 Roheim Award of Research Excellence**. The award is given annually to the Department of Physiology’s most accomplished graduate student over the past calendar year for their research accomplishments.



Nicholas Gilpin was appointed **Director of the LSUHSC Alcohol and Drug Abuse Center of Excellence**. His leadership and passion for research, particularly on substance use and its long-ranging detrimental effects will be instrumental in him leading ADACE.

Stephanie Lee received a **Student Merit Award** from the Research Society on Alcohol.

Patricia Molina was appointed as **Senior Associate Dean for Research** in the School of Medicine. She will carry the theme of excellence

in reorganizing the basic science research enterprise at LSUHSC-NO.

Professional services

Taylor Fitzpatrick-Schmidt chaired a symposium titled *Winter Chill: Navigating the Cold Truths of Chronic Pain and Substance Use Disorders* and **Stephanie Lee** chaired a symposium titled *New Discoveries in Cannabinoid Research: Exploring Therapeutic Potential, Sex Differences, and Translational Implications for Pain and Affective Disorders* at the Winter Conference on Brain Research in Lake Tahoe, CA in January 2025.

Nicholas Gilpin is the Research Society on Alcohol (RSA) 2025 Annual Meeting Program Chair. Gilpin is also spearheading the Alcohol and Drug Abuse Center of Excellence (ADACE) sponsoring a collaborative event on Polysubstance Use with RSA and College on Problems of Drug Dependence (CPDD).

Andrea Jones judged the Senior Biochemistry, Cellular and Molecular Biology and Junior Animal Science divisions at the Greater New Orleans Science and Engineering Fair at Tulane.

Patricia Molina chaired the Alcohol-Induced End Organ Diseases Gordon Research Conference (Redundant Mechanisms of Multi-Organ Injury), 2025.



Physiology family and honorary member, David Welsh, at the 2025 Gordon Research Conference, Ventura, CA

Publications

Cruise S, Secci ME, Kelley LK, Sharfman NM, Rodriguez-Graciani K, Wills TA, Gilpin NW,

Physiology News

Avegno EM. Chronic alcohol-associated increases in VTA Hcrtr1 expression are associated with heightened nociception and anxiety-like behavior in female rats. *Adv. Drug Alcohol Res. [accepted]*.

Deville P, Dennis J, Warren O, Fontenot C, Messa G, Carter JE, Phelan HA, Schoen J, Hobden JA, **Siggins RW, McTernan PM, Molina PE, Smith AA.** A Pilot Study on the Impact of Smoking on Adipose Derived Stem Cell Function in Burn Patients. *J. Burn Care Research.* 10.1093/jbcr/iraf005

Edelman EJ, Dziura J, Deng Y, DePhilippis D, Ferguson T, Brown S, Marconi VC, Goetz MB, Rodriguez-Barradas MC, Simberkoff MS, **Molina PE, Weintrob AC, Maisto SA, Paris M, Justice AC, Bryant KJ, Fiellin DA.** Integrated Stepped Alcohol Treatment With Contingency Management for Unhealthy Alcohol Use Among People With HIV: A Randomized Controlled Trial. *J Acquir Immune Defic Syndr.* 10.1097/QAI.0000000000003534.

Fitzpatrick-Schmidt T, Mansouri A, Adamec J, Klein J, Coleman L, Edwards KN, Simon L, Molina PE, Salling MC, Edwards S.J. Proteomic Analysis of Chronic Binge Alcohol-Induced Hippocampal and Anterior Cingulate Cortex Neuroadaptations in Simian Immunodeficiency Virus (SIV)-Infected Female Rhesus Macaques. *Neuroimmune Pharmacology.* 10.1007/s11481-025-10179-5.

Gilpin NW. Science Under Threat in the United States: The NIH is a sound investment for the US taxpayer. *Elife.* 10.7554/eLife.106710.

Gunaldo TP, Witmeier K, Baudoin C, Duffy S, Mazumder HOR, Sauviac H, Straif-Bourgeois S, **Edwards S.** Analysis of Interprofessional Education Perceptions at the Team Level: A Study of Three Student Cohorts. *Journal of Interprofessional Education and Practice* 2025 39(2):100741.

Jones AF, Wang Q, Rodríguez-Graciani KM, Díaz ZT, Simon L, Gilpin NW. Sex and age effects on chronic inflammatory pain development, maintenance, and resolution in Wistar rats. *J of Pain.* 2025. 10.1016/j.jpain.2025.

Lee S, Edwards S. Alcohol and Cannabis Use for Pain Management: Translational Findings of Relative Risks, Benefits, and Interactions. *Physiology & Behavior* 2025 294:114867.

Poret JM, Simon L, Molina PE. Chronic binge alcohol dysregulates omental adipose tissue extracellular matrix in simian immunodeficiency virus-infected macaques. *Alcohol Clin Exp Res (Hoboken).* 10.1111/acer.70012.

Presentations

Edwards S presented a talk titled *The Impact of Alcohol Use on Biomedical Comorbidity Risk* at the LSU Health New Orleans Department of Medicine Grand Rounds in January 2025.

Gallegos E gave a talk entitled “*Alcohol and metabolic stressors synergistically alter lipid and mitochondrial homeostasis in a MetALD spheroid model*” at the 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference. Eden presented a poster at GRC under the same title.

Gardner J gave a talk entitled “*ECM Modifications: A Mechanism of Alcohol-Mediated Cardiac Injury*” at the 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference.

Harris N gave a talk entitled “*Dual Use of Nicotine Vaping and Chronic, Binge Alcohol: Cardiovascular Outcomes in a Mouse Model*” at 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference. Nick gave a talk under the same title at the Gordon Research Seminar which is a trainee led 1 day event preceding Gordon Research Conference. Eden Gallegos chaired the 2025 Gordon Research Seminar. Nick also presented a poster at GRC under the same title.

Physiology News

Paloczi J gave a talk entitled “*The Aftermath of Binge Drinking: Loss of Gut Integrity and Cardiovascular Dysfunction*” at the 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference.

Rodriguez-Graciani gave a talk entitled “*Role of Antioxidants and Electrical Pulse Stimulation in Protecting Against Oxidative Stress-Induced Mitochondrial Dysfunction in Aged Muscle Cells*” at the 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference. Keishla presented a poster at GRC under the same title.

Siggins RW gave a talk entitled “*Alcohol Interference with the Continuum: From Proliferation to Senescence*” at the 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference.

Simon L gave a talk entitled “*Fueling Metabolism: The Intersection of Calorie Dense Diets and Alcohol*” at the 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference.

Posters

Couvillion K, Gallegos E, McTernan P, Siggins R, Welsh D, Molina PE, Simon L. CD4 T cells and alcohol produce cellular injury in a hepatocyte spheroid model. at the 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference. **Kaitlin** also gave a talk under the same title at the 2025 Gordon Research Seminar.

Donovan, M, Paloczi J. Myocardial Transcriptomic Shifts Following Binge Alcohol Exposure: Potential Role of Endocannabinoids in Impairing Cardiac Mitochondrial Respiration. at the 2025 Alcohol-Induced End Organ Diseases Gordon Research Conference.

Notable Events

Eden Gallegos, Meagan Donovan, and Kaitlin Couvillion represented the Alcohol & Drug Abuse Center of Excellence at the Peer Advocate Liaison’s Student Resource Fair in February 2025.



In addition to supporting the community, the trio are also leading research discoveries into how alcohol and endogenous cannabinoid systems impact health and disease.

Emma Weiser from the Maiya Lab married her fiancé, Joshua Carubba, on January 31st, 2025, at Southern Oaks in New Orleans. The two have been dating since junior year of high school and were overjoyed to have finally tied the knot!

Sydney Vita went to Sao Paulo, Brazil to visit Physiology Dept alum Franciely Paliarin!



When Physiology alums Jonquil Poret, Danielle Levitt, and Elizabeth Delery had a mini reunion at Indianapolis!