



**THE OHIO STATE
UNIVERSITY**

**DOROTHY M. DAVIS HEART AND
LUNG RESEARCH INSTITUTE**

Quarterly Newsletter

Spring 2025



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A Message from the Director -



As the semester wraps up this month, we extend our heartfelt congratulations to all the graduating students and their families! We also take a moment to reflect on the completion of another successful academic year in the DHLRI. Our educational programming, including Research in Progress (RIP) and Working Wednesdays, will go on hiatus until the Fall, but not before we acknowledge the tremendous slate of speakers, representing a wide range of topics, career stages and backgrounds. Altogether the 2024-2025 RIP schedule included 23 presentations (9 internal, 1 from NCH, and 13 from outside Columbus), plus presentations from our pre- and post-doc of the year candidates and research day trainees. This year, RIP featured two Pathways to Progress speakers. **Damon Tweedy, MD**, a Professor of Psychiatry at Duke University and author, shared his personal journey as a black first-generation college student navigating his way to a career in medicine, and the ongoing issues of race in the field. Additionally, **Diane Allen-Gipson, PhD**, an Associate Professor at the University of South Florida, discussed the crucial role of mentoring in developing the next generation of leaders in STEM.

Looking ahead to 2025-2026, the DHLRI Education Committee has already lined up an excellent slate of speakers for the Fall. The highlight will be Research Day on October 16, 2025, featuring **Juleen Zierath, PhD**, an American-Swedish biologist. Dr. Zierath is a Professor of Integrative Physiology at Karolinska Institutet and the Executive Director at the Novo Nordisk Foundation Center for Basic Metabolic Research at the University of Copenhagen. Additionally, she has been a member of the Nobel Committee since 2011.

Special thanks to the DHLRI Education Committee, chaired by **Seth Weinberg, PhD** (Biomedical Engineering) and the Pathways to Progress Committee, chaired by **Rebecca Vanderpool, PhD** (Cardiovascular Medicine) for terrific programming.

This year's Research Day will be exceptionally significant as we celebrate DHLRI's 25th Anniversary! Over the past quarter-century, the institute has been at the forefront of groundbreaking research, innovative treatments, and dedicated patient care. This milestone is a testament to the unwavering commitment and exceptional contributions of our researchers, clinicians, and staff. Be sure to join us in commemorating this remarkable journey and looking forward to many more years of advancing heart and lung health.

Beyond our educational programming over the past quarter, we've been busy expanding our research infrastructure, including negotiating bulk price discounts and updated our basic shared equipment package which encompassed multiple -80s, -20s, deli refrigerators, microcentrifuges, tabletop centrifuges, BSCs and incubators. The resulting collaboration produced over \$250k in savings. In addition, the shared equipment portfolio was further expanded to include, a Cytation C10 multimodal plate reader and confocal imager, cryostats and a Vevo F2 imaging system resulting in >\$1M of shared equipment purchases.

Now, let's celebrate the many achievements of our faculty, staff, and trainees over the past quarter!

Thomas J. Hund, PhD
Professor, Departments of Internal Medicine and Biomedical Engineering
Director and William D. and Jacquelyn L. Wells Chair,
Dorothy M. Davis Heart and Lung Research Institute



Kudos -

We are delighted for our members who secured new grants over the previous quarter!



Yutong Zhao, PhD [Physiology & Cell Biology (PCB)] was awarded an NIH NHLBI R01 to investigate the deubiquitination enzyme USP30 in the regulation of lung endothelial function in the setting of acute lung injury.



Jeff Horowitz, MD and **Richard Nho, PhD** [Pulmonary, Critical Care and Sleep Medicine (PCCSM)] received a new R01 for their project on hypoxia-induced aberrant lactate generation and shuttling as a signal to promote pro-fibrotic fibroblast phenotypes.



- **Nicolae Moise, MD** [Biomedical Engineering (BME)] and **Shinsuke Nirengi, PhD** (Surgery) received AHA Career Development Awards.
- **Aaron Argall, PhD** (Mingtao Zhao lab) and **Roman Kalinini, PhD** (Gyorke lab) received AHA Postdoctoral Fellowships.
- **Vladimar Bogdanov** (Gyorke Lab) received an AHA Predoctoral Fellowship for research on local mRNA translation and calmodulin-dependent signaling in cardiac myocytes.
- **Jihyun Jang, PhD** [Nationwide Children's Hospital (NCH)] received an AHA International Visiting Professorship Award for collaborative research to characterize chamber-specific cardiomyocyte proportions.



Vidu Garg, MD (NCH) will lead a new summer undergraduate fellowship program entitled “Nationwide Children’s Hospital Summer Undergraduate Program in Cardiovascular Research” with support from the American Heart Association.

Yohannes Mebratu, DVM, PhD (PCCSM) received the “Emerging Pathogens Award” from the American Lung Association to study enzyme potential in fighting influenza.



Lorena Rosas, PhD, Ana Mora, MD and **Mauricio Rojas, MD** (PCCSM) were awarded the Akoya Biosciences IO60 Spatial Omics grant.



Congratulations to our faculty and trainees who have been recognized with professional awards, invited talks and other honors over the past few months!



We are elated for **Kymberly Gowdy, PhD** (PCCSM) and **Sylvester Black, MD** (Transplant Surgery) who were each awarded the prestigious Presidential Early Career Award for Scientists and Engineers (PECASE), the highest honor bestowed by the U.S. government on outstanding scientists and engineers who are in the early stages of their independent research careers.

Read more [here](#).

Our research teams published too many great papers to mention here but special shout out to **Megan Ballinger, PhD** for her recent paper in *Biomaterials*.

Ana Mora, MD, Mauricio Rojas, MD (PCCSM) and team published their research on the role of fatty acid metabolism in lung progenitor cell repair and development of lung fibrosis in *JCI Insight*.

Vadim Fedorov, PhD (PCB) led an interdisciplinary translational study on sex differences in human sinoatrial node gene expression that was published in *Circulation: Arrhythmia and Electrophysiology*.



(Left to Right):
Megan Ballinger, PhD,
Ana Mora, MD,
Mauricio Rojas, MD, and
Vadim Fedorov, PhD



Thomas Hund, PhD (CVM/BME) was inducted into the American Institute for Medical and Biological Engineering College of Fellows, an honorific society that represents the top 2% of medical and biological engineers.
Read more [here](#).

Natalia Higuera-Castro, PhD (BME) received the College of Engineering Executive Leadership in Innovation Award.

Rizwan Ahmad, PhD (BME) received the College of Engineering Lumley Engineering Research Award.



Beka Shaheen (Hund Lab) received the Department of Biomedical Engineering Andreas F. von Recum Graduate Research Achievement Award.



Richard Gumina, MD, PhD [Cardiovascular Medicine (CVM)] gave an invited talk at the Stanford University Cardiovascular Institute as part of their Frontiers in Cardiovascular Science series.

E. Douglas Lewandowski, PhD (Endocrinology, Diabetes & Metabolism) gave a Keynote Lecture at the 2025 International Hawaii Cardiovascular Symposium entitled, "Targeting both adverse and cardioprotective metabolic remodeling in the pathogenesis of heart failure".



Julia Coleman, MD (Trauma Surgery) and **Tamar Gur, MD, PhD** (Psychiatry) were featured by 10TV News, discussing how women-led health research levels the playing field. Watch the segment [here](#).



Loren E. Wold, PhD (Cardiac Surgery) was featured by 10TV news on how wildfires and smog affect your health. Watch the segment [here](#).

The latest issue of the Ohio State Alumni magazine included feature stories on the impactful work of **Sakima Smith, MD** (CVM) and collaborative research between the labs of **Seth Weinberg, PhD** (BME), **Rengasayee Veeraraghavan, PhD** (BME), and **Thomas Hund, PhD** taking place in the Pelotonia Research Center. Read about Dr. Smith's research [here](#) and about the Pelotonia Research Center [here](#).



Dr. Smith was also featured in an article by the Columbus Dispatch, "Black health history event brings medical resources to community." Read the article [here](#).

Wandi Zhu, PhD (Molecular Medicine & Therapeutics) joined the Editorial Advisory Board at the Journal of General Physiology.



Happenings -

DHLRI Research in Progress returned for the Spring semester, beginning with DHLRI Director, Dr. Thomas Hund's DHLRI: A Year in Review. Additional talks included **Ping Zhang, PhD** (Biomedical Informatics), **Srinivas Parinandi, PhD** (University of Colorado at Boulder), **Roberto Machado, MD** (Indiana University), **Andre Palmer, PhD** (Chemical & Biomolecular Engineering), **Jihyun Jang, PhD** (NCH), **Leah Pyter, PhD** (Psychiatry and Neuroscience), **Michelle Tallquist, PhD** (University of Hawai'i at Manoa), **Anna Pfenniger, MD, PhD** (Northwestern University), **Peter M. Kekenes-Huskey, PhD** (Loyola University Chicago), **Yohannes Tesfaigzi, PhD** (Mass General Brigham, Harvard Medical School), and **Shijie Zhou, PhD** (Worcester Polytechnic Institute). DHLRI Research in Progress will go on hiatus for the summer then resume in the Fall each Friday from 1-2pm in DHLRI 170.



The DHLRI Pathways to Progress Committee hosted **Diane Allen-Gipson, PhD** (University of South Florida).



DHLRI Working Wednesdays continued this spring with talks from **Sara Koenig, PhD**, discussing updates from the College of Medicine, a presentation from the **DHLRI Cores Managers**, updates from the **College of Medicine Grants Management Office**, and a presentation on the new **R01-201 program**.

Transitions -

Sarah "Sally" Ross Soter and the Soter Kay Foundation pledged a \$15 million gift to The Ohio State University College of Medicine, establishing the Sarah Ross Soter Women's Health Research Program. Congratulations to **Tamar Gur, MD, PhD** for being named the inaugural Director.



Leah Pyter, PhD was named Director of the Institute of Behavioral Medicine Research (IBMR).



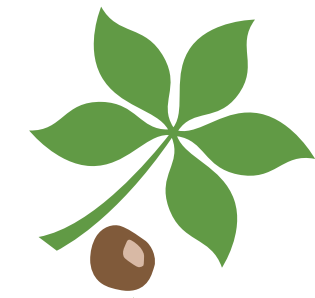
Mona El Refaey, PhD (Cardiac Surgery) was named Vice Chair of the DHLRI Education Committee.



DHLRI Student Administrative Assistant, **Andrew Bernhard**, was one of the almost 10,000 graduates of the OSU Spring Commencement of 2025. Andrew plans to attend graduate school for his Master of Physical Therapy. Well done Andrew!

This concludes our May Newsletter Updates.

We are proud of the achievements and contributions of our faculty and researchers. Stay tuned for more updates in the coming months!



Previous Annual Reports and Quarterly Newsletters can be found at: <https://medicine.osu.edu/departments/davis-heart-lung-research-institute/our-people/message-from-the-director>

The DHLRI website has also been updated for the quarter, including new featured stories, featured publications, a new events & outreach schedule, and administrative staff updates.

Please reach out to Izabelle Colvin, Editor, (Izabelle.Colvin@osumc.edu) with any submissions for next quarter's newsletter. Photos to accompany your announcement are appreciated.



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