**Vision**

A society that understands the impact of human activities on the global environment and the interactions within the Earth system that preserve the habitability of the planet.

**Mission**

To contribute, through research and teaching, to a fundamental scientific understanding of the Earth as a coupled system, to train the next generation of Earth scientists, and to inform and educate policymakers and the public-at-large.
Responding to Environmental Challenges

Understanding global environmental issues such as global warming, stratospheric ozone depletion and worldwide air pollution requires the cooperation of scientists across many disciplines. Global change is projected to accelerate through the 21st century and will impact the ecosystems that preserve the habitability of the planet. The Department of Earth System Science focuses on the atmosphere, land and oceans - how they interact as a system - and how the Earth will change over a human lifetime.

Founded as a Geosciences program in 1989 with current Chancellor Ralph J. Cicerone as director, Earth System Science achieved department status in 1995. Less than a decade later, the Department of Earth System Science has earned a reputation as one of the most influential academic departments in the nation devoted to studying the Earth as a system.

Internationally Recognized Faculty

UC Irvine consistently ranks among the top four U.S. universities for the impact of its publications in the geosciences (Source: Institute for Scientific Information). Faculty expertise varies widely from climate, atmospheric chemistry and biogeochemistry to oceanography and hydrology. In addition to research, faculty work to inform and educate policymakers and the community-at-large on a range of issues that affect the environment and the quality of life on the planet.
The Department of Earth System Science is committed to developing state-of-the-art facilities, research labs and teaching tools. These resources are an integral part of the ESS educational and research experience.

- Croul Hall, a new building designed from the ground up for ESS research and education
- W.M. Keck carbon cycle accelerator mass spectrometer – a facility for low-level environmental carbon-14 measurements
- Stable isotope mass spectrometry for carbon, nitrogen and hydrogen
- A supercomputer facility for simulations of atmospheric, oceanic and terrestrial interactions
- Field research projects spanning the globe – from the central Pacific to the forests of tropical Amazonia to ice core drilling in Antarctica

Satellite image of the global biosphere
B.S. and Ph.D. Programs

A critical need exists to train new research scientists to address the monumental environmental challenges of the 21st century.

The undergraduate program in Earth and Environmental Science features:

- A solid scientific education grounded in the fundamentals of physics, chemistry, biology and mathematics;
- An interdisciplinary curriculum covering the land, ocean and atmospheric components of the Earth system;
- Advanced electives in atmospheric chemistry, physical oceanography, atmospheric dynamics, ecosystems ecology, weather and climate, hydrology, biogeochemical cycles and remote sensing;
- Opportunities for summer field work and year-round research.

The doctoral program in Earth System Science features:

- A unique, modular interdisciplinary curriculum providing an integrated systems approach to studying the Earth;
- Cutting-edge research opportunities in terrestrial, ocean and atmospheric field observations, laboratory instrumentation and computational Earth simulation;
- Interaction with diverse faculty and student body including chemists, biologists, hydrologists, physicists and geologists;
- Student research focused on global issues involving biogeochemistry, global climate and atmospheric chemistry.

Join Us:
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