The Climate and Health Program, launched in 2008, has a mission to foster innovative scholarship on the human health dimensions of climate change impacts and vulnerabilities, and to provide information of direct value in climate adaptation and mitigation planning. We train PhD and DrPH students, and postdoctoral scientists in the design and conduct of cutting edge research on mechanisms linking climate to ill-health as well as on methods for assessing health impacts and benefits of future climate policy scenarios. We also offer the first ever MPH certificate in climate and health.

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### Faculty and staff in the news

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<td>Brittany Shea</td>
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<td>Pressured By Students, Medical Schools Grapple With Climate Change</td>
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Faculty and staff in the news

Frederica Perera
Mailman News
Dec 21, 2020: How Our Health Could Benefit If Clean Air Improvements During COVID-19 Shutdown Continued Post-Pandemic Via Climate Policies

Wan Yang
Bloomberg

Sen Pei
Wall Street Journal
Sep 22, 2020: Reopening Colleges Likely Fueled Covid-19 Significantly, Study Finds
NBC News
Sep 24, 2020: Vindicated Covid-19 models warn pandemic is far from over
CNN
Nov 07, 2020: Social distancing earlier could have saved over 59,000 lives in the US
NPR
Jan 23, 2021: The Vaccine Rollout Will Take Time. Here’s What The U.S. Can Do Now To Save Lives

Jeffrey Shaman
Gothamist
Oct 20, 2020: Scientists Are Increasingly Bracing For The Possibility That COVID-19 May Never Go Away
Wall Street Journal
Oct 23, 2020: How Covid-19 Death-Rate Predictions Have Changed Since March
NPR
Nov 09, 2020: U.S. Confirmed Coronavirus Infections Hit 10 Million
NY Times
Nov 17, 2020: Immunity to the Coronavirus May Last Years, New Data Hint
Washington Post
Nov 18, 2020: More than 3 million people in U.S. estimated to be contagious with the coronavirus
Gothamist
Washington Post
Jan 06, 2021: CDC foresees spread in U.S. of highly contagious coronavirus variant
NY Times
Jan 19, 2021: Coronavirus Death Toll in the U.S. Passes 400,000
NY Times
Jan 24, 2021: Why Vaccines Alone Will Not End the Pandemic
CERTIFICATE NEWS

Meet our new master’s students

Tanya Isaac is from Bangalore, India. She received her BS in Public Health and Psychology from Tulane University. During her time at Tulane, she was a research assistant in a water and soil microbiology lab investigating infectious diseases in water systems. This introduced her to the impacts of climate change on waterborne disease, and water and sanitation, and influenced her decision to pursue an MPH in EHS. Through this program, she is hoping to gain a better understanding of water security and climate change and gain analytical skills that can be applied to creating policy for these issues.

Kendall Kruchten is from Houston, Texas. She created her own degree in Environmental Health Policy and Economics at the University of Alabama. She has worked for the last five years in Houston on mosquito disease transmission, especially focusing on West Nile Virus. Through the Climate and Health certificate, she is hoping to expand her technical skills in modeling future infectious disease scenarios under different climate conditions.

Christina Ng is a Brooklyn native currently residing in Sunset Park. She received her nursing degree from Binghamton University and took her first job at Magee-Womens Hospital in Pittsburgh. After a few years of bedside care, she transitioned to public health and began working as a Public Health Nurse for NYC’s Department of Health and Mental Hygiene. While there, she worked on assignments responding to the 2019 measles epidemic and later, the COVID-19 pandemic. At Mailman, she is pursuing knowledge on a wide breadth of interests including climate effects on infectious diseases and zoonotic diseases, and hope to graduate with strong new skills in data analysis.

Rashmika Prakash is from India, where she also received her undergraduate degree in biotechnology. After one year of experience as an analyst, she made a switch to pursue her MPH in Epidemiology. With the Climate and Health certificate, she hopes to focus and learn more about the intersection of infectious disease and climate change.
Meet our new master’s students

**Zoe Siegel**, a Virginia native, is a Master’s in Public Health candidate focusing on Health Policy and Management with a certificate in climate and health. She graduated from New York University in 2017 with a BS in Applied Psychology and Global Health. Prior to graduate school, she led efforts at Drum Major Institute, a nonprofit committed to continuing the legacy of Martin Luther King Jr. by identifying common sense solutions to pressing social issues. Through this certificate, she hopes to better understand how through a policy lens, she can tackle climate change and its impact on our food.

**Jenna Wilf** is from NYC. She received her BA in anthropology from Washington University in St. Louis. Prior to coming to Mailman, she worked at Innovation: Africa, where she researched methods of sustainable agriculture through the use of drip irrigation. She also worked at the US Green Building Council, where she was responsible for producing case studies that highlighted and promoted energy efficiency benchmarking efforts that governmental and large-scale residential buildings initiated in the Saint Louis area. Synthesizing data across electricity, gas, and water energy units, she made recommendations to each property manager on how to reduce their carbon emissions as well as their water footprint. At Mailman, she hopes to gain the tools to be a public health leader in climate change action.
Recent findings

Nationwide Study of Short-term Exposure to Fine Particulate Matter and Cardiovascular Hospitalizations Among Medicaid Enrollees

*Affiliated Investigators: Robbie Parks and Marianthi-Anna Kioumourtzoglou*

*Journal: Epidemiology*

The association between short-term PM2.5 exposure (average of PM2.5 on the day of hospitalization and the preceding day) and CVD admissions rates among adult Medicaid enrollees in the continental United States (2000-2012) was estimated using a time-stratified case-crossover design. This analysis was repeated at PM2.5 concentrations below the WHO daily guideline of 25 μg/m. The PM2.5-CVD association in the Medicaid ≥65 years old versus non-Medicaid-eligible Medicare enrollees (≥65 years old) was compared. A robust evidence of an association between short-term PM2.5 and CVD hospitalizations among the vulnerable subpopulation of adult Medicaid enrollees was found with 0.9% increase in CVD admission rates per 10 μg/m PM2.5 increase. The association was stronger at low PM2.5 levels. Among Medicaid enrollees ≥65 years old, the association was 0.9% vs. 0.8% among non-Medicaid-eligible Medicare enrollees ≥65 years old.

Responses of rice qualitative characteristics to elevated CO2 and higher temperature: Implications for global nutrition

*Affiliated Investigators: Weilu Wang and Lewis Ziska*

*Journal: Journal of the Science of Food and Agriculture*

Protein and some minerals of rice seed are negatively affected by projected carbon dioxide (CO2) levels. However, an in-depth assessment of rice quality that encompasses both CO2 and temperature for a wide range of nutritional parameters is not available. Using a free-air CO2 enrichment facility with temperature control, a field experiment with two levels of CO2 (ambient; ambient + 200 ppm) and two levels of temperature (ambient; ambient + 1.5 °C) was conducted. An in-depth examination of qualitative factors indicated a variable nutritional response. For total protein, albumin, glutelin, and prolamin, elevated CO2 reduced seed concentrations irrespective of temperature. Similarly, several amino acids declined further as a function of higher temperature and elevated CO2 relative to elevated CO2 alone. Higher temperature increased the lipid percentage of seed; however, elevated CO2 reduced the overall lipid content. At the nutrient elements level, whereas elevated CO2 reduced certain elements, a combination of CO2 and temperature could compensate for CO2 reductions but was element dependent. These data indicate that climate change is likely to significantly impact the nutritional integrity of rice, with subsequent changes in human health on a global basis.
Select recent publications


Elser H, Goldman-Mellor S, Morello-Frosch R, Deziel NC, Ranjbar K, Casey JA. Petro-riskscapes and environmental distress in West Texas: Community perceptions of environmental degradation, threats, and loss. Energy Research & Social Science. 2020 Dec 1;70:101798.


APHA Annual Meeting

Brittany Shea, Project Director of the Global Consortium on Climate and Health Education, gave a presentation on "Higher Education’s Role in Building Climate Change Resilience" at the American Public Health Association (APHA) Annual Meeting & Expo, which was held virtually from October 24-28, 2020.

COVID-19 Dynamics & Evolution Conference

Sen Pei, Associate Research Scientist, gave a presentation on ‘Real-time projection of COVID-19 in the United States’ on October 19, 2020 at the COVID-19 Dynamics & Evolution Conference held online.

FEEDBACK

Please email the Program Coordinator, Haruka Morita, at hm2487@cumc.columbia.edu with questions or suggestions for future newsletter content. For more information about the Program, please visit our website.