

## How to Apply

The Certificate Program in Environmental Health Sciences (EHS) is a full-time training program offered by the Office of Biomedical Graduate Studies (BGS). Students who apply for any BGS PhD program are eligible to apply to the program.

Matriculants receive a fully-funded fellowship—including tuition, fees, health insurance, and a competitive stipend—regardless of financial need. The training and research base for the Certificate Program in Environmental Health Sciences is the Center of Excellence in Environmental Toxicology (CEET) which is funded in part by the National Institute of Environmental Health Sciences (NIEHS) P30 ES013508.

## Curriculum

Students take specialized courses in addition to their graduate group requirements and receive a PhD from their graduate group and a Certificate in Environmental Health Sciences. Course work covers molecular toxicology, epidemiology, biostatistics, genome science and biomedical informatics. All students must complete three laboratory rotations, one of which must be a community or population-based research project. Students are expected to attend the CEET seminar series and present at the annual CEET symposium. Completion of this sequence is sufficient to graduate with the Certificate. Thereafter, students conduct their thesis research (typically three years) to graduate with the PhD degree.

## NIH Training Grant Support

All matriculating students accepted into Biomedical Graduate Studies (BGS) are eligible for acceptance into the Certificate Program. Students who complete one year of the Certificate Program and elect to conduct thesis research in environmental health sciences, are eligible for additional support from our NIEHS-funded T32 training grant: Translational Research Training Program in Environmental Health Sciences, T32 ES019851.



## For more information: Center of Excellence in Environmental Toxicology

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## Certificate Program in Environmental Health Sciences

## University of Pennsylvania Center of Excellence in Environmental Toxicology



**Linking Environmental Exposures to Human Disease.  
Translating Findings into Action.**







The Certificate Program in Environmental Health Sciences, housed in the Center of Excellence in Environmental Toxicology (CEET), offers a unique curriculum designed to provide training to span the disciplines of translational environmental health sciences, enabling students to:

- Study the mechanisms by which environmental exposures cause disease
- Develop the necessary skills to translate research into effective prevention, intervention, and treatment
- Conduct community-based environmental health research and translate findings back to communities and decision makers

The certificate training prepares students for a suite of careers in toxicology, risk-assessment, and environmental and occupational health sciences. Students are encouraged to become board certified as “Diplomats of the American Board of Toxicology.” Program graduates are working in academia, government agencies, and pharmaceutical and consumer-product industries (drug, food, cosmetic and nanotechnology).



Through dedicated coursework, rotations, seminars, and symposia, students will gain foundational knowledge in Environmental Health Sciences (EHS). The certificate program emphasizes responsible conduct of research and rigorous and reproducible experimental design in a supportive environment:

- Focuses on the mechanistic links that exist between environmental exposures, the molecular and cellular effects that ensue, and diseases of environmental etiology. Emphasis is placed on training in genome science, molecular toxicology, environmental epidemiology, data science, and population-based and clinical/translational research.
- Fosters interdisciplinary collaboration and access to a network of investigators. Students engage with world-renowned experts working in one of four thematic areas: Air Pollution & Lung Health, Environmental Exposures and Cancer, Windows-of-Susceptibility, and Environmental Neuroscience — unified by cross-cutting themes in Exposomics (exposure science) and the emergent threat of Extreme Weather Events on health.
- Provides access to state-of-the-art equipment, software, and resources to conduct high-impact EHS research. Students receive hands-on instruction from CEET’s three unique Facility Cores: Translational Research Support Core, Biomolecular Mass Spectrometry Core, and Environmental Health Informatics Core.
- Enables opportunities to engage with the public on important EHS issues. Students complete a mandatory Community Environmental Health Rotation, directed by CEET’s Community Engagement Core, which provides engagement with community groups, regulators, and legislators and a mentored opportunity to create translational materials relevant to their area of research.

## Alumni Spotlight



**Nicole Robles-Matos, PhD**

**Thesis:** Elucidating the Epigenetic Mechanisms Involved in the Origins of Adult Metabolic Outcomes Following in utero Di(2-ethylhexyl)phthalate (DEHP) Exposure

**Community Rotation:** Development of Educational Materials about Lead Exposure in Water for Hispanic Communities in South Philadelphia - created and distributed in partnership with Puentes de Salud.

**Current Position:** Environmental Toxicologist, US Environmental Protection Agency



**Isabelle Lee, PhD**

**Thesis:** The Role of Polycyclic Aromatic Hydrocarbon (PAH) Metabolites in Endometrial Cancer

**Community Rotation:** Cumulative Health Risks from Air Toxicant Exposure in Chester, PA - produced an infographic in collaboration with the Chester Environmental Partnership that was used at a community town hall meeting attended by Dr. Linda Birnbaum (Former Director NIEHS).

**Current Position:** Principal Scientist & Skin Sensitization Lead, The Research Institute for Fragrance Materials



**Jessica Murray, PhD**

**Thesis:** The Role of Aldo-Keto Reductases & NRF2 Signaling in the Metabolic Activation of Nitrated Polycyclic Aromatic Hydrocarbons

**Community Rotation:** Risk Assessment of the Clearview Landfill Superfund Site in Eastwick, Philadelphia, PA

**Current Position:** Principal Investigator, Inhalation Toxicology, US Environmental Protection Agency