

GRADUATE PROGRAM

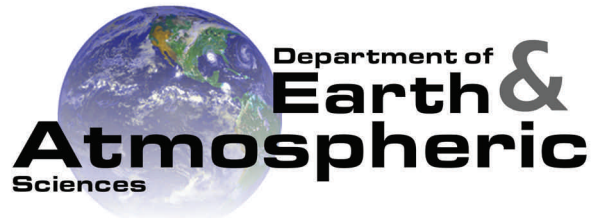
The core of the graduate research program in the Department of Earth & Atmospheric Sciences (EAS) at Purdue University is found in three broad scientific areas that are at the forefront of earth systems discovery and learning:

- Atmosphere-Surface Interactions
- Geodynamics and Active Tectonics
- Climate and Extreme Weather

EAS offers graduate research programs leading to the MS and PhD degrees. We are the multidisciplinary department of the College of Science. Our research uses mathematics, physics, chemistry, biology, statistics, and computer modeling to address some of the most challenging interdisciplinary questions about the past, present and future state of the earth system. Many of our research programs include field work in the U.S. or abroad. Our department is equipped with state of the art computer and laboratory facilities for calculation, visualization, and experimentation. Currently, 96% of our students are funded by Fellowships, Research Assistantships or Teaching Assistantships. Our former students are now employed by major research institutions, liberal arts colleges, government agencies, and industry.

We invite you to join us.

PURDUE
UNIVERSITY



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**GEODYNAMICS
&
ACTIVE
TECTONICS**

GEOLOGICAL

CONVECTION

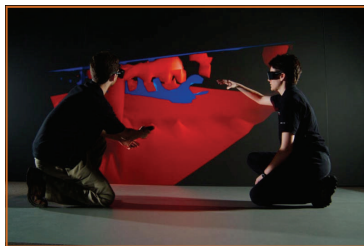
EARTHQUAKES

MODELING

TECTONICS

GEODYNAMICS & ACTIVE TECTONICS (GAT)

The face of our planet is in constant evolution as a result of geologic processes such as tectonic plate motions, earthquakes, surface erosion, or convection in the Earth's mantle. Drawing upon elements of tectonics and geophysics, the Geodynamics and Active Tectonics group at Purdue is a leader in the study of mantle, crustal, and surface processes, using approaches that include geologic observations, geophysical measurements, and theoretical modeling.



AFFILIATED FACULTY

Brenda Beitler Bowen

Sedimentary geology and geochemistry, formation and evolution of redbeds, diagenesis and fluid flow, basin evolution, geologic remote sensing, Mars geology and analog research

Larry Braile

Seismology, crustal and upper mantle structure, inversion of geophysical data, intraplate earthquakes, Earth science education

Eric Calais

Dynamics of continental deformation, strain distribution and stress transfer at plate boundary zones, rheology of the Earth's lithosphere, GPS geodesy

Lucy Flesch

Kinematics and dynamics of continental deformation, lithospheric rheology, shear wave splitting, mantle/lithosphere interaction

Andy Freed

Finite element analysis of transient processes: earthquake triggering, viscous rheology, evolution of extraterrestrial surfaces, subduction zones

Hersh Gilbert

Crust and upper mantle dynamics: continental lithospheric structure, upper mantle heterogeneity, crustal anisotropy, seismic imaging and waveform modeling

Darryl Granger

Tectonic geomorphology, landscape evolution, cosmogenic nuclides applied to geomorphology and surface processes, environmental geosciences

Saad Haq

Modeling of oblique collision and plateau growth, understanding mechanics of thin-skinned deformation in response to strain partitioning

Jennifer Haase

Seismic hazard, strong ground motion and new earthquake observation techniques

Bob Nowack

Seismic imaging of the Earth's crust and upper mantle, geophysical inverse theory

Jim Ogg

Paleomagnetism, ocean history, sedimentary geology

Ken Ridgway

Basin analysis, tectonics, sedimentary petrology, petroleum geology

Eric Riggs

Structural geology, rock deformation, fracture morphology and shear localization, mineral physics, geoscience education