Department of Environmental, Earth and Atmospheric Sciences
Students in the Environmental, Earth and Atmospheric Sciences are prepared for meaningful career opportunities in the public and private sectors and gain critical skills to successfully navigate the ever-changing job market.

Students have many ways to enrich their learning experience. Student-friendly spaces in the department allow participants to gather, learn and interact with one another. Interested students may also participate in the student chapter of the American Meteorological Society, and those who meet the guidelines may join Sigma Gamma Epsilon, the national earth science honor society. The Society of Environmental Scientists provides an opportunity for students to become involved in community-based activities. Students participate in the University’s co-op program and internships and often work with faculty members on a variety of research projects.

“Since our classes were smaller, everyone knew one another and the faculty were ready to help with any problems we encountered. I think the one-on-one attention we received helped bring confidence to our forecasts and that confidence, in turn, continued into my professional career.”

—Sarah Wroblewski, meteorologist, WBZ-TV, Boston
The Learning Environment

Environmental, earth and atmospheric sciences students will find the department warm and welcoming. The faculty is committed to the success of students, offering small class sizes—generally fewer than 20—for individual attention. Courses are taught by full- and part-time faculty, and carefully chosen graduate students who teach some lab sections. Students gain a solid understanding of science and expertise for the real world. Student interaction is strongly encouraged—peers can make great teachers—and the University provides the space and opportunity to make it happen.
Bachelor’s in Environmental Science

The B.S. in Environmental Science is designed to prepare students for a wide variety of careers. The program’s underlying theme is environmental change, and all students take a common set of courses to provide a broad overview of the interactions between humans and earth systems. Then, students select an option that matches their interests and career objectives.

Atmospheric Science

This option adheres to the American Meteorological Society’s curriculum for a degree in meteorology. This science and math based program prepares students for both entry to the job market and graduate school. About half of the graduates of the program continue on directly to graduate school. Most meteorology classes are taught in the weather laboratory, a modern classroom specifically designed for this option.

Environmental Geoscience

This option gives students a solid background in geology and environmental sciences. Elective courses can be selected from geoscience, biology, and chemistry, and allow students to tailor coursework to their specific areas of interest.

Environmental Studies

This option is designed for students who want a broader understanding of the environment. The core curriculum is the same as the environmental geoscience option, but instead of taking additional science courses, students select offerings from the humanities, social sciences, management and Science, Technology, Engineering, and Math (STEM) teaching minor. The management focus, designed in collaboration with the Manning School of Business, provides students with the necessary skills to enter the corporate workforce. The STEM minor provides the coursework necessary for certification as a science teacher.

Faculty members are engaged in the highest level of national and international teaching and research.
Master’s of Science (MS) and Professional Science Master’s (PSM)

These options are multi-department degree programs that include two options: atmospheric science and environmental geoscience. The MS requires 30 credit hours, and can be earned with both a thesis/research project option and a non-thesis option. The PSM requires 34 credit hours, combines classes in science with management courses, and requires an internship. The PSM is designed for people who are already working and want to expand their expertise and develop management skills.

The MS and PSM students take courses in their specialty areas, plus policy and economics. Environmental geoscience students also take classes from the College of Engineering. Past experience shows that graduates hold a variety of positions throughout their careers: the University’s programs are designed to ensure graduates have the skills and understanding to succeed in all of them.
Faculty Research Interests

Faculty are engaged in research at the national and international levels. Some examples include:

**Profs. Barlow** and **Qian** are experts in climate modeling, advising master’s and Ph.D students,

**Prof. Colby** analyzes severe weather, supervising numerous MS and research thesis projects,

**Prof. Swanger** works in Antarctica and is an expert on the glacial history of Antarctica,

**Prof. Eby** is a geochemist interested in igneous petrology and forensic geology.

*More information is found on faculty web pages.*

Facilities

Most atmospheric science courses are given in the weather laboratory, a fully-equipped modern classroom with multiple computer stations for student use. A dedicated computer laboratory is designated for climate research, and the department library serves as a gathering spot for students. Environmental geoscience laboratory courses are given in a specially-designated lab, and students in some classes use the department research lab for environmental geochemistry measurements and the preparation of rock and mineral specimens for analytical work.

The University is home to an extensive collection of rock, mineral and fossil collections for teaching and research. Faculty also make extensive use of the University’s research reactor and modern gamma ray spectroscopy laboratory for instrumental neutron activation analysis.
Internships and Scholarships

Students may participate in the College of Sciences co-op program. The program is selective, involving formal course work to prepare students for the job market. Between junior and senior year, students work for a company in a position relevant to their interests. There are also internship opportunities—usually unpaid—arranged at various companies. The College of Sciences has a research co-op program where qualified students do paid research with a member of the faculty. The University, College of Sciences and the department offer a variety of additional scholarships.

Post-Graduation Opportunities

Many of our graduates have continued on to earn graduate degrees at top universities.

Atmospheric science graduates have multiple employment opportunities. While on-air meteorologists are the most visible, many others work for the government and in private industry. Graduates work for the Air Force, the National Weather Service and private companies that provide weather data. Graduates are also involved in positions including forecasting ozone levels and modeling air pollution emissions for power plants.

Environmental geoscience and environmental studies graduates work for government agencies, towns, the Massachusetts Department of Environmental, the Massachusetts Environmental Police, the United States Geological Survey, U.S. Fish and Wildlife Service and the EPA. Others pursue teaching, while still others become lawyers specializing in environmental issues. Positions include exploration geologists, wetlands specialists, occupational health and safety specialists and environmental assessment and remediation experts.

Faculty

Assoc. Prof. Mathew Barlow
Prof. Frank Colby
Prof. Nelson Eby
Assoc Prof. Jian Hua Qian
Asst. Prof. Kate Swanger
Lecturer Lori Weeden
Prof. Paul Song
Professor Emeritus Arnold O’Brien