



*Department
Newsletter
Fall 2021*


 **COLUMBIA**
MAILMAN SCHOOL
OF PUBLIC HEALTH
ENVIRONMENTAL
HEALTH SCIENCES



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Credits:

Kendall Kruchten, 2nd Year MPH Student
Brandy Coleman, Academic Assistant

Letter from the Chair



Dear EHS family:

As we head toward the winter break, and wind down the semester, many efforts have remained in place to ensure that instruction and research continue to operate in full capacity. We also continue to make major headway in ringing in the Mailman School's centennial.

In this issue of our newsletter, we're excited to introduce the students who started EHS programs this year. We also highlight several new faculty members that have joined our community. *EHS Full Faculty*: [Drs. Allison Kupsco](#), [Annie Nigra](#), [Sen Pei](#), [Kathrin Schilling](#), and [Cecilia Sorensen](#). A new *Joint Faculty* appointment: [Dr. Kiros Berhane](#), Cynthia and Robert Citron-Roslyn and Leslie Goldstein Professor and Chair to the Department of Biostatistics. *A djunct Faculty*: [Dr. Shannon Marquez](#), Dean of Undergraduate Global Engagement at Columbia University, and [Dr. Dean Jones](#), Professor in the Department of Medicine (Pulmonary Division) and the Department of Biochemistry at Emory University School of Medicine in Atlanta, Georgia.

I would like to acknowledge [Dr. Matthew Perzanowski](#) for starting his new appointment as our Vice Chair of Education and Training. Dr. Perzanowski was also recently appointed as a Provost Leadership Fellow where he participates in a range of leadership development opportunities over the next two years while interacting with the University's senior leadership. You'll read more about this in this issue as well.

Congratulations to [Dr. Jeffrey Shaman](#) for his involvement with the recently created New York City's Pandemic Response Institute. The Pandemic Response Institute, a new effort led by global health center ICAP, along with key partner CUNY SPH, will expand our already robust involvement in the NYC COVID-19 response. The Institute will be a key stakeholder in preparing New York City for future public health emergencies.

I'd like to also mention the upcoming Master of Science in Environmental Health Data Science track. Initially funded by the Columbia Collaboratory Fellows Fund, the new Data Science track will offer a more rigorous approach to data science in our courses and program offerings. Since 2019, we've worked closely with the Biostatistics faculty on how we can effectively implement data science throughout our curricula to synergize how data science is taught in upper-level EHS courses. Kudos to [Dr. Tiffany Sanchez](#) for seeing this new program through the approval process and thanks to [Dr. Jeff Goldsmith](#), [Dr. Greg Freyer](#), [Nina Kulacki](#) and many others for their incredible involvement in this new initiative.

Andrea Baccarelli, MD, PhD
Leon Hess Professor and Chair (He-Him)
Department of Environmental Health Sciences

Updates: Faculty

Kim Knowlton, DrPH



EHS Faculty member [Kim Knowlton](#) was appointed to the NYC Mayor's Office's 4th NYC Panel on Climate Change (NPCC4) which provides an authoritative and actionable source of scientific information on future climate change and its potential impacts. This group will serve as a local counterpart to the Intergovernmental Panel on Climate Change to develop an assessment report on the state of climate impacts science in New York City. The 4th NPCC will expand on this model with a series of NPCC4 products beginning in late 2021. Dr. Knowlton was also co-editor, along with Cecilia Sorensen, of the new second edition textbook, [Global Climate Change and Human Health: From Science to Practice](#). See page [26](#) for more details.

Matt Perzanowski, PhD

[Dr. Matt Perzanowski](#) is our Vice Chair of Education and Training in EHS and was appointed to the Provost Leadership Fellows (PLF) program this year.



As a Provost Leadership Fellow, he will participate in a range of learning and leadership development opportunities over the next two years; interact with the University's senior leadership; gain insights into campus initiatives, strategic planning, and budget issues; and strengthen peer networks across campus and interact with faculty from prior PLF cohorts.

As the Vice Chair of Education and Training in EHS, Dr. Perzanowski will bring together education and training initiatives across EHS. Dr. Perzanowski oversees EHS educational and training for our students, postdocs, and external audiences (SHARP trainings).

Updates: Faculty



Mike Musso

EHS Lecturer [Mike Musso](#) participated in the [Association for Environmental Health & Sciences \(AEHS\) Annual East Coast conference over October 18-21, 2021](#). Usually held in Amherst, MA, this year's conference was again held virtually. Mr. Musso chaired a panel on Environmental Justice which included presenters from United States Environmental Protection Agency and academia, as well as a journalist who covered the Flint, MI water crisis. He also delivered a 3-hr Continuing Education session on the fundamentals of human health risk assessment, with a focus on contaminated waste sites.

Updates: Students



Ahlam Abuawad, PhD candidate, received an F31 grant for her dissertation work entitled, "*Arsenic, One-Carbon Metabolism, and Diabetes Incidence.*" She was also granted a KC Donnelly Externship to work with Dr. Margaret Karagas at Dartmouth College.



Kendall Kruchten and Eleanor Medley, MPH EHS students, presented at the Columbia NIEHS Center for Environmental Health in Northern Manhattan, WE ACT for Environmental Justice, and the Columbia Center for Children's Environmental Health Conference. This presentation was a result of the work completed for their MPH practicum. "*Moving Toward Beauty Justice: Conversations for Change*" (November 2021). The title of the session was "*Children's Makeup and Body Products: What do we know?*"

Updates: Students



Eleanor Medley (She/Her) • 1st
MPH Candidate at Columbia Mailman School of Publi...
16h • Edited •

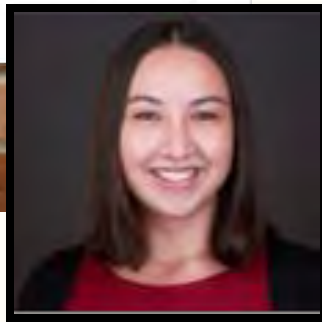
As a former biochemistry student at the University of Toronto with type 1 diabetes, the discovery of insulin there in 1921 is a very special historical event to me. To celebrate the 100th anniversary of this life-saving breakthrough, I had a lot of fun writing a series of monthly blog posts all about insulin and its history at **Connected in Motion**. Big thank you to **Jen Hanson** and **Kendra Dempsey** for all the support along the way!

Link to the first blog that inspired the series:

<https://lnkd.in/drU4RpG>

Link to the entire series (with more installments coming the rest of this year!):

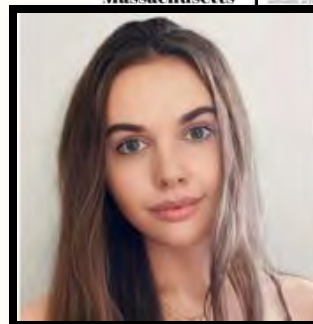
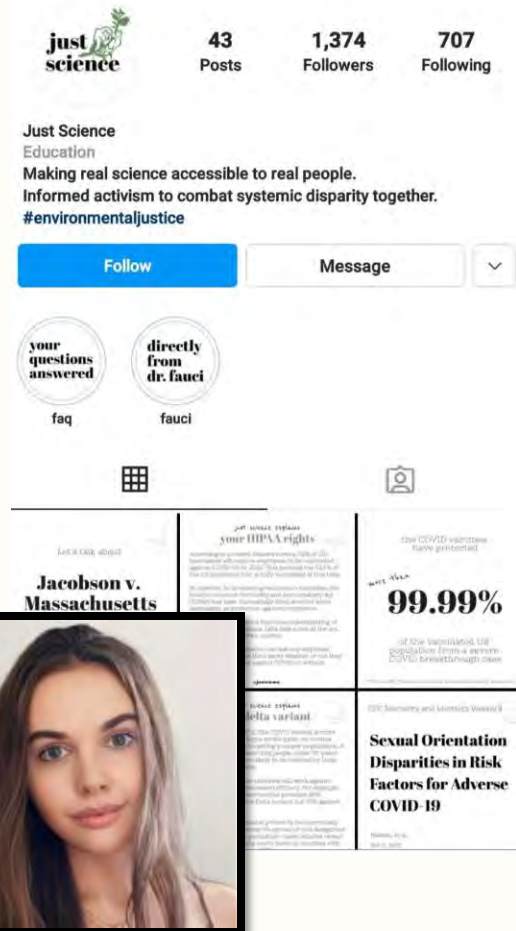
<https://lnkd.in/dct24d9>



Eleanor Medley, MPH student, wrote a monthly blog series all about insulin, its history and development for **Connected in Motion**, an organization for adults living with type 1 diabetes, to celebrate the 100-year anniversary of the discovery of insulin.

Emelia Suljic, MPH student, started a platform called Just Science mid-COVID lockdown to educate the public on the real science of environmental justice. The platform featured thorough breakdowns of journal publications and interviews with experts in the field, including Dr. Ke Liu (former Chief Oncologist at the FDA), Dr. Akilah Cadet (founder of social justice platform Change Cadet), and Mailman's very own **Dr. Bob Fullilove**.

Follow [@justscience_](#) on Instagram!



Updates: Alumni



Dr. Maulik Baxi, (MPH '08), recently accepted the position of Medical Health Officer (MHO) and Medical Director with Fraser Health Authority in British Columbia, Canada. Dr. Baxi is part of the senior leadership team for Population and Public Health and leads the public health response for opioid overdose crisis. In addition, he provides public health physician consultation for COVID-19 response for the regional health authority.



Kaitlyn Coomes, (MPH '20), along with [Dr. Frederica Perera](#) and colleagues at Harvard C-CHANGE and Emory University, presented their analysis of the potential health benefits to children in NYC from on-road air pollution reductions under the regional Transportation and Climate Initiative this past September. The meeting was hosted by WE ACT for Environmental Justice. The researchers estimated substantial avoided health effects in children and large associated economic savings, with greater benefits seen under more ambitious greenhouse gas caps and more investment in public transit. Preliminary results were presented to environmental justice groups and policy representatives from the Northeastern United States. A report summarizing the findings and discussion is being finalized and will be available soon.



Eli Lessman, (MS '21), was hired as an Environmental Scientist - Inspector in the Produce Safety Program at the [California Department of Food and Agriculture](#) in Sept 2021. Their mission is to prevent foodborne illness and contaminated produce reaching the market by fostering a culture of food safety through communication, education, and inspection of farm and farm-mixed businesses.

Updates: PrIMER Trainees



Kaila Boyer, PrIMER trainee in 2018, matriculated into the Master of Public Health program here at Environmental Health Sciences department at Mailman.

“PrIMER was a very rewarding experience and influenced my decision to pursue my MPH in the department. The skills I learned during PrIMER have helped me in my classes and with my current research. In the future, I plan on applying to medical school and would like to be involved in the environmental health field throughout my career.”

Lizbeth Gomez, PrIMER trainee in 2017, matriculated into the PhD program at Drexel after graduating with a Master of Public Health program here at the Environmental Health Sciences department at Mailman. She has recently published an article called: [Blood DNA Methylation and Incident Coronary Heart Disease, Evidence From the Strong Heart Study](#).



“Being part of PrIMER has honestly been an incredible honor; it is easily the single most significantly enriching professional experience I have ever had. As part of the PrIMER 2017-2018 cohort and with the wonderful advisement from Nina and [Dr. Navas-Acien](#), I was able to explore and develop the potential, that at the moment I didn’t know I had, to chase my dreams and become a public health professional. The training I received while being in PrIMER has fundamentally shaped the way I conduct myself both professionally and interpersonally and will forever accompany me while I continue to grow in the public health field.”

Updates: PrIMER Trainees



Dahiana Pena, PrIMER trainee in 2020, has been accepted into the Master of Public Health program in the Epidemiology department here at Mailman.

"As a first-generation student, I'm thankful that PrIMER gave me the opportunity to participate in public health research and integrate myself with Mailman's rich and supportive community. I am especially thankful to [Dr. Perzanowski](#) and Nina for their mentorship and am excited to enroll at Mailman for Fall of 2022!"

Please visit our [website](#) for more information!



PrIMER

Program to Inspire Minority
& Underserved Undergraduates in
Environmental Health Science Research

Summer Workshops



EHS' *SHARP Training Program* plans to take the winter by storm! To keep up with the increasing demand for our programs, SHARP will begin offering select boot camps during the coming winter months. This exciting expansion comes on the heels of another successful summer season of live, virtual intensive trainings on topics ranging from lab management and NIH grant writing to environmental justice and the exposome. Our roster of skilled instructors shared their expertise with over 750 attendees from 40+ states and 20 countries. With no signs of slowing down, the SHARP Program looks to the future and is excited by the opportunities here at EHS!

We'd like to give a special shout out to all the EHS Faculty members, researchers, staff, and students involved. Your effort has been instrumental in the continued growth of the SHARP Program - thank you all!

- **Faculty Training Directors:** [Andrea Baccarelli](#), [Joel Capellan](#), [Joan Casey](#), [Marianthi Kioumourtzoglou](#), [Norman Kleiman](#), [Gary Miller](#), [Jeremy Porter](#), and [Diane Re](#)
- **Faculty session leaders and panelists:** [Allison Kupsco](#), [Ana Navas-Acien](#), [Annie \(Anne\) Nigra](#), and [Matt Perzanowski](#)
- **Staff:** Meaghan Doherty, Nader Elmehdawi, Kiara Garcia, Fernando Luque, Bernice Ramos-Perez, and Abby Welbourn
- **Student Assistant:** Justin Gravlee, Gold Wuraola
- **Doctoral Student and Postdoc Workshop Guides:** Ahlam Abuawad, Jaime Benavides, Craig ~~Wistrich~~, Daouda, Nina Flores, Lizzy Gibson, Maggie Li, Wil Lieberman-Cribbin, Sarah McLarnan, Yanelli Nunez, Robbie Parks, Kylie Riley, Jenni Shearston, Yike Shen, Marisa ~~Sobel~~, Howie Wu

If you are an EHS doctoral student or postdoc: Workshop Guide opportunities are available for all trainings. Assist with a training, attend a training. More details will be available by email in early 2022. You can check out our growing list of courses [here](#), and if you are interested, please subscribe for updates to be the first to hear any SHARP related news!

Winter Offerings: Back by popular demand, the following courses will be offered in the next few months:

- [NIH Grant Writing Boot Camp](#): Nov 8th - 9th, 2021
- [PI Crash Course](#): Jan 10th - 11th, 2022
- [Epigenetics Boot Camp](#): Feb 14th - 15th, 2022

Grants & Awards

[Andrea Baccarelli](#), MD, PhD

Grant: R35 from NIH/NIEHS

"Extracellular Vesicles in Environmental Epidemiology Studies of Aging"

The NIEHS Revolutionizing Innovative, Visionary Environmental Health Research (RIVER) program supports outstanding investigators in EHS to pursue novel research. This project is investigating novel early biological responses to environmental exposures that are predictive of future health-related conditions, especially on the effects of air pollution on accelerated brain aging.

[Andrea Baccarelli](#), MD, PhD, [Gary Miller](#), MS, PhD,

[Iuliana Ionita-Laza](#), PhD

Grant: NIH R25

"The 'Career MODE' Program: Careers through Mentoring and training in Omics and Data for Early-stage investigators"

The purpose of this proposal is to train a new generation of diverse biomedical investigators and provide them with skills, knowledge, mentoring, professional skills, and networking to foster their pathways to independence using omics and data science.

[Joan Casey](#), MA, PhD

Grant: NIH/RF1

"Short and long-term consequences of wildfires for Alzheimer's disease and related dementias"

This study uses millions of patient records from the Medicare cohort and electronic health record data from a large healthcare system to advance NIA and NIEHS goals to understand the role of joint environmental and social exposures in age-related disease and will lead to recommendations to reduce the negative impact of wildfire-related PM2.5 or disaster exposure on MCI or AD/ADRD.

Grants & Awards

Julie Herbstman, MS, PhD

Award: The Academy of Community and Public Service (ACPS)

Congratulations to Dr. Julie Herbstman on being selected to the CUIMC Academy of Community and Public Service Class of 2021. The ACPS recognizes exceptional community service efforts by faculty members of our four health sciences schools. Faculty members within each of these schools have gone above and beyond to promote clinical care, medical education, and research in our local community and around the world.

Gary Miller, MS, PhD

Grant: NIEHS (R01 Competitive Renewal)

“Vesicular Modulation of Dopamine Neuron Toxicity”

Many environmental chemicals linked to Parkinson’s disease have been proposed to exert their effects via disruption of vesicular storage of dopamine. This project will focus on the role of SV2C, which has recently been identified in a genome-wide study of Parkinson’s disease, in maintaining vesicular dopamine homeostasis and protecting neurons from toxicity.

Annie (Anne) Nigra, PhD

Grant: DP5 (NIH/NIEHS)

*“Public Drinking Water Contaminants and Infant Health:
Advancing Environmental Justice”*

To develop a novel database of exposure estimates of regulated contaminants in public water systems across the entire United States at multiple spatial resolutions. The database will enable nationwide epidemiologic studies linking public water exposures to numerous related outcomes.

Muhammad Parvez, MPH, DrPH

Grant: NIH/R01 Supplement

*“Developmental Exposures to Arsenic: Pneumonia, Immunity,
and Microbiomes (DEAPIM) ”*

The goal of this project is to study the interrelationship between arsenic exposure, the gut microbiome, immune function, and vaccine response in children.

Grants & Awards

Brandon Pearson, MS, PhD

Grant: NIEHS (R21)

“Environmental Drivers of Trinucleotide Repeat Instability and Huntington's Disease Onset”

Repeat expansion disorders occur when repetitive DNA sequences become too long and cause severe and lethal neurodegenerative diseases. Our research evaluates the role of pyraclostrobin, a common pesticide used on food, in Huntington's disease progression and expansion of its underlying expanded CAG repeat mutation.

Matt Perzanowski, MPH, PhD

Grant: NIEHS/R01

“Mold Policy Intervention in New York City Public Housing and Asthma Morbidity”

This project will test the impact on asthma morbidity in adults and children of an innovative mold remediation program being conducted in the largest public housing system in the United States, the New York City Housing Authority, which has more than 365,000 residents. If successful, we will demonstrate the utility of this large-scale public health intervention on asthma morbidity among low-income NYC residents, a community with a high burden of asthma morbidity.

Diane Re, MS, PhD and Markus Hilpert, MS, PhD

Grant: NIEHS/R01

“Neurotoxic and Neurodegenerative Risks from Chronic Exposure to Metal Mixtures in E-Cigarette Aerosol”

Using human cell culture and animal models, our goals are to identify which e-cig aerosol mixtures pose significant neurotoxic risk(s), with particular emphasis on individuals genetically-susceptible for Parkinson's disease.

Grants & Awards

[Regina Santella](#), MS, PhD

Award: Metabolomic approaches to understanding associations between environmental factors and breast cancer risk in NYC communities from The Breast Cancer Research Foundation

Drs. [Mary Beth Terry](#), [Hui-Chen Wu](#), and [Regina Santella](#) will extend their work on environmental exposures and breast cancer risk by examining the exposome in prospective breast cancer cases and matched controls, participants in the Breast Cancer Family Registry. Samples will be analyzed in the Exposomics Core directed by [Dr. Gary Miller](#).

[Jeffrey Shaman](#), MA, PhD

Grant: R01 from NIH/ NIAID

“Quantifying Error Growth to Improve Infectious Disease Forecast Accuracy”

This award will fund a study of error growth processes in nonlinear dynamic systems and develop more accurate forecasting systems.

Publications

Please check out some of the amazing work being published by our community!
These publications are listed in chronological order of initial publication.

[Potential health benefits of sustained air quality improvements in New York City: A simulation based on air pollution levels during the COVID-19 shutdown.](#) **Perera, F**, Berberian, A, Cooley, D, Shenaut, E, Olmstead, H, Ross, Z, Matte, T. *Env Res.* 2021 Feb; 193(110555) doi: 10.1016/j.envres.2020.110555. PMID: 33285156

[Attracting New Talent to the Governmental Public Health Workforce: Strategies for Improved Recruitment of Public Health Graduates.](#) **Locke, R**, McGinty, M, Guerrero Ramirez, G, Sellers, K. *J Public Health Manag Pract.* 2021 Feb 2; 10.1097/PHH.0000000000001336. Online Ahead of Print. PMID: 33570871.

[Spatial Heterogeneity in Positional Errors: A Comparison of Two Residential Geocoding Efforts in the Agricultural Health Study.](#) Fisher, JA, **Spaur, M**, Buller, ID, Flory, AR, Beane Freeman, LE, Hofmann, JN, Giangrande, M, Jones, RR, Ward, MH. *Int J of Env Res and Public Health.* 2021 Feb 9; 18(1637) doi: 10.3390/ijerph18041637

[Differential COVID-19 Case Positivity in New York City Neighborhoods: Socioeconomic Factors and Mobility.](#) Lamb MR, **Kandula S**, **Shaman J**. *Influenza Other Respir Viruses.* 2021 Mar;15(2):209-217. doi: 10.1111/irv.12816. Epub 2020 Oct 14. PMID: 33280263

[The effect of clean cooking interventions on mother and child personal exposure to air pollution: results from the Ghana Randomized Air Pollution and Health Study \(GRAPHS\).](#) **Chillrud, SN**, Ae-Ngibise, KA, Gould, CF et al. *J Expo Sci Environ Epidemiol.* 2021 Mar. 2; 31: 683–698. doi: 10.1038/s41370-021-00309-5

[Educational Note: Addressing Special Cases of Bias that Frequently Occur in Perinatal Epidemiology.](#) Neophytou AM, **Kioumourtoglou MA**, Goin DE, Darwin KC, **Casey JA**. *Int J Epidemiol.* 2021 Mar 3;50(1):337-345. doi: 10.1093/ije/dyaa252. PMID: 33367719

[Suicide and the Agent-Host-Environment Triad: Leveraging Surveillance Sources to Inform Prevention.](#) Keyes KM, **Kandula S**, Olfson M, **Gould MS**, Martínez-Alés G, Rutherford C, **Shaman J**. *Psychol Med.* 2021 Mar 5:1-9. doi: 10.1017/S003329172000536X. Online ahead of print. PMID: 3366362

[Hallmarks of Environmental Insults.](#) Peters A, Nawrot TS, **Baccarelli AA**. *Cell.* 2021 Mar 18;184(6):1455-1468. doi: 10.1016/j.cell.2021.01.043. Epub 2021 Mar 2. PMID: 33657411

[Tropical Cyclone Exposure is Associated with Increased Hospitalization Rates in Older Adults.](#) **Parks RM**, Anderson GB, Nethery RC, **Navas-Acien A**, Dominici F, **Kioumourtoglou MA**. *Nat Commun.* 2021 Mar 9;12(1):1545. doi: 10.1038/s41467-021-21777-1. PMID: 33750775

Publications

Human Milk Extracellular Vesicle miRNA Expression and Associations with Maternal Characteristics in a Population-based Cohort from the Faroe Islands. **Kupsco A**, Prada D, Valvi D, Hu L, Petersen MS, Coull B, Grandjean P, Weihe P, **Baccarelli AA**. *Sci Rep*. 2021 Mar 12;11(1):5840. doi:10.1038/s41598-021-84809-2. PMID:33712635

Exploring the Seasonal Drivers of Varicella Zoster Transmission and Reactivation. Bakker KM, Eisenberg MC, Woods R, **Martinez ME**. *Am J Epidemiol*. 2021 Mar 18:kwab073. doi: 10.1093/aje/kwab073. Online ahead of print. PMID: 33733653

Nanoparticle Tracking Analysis for the Quantification and Size Determination of Extracellular Vesicles. **Comfort N**, Cai K, **Bloomquist TR**, Strait MD, Ferrante AW Jr, **Baccarelli AA**. *J Vis Exp*. 2021 Mar 28;(169). doi:10.3791/62447. PMID:33843938

Associations between body mass index and arsenic methylation in three studies of Bangladeshi adults and adolescents. **Abuawad, A**, **Spratlen, MJ**, Parvez, F, Slavkovich, V, Illievski, V, Lomax-Luum AM, **Saxena, R**, Shahriar, H, Uddin, MN, Islam, T, **Graziano, JH**, **Navas-Acien, A**, **Gamble, MV**. *Env Int*. 2021 Apr;149. doi: 0.1016/j.envint.2021.106401

Genetic or Toxicant-Induced Disruption of Vesicular Monoamine Storage and Global Metabolic Profiling in *Caenorhabditis elegans*. Bradner JM, Kalia V, Lau FK, Sharma M, Bucher ML, Johnson M, Chen M, Walker DI, Jones DP, **Miller GW**. *Toxicol Sci*. 2021 Apr 12;180(2):313-324. doi: 10.1093/toxsci/kfab011. PMID: 33538833

Air Pollution, Methane Super-Emitters, and Oil and Gas Wells in Northern California: the Relationship with Migraine Headache Prevalence and Exacerbation. Elser H, Morello-Frosch R, Jacobson A, Pressman A, **Kioumourtzoglou MA**, Reimer R, **Casey JA**. *Environ Health*. 2021 Apr 17;20(1):45. doi: 10.1186/s12940-021-00727-w. PMID: 33865403

Nutrition, One-Carbon Metabolism and Arsenic Methylation. **Abuawad A**, **Bozack AK**, **Saxena R**, **Gamble MV**. *Toxicology*. 2021 Apr 24:152803. doi: 10.1016/j.tox.2021.152803. Online. PMID:33905762

Anomalously Warm Weather and Acute Care Visits in Patients with Multiple Sclerosis: A Retrospective Study of Privately Insured Individuals in the US. Elser H, **Parks RM**, Moghavem N, Kiang MV, Bozinov N, Henderson VW, Rehkopf DH, **Casey JA**. *PLoS Med*. 2021 Apr 26;18(4):e1003580. doi: 10.1371/journal.pmed.1003580. Online ahead of print. PMID: 33901187

Trends from 2008–2018 in electricity-dependent durable medical equipment rentals and sociodemographic disparities. **Casey, JA**, Mango, M, Mullendore, S, Kiang, MV, Hernandez, D, Li, BH, Li, K, Im, TM, Tartof, SY. *Epidemiology*. 2021 May 1; 32(3): 327–335. doi: 10.1097/EDE.0000000000001333. PMID: 33591051

Publications

[Associations Between Private Well Water and Community Water Supply Arsenic Concentrations in the Conterminous United States.](#) Spaur M, Lombard MA, Ayotte JD, Harvey DE, Bostick BC, **Chillrud SN, Navas-Acien A, Nigra AE.** Sci Total Environ. 2021 May 6;787:147555. doi: 10.1016/j.scitotenv.2021.147555. Online ahead of print. PMID: 33991916

[Trends of temperature variability: Which variability and what health implications?.](#) Guo, F, **Do, V,** Cooper, R, Huang, Y, Pei, Z, Ran, J, Zhang, Q, Tian, L, Fu, Z. Sci of Total Env. 2021 May 10; 768(144487). doi: 10.1016/j.scitotenv.2020.144487. PMID: 33444866

[Telomere Dynamics Across the Early Life Course: Findings from a Longitudinal Study in Children.](#) Cowell W, Tang D, Yu J, Guo J, Wang S, **Baccarelli AA, Perera F, Herbstman JB.** Psychoneuroendocrinology. 2021 May 14;129:105270. doi: 10.1016/j.psyneuen.2021.105270. Online.PMID:34020264

[Towards a Comprehensive Characterisation of the Human Internal Chemical Exposome: Challenges and Perspectives.](#) David A, Chaker J, Price EJ, Bessonneau V, Chetwynd AJ, Vitale CM, Klánová J, Walker DI, Antignac JP, Barouki R, **Miller GW.** Environ Int. 2021 May 15;156:106630. doi: 10.1016/j.envint.2021.106630. Online ahead of print.PMID: 34004450

[Reflection on Modern Methods: Good Practices for Applied Statistical Learning in Epidemiology.](#) **Nunez Y,** Gibson EA, Tanner EM, Gennings C, Coull BA, Goldsmith J, **Kiourmourtzoglou MA.** Int J Epidemiol. 2021 May 17;50(2):685-693. doi:10.1093/ije/dyaa259.PMID:34000733

[Lead and Cadmium as Cardiovascular Risk Factors: The Burden of Proof Has Been Met.](#) Lamas GA, Ujueta F, **Navas-Acien A.** J Am Heart Assoc. 2021 May 18;10(10):e018692. doi: 10.1161/JAHA.120.018692. Epub 2021 May 4.PMID: 33942628

[Hyper-localized Measures of Air Pollution and Risk of Preterm Birth in Oakland and San Jose, California.](#) Riddell CA, Goin DE, Morello-Frosch R, Apte JS, Glymour MM, Torres JM, **Casey JA.** Int J Epidemiol. 2021 May 31:dyab097. doi: 10.1093/ije/dyab097. Online ahead of print.PMID: 34059911

[Recent CO2 Levels Promote Increased Production of the Toxin Parthenin in an Invasive Parthenium Hysterophorus Biotype.](#) Rice C, Wolf J, Fleisher DH, Acosta SM, Adkins SW, Bajwa AA, Ziska LH. Nat Plants. 2021 Jun;7(6):725-729. doi: 10.1038/s41477-021-00938-6. Epub 2021 Jun 7.PMID: 34099902

[The Association between Ambient Temperature Variability and Myocardial Infarction in a New York-State-based case-crossover Study: An Examination of Different Variability Metrics.](#) **Rowland ST, Parks RM,** Boehme AK, Goldsmith J, Rush J, Just AC, **Kiourmourtzoglou MA.** Environ Res. 2021 Jun;197:111207. doi: 10.1016/j.envres.2021.111207. Epub 2021 Apr 28.PMID: 33932478

Publications

[Urinary Arsenic and Heart Disease Mortality in NHANES 2003-2014](#). **Nigra AE**, Moon KA, Jones MR, **Sanchez TR**, **Navas-Acien A**. Environ Res. 2021 Jun 6;200:111387. doi: 10.1016/j.envres.2021.111387. Online ahead of print.PMID: 34090890

[Social-distancing Fatigue: Evidence from Real-time Crowd-sourced Traffic Data](#). **Shearston JA**, **Martinez ME**, **Nunez Y**, **Hilpert M**. Sci Total Environ. 2021 Jun 8;792:148336. doi: 10.1016/j.scitotenv.2021.148336. Online ahead of print.PMID: 34153749

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Spotlight: New Faculty



Interview with [Allison Kupsco, PhD](#)

How did you first enter the Environmental Health sciences field?

I first started looking at environmental health when I was teaching English in Mongolia. There is a lot of mining in that area, and I began to consider the impact that had on water sources and food, and subsequently people. After that, I decided to pursue a degree in it.

What has been the most rewarding part of your career thus far?

There are two big things. First, the ability to work with and connect with amazing colleagues and incredible people. Secondly, the opportunity to do research that has a clear impact on public health.

What keeps you inspired to keep going?

I work with an amazing team and have the opportunity to work on a lot of types of things so it's always really exciting.

What are you most looking forward to at Columbia?

Primarily, the opportunity to work with such a great, inclusive, smart, and kind department where everyone involved is really engaged, helpful, and collaborative. I'm also excited to be involved in such a great research and teaching environment that has the ability to make a big impact and to share my perspective on environmental health.

What advice would you give to students?

After grad school I made a large change in my career trajectory so my advice would be to follow what you're interested in and passionate about, but it is okay to have new passions and interests develop that you follow later in life.

Fun Fact:

I have been rock climbing since I was a kid.

[Read her bio here!](#)

Spotlight: New Faculty



Annie (Anne) Nigra, PhD

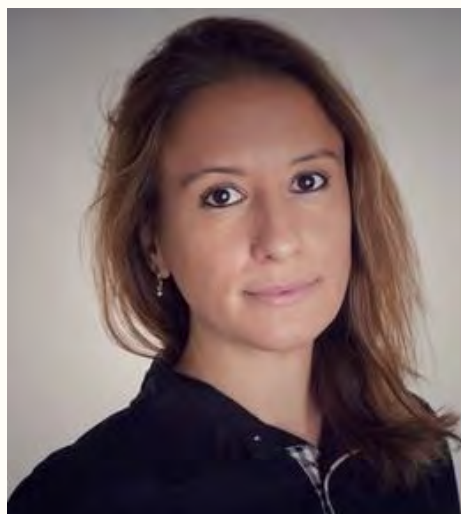
Assistant Professor

Environmental Health Scientist Wins Prestigious NIH Early Independence Award

Annie (Anne) Nigra, PhD ('20 Environmental Health Sciences Alum) began a postdoctoral research fellowship under [Dr. Ana Navas-Acien](#) after earning a PhD in Environmental Health Sciences at Columbia Mailman last year. While it is common for postdoctoral fellowships to last several years, Nigra's lasted only one year as she is one of our new EHS Assistant Professors.

Annie is also one of only ten scientists awarded an NIH Director's Early Independence Award this year. This award is geared to "enable outstanding junior scientists to skip the traditional postdoctoral training period to launch independent research careers." The five-year \$2 million grant will allow her, to evaluate racial/ethnic and socioeconomic inequalities in public drinking water contamination and how they contribute to adverse birth outcomes across the United States.

Spotlight: New Faculty



Interview with [Kathrin Schilling, PhD](#)

How did you first enter the Environmental Health sciences field?

This was a long journey for me! I am a geologist by training. When I did my PhD I transitioned to soil sciences and microbiology, looking at how soil microbes changed the environment and detoxified toxic elements. From there I transitioned to how early life developed on Earth. I went to Oxford University for my post doc and outlined how stable metal isotopes can be used in the biomedical sphere.

What has been the most rewarding part of your career thus far?

It really depends on the time! When I finished my masters and got an excellence scholarship for my PhD. In 2019 I received an award for my biomedical work.

What keeps you inspired to keep going?

My motivation is always the communities and people that I work with. Being able to help even a little bit is so rewarding.

What are you most looking forward to at Columbia?

I was at Lamont-Doherty before coming to Columbia. I love how there are so many opportunities to collaborate and interact with the students. Because the departments are so big, there is always someone who you can develop ideas with.

What advice would you give to students?

Don't ever give up even if people do not believe in what you are doing. Science is constantly progressing - what you are doing may be state of the art and change the world.

Fun Fact:

I really enjoy walking, running, and biking. The first time I went downtown in New York, I walked more than one hundred blocks. It is the best way to explore a new place.

[Read her bio here!](#)

Spotlight: New Faculty



Interview with Cecilia Sorensen, MD

How did you first enter the Environmental Health sciences field?

I studied biology as an undergraduate and came at the field of medicine with an awareness of the that the health of an organism is dependent on the health of the ecosystem in which they live. This was what led me to my understanding of climate change and of planetary health. In residency there aren't a lot of opportunities for this type of training, but in my role in emergency medicine, I started noticing how environmental conditions impact the number of patients we would see.

Later, I had an opportunity to do an NIH Fellowship in Climate and Health which led me to do research at the intersection of the two. After Hurricane Maria, I was in Puerto Rico understanding the subsequent breakdown of the medical system on the island and what the health impacts were for families. I also looked at heat stress in agricultural...

workers in South America, as well as spending time in Syria at a refugee camp understanding how the environment led to migration.

What has been the most rewarding part of your career thus far?

These days it is mentoring students and being able to take the knowledge I have garnered to inspire people to do similar work and come into the field. We need innovation and young people to spark new initiatives. Working in climate and health is an uphill battle and we haven't seen transformational change we need to so what keeps me going is the excitement of those around me sparking change.

Can you speak to the Global Consortium on Climate and Health Education (GCCHE) and how you see your role?

The GCCHE has 225 health profession schools globally that represent 35 different countries, reaching 175,000 students per year giving them climate and health education. There is a real opportunity here to unite all these voices to advocate for climate and health solutions, as well as to spread the information we have to the places that need it most. Where we are going is to continue to bolster our institutions, increase our membership, and focus on strategic partnerships to bring climate change into the practice of health.

Continued on next page.

Spotlight: New Faculty

Interview with Cecilia Sorensen, MD

Continued from previous page

What are you most looking forward to at Columbia?

The ecosystem at Columbia is so incredible with the energy of the community. There is really strong leadership in climate change and the people at the top really care about and are serious about climate change, and want to make change.

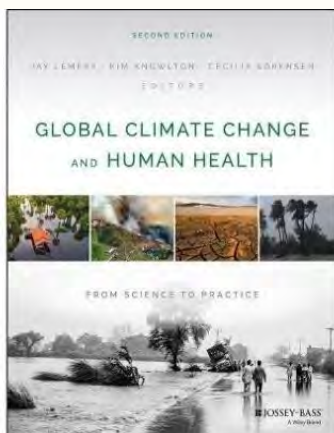
What advice would you give to students?

Take any opportunity you can and do the things that make you excited! Follow your passion and get as much experience as you can – this is a time to say yes (even if you are not sure how relevant it is to where you will end up).

Fun Fact:

I climbed Mount Denali, the highest peak in North America a few months ago. I fell into a crevasse, which I blame on climate change, and made it out.

[Read her bio here!](#)



EHS faculty [Cecilia Sorensen](#) and [Kim Knowlton](#) were co-editors, along with Jay Lemery from University of Denver, of the new second edition textbook, [Global Climate Change and Human Health: From Science to Practice](#). Published this year (2021) by Wiley/Jossey Bass, this is among the only texts on climate and health aimed at both public health and clinical students and includes “clinical correlates” linking climate change to clinical practice.

Spotlight: Faculty



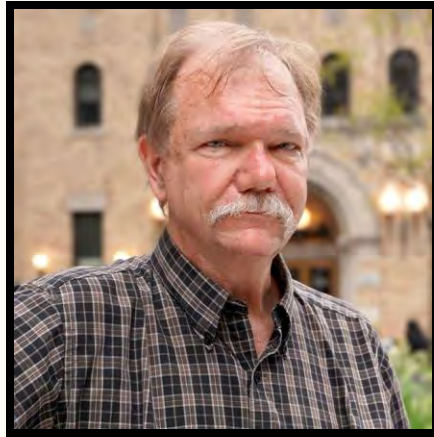
Maya Deysenroth, DrPH
Assistant Professor
2021 Yusuf Hamied Faculty Fellowships

Project: Impact of gestational multi-metal exposure on perinatal health outcomes in India

Gestational exposure to multiple metals is linked to fetal growth restriction. Our previous work characterizes molecular signatures in the placenta that capture the growth-restrictive impact of gestational arsenic and cadmium exposure in US populations. The proposed work seeks to extend this paradigm in India, where pollutant exposure sources, land-use patterns and climactic factors can play an important role to uniquely frame the relationship between such environmental exposures and health outcomes. Through collaborations facilitated by the Public Health Foundation of India (PHFI), this project will seek to establish the network of collaborators and resources necessary to survey multi-metal exposure in pregnant women, evaluate trends between these metals and birth weight and assess placental markers as potential mediators in this paradigm.

Dr. Maya Deysenroth lab focuses on surveying the in utero environment to identify molecular signatures indicative of exposure-induced early life health outcomes. She specifically focuses on the placenta as the interface that captures reprogrammed developmental trajectories in response to in utero exposures. To this end, her work is centered on the incorporation of multi-pollutant exposure modeling methods and integrative genomics in environmental epidemiology studies.

Spotlight: Faculty



Lewis Ziska, PhD
Assistant Professor

Centennial Distinguished Speaker Series:
A Conversation About Climate and Food
Held on Oct 13th 2021

[Click here to watch!](#)

As part of the Mailman Centennial, the Distinguished Speakers Series was created to widely disseminate important public health innovations and ideas as we move into our next century. Professor Ziska's invitation to give a lecture recognizing his pursuance and advocacy for critical new policies and programs.





Spotlight: EHS Course

P8329: Water, Sanitation, and Human Health (WASH)

This course presents an in-depth analysis of issues relating to water, sanitation and hygiene (WASH); the related global burden of disease; and improving the health, education, livelihood and economic development of populations by addressing the global water and sanitation crisis. Students will become familiar with the hydrologic cycle, the major causes of enteric morbidity and mortality, and the design, financing and implementation of water and sanitation systems. This course is designed for both engineering and public health students and is intended to foster dialog between the two communities. Class meets once per week and consists of lectures, discussion of assigned readings, break-out work and student presentations; in addition, there are instructor-mediated modules that will be completed in Canvas. Upon completion of the course, students will possess a thorough understanding of WASH nexus issues, including the sustainable development goals (SDGs) enabled by WASH; and will be able to analyze how political, economic, social, environmental, and material factors affect access to WASH, development, and disease burden.

"I am excited to teach this course to help public health and engineering students better understand how the sustainable provision of safe water, sanitation, and hygiene is essential to the attainment of public health and socioeconomic development and helps drive progress towards achieving the Sustainable Development Goals (SDGs) related to poverty, food security, health, education, climate change, and gender equality. I truly believe that the global water and sanitation crisis can be solved within our lifetime. Accordingly, my commitment to teaching the WASH course extends far beyond raising awareness and knowledge of this issue of global concern; I hope to empower students to understand how the global water crisis impacts their own lives and what they can do to effect change and address this critical global challenge and as next-generation leaders."

- [Dr. Shannon Marquez](#), PhD, Course Instructor

Spotlight: Current Students



Hadler da Silva, MS Student & Tanya Isaac, MPH Student

Two students, Hadler da Silva and Tanya Isaac, were nominated and accepted into the Tow Doctoral Scholars Pilot Program (also known as the Bridge Program) which helps support Mailman students as they apply to PhD programs by matching them with faculty and alumni mentors who can guide them and provide research opportunities.

“The program so far has been very supportive in my PhD application process. I’ve really taken advantage of the connections made to us with our alumni mentors and faculty mentors, especially with help in writing my personal statements and with having someone to ask about their journey through their PhD. Just having someone to bounce ideas and to ask for advice during this application process has been greatly beneficial. I hope that programs like Bridge to PhD allows for this type of mentorship to continue.”

- Hadler da Silva, MPH Student

“I am grateful for the guidance and support this program has offered. The program’s significant mentorship has helped me navigate the PhD application process. Especially how to go about funding and finding the right fit for me. We’ve also built a community for ourselves within the Tow Doctoral Scholar cohort, which has been undoubtedly helpful. I hope this program and more to come continue to encourage and support potential doctoral students in their PhD application process.”

- Tanya Isaac, MPH Student

Spotlight: Current Students



Maggie Li, PhD student, presented her work titled “*Air pollution in American Indian vs. Non-American Indian communities*” at the International Society for Environmental Epidemiology **ISEE conference** (August 2021).



Wil Lieberman-Cribbin, PhD student, presented his work titled “*Community Socioeconomic Deprivation and Unconventional Natural Gas Development in Pennsylvania*” at the International Society for Environmental Epidemiology **ISEE conference** (August 2021).



Maya Spaur, PhD student, presented her work titled “Water as a relevant source of inorganic arsenic exposure in U.S. cities” at the International Society for Environmental Epidemiology **ISEE conference** (August 2021). Her research has also been highlighted in the [SRP Research Brief 320: Characterizing Arsenic Exposure in Public Water Supplies and Private Wells](#).



Meet Our New Students!

PhD



Jocelyn Dicient

Hometown: Rockaway Beach, New York

Previous School: Yale University

Favorite Food: Mangú con los tres golpes

Fun Fact: I learned how to surf before I learned how to swim!

Catherine Lucey

Hometown: New York, New York

Previous School: Vassar College

Favorite Food: A good apple or peach

Fun Fact: I did not learn how to ride a bike until my junior year of college, but now I love it!



Irene Martinez-Morata

Hometown: Murcia, Spain

Previous School: Mailman School of Public Health and University of Murcia

Favorite Food: Cheese!

Fun Fact: I just discovered that I love gardening.

Meet Our New Students!

PhD

Danielle Medgyesi

Hometown: Reno, Nevada

Previous School: University of Iowa

Favorite Food: Thai

Fun Fact: I enjoy listening to all sorts of podcasts and my favorite true crime podcast at the moment is Morbid.



Brittany Shea

Hometown: Redding, California

Previous School: Harvard University

Favorite Food: Pasta

Fun Fact: I can juggle.

Sabah Usmani

Hometowns: New Delhi and Kathmandu

Previous School: Massachusetts Institute of Technology
(Urban Planning)

Favorite Food: Tea and Coffee

Fun Fact: I started an Instagram account ([@6ftlove](#)) to share stories of people around the world experiencing the COVID-19 pandemic through illustrations.



Meet Our New Students!

MPH



Khalid Ziad Kha Al-Bawaliz

Certificate: Molecular Epidemiology

Hometown: Toronto, Canada

Previous School: Royal College of Surgeons in Ireland - Bahrain

Favorite Food: Sushi

Fun Fact: I've lived in 6 different countries!

Ellen Bannon

Certificate: Toxicology

Hometown: North Salem, New York

Previous School: Georgetown University

Favorite Food: Sweet Potatoes!

Fun Fact: I am a certified rock-climbing instructor and would be happy to take people out climbing!



Jaemie Bennett

Certificate: Climate and Health

Hometown: Roselle, Illinois

Previous School: Johns Hopkins University

Favorite Food: Movie Theater Butter Popcorn

Fun Fact: My favorite animal is a capybara, and my life will be complete the moment I make friends with one.

Meet Our New Students!

MPH

Maame Ama Bortsiwah Arthur

Certificate: Infectious Disease Epidemiology
Hometown: Takoradi, Ghana
Previous School: Calvin University
Favorite Food: Jollof rice
Fun Fact: I watch the movie Legally blonde twice every year.



Annie (Anne) Bruecker

Certificate: Toxicology
Hometown: Evergreen, Colorado
Previous School: Baylor University
Favorite Food: Steak
Fun Fact: I used to figure skate.

Emilia Bulfone

Certificate: Climate and Health
Hometown: Palo Alto, California
Previous School: University of California, Berkeley
Favorite Food: Almond butter
Fun Fact: I climbed Mt. Kilimanjaro.



Meet Our New Students!

MPH



Hailey Christian

Certificate: Environmental Health Policy

Hometown: Suwanee, Georgia

Previous School: Mercer University

Favorite Food: Nachos

Fun Fact: I'm learning to play the electric guitar!

Meredith Cohen

Certificate: Climate and Health

Hometown: Wilmington, Delaware

Previous School: New York University

Favorite Food: Roasted Chickpeas

Fun Fact: My favorite hobby is jumping rope!



Daniela Cortes-Fernandez

Certificate: Climate and Health

Hometown: Bogotá, Colombia

Previous School: University of San Francisco

Favorite Food: Mediterranean

Fun Fact: I'm an only child but have 20 cousins on my mom's side of the family.

Meet Our New Students!

MPH

Lindsey Covell

Certificate: Toxicology
Hometown: Reading, Pennsylvania
Previous School: Arizona State University
Favorite Food: Dumplings
Fun Fact: I have hiked the Grand Canyon.



Hannah Davin

Certificate: Global Health 3-Month
Hometown: Granby, Connecticut
Previous School: University of Massachusetts Amherst
Favorite Food: Tacos
Fun Fact: I really like to surf!

Robbie Floyd

Certificate: Climate and Health
Hometown: Lithonia, Georgia
Previous School: Morehouse College
Favorite Food: Sushi
Fun Fact: My favorite color is Orange.



Meet Our New Students!

MPH



Siyue Gao

Certificate: Applied Biostatistics and Public Health Data Science

Hometown: Beijing, China

Previous School: China Agricultural University

Favorite Food: Hot pot

Fun Fact: I'm afraid of all birds.

Nico (Nicola) Hamacher

Certificate: Climate and Health

Hometown: Scholls, Oregon

Previous School: Quest University Canada

Favorite Food: Italian

Fun Fact: I lived abroad with two nuns!



Holly (Liting) Hao

Certificate: Toxicology

Hometown: Changzhi, China

Previous School: Muskingum University

Favorite Food: Eggplant

Fun Fact: I like watching horror movies, but I'm so afraid of them.

Meet Our New Students!

MPH

Isheeta Jaria

Certificate: Epidemiology of Chronic Disease

Hometown: Chicago, Illinois

Previous School: University of Illinois at Urbana Champaign

Favorite Food: Mexican/Indian/Thai

Fun Fact: I have been doing hip hop and Bollywood dance for years now!



Vasuda Kapoor

Certificate: Molecular Epidemiology

Hometown: New Delhi, India

Previous School: University of Wisconsin-Madison

Favorite Food: Butter chicken with garlic naan

Fun Fact: One of my favorite pastimes is watching documentaries about world history.

Mochi Li

Certificate: Climate and Health

Hometown: La Palma, California

Previous School: The University of California, Los Angeles

Favorite Food: S'mores

Fun Fact: I played and coached Ultimate Frisbee at UCLA.



Meet Our New Students!

MPH



Auston Locke

Certificate: Social Determinants of Health

Hometown: San Clemente, California

Previous School: The University of California, Berkeley

Favorite Food: Sushi

Fun Fact: I love to play sports and go to the beach!

Mary Lundin

Certificate: Climate and Health

Hometown: Scranton, Pennsylvania

Previous School: Hamilton College

Favorite Food: Sushi

Fun Fact: I love trying new flavors of ice cream!



Rafe (Raphaela) O'Connor

Certificate: Climate and Health

Hometown: Charleston, South Carolina

Previous School: University of South Carolina

Favorite Food: Pasta

Fun Fact: I was an extra in Outer Banks on Netflix.



Meet Our New Students!

MPH

Charity Ogunlusi

Certificate: Infectious Disease Epidemiology
Hometown: Nigeria
Previous School: Delta State University, Nigeria
Favorite Food: Fried Rice
Fun Fact: I love watching movies and TV shows.



Ellen Park

Certificate: Applied Biostatistics and Public Health
Data Science
Hometown: Seaford, Long Island, New York
Previous School: Cornell University
Favorite Food: Anything in noodle form (maybe spaghetti alla vodka)
Fun Fact: I enjoy playing the flute!

Skyler Price

Certificate: Infectious Disease Epidemiology
Hometown: Hillsborough, North Carolina
Previous School: North Carolina State University
Favorite Food: Milano cookies!
Fun Fact: I love trash TV.



Meet Our New Students!

MPH



Filippo Ravalli

Certificate: Epidemiology of Chronic Disease

Hometown: New York City, New York

Previous School: Columbia University

Favorite Food: Spaghetti all'amatriciana

Fun Fact: I can make pasta from scratch!

Giuditta Schapira

Certificate: Population and Mental Health

Hometown: Milan, Italy

Previous School: The University of California, Los Angeles

Favorite Food: Pasta cacio e pepe

Fun Fact: I'm a great cook!



Emily Shambaugh

Certificate: Molecular Epidemiology

Hometown: Oakton, Virginia

Previous School: Georgetown University

Favorite Food: Vindaloo

Fun Fact: I'm running my first marathon soon!

Meet Our New Students!

MPH

Emelia Suljić

Certificate: Molecular Epidemiology
Hometown: Chicago, Illinois
Previous School: Columbia University
Favorite Food: Cheese, unfortunately
Fun Fact: I'm an advanced rescue trained scuba diver!



Liz (Elizabeth) Sun

Certificate: Environmental Health Policy
Hometown: North Brunswick, New Jersey
Previous School: The George Washington University
Favorite Food: Carrot cake
Fun Fact: One of my favorite pastimes is rock climbing!

Sissi (Yeque) Sun

Certificate: Applied Biostatistics and Public Health
Data Science
Hometown: Chizhou, China
Previous School: Converse University
Favorite Food: Spicy food/ milk
Fun Fact: I'm the master of egg pancakes. I can cook a perfect egg pancake with good flavor and wonderful shape.



Meet Our New Students!

MPH



Jackson Zeiler

Certificate: Environmental Health Policy

Hometown: Denver, Colorado

Previous School: University of Colorado

Favorite Food: Thai

Fun Fact: I worked on a fruit farm in Chile after undergrad.

Andrew (Teng) Zhao

Certificate: Climate and Health

Hometown: China

Previous School: Muskingum University

Favorite Food: Steak

Fun Fact: I am a photographer who sees this world in a different way.



Meet Our New Students!

MPH 4+1



Monique Slowly

Hometown: Cheltenham, Pennsylvania

Previous School: Columbia College

Favorite Food: Jamaican Curry Chicken and Rice

Fun Fact: I enjoy gardening.

Meet Our New Students!

MS



Shroug (Shuruq) Almaymoni

Hometown: Saudi Arabia

Previous School: King Abdul-Aziz University

Favorite Food: Indian Food

Fun Fact: The sounds of the night cricket bug make me relax!

Gabriela Jackson

Hometown: Boston, Massachusetts

Previous School: Barnard College

Favorite Food: Mashed potatoes

Fun Fact: I recently adopted a kitten named Georgie.



Sonny Kumi

Hometown: Kumasi, Ghana

Previous School: Calvin University

Favorite Food: Fried Rice

Fun Fact: I started a cooking and photography business in college.

Meet Our New Students!

MS

Kat (Kathleen) Lau

Hometown: Richmond, Virginia

Previous School: Virginia Commonwealth University

Favorite Food: Fried chicken

Fun Fact: I'm an art school dropout.



Jessica Tabet

Hometown: Tampa, Florida

Previous School: University of North Florida

Favorite Food: Lebanese food

Fun Fact: I love skydiving and have been 3 times in: Miami, Long Island, and Dubai!

Shane Wilson

Hometown: Bethesda, Maryland

Previous School: Duke University

Favorite Food: Sushi

Fun Fact: My favorite TV show is Archer.



Practicum Portraits: MPH Students

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?



Mohammad Alayyoub

Organization: Columbia University

Location: New York, New York

Description: I am working in the EHS research department in [Dr. Diane Re's](#) lab. My main research focus is looking to see if extracellular vesicles in the blood can serve as a novel biomarker for measuring Central Nervous System metal load.

Favorite thing you did for fun last summer: Visiting the American Museum of Natural History in New York.

Practicum Portraits: MPH Students

Yuning Feng

Organization: New York City
Department of City Planning

Location: New York, New York

Description: In DCP's Capital Planning Division, I studied space needs and constraints of city agencies and their implications in zoning and land use. I helped develop a soft site analysis for siting city facilities and incorporated community health aspects in the analysis framework.

Favorite thing you did for fun last summer: I watched In the Heights in a movie theater.

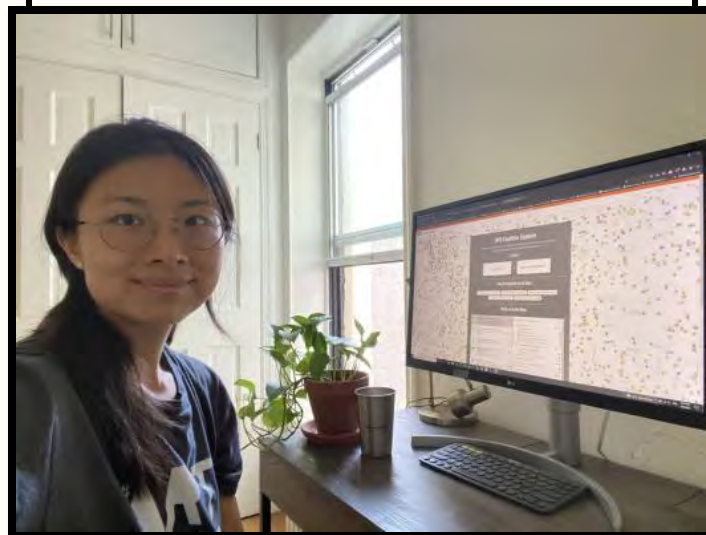
Kaila Boyer

Organization: Department of
Environmental Health Sciences,
Mailman School of Public Health

Location: New York, New York

Description: I did research with Drs. [Navas-Acien](#) and [Kupsco](#) on metal exposure and epigenetic age acceleration in the Strong Heart Study. I also worked with Dr. Navas-Acien's PRIMER Trainee with her own analysis on age acceleration and cultural factors, in addition to helping with the coordination of PRIMER.

Favorite thing you did for fun last summer: Visiting my friends in Boston.



Practicum Portraits: MPH Students

Nicki (Edna) Franks

Organization: Environmental Health Sciences Columbia Mailman School of Public Health

Location: New York, New York

Description: This summer I worked with [Dr. Joan Casey](#) studying the mobility of agriculture regions of California during wildfire events. Using QGIS I created maps of the regions of interest that I then performed geospatial analysis on in RStudio.

Favorite thing you did for fun last summer: Traveled around the country in my '88 RV!



Tanya Isaac

Organization: KPMG India

Location: Remote (Office based in Gurgaon, India)

Description: I worked under KPMG's Infrastructure, Government and Health Practice as part of the National Indian COVID-19 War Room to create a framework of Covid management strategies to be implemented in India prior to the third wave. I conducted literature reviews regarding clinical management strategies, containment and surveillance, human resources augmentation, vaccine distribution, and researched other best practices implemented in countries with relatively lower COVID-19 prevalence.

Favorite thing you did for fun last summer: Went to the beach... a lot!

Practicum Portraits: MPH Students



Grace (Hyungjin) Jin

Organization: The Earth Institute

Location: New York, New York

Description: I worked with Dr. Lisa Dale on a pilot project called, "Climate Adaptation in Rwanda". I used Nvivo software for qualitative data analysis to understand the effectiveness of resettlement as a climate change adaptation strategy and identify opportunities for future research.

Favorite thing you did for fun last summer: I went on a camping trip with college friends, and it was a lot of fun!

Sophie Kimball

Organization: New York City Economic Development Corporation

Location: New York, NY

Description: I worked as part of the Offshore Wind NYC team at NYCEDC. The team is focused on establishing NYC as a world-class wind port by supporting workforce development & innovation and scaling the offshore wind supply chain. In September, NYCEDC and Mayor de Blasio announced that NYC would invest \$191M to realize the city's Offshore Wind Vision plan (a document I worked on).



Practicum Portraits: MPH Students

Joshua Klett

Organization: Columbia University

Location: New York, New York

Description: This summer I worked with [Dr. Sanchez](#) to conduct a literature review of the latest research regarding cannabis contaminants of concern and potential associated health outcomes. The next step in the research is to utilize NHANES data to assess the correlation between cannabis smoking and these contaminants of concern in the population.

Favorite thing you did for fun last summer: Explored tons of new cities on the east coast!



Kendall Kruchten

Organization: Columbia Center for Children's Environmental Health

Location: New York, New York

Description: I developed a survey distributed nationwide to understand demographics, purchasing patterns, and usage behaviors of children's makeup and body products. I analyzed the data for publication. Results may be used to improve regulations regarding children's cosmetic products.

Favorite thing you did for fun last summer: I walked from the top of Manhattan to the bottom along the Hudson River.

Practicum Portraits: MPH Students



Eleanor Medley

Organization: Columbia Center for Children's Environmental Health

Location: New York, New York

Description: I worked on developing and administering a national survey on the use of children's makeup and body products. We are hoping to learn how children use such products because their ingredients are not adequately regulated. I am excited to discuss the project at a conference with WEACTION this November and analyze the survey response data.

Favorite thing you did for fun last summer: I had a lot of fun exploring NYC!

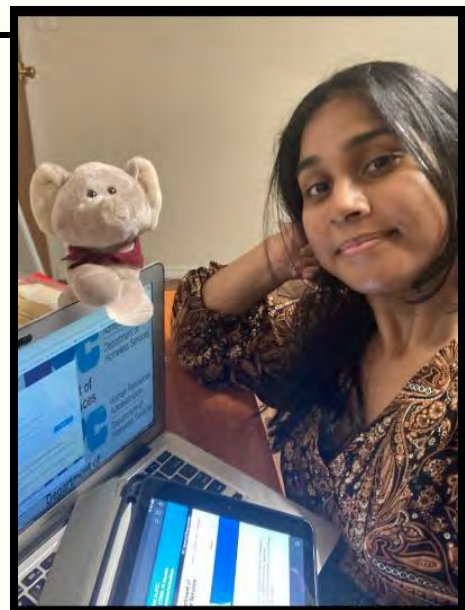
Sultana Morioum

Organization: Department of Homeless Services

Location: New York, New York

Description: I was involved in providing reasonable accommodations to individuals with disabilities within homeless shelters. I was also involved in providing disability training to all employees who are directly working with those who are disabled.

Favorite thing you did for fun last summer: I went on a yacht for the first time with friends and didn't break the bank! (Thank you Groupon!)



Practicum Portraits: MPH Students

Jack Morris

Organization: Columbia University
Environmental Health Sciences
Department

Location: New York, New York

Description: I worked with data from several US population-based cohorts, harmonizing data on pipe and cigar use. I am using that harmonized data to investigate the demographic distribution of pipe and cigar use, as well as how their use affects respiratory health and mortality.

Favorite thing you did for fun last summer: I grew a little garden on the rooftop of my apartment building!



Sarah Nekoufar

Organization: CIPHER - Citizens' Public Health Literacy

Location: New York, New York

Description: I worked as a Community Outreach Assistant for CIPHER. In this role, I worked with CIPHER's community partners to create programs and events for increasing vaccine access and addressing vaccine hesitancy in Upper Manhattan.

Favorite thing you did for fun last summer: I went to my best friend's wedding!

Practicum Portraits: MPH Students



Christina Ng

Organization: Columbia University Earth Institute

Location: Staten Island, New York

Description: As a summer research assistant for Dr. Maria Diuk-Wasser, I investigated factors that impact human exposure to ticks and tick-borne illnesses on Staten Island. This was done through surveying residents on their experiences, behaviors, and perceptions, mapping outdoor areas, and systematically collecting tick specimens - we literally collected more than a thousand! I also enjoyed using traps and wildlife cameras to monitor fauna that may be potentially transporting ticks or serving as Lyme disease reservoirs.

Favorite thing you did for fun last summer: I spent a day in the Far Rockaways surfing and longboarding with friends.

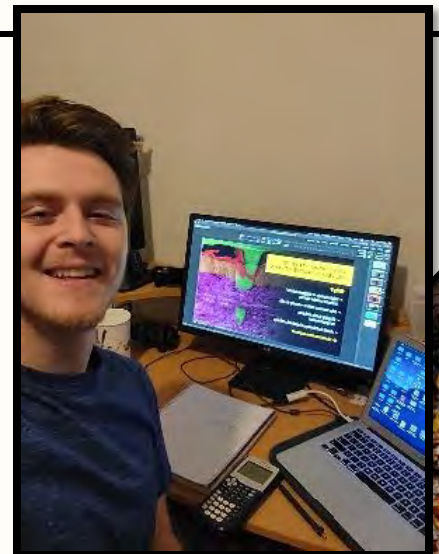
Tom (Thomas) Onsi

Organization: Vaxxas

Location: Cambridge, Massachusetts

Description: I did a life cycle analysis comparing needle and syringe delivery to Vaxxas's micropatch technology. This included the manufacturing, transportation, and elimination of both vaccine delivery mechanisms to compare their environmental sustainability.

Favorite thing you did for fun last summer: I visited Martha's Vineyard with my roommates from college!



Practicum Portraits: MPH Students

Lauren Stiene

Organization: Kleiman Lab, Columbia University Mailman School of Public Health

Location: CUMC & the Catskills

Description: I went to the Catskills with a lab team to collect blood samples. We did this because we needed unvaccinated individuals who have never had COVID-19 to be our reference control subjects. We wanted to know if history of other viral infections, prior vaccinations, lifestyle or medical history affect susceptibility to COVID-19 infection or disease severity.

Favorite thing you did for fun last summer:

The coolest part was going up to the Catskills. I really enjoy fieldwork and it is an experience I will never forget!



Zhiru Wang

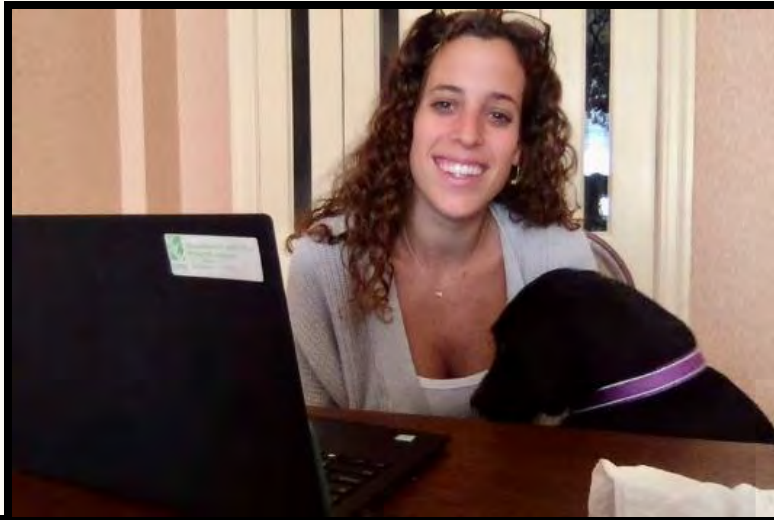
Organization: Columbia Center for Children's Environmental Health

Location: New York, New York

Description: During my practicum, I created three PSAs to communicate the center's research on air pollution, BPA, and climate and health to the public. I was also involved in data analysis for a Needs Assessment Report and community outreach.

Favorite thing you did for fun last summer: Learned to develop pixel art games.

Practicum Portraits: MPH Students



Jenna Wilf

Organization: International Food Policy Research Institute

Location: New York, New York

Description: I was a Project Intern that worked to create communication pieces (blog posts, tweets, etc.) for research briefs about topics such as water & food systems, as well as COVID-19 economic recovery in South Africa. I was also part of the team that organized research for the United Nations Food Systems Summit.

Favorite thing you did for fun last summer:
I travelled to South Africa.

PrIMER Trainees



Audrey Arthur
Faculty Mentor: [Joan Casey](#)
School: Barnard College

Project: Neurodevelopmental Conditions, Environmental Racism, Medical Racism, and Vulnerability to Climate Catastrophe

Over the summer Audrey, under the guidance of Dr. Joan Casey, studied the connections between four main issues: neurodevelopmental conditions, environmental racism, medical racism, and climate catastrophe. Through her literature review, Audrey discovered that due to the confounding factors of medical racism and environmental racism, black people with neurodevelopmental conditions that cause sensory sensitivities will be more adversely affected by the increased inclement weather caused by climate catastrophe. For her paper, Audrey created a framework called the “Web of Vulnerability”, which demonstrates how black neurodivergent populations become more susceptible to climate catastrophe due to environmental racism and medical racism. Audrey also explored preliminary solutions to decrease vulnerability in black neurodivergent populations.

PrIMER Trainees



Shanelle Bhajan

Faculty Mentor: [Daichi Shimbo](#)

School: New York University

Project: Cannabis Use and Blood Pressure: A Systematic Review

This summer, I began working on a systematic review of the association between marijuana usage and hypertension. I developed an inclusion/exclusion criterion by gathering terms that could potentially result in articles that include a relationship; for example, synonyms for "marijuana" were included in the search term. In addition, I included pieces from any year and any language while excluding articles that did not identify a relationship between marijuana usage and hypertension and articles that were reviewed. I used a PubMed search term with Covidence to find published articles that identified this association. At first, there were 815 articles identified; however, they were narrowed down to 23 studies. Following this, I collected data and analyzed evidence in these 23 relevant articles. I will be working on this project throughout the year.

PrIMER Trainees



Koshiq Hossain
Faculty Mentor: [Andrea Baccarelli](#)
School: Hunter College

Project: Chronic Lead Exposure is Association with Reduced Bone Mineral Density In Older Individuals

Lead exposure has been repeatedly linked to neurological and cardiovascular diseases, especially in older individuals. Also, lead exposure leads to increased blood pressure levels. Over 94% of lead is chronically stored in the bone where it has a half-life of years to decades. Among older adults, bone lead remains a critical source of exposure through bone remodeling (endogenous exposure). In the Normative Aging Study, the rate of change in tibia lead was -1.4% decline per year and for patella lead -5.1% per year initially. Osteoporosis is a bone disease that occurs when the body loses too much bone, makes too little bone, or both. As a result, bones become weak and may break from a fall or, in serious cases, from sneezing or minor bumps. My research found that in elderly individuals increased lead exposure was associated with reduced bone mineral density in sites where Osteoporosis was significant in. This meant that as lead exposure increased, bone mineral density in the Ward's Triangle, Trochanter, and Femoral Neck were significantly reduced.

PrIMER Trainees



Lauren Lopez

Faculty Mentor: [Andrea Baccarelli](#)

School: Hunter College

Project: Small Molecules Associated with Short Lifespan in *Caenorhabditis Elegans*

Advances in public health have significantly increased life expectancy over the last century. Although people are living longer lives, they are not necessarily living healthier lives in their later years. Age-related diseases such as cancer and neurodegenerative diseases are among the main contributors to the global burden of disease. Several studies have pointed to the role of metabolism in controlling longevity. Indeed, some have suggested a “metabolic clock” that controls the rate of aging and its associated diseases. Given that several environmental exposures are known to affect metabolism, such as endocrine disrupting chemicals, it is speculated that these exposures may alter the aging process and lead to unhealthy aging. In order to understand how environmental chemicals may be altering metabolic control of aging, we proposed the creation of metabolic profiles of accelerated aging in the nematode model *Caenorhabditis elegans*, using high-resolution metabolomics. These profiles will be used as a reference when studying metabolic effects relevant to aging as a result of chemical exposures in the model organism. The focus of my study was to identify key metabolic signatures of accelerated aging in the short-lived *daf-16* mutant. Combining high-throughput techniques and high-dimensional data analysis, metabolomics offers a window into intricate metabolic mechanisms. Follow up studies will reveal the biological implications of the metabolites found to be central in metabolic pathways associated with accelerated aging.

PrIMER Trainees



Marilyn Santo
Faculty Mentor: [Ana Navas-Acien](#)
School: Columbia College

Project: DNA Methylation and Cultural Connection as a Proxy for Healthy Aging

The project I worked on this summer aimed to characterize the association of culture and social factors with healthy aging. It is important to determine factors that contribute to healthy aging to decrease the risk of aging-related diseases later in life. We used data from the Strong Heart Study (SHS), a population-based prospective cohort study that evaluates cardiovascular disease and its risk factors in American Indian communities. We compared participants' blood DNA methylation age to their chronological age to determine healthy aging using different epigenetic clocks. Finally, to assess cultural connection with tribal traditions and mainstream U.S. traditions, we used data from a survey answered by the SHS participants and compared them to the epigenetic-chronological age measurements to determine whether stronger ties to traditional culture were correlated with healthy aging.

PrIMER Trainees



Jasmine Shaikh
Faculty Mentor: [Diane Re](#)
School: Hunter College

Project: New Methods for Isolation and Analysis of Extracellular Vesicles (EVS)

Recently, extracellular vesicles have risen to fame and scientists started describing them as the cell's way of communicating with other cells and biomarkers of disease. Extracellular vesicles or EVs were misunderstood in the past and were often labeled as cell waste. Due to the inadequate research, the isolation and extraction techniques were lacking clarity and efficiency. However, new methods of extraction, isolation, and analysis are becoming popular in the scientific community. I conducted a systemic review of extracellular vesicles and methods of extraction. EVs are clinically valuable, and the new techniques will allow for the greater utilization of extracellular vesicles.

PrIMER Trainees



Monique Slowly
Faculty Mentor: [Regina Santella](#)
School: Columbia College

Project: Blood DNA Methylation and Liver Cancer: Evidence from the Strong Heart Study

Liver cancer incidence has been rising amongst American Indians for the past 10-20 years. Blood DNA methylation (DNAm) can be used as a biomarker for cancer risk. Using data from the Strongheart Study, we found that differential methylation in CpG sites identified in an epigenome-wide association study was associated with liver cancer mortality. We also verified differential methylation in CpGs identified in studies assessing Blood DNAm and liver cancer. We plan on examining the biological implications of methylation at identified significant CpGs.

Letter from SEA

Dear EHS Family,

SEA would like to extend our thanks to everyone who joined the club this fall, as well as our continuing members!

We kicked off the semester with SEA's General Body Meeting where we introduced ourselves and our agenda for the semester. We had a chance to interact with our members and learn a little bit about them; we are happy to note that many different departments at Mailman are represented within our new members!

In October, we hosted a Fireside Chat with climate activist Michaela Stith. Stith recently released her book "Welp: Climate Change and Arctic Identities", and spoke about her experiences as a Black, mixed-race individual from Alaska working in the field of environmental justice. She touched upon what life was like in the Arctic from a lens of climate change, racism, and systemic social problems that primarily impact people of color, including Black and indigenous communities.

In the Spring, we'll host our regular event, SEA of Thoughts, where we will discuss an environmental health topic with various faculty experts. We are in the process of finalizing our theme and our panelists, so stay tuned to our social media pages (links below) for the latest news and updates!

Facebook: facebook.com/sea.columbia.publichealth

Instagram: [@seacolumbia](https://instagram.com/@seacolumbia)

Engage: [SEA on Engage](#)

Some Fall Semester Memories



Audrey Arthur
Mentor: Joan Casey
Project: Neurodevelopmental Conditions, Environmental Racism, Medical Racism, and Vulnerability to Climate Catastrophe



Monique Slowly
Mentors: Regina Saniella & Hui Chen Wu
Project: Blood DNA Methylation and Liver Cancer: Evidence from the Strong Heart Study



Marilyn Santo
Mentor: Ana Navas-Acien
Project: DNA Methylation and Cultural Connection as a Proxy for Healthy Aging



Shanika Shajan
Mentor: Dalchi Shimbo
Project: Cannabis Use and Blood Pressure: A Systematic Review

PrIMER Research Presentations

Day 1 of 2: Monday, Sept 13th
11:45am – 12:45pm

Room: ARB 1102



Lauren Lopez
Mentor: Andrea Baccarelli
Project: Small Molecules Associated with Short Lifespan in Caenorhabditis Elegans



Jasmine Shaikh
Mentor: Diane Re
Project: New Methods for Isolation and Analysis of Extracellular Vesicles (EVs)



Koshiq Hossain
Mentor: Andrea Baccarelli
Project: Chronic Lead Exposure is Associated with Reduced Bone Mineral Density in Older Individuals

PrIMER Research Presentations

Day 2 of 2: Monday, Sept 20th
11:45am – 12:45pm

Room: ARB 1102



Come join us for Practicum Presentations!

October 15th and October 22nd
11:30am – 12:45pm

October 15th

Zhiru Wang
Eleanor Medley
Kendall Kruchten
Mohammad Alayyoub
Joshua Klett
Kalia Boyer
Sultana Morioum
Tom (Thomas) Onsi

October 22nd

Nicki (Edna) Franks
Tanya Isaac
Grace (Hyungjin) Jin
Jack Morris
Sarah Nekoufar
Christina Ng
Lauren Stiene
Jenna Wilf

Refer to calendar invite for Zoom details



SEA PRESENTS: A Fireside Chat with Climate Activist



MICHAELA STITH
AUTHOR OF
“WELP: CLIMATE CHANGE AND ARCTIC IDENTITIES”



BUILDING A HEALTHY AND JUST WORLD
SINCE 1922

Got News?



We enjoy sharing news about our EHS Family with the community and we want to hear from you!

Please send us information about your accomplishments, awards, presentations, publications, pictures, and any noteworthy EHS updates you'd like to share.

Email Nina at [njc2128@columbia.edu](mailto:njk2128@columbia.edu) with your submissions.

We look forward to hearing from you. Be well and keep in touch!