



THE OHIO STATE  
UNIVERSITY

DOROTHY M. DAVIS HEART AND  
LUNG RESEARCH INSTITUTE

# Quarterly Newsletter



Winter 2025



*2024 DHLRI Research Day Poster Session*

473 West 12th Avenue  
Columbus, OH 43210  
[www. https://medicine.osu.edu/departments/davis-heart-lung-research-institute](https://medicine.osu.edu/departments/davis-heart-lung-research-institute)

## A Message from the Director -



Beyond specific medical breakthroughs, it is difficult to overstate the multiplier effect federal funding for research has on the economy. It creates jobs, fosters innovation, and fuels the biotechnology and pharmaceutical industries. Every dollar invested in medical research generates significant economic returns by reducing healthcare costs and improving workforce productivity through better health outcomes.

This begs the question: what can scientists and supporters of science do to ensure continued federal support for medical research?

- **Stay informed** – The OSU Enterprise for Research, Information and Knowledge and the Office of Government Relations serve as clearinghouses of information and resources, available at [research.osu.edu](http://research.osu.edu) and [govrelations.osu.edu](http://govrelations.osu.edu).
- **Stay engaged** - There are many opportunities to make your voice heard, starting with the Office of Government Affairs, which maintain relations teams at the local, state, and federal level. The office provides many opportunities for members of the OSU community to engage on issues that are important to them.
- **Stay determined** - Advocacy works and is responsible for a number of important developments over the years, including:
  - ▶ Doubling of NIH funding over 5 years from 1998-2003.
  - ▶ 21st Century Cures Act in 2016, which allocated \$6 billion for medical research initiatives, including the Precision Medicine Initiative and the Cancer Moonshot.
  - ▶ Inflation Reduction Act in 2022 that capped the cost of insulin for Medicare. **Joshua Joseph, MD** participated in a panel discussion at the White House as part of an anniversary celebration event in 2024.

And now let's honor the many achievements of our members!

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 -

**Congratulations to our members who received new grants over the last quarter!**

**Chris Breuer, MD** [Nationwide Children's Hospital (NCH)], **Isabelle Deschenes, PhD** [Physiology & Cell Biology (PCB)], and **Mingtao Zhao, PhD** (NCH) are leading 2 projects on single ventricle heart disease funded by the American Heart Association and Additional Ventures.

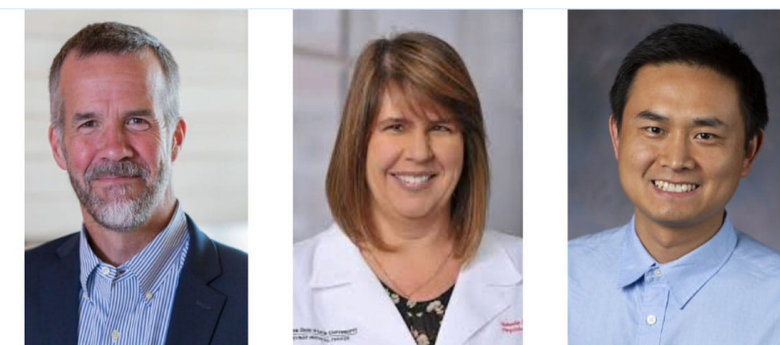
**Natalia Higuera-Castro, PhD** [Biomedical Engineering (BME)] is part of a collaborative team funded by the Department of Defense Congressionally Directed Medical Research Programs – Toxic Exposures Research Program for developing novel therapeutics for Gulf War Illness.

A collaborative team of DHLRI Investigators including **Tatiana Cuellar-Gaviria, PhD** (BME), **Daniel Gallego-Perez, PhD** (BME) and **Kristin Stanford, PhD** (Surgery) were awarded a grant from the Herbert W. Hoover Foundations for their project to investigate the inflammatory response and upregulation of immune and cancer-related genes in contact with hernia meshes.

**Brad H. Rovin, MD** (Nephrology) was honored with the Lupus Foundation of America's 2024 Evelyn V. Hess Award, which honors a clinical or basic science researcher whose exceptional work has enhanced the understanding of the science of lupus treatment.

**Evangeline Schott** (Gowdy Lab) was awarded first place for her poster presentation at the Ohio Valley Chapter of the Society of Toxicology (OVSOT) annual meeting.

**Sakima Smith, MD** presented at Cardiovascular Medicine Grand Rounds on his path as a physician scientist.



*Christopher Breuer, MD, Isabelle Deschenes, PhD & Mingtao Zhao, PhD*



*Krishna Chinthalapudi, PhD*

**Krishna Chinthalapudi, PhD** [Physiology & Cell Biology (PCB)] and his team were published in Nature Communications with their work on membrane repair protein dysferlin. **Joshua Englert, MD** (Pulmonary, Critical Care & Sleep Medicine) co-led a study titled "A micro-scale humanized ventilator-on-a-chip to examine the injurious effects of mechanical ventilation," which was recently published in the journal Lab on a Chip. Using the ventilator-on-a-chip model, the study found that stress from the collapse and reopening of the air sacs is the most injurious type of damage.



**Richard Gumina, MD, PhD** (Cardiovascular Medicine) was appointed to the 2024-25 American Heart Association of Central Ohio's Board of Directors. He joins **Joshua J. Joseph, MD, MPH, FAHA** (Endocrinology, Diabetes & Metabolism) who will serve as the American Heart Association of Central Ohio's board president.

The Central Ohio American Heart Association held their Annual Research Reception in December with invited speakers **Isabelle Deschenes, PhD** (PCB), **Richard Gumina, MD, PhD** (CVM) and **Christopher Breuer, MD** (Nationwide Children's Hospital). Several AHA funded DHLRI learners also presented their research at the event.



Isabelle Deschenes, PhD & Christopher Breuer, MD at the 2025 Central Ohio American Heart Association Research Reception

Several DHLRI Members from the Division of the Pulmonary, Critical Care & Sleep Medicine (PCCS) gave presentations at the American College of Chest Physicians Annual Meeting in Boston.

**Jing Wang, MD** was awarded a CHEST Research Grant in Women's Lung Health Disparities: "Adverse Pregnancy Outcomes and Risk of Developing COPD Later in Life: An Analysis of the Women's Health Initiative,"

**Laura Leuenberger, MD** (Gowdy Lab) was awarded a Young Investigator Grant for her work "Obesity-mediated Mechanisms of Altered Lipid Metabolism: A novel Mechanism of ARDS," and **Joseph Bednash, MD** was awarded a CHEST Research Grant in Critical Care Medicine for his work, "Transfer RNA Fragments as Novel Biomarkers in ARDS."

DHLRI was also well represented at the 2024 American Heart Association Scientific Sessions in Chicago, IL, with >30 Ohio State researchers or physicians serving as panelists, moderators or presenters.



Richard Gumina, MD, PhD, Benjamin Buck, MD & Thomas Hund, PhD at the 2025 AHA Scientific Sessions

### Transitions -



Josh Jackson & Kristy Townsend, PhD

Welcome to **Josh Jackson**, the new DHLRI Building Services Coordinator! Before joining the DHLRI team, Josh worked for several years with OSU Surplus.

Congratulations also to **Kristy Townsend, PhD** (Neurosurgery) on being named Faculty Lead for Research Operations and Compliance for the College of Medicine.

### Happenings -

#### New T32 Training Program

We are very excited that the first 2 post-doctoral trainees have been appointed to the new NIH T32 Training Program on the Biology of Aging and Lung Disease, led by **Ana Mora, MD** (PCCS) and **Rama Mallampalli, MD** (PCCS).



Ana Mora, MD & Rama Mallampalli, MD

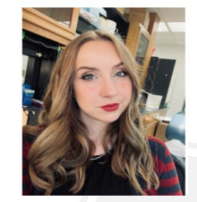
**Laura Leuenberger, MD** will be studying "Alterations in lipid metabolism and the innate immune response: novel mechanisms driving Acute Respiratory Distress Syndrome Severity" and **Julia Pinette, PhD** will study "Defining the role of 12, 13-diHOME in cardiopulmonary function with age."

OSU Pulmonary, Critical Care and Sleep Medicine

#### T32: Biology of Aging and Lung Disease



**Laura Leuenberger, M.D.**  
Alterations in lipid metabolism and the innate immune response: novel mechanisms driving Acute Respiratory Distress Syndrome Severity



**Julia Pinette, Ph.D.**  
Defining the role of 12,13-diHOME in cardiopulmonary function with age

Welcome to our new T32 post-doctoral trainees!







### Research in Progress

Research in Progress continued over the last quarter of 2024 with talks from **Joseph Bednash, MD** (PCCS), **David Jones, PhD** (University of Michigan), **Yohannes Mebratu, DVM, PhD** (PCCS) and **Joanna Tsai, MD** (PCCS), and 2 Discovery speakers **Elizabeth Murphy, PhD** (National Institutes of Health) and **Dean Sheppard, MD** (University of California San Francisco).

Research in Progress takes place every Friday from 1-2pm in DHLRI 170. For more information about weekly speakers, check out the DHLRI website and X/Twitter @OhioStateDHLRI.



**Davis Heart and Lung Research Institute**  
Research In Progress Presents:



**“The Role of E3 Ligase MARCH10 in Lung Epithelial Cells”**

Friday, December 13, 2024  
1:00 p.m. to 2:00 p.m.  
DHLRI 170, Auditorium

Joanna Tsai, MD  
Assistant Professor  
Division of Pulmonary, Critical Care and Sleep Medicine  
Department of Internal Medicine

For Zoom details, please email: [Lataha.Roland@osumc.edu](mailto:Lataha.Roland@osumc.edu). \*\*Plans provided for attendees.\*\*

Joanna Tsai, MD



**Davis Heart and Lung Research Institute**  
Research In Progress Presents:

**“Into the Nucleus: New Roles for hERG1 in Developing Cardiomyocytes”**

Friday, October 25, 2024  
1:00 p.m. to 2:00 p.m.  
DHLRI 170, Auditorium



David K. Jones, PhD  
Assistant Professor  
Department of Pharmacology  
Department of Internal Medicine  
University of Michigan Medical School

The Ohio State University  
www.osu.edu

For access to Zoom link, contact [Lataha.Roland@OSUWV.edu](mailto:Lataha.Roland@OSUWV.edu) or call (614) 247-7766

*David Jones, PhD*

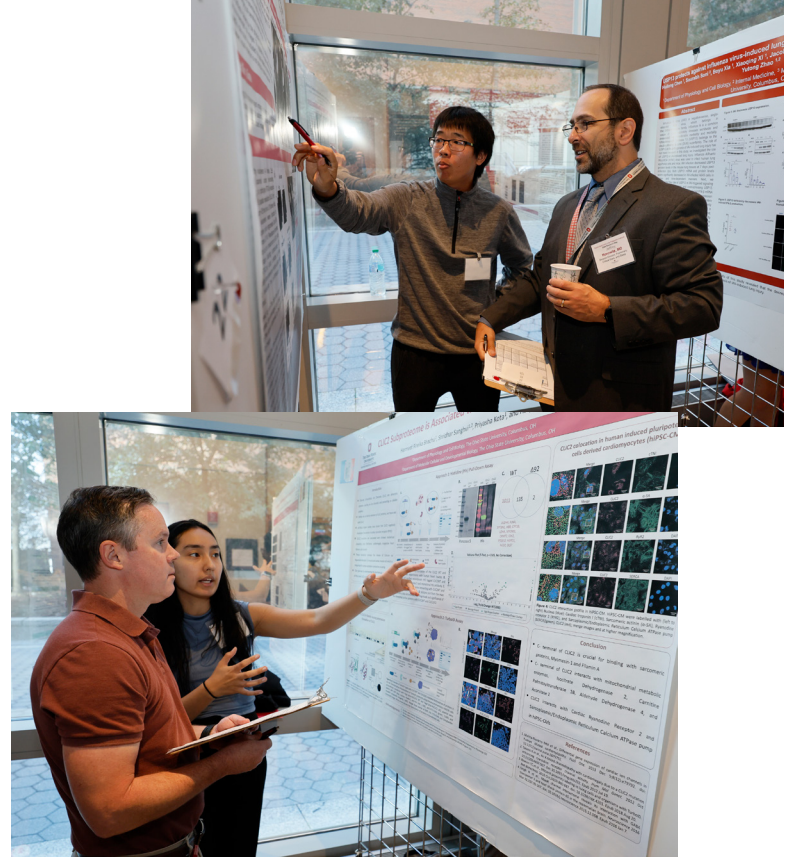
The DHLRI also hosted their first “Pathways to Progress” distinguished speaker, **Damon Tweedy, MD**. Dr. Tweedy is a Professor of Psychiatry at Duke University, School of Medicine, and a New York Times best selling author. Dr. Tweedy’s talk was titled, “Reflections on Race and Medicine: Past, Present, and Future.”



Damon Tweedy, MD with DHLRI Trainees

### 2024 DHLRI Research Day

The 2024 DHLRI Research Day was a resounding success with a packed poster session in the morning, followed by standing room only short talks, and a Keynote talk from **Joshua Joseph, MD** (Endocrinology, Diabetes & Metabolism) on “Cardiometabolic Risk: From People to Populations.”



### 2024 DHLRI Research Day Distinguished Award Winners:

- Sakima Smith, MD** - Melissa G. Piper Distinguished Mentor Award
- Daniela Farkas** - Distinguished Basic Research Staff Award
- Jennifer Smith** - Distinguished Clinical Research Staff Award
- Priya Roy, MD** - Distinguished Clinical Fellow Award
- Andy Newland & Phillip Tate** - Distinguished Administrative Staff Award
- Kristy Townsend, PhD** - Charles Webb Innovator of the Year Award
- Lorena Rosas, PhD** - Post-Doctoral Scholar of the Year Award
- Dharti Shantaram** - Graduate Student of the Year Award

A new DHLRI Annual Report was released in November! You can view current and previous Annual Reports and Quarterly Newsletters 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](mailto:Izabelle.Colvin@osumc.edu)) with any submissions for next quarter’s newsletter. Photos to accompany your announcement are appreciated.



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