The Earth Institute at Columbia University presents

E.I. Teach: Climate Change in the Classroom

Join us for the Earth Institute's inaugural virtual professional development event for K-12 educators. "E.I. Teach: Climate Change in the Classroom," will prepare educators with the tools and content area expertise to begin to address climate change in their classrooms and engage students in learning about the climate system beyond textbooks and worksheets. Our live sessions will be hosted by our world-renowned climate experts and will be supplemented by additional readings and teaching resources.

Participants will be divided up into two cohorts: educators teaching at the K-5 levels and educators teaching at the 6-12 levels. Each cohort will participate in two consecutive half-day events from July 28-31. Certificates of participation will be provided to all participants.

If you are a K-5 educator, please use this registration link:
https://events.columbia.edu/go/EI_Teach_K_5

If you are a grade 6-12 educator, please use this registration link:
https://events.columbia.edu/go/EI_Teach_6_12

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

Grades 6-12 Educators: Tuesday, July 28, 2020 | 10:00am – 1:30pm EDT

10:00am - Opening Remarks
Cassie Xu, Director, Office of Education and Outreach, Lamont-Doherty Earth Observatory

10:05am - Keynote Presentation: The Warming Earth and How We Are Causing It
Dr. Jason Smerdon, Lamont Research Professor, Lamont-Doherty Earth Observatory

11:00am: Shrinking Glaciers, Growing Science
Dr. Jonny Kingslake, Assistant Professor, Earth and Environmental Sciences
In this session, Jonny will describe the fundamental processes underlying how ice sheets and glaciers grow and shrink, as well as outlining how these are described in computer models that predict the future of glaciers and ice sheets as the climate continues to warm. He will also demonstrate an app that will serve as a useful tool for giving students intuition about how ice sheets and glaciers behave.

12:00pm: We're On Thin Ice – Exploring the Thwaites Glacier in Western Antarctica
Margie Turrin, Director of Educational Field Partnerships, and Laurel Zaima, Education Program Assistant, Lamont-Doherty Earth Observatory
Why should we care about the Thwaites Glacier in Western Antarctica and how much and how fast it is changing? Join us to explore Thwaites below the ice, under the ocean, and back in time, in order to truly understand this doomsday glacier.

Grades 6-12 Educators: Wednesday, July 29, 2020 | 10:00am – 1:30pm EDT

10:00am: Empowering Climate Leaders with Immersive Learning Technologies
Dr. Allison Bridges, Adjunct Lecturer, School of Professional Studies, with special guest Travis Feldler, Founder, Techrow
This session introduces ways in which immersive virtual reality (VR) experiences can be designed to help students understand the fundamentals of climate change. Immersive learning technologies such as VR can engage students by both introducing climate science fundamentals and showcasing critical social justice issues using a narrative format that represents the experiences of all students.

11:00am: Scientists as Superheroes
Margie Turrin, Director of Educational Field Partnerships, and Laurel Zaima, Education Program Assistant, Lamont-Doherty Earth Observatory
Meet our superhero scientists from the Snow on Ice Project who are taking a new look at the Arctic climate to question if current warming conditions can actually stabilize the Greenland Ice Sheet. Learn about their superhero skills while they uncover the Ice Sheet's past.

12:30pm: Get the GIS of Climate Change
Dara Mendeloff, Geographic Information Specialist, Center for International Earth Science Information Network
Learn the basics of Geographic Information Systems (GIS), how scientists use it to gain valuable insights, and work with ArcGIS to understand the important role that GIS plays in understanding issues related to climate change and sustainable development. Participants will work with socioeconomic and environmental data and be introduced to how GIS helps scientists track, predict, and communicate important findings.

1:25pm – Closing Remarks
Cassie Xu, Director, Office of Education and Outreach, Lamont-Doherty Earth Observatory

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) at least 10 days in advance of the event.

Grades K-5 Educators: Thursday, July 30, 2020 | 10:00am – 1:30pm EDT

10:00am - Opening Remarks
Cassie Xu, Director, Office of Education and Outreach, Lamont-Doherty Earth Observatory

10:05am - Keynote Presentation: The Warming Earth and How We Are Causing It
Dr. Jason Smerdon, Lamont Research Professor, Lamont-Doherty Earth Observatory

11:00am: At the Core of It – Sediment Cores and Climate Change
Nichole Anest, Core Repository Curator, Lamont-Doherty Earth Observatory
Go on a virtual tour and get a sneak peek of 18,000 core samples taken from beneath the ocean floor. The collection in the Core Repository at Lamont-Doherty Earth Observatory has taken more than half a century to build and is a treasure trove of scientific data. Learn how and why we collect and use sediment cores to help us understand Earth's history, and how what we learn about the past can inform our predictions for our future.

12:00pm: We're On Thin Ice – How Fast and How Much?
Margie Turrin, Director of Educational Field Partnerships, and Laurel Zaima, Education Program Assistant, Lamont-Doherty Earth Observatory
Thwaites is a 'threshold glacier' and is extremely vulnerable to collapse. When it does, it will release additional ice to flow into the ocean, raising sea level significantly. Join us to explore Thwaites below the ice, down under the ocean, and back in time, in order to truly understand this doomsday glacier.

Grades K-5 Educators: Friday, July 31, 2020 | 10:00am – 1:30pm EDT

10:00am: Planning for Urban Resilience
Dr. Allison Bridges, Adjunct Lecturer, School of Professional Studies
To solve global problems like climate change, we need to give students the tools for understanding both how they impact their environment and how their environment impacts them. This session offers suggestions for using games, design experiences, project-based learning, and neighborhood exploration to teach children how we use science to design resilient and low-carbon cities.

11:00am: Trees Don't Lie – Dendrochronology and the Environment
Dr. Caroline Leland, Science Fellow and Lecturer, Earth and Environmental Sciences, and Rose Oelkers, PhD Candidate, Lamont-Doherty Earth Observatory
Learn about how tree rings are a powerful tool to learn about climate and environmental changes over hundreds or thousands of years. Get your students pondering how and when trees grow, the environmental record in the rings, and the essential ecosystem services that trees and forests provide.

12:00pm: Scientists as Superheroes
Margie Turrin, Director of Educational Field Partnerships, and Laurel Zaima, Education Program Assistant, Lamont-Doherty Earth Observatory
Meet our superhero scientists from the Snow on Ice Project who are using their "super" science skills to dig into the past. What can we learn from fossilized plankton, how do we find out more about the past sea ice cover, and what messages can we find in buried mud?

1:25pm – Closing Remarks
Cassie Xu, Director, Office of Education and Outreach, Lamont-Doherty Earth Observatory

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Speaker Bios

Nichole Anest

Nichole is the Curator of the Core Repository at Lamont-Doherty Earth Observatory, which contains one of the world's most unique and important collections (approximately 20,000) of scientific samples from the deep sea. After graduating from Rutgers University with a degree in Environmental Science and Geology, Nichole started her journey at the Repository by picking forams and doing grain sized analyses on core samples. She is now an expert "core describer" and documents everything we need to know about a new core sample, such as its color, texture, and composition. In her role, Nichole archives new samples, runs analytical equipment, digitizes analog records, and does outreach for the lab.

Allison Bridges

Allison Bridges recently completed a Postdoctoral Fellowship with the Earth Institute and is an Adjunct Lecturer at Columbia's School of Professional Studies. Holding a Ph.D. in Urban Planning and Policy, her research explores strategic sustainability planning, post-disaster reconstruction for climate resiliency, and spatial analytic approaches to equitable urban land use. She has designed and taught graduate level courses in urban sustainability and developed an after-school environmental-STEM enrichment program for late elementary and middle school with support from National Geographic.

Jonny Kingslake

Jonny Kingslake is an Assistant Professor at Lamont-Doherty Earth Observatory, Columbia University. His research focuses on the flow of ice and water in ice sheets. He has conducted fieldwork in Norway, Alaska, Greenland, and Antarctica and uses a combination of mathematical models, satellite data and field observations to examine fascinating and important processes that control how the ice sheets will respond to climate change.

Speaker Bios

Caroline Leland

Caroline Leland is a Science Fellow and Lecturer in the Department of Earth and Environmental Sciences at Columbia University. As a dendrochronologist, she is interested in using annual records of tree growth to reconstruct climatic and ecological conditions of the past. Her graduate school and ongoing research involves studying the physiology, morphology, and growth histories of long-lived trees from North America and Asia, some of which are several thousands of years old.

Dara Mendeloff

Dara is a Senior Geographic Information Specialist and an Environmental Educator. Her work at the Center for International Earth Science Information Network (CIESIN), a center at the Earth Institute, Columbia University, supports interdisciplinary research projects involving the integration of socioeconomic and environmental data to create data and map products, and applications for distribution to comprehensive and diverse user communities. Dara's research focus is on local, regional and global geospatial data management and applications for sustainable development.

Rose Oelkers

Rose Oelkers is a PhD candidate in the Tree-ring Lab at Lamont-Doherty Earth Observatory of Columbia University. She has been studying the growth rings of trees from many places around the world, including Alaska, Bolivia, and Mongolia. Rose is interested in studying many properties of tree rings, including their reflective properties and stable isotopes, for understanding how climate has varied in the past. Currently, her PhD thesis is focused on developing new tree-ring data in Bolivia and Peru to assess how tropical species are responding to environmental change.

Speaker Bios

Jason Smerdon

Jason Smerdon is a Lamont Research Professor at the Lamont-Doherty Earth Observatory, member of the Earth Institute faculty, and co-director of the Earth Institute's Undergraduate Program in Sustainable Development, all at Columbia University. The broad objective of Smerdon's research is to characterize and understand climate variability and change on multi-decadal to centennial timescales. His recent work has focused on hydroclimate variability and change, with an emphasis on multidecadal droughts in North and South America. Smerdon received a B.A. in Physics from Gustavus Adolphus College and a Ph.D. in Applied Physics from the University of Michigan.

Margie Turrin

Margie is Director of Educational Field Programs at Lamont-Doherty Earth Observatory where for the last 20 years, she has used her training as an ecologist to develop and deliver science education for formal and informal educators. She is committed to field-based research and teaching. She has worked extensively on the Hudson River and marine systems as well as field projects in both Greenland and Antarctica that focused on climate research and linking changes in these regions to climate and polar literacy.

Laurel Zaima

Laurel is a marine biologist and an environmental educator. She works on education initiatives that communicate science research to the general public, K-12 and undergraduate school groups, and teachers. Her primary educational focus is on connecting the public to the Hudson River and their local waterways through place-based education and fieldwork. She also teaches about climate change and sea level rise with a strong emphasis on the changes occurring in the polar regions.

Here are some answers to frequently asked questions (FAQs). If you have any additional questions about the event, please contact Cassie Xu (cassie@ei.columbia.edu)

1. Is registration required?

   Yes, registration is required for the event. This is a fee-based event with reduced pricing options available. Once participants register, a confirmation email will be provided.

2. What's included in the registration price?

   The registration price includes access to the live event as well supplemental resources, lesson plans, and recordings to all of the sessions.

3. What forms of payment are accepted?

   We accept payment online with all major credit cards. If requested, we can provide a receipt. Please note that with remote operations, we will be unable to accept check payments.

4. What if I need to cancel my registration?

   Cancellations will be accepted up until July 21 for a full refund. If cancellations are requested after July 21, a 10% processing fee will be charged.

5. When does registration close?

   Registration will be open up until 8:00am EDT on July 28 for the training event for educators teaching at the grade 6-12 levels. Registration will be open until 8:00am EDT on July 30 for the training event for educators teaching at the K-5 levels.

6. What if I cannot attend on these dates?

   We will record all our sessions and make them available for purchase after the live event is complete. If you cannot attend the live events and would like to purchase the recordings, please let us know and we will share that information when it becomes available.

7. What platform will be used for this professional development event?

   We will be utilizing Zoom for all of these sessions.

8. Will I receive anything to document my participation?

   Yes, all participants will receive a certificate of participation along with the number of training hours completed.