In recent decades, the Earth Sciences have undergone major changes, stimulated in part by the reinterpretation of Earth history and processes within the context of plate tectonics. The past 15 years have been exciting, as new understanding of the interconnectedness among air, water, and solid Earth has come into sharper focus. We address key topics ranging from environmental contaminants in local waterways to the evolution of our planet.

The Department of Earth and Environmental Sciences offers the study of Earth’s component materials, the development of its structures and surface features, the processes by which these change with time, and the origin, discovery, and protection of its resources—water, fuels, and minerals. Our students use techniques ranging from seismological and satellite-tracking investigations of crustal motions to state-of-the-art geochemical instruments.

**Degrees Offered**
- Environmental Science  B.S.
- Geology       B.S., M.S., Ph.D.
- Hydrogeology  B.S.

**Equipment & Facilities**
- Electron Microprobe Laboratory
- Corman Center for Mass Spectrometry
- Raman and Fourier Transform Infrared Spectroscopy
- Atomic Force Microscope
- High Pressure-Temperature Experimental Laboratory
- Lapidary Laboratory
- X-ray Fluorescence
- Geophysics Laboratory

**Major Areas of Graduate Research**
- Environmental Geoscience
- Environmental Informatics
- Geochemistry of the Earth’s Interior
- Metamorphic Petrology and Tectonics
- Paleoclimate and Micropalaeontology
- Solid-Earth Geophysics

**New York Center for Astrobiology**

The New York Center for Astrobiology is devoted to investigating the origins of life on Earth and the conditions that lead to formation of habitable planets in our own and other solar systems. Supported by NASA, the center is a member of the NASA Astrobiology Institute (NAI), and is a partnership between Rensselaer and the University at Albany, Syracuse University, the University of Arizona, and the University of North Dakota.
Earth and Environmental Sciences

Faculty and Research Areas

Richard Bopp
Associate Professor
Environmental Geochemistry

Daniele Cherniak
Research Professor
Experimental Geochemistry and Accelerator Spectrometry

Peter Fox
Professor and Tetherless World Constellation Chair
Solar and solar-terrestrial physics, ocean and environmental informatics, computational and computer science, digital humanities, and distributed semantic data frameworks

Mimi Katz
Assistant Professor
Paleoceanography and micropaleontology

Laurie Leshin
Professor and Dean
Planetary science, astrobiology, meteoritics

Steven Roecker
Professor
Seismology, geophysics, tectonics

Karyn Rogers
Assistant Professor
Geochemical reaction energetics, geomicrobiology, and microbial ecology in extreme ecosystems; astrobiology and planetary habitability

Frank Spear
Department Head and Edward P. Hamilton Distinguished Professor
Metamorphic petrology, thermochronology, tectonics

Bruce Watson
NAS, Institute Professor
Transport properties, numerical modeling, kinetics, ion-beam analysis, ion implantation, inorganic geochemistry, high-pressure science, Earth fluids, early Earth, climate proxies.

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