



NIH T32 Training Program

Advanced Training in Environmental Health and Data Science

Spring 2023 Newsletter

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Contacts

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For more information on the program, please visit the website:
<https://www.publichealth.columbia.edu/research/niehs-t32-combined-training-program>

New Trainees - Predoctoral

1st year trainees – EHS

Alana Ferris received a Bachelor's in Cell and Developmental Biology from University of Rochester. Her first semester included a rotation under Dr. Maya Deyssenroth, which involved a project examining how traffic-related air pollution that reaches a developing fetus may alter the placental epitranscriptome and, ultimately, affect neurodevelopment outcomes. Currently, she is rotating with Dr. Julie Herbstman and working on a project assessing personal care product exposure data in the Columbia Center for Children's Environmental Health Fair Start Cohort and corresponding levels of parabens, phenols, and phthalates.



Kevin Patterson entered the program with an MPH in Environmental Health Sciences, a certificate in Molecular Epidemiology from Mailman, and a BA in Native American Studies and Global Health from Dartmouth College. He is a trainee with the Columbia Northern Plains-SRP and has worked under the mentorship of Drs. Ana Navas-Acien and Anne Nigra during his MPH and as a research assistant before his fall 2022 enrollment. His research interests include investigating relationships between heavy metal exposure through drinking water and related cardiometabolic and kidney outcomes. Some of his projects have assessed differential uranium exposure in the Strong Heart Study and hypertension outcomes. With Dr. Ami Zota, he is investigating the impact of US federal housing assistance programs on phthalate exposures, and with Dr. Nigra he is evaluating the relationship between sociodemographic characteristics at the water system level and arsenic MCL regulation.



Raenita Spriggs entered the program with a BA in Public Health from UC Berkeley and an MPH from UCLA. Her research explores the impacts of climate-related exposures on communities historically burdened by environmental injustice. Since the fall semester, she has been completing a research rotation under the mentorship of Dr. Anne Nigra, where she is pooling relevant data sources and characterizing multiple environmental exposures impacting incarcerated populations across the US and territories (i.e., air pollution, drinking water quality, extreme heat, wildfires, and power outages).

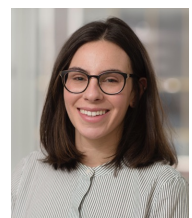


1st year trainees – Epidemiology

Lina Demis entered the program with an MPH in Epidemiology and Humanitarian Action from Mailman. She was formerly a research coordinator in the Department of Neurology at NYU School of Medicine. Her interests lie in applying advanced epidemiologic methods to climate-related causes and consequences of forced migration on maternal mental health and child neurodevelopment.



Nicole Itzkowitz received her MSc in Epidemiology from the London School of Hygiene and Tropical Medicine in 2020 and holds a BA in Public Health from the University of Rochester. She was formerly a member of the Environment and Health Statistics Group and MRC Centre for Environment and Health at Imperial College London, where she worked on projects evaluating the health impacts of urban noise exposure and developing methods for estimating smoking behavior at small area level using routinely collected data. Her current interests include how environmental exposures and the built environment influence non-communicable disease risk and in applying advanced environmental epidemiological and life course methods to pressing public health issues in the context of urbanization and the changing climate.



New Trainees - Postdoctoral

EHS

Abby Gaylord received her PhD in Epidemiology from the NYU School of Medicine in 2022, where she worked with the Department of Environmental Pediatrics on several projects using data from the NYU Children's Health and Environment Study and other birth cohorts. Her dissertation work focused on cord blood methylomic and transcriptomic signatures associated with prenatal exposure to endocrine disrupting chemicals. Prior to attending NYU, Abby earned her MPH from the EHS department at Mailman and a BS in Pharmacology from the University at Buffalo. Her postdoctoral research will continue to examine biomarkers of prenatal and early childhood exposures and adverse health outcomes in childhood under the advisement of Drs. Allison Kupsco, Andrea Baccarelli, and Julie Herbstman.



Conference Presentations

Postdoctoral trainees

Katlyn McGraw gave two oral presentations at the Annual ISEE Conference in September 2022 in Athens, Greece, 'Association of Volatile Organic Compound Exposure with Blood Pressure in the National Health and Nutrition Examination Survey (2011-2016)' and 'Blood and urinary metal levels among exclusive marijuana users in the National Health and Nutrition Examination Survey (2005-2018)'. She also gave a talk, entitled 'Association of Volatile Organic Compound Exposure with Blood Pressure in the National Health and Nutrition Examination Survey (2011-2018)', at the Annual Superfund Research Program (SRP) Meeting in December 2022 in Raleigh, North Carolina.

Christian Dye presented a poster, titled 'Maternal DNA Methylation Signatures of Arsenic Exposure is Associated with Adult Offspring Insulin Resistance in the Strong Heart Study', at ISEE.

Gabriella Meltzer gave an oral presentation on 'The development of a cumulative environmental stress index for disaster-exposed Louisiana families' at the APHA Annual Meeting in November 2022 in Boston. There, she also presented two posters, 'Examining the effects of cumulative environmental stressors on child and adolescent health: a structural equation approach' and 'Associations Between COVID-19 Vaccine Hesitancy and Socio-spatial Factors in NYC Transit Workers 50 Years and Older'. The latter was also presented at the Gerontological Society of America Annual Scientific Meeting in November 2022. She also gave one oral presentation on 'Social Places: Shifting Neighborhood Perceptions Among Aging Americans During COVID-19' at this meeting.

Mariah DeSerisy gave two poster presentations at the Annual Association for Behavioral and Cognitive Therapies Convention in November 2022 in NYC, 'Between Maternal Demoralization and Children's Emotion Regulation Are Altered by Prenatal Exposure to Environmental Tobacco Smoke' and 'Brain-Predicted Aging Associates with Socioeconomic Status and Behavior in Childhood and Adolescence'.

Ilan Cerna-Turoff was invited to give a lecture at the CDC Division of Violence Prevention - Field Epidemiology and Prevention Branch in February 2023. His talk was titled 'Unmeasured confounding: Methodological solutions to an ongoing challenge in survey data. A gentle introduction to causal designs for observational studies and instrumental variables'.

Conference Presentations

Predoctoral trainees

Tanya Butt presented three posters at ISEE in September 2022 in Greece: 1) 'Comparing and validating current methods for isolating and characterizing brain-derived extracellular vesicles as central nervous system biomarkers of environmentally linked neurodegenerative diseases', 2) 'Establishing a method to isolate blood-borne extracellular vesicles derived from microglia: a critical biomarker source for environmental exposure-linked neurotoxicity', and 3) 'Astrocyte-derived extracellular vesicles: novel biomarkers of CNS metal exposure and elimination with applications in discerning the pathogenesis of neurodegenerative disease'.

Danielle Medgyesi gave an oral presentation on 'Geospatial determinants of maternal and child exposure to fine particulate matter in Kintampo, Ghana: Levels within the household and community, by surrounding building density and near roadways' at ISEE. She also presented two posters, entitled 'Changes in California arsenic and uranium community water concentrations relative to US EPA regulation' and 'Water arsenic and uranium exposure and risk of cardiovascular and chronic kidney diseases in California' at the SRP Meeting in December 2022 in Raleigh, North Carolina.

Marisa Sobel presented on 'Metal exposure, lung function and epithelial airway injury in the Strong Heart Study' at the SRP Meeting and at the 11th Conference on Metal Toxicity and Carcinogenesis in October 2022 in Montreal, Quebec, she presented a poster, titled 'Biomarkers of early life metals exposures'.

Wil Lieberman-Cribbin had two poster presentations at ISEE, 'Epigenetic biomarkers of lead exposure and cardiovascular disease: prospective evidence in the Strong Heart Study' and 'Environmental justice and well waste disposal from oil and gas development in Pennsylvania'. He also had a poster at the SRP Meeting, entitled 'Association of urinary uranium exposure with cardiac geometry and left ventricular function in the Strong Heart Family Study'.

Jenni Shearston presented a poster, titled 'Partnering with the community to advocate for clean air: a case study from the South Bronx, NYC' at ISEE.

Nina Flores presented a poster, titled 'The 2021 Texas Power Crisis: distribution, duration, and disparities' at ISEE and another poster, titled 'Latent Class Mixed Model Analysis of Rhinitis in a Birth Cohort from low-income neighborhoods of NYC' at the American Academy of Allergy, Asthma, and Immunology Conference in February 2023.

Gloria Graf gave a talk on 'Associations of educational mobility with biological aging and mortality across two generations of the Framingham Heart Study' at the 2022 Integrating Genetics and the Social Sciences conference in Boulder.

Catherine Lucey presented a poster, titled 'Toxic and Nutrient Metal Exposure in a Rice-Based Diet', at the Metals Carcinogenesis and Toxicity Conference.

Autumn Clemons presented a poster at ISEE on 'Phthalate and DEHP Metabolite Exposure during Pregnancy and Adverse Pregnancy Outcomes in an Ethnically Diverse Nulliparous Pregnancy Cohort in the United States, 2010-2015'.

Kevin Patterson presented a poster on 'Differential Uranium Exposure and its Association with Hypertension and Elevated Blood Pressure in American Indian Communities in the Strong Heart Family Study' at ISEE.

Awards

Predoctoral trainees

Kevin Patterson was selected as Agents of Change Fellow in 2022. The Agents of Change in Environmental Justice program is a partnership between Environmental Health News and MSPH. The mission of the program is to empower emerging leaders from historically excluded backgrounds in science and academia to reimagine solutions for a just and healthy planet.

Autumn Clemons was awarded a NIEHS F31, titled 'Does self-reported psychosocial stress in pregnancy mediate the association between maternal race/ethnicity and hypertensive disorders of pregnancy?'

Postdoctoral trainees

Gabriella Meltzer's poster, 'Associations Between COVID-19 Vaccine Hesitancy and Socio-spatial Factors in NYC Transit Workers 50 Years and Older' was awarded Best Student & New Researcher poster by APHA's Occupational Health and Safety Section.

Emma Amissah was awarded a pilot grant from the NIEHS Center Environmental Health and Justice in Northern Manhattan for a project, titled 'Prenatal Exposure to SARS-CoV-2, Disinfectant Use, Changes in the Infant Microbiome and Neurodevelopment'.

Media Features

Exposure to Lead Linked to Risk of CVD Mortality: Strong Heart Study – tctMD

Nov 18, 2022 - "We know that lead is associated with a variety of adverse health outcomes, including cardiovascular disease,' **Wil Lieberman-Cribbin** told tctMD. 'For this paper, we were trying to assess that risk in an American Indian population, because it's a population that's been understudied. Given the relevance of lead exposure, both nationally and specifically within American Indian communities, we wanted to discern a way to assess the risk of lead exposure with cardiovascular disease."

Publications

Sprague NL, Bancalari P, Karim W, **Siddiq S**. Growing up green: A systematic review of the influence of greenspace on youth development and health outcomes. *Journal of exposure science & environmental epidemiology*. 2022 Sep;32(5):660-81.

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