

YOUR HEALTH & THE ENVIRONMENT



NEWS FROM THE UNIVERSITY OF ROCHESTER ENVIRONMENTAL HEALTH SCIENCES CENTER

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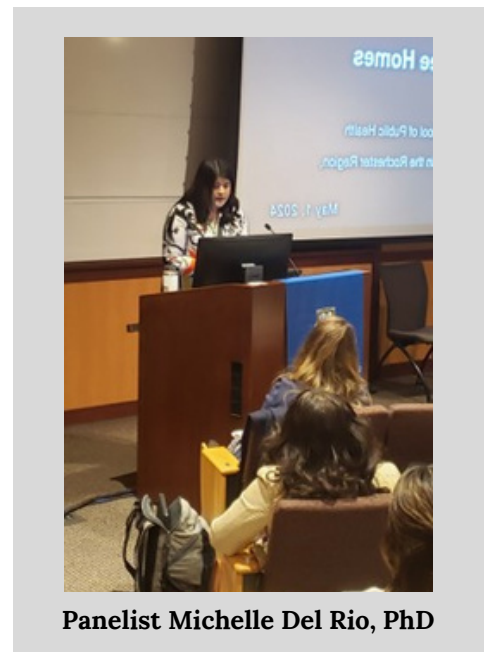
UR ENVIRONMENTAL HEALTH NEWS AND AWARDS



Research Workshop Connects Researchers, Community around Health, Housing, and Environmental Justice

On May 1, the UR Institute for Human Health and the Environment (IHHE) and Environmental Health Sciences Center (EHSC) hosted a Housing, Health, and Environmental Justice Research Workshop to explore how home-based environmental exposures affect health equity. The workshop, attended by 130 students, staff, researchers, and community partners, aimed to build understanding of the connections between housing environments and health, identify unique opportunities for healthy homes research in the Rochester region, and foster new research to inform solutions.

Welcome addresses from Katrina Korfmacher, PhD (EHSC Community Engagement Core (CEC) Director and IHHE



Panelist Michelle Del Rio, PhD

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Research Workshop (continued)

Engagement Pillar leader), Anika Griffiths (Poet Laureate at Common Ground Health), Steve Dewhurst, PhD (Vice President for Research, URM), and Dana Miller (Commissioner of Neighborhood and Business Development, City of Rochester) started the day. An overview of local housing was provided by Melissa Berrien, Director of Resident Services at Rochester Housing Authority. Amanda Reddy, MS, Executive Director of the National Center for Healthy Housing, gave the keynote address: “Housing Quality and Health Equity: Engagement, Research, and Solutions.”

A healthy housing research panel featured Robin Dodson, ScD (Silent Spring Institute), Michelle Del Rio, PhD (Indiana University, Bloomington), and Kevin Kennedy, MPH (Healthy Indoors Consulting), who provided an overview of how their diverse research approaches have integrated partners and impacted policy. An interactive “Research and Resource Expo” session that mixed research posters with informational tables by community partners, with topics ranging from pest control and lead

MARK YOUR CALENDARS!

**ENVIRONMENTAL HEALTH SCIENCES
CENTER AND INSTITUTE FOR HUMAN
HEALTH AND THE ENVIRONMENT**

2024 FALL RESEARCH SYMPOSIUM

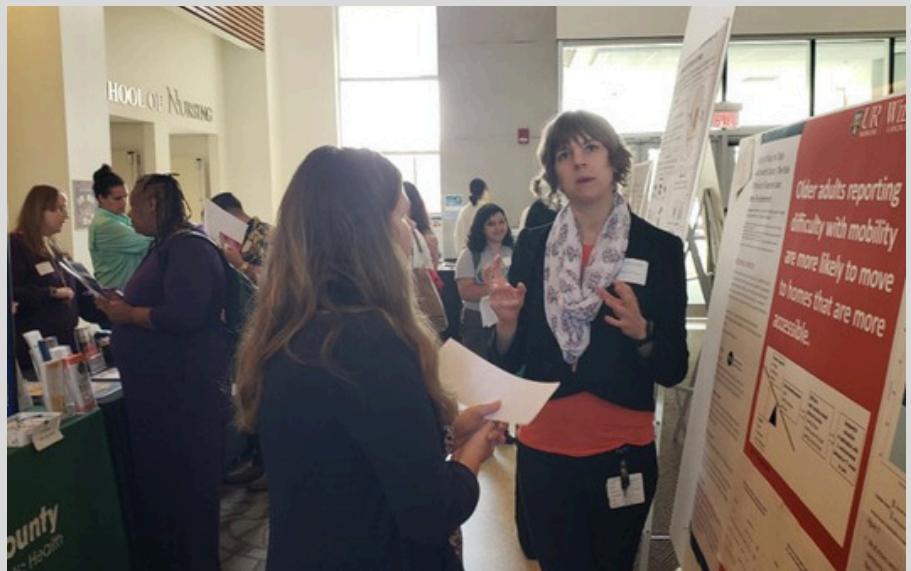
AIR POLLUTION AND HEALTH

Join us for the next event!

On November 17th the EHSC and IHHE will host a one-day research symposium on air pollution and health at the Memorial Art Gallery in Rochester. The symposium will feature keynote lectures by Marianthi-Anna Kioumourtoglou, ScD, and Matthew Campen, PhD, MSPH.

For more information, contact:
ihhe@urmc.rochester.edu

The Resource and Research Expo featured tables from 26 organizations and posters by 15 researchers, including Marielle Jensen-Battaglia (pictured), a trainee in URM’s Geriatric Oncology Research Group.



Continued from page 2

Research Workshop (continued)

poisoning prevention to PFAS and microplastics, provided rich opportunities for participants to interact across sectors and institutions.

To kick off the afternoon, four short “seed talks” (see right) highlighted how diverse researchers and clinicians can enter the field of healthy housing research. The day concluded with roundtable discussions of problems in homes and their potential health impacts, available data and resources, and future research needs and possible partnerships. “World café”-style discussions focused on specific populations of children, women, and older adults, but all identified a need for additional efforts to engage with communities about priority needs, for additional housing quality improvement programs, and for the potential of research to inform and evaluate such initiatives.



Attendees participated in Research Roundtables, world café-style discussions to identify problems, resources, and research potential around housing and health.

Seed talks highlighted entry points from diverse fields into healthy housing research.

“Mind the gap: the limits of research ethics rules for environmental health research”
-philosopher Jon Herington, PhD

“An economist takes on environmental health and justice in Rochester”
-environmental economist (and EHSC member)
Elaine Hill, PhD

“Improving indoor air quality as an infection control strategy: lessons from nursing homes and the Covid-19 pandemic”
-public health scientist Brian McGarry, PhD

“Exploring the gaps, using implementation science to improve the outcomes for children with asthma and allergic disease in Rochester, NY”
-allergist Jessica Stern, MD

Thank you to all our speakers!

Keynote Speaker



Amanda L. Reddy, MS
Executive Director
National Center for Healthy Housing

Local Overview



Melissa Berrien
Director of Resident Services
Rochester Housing Authority

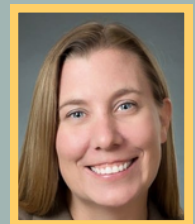
Healthy Housing Research Panelists



Michelle Del Rio, PhD
Assistant Professor
School of Public Health
Indiana University, Bloomington



Kevin Kennedy,
MPH, CIEC
Environmental Health Scientist
Healthy Indoors Consulting



Robin Dodson, ScD
Associate Director of research
operations
Silent Spring Institute

Rochester Home to New Microplastics Research Hub



A new Rochester-based research center will study the lifecycle of microplastics, including their origin, distribution and movement in the Great Lakes freshwater ecosystem and the implications for human exposure and health impacts. The research center will also focus on how climate change could intensify the environmental and health threats posed by microplastics.

The Lake Ontario Center for Microplastics and Human Health in a Changing Environment, or “LOMP,” is a collaboration between the University of Rochester and Rochester Institute of Technology (RIT) supported by a \$7.3 million grant from the National Institute of Environmental Health Sciences (NIEHS) and the National Science Foundation under their joint Oceans and Human Health program.

“The center will seek to develop a better understanding of the interactions between plastic pollution, the Great Lakes environment, and human health in both current and projected real-world conditions,” said Katrina Korfmacher, PhD, a professor of Environmental Medicine at URMC and co-director of the new center. “This research will catalyze a new understanding of both environmental and human health aspects of microplastics, engage new groups in strategies to reduce the source of waste and mitigate exposure, and provide a model for similar approaches in other communities.” LOMP co-director Christy Tyler, PhD, professor in the Thomas H. Gosnell School of Life Sciences at RIT, said “This funding gives us the opportunity to bring together environmental and health sciences researchers to tackle a truly global crisis.”



Katrina Korfmacher, PhD (left), and Christy Tyler, PhD (right), co-direct the new center.

Microplastics, plastic particles less than 5 mm in size, have been shown to move easily through the food chain and persist in the environment. Common sources of plastic pollution include food wrappers, plastic bottles, plastic bottle caps, plastic bags, plastic straws, cigarette butts, tire-wear particles, and synthetic clothing. Plastic waste enters the environment via urban stormwater, agricultural runoff, and wastewater. Microplastics are ubiquitous, frequently difficult to detect and mitigate, and research has found microplastic particles in human blood, heart, liver, and

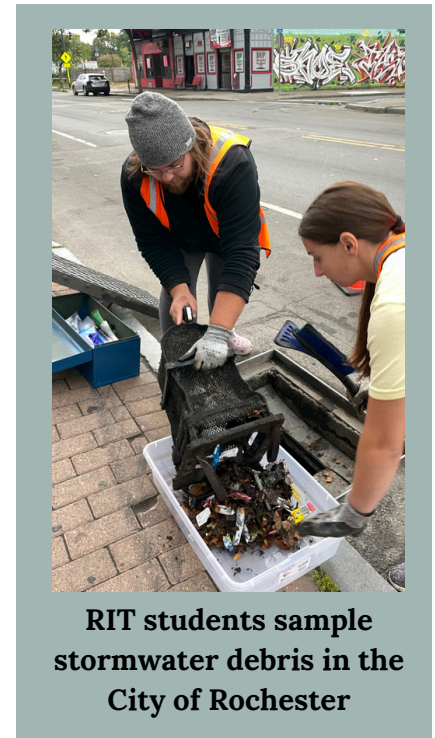
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Microplastics research hub (continued)

lung tissue, placenta, and breast milk. However, little is known about their long-term impact on human health.

The new center will undertake research projects that aim to understand how environmental changes may affect the movement and characteristics of microplastics in Lake Ontario, how microplastics interact with other contaminants, and the impact on inflammation and immune response in model biological systems. The goal is to develop and promote solutions that inform future research, community actions, and policy changes that will lessen the health effects associated with microplastics.

The center will engage with diverse partners to conduct community science, advance environmental health literacy, and promote solutions. These activities include involving residents in efforts to monitor debris flows and developing, evaluating, and disseminating outreach materials for audiences including youth, educators, community groups, and policy makers in both urban and rural settings.



RIT students sample stormwater debris in the City of Rochester

Adapted from: <https://www.urmc.rochester.edu/news/story/microplastics-research-hub-aims-to-unravel-health-impact-in-changing-climate>



Top row (RIT): Steven Day, Nathan Eddinsaas, Matt Hoffman, Andre Hudson, and Iris Rivero
Bottom row (UR): Lisa DeLouise, Alison Elder, Jim McGrath, Jacques Robert, and Sami Romanick

Working to Identify Community Environmental Health Priorities

What are the top environmental health priorities in Rochester and the Finger Lakes region?

EHSC and IHHE engagement staff are working with community partners to update our understanding of how these priorities have evolved over time. The May 2024 Community Advisory Board meeting focused on refining an initial list of environmental health priorities compiled from a survey of advisory board members last winter.

In Summer 2024, EHSC and IHHE staff will partner with 2024 Capacity Building Project awardee, Rochester Ecology Partners, to gather input from the broader community. Rochester Ecology Partners' "Building Capacity for Rochester's Environmental Movement" project aims to identify environmental health priorities from a community perspective and promote collaboration among diverse groups to address environmental health and justice challenges. These efforts will inform future partnerships, research directions, and engagement efforts of the EHSC and IHHE.



Rochester Ecology Partners introduced their project (left). CEC Director Katrina Korfmacher facilitated a discussion about community environmental health priorities (right).

Tree Talk – Trees, Human Health, and Equity in Rochester

The IHHE and Enrico Fermi School No. 17 came together this year to form Tree Talk, a collaborative project aimed at increasing awareness about the relationship between trees, human health, and equity. The project supported youth in building social networks for a topic they care about and promoting tree planting in areas of Rochester with lower tree equity scores.

Launched at the Rochester Makerspace in October 2023 with the School 17 Garden Club and their families, Tree Talk's goal was to plant 40 trees across various Rochester neighborhoods and encourage action around the impact trees have on community health. Students and mentors made decisions about tree species selection and planting locations based on data from the Racial Equity Index and public health research. Students determined the planting sites for the new trees by considering locations where trees had died and not been replaced, neighborhoods with fewer trees, and sentimental spots for students. Varieties of native trees in different sizes were recommended for each planting location.



Garden Club students and mentors



On April 27, Tree Talk students, teachers, and families invited the community to a Festival of Trees to learn more about their project and how to get involved. Festival attendees explored the connections between trees, human health, and equity through interactive activities, informational tables, crafts, greenhouse tours, and plant and tree adoptions. EHSC faculty, staff, and graduate students attended the festival to share information about air and health, heat, and to help with interactive activities.

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Tree Talk (continued)

Tree Talk was led by School 17 science teacher Ellie Faugh, a UR Warner School of Education alumna, and April Leuhmann, PhD, associate professor at the Warner School and co-leader of the IHHE Education Pillar. Partners who provided additional support to Tree Talk include TeJay Chess from Cornell Cooperative Extension of Monroe County (recipient of the 2022 EHSC Capacity Building Project for the “Tree Canopy Initiative”) and John McIntyre from the University of Rochester Horticulture and Grounds Department.

Adapted from: <https://blogs.rochester.edu/thegreendandelion/2024/04/tree-talk-festival-caps-off-universitys-earth-week-celebrations/>

EHSC Engages Around Air and Health

The University of Rochester has been home to leading research on air quality and health for decades. Until recently, local air quality has not been a pressing concern for the general public. However, growing awareness of climate change and the impact of wildfire smoke from fires in Canada in 2023 have increased community interest in learning more about air pollution and human health. Over the past year, the CEC has worked with researchers to address these concerns.

On March 7, EHSC member Dan Croft, MD, MPH, presented a public lecture, “Climate Change and the Air You Breathe,” at the Rochester Museum and Science Center. CEC staff and toxicology trainees led interactive activities about air and health before the lecture.



Have you ever wondered what’s in the air you breathe? The IHHE partnered with the Edward G. Miner Library for an interactive lunch and learn workshop to explore the question “What’s in your air?”. Faculty, staff, and students from across campus learned how air quality is important for health and what resources are available to learn about air pollution in your home, school, workplace, or neighborhood. Attendees also had the opportunity to check out a variety of personal air sensors.

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Air and Health (continued)

The presentation was adapted from [Sensor Stories](#), a resource co-designed with the CECs at the University of North Carolina at Chapel Hill, University of Texas Medical Branch, and Columbia University, and WE ACT for Environmental Justice. Sensor Stories materials help audiences use low-cost air quality sensors to address community questions and concerns about particle pollution. Sensor Stories materials have also been integrated into the University of Cincinnati's NIEHS-funded project, "RISE Communities" (Research Innovations using Sensor Technology in Environmental Justice Communities), to train community teams to use low-cost air sensors. CEC Director Katrina Korfmacher, PhD, participated remotely in training their first cohort of five academic-community partner teams.



Members of the University of Rochester community can now check out a personal air sensor from the Miner Library.

Ask the Information Desk staff to learn more!

Following the summer 2023 wildfire smoke events, local organizations in Rochester identified a need for kid-friendly information about wildfire smoke and health. CEC staff, with input from local, state, and national partners, developed an activity sheet for elementary school-aged children and an accompanying guide for their caregivers.

Why should I play inside today?

Wind can bring smoke far away from the fire. Connect the smoke from the wildfire to the town.

When it is hot and dry, a small spark can start a wildfire. Many people help keep us safe from wildfires. Can you spot all the helpers?

Wildfire smoke is not good for our bodies. It is worse for kids than for grown-ups. Your body is still growing!

What color is your air quality today?

You may not be able see or smell the smoke. Scientists test the air to see if it is healthy to play outside. You can too!

www.airnow.gov

Scan the QR code to check your air and color the flag.

If it is green or yellow, it is healthy to play outside!

Find all the hidden words!

Air quality Coughing Growing Smoke Asthma Exercise Indoors Pollution Breathing Forests Lungs Wildfire

Some fun things I can do inside are...

Draw yourself as a helper!

How are you feeling?

Happy, Surprised, Confused, Sad, Angry, Worried, Disappointed, Bored

How does smoke get into your body? Connect the dots!

Why Should I Play Inside Today? Activity Sheet Guide for Caregivers

"Why should I play inside today?" is an activity sheet designed for elementary school-aged children who may be experiencing air pollution from wildfire smoke but are not directly experiencing a nearby wildfire.

Changes in climate like record high temperatures and dry conditions are increasing the severity and frequency of wildfires. With longer fire seasons and larger fires, more communities are impacted by wildfires and wildfire smoke. This includes communities far from actively burning fires, as wind patterns can carry the smoke long distances.

How to use this activity sheet

Parents, educators, healthcare providers, and other caregivers can use this activity sheet alongside conversations including:

- What a wildfire is and where it is happening.
- That wildfire smoke can travel a long way through the air and can be harmful.
- What you can do to stay healthy.
- Fun things you can do indoors.
- How you and the child are feeling.

Wildfire smoke and health

Wildfire smoke can impact air quality far from the source fire. Smoke exposure is particularly dangerous for children and babies as their bodies are still developing.

Learn how to protect yourself and kids if wildfire smoke is affecting your area from the [NIH Children's Environmental Health Centers](#)

Find tips for talking to children about natural disasters from the [American Academy of Child and Adolescent Psychiatry](#).

What can I do?

Check the air quality

Scan the QR code on the activity sheet or visit [airnow.gov](#) together to check your air quality. Color the flag on the sheet with what you find. Follow the guidance for outdoor activity.

Create a clean room for safer breathing

Learn how at [EPA.gov](#)

Buy or make your own air purifier

Scan the code for instructions in English or Spanish from the [U.S. Environmental Health Centers](#). en Español in English

Read or listen to a picture book

"Why is Coco Red?" Available from the [EPA](#) in multiple languages

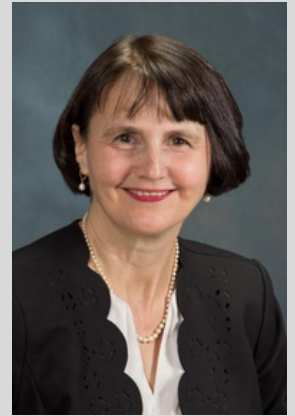
This activity sheet and guide were developed by the Community Engagement Core of the University of Rochester Environmental Health Sciences Center with support from National Institute of Environmental Health Sciences grant P30 ES001247. Last updated 5/1/2024

"Why Should I Play Inside Today?" is designed for children experiencing wildfire smoke events, even if they are far from the active fire. Activities explain why they may need to stay indoors, how to check the air quality, and what they can do. The Caregiver Guide provides conversation starters and links to resources on key information and actions children and caregivers can take to stay safe from wildfire smoke. [Find these and more resources on our website.](#)

EHSC Faculty News and Awards

Uncovering PFAS' Impact on Immunity

EHSC Director B. Paige Lawrence, PhD, (pictured) received funding from NIEHS to study how maternal exposure to PFAS affects the immune system later in life. PFAS, called “forever chemicals,” are found in many common products and most drinking water, and exposure to PFAS has been linked to a range of health effects. The team also includes EHSC member Kristin Scheible, MD, postdoc Christina Post, PhD, trainees Darline Castro-Melendez, MS, and Marissa Skulsky, and Carrie McDonough, PhD (Carnegie Mellon University).



New Translational Center for Barrier Microphysiological Systems (TraCe-bMPS)



University of Rochester recently became home to a new national center focused on using tissue-on-chip technology to develop drugs more rapidly and reduce the need for animal trials. EHSC member James McGrath, PhD, (pictured) will direct the new TraCe-bMPS center, funded by a \$7.5 million grant from the National Institute on Aging to the University of Rochester in partnership with Duke University.

The center aims to develop Food and Drug Administration-qualified drug development tools related to studying barrier functions in disease –interfaces in tissue that are critical for the progression of infection, cancer, and many autoimmune disorders. The TraCe-bMPS scientists will create the drug development tools using microphysiological systems: small chips that mimic the structure and function of diseased tissue using human cells. They will be built using the modular, mass-producible μ SiM chips pioneered by center director James McGrath. (The chips feature the same silicon nanomembranes used for capturing microplastics from environmental samples in the LOMP center research.)

Additional center leadership includes Hani Awad, PhD, Benjamin Miller, PhD and Joan Adamo, PhD, at the University of Rochester and George Truskey at Duke University.

Adapted from: <https://www.rochester.edu/newscenter/tissue-on-chip-drug-development-tool-trace-bmps-589512/>

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Faculty News (continued)

Congratulations to the EHSC members recently appointed to [named professorships](#):

William H Eilinger Professor of Pediatrics: **Jill S. Halterman**, MD, MPH

Martha M. Freeman, M.D. Professor in Biomedical Genetics: **Margot Mayer-Proschel**, PhD

Albert and Phyllis Ritterson Professor in Microbiology and Immunology: **Jacques Robert**, PhD

Dean's Associate Professor, Pediatrics: **Kristin M. Scheible**, MD

Toxicology Trainee News and Awards

The Toxicology Training Program's annual retreat was held on May 30. Dana Dolinoy, PhD, Director of the University of Michigan Lifestage Environmental Exposures and Diseases (M-LEED) center, delivered the keynote address, titled "Toxicoepigenetics and the use of piRNA for precision environmental health research." The event also featured platform presentations by trainees Elizabeth Plunk, MS, Traci Pressley, MS, Garrick Salois, PhD, and Courtney Jackson, PhD, as well as a lively poster session with presentations from toxicology trainees.



Trainees Nashae Prout (left) and Kristina Fenner (right) with Dr. Dana Dolinoy

Toxicology Training Program - Annual Awards:

- **Marissa Skulsky**, a first-year graduate student, and **Dr. Christina Post**, a postdoctoral fellow, won awards for Best Poster Presentation. Both are members of Dr. B. Paige Lawrence's lab.
- **Elizabeth Plunk**, a graduate student in Dr. Ania Majewska's lab, was awarded Best Platform Presentation.
- **Adelaide Weidner**, a graduate student in Dr. Olga Astapova's lab, was awarded Most Inquisitive Student.
- The Mentoring Award was won by **Philip Spinelli**, a Senior Research Specialist in Dr. Martha Susiarjo's lab.
- The 2023 William F. Neumann Award for Exemplary Scholarship and Citizenship was awarded to **Elizabeth Plunk**, a graduate student in Dr. Ania Majewska's lab.
- Weiss Toxicology Scholar Awards were given to **Catherine Beamish**, advised by Dr. Matthew Rand, and **Kristina Fenner**, advised by Dr. B. Paige Lawrence.

Continued from page 11

Trainee News and Awards (continued)

- Robert Infurna awards for outstanding first-author research publications were given to:
 - **Dr. Janine Cubello**, a postdoctoral associate in Dr. Marissa Sobolewski-Terry's lab, for her work published as a graduate student in Dr. Margot Mayer-Proschel's lab. Janine's paper, titled "Maternal Iron Deficiency and Environmental Lead (Pb) Exposure Alter the Predictive Value of Blood Pb Levels on Brain Pb Burden in the Offspring in a Dietary Mouse Model: An Important Consideration for Cumulative Risk in Development" was published in *Nutrients* in September 2023. Coauthors are Derick R. Peterson, Lu Wang, and Margot Mayer-Proschel.
 - **Adelaide Weidner**, a graduate student in Dr. Olga Astapova's Lab. Adelaide's paper "Paxillin regulates androgen receptor expression associated with granulosa cell focal adhesions" was published in *Molecular Human Reproduction* in May 2024. Coauthors are Anna Roy, Kenji Vann, Ariana C. Walczyk, and Olga Astapova.



Trainees with program coordinator Leah Brown at the awards dinner

Other trainee awards and accolades from the Spring 2024 semester include:

- Five Toxicology Training program students successfully defended their PhD dissertations.
 - **Dr. Emily Quarato**, mentored by Dr. Laura Calvi
 - **Dr. Alex Strohm**, mentored by Dr. Ania Majewska
 - **Dr. Joe Lucas**, mentored by Dr. Irfan Rahman
 - **Dr. Catherine Beamish**, mentored by Dr. Matt Rand
 - **Dr. Sarah Morgan**, mentored by Dr. Lisa DeLouise
- **Dr. Christina Post**, a postdoctoral fellow in Dr. B. Paige Lawrence's lab, received a Health and Environmental Sciences Institute Immunotoxicology Young Investigator Travel Award to attend the Society of Toxicology meeting.
- **Dr. Sadiya Shaikh**, a postdoctoral fellow in Dr. Irfan Rahman's lab, was elected as the Postdoctoral Representative for the Association of Scientists of Indian Origin for the year 2024-2025.
- **Ryan Owens**, a graduate student in Dr. Regina Rowe's lab, received the Association for Chemosensory Sciences Diversity Travel Award and was elected the graduate representative for the Society of Toxicology Lake Ontario Regional Chapter.
- **Pablo Reina-Gonzalez**, a graduate student in Dr. Souvarish Sarkar's lab, received the 2nd place DDTSS Best Graduate Student Poster Award and was awarded a Society of Toxicology Travel Award.

For Questions or Comments, Please Contact:

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