

Department Newsletter Fall 2018



COLUMBIA
UNIVERSITY

MAILMAN SCHOOL
of **PUBLIC HEALTH**

**ENVIRONMENTAL
HEALTH SCIENCES**





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Letter from the Chair

Dear EHS Students, Faculty, Staff and Friends of the Department,

Once again, I write to you in the midst of a very productive and exciting time in our department as we celebrate the many achievements of our students, staff, and faculty. In the past few months, EHS colleagues have published some exciting papers and received many awards, some of which are highlighted in this newsletter. This year is shaping up to be eventful and busy with new initiatives in EHS that will extend throughout Mailman and our community.

A few particular new changes I'd like to draw attention to:

Dr. Gary Miller joined Mailman as a Professor in EHS and the first Vice Dean for Research Strategy and Innovation. Dr. Miller comes to us from Emory University's Rollins School of Public Health, he's trained as a neurotoxicologist and is a pioneer in the field of the exposome, the environmental parallel to the genome. At the School level he is working with academic leaders, faculty, and their teams to generate cutting-edge interdisciplinary research. He is establishing an Exposomics Core, which will be a joint effort with the Irving Institute for Clinical and Translational Research. While setting up his own research lab in EHS, Dr. Miller is also developing an intensive exposome training to be offered this summer. These initiatives encourage collaboration in the exciting and growing exposome field. I encourage everyone in the Department to introduce yourselves and welcome Dr. Miller to the EHS family.

This year we have some exciting new classes in EHS that include: Advanced Analytics in EHS, taught by Dr. Marianthi-Anna Kioumourtzoglou; Computational Toxicology, taught by Dr. Brandon Pearson; Advanced GIS and Spatial Analysis, taught by Dr. Jeremy Porter. We hope students will enjoy these new skill-building courses.

As the holidays approach, I wish you all a happy and safe holiday season.

Sincerely,

Andrea A. Baccarelli, MD, PhD, MPH
Leon Hess Professor and Chair
Department of Environmental Health Sciences

Faculty

Andrea Baccarelli, MD, PhD, MPH

Andrea Baccarelli was interviewed by CNN in a piece titled, [“Trump’s Coal Emissions Rollbacks Will Be Bad for Country’s Health, Experts Say,”](#) where he discussed the EPA's recently proposed Affordable Clean Energy (ACE) Rule, which would allow states to set their own emission standards for coal-fueled power plants. He states, "there is no such thing as a safe level of pollution. It's that simple. Any pollution is bad. There is no doubt about this. It's clear that relaxing the standards could cost lives."

Julie Herbstman, PhD, Ricky Perera, PhD, and Lizzy Gibson (Doctoral Candidate)

Julie, Ricky, and Lizzy were interviewed for a piece titled [“Handwashing and House Cleaning May Protect Against Unhealthy Chemicals”](#) as part of Columbia University’s Public Health Now News. In addition, Ricky and Julie were interviewed by the [Manhattan Times](#) for their work on pollution and pregnancy. Julie was interviewed by the Boston Public Radio’s [“Living Lab Radio.”](#)

Darby Jack, PhD

Darby was interviewed by Vice News for an article titled, [“City cyclists: Here’s how much pollution you’re actually inhaling”](#) about NYC’s air pollution and the dangers for cyclists.

Ana Navas-Acien, PhD

Ana was interviewed by PBS for a piece titled, [“Residents say Love Canal chemicals continue to make them sick”](#) about her Superfund research. Ana was also interviewed by CNN Online, regarding e-cigarette use among teens in a piece titled, [“Teens Who Vape or Use Hookah are More Likely to Use Marijuana Later, Study Finds.”](#) In an [article published by Consumer Affairs](#), Ana noted how, “Given the emerging data showing that e-cigarette use increased exposure to metal and other toxicants, FDA initiatives to reduce e-cigarette use among youth are urgently needed.” In an [article published by BMJ](#), Ana discussed how "despite widespread distribution of toxic metal contaminants, technical reports from environmental and public health agencies often disregard the mounting evidence of associated cardiovascular risk."

Markus Hilpert, PhD

Markus was highlighted by [Newsweek](#) and the [Mailman News](#) for his recent findings published in [Science of the Total Environment](#) about the toxic fumes emitted by gas stations. Markus notes, “Officials should reconsider their regulations based on these data ... related to fuel deliveries and the use of pollution prevention technology.” Markus was also featured in Columbia University’s Public Health Now in a [video](#) documenting his work with the EHS drone.

Jeff Shaman, PhD

Jeff was featured in a recent [Mailman news](#) post about the unveiling of an online knowledge bank with resources for educators on the health impacts of climate change by the Global Consortium on Climate and Health Education (GCCHE). Following the release of the IPCC report, Jeff again was interviewed by Mailman’s Public Health Now piece, “[Experts Respond to UN Climate Report.](#)” Jeff penned a brief Letter to the Editor that was published in the [Opinion section of The New York Times](#). He responded to the September article [One Thing You Can Do: Divest](#) noting, “One more thing you can do: Become educated on the health effects of climate change and share this information with others.” And finally, Jeff shared his research and insight toward an [article in Axios news](#) that details the intensity of influenza in different cities, noting that the results don't yet provide enough information to be useful for providing flu control solutions.

Madeleine Thompson, PhD

Madeleine weighed in on the paper published in PLoS One Medicine for a piece by Mailman’s Public Health Now, “[Children Highly Vulnerable to Health Risks of Climate Change.](#)” Studies suggest that climate change is increasing the intensity of North Atlantic hurricanes and the likelihood that the severe consequences for children’s health will grow.

Postdoctoral Fellow

Katherine Crocker, PhD

Katherine published an engaging [essay in Carte Blanche](#) titled “Híyoge owísisi tánga itá - Cricket Egg Stories” outlining her work in evolutionary biology on cricket hormones and tying in parallels with family ancestry around trauma experienced by Indigenous people. Her essay was also featured in [Nature Briefings](#).

Current Students

Peggy Hsieh, 2nd Year MPH

After 2 years of research, Peggy had the opportunity to present at the International Indoor Air conference in Philadelphia, PA, with a presentation titled, “Association between Current Asthma and 36 Fungal Taxa in Residential Dust Analyzed by Quantitative PCR: A Review.” Peggy co-wrote the paper with her practicum supervisor, Mark J. Mendell. She says the experience taught her to how to clearly communicate the complexities of her research findings to different audiences.

Katherine Baker, 2nd Year MPH

Katherine published an article in Planet Forward titled, “[Talking to skeptics about climate change](#)” after her trip to Alaska this summer.

Erica Chung, 2nd Year MPH

Erica was profiled in the [Mailman Student Voices](#) for her summer practicum work with Because Health, a health communications website. There, she translated environmental health issues into everyday language for digital media channels.

Nicole Comfort, Doctoral Candidate

Nicole was selected as a “Scientist-in-Residence” for the 2018-2019 [Scientist-in-Residence Program](#). This is a collaboration between the New York City Department of Education and The New York Academy of Sciences’ to pair a scientist with a NYC K-12 public school teacher. Working with the teacher, Nicole will help devise and implement a year-long scientific project that students can carry out in the classroom.

Alumni

Jamal Lewis, MPH ‘18

Jamal was selected as one of the [2018 Linda Latham Scholars](#) by The American Council for an Energy-Efficient Economy (ACEEE).

Alexandra “Sasha” Berns, MPH ‘17

Sasha was recently highlighted in the [Mailman News](#) for her incredible work as a health and safety specialist with the Department of Environmental Protection (DEP). Alexandra credits Dr. Greg Freyer and Nina Kulacki as the impetus for her seeking an MPH on the Toxicology track.

Grants & Awards

- **Ana Navas-Acien, PhD** received the award titled “Low-level Arsenic Exposure and Cardiovascular Disease in Multi-Ethnic Adults (MESA As)” from the National Institutes of Health.
- **Mary Gamble, PhD** received the award titled “Health Effects and Geochemistry of Arsenic” from the National Institutes of Health as an Administrative Supplement for Superfund Research Program.
- **Diane Re, PhD** received the award titled “Brain-Derived Extracellular Vesicles as a Novel Source of Biomarkers for Disease Progression and Environmental Exposure in ALS” from the National Institutes of Health and the award titled “Novel Extracellular Vesicle and Molecular Biomarkers of Environmental Exposure and Disease Progression in ALS” from the Centers for Disease Control as a Multiple PI award with Department of Neurology at CUMC.
- **Markus Hilpert, PhD and Norman Kleiman, PhD** received the award titled “Tracking Metals from E-cigarettes: From the Coil into Lung Tissue” from the National Institutes of Health.
- **Ricky Perera, PhD and Julie Herbstman, PhD** received the award titled “Identifying Newborns at Risk of Adverse Neurodevelopmental Outcomes and Obesity from Air Pollution” from the National Institutes of Health.
- **Yanelli Nunez, Doctoral Candidate** received the award titled “Principal Component Pursuit to Assess Exposure to Environmental Mixtures in Epidemiologic Studies” from the National Institutes of Health as a Research Supplement to Promote Diversity.
- **Anne E. Nigra, Doctoral Candidate** received the award titled “Arsenic Exposure in US Drinking Water: Spatial Patterns, Temporal Trends, and Related Mortalities” from the National Institutes of Health as part of the Fellowship Programs (F31).
- **Mike He, Doctoral Candidate** received the award titled “Assessing Current and Future Health Impacts of Fine Particulate Matter in China and the United States” from the National Institutes of Health as part of the Fellowship Programs (F31).
- **Matt Perzanowski, PhD** received the award titled “Determinants of fungal exposure in low-income, urban homes and the relevance of early-life domestic exposure” from the U.S. Department of Housing and Urban Development (HUD).
- **Andrea Baccarelli, PhD** received the award titled “2018 Baiocco D’oro Award” from the City of Perugia, Italy. The City of Perugia bestows this annual award upon one person who brings prestige to the city. The award notice reads, “Dr. Baccarelli’s skills, his constant commitment to his work, and the important results achieved to date are—for the community of the city of Perugia—a source of pride and gratitude.”
- **Sen Pei, PhD (Postdoc)** received the award titled “2019 Awards for Outstanding Research Articles in Biosurveillance (Category: Scientific Achievement)” from the International Society for Disease Surveillance (ISDS). Dr. Pei’s paper Forecasting the spatial transmission of influenza in the United States was published in PNAS earlier this year. Other authors included EHS Sasikiran Kandula, Wan Yang (Epi), and Jeff Shaman.

Publications

We have compiled a list of recent publications from our faculty, students, and staff along with links for viewing.

- [A critical role for ABC transporters in persistent lung inflammation in the development of emphysema after smoke exposure.](#) **Sonett, J.**, Goldklang, M., Sklepkiwicz, P., Gerber, A., Trischler, J., Zelonina, T., Westerterp, M., Lemaître, V., Okada, V., D'Armiento, J. 2018 June 15. Doi: 10.1096/fj.201701381.
- [Experiences with the Mass Distribution of LPG Stoves in Rural Communities of Ghana.](#) Abdulai MA, Afari-Asiedu S, Carrion D, Ae-Ngibise KA, Gyaase S, Mohammed M, Agyei O, Boamah-Kaali E, Tawiah T, Dwommoh R, Agbokey F, Owusu-Agyei S, Asante KP, **Jack D.** Ecohealth. 2018 Sep 19. doi: 10.1007/s10393-018-1369-7. PMID: 30232662
- [Concussion History and Cognitive Function in a Large Cohort of Adolescent Athletes.](#) Taylor KM, **Kioumourtzoglou MA**, Clover J, Coull BA, Dennerlein JT, Bellinger DC, Weisskopf MG. Am J Sports Med. 2018 Sep 19:363546518798801. doi: 10.1177/0363546518798801. PMID: 30230912
- [Residential Proximity to Major Roadways at Birth, DNA Methylation at Birth and Midchildhood, and Childhood Cognitive Test Scores: Project Viva \(Massachusetts, USA\).](#) Peng C, den Dekker M, Cardenas A, Rifas-Shiman SL, Gibson H, Agha G, Harris MH, Coull BA, Schwartz J, Litonjua AA, DeMeo DL, Hivert MF, Gilman MW, Sagiv SK, de Kluizenaar Y, Felix JF, Jaddoe VW, Oken E, Duijts L, Gold DR, **Baccarelli AA.** Environ Health Perspect. 2018 Sep;126(9):97006. doi: 10.1289/EHP2034. PMID: 3022639
- [Association of Low-Moderate Urine Arsenic and QT Interval: Cross-Sectional and Longitudinal Evidence from the Strong Heart Study.](#) Moon KA, Zhang Y, Guallar E, Francesconi KA, Goessler W, Umans JG, Best LG, Howard BV, Devereux RB, Okin PM, **Navas-Acien A.** Environ Pollut. 2018 Sep;240:894-902. doi: 10.1016/j.envpol.2018.04.129. Epub 2018 May 26. PMID: 29793197
- [Effects of Polybrominated Diphenyl Ethers on child cognitive, behavioral, and motor development.](#) **Gibson EA**, Siegel EL, Eniola F, **Herbstman JB**, Factor-Litvak P. Int J Environ Res Public Health. 2018 Aug 2;15(8). pii: E1636. doi: 10.3390/ijerph15081636. Review.
- [Letrozole concentration is associated with CYP2A6 variation but not with arthralgia in patients with breast cancer.](#) Borrie AE, Rose RV, Choi YH, **Perera FE**, Read N, Sexton T, Lock M, Vandenberg TA, Hahn K, Dinniwel R, Younus J, Logan D, Potvin K, Yaremko B, Yu E, Lenehan J, Welch S, Tyndale RF, Teft WA, Kim RB. Breast Cancer Res Treat. 2018 Aug 9. doi: 10.1007/s10549-018-4910-z. [Epub ahead of print] PMID:30094551
- [Maternal one carbon metabolism and arsenic methylation in a pregnancy cohort in Mexico.](#) Laine JE, **Ilievski V**, Richardson DB, Herring AH, Stýblo M, Rubio-Andrade M, Garcia-Vargas G, **Gamble MV**, Fry RC. J Expo Sci Environ Epidemiol. 2018 Aug 1. doi: 10.1038/s41370-018-0041-1. [Epub ahead of print]
- [Nutritional influences on one-carbon metabolism: effects on arsenic methylation and toxicity.](#) **Saxena R, Bozack AK, Gamble MV.** Annu Rev Nutr. 2018 May 23. doi: 10.1146/annurev-nutr-082117-051757. [Epub ahead of print] PMID:29799766
- [Regulation of birthweight by placenta-derived miRNAs: evidence from an arsenic-exposed birth cohort in Bangladesh.](#) Rahman ML, Liang L, Valeri L, Su L, Zhu Z, Gao S, Mostofa G, Qamruzzaman Q, Hauser R, **Baccarelli A**, Christiani DC. Epigenetics. 2018 Aug 13:1-18. doi: 10.1080/15592294.2018.1481704. [Epub ahead of print] PMID:30099960

- [Assessing the use of influenza forecasts and epidemiological modeling in public health: decision making in the United States.](#) Doms C, **Kramer SC, Shaman J.** Sci Rep. 2018 Aug 17;8(1):12406. doi: 10.1038/s41598-018-30378-w. PMID: 30120267
- [Live birth bias and observed associations between air pollution and autism.](#) Raz R, **Kioumourtzoglou MA,** Weisskopf MG. Am J Epidemiol. 2018 Aug 7. doi: 10.1093/aje/kwy172. [Epub ahead of print] PMID:30099488
- [Metastable DNA Methylation sites Associated with Longitudinal Lung Function Decline and Aging in Humans: An Epigenome-Wide Study in the NAS and KORA Cohorts.](#) Carmona JJ, Barfield RT, Panni T, Nwanaji-Enwerem JC, Just AC, Hutchinson JN, Colicino E, Karrasch S, Wahl S, Kunze S, Jafari N, Zheng Y, Hou L, DeMeo DL, Litonjua AA, Vokonas PS, Peters A, Lin X, Schwartz J, Schulz H, **Baccarelli AA.** Epigenetics. 2018 Oct 21:1-17. doi:10.1080/15592294.2018.1529849.
- [Urinary Metals and Metal Mixtures in Bangladesh: Exploring Environmental Sources in the Health Effects of Arsenic Longitudinal Study \(HEALS\).](#) **Sanchez TR, Slavkovich V, Lolocono N,** van Geen A, Ellis T, Chillrud SN, Balac O, Islam T, Parvez F, Ahsan H, **Graziano JH, Navas-Acien A.** Environ Int. 2018 Oct 18;121(Pt 1):852-860. doi: 10.1016/j.envint.2018.10.031. PMID:30343184
- [Validation of the Maximum Symptom Day Among Children with Asthma.](#) Wu TD, **Perzanowski M,** Peng RD, Wise RA, Balcer-Whaley S, Newman M, Cunningham A, Phipatanakul W, Matsui EC, McCormack MC. J Allergy Clin Immunol. 2018 Oct 18. pii: S0091-6749(18)31447-7. doi: 10.1016/j.jaci.2018.10.008. PMID: 30342891
- [Air Pollution, Urgent Asthma Medical Visits and the Modifying Effect of Neighborhood Asthma Prevalence.](#) Lovinsky-Desir S, **Acosta LM,** Rundle AG, Miller RL, Goldstein IF, Jacobson JS, Chillrud SN, **Perzanowski MS.** Pediatr Res. 2018 Oct 18. doi: 10.1038/s41390-018-0189-3. PMID: 30337671
- [Arsenic, One Carbon Metabolism and Diabetes-Related Outcomes in the Strong Heart Family Study.](#) **Spratlen MJ,** Grau-Perez M, Umans JG, Yracheta J, Best LG, Francesconi K, Goessler W, Balakrishnan P, Cole SA, **Gamble MV,** Howard BV, **Navas-Acien A.** Environ Int. 2018
- [Targeted Metabolomics to Understand the Association between Arsenic Metabolism and Diabetes-Related Outcomes: Preliminary Evidence from the Strong Heart Family Study.](#) **Spratlen MJ,** Grau-Perez M, Umans JG, Yracheta J, Best LG, Francesconi K, Goessler W, Bottiglieri T, **Gamble MV,** Cole SA, Zhao J, **Navas-Acien A.** Environ Res. 2018 Sep 27;168:146-157. doi: 10.1016/j.envres.2018.09.034. PMID: 30316100
- [Vent Pipe Emissions from Storage Tanks at Gas Stations: Implications for Setback Distances.](#) **Hilpert M,** Rule AM, Adria-Mora B, Tiberi T. Sci Total Environ. 2018 Sep 24;650(Pt 2):2239-2250. doi: 10.1016/j.scitotenv.2018.09.303. [Epub ahead of print PMID: 30292117
- [Government Policy, Clean Fuel Access, and Persistent Fuel Stacking in Ecuador.](#) **Gould CF,** Schlesinger S, Toasa AO, Thurber M, Waters WF, Graham JP, **Jack DW.** Energy Sustain Dev. 2018 Oct;46:111-122. doi: 10.1016/j.esd.2018.05.009. Epub 2018 Jun 27. PMID: 30294142
- [Prenatal Household Air Pollution is Associated with Impaired Infant Lung Function with Sex-Specific Effects: Evidence from GRAPHS, a Cluster Randomized Cookstove Intervention Trial.](#) Lee AG, Kaali S, Quinn A, Delimini R, Burkart K, Opoku-Mensah J, Wylie BJ, Yawson AK, Kinney PL, Aengibise KA, Chillrud S, **Jack D,** Asante KP. Am J Respir Crit Care Med. 2018 Sep 26. doi: 10.1164/rccm.201804-0694OC. PMID: 30256656

Summer Workshops

For the past two summers, EHS has spearheaded new collaborations across Columbia departments and other Universities to develop several short, intensive methods trainings for investigators at all career stages. EHS faculty members have identified important knowledge gaps to lead seminars and hands-on activities. Students and postdocs have assisted with content development and aiding participants, and staff have glued all the pieces together - resulting in six successful trainings.

So far, EHS has trained more than 300 participants from 28 states and 8 countries! Topics have included epigenetics, environmental mixtures, radiation safety, GIS, Mendelian randomization, and lab leadership and management.

With a great turnout and enthusiastic requests for more trainings, we've put together an exciting lineup for summer 2019, including seven new topics: Exposomics, NIH grant-writing, machine learning, causal mediation analysis, functional genetics, neonatal comfort care, and single cell RNA sequencing.

You can find more information about the offerings, instructors, and sign up for announcements at mailman.columbia.edu/training-workshops. We also have some opportunities for students and postdocs to get involved if interested. Feel free to email Abby Welbourn aj2730@columbia.edu with any questions.

Faculty

Dr. Gary Miller, PhD

Professor Environmental Health Sciences
Vice Dean, Research Strategy and Innovation



Gary, a new Professor in Environmental Health Sciences, joined the Department August 1, 2018.

He is also serving as the new Vice Dean for Research Strategy and Innovation for MSPH. Gary completed his doctoral training in pharmacology and toxicology and postdoctoral training in molecular neuroscience. His career began with the study of environmental contributors to Parkinson's disease and that work continues to this day. His lab uses a variety of techniques to study dopamine function-fast-scan cyclic voltammetry, radioligand transport assays, behavior, immunohistochemistry, antibody generation, and fluorescent and light microscopy. They (Josh, Fion, and Vrinda—more to come) use a range of models, including cell culture, *C. elegans*, and transgenic mice, as well as analyzing human clinical samples. More recently, his group has been expanding into other neurodegenerative conditions, such as Alzheimer's disease.

He has been a leading proponent of the exposome concept, plans to teach an Exposome Bootcamp next Summer as part of the EHS series, and is working on an updated version of his exposome book. Together with the Irving Institute at Columbia he is setting up an untargeted metabolomics/exposomics core (hope to be up and running in the spring). During his 16 years at Emory, Gary led the NIEHS P30 HERCULES Exposome Research Center, the NIEHS U2C CHEAR center, and the NIEHS T32 Training Grant. He served as Associate Dean of Research for eight years at Emory where he developed several programs to facilitate grant submissions. He has been Editor-in-Chief of Toxicological Sciences since 2013 (term ends June 2019) and keeps close tabs on the trends within the scientific publication landscape.

Gary and his wife, Patti, have six semi-adult children, who are all working or going to college in Georgia. They request the kids visit in shifts given the confines of their NYC apartment.

Alumni

Sashti Balasundaram, MPH '08

Sashti recently began a one year fellowship opportunity called [Wild Gift](#), which empowers social entrepreneurs working to solve pressing environmental challenges. He was chosen based on personal and professional accomplishments with WeRadiate; his start-up modernizing compost technology for regulatory compliance and compost quality assurance.

The Fellowship begins with a 20-day expedition in the Boulder White-Cloud Idaho Wilderness. The trek is to enable fellows to connect deeper with nature, away from distraction for both personal and entrepreneurial pursuits. This year's cohort includes five fellows across the U.S. ranging from 23-35 years of age working on issues such as renewable energy, science communication, micro-finance and enhancing environmental opportunities for communities of color. Follow Sashti's journey, [@WeRadiateNY](#) on Twitter and Instagram.



Sashti previously worked for the Mayor's Office in the City of Buffalo. He was the city's Recycling Coordinator and piloted a new citywide Food Scrap Drop-Off for city residents to begin composting. He also implemented a new districtwide environmental competition called the Environmental Champions Program for students K-12.

Current Students

Anne Nigra

3rd Year PhD Student

Anne Nigra, 3rd year PhD candidate, spent a good chunk of her summer traveling. Anne received a KC Donnelly Externship Award Supplement through the Superfund Research Program to conduct environmental monitoring for metals with collaborators and community partners in rural South Dakota. She began monitoring in South Dakota last summer and returns again this winter to continue work with a local high school student. Anne also traveled to Fort Collins, CO to participate in a USGS Powell Center Working Group meeting for a project titled “Linking environmental and public health data to evaluate health effects of arsenic exposure from domestic and public supply wells.”



Anne is pictured with the mercury monitor they are using in South Dakota on the GWB.

Darwin Keung

2nd Year MPH Candidate

This summer Darwin spent 20 days in Nanjing through the Nanjing International Youth Exchange Program and Nanjing University. Together with 80 university students from around the world, he toured Nanjing’s extensive past, and preview the future of Nanjing’s tech and AI industries such as GenScript and Panda. Highlights included a riverboat cruise, exploring a countryside farm, AI and facial recognition, and human interaction robots, and a prototype of a municipal environmental emergency monitoring system that can detect fires with a black carbon and a PM2.5 network. Darwin wishes to thank Dr. Tang for recommending him for this program and also Mr. Ding Xhao and his staff and the students of Nanjing University for hosting him.

New Doctoral Students

Brennan Baker

PhD Student

Brennan grew up in Dallas, Texas. He received his BA/MA degree in Biology from Wesleyan University where he conducted research focused on the evolutionary implications of heritable, environmentally-induced epigenetic changes. At Columbia, he is interested in studying how the effects of environmental exposures may be transmitted across generations to influence human health and disease. Brennan has a new pet cat. Some of the things that Brennan enjoys include, but are not limited to sports, video games, tabletop games, breweries, watching the big game, and ice cream cookie sandwiches.



Jenni Shearston

PhD Student

Jenni is originally from Pagosa Springs, Colorado. She received a BA in English from Regis University in Denver, and an MPH in Epidemiology from New York University. Prior to joining Columbia, Jenni was a home health care provider in Denver, taught high school in Newark, NJ, and was a research project manager at NYU School of Medicine. Her past research has focused on the epidemiology and health effects of hookah, e-cigarettes, and dokha. At Mailman, she hopes to study methods of measuring industrial pollutants in the environment and their impact on human health at the population level.



Vrinda Kalia

PhD Student

Vrinda is from Bangalore, India, where she received a Bachelor of Pharmacy degree from the Rajiv Gandhi University of Health Sciences, in 2012. After college, she worked as a teacher in her high school alma mater, teaching Chemistry and Biology to students in classes 6 through 9. She graduated with an MPH from the EHS Department at Mailman with a certificate in Toxicology in 2015. After graduation, she worked in the Children's Environmental Health Center with Dr. Tang and Dr. Herbstman. She started her PhD in the Environmental Health Sciences program at the Rollins School of Public Health at Emory University, under Dr. Gary Miller in 2016. She returned to the department as a doctoral student when Dr. Miller joined Mailman as the new Vice Dean of Research Strategy and Innovation. Her current research aims to create a platform to study environmental determinants of neurodegeneration and aging using high-resolution metabolomics in *Caenorhabditis elegans*, a well understood, non-parasitic, nematode model used widely in neuroscience and genetic studies. She is excited to be reunited with the EHS family and is looking forward to all the New York-style salsa!



Practicum Portraits

Between their 1st and 2nd years, Mailman students complete a required practicum. To find out more about the EHS 2nd year students and their experiences, we asked them:

Practicum Organization / Mentor

Practicum Location

- *Description of Practicum Experience*
- *What was your favorite part of the summer?*

MPH Students

Katherine Baker

NY-Presbyterian & Columbia University

New York, NY

- I was a research assistant in the medical nutrition department at NY-P. I also worked as a research assistant for the upcoming Global Health Justice Group at Mailman, where I focused on rights-based approaches to combatting air pollution to prevent NCDs.
- I went to Alaska for 8 days and got to see glaciers and lots of adorable wildlife, including baby bears and puffins! When I wasn't in Alaska, I got to spend a lot of time with my dog, which is my favorite activity.



Carolyn Booth

Food and Drug Administration Office of Food Additive Safety

Washington, D.C.

- I created a project to assess the current communication practices of the office with regard to food trade news outlets. I interviewed a retired journalist as well as staff from all three divisions within the office. I also analyzed the office's draft and final statements, and online news articles from five major food trade news outlets. I created a poster, presented to senior staff, and wrote a final paper summarizing my findings.
- Explored the food scene in D.C.



Jessica Brown

New Yorkers for Parks

New York, NY

- I led a team of five undergraduate interns on park and neighborhood surveys in NYC to gather open space data in areas that are being rezoned. The goal of the research is to provide reports to community advocate groups so they can advocate for open space in their community.
- Went home to Minnesota and stayed by the lake all week!



Lauren Byrne

Dr. Kleiman's lab, Columbia University

New York, NY

- I worked with Dr. Kleiman measuring occupational radiation exposure to the eye of interventional cardiologists at CUMC. My main task this summer was to define sensitivity and uniformity of nano-dosimeters used in this study. Additionally, I assisted with Chernobyl dog hair metal analysis.
- I spent 3 weeks out West exploring National Parks in Montana and Wyoming.



Eunsuk Chang

New York Patient Navigator Program

Brooklyn, NY

- I worked as a lead intake coordinator and liaison between the NYC patient navigator program and other various third-parties such as resettlement agencies and primary healthcare facilities. I created the program protocol, consent form, health risk assessment tool and submitted the study protocol to the IRB at Columbia. Through my practicum experience, I learned how clinical research is designed, conducted, and promoted. The project is on its track and I am expected to work more on keeping and recording patient log and managing unexpected outcomes.
- Went to Hawaii in the middle of hurricane warning.



Erica Chung

**Collaborate on Health and Environment
Bolinas, CA**

- Researched and wrote approachable and accessible content for environmental health issues relevant to the general public.
- Ate delicious dairy-free ice cream, hooray!



Justin Collins

**Cardno ChemRisk
Boulder, CO**

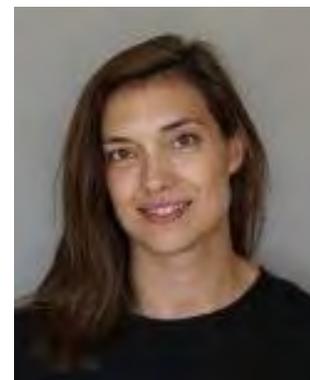
- I worked on exposure assessments related to toxic tort litigation. I also contributed to a review of current models of dermal exposure to phthalates.
- I enjoyed hiking in the Flatirons.



Michelle Gorchynski

**NYU Langone Medical Center
New York, NY**

- I worked on The Children's Health & Environmental Study, which follows women from preconception to postnatal, with follow up visits until their child is 3 years old. The study looks at environmental exposures, such as phthalates, PAH levels and certain proteins. I helped with the consent process for participants and with the 12-month follow-up visits. I also assisted with recruitment in the preconception arm of the study, called ECHO.
- I went to Costa Rica!!!



Amelia Grant-Alfieri

**UC Berkeley School of Public Health
Berkeley, CA**

- I analyzed the effect of early life exposure to arsenic in drinking water on immunological biomarkers in adults. The data I used came from a cohort study in northern Chile. I had the privilege of briefly working with the project lead during a visit to Chile.
- Backcountry camping in Yosemite.

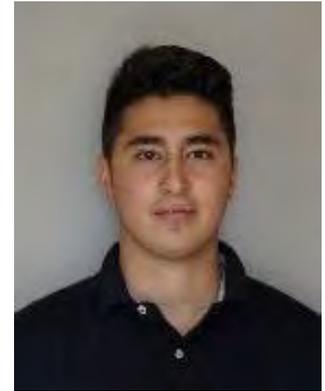


Grant Hartzell

Versar Inc. / WTI Team

Washington, D.C.

- I was a consultant and junior scientist working with a small team that specialized in Indoor Air Quality. Although it was rare, when I was not in the field working with clients, I did flame retardant exposure modeling research work for Versar under an EPA grant. But I spent the majority of my time air sampling and consulting with the WTI Team.
- Happy hours with coworkers.



Pei Yang (Peggy) Hsieh

California Department of Public Health

Indoor Air Quality Section

Richmond, CA

- I worked on two main projects. I created a California housing code enforcement database to inform the public on their local point of contact for assistance on IAQ issues. While working on this project, as well as answering emails from the public, I learned about the importance of health communication in public health work. Secondly, I had the opportunity to present my literature review on mold and its association with current asthma at the ISIAQ Indoor Air 2018 conference.
- My favorite thing was traveling with my best friend from Seattle to New York.



Erin Kawazu

World Health Organization

Manila, Philippines

- I worked in the Health and the Environment Unit at the WHO Regional Office of the Western Pacific. I supported my colleagues in putting together WHO publications, as well as conducted my own comparative analysis of two environmental health incidents in the Western Pacific Region.
- Cycling around Naoshima, Japan to see some great art.



Stella Keck

**NYC Department of Health and Mental Hygiene
Long Island City, NY**

- I used R and ArcMap GIS to fulfill mapping requests for various bureaus within the NY Health Department. I also created educational materials and tutorials on how to geocode, create choropleth maps, pull data from the Census website using APIs, and create dot density maps in R for DOH employees to use online and in workshops. Additionally, I made updates and added resources to the DOHMH SharePoint website. I had the opportunity to participate in various inter- and intra-agency GIS workgroups and technical workforce meetings.
- Went hiking in the White Mountains, NH, with my twin brother.



Darwin Keung

**Columbia University
New York, NY**

- I worked with Dr. Micaela Martinez on a NIEHS pilot study exploring the effects of light pollution on circadian rhythms and health. The project was a mix of study design, data collection, and analysis. In practice, that meant I set up light sensors around New York City and the surrounding rural areas to observe the summer solstice. When not hiking through the woods or the city, I learned how to do time series analyses on the data I collected.
- I went on a funded trip to Nanjing, China for 20 days in July for the Nanjing International Youth Exchange Program and met other university students from over 10 different countries!



Yaa Asantewaa Klu

**NYC Department of Health and Mental Hygiene and
New York University (NYU)**

New York, NY

- My practicum at the NYC DOHMH focused on an evaluation of 5 parks in the city, prior to art installations in the parks. I conducted intercept surveys and observation studies to gather data about the park from the people who use it. The project objective is to improve the parks through arts and to, consequently, increase park use and physical activity levels of NYers. At NYU, I analyzed data and wrote a manuscript on the function of the microbiome in colorectal cancer.
- I travelled to Atlanta and Minneapolis to visit my friends.

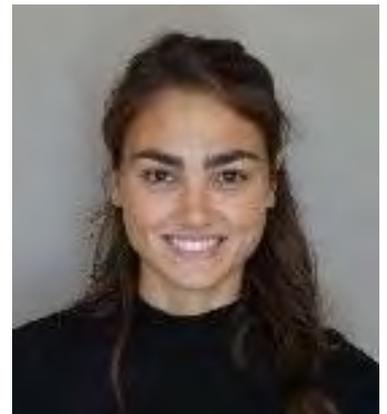


Rachel Lamy

Environmental Protection Agency

New York, NY

- At the EPA, I worked with a toxicologist who worked as the regional risk assessment coordinator. I primarily worked on projects involving lead and perfluorinated compounds.
- I went to Canada!



Siliang Liu

Columbia University

New York, NY

- I used GIS and R to visualize county-level air pollutants concentration of New York State from 2002-2012. I then collaborated with a NASA HAQAST team to analyze the effect of ambient air pollution on human bodies.
- Went on a road trip in the west.



Sarah McLarnan

**City of Minneapolis Health Department
Minneapolis, MN**

- As an environmental health technician, I was responsible for ensuring compliance with city ordinances related to the environment. I routinely inspected construction sites for proper erosion control and responded to citizen complaints regarding air, land and water pollution. In addition, I contributed to environmental initiatives that improve pollinator habitat across the city, distribute trees and began assessing the Emerald Ash Borer on the community.
- I lived with a dog named Moose (he was a good boy).



Eileen Shea

**Columbia University
New York, NY**

- I worked with Dr. Perera to quantify economic benefits of reducing air pollution from fossil fuel combustion. Particularly, I compiled information from economic studies to aid in the development of cost valuation functions related to children's health outcomes.
- Visited Wisconsin!



Marisa Sobel

**Columbia University
New York, NY**

- I conducted my first epidemiology analysis with Dr. Ana Navas-Acien and Dr. Tiffany Sanchez. It was an analysis of low levels of arsenic exposure by rice consumption and subclinical outcomes of cardiovascular disease. The data came from the MESA cohort, a multiethnic cohort from cities all across the country that is substantially representative of the US population. Analysis is ongoing, but I had the opportunity to utilize new skills learned in my first year.
- Getting out of the city on the weekend!



Jarrood Sonett

Columbia University
New York, NY

- My practicum was focused on determining the health effects of dung biomass smoke. To accomplish this, I treated cells with dung biomass smoke and exposed mice to biomass smoke and then looked at changes in common inflammatory gene and protein targets.
- Hanging at the beach with my friends and family!



Charlotte Tsou

NYS Department of Health
Albany, NY

- I learned to read the reports that monitor the PFCs in our drinking water supply. I shadowed the interview process for reported harmful algal bloom cases. I also participated in many meetings to learn about the general investigation processes in the legionnaire disease clusters. There were also opportunities to actually go out to the field and take samples.
- I visited Montreal with only 3 hours of driving!



Angel Weng

Helen Keller International
New York, NY

- I was a program assistant for the Neglected Tropical Disease team. I had a varied job, from making GIS gifs to analyzing/cleaning data to updating budgets and administrative roles. It was a great job to get a feel for many different program officer jobs and the world of global health.
- I played for an ultimate frisbee team called Unlimited Swipes.



Syd Wolchok

Office of the New York State Attorney General
New York, NY

- I conducted scientific research for the chief scientist to be used in comments submitted to the Federal Register regarding flavored e-cigarettes and research for legal cases including the Exxon investigation. Additionally, I prepared affidavits, drafted reports and fact sheets, analyzed scientific and engineering data, and briefed the staff regarding recent and relevant news and scientific studies in subject areas that aligned with the work conducted in the office.
- I went to Iceland!



David Yu

Columbia University
New York, NY

- I mainly set up equipment for the bike study. I also did a side R project, creating a report for the participants.
- Learned to code



Lyuou Zhang

Columbia University
New York, NY

- I worked on a research project here in EHS about fuel conversion and air pollution. My major job responsibilities include data management, data visualization, data analysis in R and QGIS. I also presented at monthly meetings.
- Drawing in Washington Square Park!



MS Toxicology Students

Arina Wu

Columbia University
New York, NY

- Worked in Dr. Re's lab, which focused on heavy metal screening.
- Naps in central park.



Tess Bloomquist

Columbia University
New York, NY

- I continued my work in Dr. Baccarelli's lab this summer and focused on optimizing protocols to measure copy number and oxidative stress in mitochondrial DNA. I have not yet completed my practicum as I spent this summer at work and in classes.
- I spent an entire afternoon and evening at "Harry Potter and the Cursed Child." I think about how truly magical it was every day.



Vincent Tam

Columbia University
South Bronx, NY

- I gathered motor traffic pollution and noise data in a rapidly gentrifying area of the South Bronx. It involved setting up collection sites to log noise data, air pollution levels, and a radar unit. There was a lot of suffering in the direct sunlight, heat, and humidity.
- Sat outside and enjoyed the sunshine.



Meet the 1st Years:

To find out more about of 1st year students, we asked them:

- *Hometown*
- *Certificate*
- *Previous Academic Institution*
- *Favorite Food*
- *Fun fact!*

MPH Students

Krish Bhatt

Old Bridge, NJ

- Social Determinants of Health
- Barnard College
- Brownies
- I grow things (plants, brewing kombucha, etc.)



Haleigh Cavalier

Rome, NY

- Molecular Epidemiology
- Penn State University
- Pasta
- I play ultimate frisbee!



Maxine Coady

Madison, WI

- Environmental Health Policy
- University of Wisconsin - Madison
- Gelato
- I've been to 52 countries!



Katy Coomes

Santa Rosa, CA

- Climate and Health
- UC San Diego
- My grandma's red beans and rice
- In my spare time I paint watercolor landscapes and planets.



Anita Dev

San Diego, CA

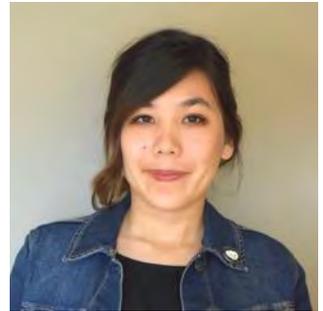
- Epidemiology of Chronic Disease
- UCSD
- Fried chicken? Mango? Boba? I can't pick just one!
- I've visited 48 countries.



Yun-Wen Betty Fletcher

Kapolei, HI

- Environmental Health Policy
- University of Hawaii at Manoa
- Sushi
- When I was as a waitress the first customer I ever had was Barack Obama's brother-in-law.



Meethila Gade

Mumbai, India

- Toxicology
- St. Xavier College
- Grilled salmon with mashed potatoes and baby spinach- best thing ever
- I read my horoscope every day.



Katie Gao

Carmel, IN

- Toxicology
- Vanderbilt University
- Sushi
- I studied abroad in Edinburgh, Scotland.



Qianrui Gao

Shanghai, China

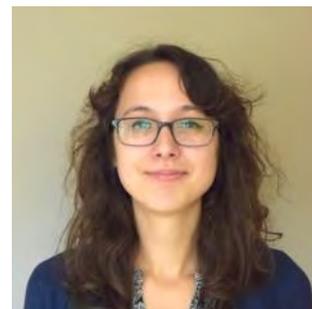
- Molecular Epidemiology
- Purdue University
- Curry
- I got my name from “cherry blossom” since I was born in Japan, but my favorite flower is hydrangea.



Nastasia Gernat

Lafayette, NJ

- Toxicology
- Marist College
- Ice cream
- Hiked up the Narrows gorge in Zion National Park.



Lizbeth Gomez

White Plains, NY

- Toxicology
- City College of New York
- Lebanese/Greek (can't decide)
- I grew up with 7 cats and now I'm deathly allergic.



Dennis Khodasevich

Brooklyn, NY

- Toxicology
- George Washington University
- Sushi
- One of my biggest weaknesses is limited edition Oreo flavors, they're awful most of the time but I always buy them whenever they come out.



Sun Young (Sally) Park

Seoul, South Korea

- Toxicology
- New York University
- Korean BBQ (pork belly & kalbi)
- I have travelled to every continent except Antarctica and South America. I hope to reach every continent before I turn 30 years old!



Victoria Sanders

Fremont, CA

- Climate and Health
- UC Davis
- Cajun Food
- I was a volunteer at the Oakland Zoo when I was 7 and know lots of random animal trivia.



Grant Tore

Cincinnati, OH

- Global Health
- University of South Carolina
- Sweet potato fries
- I lived in Costa Rica for a year when I was younger because my dad worked for Chiquita Banana.



Kai Wilmsen

Albany, CA

- Toxicology
- University of California, Santa Barbara (UCSB)
- Key Lime Pie
- I know how to juggle, walk on a tightrope, and do a handful of other circus things.

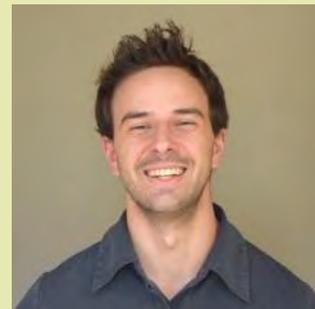


MS Toxicology Students

Peter Arden

San Francisco, CA → Amherst, OH → NYC

- Fieldston → Oberlin
- Mexican food: Tacos
- Tacos and Oreos



Peter Chirdon

Lakewood, OH

- Columbia University Postbac Premed
- Chicken
- I have conducted an opera (Dido and Aeneas by Henry Purcell).



Stavros Fanourakis

Thessaloniki, Greece

- CUNY School of Public Health
- Oysters
- Once I helped rescue an injured flamingo trapped in the middle of a swamp.



Rian Garland

Abington, MA

- University of Massachusetts Amherst
- Chocolate
- I have a handsome 20lb black kitty named Boolean!



STUDENTS

Vasundhara Singh

Kanpur, India (born)

Bloomington, IN (lived in most)

- Indiana University
- Anything spicy! Or pasta.
- I dislike melted cheese.



Maria Talayero

Mexico City, Mexico

- Universidad Anáhuac México
- Mexican food: Tacos
- I love to paint!



PrIMER

This past summer, the Department of Environmental Health Sciences at the Mailman School of Public Health hosted the fourth cohort of trainees in the **Program to Inspire Minority** undergraduates in **Environmental health sciences Research (PrIMER)**. This NIEHS-funded program provides students, who are typically underrepresented in STEM fields, the opportunity to gain valuable research experience in environmental health sciences.

This year's PrIMER cohort represents students from Fordham University, CUNY-City College, Hunter College, and John Hay College. The trainees worked full-time over the summer with EHS faculty members, Dr. Navas-Acien, Dr. Markus Hilpert, Dr. Brandon Pearson, Dr. Darby Jack, Dr. Norman Kleiman and Dr. Jeffrey Shaman. Some of the research topics included: neuronal polarization with pesticide exposure, metal contamination in Chernobyl dog hair, and e-cigarette aerosol effects on blood metal levels.

Trainees gained valuable skills and experience in study design, laboratory practices, and statistical analysis, in addition to valuable mentorship provided by their faculty member. The summer culminated with PrIMER Research Presentations, where each trainee provided an overview of their experience and research in the program so far.

In addition to their projects, PrIMER trainees participated in weekly professional development seminars, aimed to prepare them for EHS graduate school applications and careers. Seminars also featured guest speakers including Dean Marlyn Delva and EHS faculty, who shared stories about their backgrounds and journeys to public health research. Inspired by the weekly speakers, many trainees are planning to use the skills gained during the professional development series to apply to graduate programs in EHS.

Trainees Farida Ahmed, Maria Andrade, Kaila Boyer, Jacintha Halaby, Nelsa Matienzo, Michael Migliaro, Charlene Redhead and Michelle Rodriguez will have the opportunity to continue conducting research during the 2018-19 academic year. PrIMER trainees engage in research, while balancing classes and GRE preparatory courses provided by the program.

The first four years of the program have been successful and Drs. Navas-Acien and Freyer and Nina Kulacki, MBA, who direct the program, look forward to continuing these efforts. PrIMER thanks the Environmental Health Sciences department and faculty for their continued support to inspire minority undergraduates to pursue careers in environmental health.

PrIMER Students



Kayla Boyer



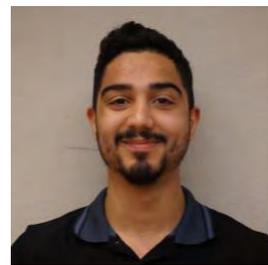
Farida Ahmed



Charlene Redhead



Jacintha Halaby



Michael Migliaro



Michelle Rodriguez



Nelsa Matienzo



Maria-Jose Andrade

Letter from SEA

Dear EHS Family,

This semester, we aimed to continue SEA's goal of promoting sustainability both on and off the CUMC campus, while also including more social and networking opportunities through outdoor meetups.

We started off the school year with our annual orientation trip to the New York Botanical Garden to see the Georgia O'Keeffe exhibit. During Climate Week, Nicole Comfort, PhD Candidate in EHS and a Climate Reality Leader, hosted a brief training and discussion to share resources and techniques on how to write targeted op-eds.

At the beginning of October, SEA successfully launched a composting pilot on the EHS floor (11th) in ARB. Five composting receptacles are now placed at multiple locations on the 11th floor. We are also collecting data with the goal of compelling School administration to instate building-wide composting collection, given the large amount of organic waste produced in this setting. We thank the department for its support during this pilot!

In late-October, along with the group Women for Women (W4W), we hosted a screening of Pink Ribbons Documentary, to highlight the politics of philanthropy and the environmental health issues surrounding chemicals in products that have been "pink-washed" for breast cancer awareness efforts. Just recently, we hosted our annual SEA of Thoughts Seminar with a theme of disease ecology. We were joined by our very own Dr. Micaela Martinez and EcoHealth Alliance's Dr. Carlos Zambrana-Torrel for a wonderful panel discussion.

Finally, please stay tuned for our upcoming "DIY Self-Care Workshop" during Wellness Week in December. This will be an opportunity for members to create facial scrubs from used coffee grounds and essential oils. We are also open to forming subcommittees on other sustainability-related initiatives that interest our members, so please feel free to reach out to us via Engage or Facebook with any ideas!

We'd like to thank everyone who has taken part in our events so far. We hope you enjoyed these events and met some new friends in the process!

It's been a pleasure serving as SEA's Executive Board and we thank you all for your continued support. For spring, we welcome the new SEA Board (2019):

President: Victoria Sanders
VP of Events/Outreach: Dennis Khodasevich
VP of Communications: Maxine Coady
VP of Finance: Katy Coomes

Congratulations to the Class of 2020's SEA Executive Board, and we look forward to seeing you all at future SEA events!

Peggy Hsieh, Case Chun, Stella Keck, Erin Kawazu
The Executive Board of Students for Environmental Action

Facebook: facebook.com/sea.columbia.publichealth
Engage: <https://mailman-columbia.campuslabs.com/engage/organization/students-for-environmental-action>



MEMORIES

Fall Faculty-Sponsored Social



11th Annual Chili Cook-Off



Winners!

Meat chili - Mike He and Sebastian Rowland (PhD)
Veggie chili - Dr. Matt Perzanowski (Faculty)
Cornbread - Ahlam Abuawad (PhD)
Dessert - Amelia Grant-Alfieri (2nd year Master's)



MEMORIES

EHS Holiday Party

