



National Institute of Environmental Health Sciences
Your Environment. Your Health.

Council Concept Clearance

Pediatric and Reproductive Environmental Health Scholars

Program Continuation

September 10, 2025



Overview

- Program history & rationale
- Accomplishments
- Request

Program Team

Program

- Liam O'Fallon (Primary POC)
- Mike Humble
- Jenny Collins



Grants Management

- LaTavia Miller
- Jenny Greer
(Chief, Grants Management Branch)





National Institute of Environmental Health Sciences
Your Environment. Your Health.

Bright future with great potential

Original concept approved by Council in
September 2019



Program Rationale



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Identified training gap

- Consistent funding for research training
- Environmental health literacy

Strengthen coordination

- NIEHS, CDC/ATSDR, and EPA/OCHP
- NIEHS-funded researchers and Pediatric Environmental Health Specialty Units (PEHSUs)



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Program Rationale: PEHSU Partnership

PEHSU:

Pediatric Environmental Health Specialty Units

Activities:

1. Train Health Professionals
2. Outreach and Education
3. Consult and Refer

Affiliations:

Academic and Hospital



We are a national network of experts in reproductive and children's health issues related to environmental exposures.

Together, we make up the Pediatric Environmental Health Specialty Units (PEHSU) and work collaboratively to improve health systems to make communities safer for children and families. We provide community education and outreach, training for health professionals, and guidance and referrals.

**PEHSUs do not
conduct research.**

Pediatric & Reproductive Environmental Health Scholars Program

Programmatic Perspective and Vision

- **Purpose**: Research training opportunity for clinical disciplines
 - Pediatricians
 - Family medicine doctors
 - Obstetricians/Gynecologists
 - Nurses
- **Goal**: Strengthen Scholars' Research Capacity & Environmental Health Literacy
 - Enhance expertise in EHS research
 - Improve capacity in communication, outreach, and education
 - Increase understanding of health outcomes from environmental exposures
- **Outcome**: Expanded network of healthcare professionals and clinical researchers who possess the skills and knowledge to address the complexities of pediatric and reproductive environmental health.

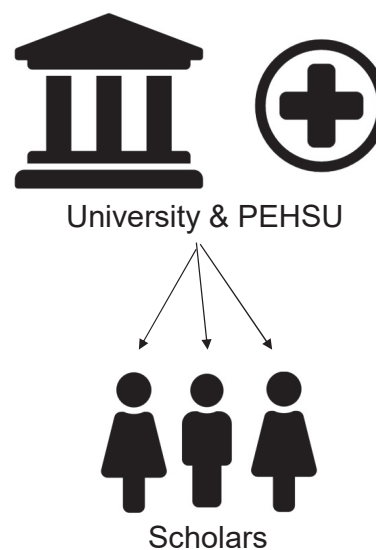
Pediatric and Reproductive Environmental Health Scholars Program

2019 Concept

- Academic institution with strong PREH research is required to partner with a funded PEHSU
- Institution must:
 - Develop research training plan
 - Solicit scholar applications
 - Offer research opportunities
 - Advance outreach and engagement through PEHSU

Scholar Benefits

- Salary and fringe (\$110K)
- Protected time (9 months)
- Research and career development costs (\$25K)



Program Highlights



Emory University

University of
Washington

Mount Sinai
School of Medicine



PEHSU Region 4

PEHSU Region 10

PEHSU Region 2



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MSSM Scholars



Nicole Ramsey, MD, PhD Pediatric allergist	Focus: Associations among prenatal metals, maternal diet, and food allergy in children
Dania Valvi, MD, MPH, PhD Environmental Pediatrics	Focus: Metabolic Syndrome
Dinesh Barupal, PhD Environmental Medicine	Focus: Exposomics
Aderonke Akinkugbe, BDS, MPH, PhD Public Health Dentist	Focus: Prenatal lead exposure and offspring oral health outcomes
Sarah McCuskee, MD, Mphil Emergency Medicine	Focus: 'Spatio-Temporal Response to Environmental Stressors in Sickle Cell Disease'
Chelsea DeBolt, MD, MSCR Obstetrics and Gynecology, Maternal and Fetal Medicine	Focus: Prenatal PFAS mixture exposure and hypertensive complications of pregnancy.



MSSM Scholar Highlights

• Nicole Ramsey, MD, PhD

- Publications on maternal stress and child asthma and prenatal metal exposure and child food allergy
- Social Media Reel on Environment Friendly Back to School Tips
- Clinical collaboration with PEHSU and NYSCHECK on asthma patients with environmental triggers

• Aderonke Akinkugbe, BDS, MPH, PhD

- Publications on environmental exposures and pediatric oral health
- Developed an Rx for Prevention on Fluoride in collaboration with PEHSU and NYSCHECK

P*rescription for Prevention*

Fluoride

Did you know?
Cavities are the most common chronic disease in childhood and are 5 times more common than asthma. Fluoride helps to reduce the risk of cavities.

What to know about Fluoride
Fluoride treatment can help reduce the risk of cavities in children.

- Cavities ("tooth decay") contribute to children's health problems such as pain, infections (including meningitis), poor self-esteem, missed school, and poor school performance.
- New York City (NYC) adds small amounts of fluoride to drinking water to prevent cavities and strengthen teeth. These low levels have been shown to be safe.
- Some studies have shown changes in brain development in children, but the levels of fluoride used in these studies were much higher than the levels in NYC water.

Action plan
Take steps to protect your child's teeth from cavities. Make sure your child sees their dentist every 6 months once their 1st tooth comes in.

- Talk to your child's dentist or pediatrician about applying fluoride to their tooth surfaces.
- Don't put your baby to sleep with a bottle. If your baby drinks milk at bedtime, make sure they finish it quickly before falling asleep. Drinking milk from a bottle overnight can cause tooth decay.
- Use a rice-grain sized amount of fluoride toothpaste for children 2 years and under.

more →

New York State Children's Environmental Health Centers | NYSCHECK.ORG | Signature

Emory Scholars



Carmen Dickinson-Copeland, PhD, MSCR Biomedical research	Focus: Machine learning to examine children are at risk for both high and low-level lead exposure.
Liliana Aguayo, PhD, MPH Community Health	Focus: Order and onset of cardiovascular health losses among mothers and their infant
Nasim Katebi, PhD Bioinformatics	Focus: 1) maternal stress with fetal development and 2) epigenetic factors with fetal development and maternal stress.
Belise Livingston-Burns, MD, MPH Pediatrics	Focus: 1) water consumption preferences (tap versus bottled water) and child health outcomes and 2) evaluate an intervention to improve trust in drinking water.
Ashley M. Ruiz, PhD, RN Women's health	Focus: Social and environmental determinants that impact women's vulnerability to sexual-based violence following natural disasters
Abby Mutic, PhD, MSN, CNM Maternal and Infant Health/Midwifery	Focus: Perinatal and pediatric environmental exposures that contribute to respiratory health outcomes and school absenteeism
Zahra Barandouzi, RN, PhD Nurse	Focus: TBD
Mattie Wolf, MD, MSc Neonatologist	Focus: TBD

Emory Scholar Highlights:

- **Liliana Aguayo, PhD, MPH**
 - 10 manuscripts, a book chapter, and an Op-Ed published in Medscape
 - Received American Heart Association Career Development Award.
- **Carmen Dickinson-Copeland, PhD, MSCR**
 - Named an Institutional Champion of the All of Us Research Program Researcher Academy.
- **Nasim Katebi, PhD**
 - Publications on novel approaches to fetal heart monitoring and blood pressuring monitoring



Incorporating the Environment Into Maternal and Child Health Care

February 26, 2024

Download: [Transcript](#) [Audio](#)

Interviewees: Lisa Thompson, Ph.D., R.N., and Belise Livingston-Burns, M.D.

In this episode, we'll learn how the NIEHS Pediatric and Reproductive Environmental Health Scholars (PREHS) program is teaching health care professionals about the many interactions that occur between children, pregnant women, new mothers, and their environment.

UW Scholars



Mary Crocker, MD, MPH Pediatric pulmonologist	Focus: Reducing environmental factors associated with asthma outcomes in low-income populations.
Jonika Hash, PhD, RN Nurse	Focus: Influence of social and environmental factors on pediatric cardiometabolic health via epigenetics.
Lizzie Reznikov, DO, PhD Pediatric gastroenterology	Focus: Environmental exposures and inflammatory cytokine levels in children with inflammatory bowel disease. How these exposures interact with other common dietary factors to influence disease.
Ayana De Gaia, MD, MPH Obstetrician	Focus: Neighborhood factors, including greenspace, as modifiable risk factors driving disparities in birth outcomes
Tristan Nicholson, MD Reproductive urologist	Focus: Male-factor infertility. Will examine wildfire smoke and other environmental toxicants that impair sperm production and/or function.



UW Scholar Highlights:

• Jonika Hash, PhD, RN

- Developed an infographic on ultrafine particles in response to community concerns
- Integrating environmental health exemplars into her Intro to Nursing Research course.
- Pilot Project program award (P30). *A Pilot Study Characterizing Traffic-Related Air Pollution Exposure and Cellular Aging in an Underserved Sample of Mother-Child Dyads.*

• Lizzie Reznikov, DO, PhD

- Developed a “Guidance” document on sweet alternatives that has been posted on the PEHSU resources page.



UW Scholar Highlights

- **Mary Crocker, MD, MPH**

- Developed a Wildfire Action Plan for parents and caregivers.
- Pilot Projects Program award (USC P2C). *A Virtual Environmental Home Inspection Protocol to Address Environmental Asthma Triggers in Children*
- Featured in NIEHS *Environmental Factor*

Environmental Factor
Your Online Source for NIEHS News
MAY 2025

NIH National Institute of Environmental Health Sciences

Home Science Highlights Community Impact Papers Published Awards & Recognition Beyond the Bench

Pediatrician shares keys to reducing wildfire smoke exposure

Previous Article Next Article

NIEHS program helped Mary Crocker, M.D., develop evidence-based interventions to reduce children's asthma symptoms during wildfires.
BY ISAAC CONRAD



Summary: Training the Next Generation of Clinician

Building capacity and leadership of Scholars in *multiple clinical specialties*

Pediatric
Pulmonology

Pediatric
Allergy and
Immunology

Pediatric
Gastroenterology

Obstetrics/
Gynecology

Urology
(male fertility)

Epidemiology
(Obesity, DM,
CVD)

Dentistry

Nursing
(Child and Family
Public Health)

Emergency
medicine

Biomedical
Research
(bioinformatics,
machine learning)

Summary: Research foci

Exposures

- Lead & other heavy metals
- Maternal stress
- Greenspace/nature
- PFAS mixtures
- Wildfire smoke
- Traffic-related air pollution
- Phthalates
- Food, nutrition, and water consumption

Outcomes

- Non-alcoholic fatty liver disease
- Neurodevelopmental conditions
- Dental caries & periodontal disease
- Sickle cell disease
- Adverse pregnancy outcomes
- Hypertensive complications
- Cardiovascular health
- Respiratory disease
- Inflammatory bowel disease
- Cellular aging
- Infertility

Fostering Scholar Interactions

Scholar Networks

It has been important for scholars to plug into environmental health research networks to gain greater understanding of the field and share their new knowledge.

Program Identity

The projects have been working with their scholars to establish an identity of being a PREH Scholar.

PREHS Program Meetings (virtual and in-person)

- October 2023 (NIEHS)
- November 2025 (PEHSU National)
- Promoted interactions among program participants
- Shared research efforts
- Advanced approaches
 - Research
 - Training
 - Communication



Moving Forward: Continuing the Program



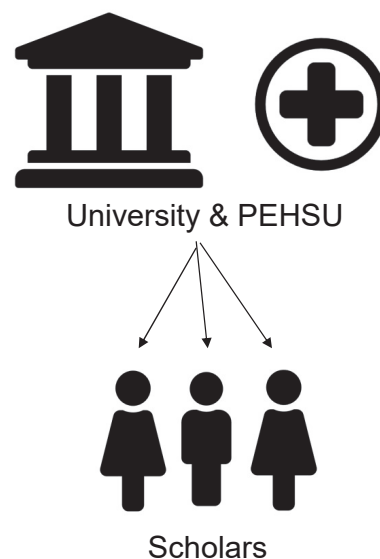
Pediatric and Reproductive Environmental Health Scholars Program

2025 Concept

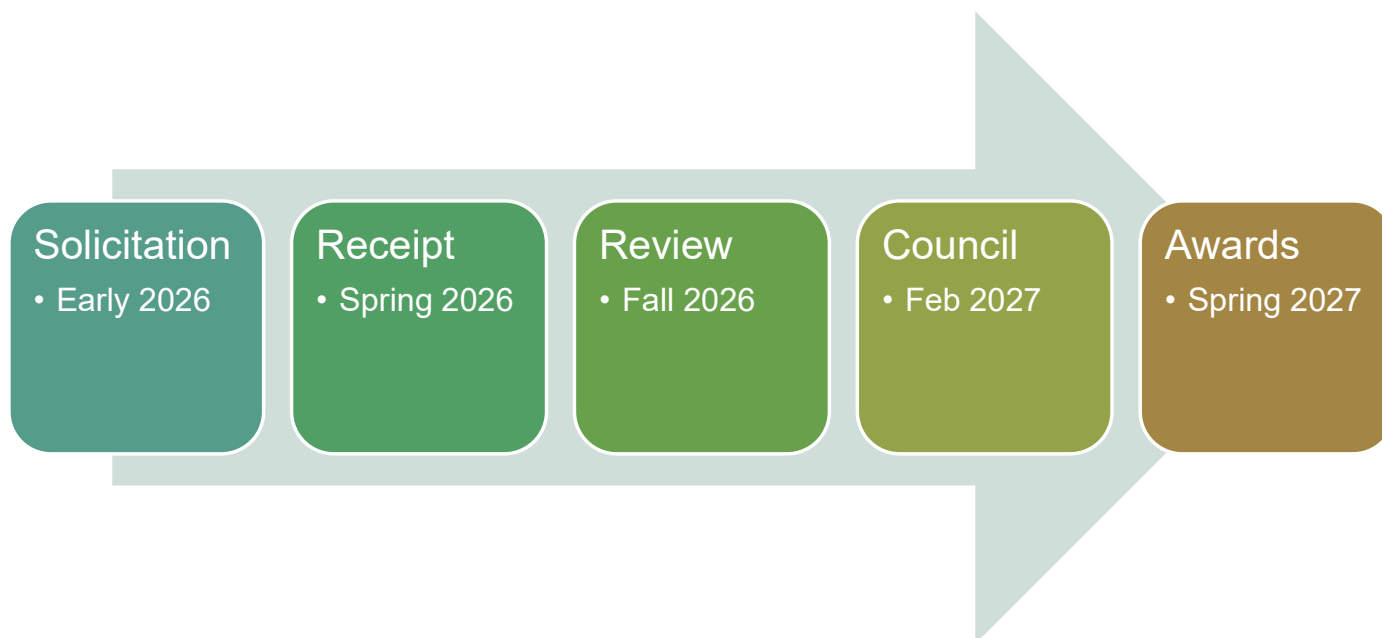
- Same format and vision with minor tweaks
- Academic institution with strong PREH research is required to partner with one or more funded PEHSUs
- Institution must:
 - Develop research training plan
 - Solicit scholar applications
 - Offer research opportunities
 - Advance outreach and engagement through PEHSU

3 Goals

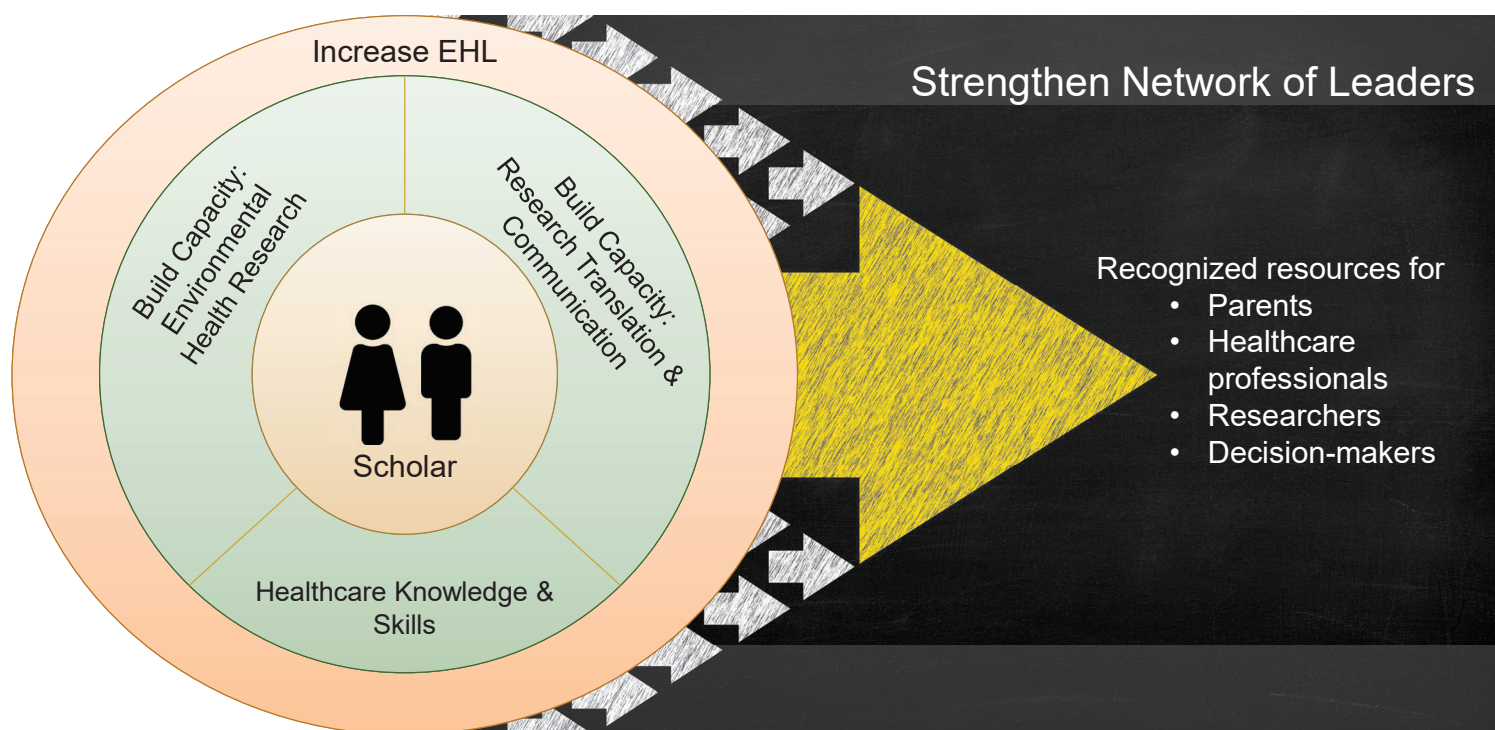
- Continue training well-rounded scholars
- Strengthen our PEHSU partnership
- Further cultivate a programmatic identity



PREHS Program 2.0: Proposed Timeline



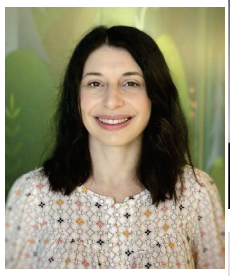
PREHS Program: Advancing Future Leaders



Thank You!



Discussants: Drs. Cormier and Mutlu



PREHS Program Projects

Project Title	Institution	Scholars	Pubs
Pediatric and Reproductive Environmental Health Scholars Southeastern Environmental Exposures and Disparities (PREHS SEED) Program	Emory University Atlanta, GA PEHSU Region 4	8	12
University of Washington Pediatric and Reproductive Environmental Health Scholars (UW PREHS)	University of Washington Seattle, WA PEHSU Region 10	5	6
Scholars in Environmental Pediatrics, Reproductive Health, and Life Course Science	Mount Sinai School of Medicine New York City, NY PEHSU Region 2	6	15