

GEOSCIENCES

FACULTY POINTS OF PRIDE

- Christopher Condit is a geology instructor for NASA Astronaut Candidates.
- Piper Gaubatz named 2015 Interdisciplinary Studies Institute Fellow.
- Rob DeConto, a leading expert on the impact of ice sheet collapse on global and regional sea levels, uses innovative research involving coupled climate-ice sheet models.
- Mike Williams and Mike Jercinovic operate the world-class Electron Microprobe Facility; its signature UltraChron Microbeam produces the most accurate ages of tectonic events using the smallest microbeam.
- Jon Woodruff is an international expert in the study of past tsunami and hurricane history in Japan and the U.S. east coast.
- Michele Cooke is developing new models to improve earthquake prediction in California based on her studies of fault mechanics. She serves on the Board of Trustees of the Southern California Earthquake Center.

- Steve Burns is a world expert in understanding monsoon variability based on research using stalactites and stalagmites in tropical and subtropical caves around the globe.
- Isla Castaneda is processing samples from a Siberian lake that offer data spanning 800,000 years, to produce the first high-resolution paleotemperature record from the Arctic, with a precision equal to the EPICA ice cores of Antarctica.
- David Boutt and Jonathan Woodruff work with federal, state, and local officials on the Commonwealth's largest ecological restoration project, the Cranberry Bog restoration at Tidmarsh Farms, Plymouth, MA.
- Michael Rawlins named 2015 Public Engagement Project Fellow.
- Eve Vogel and Christina Hatch continue their "River Smart Project" for western Mass.

EDUCATION

- BS in Geology or Earth Systems, BS/BA in Geography, and graduate programs provide students with the close faculty interaction characteristic of a small school and the extensive research facilities and projects found at a major research university.

- Isla Castaneda, Rob DeConto, Steve Burns, and Julie Brigham-Grette, train teachers in Earth system science and climate research through lake coring workshops
- Ray Bradley's *Paleoclimatology*, in its 3rd edition, remains the most popular textbook worldwide on the topic.

LEADERSHIP & OUTREACH

- Home to the State Geologist, Steve Mabee and the Mass. Geological Survey, whose mission is to understand and the state's water, energy and public health issues, provide geologic hazard identification and mitigation, and provide guidance around hazardous situations related to climate change.
- The Northeast Climate Science Center provides scientific information, tools, and techniques that managers and other parties can use to anticipate, monitor, and adapt to climate change in the Northeast region.
- The Climate System Research Center conducts research focused on the climate

system, climatic variability and global change issues from contemporary to paleoclimatic and paleoenvironmental periods. Research findings impact public policy and environmental planning decisions.

- The Marvin Rausch Mineral Gallery holds over 250 international mineral specimens, one of the finest collections in the U.S.
- Mike Williams is a principal investigator for the Trail of Time that guides visitors in Grand Canyon National Park to explore and understand the magnitude of geologic time.

BY THE NUMBERS FY15

Tenure-track faculty	19
Lecturers	3
Postdoctoral fellows and Research associates	9
Undergraduate majors	99
Joint Environ Science majors	250
Graduate students	68
Research awards	\$9.23M

RESEARCH AREAS

Earth Dynamics:

Analytical petrology, tectonics, structure, fault mechanics and Geochemistry, cutting-edge geological dating using the world's most powerful electron microprobe.

Global Climate Change and Surficial Processes :

Paleoclimate and Quaternary research involving all aspects of the surficial Earth as a system, including biogeochemistry, stable isotopes, sediment geochemistry, coastal processes, geomorphology, and climate modeling on all times scales.

Water and the Environment :

Hydrogeology, water resources, water chemistry, ground water modeling, state and community needs and issues, and water politics and governance, all of which critically impact decision-making for sustainability and environmental quality issues.

Geography, Society and Environment:

Third world and community development, resource management, public policy, urban planning, and spatial data analysis. Significant opportunities now exist in fields addressing sustainability, global change, natural hazards, human impacts on natural environments, and environmental policy and resource management.