TSZSHAN MA, MS
Y4 EHS PHD

I am a 4th year PhD candidate in Environmental Health Sciences, focusing on Environmental Epidemiology. My research interests are cardiovascular health, chronic debilitating brain disorders, join effects of multiple air pollution exposures, and modification of these effects by individual and neighborhood socioeconomic factors. I am passionate about investigating health consequences of air pollution and environmental health disparities, by leveraging large-scale datasets and integrating state-of-the-art epidemiologic and statistical methods. Some examples of my current work include exploring joint and individual effects of criterial air pollutants on dementia and exploring relative toxicities of air pollution components for cardiovascular diseases mortality. Although not exclusively, much of my work is conducted within large cohorts, including Medicare, Medicaid, and State Inpatient Database. My interest in large scale real-world evidence study also motivates me to intern at a consulting company this summer that I get exposed to Health Economics and Outcomes Research in industrial settings. Over the next year, I look forward to focusing my efforts on my dissertation analyses.

CONGRATULATIONS!

PUBLICATIONS: **Haisu Zhang** - 2nd author, Environmental International; **Rina Das** - 1st author, PlosNTD; **Kaitlin Taibl** - 2nd author, ES&T

CONFERENCES: **Rina Das** - Poster, ASN

ANNOUNCEMENTS!

UNION ELECTION: 10/17 & 10/18, 9 am - 1 pm & 3 pm - 7 pm, Woodruff Health Sciences Center Library – Classroom B65

EHS FALL RETREAT: 11/10, 9 am - 2 pm, breakfast & lunch provided

I am a third-year doctoral student in Environmental Health Sciences. My research interests are centered around unraveling the mechanisms underlying air pollution-related health effects (i.e., lung cancer, adverse birth outcomes) with the application of 'omics-based analysis. In collaboration with researchers from the American Cancer Society (ACS), I conducted the largest metabolomics study to date on lung cancer risk in the well-established Cancer Prevention Study (CPS) cohorts. My discoveries pinpointed sphingomyelin (d18:0/22:0) as a promising candidate for lung cancer screening biomarkers. Additionally, my study findings illuminated the influence of lipid and amino acid metabolism on lung cancer development, demonstrating variations based on smoking habits. This study has been presented at several international conferences, including the annual meetings of the American Society of Clinical Oncology (ASCO), the American Association for Cancer Research (AACR), and the Consortium of Metabolomics Studies (COMETS), and I also received the prestigious Conquer Cancer Merit Award at the ASCO annual meeting. My doctoral dissertation will further bring in the aspect of air pollution, focusing on the exploration of the mechanisms underlying air pollution toxicity in lung cancer using cutting-edge 'omics-based profiling and integration. Looking towards the future, my overarching goal is to leverage the power of multi-omics integration to enhance our understanding and contribute to precision medicine for environmentally induced cancer prevention and therapy.

ZIYIN TANG, MPH
Y3 EHS PHD

I am a rising 4th year EHS candidate and Environmental Health Science and Toxicology Training Grantee, and my research focuses on understanding the impact of water quality on health among children in low-resource settings. I am part of the PAASIM study that takes place in Beira, Mozambique (Co-I's: Matthew Freeman and Karen Levy), which aims to understand the impact of an improved piped water network on child health. My dissertation will focus on understanding if and how drinking water quality exposure during the first year of life affects the composition and development of the child gut microbiome. I presented preliminary data at in October of 2022 at the UNC Water & Health conference on spatial heterogeneity in consumer access to safe water in our study neighborhoods in Mozambique. This work was also published in PLOS Water in June of 2022.

Over the past year, I have had the privilege of receiving the Infectious Disease Across Scales Training Program Award of Distinction, and the ARCS Foundation Scholar Award for my research. As of May 2023, I have completed my two-year tenure as EHS Co-Representative where I sat on various boards and committees at RSPH and LGS as an advocate for improving our program and student experience. Over the next year, I look forward to focusing my efforts on my dissertation analyses and welcoming a baby in October!

COURTNEY VICTOR, MPH
Y4 EHS PHD

CONGRATULATIONS!

PUBLICATIONS: **Rina Das** - first-author, Sci Rep; **Rina Das** - co-author, AJTMH; **Kaitlin Taibl** - first-author, Nat Comm

AWARDS: **Steph Bellman** - Livingston Fellow; **Brooke Lappe** - Poster Award for Health, Education & Equity at Georgia Climate Conference; **Kaitlin Taibl** - PEO Scholar Award

CONFERENCES: **Brooke Lappe** - Georgia Climate Conference; **Brooke Lappe** - Calicivirus Conference

OTHER ACCOMPLISHMENTS: **Brooke Lappe** - NIEHS T32 Trainee; **Kaitlin Taibl** - NIEHS T32 Trainee

I am a third-year doctoral student in Environmental Health Sciences, PEO Scholar, and T32 Trainee. I research how environmental exposures during the first 1,000 days of life affect maternal and child health outcomes with cell-based assays, exposomics, and epidemiological methods. Two formidable research experiences have been my involvement in the NIH P30 HERCULES Center and NIH ECHO Program. Both motivated my dissertation, which is entitled "Impact of Per- and Polyfluoroalkyl Substances (PFAS) Exposure on Mitochondrial Dysfunction in Fetal Growth Restriction". I will generate experimental data with the BeWo human placenta cell line and use extant observational data from the Atlanta African American Maternal-Child Cohort. The innovative, dual-arm study design will enable the translation of findings into clinical interventions and public health policies. My long-term goal is to strategize about preventatives, diagnostics, and therapeutics for chemical toxicity during critical growth periods as a principal investigator at a research institution.

Aside from research, I enjoy mentoring students, attending scientific conferences, and serving on student advocacy organizations, including as the Environmental Health Sciences Co-President, Rollins School of Public Health Doctoral Student Advisory Board Co-Representative, and Laney Graduate Student Council Vice President.
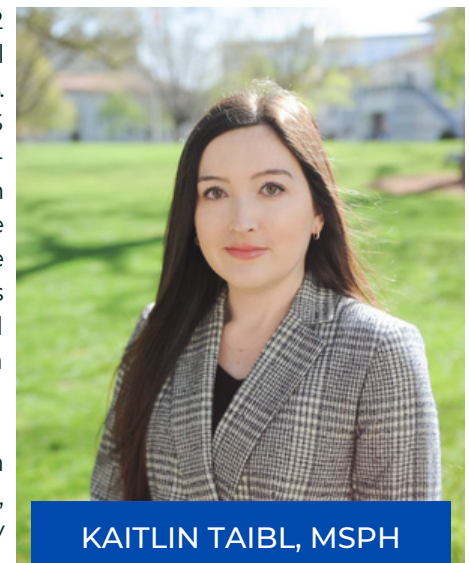
KAITLIN TAIBL, MSPH
Y3 EHS PHD

JASMIN EATMAN, MS
Y1 EHS PHD/Y4 MD

My doctoral research examines the combined impact of chemical and non-chemical stressors on pregnancy outcomes among African American women. So far, my investigations have centered effects of chemical exposures to plasticizers including phthalates and BPA, and exposure to psychological stressors including racism and gender discrimination. Immediately after finishing my third year of medical school and completing my Step 2 board exam, Dr. Stephanie Eick took me under her wing and has been an incredible mentor. I completed my first research rotation with her in Summer 2022, and had the opportunity to first-author a manuscript. I've continued to work as a Graduate Research Assistant in the Research on the Environment and Pediatric/Reproductive Outcomes (REPRO) lab, where I measure impacts of social and environmental determinants of perinatal health outcomes. My current research leverages mixture models to capture the combined impacts of Lead (Pb) and psychosocial stress, including racial and gender discrimination, on outcomes in the Atlanta African American Maternal Child Cohort. This work provides insight into risk factors for adverse pregnancy outcomes and analyzes impacts of chemical and non-chemical stressors on pregnancy. My goal is to use my PhD to investigate racial disparities in maternal health outcomes. Ultimately, I will leverage this research in my own medial practice and use it to impact healthcare policy.

As the American College of Obstetricians and Gynecologists (ACOG) District IV Medical Student Representative, I led a collaborative effort with medical students across the nation that resulted in the publication of the digital guidebook, In Plain Sight: Normalizing Diverse Clinical Presentations in Obstetrics and Gynecology. The mission of this project is to increase representation of various pathology on Brown skin in medical education. Shortly after this publication, I presented at the Reproductive Ethics Conference in Galveston, TX on the topic of reproductive justice and the impact of the Dobbs Decision on medical education. I was also invited to present this work to the Emory Chapter of the Student National Medical Association (SNMA) during their Black History Month lecture series, and received the SNMA Student Activist Award. This semester, I was also invited to serve on a panel for the American College of Surgeons Southeastern Surgical Congress, discussing best practices for fostering Diversity, Equity, and Inclusion in medical education. I also recently co-authored a manuscript published in the Journal of Exposure Science and Environmental Epidemiology, and my research has been accepted for several oral presentations at upcoming conferences, including the Society for Research in Child Development and the International Society for Environmental Epidemiology North American Chapter.

On a personal note, I got engaged in February! In March, Greg (my fiancé and medical school sweetheart) matched into residency in Orthopaedic Surgery at Emory – his top choice! We are ecstatic to be staying in Atlanta with our two pups – Luna and Champ!

CONGRATULATIONS!

PUBLICATIONS: Courtney Victor - co-author, BMJ Open

AWARDS: Sarahna Moyd - Biological Modeling Specialty Section "Best Trainee Abstract Award" Finalist, Society of Toxicology

CONFERENCES: Sarahna Moyd - Frontiers in Addiction Research and Pregnancy, Sarahna Moyd - Society of Toxicology

OTHER ACCOMPLISHMENTS: Brooke Lappe - guest speaker, NPR WABE Radio, Brooke Lappe - guest speaker, The Guardian

Jhanel Chew is a second year EHS doctoral student with research interests in women and girl's empowerment in low-to-middle school countries (LMICs) with a focus on implementation science and sociobehavioral factors using mixed methods approaches. Her dissertation work assesses how to better integrate various interventions in LMICs centered around water, sanitation, and hygiene (WASH); household air pollution (HAP); and vector control. Last summer, she conducted research in Beira, Mozambique on the PAASIM study (Pesquisa Sobre o Acesso à Água e a Saúde Infantil em Moçambique - Research on Access to Water and Children's Health in Mozambique) where she collected community water samples and collaborated with researchers in country alongside other PhD students from University of Washington Seattle and University of North Carolina Chapel Hill. Jhanel also has vested interests in teaching, and is actively involved in giving guest lectures at Tufts University, where she completed her Masters of Science. She has also enjoyed the time she has spent as a teaching assistant for various classes at Emory including WASH in Schools, Risk Assessment, and Introduction to Biostatistics.

JHANEL CHEW, MPH
Y2 EHS PHD
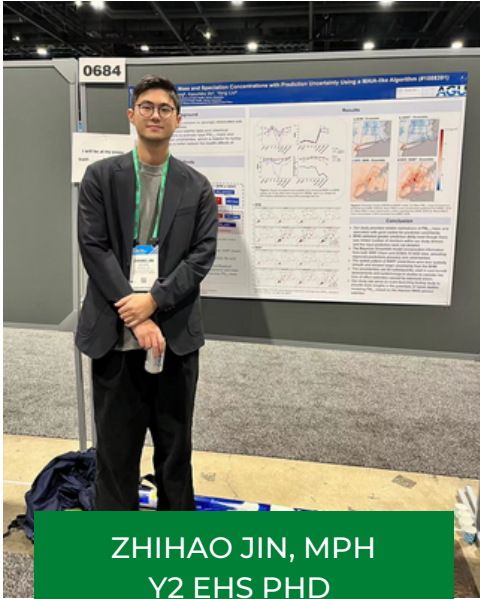
ZHIHAO JIN, MPH
Y2 EHS PHD

My research interests center around remote sensing, exposure assessment, air pollution, and human health. I contribute to the NASA MAIA Projects, including the pre-launch study for the upcoming MAIA satellite. This state-of-the-art aerosol satellite will provide the most accurate measurements to date. Our study followed the MAIA algorithm and provided reliable estimates of PM2.5 mass and speciation, while maintaining control over prediction uncertainty. During my time at the 2022 AGU in Chicago, I proudly presented our project, which demonstrated Bayesian Hierarchical models have greater predictive abilities, despite limited numbers of monitors and low-dimensional input predictors. This makes the model applicable in developing countries with poorly constructed monitoring networks. The same studies are also conducted in Northeastern US and Italy, allowing us to validate MAIA in different regions. Another study I contributed to explored the diurnal variation of pollen in Atlanta. We discovered counts of total pollen and tree pollen decline before noon, then sharply increase from noon to 3pm. We also identified wind, temperature, and solar radiation as important meteorological variables for estimating the hourly variation of pollen.


CONGRATULATIONS!

PUBLICATIONS: Kaitlin Taibl - 1st author, Env Poll ● Kaitlin Taibl - co-author, AJOG ● Kaitlin Taibl - co-author, JESEE ● Rina Das - 1st author, Sci Reports

AWARDS: Brooke Lappe - Outstanding Student Presenter Award, AGU 12/2022

OTHER ACCOMPLISHMENTS: Oscar de Leon - Advanced to Candidacy, 12/2022

Sarahna is a 4th year PhD Candidate, health scientist, and MCH advocate at the Gangarosa Department of Environmental Health at Emory University. Her area of work is computational reproductive toxicology and environmental MCH epidemiology. More specifically she uses toxicology methodologies to better understand mechanisms of ovarian aging in adolescents and women of reproductive age. She also explores developmental origins of health and disease (DoHAD) framework via epidemiology to characterize the potential effects of maternal prenatal smoke exposure on offspring future reproductive health. She is immensely passionate about MCH and is motivated to use apply the science to inform data-driven, outcomes-centered solutions in health research, health services research, and practice. Sarahna looks forward to sharing her works-in-progress at the upcoming Society of Toxicology Annual Meeting and Frontiers in Addiction Research and Pregnancy in March, as well as Frontiers in Reproduction this summer!
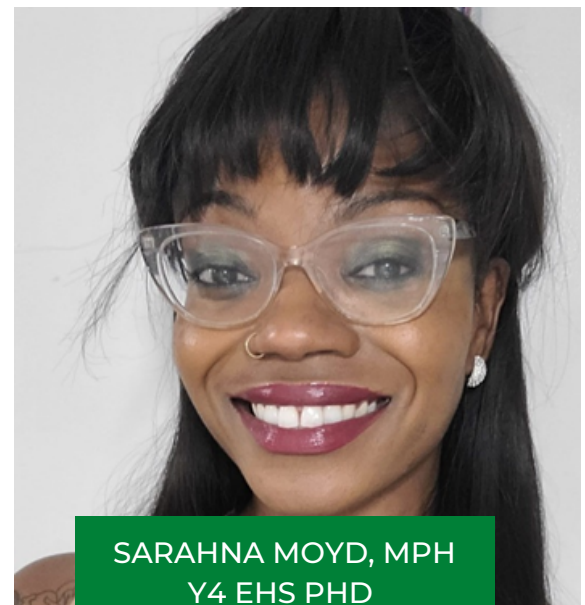
SARAHNA MOYD, MPH
Y4 EHS PHD

**BROOKE LAPPE, MPH
Y2 EHS PHD**

I am a second year EHS doctoral student with research interests in climate change and health. As a member of the ENVISION group (Stefanie Ebelt, Noah Scovronick, Howard Chang), I contributed to the longest time series analysis to date on pollen and ED visits for asthma and wheeze in Atlanta between 1992-2018. We found pollen-associated risks for these respiratory conditions were higher in Black patients compared to white patients. Similarly, a study I conducted with RSPH alumni Jason Vargo (SF Federal Reserve) and Katie Conlon (UC Davis) and adjunct faculty Maria Mirabelli (CDC Climate & Health) demonstrated racial and ethnic minority groups, plus other socially vulnerable populations, were disproportionately exposed to wildfire smoke in the US between 2011-2021. Our work will be used to guide financial resources and community development efforts, as detailed in a research brief and blog post co-authored by myself and Jason for the Federal Reserve Bank of San Francisco. I look forward to presenting these findings at the Atlanta Science Tavern this month and the AGU conference in December.

CONGRATULATIONS!

PUBLICATIONS: **Kaitlin Taibl** - 1st author, Env Intl ● **Kaitlin Taibl** - 4th author, STOTEN

CONFERENCES: **Courtney Victor**- UNC Water & Health, poster ● **Brooke Lappe** - Emory School of Medicine Research Day, poster ● **Hemali Oza** - Poster, UNC Water and Health ● **Stephen Mugel** - ASTMH, 2 posters

OTHER ACCOMPLISHMENTS: **Courtney Victor**- article feature, John Snow Society Broad Sheet newsletter ● **Oscar de León** - Instructor, Spring 2023 SIRE 299R ● **Brooke Lappe** - presenter, GDEH RIPS ● **Brooke Lappe** - panelist, Climate Change and Health Seminar at Mercer Medical School ● **Hemali Oza** - Instructor, Spring 2023 SIRE 299R

Wenhao Wang is a 3rd year PhD student in the Environmental Health Sciences program. He is advised by Dr. Yang Liu, chair and professor of the Gangarosa Department of Environmental Health. Wenhao's research interests include applications of satellite data and machine learning algorithms in ambient air pollution exposure assessments, ambient air pollution epidemiology, and low-cost automotive ambient pollution and pollen sensors. He works with Dr. Liu's group to develop national-scale models on wildfire PM2.5 in the contiguous United States at high spatiotemporal resolution. This work addresses wildfire's long-term contributions to ambient PM2.5 exposure. This summer, he was funded by Dr. Liu to work with the Southern University of Science at Technology in China. During the 5-month research trip, he analyzed data from a 24-year national-wide cohort study to discover the long-term cardiovascular health risks from exposure to multiple air pollutants in China. His dissertation proposes assessing long-term wildfire PM2.5 constituents exposure and studying mixture effects of PM2.5 constituents exposure on CVD risks.

**WENHAO WANG, MPH
Y3 EHS PHD**