

NEWSLETTER Volume 10, Issue 2

Spring 2021

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

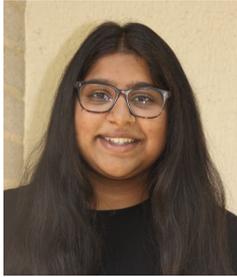
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- Micaela
Martinez **Gothamist**
Dec 10, 2020: [How NYC Is Preparing To Roll Out COVID-19 Vaccines](#)
National Geographic
Dec 15, 2020: [Why cold weather makes it harder for the body to fight respiratory infections](#)
Guardian
Dec 22, 2020: [Sex at Christmas tends to be off menu until fireworks at new year – study](#)
Teen Vogue
Feb 08, 2021: [What Will Life After the COVID-19 Vaccine Look like?](#)
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- Lewis Ziska **Mailman News**
Feb 08, 2021: [Allergy Seasons Are Worsening and Climate Change Is Playing a Significant Role](#)
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- Marta
Galanti **Gothamist**
Oct 20, 2020: [Scientists Are Increasingly Bracing for the Possibility that COVID-19 May Never Go Away](#)
Huff Post
Oct 30, 2020: [Scientists Say Covid-19 May Become 'Endemic'. Here's What That Means](#)
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- Joan Casey **Mailman News**
Sep 14, 2020: [Wildfires Present a Growing Threat to Human Health](#)
Eureka Alert!
Jan 27, 2021: [Historically Redlined Neighborhoods Are More Likely to Lack Greenspace Today: Study](#)
-
- Marianthi-
Anna
Kioumourt-
zoglou **Mailman News**
Oct 20, 2020: [Study Finds Significant Link Between Air Pollution and Neurological Disorders](#)
-
- Wil
Lieberman-
Cribbin **NY Times**
Oct 30, 2020: [Some Areas of N.Y.C. Are Getting a Lot More Testing. Guess Which Ones](#)
NPR
Dec 03, 2020: [Battle-Wearied Nurses Wonder If New York Hospitals Can Handle Another Coronavirus Surge](#)
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- Brittany Shea **Health Affairs**
Dec 07, 2020: [Pressured By Students, Medical Schools Grapple With Climate Change](#)
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Faculty and staff in the news

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- 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](#)
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- Wan Yang **Bloomberg**
Oct 20, 2020: [New Yorkers' Risk of Covid Death Was Double Earlier Estimates](#)
-
- 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
Dec 29, 2020: [WHO Says COVID-19 Virus Will "Likely" Become Permanent Presence, Warns Of Deadlier Pandemic Ahead](#)
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](#)
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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.



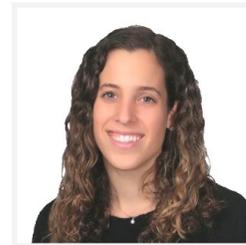
Rashmika Prakash is from India, where she also received her undergraduate degree in biotechnology. After one year of experience as an analyst, she made a switch to pursue her MPH in Epidemiology. With the Climate and Health certificate, she hopes to focus and learn more about the intersection of infectious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

CERTIFICATE NEWS

Meet our new master's students



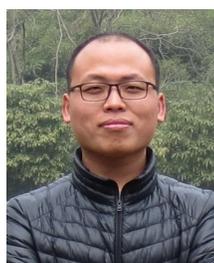
Zoe Siegel, a Virginia native, is a Master's in Public Health candidate focusing on Health Policy and Management with a certificate in climate and health. She graduated from New York University in 2017 with a BS in Applied Psychology and Global Health. Prior to graduate school, she led efforts at Drum 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 PM_{2.5} exposure (average of PM_{2.5} 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 PM_{2.5} concentrations below the WHO daily guideline of 25 µg/m. The PM_{2.5}-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 PM_{2.5} 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 PM_{2.5} increase. The association was stronger at low PM_{2.5} 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

- Kramer SC, Pei S, Shaman J.** Forecasting influenza in Europe using a metapopulation model incorporating cross-border commuting and air travel. *PLoS computational biology*. 2020 Oct 14;16(10):e1008233.
- Kontis V, Bennett JE, Rashid T, **Parks RM**, Pearson-Stuttard J, Guillot M, Asaria P, Zhou B, Battaglini M, Corsetti G, McKee M. Magnitude, demographics and dynamics of the effect of the first wave of the COVID-19 pandemic on all-cause mortality in 21 industrialized countries. *Nature Medicine*. 2020 Oct 14:1-0.
- Volk HE, **Perera F**, Braun JM, Kingsley SL, Gray K, Buckley J, Clougherty JE, Croen LA, Eskenazi B, Herting M, Just AC. Prenatal Air Pollution Exposure and Neurodevelopment: A Review and Blueprint for a Harmonized Approach within ECHO. *Environmental Research*. 2020 Oct 22:110320.
- Shaman J, Galanti M.** Will SARS-CoV-2 become endemic?. *Science*. 2020 Oct 30;370(6516):527-9.
- Casey JA**, Fukurai M, Hernández D, Balsari S, Kiang MV. Power Outages and Community Health: a Narrative Review. *Current Environmental Health Reports*. 2020 Nov 11:1-3.
- Pei S**, Dahl KA, **Yamana TK**, Licker R, **Shaman J.** Compound risks of hurricane evacuation amid the COVID-19 pandemic in the United States. *GeoHealth*. 2020 Dec;4(12):e2020GH000319.
- Elser H, Goldman-Mellor S, Morello-Frosch R, Deziel NC, Ranjbar K, **Casey JA.** Petro-risks and environmental distress in West Texas: Community perceptions of environmental degradation, threats, and loss. *Energy Research & Social Science*. 2020 Dec 1;70:101798.
- Gemmill A, Catalano R, Alcalá H, Karasek D, **Casey JA**, Bruckner TA. The 2016 presidential election and periviable births among Latina women. *Early Human Development*. 2020 Dec 1;151:105203.
- Nunez Y**, Gibson EA, Tanner EM, Gennings C, Coull BA, Goldsmith JA, **Kiourmourtzoglou MA.** Reflection on modern methods: Good practices for applied statistical learning in epidemiology. *International Journal of Epidemiology*, 2021
- Ziska LH.** Crop Adaptation: Weedy and Crop Wild Relatives as an Untapped Resource to Utilize Recent Increases in Atmospheric CO₂. *Plants*. 2021 Jan;10(1):88.
- Prah RK, Carrion D, Oppong FB, Tawiah T, Mujtaba MN, Gyaase S, Kwarteng A, Ae-Ngibise KA, Agyei O, Twumasi M, Agbokey F, Asante KP, **Jack D.** Time Use Implication of Clean Cookstoves in Rural Settings in Ghana: A Time Use Study. *International Journal of Environmental Research and Public Health*. 2021 Jan;18(1):166.
- Wang Y, **Perera F**, Guo J, Riley KW, Durham T, Ross Z, Ananth CV, Baccarelli A, Wang S, Herbstman JB. A methodological pipeline to generate an epigenetic marker of prenatal exposure to air pollution indicators. *Epigenetics*. 2021 Jan 21:1-9.
- Nardone A, Rudolph KE, Morello-Frosch R, **Casey JA.** Redlines and Greenspace: The Relationship between Historical Redlining and 2010 Greenspace across the United States. *Environmental health perspectives*. 2021 Jan 27;129(1):017006.
- Galanti M, Pei S, Yamana TK**, Angulo FJ, Charos A, Swerdlow DL, **Shaman J.** Social distancing remains key during vaccinations. *Science*. 2021 Jan 29;371(6528):473-4.
- Yang W, Kandula S**, Huynh M, Greene SK, Van Wye G, Li W, Chan HT, McGibbon E, Yeung A, Olson D, Fine A, **Shaman J.** Estimating the infection-fatality risk of SARS-CoV-2 in New York City during the spring 2020 pandemic wave: a model-based analysis. *The Lancet Infectious Diseases*. 2021 Feb 1;21(2):203-12.

PAST EVENTS

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](#).