

Earth + Atmospheric Sciences

CORNELL ENGINEERING

Primary Areas of Education and Degrees Offered

- BS in Science of Earth Systems (COE, CALS, A&S)
Concentrations: Geological Sciences, Atmospheric Sciences, Ocean Sciences, Biogeochemistry
- BS in Atmospheric Sciences (CALS)
- MS, MEng, and PhD in Geological Sciences (COE)
- MS and PhD in Atmospheric Science (CALS)

Primary Areas of Research

Structure and Evolution of Mountain Belts, Active Tectonics, Deep Continental Lithosphere, Plumes and Geodynamics, Paleoclimatology and Paleoecology, Upper Atmosphere Physics, Weather and Climate Forecasting, Marine Ecosystems, Biogeochemistry

Significant Trends (past 5–10 years)

Growing emphasis on environmental issues, resurgence of energy sector, and impact of new technologies such as INSAR and GPS.

Department and Faculty Achievements

- 4 new faculty hires: Pritchard, Andronicos, Mahowald, Lohman (two females and one under-represented minority)
- 4 new Chaired Professors (Allmon, Brown, Jordan, Kay)
- 4 COE Excellence in Teaching awards (Hysell, Pritchard, Andronicos, Moore)
- Prof. S. Kay named Outstanding Educator by the Eastern Section of the American Association of Petroleum Geologists and Fellow of the Society of Economic Geologists
- Prof. C. Greene elected as Fellow of The Oceanography Society
- Prof. S. Riha appointed as Director of the New York State Water Resources Institute (WRI)
- Prof. C. Andronicos earned the 2008 Zellman Warhaft Commitment to Diversity Award

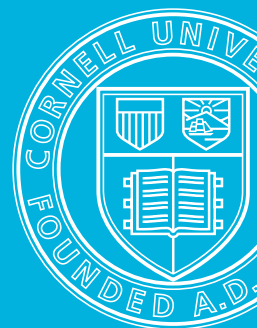
The Third International Joint Workshop between Tsinghua University and Cornell University on the theme of Sustainable Development: Water Resources, Energy and the Environment (2008) organized by EAS

INSTOC Workshops on Tectonics of the Continental Lithospheric Mantle (2005), Subduction, Orogeny, and the Surface of the Earth (2006), The Unknown Andes (2007) and Magma (2008)

Major International Research Programs, e.g. in the Andes (PUNA, INSAR Projects), Tibet (INDEPTH Project), Taiwan (TAIGER Project), and Caribbean (Montserrat SEA-CALIPSO) as well as regional initiatives (e.g. NYS Carbon Sequestration)



Earth and Atmospheric Sciences provides unique opportunities to gain intensive field experience which provides critical connections between theory and the real world. The EAS Semester in Hawaii Program emphasizes sustainability and natural systems in a unique cultural context. Here students in the Hawaii program carry out ground penetrating radar surveys of lava flows near Kilauea.



Affiliated Institutions

Water Resources Institute, Northeast Regional Climate Center, Institute for the Study of the Continents, Paleontological Research Institution and Museum of the Earth

Priority Goals

- To expand international leadership into new research areas
- To become the premier Cornell resource for earth literacy

Challenges and Strategies

Challenges: To maintain current global leadership while expanding into new research areas. Correspondingly, provide breadth without degrading depth in undergraduate curriculum.

Strategies: Identify research priorities; expand collaboration with other departments at Cornell; expand faculty and especially research staff; revamp undergraduate curriculum.

Opportunities

An expanded societal demand for new sources of energy and other strategic resources, growing demand for students trained for careers in non-traditional energy, and increasing societal vulnerability to natural hazards.

Actions Designed to Take Advantage of These Opportunities

Developing new campus collaborations; new research initiatives more closely linked to energy; seeking new faculty/research staff in priority areas (e.g. energy, hazards); exploiting CALS outreach expertise to engage external stakeholders (policy, public).



EAS faculty members Matt Pritchard and Rowena Lohman use the latest space technologies such as GPS and INSAR to assess earthquake and volcano hazards. This map shows INSAR estimates of surface deformation associated with volcano inflation in the central Andes between 1992 and 2006.



EAS Prof. Sue Kay and University of Missouri's Prof. Eric Sandvol deploy seismic equipment as part of a major study in the central Andes. EAS scientists lead major geological and geophysical studies in major mountain belts around the world.