

The Earth Institute at Columbia University presents  
**E.I. Teach: The Science of COVID-19**



Join us for the second installment of E.I. Teach, the Earth Institute's professional development series for K-12 educators. In this training session, we will aim to provide educators with information on the impacts of COVID-19 on education and learning and the origins and science of the virus. This live professional development opportunity will be hosted by scientific experts in the fields of public health and epidemiology.

The workshop will take place on Saturday, December 5 from 10:00am – 1:30pm ET. K-12 educators and administrators working in both formal and informal learning environments are encouraged to attend.

Registration is now open. Earn CTLE through Rockland Teachers' Center/Institute. Sign up here:

<https://www.mylearningplan.com/WebReg/ActivityProfile.asp?D=12361&I=3668534>

If you have questions regarding registration for CTLE, please contact [dstudnitzer@rockteach.org](mailto:dstudnitzer@rockteach.org)

If you have any questions about the event, please contact Cassie Xu ([cassie@ei.columbia.edu](mailto:cassie@ei.columbia.edu))

## Saturday, December 5 | 10:00am – 1:30pm ET

### 10:00am - Opening Remarks

*Cassie Xu, Associate Director, Non-Degree Education Programs and Outreach*

### 10:05am - Beyond Reopening Schools: Education and COVID-19

*Dr. Irwin Redlener, National Center for Disaster Preparedness*

This session will provide participants with insight into the long-term impacts of COVID-19 on education and learning, with a focus on circumstances in the United States.

### 11:00am: At the Root of It: How Viruses Emerge and Spread

*Dr. Maria Diuk-Wasser, Department of Ecology, Evolution, and Environmental Biology*

This session will introduce participants to the connections between infectious disease ecology and pandemics. Dr. Diuk-Wasser will explore how vector-borne and zoonotic diseases emerge and spread and how we can use the knowledge we have at hand to mitigate, prevent, and prepare for future public health disasters.

### 11:55am – 12:00pm: BREAK

### 12:00 – 1:15pm: COVID-19's Transmission Dynamics and What the Future Holds

*Drs. Jeffrey Shaman and Micaela Martinez, Mailman School of Public Health*

This joint session will begin with an overview of the epidemiological characteristics of the virus and why and how it became a pandemic. It will then explore the various types of immunity and vaccination options, as well as why certain households/communities are more impacted than others.

### 1:15 – 1:30pm: Closing remarks

Columbia University makes every effort to accommodate individuals with disabilities. If you require disability accommodations to attend this event, please contact Cassie Xu ([cassie@ei.columbia.edu](mailto:cassie@ei.columbia.edu)) at least 10 days in advance of the event.

## Speaker Bios



*Irwin Redlener*

Dr. Redlener is a recognized national leader in disaster preparedness in response to pandemics, and is currently working on the COVID-19 pandemic. He has also worked extensively with challenges facing migrant children on the southwest U.S. border. He is an expert in the public health ramifications of terrorism and large-scale catastrophic events. He and his team have developed major programs to enhance public health and health systems readiness with respect to disasters. He has written and spoken widely on the response to Hurricane Katrina, U.S. readiness for pandemics and the concerns of children as potential targets of terrorism. Dr. Redlener has also had more than three decades of experience providing healthcare to medically underserved children in rural and urban communities throughout the U.S. As founder and president of the Children's Health Fund, he is a renowned advocate for access to healthcare for all children. Dr. Redlener served as a principal developer and president of the new Children's Hospital at Montefiore in the Bronx. He has been a formal and informal adviser to the president and various cabinet members since 1993, over the last few years working with key members of the U.S. Congress on disaster preparedness and child health access. In 1993 & 1994, Dr. Redlener served as special consultant to the National Health Reform Task Force for the Clinton White House. He has taught medical students in rural Honduras and has led or assisted in international disaster relief in Central America and Africa. Dr. Redlener has also created a series of direct medical relief programs and public health initiatives in the Gulf region ravaged by Hurricane Katrina.



*Maria Diuk-Wasser*

Dr. Diuk-Wasser is interested in elucidating the environmental and anthropogenic factors driving the emergence of vector-borne and zoonotic diseases. Her research integrates laboratory, field and a range of modeling approaches to predict human disease risk. Her current focus is on how pathogen interactions at multiple scales (within host, population, community and regionally) influence the recent emergence of tick-borne pathogens in the United States. In endemic areas, she studies how human behavior and landscape modification influence human infection and disease. Her current research focuses on tick-borne pathogens, but she has also worked on West Nile virus, malaria, dengue and leptospirosis. Other research interests include landscape ecology, population and community ecology, evolutionary ecology, behavioral ecology and conservation biology.

## Speaker Bios



*Micaela Martinez*

Dr. Martinez is an infectious disease ecologist, currently an Assistant Professor at Columbia University in the Department of Environmental Health Sciences. She earned her Ph.D. in Ecology & Evolution in 2015 at the University of Michigan, followed by two years at Princeton University. Her primary focus is understanding the drivers of seasonality in infectious disease systems and the impact of circadian and seasonal rhythms on disease. Supported by the NIH Director's Early Independence Award, her current research aims to understand how ecology, demography, and physiology intersect to drive the transmission of epidemic-prone diseases, including poliomyelitis, measles, chickenpox, and SARS-CoV-2.



*Jeffrey Shaman*

Dr. Shaman focuses on climate, atmospheric science and hydrology, as well as biology, and studies the environmental determinants of infectious disease transmission and infectious disease forecast. For the former, Dr. Shaman investigates how hydrologic variability affects mosquito ecology and mosquito-borne disease transmission, how atmospheric conditions impact the survival, transmission and seasonality of pathogens, and, how meteorology affects human health, in general. For the latter, he is engaged in developing mathematical and statistical systems for generating forecasts of infectious disease outbreaks at a range of time scales. In addition, Dr. Shaman is studying a number of climate phenomena, including Rossby wave dynamics, atmospheric jet waveguides, the coupled South Asian monsoon-ENSO system, extratropical precipitation, and tropical cyclogenesis.