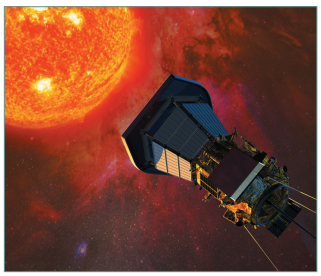
University of New Hampshire

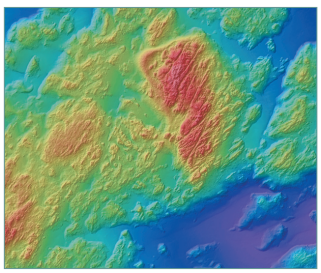
Institute for the Study of Earth, Oceans, and Space

From Deep Space to the Ocean Depths…

THE INTERDISCIPLINARY RESEARCH at the University of New Hampshire Institute for the Study of Earth, Oceans, and Space (EOS) places it in the forefront of academic centers offering opportunities for students to work alongside distinguished faculty on high-level research projects.

Our researchers, faculty, staff, and students have expertise in space science, solar terrestrial theory, engineering, atmospheric chemistry, ocean dynamics and chemistry, biogeochemistry, climate change, paleoclimatology, forest and wetland ecology, hydrology, marine science, and remote sensing of terrestrial and ocean ecosystems.





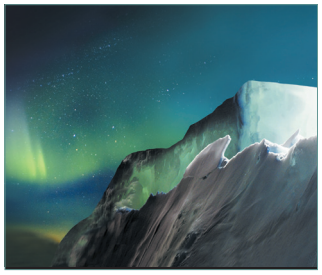
Project collaborations are local to international in scope. EOS faculty can be found in the pages of *Science* and *Nature,* on Capitol Hill briefing policymakers on major science issues, and working with students on the ice sheets of Greenland, the forests of North and South America, the waters of the North Atlantic Ocean, and in laboratories designing precision instruments for spacecraft and analyzing data from the latest space mission.

EOS Projects

EOS SCIENTISTS AND STUDENTS explore processes on the Sun, solar influences on Earth and its magnetosphere, the chemistry and dynamics of the atmosphere, changing climate, and large-scale ecosystems in terrestrial and marine environments—emphasizing impacts on and by human activities.

They use satellites, aircraft, and ships to investigate some of the most important and inaccessible places in the universe, in our solar system, and on our planet. Current projects include:

- Designing, building and operating major instruments on NASA satellites to study solar-terrestrial physics—including MMS, STEREO, GOES, LRO and RBSP satellite missions—and phenomena at the edge of the solar system—the IBEX mission
- Participating in a multi-institutional scientific team analyzing data from NASA's Earth Observing System
- Expanding our ability to monitor marine ecosystems using Earth-observing satellites
- Measuring the retreat of Greenland glaciers using global-positioning sensors
- Probing deeper into the fundamental workings of our universe using theoretical plasma physics, solar and heliospheric physics, magnetospheric physics, and plasma astrophysics
- Studying regional air quality, meteorology, and climatic phenomena.



EOS Facts

- EOS is UNH's largest research enterprise and receives more than $41 million each year in external research support from NASA, NOAA, NSF, and other federal agencies.
- In recognition of the Institute's two decades of world-class research and graduate education, EOS became UNH's first "University Institute" in 2006.
- UNH is ranked a "high-impact university" in forestry, geoscience, and environmental science citations. ScienceWatch (ESI) listed UNH as #1 in "citation impact" for forestry (2004-08) and geoscience (1996-2007) publications. In a review of citations for climate change research papers 1999-2009, UNH was in the company of NASA, NOAA, NCAR, Stanford, Columbia, and Princeton for the top-ranked international institutions. EOS researchers figure prominently in contributing to all rankings.

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EOS Research Centers

THE MORE THAN 275 FACULTY, STAFF, AND STUDENTS of the Institute for the Study of Earth, Oceans, and Space (EOS) are affiliated with one of our four research centers. The centers provide opportunities for interaction and collaboration in small groups of researchers having similar interests, as well as specialized administrative and technical support. The Institute's unique design also leads to interdisciplinary cooperation on numerous projects within individual centers.

EARTH SYSTEMS RESEARCH CENTER

The Earth Systems Research Center is dedicated to understanding the Earth as an integrative system, through studies that cross traditional academic boundaries and reach all corners of the globe. Our scientists study Earth's ecosystems, atmosphere, water and ice using field measurements, remote sensing and mathematical models. Emphasis is placed on basic science, the role of humans in environmental change, and a systems-based sustainability approach to studying coupled human-natural systems. Our faculty and graduate students work jointly with the department of Natural Resources and the Environment, the department of Earth Sciences, and the Natural Resources and Earth System Science (NRESS) Ph.D. program.

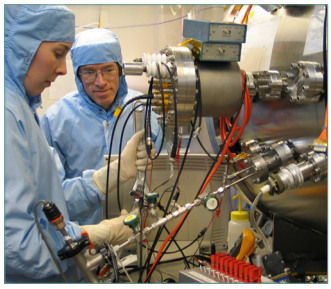
SCHOOL OF MARINE SCIENCE AND OCEAN ENGINEERING

The School of Marine Science and Ocean Engineering is an interdisciplinary school addressing today's ocean and coastal challenges through graduate education, research, and community engagement. With strengths in Oceanography, Marine Biology, and Ocean Engineering, the school's faculty and programs have national/international reach and are fully engaged in regional issues within the Gulf of Maine. These efforts are supported through specialized facilities including the Jere A. Chase Ocean Engineering Laboratory, the Jackson Estuarine Laboratory, the Judd Gregg Marine Science Pier and Laboratory, the Shoals Marine Laboratory, and a diverse fleet of research vessels.

OCEAN PROCESS ANALYSIS LABORATORY

Research in the Ocean Process Analysis Laboratory focuses on physical, geochemical, and biological processes in the Gulf of Maine, Gulf Stream, and North Atlantic. Faculty and students are affiliated with the Departments of Earth Sciences or Natural Resources, and degree programs in Oceanography, Marine Ecology, and the interdisciplinary Ph.D. program in Natural Resources and Earth System Science (NRESS).

SPACE SCIENCE CENTER



The Space Science Center is engaged in research and graduate education in all of the space sciences, with studies ranging from the ionosphere, to the Earth's magnetosphere, to the local solar system, and out to the farthest reaches of the universe. Faculty and students are affiliated with the Department of Physics and with its graduate degree program in Space Physics/Astrophysics.

Graduate Studies

Institute faculty offer graduate courses through academic departments at the University of New Hampshire. While graduate students conduct their research within the auspices of EOS, they earn degrees within the academic-based departments of the University.

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University of New Hampshire
Morse Hall, 8 College Road, Durham, NH 03824
603 862-0322 eos.director@unh.edu
www.eos.unh.edu

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