Geology

"Even the most difficult concepts become clearer when you can stare at the rock, touch it, sketch it, follow it through the woods, hammer it, and examine it at length with a hand lens."
Emily Walsh, Geology Professor

As the world faces declining natural resources (for example, accessible oil and water), climate change, and an increasing population, a major in geology provides particularly salient training to address these issues.

Cornell's geology department was the first in Iowa, and Cornell is the only liberal arts college in Iowa to offer a four-year degree in geology. Department faculty believe strongly in a hands-on approach to learning science, and Cornell's One Course At A Time schedule allows them to include field and laboratory opportunities in every course, ranging in length from a day to an entire block.

Many entry-level courses are available, including Physical Geology, Climate Change, Marine Science, Earth Science, and Iowa Geology: The Story Under Your Feet.

The basic curriculum of upper-level courses, along with supporting coursework in other sciences and mathematics, prepares graduates for entry-level occupations in government and industry or for graduate-level education. The curriculum also prepares students who choose careers in earth science teaching.

A geology degree offers many possibilities after college, and Cornell alumni pursue careers in a wide range of fields, including water consulting, mining, the oil industry, the national parks, education, and research. Many graduates continue to study geology in respected graduate programs, such as those at the University of Chicago, Yale, Vanderbilt, the University of California, and the University of New Mexico.

BENEFITS OF ONE COURSE AT A TIME

The best place to learn about geology is in the field or in the lab, where students can interact with the earth and with earth materials. With the One Course At A Time schedule, faculty have the flexibility to take students out of the classroom, repeatedly, on trips of varying length; significant field study is not limited to spring, winter, or summer breaks.

Geology majors are typically encouraged (or required) to take additional summer field courses offered by larger institutions; however, students at Cornell College have the advantage of participating in a full-fledged field course during the school year. Two off-campus field courses are offered each February: in the Bahamas (every year), and in New Zealand (in alternate years).

CURRICULUM HIGHLIGHTS

Another advantage of the One Course schedule is that geology majors all have the flexibility to perform at least one intensive block of hands-on research with a faculty member. This research comprises their major capstone course: Geological Problems.

Before the capstone block begins, students read background literature and prepare a brief research proposal. Throughout the block they meet regularly with their faculty mentor and with other students in the research group. They continue to read the literature while they carry out their research, including data collection, manipulation, and interpretation. At the end of the block students write a comprehensive term paper, and all students present their data orally at the annual Cornell College Student Symposium.

Many students choose to extend their research over more than one block, and some pursue research with their faculty mentor over the summer by

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Faculty Bios & Courses

RHAWN DENNISTON
Professor of Geology

Teaches courses that include Climate Change, Environmental Geology, and Geology of New Zealand. With Cornell students, he studies stalagmites and ancient coral to understand prehistoric climate conditions in various regions of the world, including Portugal, Australia, New Zealand, and the Western U.S. He and his students have published articles in leading journals including Geology and Quaternary Science Reviews. He chairs the environmental studies program. Ph.D. in Geosciences, University of Iowa.

KELSEY FESER
Visiting Assistant Professor of Geology

Teaches courses that include Paleontology, Historical Geology, and Sedimentology. She is a paleoecologist whose research interests lie in using marine clams and snails to better understand both natural and human-induced environmental change. Ph.D. in Paleontology, University of Cincinnati.

participating in the Cornell College Summer Research Institute. These students may also present their research at regional or national geological conferences.

The ability to successfully complete a research project is an important skill that is highly valued by future employers. Any student who has completed a research block understands the necessity for self-motivation and self-discipline and has the tools to succeed.

RESEARCH

Students are actively engaged in research projects with Cornell faculty throughout the year and during the summer, and many students are accepted into competitive summer research experiences or internships.

Students have had recent research opportunities all over the United States. A few recent examples include:

- Keck Geology Consortium
- University of Arizona
- University of Texas
- University of Northern Iowa
- Johns Hopkins Applied Physics Lab

INTERNSHIPS/FELLOWSHIPS

Students are encouraged to study on-site with professional geologists through internship opportunities. Recent internship topics include volcanic processes with the United States Geological Survey (USGS) at Mount St. Helens and in Hawaii; petroleum exploration methods with oil companies in Oklahoma and Texas; land and soil management with the Natural Resources Conservation Service; water resources with the USGS in eastern Iowa; and energy resources with Alliant Energy. These internships not only enhance the education of Cornell students, but they also have led to graduate research placements and professional employment.

Other recent internship examples include:

- GeoCorps, Oregon Caves National Monument
- Ice Age Trail in western Wisconsin
- Iowa Geological Survey
- Iowa Department of Natural Resources
- Baruch Institute for Marine and Coastal Studies at the University of South Carolina
- University of Western Australia
- Field Museum of Natural History in Chicago

AFTER CORNELL

ALUMNI CAREERS

Geology majors leave Cornell able to pursue a wide variety of careers within and outside of the sciences. Here are a few examples of what Cornell alumni are doing now:

Facilitator at Museum of Science and Industry, Chicago, Illinois (Class of 2015)

Trip leader at Camp Timberlane, Tucson, Arizona (Class of 2015)

Fish & wildlife biologist assistant at U.S. Fish and Wildlife Service, Moline, Illinois (Class of 2014)

Geologist and cave tour guide at Oregon Caves National Monument, Oregon (Class of 2013)

Geotechnical and construction technician II at American Engineering Testing, Inc., Duluth, Minnesota (Class of 2012)

Well-site geologist at Columbine Logging, Inc., Denver, Colorado (Class of 2011)

Scientist and field geologist at CB&I, Cincinnati, Ohio (Class of 2011)

Visiting assistant professor at Geology Department, Cornell College, Iowa (Class of 2010)

Exploration geologist at Shell, Texas (Class of 2008)

Geologist and education park tour guide at National Park Service for the Grand Canyon, North Rim, Arizona (Class of 2008)

Geologist at Burns & McDonnell Engineering, Inc., Mission, Kansas (Class of 2006)

Grand research consultant at Lahaina Restoration Foundation, Lahaina, Hawaii (Class of 2006)

Assistant professor, University of Northern Iowa, Cedar Falls, Iowa (Class of 2005)

Geologist at Anadarko Petroleum, The Woodlands, Texas (Class of 2005)

Environmental scientist at U.S. Environmental Protection Agency, Chicago, Illinois (Class of 2003)

GRADUATE SCHOOLS ATTENDED

Ph.D., paleoclimatology, Columbia University (Class of 2016)

M.S., geosciences, University of Wisconsin-Milwaukee (Class of 2014)

M.S., geological sciences, University of New Hampshire (Class of 2014)

Ph.D., geological sciences, University of South Florida (Class of 2013)

Ph.D., earth sciences, Syracuse University (Class of 2012)

Ph.D., geological sciences, New Mexico State University (Class of 2012)

M.S., geological sciences, University of Minnesota-Duluth (Class of 2012)

BENJAMIN GREENSTEIN
Professor of Geology

Teaches courses that include Marine Science, Invertebrate Paleontology, and Modern and Ancient Carbonate Systems of the Bahamas. He is currently engaged in a three-year comparative study of modern and Pleistocene reef coral community composition in coastal Western Australia, which has resulted in an article in the international journal Global Change Biology. He also collaborates with students and biology faculty on joint studies of fire coral in the Bahamas. Ph.D. in Geology, University of Cincinnati.

EMILY WALSH
Associate Professor of Geology

Teaches courses that include Mineralogy, The Origin of Mountains, and Geology of the National Parks. Her research focuses on the formation of mountain ranges and the mechanisms involved in subduction zones. In particular, she and her students study the metamorphic reactions, geochronology, and deformation of ultrahigh-pressure rocks from Western Norway to better understand the tectonic history of the Scandinavian Caledonides. Ph.D. in Geological Sciences, University of California at Santa Barbara.