# **ABOUT DEES**

The Department of Earth and Environmental Sciences (DEES) hosts one of the top-rated earth and environmental science programs internationally. Faculty from all over the world bring their expertise and knowledge to our classrooms preparing students to take on the current challenges facing earth and humanity. The program provides an understanding of the natural functioning of our planet and considers the consequences of human interactions with it. It is designed to instill a comprehension of how the complex earth systems work, at a level that will encourage students to think creatively about how to address multidisciplinary environmental problems.

With climate change rapidly reshaping the earth, it has never been a more crucial time to train the next generation of scientists in the earth and environmental science fields. Students will graduate with a degree that readies them to think critically and tackle the problems of Earth's unpredictable future.

The breadth of material covered in the program provides an excellent background for students to continue on to careers in various fields or graduate school in the earth and environmental sciences. The skills developed in the program can open up many career paths such as law, business, environmental consulting, research, public policy, teaching, and journalism.



Field trip to the Newark Basin



Field trip to Death Valley, California



Field trip to Greenbush, Maine

Director of Undergraduate Studies: **Meredith Nettles & Kerry Key** 

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Department of Earth & Environmental Sciences Columbia University

#### COURSE LIST

Dinosaurs & the History of Life Global Warming for Global Leaders Death Valley Field Excursion Earth: Origin, Evolution, Processes, Future Oceanography Environmental Risks & Disasters Earth's Resources & Sustainable Development Science for Sustainable Development Earth's Environmental Systems: The Climate System Earth's Environmental Systems: The Solid Earth System Earth's Environmental Systems: The Life System Field Geology (Italy/Barbados) Geochemistry for a Habitable Planet Climate Physics Climate Biogeochemistry **Climate Extremes** Solid Earth Dynamics Computational Earth Science Introduction to Atmospheric Science Chemical Geology Humans and the Carbon Cycle Climate Thermodynamics/Energy Transfer Global Assessment-Remote Sensing Geodynamics Geochronology & Thermochronology Intro to Mineralogy Geophysical Fluid Dynamics Glaciology Sedimentary Geology Crustal Deformation Sea Level Change Earth's Deep Interior **Terrestrial Paleoclimate** Paleobiology & Earth's System History Biogeochemistry Plant Ecophysiology Air-Sea Interaction Intro to Igneous Petrology Wetlands & Climate Change Chemistry of Continental Waters Isotope Geology I Stable Isotope Geochemistry Earth-Human Interactions Paleoceanography **Biological Oceanography** Intro to Atmospheric Chemistry Physical Oceanography Chemical Oceanography Ocean Dispersion & Mixing Earth's Oceans & Atmosphere Cenozoic Paleoceanography Plate Tectonics Intro to Seismology



### **MAJORS &** CONCENTRATIONS

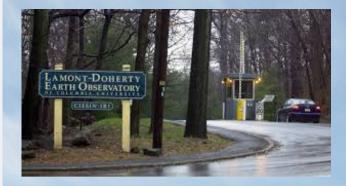
The **Earth Science** major provides an in-depth study of the solid and fluid Earth, its history, and ancient and modern geological processes

The **Environmental Science** major focuses on the interaction between Earth's physical environment and the biosphere, anthropogenic processes like pollution and global climate change, and environmental remediation.

The **concentrations** in Earth and Environmental Science are designed to give students deeper knowledge of these fields than that provided by introductory courses.

# **FIELD TRIPS**

The department hosts field trips to bring lessons from the classroom to the outdoors. We have a field-geology course for majors offered annually, typically in Italy or Barbados. We also offer trips to California's Death Valley and other destinations for first and second-year students. Our student-ran undergraduate club also plans various events such as a Central Park Geology trip and overnight camping trips.



### RESEARCH

The Department of Earth and Environmental Sciences shares staff and facilities with Columbia University's world renowned research institution, the Lamont-Doherty Earth Observatory. Since its founding in 1949, Lamont has been a leader in the earth sciences.

The Department is also affiliated with the NASA Goddard Institute for Space Studies (GISS) and the American Museum of Natural History (AMNH).

Undergraduate students can participate in research alongside professors and graduate students at Lamont, NASA GISS, and AMNH.

