



# HARVARD T.H. CHAN

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF  
ENVIRONMENTAL  
HEALTH



**DEPARTMENT NOTES** | **May 2022**

DOCTORAL DEFENCES

POPULAR PRESS: TRANSLATING OUR SCIENCE

ALUMNI NEWS

YOUNG SCHOLARS PUBLICATIONS

UPCOMING EVENTS

IN OTHER NEWS

CURRENT OPPORTUNITIES

Global leaders in research and training addressing critical  
environmental and public health challenges.

Note from the Chair

Boston, Massachusetts, May, 2022

*As we welcome summer weather this time of year, we are always thrilled to celebrate the extraordinary accomplishments of our graduates who will be honored this week at various ceremonies throughout Harvard. We recognize the tremendous support and encouragement they have received from their families, relatives, friends, faculty, staff, and colleagues over the years to reach this pinnacle of academic success. Congratulations to everyone!*

*Doug*

**Douglas W Dockery ScD**

Acting Department Chair

John L. Loeb and Frances Lehman Loeb

Research Professor of Environmental Epidemiology

## Graduating Students 2022

### **Congratulations and Best Wishes to all 2022 HSPH Environmental Health Graduating Students !**

#### **PhD in Population Health Sciences Graduates:**

Barrak Alahmad, Melissa Fiffer, Ashley Gripper, Man Liu, Xinye Qiu, Lisa Rokoff, Linda Tomasso, Kathryn Tomsho, and Xinan Wang.

#### **Master of Science Graduates:**

Mahaa Ahmed, Jennifer Dai, Yuhong Hu, Yunfei Li, Jessica Chun-Han Lin, Jennie Lytel-Sternberg, Himaja Nagireddy, Shivani Parikh, Christopher Warner Romero-Gutierrez, Marjorie Tunu Naila Segule, Jessica Schiff, Samantha Tracy, Katherine Uriarte, Emma Willcocks, and Saiwen Zhang

#### **Master of Public Health (65 credits) Graduates:**

Alexandra Azevedo

#### **Master of Public Health (45 credits) Graduates:**

Joseph Abrams, Yuan-Hsin Chen, Anne Hui Yi Goei, Kevan Lutchman, Julia Malits, Jose Villa-Uribe, Rachael Zacks

#### **Occupational and Environmental Medical Residents Graduates:**

Alexander Jobrack, Shane Joseph, Samuel Ko, James Medeiros, Jonathan David Sterns.

## Doctoral Defenses



Congratulations to **Ashley Gripper** who successfully defended her dissertation on April 11, 2022. Ashley joined the department in 2017 under the supervision of Associate Professor of Environmental Health and Exposure Disparities **Gary Adamkiewicz**. Her research explores the impact of urban agriculture on the health and wellbeing of Black people in Philadelphia. Ashley was the second author on the article “[Built and Social Environments, Environmental Justice and Maternal Pregnancy Complications](#)” which will be published in Current Obstetrics and Gynecology.

Ashley was recently Appointed as an Assistant Professor of Racism and Health Equity at Drexel University School of Public Health at the [Ubuntu Center for Racism, Global Movements, and Population Health Equity](#). Her primary appointment will be in the department of Community Health and Prevention and secondary appointment in the Environmental and Occupational Health department.

To request a link to watch her defense please contact Ashley at [asg745@g.harvard.edu](mailto:asg745@g.harvard.edu)



Congratulations to **Melissa Fiffer** who successfully defended her dissertation titled “Environmental Exposures and Diabetes Risk” on April 29, 2022. After working at the US EPA for nine years, Melissa joined the department in fall 2018 to work with Professor of

Environmental Epidemiology **Francine Laden** and Associate Professor in the Department of Environmental Health **Jaime Hart** on her PhD in Environmental Epidemiology. As part of the Spatial and Contextual Exposomics and Epidemiology lab, her research interests broadly include air pollution and health, and the impact of contextual factors such as greenness and walkability. During her time at HSPH, Melissa served as Co-President of the Environmental Justice Student Organization (EJSO) and as a student representative on the Sustainability Plan Subcommittee of the Presidential Committee on Sustainability. She was also a member of the Council of Student Sustainability Leaders (CSSL).

Melissa plans to apply her newly honed research skills and her past policy and program management experience towards pressing environmental health challenges.

To watch a recording of Melissa’s defense you may follow this [link](#).



Congratulations to **Linda Powers Tomasso** who successfully defended her dissertation, titled “Investigating an Affinity for Nature as a Determinant of Nature Use and Health Benefits,” on April 25, 2022.

Linda joined the department in 2017 under the supervision of Akira Yamaguchi Professor of Environmental Health and Human Habitation **Jack Spengler** and has researched the emotional and cognitive benefits of nature from a mixed-methods approach to exposure assessment. Her work brings qualitative insights into a discipline typically quantitatively focused to understand the origins of nature-seeking behavior, social and structural barriers to nature engagement,

## Doctoral Defenses

and the impacts of these factors on equitable nature access. Linda was the first author on “[The Relationship between Nature Deprivation and Individual Wellbeing across Urban Gradients under COVID-19](#)” which was published in the International Journal of Environmental Research and Public Health. She recently conducted a [novel museum-based](#) experiment to assess stress reduction from live nature vs landscape paintings for use in institutionalized settings.

Linda will continue her research as a post-doctoral Research Fellow with Jack Spengler.

To watch a recording of Linda’s defense you may follow this link: <https://we.tl/t-jmghXyKkpq>.



Congratulations to **Barrak Alahmad** who successfully defended his dissertation titled “Climate Change & Health: Implications for Inherently Hot Regions and Cardiovascular Health” on April 28, 2022.

Barrak joined the department in 2018 under the supervision of Professor of Environmental Sciences **Petros Koutrakis**. He investigated air quality, climate change & health in the Middle East, specifically the adverse impacts of dust storms and extreme temperatures. His other research interests include migrant workers health, environmental risk assessment, and environmental cardiology. Barrak was the first author on “[Disparities in excess deaths from the COVID-19 pandemic among migrant workers in Kuwait](#)” which was published in the BMC Public Health Journal. His work on migrant workers was also highlighted by the WHO in “[Migrant workers bear the brunt of extreme heat in Kuwait](#)”.

Barrak will now begin work as a Postdoctoral

Research Fellow with Petros Koutrakis to continue exploring the effects of climate change on health in Kuwait and the broader Middle East.

To watch a recording of Barrak’s defense you may follow this [link](#)



Congratulations to **Man Liu** who successfully defended her dissertation titled “Environmental Radiation and Human Health: From Radon to the Sun” on May 6, 2022. Man joined the Environmental,

Epidemiology and Risk program in 2017 and was advised by **Petros Koutrakis**. Man’s research focuses on the exposure assessment of particle radioactivity from long-lived radon decay products, and the pregnancy-related outcomes from exposure to solar and geomagnetic activities. She was a co-author with Carolina L Zilli Vieira and Koutrakis in the EP Eurospace article “[Solar and geomagnetic activity enhance the effects of air pollutants on atrial fibrillation](#)”.

After graduating Man will work in a consultancy role. A recording of Mans dissertation defense will be available on the Graduate Student News Page in the near future.

## Popular Press: Translating Our Science



Assistant Professor of Reproductive and Women's Health **Shruthi Mahalingaiah**, recently spoke with India Rakusen on BBC Sounds 28ish Days Later, a podcast that dives

into the importance of the menstrual cycle for whole body health. All 28 episodes are now available, including *Day Twenty: Chemical Disruption* which includes Shruthi's interview about the impact of synthetic chemicals on the endocrine system and reproductive outcomes. Listen to the episode on the [BBC Website](#).



Former Industrial Hygienist Trainee at the School of Public Health, **Lisa Brosseau**, was featured in numerous popular press articles discussing COVID-19, Masks and Mandates, including the

NPR article "[Corona virus FAQ: I'm a one-way masker. With mask mandates going away, is that helpful?](#)" and in The Toronto Star article "[Why we need N95 respirators more than cloth masks](#)". You can listen to Lisa discuss *Masking and Respirators; Lessons from COVID-19* in this [IAQ Radio Podcast](#).

Congratulations to Lisa who recently received the 2022 ACGIH Philip R. Morey Memorial Award! Created in 2020, the Philip R. Morey Memorial Award is presented annually to a person who has made a significant contribution in the science of occupational and environmental bioaerosols and biological agents.



Assistant Professor of Pediatrics **Ari Bernstein** was featured in numerous press articles this month that addressed Climate Change and Health. In the Coverage series article "[Caring for our planet and our children](#)", where

Ari explores the ways health and health care are affected by climate change, and highlights climate actions families can take to ensure that we provide our children and our loved ones with a healthier, more just, and sustainable world.

Ari provided comment for the AP news piece "[Increased infectious disease risk likely from climate change](#)" and reviewed the nature article "[Climate change increases cross-species viral transmission risk](#)".

You may listen to Ari discuss the intersection of climate change and health policy on the Health Affairs Pathways podcast – [The Earth and Disease](#)

SHINE research supporter and iconic global brand Levi Strauss & Co. (LS&Co.) has published a [Worker Well-being Guidebook](#) which offers new approaches for corporations and factory owners to improve the health and well-being of apparel workers and some of the most vulnerable populations around the world.

The Guidebook, which provides insight into strategies for identifying locally relevant ways to improve the well-being of garment factory workers and their families, is based in part on foundational research conducted by the Harvard Chan SHINE team, led by SHINE Executive Director **Eileen McNeely**.

Supported by the Levi Strauss Foundation, SHINE surveyed over 13,000 workers in LS & Co. supply chain factories across five countries:

## Popular Press: Translating Our Science

Cambodia, China, Mexico, Poland and Sri Lanka over three years, beginning in 2017. Through hundreds of group conversations and direct interviews with workers and suppliers, this multi-year study highlighted that workplaces that cultivate trust, respect and fairness lead to meaningful improvements in gender equality, well-being and productivity. They were able to define what well-being means in the apparel context, measure it and identify what drives it for garment workers. Their findings reinforce the point that people are foundational to business success and that how work gets done deeply affects people's lives. As such, raising well-being and equity among workers helps build resilient supply chains, business success and further sustainable development.



**Rima Habre** (ScD 2012) is currently an Associate Professor in Environmental Health and Spatial Sciences at the University of Southern California Department of Population and Public

Health Sciences, in Los Angeles, CA. Rima's work on how exposure science can advance precision environmental health was featured as the cover story in the [NIEHS Environmental Factor](#) official newsletter following an invited talk at the NIH Keystone Lecture Series.

## Alumni News

**Annelise Blomberg** (ScD 2020) received the Marie Skłodowska-Curie Postdoctoral Fellowship for her project, "*Developmental immunotoxicity of perfluoroalkyl substances (PFAS) in a population of highly-exposed children.*" She will conduct her fellowship at Lund University, Sweden.



**Jongeun Rhee**, Research Fellow in the Occupational and Environmental Epidemiology Branch, Division of Cancer Epidemiology & Genetics, National Cancer Institute, presented her work on

"[Circulating immune markers and risks of non-Hodgkin lymphoma subtypes: a pooled analysis](#)" and received an American Association for Cancer Research June L. Biedler Scholar-in-Training Award at the 2022 AACR Annual Meeting.



**Britt Hatfield** (MPH 2004) serves as the Chief Medical Officer for Quadrant Health Strategies, Inc. Britt participated in the 2022 [American Occupational Health Conference](#) in Salt Lake City, Utah

To be featured in the next edition of Environmental Health: Department News please submit your information by completing the survey below:

Click for [Department News Survey](#)

## Young Scholars Publications



Doctoral Student **Di (Marina) Chen** was a co-author in a recent article in the Journal of Microbiology, “[\*Strain Identification and Quantitative Analysis in Microbial Communities\*](#).”

The article provides an in depth discussion of recently available computational tools that can be applied for this task, as well as statistical models and gaps in performing and interpreting any of these three main types of studies using strain-resolved shotgun metagenomic profiling of microbial communities. Marina presented some of her research at the [Harvard Chan Microbiome in Public Health Symposium](#) on May 16, 2022.



PhD Student **Kyle Colonna** was first author in the Environmental Science & Technology Journal article “[\*Mortality Attributable to Long-Term Exposure to Ambient Fine Particulate Matter: Insights from the Epidemiologic Evidence for Understudied Locations\*](#)”

This critical review discusses the evidence for (i) the associated risk of mortality, (ii) the shape of the concentration response function, (iii) a causal interpretation, and (iv) how the source mix/composition of PM<sub>2.5</sub> and population characteristics may alter the effect.

Master of Science student **Chris Romero-Gutierrez** was co-author in a recent article in the Sleep Medicine Journal, “[\*Restless legs syndrome severity in the National RLS Opioid Registry during the COVID-19 pandemic\*](#)”. The research hypothesized that Restless Leg Syndrome (RLS) symptom severity would be increased during the COVID-19 pandemic. In a sample of patients with diagnosed RLS and participants with increases in RLS severity were significantly more likely than others to see increases in sleep disturbance, depression, and anxiety.

Postdoctoral Fellow **Xinye Qiu** was first author in the Lancet Planetary Health Journal article “[\*Associations of short-term exposure to air pollution and increased ambient temperature with psychiatric hospital admissions in older adults in the USA: a case “crossover study”\*](#)”. The research examined the US Medicare population, short-term exposure to elevated concentrations of PM<sub>2.5</sub>, NO<sub>2</sub> and cold season ambient temperature increase, which were significantly associated with an increased risk of hospital admissions for psychiatric disorders (including depression, schizophrenia, and bipolar disorders). Considering the increasing burden of psychiatric disorders in the US population, these findings suggest that intervening on air pollution and ambient temperature levels through stricter environmental regulations or climate mitigation could help ease the psychiatric healthcare burden.”

## Young Scholars Publications



Master of Science Student  
Naila Segule was the first  
author on a recent article

[“Incarcerated workers:  
Overlooked as Essential  
Workers”](#) published in

BMC Public health and

co-author of [“How the Pandemic Further  
Isolated the Incarcerated”](#) published in the  
American Journal of Public Health. Her  
research reported how incarcerated workers  
fared in the U.S correctional system during the  
height of pandemic and called to attention the  
need to prioritize incarcerated workers’ health.

Naila co-authored the American College of  
Environmental Medicine Guidance Statement  
[“Occupational and Environmental Hazards  
of Correctional Settings a Scoping Literature  
Review From ACOEM’s Presidential Task  
Force on Correctional Institutions”](#) which  
hypothesized that examination of the academic  
literature could reveal opportunities for an  
improved approach in research of worker health  
and safety within correctional facilities.

Naila was also a co-author on the Sage  
Journal article [“Lead Levels in Spices From  
Market Basket and Home Lead Investigation  
Samples in North Carolina”](#) which compared  
lead levels in samples of spices and other  
consumable products by country of purchase  
to inform consumer safety interventions and  
regulations.

Postdoctoral Fellow **Yang Sun** was first  
author in the European Respiratory journal  
article [“Association of blood trihalomethane  
concentrations with asthma in U.S. adolescents:  
nationally representative cross-sectional study”](#).  
The article explores the associations between  
blood trihalomethane (THM) concentrations and  
asthma among U.S. adolescents and assess to  
what extent the association is modified by active  
tobacco smoke exposure and that Exposure to  
THMs is associated with a greater risk of asthma

in adolescents, particularly among those exposed  
to tobacco smoke.



Postdoctoral Fellow  
**Yagugang Wei** was first  
author in the American  
Journal of Respiratory and  
Critical Care Medicine  
Journal article [“Air Pollutants  
and Asthma Hospitalization  
in the Medicaid Population”](#)

The research assessed the effects of short-term  
exposures to fine particulate matter (particulate  
matter with an aerodynamic diameter of 2.5 µm  
[PM2.5]), warm-season ozone (O3), and nitrogen  
dioxide (NO2) on risk of asthma hospitalization  
among national Medicaid beneficiaries, the  
most disadvantaged population in the U.S.,  
and to test whether any subpopulations were  
at higher risk and concluded that short-term air  
pollutant exposures increased risk of asthma  
hospitalization among Medicaid beneficiaries,  
even at concentrations well below national  
standards. The subgroup differences suggested  
individual and contextual factors contributed to  
asthma disparities under effects of air pollutant  
exposures.



Postdoctoral Fellow **Anna  
Young** was first author in the  
Environment International  
Journal article [“Chemical  
contaminant exposures  
assessed using silicone  
wristbands among occupants](#)

[in office buildings in the USA, UK, China, and  
India”](#). The research evaluated exposures to 99  
chemicals in urban office buildings in the U.S.,  
UK, China, and India using silicone wristbands  
worn by 251 participants while they were at  
work, and found substantial country differences  
in chemical exposures and continued exposures  
to legacy phased-out chemicals and their  
substitutes in buildings

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## Upcoming Events

The [NCI Health Disparity Workshop](#) is happening May 25-26, 2022. It's co-organized by NCI Center for Cancer Research Health Disparity Steering Committee, Division of Cancer Epidemiology & Genetics (DCEG) Cancer Health Disparities Working Group, and DCEG Fellows' Cancer Health Disparities Interest Group.

Planning is under way for the 2022 [Planetary Health Annual Meeting](#) (PHAM), which will take place in Boston this fall. Visit the PHAM website updates and more information.

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### Graduation Festivities

Wednesday, May 25, 11:00 am – 2:00 pm: Harvard T.H. Chan School Convocation Ceremony for the Class of 2022, Reggie Lewis Center in Roxbury, MA

Thursday, May 26, 8:00 am – 12:00 pm: Harvard University 2022 Commencement, Cambridge/Harvard Yard

Friday, May 27th 1:00 pm – 3:00 pm, Building 1, 13th floor; Department of Environmental Health Open House for 2020, 2021, 2022 graduates (invitation only event)

Saturday, May 28, 10:00 am – 12:00 pm: Harvard T.H. Chan Graduation Ceremony Classes of 2020 and 2021, Harvard Medical School Quad; Reception 12:30-1:30

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Please submit all events to  
[envhlth@hsph.harvard.edu](mailto:envhlth@hsph.harvard.edu)

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## In Other News

In 2016 Assistant Professor of Medicine and HSPH research associate, **Peggy Lai**, received flash funding grant at the NIEHS center retreat. It was the seed money that allowed Peggy to get additional grants and eventually conduct a randomized controlled trial of indoor solar lighting to reduce household air pollution in rural Uganda.

[\*“Effect of a solar lighting intervention on fuel-based lighting use and exposure to household air pollution in rural Uganda: A randomized controlled trial”\*](#) was published in the Indoor Air Journal and was highlighted in the May [NIEHS Environmental Factor Newsletter](#) as

one of the highest impact and most innovative research funded by NIEHS. The randomized controlled trial of indoor solar lighting systems focused on women living in rural Uganda who serve as the primary cooks for their households, even without altering their use of biomass fuel for cooking, the solar lighting intervention displaced kerosene lamp use and reduced personal PM2.5 and black carbon exposure that was sustained over a one year period.

[\*“Use, cost-effectiveness, and end user perspectives of a home solar lighting intervention in rural Uganda: a mixed methods, randomized controlled trial”\*](#) was published in

Environmental Research Letters. The research showed that Energy poverty, particularly in resource-limited settings, is a source of health disparities. In this mixed methods study embedded in a randomized controlled trial of home solar lighting systems in rural Uganda, they show that the intervention is cost-effective and allows the household to breakeven on their initial investment at 2.76 years due to the lower per-lumen cost of solar lighting as compared to kerosene lighting, and changes the social determinants of health for that household.

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The Planetary Health Alliance recently concluded the Planetary Health Colloquium series with the seminar Planetary Health as a Frame for the United Nations Sustainable Development Goals (SDGs), from Local to Global, which featured a conversation between PHA Advisory Board Members Hindou Oumarou Ibrahim and Achim Steiner, moderated by Sam Myers, Director of the Planetary Health Alliance, and focused on the nexus of global policy, development, and planetary health. The PHA were very proud to co-sponsor this series, along with Harvard T.H. Chan School of Public Health departments of Environmental Health, Global Health and Population, Immunology and Infectious Disease, and Nutrition, as well as the Harvard Global Health Institute, Harvard University Center for the Environment and the European Environment and Sustainable Development Advisory Councils Network (EEAC Network). Find the recordings of past sessions on the HSPH website and on the [PHA's YouTube Channel](#).

On April 4th, the PHA hosted A Call to Action for a Well-being Agenda: the Need for a Planetary Health Approach. This webinar was held in collaboration with the World Health Organization (WHO) and the German Advisory Council on Global Change (WBGU), co-

sponsored by the World Federation of Public Health Association (WFPHA) as part of their Global Public Health Week. The webinar featured Carlos Faerron Guzman, PHA's Associate Director; Rudiger Krech, Director of WHO Department of Health Promotion; and Sabine Gabrysch, Head of the Department on Climate Resilience at the Potsdam Institute for Climate Impact Research and member of the WBGU Council. The event was moderated by Dr. Nicole de Paula, Senior SDGs Expert, FAO of the UN & Founder of Women Leaders for Planetary Health. Over 350 people registered for this event, with attendees joining from all over the globe.

In celebration of World Health Day, the PHA hosted April's Planetary Health Colloquium: How the Private Sector Can Help Stimulate a Great Transition toward Planetary Health. April's session featured Paul Polman, business leader, influencer, and author; Rudiger Krech; and Michael Weatherhead, Development Lead, Wellbeing Economy Alliance Amplification Team. The session was moderated by Iris Blom, PHA Steering Committee Member. More than 375 individuals registered for this event, which fostered exciting discussions surrounding the role that the private sector can play in stimulating a great transition.

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Research Associate **Wendy M. Purcell** PhD FRSA is the Series Editor of 17 books for Emerald Press on '[Higher Education and the SDGs](#)'. Wendy will launch a webinar series with United Nations (UN) Global Youth

featuring the Student Voice with Brighton Kaoma, the Global Director of UN Sustainable Development Solutions Network Youth. The webinars will feature students, editors and chapter authors in dialogue about the role of

students as agents of change.

To date, seven books in the series are under development (SDG4, 5, 7, 11, 14, 16, 17). Each book includes authors from across the globe.

The book series was showcased at the University Global Coalition in March 2022, where Wendy chaired a session with some of the editors in the series and engaged in discussion with conference attendees. A recording of the event can be found on the [University Global Coalition](#) Website.

information on potential hazards and the controls in-place to address a variety of exposure risks. Through benchmarking with regulations and industry standards, students prepared reports as an exercise to critique the overall management and implementation of the safety program that utilizes administrative and engineering controls as well as personal protective equipment to protect the health and well-being of workers at MassBiologics and other sites.

The Apple Women's Health Study recently released preliminary insights which found that participants with polycystic ovarian syndrome (PCOS) were more likely to have a family history of the condition, abnormal menstrual cycles, and heart health conditions. The analysis is on the [Study's Website](#).

Assistant Professor of Social and Behavioral Sciences **Natalie Slopen** and HSPH Senior Research Scientist **Andrea Roberts** (as co-PIs) received the HSPH Dean's Acceleration Award for a study titled, "Childhood experiences and lifetime exposure to viruses in women."

Cecil K. and Philip Drinker Professor of Environmental Epidemiology and Physiology **Marc Weiskopf** presented at the Collège de France on Air Pollution and the Central Nervous System (April 13). You can watch Marc's presentation [Here](#).

The class, ID263 Practice of Occupation Health, visited the MassBiologics vaccine production facility in Mattapan on April 20th as part of the curriculum to train students in recognizing common occupational hazards during walk-through visits to workplaces. This class was the first to be invited back since the COVID-19 stay-in-place order in 2020. The students were able to observe production processes to gather

## Current Opportunities

[Biosafety Officer](#) – Environmental Health & Engineering, Inc.

[The Laboratory Safety Advisor](#) – Harvard Environmental Health and Safety

[Postdoctoral Fellow](#) - Environmental Epidemiology at UNC Chapel Hill

[Research Associate in Asian Health Equity and Structural and Social Determinants of Health](#) - Tufts Clinical and Translational Science Institute

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