HEI | Health Effects Institute

Mentorship Opportunities for HEI Summer Fellows

#	Mentor	Affiliation	State
New England			
1	Robin Dodson, Associate Director of Research Operations	Silent Spring Institute	MA
2	Jon Levy, Professor and Chair of the Department of Environmental Health	Boston University, School of Public Health	MA
3	Shady Abohashem, Investigator and Instructor in Cardiovascular Imaging and Prevention	Massachusetts General Hospital/Harvard Medical School	MA
4	Mary D. Willis, Assistant Professor of Epidemiology	Boston University, School of Public Health	MA
5	Gary Adamkiewicz, Associate Professor of Environmental Health and Exposure Disparities	Harvard T.H. Chan School of Public Health	MA
Middle Atlantic			
6	Diana Hernandez, Associate Professor	Columbia University, Mailman School of Public Health	NY
7	Elena Colicino, Associate Professor	Icahn School of Medicine	NY
8	Marianthi-Anna Kioumourtzoglou, Associate Professor	Columbia University, Mailman School of Public Health	NY
Midwest			
9	Nishit Shetty, Assistant Professor	University of Kansas	KS
10	Ther Wint Aung, Assistant Professor	The MetroHealth Medical Center at Case Western Reserve University	OH
South			
11	Mark Meade, Associate Professor	University of Alabama at Birmingham	AL
12	Ping-Ching Hsu, Associate Professor	University of Arkansas for Medical Sciences	AR
South Atlantic			
13	Kelvin Fong, Assistant Professor	George Washington University	D.C.
14	Christine Ekenga, Assistant Professor	Emory University	GA
15	Ana M. Rule, Assistant Professor	Johns Hopkins	MD
16	Jennifer Richmond-Bryant, Associate Professor	North Carolina State University	NC
17	Lucas Henneman, Assistant Professor	George Mason Univeristy	VA
West			
18	Regan Patterson, Assistant Professor	University of California, Los Angeles	CA
19	Olukayode Jegede, Assistant Professor	University of California, Davis	CA
20	Jun Wu, Professor	University of California, Irvine	CA

21	Nicolas Lopez-Galvez, Assistant Professor	San Diego State University	CA
22	Sascha Nicklisch, Assistant Professor	University of California, Davis	CA
23	Judit Marsillach Lopez, Assistant Professor	University of Washington	WA
US Territories			
24	Nancy Cardona, Assistant Investigator	Comprehensive Cancer Center of the University of Puerto Rico	PR
Remote			
25	Lucille Joanna Borlaza-Lacoste, Research Scientist	State University of New York	N/A
26	Colleen Marciel Rosales, Strategic Partnerships Director	OpenAQ	N/A

Detailed mentor descriptions are listed below.

New England

1. Robin Dodson, Silent Spring Institute

Associate Director of Research Operations

Website: www.silentspring.org

Research description: Silent Spring Institute is a mission-driven scientific research organization dedicated to uncovering the environmental causes of breast cancer. We are developing innovative methods for determining which, among the thousands of chemicals in use, increase breast cancer risk; we are increasing our understanding of the sources of exposure to toxic chemicals, which is the first step toward limiting them in our everyday lives; and we are developing new effective prevention strategies by linking early warning signs of disease risk with chemical exposures.

- **Opportunity Overview**

Student project description: Responsibilities might include literature searches, interviews with study participants, environmental sampling, data analysis and management, and writing, among other activities. Specific responsibilities will be tailored to the skills and interests of the applicant.

Top three skills that will be learned and used: quantitative data analysis, coding (computer programming), literature review.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend 40-60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: We do not have an accessibility office given our small size. However, both our Deputy Director Amy Dale and Director of Administration Anna Claeys have training and are available to discuss accommodations.

Additional information about this opportunity: As a nonprofit, mission-driven research organization we are unique. The fellow will also learn more about how nonprofits operate.

2. Jon Levy, Boston University, School of Public Health

Professor and Chair of the Department of Environmental Health

Website: https://www.bu.edu/sph/profile/jonathan-levy/

Research description: My research focuses on urban environmental exposure and health risk modeling, with an emphasis on indoor and outdoor air pollution, climate change, and environmental justice issues. Major ongoing projects include monitoring studies of air pollution near airports for source attribution, epidemiological investigations of noise and cardiovascular health, characterization of the health effects of simultaneous exposure to chemical and climate stressors, and investigation of the exposure and health benefits of improvements to indoor air quality.

➢ Opportunity Overview

Student project description: One likely project involves measurement of air pollution inside of low-income multi-family homes before and after gas stoves are removed. A fellow might have the opportunity to learn how air pollution monitors work, go into the field, analyze data, and prepare communications for residents. There might also be opportunities to develop communication products related to geospatial data on chemical and climate stressors among Boston-area communities.

Top three skills that will be learned and used: fieldwork (collecting environmental samples or measurements), mapping/spatial analysis, community engagement and outreach.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself or a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, lab or group meetings, and departmental meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, computer, access to high-powered computing cluster, specialized software, library access, access to peer-reviewed literature, presentations to lab group.

Institution's accessibility office: https://www.bu.edu/disability/

Additional information about this opportunity: The Department of Environmental Health at BUSPH has numerous research projects around the world covering an array of topics. We would hope that you would have an opportunity to engage with multiple people in the department and take on a range of tasks so that you get the most out of your experience.

3. Shady Abohashem, Massachusetts General Hospital/Harvard Medical School

Investigator and Instructor in Cardiovascular Imaging and Prevention

Website: https://circ.mgh.harvard.edu

Research description: My research focuses on understanding the interplay between environmental exposures and cardiovascular disease (CVD) risk. I use advanced imaging, genetic, and epidemiological methods to study the impact of environmental factors such as air and noise pollution on cardiovascular health. One of my key areas of investigation includes the role of inflammation and stress pathways in linking environmental exposures to adverse cardiovascular outcomes. I also explore the intersection of environmental justice and health equity, particularly in populations disproportionately affected by environmental hazards. By integrating multimodal data—environmental, clinical, and behavioral—my work aims to identify vulnerable populations and mechanisms that contribute to health disparities, ultimately driving public health interventions and policy change.

➢ Opportunity Overview

Student project description: A fellow working with me would focus on projects exploring the cardiovascular and neurobiological impacts of environmental exposures, such as air and noise pollution. They will gain skills in quantitative imaging analysis using advanced techniques for multi-organ assessment, including the brain and heart. The projects will investigate how environmental factors influence imaging phenotypes, such as brain stress responses and cardiac disease, while exploring related underlying mechanisms. Additionally, the fellow will explore the links between these environmental exposures and mental health outcomes, such as depression, dementia, and cognitive decline, contributing to understanding the broader health impacts of environmental hazards.

Top three skills that will be learned and used: quantitative data analysis, coding (computer programming), mapping/spatial analysis.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, lab or group meetings, and departmental meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, computer, specialized software, library access, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://www.mghihp.edu/academics/academic-resources-services/accessibility-resources

4. Mary D. Willis, Boston University, School of Public Health

Assistant Professor of Epidemiology

Research description: The relationship between energy and health is rapidly growing research area that has relevance to a range of contemporary policy issues, including climate mitigation, environmental justice, and the energy transition away from fossil fuels. Drs. Mary Willis (Assistant Professor of Epidemiology) and Jonathan Buonocore (Assistant Professor of Environmental Health) work on the health effects of energy sector decisions. Dr. Willis' methodological expertise is in environmental epidemiology, spatial exposure assessment, and applied data science, while Dr. Buonocore's methodological expertise is in environmental risk assessment, life cycle assessment, and environmental economics. This combination of expertise creates an interdisciplinary space for considering energy-related research questions from all angles. Of note, this team has worked on a range of energy-related issues such as oil and gas extraction, networked geothermal, and vehicle tailpipe emissions. Most recently, the team has constructed the Energy Infrastructure Exposure Intensity and Equity Indices [EI]3 database, a geospatial database of energy infrastructure in the United States with nearly 30 different types of energy infrastructure and millions of individual features.

- **Opportunity Overview**

Student project description: Our group is conducting evaluations of environmental justice surrounding a wide range of energy-related questions, such as the siting of new cryptocurrency mines, emissions variations for midstream infrastructure, and determinants of blackouts. We anticipate that the fellow would work on a geospatial analysis of a specific piece of infrastructure that might have health implications, including issues related to population characterization and environmental justice.

Top three skills that will be learned and used: quantitative data analysis, mapping/spatial analysis, literature review.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself, my lab's Co-PI, or a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor and lab or field work.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, computer, access to high-powered computing cluster, specialized software, library access, access to peer-reviewed literature, presentations to lab group, departmental seminars or professional development seminars.

Institution's accessibility office: https://www.bu.edu/disability/

Additional information about this opportunity: This position would be co-mentored by Drs. Mary Willis (Assistant Professor of Epidemiology) and Jonathan Buonocore (Assistant Professor of Environmental Health). We are dedicated to understanding the health effects of the energy system from a multidisciplinary angle, so this co-mentorship will be beneficial to a student in this position.

5. Gary Adamkiewicz, Harvard T.H. Chan School of Public Health

Associate Professor of Environmental Health and Exposure Disparities

Website: https://www.healthycitieslab.org/

Research description: Directed by Dr. Gary Adamkiewicz at the Harvard T.H. Chan School of Public Health, the Healthy Cities Lab (www.healthycitieslab.org) is motivated by a desire to improve health and alleviate environmental health disparities. Our work aims to identify the specific aspects of housing, communities, and neighborhoods that shape an individual's health and thus, population health. We are firmly committed to addressing environmental injustices as they are shaped in all these settings. Much of our work is focused on urban environments, where the key drivers of health vary by household and vary in space and time in ways that we can quantify using modern tools and technologies. Our lab is working to develop and improve the methods of quantifying environmental exposures and health risk in ways that inform outreach, intervention, and public policy. This work, conducted in the lab and in the field, includes the application of exposure assessment methods, data science, statistical methods, sensing technologies, and other diagnostic tools.

➢ Opportunity Overview

Student project description: The increasing frequency and intensity of extreme weather events, such as heat waves, is disproportionately affecting the health of racial/ethnic minority and low-income populations. There is an urgent need to develop climate-smart solutions for heat stress in marginalized communities, addressing both direct and indirect effects. During the summer of 2025, we will be working on an NIH-funded project that aims to test and implement cooling solutions that promote resilience to heat stress for the most vulnerable members of environmental justice communities within the city of Boston. This study will involve both lab- and field-based research activities.

Top three skills that will be learned and used: fieldwork (collecting environmental samples or measurements), quantitative data analysis, community engagement and outreach.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor and lab or field work.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, computer, library access, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://accessibility.harvard.edu/; https://www.hsph.harvard.edu/student-affairs/disability-services/

Additional information about this opportunity: I hope to provide some synergy between the HEI Fellowship and complementary summer programs at Harvard, allowing students to network with and learn from each other.

Middle Atlantic

6. Diana Hernandez, Columbia University, Mailman School of Public Health

Associate Professor

Website: https://e2h2hernandez.com/

Research description: Founded and led by Dr. Diana Hernández, Energy, Equity, Housing, and Health (E2H2) has produced a robust body of work ranging from foundational research on the concept of energy insecurity to the evaluation of various interventions and policies at the housing and community level. Relying on rigorous interdisciplinary and mixed methods, the E2H2 scientific approach 1) combines interview and observational methods with environmental exposure assessments, trend analyses of large administrative, and longitudinal datasets; 2) leverages policy changes as well as current events; and 3) is based in strategic partnerships with government, communit,y and other stakeholders at local and national organizations.

- **Opportunity Overview**

Student project description: We have a field based research project looking at the critical intersection of the housing crisis and climate change for senior tenants in New York City in collaboration with sites in Vancouver and Barcelona. We anticipate a prospective fellow will be able to assist in collecting related data. including sensor data monitoring indoor environmental quality. and conducting in-depth semi-structured interviews with our research team. There may be an opportunity to conduct spatial analyses and to evaluate impact of climate or housing related policies.

Top three skills that will be learned and used: fieldwork (collecting environmental samples or measurements), qualitative data analysis (conducting or analyzing surveys, interviews, or text), mapping/spatial analysis.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself or Farzana Khan, Project Coordinator.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, library access, access to peer-reviewed literature, presentations to lab group.

Institution's accessibility office: https://www.health.columbia.edu/content/disability-services

Additional information about this opportunity: This program has historically supported the mentorship of both graduate and undergraduate students. We also have several projects ongoing concurrently. In this program, the prospective fellow will be able to interact with various members of the program and those currently in graduate school. They will also be exposed to research methods and project ideas that other members in the program are conducting furthering the extent of knowledge built during their time in this program.

7. Elena Colicino, Icahn School of Medicine

Associate Professor

Website: https://scholar.google.com/citations?hl=en&user=M1-yMSYAAAAJ&view_op=list_works&sortby=pubdate

Research description: I am a biostatistician with extensive expertise in high-dimensional molecular epidemiology. Currently, I am working on the development of biostatistical methods for environmental health data, including air pollutants. My research focuses on assessing the effects of mixture of independent variables (chemicals, non-chemical) on maternal conditions and diseases throughout the life course.

- **Opportunity Overview**

Student project description: The fellow will work on applying novel mixture approaches. The fellow will work on multiple chemical exposures and assess their impact on immune function in children.

Top three skills that will be learned and used: quantitative data analysis, coding (computer programming), writing.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend 40-60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor and meetings with secondary supervisor.

Lab size: This person will be the only undergraduate present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, specialized software, library access, access to peer-reviewed literature, presentations to lab group, departmental seminars or professional development seminars.

8. Marianthi-Anna Kioumourtzoglou, Columbia University, Mailman School of Public Health

Associate Professor

Research description: My research focuses on applied statistical issues related to environmental epidemiology, including quantifying and correcting for exposure measurement error, exposure prediction uncertainty propagation, and assessment of high-dimensional and complex exposures in health analyses. My studies mainly (albeit not exclusively) focus on climate-relevant exposures (air pollution, temperature, cyclones, wildfires, among others) and urban health.

- **Opportunity Overview**

Student project description: Depending on the fellow's skills and interests, they can work on characterizing how different urban or climate exposures vary over space and time and community socio-demographic charactertistics. They could also perform some epidemiologic analyses to evaluate the impact of these exposures on a health outcome using administrative datasets (e.g., hospitalizations, mortality).

Top three skills that will be learned and used: quantitative data analysis, coding (computer programming), mapping/spatial analysis, literature review, writing.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself or a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend 40-60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or group meetings, and departmental meetings.

Lab size: This person will be the only undergraduate present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, access to high-powered computing cluster, specialized software, library access, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://www.health.columbia.edu/content/disability-services

Midwest

9. Nishit Shetty, University of Kansas

Assistant Professor

Website: https://sites.google.com/view/nishitshetty/home

Research description: My lab is dedicated to addressing critical environmental and health challenges through innovative research. We focus on understanding the effects of airborne particles on climate and public health. By conducting lab experiments, we measure the optical and physical properties of particles such as wildfire smoke to assess their environmental effects. These measurements help us understand how wildfire smoke contributes to climate change and affects air quality, ultimately impacting human health. We also develop advanced sampling platforms to detect and analyze infectious respiratory particles. This work is essential for monitoring and controlling the spread of diseases, as it allows us to identify harmful pathogens in the air quickly and accurately. Additionally, we use computer models to study the movement of infectious aerosols in indoor air and evaluate strategies to mitigate their impact. This research is crucial for creating safer indoor environments, especially in places like hospitals, schools, and public buildings. Our work aims to create safer and healthier environments by providing valuable insights and practical solutions for improving air quality and public health. We hope to contribute to a healthier and more sustainable future by advancing our understanding of these critical issues.

- **Opportunity Overview**

Student project description: Currently, my lab is focusing on three projects. The first project involves measuring the radiative and health impacts of wildfire emissions, which includes conducting lab measurements of the optical and physical properties of wildfire smoke. The second project will have a student develop a sampling platform for collecting and detecting infectious respiratory particles. The third project involves modeling the transport of infectious aerosols in indoor air and evaluating the effectiveness of strategies to mitigate their impact.

Top three skills that will be learned and used: hands-on laboratory analysis, quantitative data analysis, coding (computer programming).

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, library access, access to peer-reviewed literature, presentations to lab group, departmental seminars or professional development seminars.

Institution's accessibility office: Email is: access@ku.edu

Additional information about this opportunity: We are interested in students who are curious to learn new skills regardless of their current proficiency in it. I encourage students to apply if they are interested in the subject matter even if they think that they might not have the skills relevant to the position. My philosophy is that if the student is interested, we can ensure that they learn what is needed.

10. Ther Wint Aung, The MetroHealth Medical Center at Case Western Reserve University

Assistant Professor

Website: https://www.metrohealth.org/population-health-and-equity-research-institute/our-team/ther-w-aung

Research description: MetroHealth is currently implementing an intervention funded by the U.S. Environmental Protection Agency (EPA) to replace gas stoves with induction stoves and install ventilation hoods in 1,200 homes with asthmatic individuals. In addition, if participants are using an electricity supplier that uses fossil fuels to generate electricity, we will provide participants with a financial incentive to switch to a renewable electricity supplier. If an intervention home has a garage, a 240-volt outlet in the garage may be installed for future electric car use. The project will evaluate changes (pre- and post-stove switch) in 1) indoor air quality, 2) asthma symptoms, and 3) greenhouse gas emissions. The project area is in an EPA disadvantaged region in Cleveland, Ohio and its neighboring six suburbs and will be implemented with a coalition of seven community partners.

- **Opportunity Overview**

Student project description: The fellow will have the opportunity to be involved in a variety of activities depending on the fellow's interests, including assisting a field team with data collection, which would include visiting participants' homes to install/remove indoor air quality monitors for PM2.5 (PurpleAir sensors) and nitrogen dioxide (Ogawa passive samplers) in kitchen areas, administration of asthma symptom surveys, and collection of utility bills. Additional activities might include survey data entry, air quality data downloads, data cleaning, and preliminary analyses. There will also be opportunities to be involved in community engagement and outreach activities through recruitment of potential participants and answering questions about the intervention and the data collection activities.

Top three skills that will be learned and used: fieldwork (collecting environmental samples or measurements), quantitative data analysis, community engagement and outreach.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: lab or field work.

Lab size: This person will be the only undergraduate. There may be other students (undergraduate/graduate) working on the project, but this is unknown at this time.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, library access, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://www.metrohealth.org/about-us/inclusion-and-diversity

Additional information about this opportunity: MetroHealth is Cuyahoga County's only public safety-net hospital and is the largest provider of care to Medicaid and uninsured patients in Ohio. It serves a diverse community of patients, with 38,326 African American patients (35.9%) and 10,285 Hispanic patients (9.6%) seen in primary care in the last year. The fellow will be based at the Population Health and Equity Research Institute (PHERI) (https://www.metrohealth.org/population-health-and-equity-research-institute) at MetroHealth, which houses innovative and diverse faculty whose research have a strong focus on health equity. Cleveland is a beautiful place, especially in the summer, with great access to nature (Lake Erie, Cuyahoga National Park, Cleveland Metro Parks), museums, and friendly people.

South

11. Mark Meade, University of Alabama at Birmingham

Associate Professor

Website: https://scholars.uab.edu/19236-mark-meade

Research description: I am an environmental scientist focusing on how climate change influences aquatic systems, mainly freshwater systems in Alabama. I conduct species surveys, develop climate change models related to physiological ecology, and study climate and pollution impact to indicator species.

➢ Opportunity Overview

Student project description: The project involves using macroinvertebrate species as indicators of environmental health. Using EPA rapid bioassessment protocols we will survey a unique watershed in Alabama (Cahaba River) to determine any heavy metal pollution based on species presence and health. Macroinvertebrates, such as insect larvae, show pronounced and specific morphological abnormalities in the presence of environmental heavy metals. Organisms will also be analzyed for a series of heavy metals using analytical techiques to corrroborate with morphological data.

Top three skills that will be learned and used: fieldwork (collecting environmental samples or measurements), hands-on laboratory analysis, mapping/spatial analysis.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, computer, specialized software, library access, access to peer-reviewed literature, presentations to lab group, departmental seminars or professional development seminars.

Institution's accessibility office: https://www.uab.edu/access-engagement/

Additional information about this opportunity: This project hopes to provide an opportunity for a student interested in the link between environmental health and public health.

12. Ping-Ching Hsu, University of Arkansas for Medical Sciences

Associate Professor

Website: https://publichealth.uams.edu/people/ping-ching-hsu-phd/

Research description: Residents in Arkansas face high risks in generational exposure to pesticides and fertilizers from agricultural production; heavy metals such as arsenic found in the soil, water, air; and aromatic hydrocarbons (benzene, benzo[a]pyrene) from frequent burning of trash, crop and timber residues, and high-temperature cooking. Arkansas Rural Community Health Study (ARCH) is the first and the largest epidemiologic cohort of adult women in AR to examine the effects of both genetic and environmental exposures on an individual's risk of developing breast cancer and predicted response to treatment. In total, the institutionally supported ARCH cohort has 26,375 women from all 75 Arkansas counties. In contrast to most cohorts conducted among populations well below average risk, ARCH is enriched with a high rate of early-onset breast cancer cases among all breast cancer prevalent cases at baseline and incident cases when linked with Arkansas Cancer Registry. Given increasing incidence of early-onset breast cancer nationwide, it is crucial to invest in an understudied rural population with generations of exposure to identify factors responsible for increasing risk and the mechanisms underlying the etiology in early-onset breast cancer.

➢ Opportunity Overview

Student project description: 1. To support optimizing and documenting the protocol for the detection of environmental chemicals using Inductively-coupled plasma mass spectrometry (ICP-MS) 2. To support pilot projects comparing trace metals from different bio-specimen (saliva, urine, blood, toenails) using Inductively-coupled plasma mass spectrometry (ICP-MS)

Top three skills that will be learned and used: hands-on laboratory analysis, qualitative data analysis (conducting or analyzing surveys, interviews, or text), quantitative data analysis, literature review, writing, science communication, community engagement and outreach.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with an instructor in my lab.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, computer, specialized software, library access, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://students.uams.edu/resources/ada-disability-services/

Additional information about this opportunity: I am the director of a mass spec core lab and also the PI of the largest cohort in Arkansas. The student will have access to shadow the lab work and also to engage with the cohort activities.

South Atlantic

13. Kelvin Fong, George Washington University

Assistant Professor

Website: https://leaph.info and https://publichealth.gwu.edu/departments/environmental-and-occupational-health

Research description: My research focuses on environmental health disparities. My team assesses the extent to which marginalized populations are exposed and affected by environmental factors such as poor air quality, low access to green space, and increased frequency of severe climate change-related events. As the primary supervisor, I have trained and mentored five undergraduate students, five graduate students (2 MPH, 2 MSc, 1 PhD), and a postdoctoral associate in research projects, including assessing air quality changes following a wildfire event, estimating the extent to which low-income Canadians are exposed to high levels of traffic-related air pollution with satellite remote sensing, investigating how environmental pollutants contribute to risks for mental health conditions, and assessing the role of green spaces and parks in mitigating heat and air pollution effects. Outside the lab, we engaged local communities to install low-cost air quality sensors to fill monitoring gaps. The ultimate goal of my research program is to inform better decision-making around environmental and health policy to advance environmental justice.

- **Opportunity Overview**

Student project description: At the NIH P20 Research and Engagement for Action in Climate and Health (REACH) Center, I co-direct Research Project 1 on Transportation, Health, and Equity. This project seeks to understand the population health and equity impacts of congestion pricing in Washington D.C. The fellow will be involved in several parts of this project, including engaging with local partners (i.e., Greater Greater Washington) to develop materials to communicate how road pricing strategies can lead to downstream effects on population health through potential air quality improvements and changes to the rate of traffic accidents.

Top three skills that will be learned and used: mapping/spatial analysis, science communication, community engagement and outreach.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or group meetings, and departmental meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, computer, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://accessibility.gwu.edu

Additional information about this opportunity: This will be an excellent opportunity to immerse in environmental health research with policy implications.

14. Christine Ekenga, Emory University

Assistant Professor

Website: www.christineekenga.com

Research description: We conduct community-driven environmental health research focused on underresourced populations that experience overexposure to environmental hazards and limited access to beneficial aspects of the environment. Exposures of interest include air pollution, extreme heat, and access to green spaces. We aim to conduct research aligned with the principles of environmental justice and to build capacity within communities. In close collaboration with community-based partners and organizations, we develop projects designed to provide the evidence needed to address real-world health and environmental justice challenges.

- **Opportunity Overview**

Student project description: We have several projects focused on characterizing exposures in communities with environmental justice concerns. Potential projects include (1) studies on climate change perceptions and the health impacts of weather extremes (e.g., extreme heat, flooding, disaster events) in historically marginalized and underresourced communities, (2) quantitative and qualitative approaches (e.g., interviews, focus groups) to operationalizing structural racism for environmental health research, and (3) community-engaged GIS mapping projects to visualize and analyze environmental exposures.

Top three skills that will be learned and used: qualitative data analysis (conducting or analyzing surveys, interviews, or text), mapping/spatial analysis, community engagement and outreach.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself or a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend 40-60% of their time working in person. The following meeting will be held in person: meetings with primary direct supervisor, lab or group meetings, and departmental meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, access to high-powered computing cluster, library access, access to peer-reviewed literature, presentations to lab group, departmental seminars or professional development seminars.

Institution's accessibility office: https://accessibility.emory.edu/index.html

Additional information about this opportunity: This is an excellent opportunity to contribute to research projects with direct, practical relevance to communities in Atlanta, GA.

15. Ana M. Rule, Johns Hopkins University

Assistant Professor

Website: https://publichealth.jhu.edu/faculty/1984/ana-maria-rule

Research description: My research focuses on the development and evaluation of sampling and analysis strategies for assessments of exposure to aerosols, including from e-cigarette, and biological and particulate matter.

- **Opportunity Overview**

Student project description: They may help monitor air and/or noise pollution in a community setting, which involves setting up and deploying the samplers, analyzing samples in the lab, or analyzing electronic data.

Top three skills that will be learned and used: fieldwork (collecting environmental samples or measurements), hands-on laboratory analysis, community engagement and outreach.

Mentoring and support: Dr. Sandra Albornoz will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with multiple investigators, including myself and graduate students.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, specialized software, library access, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs.

Institution's accessibility office: https://www.jhu.edu/life/disability-services/
https://ctei.jhu.edu/teaching/accessibility-guidelines-for-course-materials/

Additional information about this opportunity: There are several ongoing projects so the fellow will have an opportunity to work on one of them.

16. Jennifer Richmond-Bryant, North Carolina State University

Associate Professor

Website: https://cnr.ncsu.edu/directory/jennifer-bryant/

Research description: Much of our group's work has an "environmental justice" focus in which we characterize exposures in marginalized communities. In our lab, we maintain the perspective that community data belongs to communities, so we provide frequent updates to community partners on our findings and what they might mean. My research uses different quantitative and qualitative methods to characterize air pollution levels around sources. In a quantitative analysis, a researcher in our lab might model spatial patterns in emissions or concentrations based on existing data or transport and dispersion models. We compare those results across demographic groups. Or, we might test different relationships between air pollutant exposures and health outcomes and test if those relationships vary for different demographic or social conditions. From a qualitative perspective, we have recently performed oral history interviews for community partners and then used the information gleaned from our interviews to look for patterns in diagnosed conditions or symptoms. We were able to use that information also to explore questions about exclusion of community partners from decision-making processes.

➢ Opportunity Overview

Student project description: The HEI Summer Fellow will have several options for research experiences during their time in our lab: sample collection, quantitative data analysis, modeling, or qualitative data analysis. Because our lab has a variety of ongoing projects, the student can select one project of interest or can dabble in a couple of projects. The student may also perform some literature review to support their project. The student will be expected to create a poster to present during NC State's Summer Undergraduate Research Symposium. We will also spend some time on career development (resume, LinkedIn, applying to graduate school or jobs).

Top three skills that will be learned and used: quantitative data analysis, mapping/spatial analysis, science communication.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself, a research scientist, postdoc, or graduate student in my lab, or undergraduates in a USFS fellowship with me.

Work environment: The student will spend 40%-more than 60% of their time working in person. The following meetings will be held in person or on Zoom: meetings with primary direct supervisor, and lab or group meetings. The HEI fellow will also have the option of traveling on field trips with USFS summer fellows.

Lab size: > 10 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, computer, specialized software, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://dro.equalopportunity.ncsu.edu/

Additional information about this opportunity: I will work with the HEI fellow to meet their learning and experiential goals, so if there is something missing that the fellow is looking for, we can figure out how to make that happen.

17. Lucas Henneman, George Mason University

Assistant Professor

Website: https://www.lucashenneman.org/

Research description: I, Lucas Henneman, am an Environmental Engineer interested in how air quality and health are influenced by regulatory policies and climate change. I teach classes in air pollution, climate change, and environmental engineering systems.

- **Opportunity Overview**

Student project description: A fellow will use tools like R to analyze air quality data, focusing on trends in pollution sources and associated health impacts. They will identify major emission contributors, examine pollutant types, and determine their implications for public health. The project includes understanding the role of different pollutants, such as particulate matter and nitrogen oxides, and assessing the impact of exposure on community health and inequities. The fellow's work will help connect emissions data to health outcomes, ultimately contributing to a broader understanding of how pollution affects society and supporting informed environmental policy-making.

Top three skills that will be learned and used: quantitative data analysis, coding (computer programming), mapping/spatial analysis.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with my PhD student Xiaorong Shan.

Work environment: The student will spend 40-60% of their time working in person. The following meeting will be held in person: meetings with primary direct supervisor and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, access to peer-reviewed literature, presentations to lab group.

Institution's accessibility office: https://accessibility.gmu.edu/

Additional information about this opportunity: In Dr. Lucas Henneman's group, you will benefit from collaborative mentorship where both Dr. Henneman and Xiaorong Shan will actively guide your work. Our group emphasizes teamwork and interdisciplinary learning, providing access to modeling tools, health impact data, and computational resources. This opportunity also connects you with a broader research network focused on air quality and public health, enabling you to grow your analytical skills and scientific understanding. The supportive environment aims to help you develop as an independent researcher while contributing meaningfully to impactful studies on environmental pollution and health outcomes.

West

18. Regan Patterson, Univeristy of California, Los Angeles

Assistant Professor

Website: www.engineerejlab.com

Research description: I am the Principal Investigator of the Engineering Environmental Justice Lab at UCLA. My research focuses on the intersection of air quality, transportation equity, environmental justice, and community engagement. More specifically, my lab examines and models the impact of policies and place-based, community-driven interventions on pollution exposure disparities and environmental justice. My research is interdisciplinary, and several projects employ participatory action research. The goals of my research-to-action projects are to inform mitigation efforts and improve environmental justice outcomes.

- **Opportunity Overview**

Student project description: E-commerce and global trade have driven the proliferation of warehouses. Warehouse growth has transformed the landscape of California, particularly agricultural areas and environmental justice communities. The fellow will investigate land use and land cover changes, urban heat island creation, and health implications in communities in the Central Valley and Inland Empire, which have been deeply impacted by warehouse expansion. The fellow will conduct a temporal analysis of land surface characteristics to assess the changes. There is also an opportunity to conduct statistical analyses to quantify the relationship.

Top three skills that will be learned and used: quantitative data analysis, mapping/spatial analysis, writing.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend 40-60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, library access, access to peer-reviewed literature, presentations to lab group.

Institution's accessibility office: https://cae.ucla.edu/

Additional information about this opportunity: My lab focuses on environmental justice. This particular project will help elucidate the relationship between land use changes and urban heat island in communities affected by warehouse growth.

19. Olukayode Jegede, University of California, Davis

Assistant Professor

Website: https://etox.ucdavis.edu/jegede-olukayode

Research description: My research is about assessing the toxicology of agricultural input, including pesticides, plastics, and veterinary pharmaceuticals. I conduct field and laboratory studies to test the toxicity of contaminants to soil health, plants, animals, and humans from a one-health perspective. I maintain cultures of standardized test species in my lab. My research also encourages the use of native or local non-standardized species to increase the relevance of our tests to the environment and help with making better risk assessments.

➢ Opportunity Overview

Student project description: The students will be involved in field sampling and get to learn how to conduct environmental sampling. The students will be involved in starting and raising cultures of standardized test species in the lab. They will learn about conducting soil ecotoxicological tests and learn to analyze results and make reasonable conclusions from it. Moreover, they will be taught the art of public speaking in terms of making slides and presenting their results to an audience of their peers and graduate students in my lab. As a cooperative extension specialist, they will accompany me to attend one outreach event and learn how to communicate research to a community and other stakeholders.

Top three skills that will be learned and used: fieldwork (collecting environmental samples or measurements), hands-on laboratory analysis, qualitative data analysis (conducting or analyzing surveys, interviews, or text), communication, community engagement and outreach.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with a research scientist, postdoc, or graduate student in my lab. I will be available as much as I can to answer their questions but not daily. The students will have access to the lab everyday, and if I am available, they are free to ask me questions if they have. Otherwise, they can ask my graduate students who will be around every day.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: dedicated laboratory space, laboratory supplies, and access to equipment, computer, access to peer-reviewed literature, presentations to lab group.

Institution's accessibility office: https://sdc.ucdavis.edu/

Additional information about this opportunity: Opportunity to learn how to write and publish scientific articles.

20. Jun Wu, University of California, Irvine

Professor

Website: https://drwulab.net/

Research description: Jun Wu's lab at University of California, Irvine focuses on providing scientific evidence to protect public health from environmental exposures such as air pollution, built environment, and climate factors through exposure assessment and environmental epidemiological studies. For environmental exposure assessment, we develop advanced exposure assessment methods using big data, geographical information system techniques, global positioning system tracking, spatiotemporal modeling, and sophisticated statistical methods. For environmental epidemiology, we focus on the impact of air pollution, meteorology, and built environment on maternal health, pregnancy outcomes, children's health, and cancer. In addition to quantitative methods, we work extensively on addressing environmental injustice and health disparity issues (e.g. air pollution, lead contamination, climate change related impacts) in disadvantaged communities in Southern California through close collaboration with multiple local community partners.

➢ Opportunity Overview

Student project description: A fellow can work on a community-centered project entitled "Inequities in Childhood Life-Course Lead Exposure and Academic and Neurobehavioral Outcomes (I-CLEAN)." We will establish a prospective longitudinal cohort of 600 elementary school children in Santa Ana, California, focusing on the impact of life-course exposure to low-levels of metals, including lead on children's behavioral development and school academic performance. Through community-academic partnership, the study will also develop, disseminate, pilot, and evaluate a multi-level Public Health Equity Action Plan to raise awareness of the health and academic implications of lead exposures and mitigation strategies.

Top three skills that will be learned and used: community engagement and outreach, fieldwork (collecting environmental samples or measurements), qualitative data analysis (conducting or analyzing surveys, interviews, or text).

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend 40-60% of their time working in person. The following meetings will be held in person: lab or field work and lab or group meetings.

Lab size: 6-10 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, specialized software, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs.

Institution's accessibility office: https://accessibility.uci.edu/

21. Nicolas Lopez-Galvez, San Diego State University

Assistant Professor

Website: https://publichealth.sdsu.edu/people/nicolas-lopez-galvez/

Research description: Evaluating environmental exposures to carcinogens such as pesticides and tobacco-related pollutants among underserved populations, including low-wage immigrant workers, farm workers, children, and those who live near the U.S.-Mexico border region. In my lab, we use innovative and non-invasive exposure assessment tools in field studies to monitor carcinogens in occupational and community-based settings to better understand their effects on human health.

➢ Opportunity Overview

Student project description: The student will work in a project related to breast cancer and chemicals in air among farmworkers. This study aims to measure chemical exposures, understand knowledge and attitudes about breast cancer screening, and identify barriers and facilitators in Imperial Valley, California. Our team will use new analytical tools and conduct surveys and interviews to gather data. The results will support health equity by developing interventions to reduce cancer-related exposures and improve breast cancer screening access for this marginalized population.

Top three skills that will be learned and used: fieldwork (collecting environmental samples or measurements), hands-on laboratory analysis, quantitative data analysis, literature review, writing, science communication, community engagement and outreach.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself, my lab's Co-PI, or a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, specialized software, library access, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://sds.sdsu.edu/

Additional information about this opportunity: I am a first-generation Latino immigrant in the United States, which is an experience that has influenced my commitment towards addressing environmental justice issues and health disparities in minority populations. I welcome all students who are committed or want to learn more about addressing EJ issues.

22. Sascha Nicklisch, University of California, Davis

Assistant Professor

Website: https://nicklischlab.faculty.ucdavis.edu

Research description: Dr. Sascha Nicklisch, an Assistant Professor of Environmental Toxicology at UC Davis, combines expertise in protein biochemistry, environmental chemistry, and toxicology to study the effects of contaminants on health. His research group at UC Davis investigates how environmental chemicals interact with biological systems, focusing on the molecular mechanisms by which pollutants affect cellular defense proteins and contribute to disease. Dr. Nicklisch's interdisciplinary approach integrates analytical chemistry, protein biochemistry, and toxicology to advance our understanding of environmental health risks.

➢ Opportunity Overview

Student project description: Undergrads are typically paired up with a graduate student in the lab to assist in bee-related projects. Depending on the interest and commitment, independent research projects can be developed and executed by the undergrad. For this position, undergrads will learn how to clone and sequence honey bee genes using PCR; design primers and quantify genes using qPCR; perform Western blots using antibodies to detect proteins; assist in re-queening colonies and setting up mini hives (if no allergy to bee venom); generate honey bee gut bacterial cultures; dissect and prepare honey bee sample; record experimental data in clear, concise, and organized manner; to analyze and interpret your data; and to present your research in a lab meeting.

Top three skills that will be learned and used: hands-on laboratory analysis, quantitative data analysis, literature review.

Mentoring and support: My PhD student, Eli Wooliever, will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself or a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend more than 60% of their time working in person. The following meeting will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: dedicated laboratory space, laboratory supplies, and access to equipment, specialized software, library access, access to peer-reviewed literature, presentations to lab group, departmental seminars or professional development seminars.

Institution's accessibility office: https://sdc.ucdavis.edu

23. Judit Marsillach Lopez, University of Washington

Assistant Professor

Website: https://deohs.washington.edu/faculty/judit-marsillach

Research description: Our laboratory focuses on inhalation toxicology from two key perspectives: mechanistic studies using animal models and in vitro cultures, and exposure science through the measurement of biomarkers in human blood. We place a strong emphasis on understanding the impacts of traffic-related air pollution, wildfire smoke, and volatile organic compounds, particularly how these exposures contribute to accelerated aging and the development of age-related diseases.

➢ Opportunity Overview

Student project description: Our lab is conducting several ongoing research projects that the HEI Summer Fellow will have the opportunity to participate in. These include: processing tissue samples from mouse models exposed to diesel exhaust or e-cigarette aerosols and working with cell lines to generate a lung-blood vessel interface for studying the effects of inhaled toxicants like diesel exhaust. In both projects, the fellow will learn laboratory techniques such as Western blot, PCR, and immunofluorescence to identify inflammatory and oxidative stress markers, as well as architectural changes in tissues or cells. For data analysis, we use software tools including ImageJ, GraphPad Prism, and R.

Top three skills that will be learned and used: hands-on laboratory analysis, quantitative data analysis, science communication.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, dedicated laboratory space, laboratory supplies, and access to equipment, computer, access to high-powered computing cluster, specialized software, library access, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Institution's accessibility office: https://www.washington.edu/accessibility/

Additional information about this opportunity: As a scientist from an underrepresented background, I am deeply committed to creating opportunities for underrepresented students. In our laboratory, we currently have three other team members from diverse backgrounds, spanning various stages of their academic journeys—PhD, research technician, and undergraduate. This diversity enriches our work environment and enhances our research, and I am eager to support more underrepresented students in pursuing their scientific aspirations through this mentoring opportunity.

US Territories

24. Nancy Cardona, Comprehensive Cancer Center of the University of Puerto Rico

Assistant Investigator

Website: https://www.cccupr.org/programas/capac-training-program/nancy-r-cardona-cordero/

Research description: Our a research program is aimed at understanding the role of environmental factors in the Cancer Control Continuum among Caribbean populations. Work has included examining modifiable factors that disproportionately affect Hispanic/Latina women, as well as attempting to better characterize environmental exposures for epidemiological studies. We are particularly interested in evaluating the dangers associated with endocrine disrupting chemicals in Hispanic/Latina and Caribbean populations, as research has demonstrated that these chemicals can affect hormone-sensitive tumors such as thyroid, breast, and gynecological cancers. To address health inequities, we are also undertaking studies in Puerto Rico that evaluate the spatial distribution of contaminated sites and cancer risk; these studies allow us to identify the most vulnerable and sensitive communities throughout the archipelago. In addition, we were recently receive a 1P20CA294096, where our team co-leads the research project focused on the impact of climate change on cancer patients.

➢ Opportunity Overview

Student project description: The student will be working as part of the Caribbean Climate Change Adaptation, Cancer, and Health Disparities Research Center(P20CA294096) Research Project which employs an epidemiological study to assess the risk of cancer in PR and USVI in relation to climate vulnerabilities and socio-environmental factor. The student will collaborate in literature review, quantitative (STATA or R) or spatial analyses (QGIS or R), and drafting sections for a publication. They will have access to information from the PR and USVI cancer registries to assess cancer incidence and mortality risk in the context of historical and current environmental data, in a framework that evaluates social disparities.

Top three skills that will be learned and used: qualitative data analysis (conducting or analyzing surveys, interviews, or text), quantitative data analysis, mapping/spatial analysis.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself or a research scientist, postdoc, or graduate student in my lab.

Work environment: The student will spend more than 60% of their time working in person. The following meetings will be held in person: meetings with primary direct supervisor, lab or field work, and lab or group meetings.

Lab size: 6-10 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: desk/office space, computer, specialized software, library access, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs, departmental seminars or professional development seminars.

Additional information about this opportunity: Conducting research in Puerto Rico is an awesome experience. You will be able to engage with other undergraduate, post bacs from our REPMIC program, and graduate students from our CAPAC Summer Research Program.

Remote

25. Lucille Joanna Borlaza-Lacoste, State University of New York

Research Scientist

Research description: I am an atmospheric scientist with over 15 years of experience in air quality research, focusing on particulate matter (PM), volatile organic compounds (VOCs), and oxidative potential (PM) and their impact on pollution and health. My work primarily examines long-term trends in source contributions in various typologies. I use advanced source apportionment techniques and data-driven machine learning approaches to identify key emission sources and assess how environmental policies and economic shifts influence air quality over time. In addition to source identification, I conduct health risk assessments, estimating both cancer and non-cancer risks. My research also investigates the potential of PM and VOCs to form secondary organic aerosols, contributing to ozone production.

- **Opportunity Overview**

Student project description: In my project, I would focus on identifying sources of pollution using particulate matter (PM) and volatile organic compound (VOC) data. I would apply machine learning techniques, such as Random Forest or Extreme Gradient Boosting, and trend analysis methods, to deconvolute long-term patterns in emissions. The goal is to uncover key pollution sources, track their changes over time, and evaluate the effectiveness of mitigation strategies. This work would provide valuable insights for air quality management and help develop more targeted policies to reduce harmful emissions and improve public health.

Top three skills that will be learned and used: quantitative data analysis, coding (computer programming), mapping/spatial analysis, literature review, writing.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend less than 40% of their time working in person. This lab and this project are remote.

Lab size: This person will be the only undergraduate present in the lab or department in the summer.

Other resources available to the fellow include: specialized software, access to peer-reviewed literature, departmental seminars or professional development seminars.

26. Colleen Marciel Rosales, OpenAQ

Strategic Partnerships Director

Website: https://openaq.org/

Research description: We are a nonprofit organization fighting air inequality by providing open and universal access to real-time and historical air quality data through our platform and various tools such as the Explorer, API, python SDK and command line interface. We aggregate, standardize, and harmonize air quality data and train users on how to use our resources. We also produced AQI Hub (https://aqihub.info/), a resource to navigate air quality indices across the world.

➢ Opportunity Overview

Student project description: The fellow will work on a combination of systematic reviews on air quality policy and existing documentation and science communication/relationship building. Tasks might include (1) creating a report related to air quality regimes and national standards, mapping regulatory frameworks and responsibilities globally; (2) auditing worldwide data sources for relative humidity & temperature; (3) conducting desk research on potential OpenAQ partners; (4) conducting a semantic/language review of our GitHub repositories; (5) participating in concurrent Community Ambassador sessions; (6) attending partner meetings and preparing call plans; (7) surveying and writing impact stories about use cases of OpenAQ, or (8) curating digital assets.

Top three skills that will be learned and used: qualitative data analysis (conducting or analyzing surveys, interviews, or text), literature review, science communication.

Mentoring and support: I will directly supervise and will have a formal meeting with the fellow at least once per week. The student's primary daily communication will be with myself.

Work environment: The student will spend less than 40% of their time working in person. We are a 100% remote organization, all of the work will be done remotely.

Lab size: 2-5 undergraduates are typically present in the lab or department in the summer.

Other resources available to the fellow include: specialized software, access to peer-reviewed literature, presentations to lab group, ability to attend trainings provided by other summer programs.

Institution's accessibility office: We do not have an accessibility office, but accessibility requests may be made to me.

Additional information about this opportunity: Through last year's HEI fellowship program, we were able to build the AQI Hub (https://aqihub.info/). By joining us as a summer fellow, you will contribute greatly to the mission of universal access to open air quality data.