
GRADUATE RESEARCH OPPORTUNITIES AT THE UNIVERSITY OF WISCONSIN, MADISON

GEOPHYSICS

Geophysical studies concentrate on developing a quantitative understanding of the structure and dynamics of the Earth. The emphasis of the geophysical group at UW-Madison is on the lithosphere, with current research grouped into geodynamics, rock physics, seismology, structural geology, and tectonics. Our students typically graduate to successful careers in industry and academia. Concise descriptions of individual faculty research programs are given below.

Chuck DeMets

GLOBAL TECTONICS

Research includes GPS field programs in central America, Mexico, and the Caribbean for measurement of active crustal deformation, modeling of present and past plate motions using geodetic, marine geophysical, satellite, and seismic data, modeling of crustal deformation during all phases of the seismic cycle.

Phone: (608) 262-8598; Email: chuck@geology.wisc.edu

Kurt Feigl

TECTONIC APPLICATIONS OF GEODESY

Research includes measuring and modeling crustal deformation from earthquake faults, volcano activity, glacier loads, and fluid extraction. Geodetic measurement techniques include Global Positioning System (GPS) surveying, satellite radar interferometry (INSAR), and other remote-sensing schemes. Numerical modeling approaches include the finite-element method, parameter estimation by inversion, and analytic elastic solutions.

Phone: (608) 262-0176; Email: feigl@geology.wisc.edu

Laurel Goodwin

STRUCTURAL GEOLOGY

Research in New Mexico, California, and Australia includes: localization of deformation at all crustal levels; faulting of granular porous media and its impact on multi-phase fluid flow; the geophysical signature of fault-zone structures; length scales of fault and shear-zone heterogeneities.

Phone: (608) 265-4234; Email: laurel@geology.wisc.edu

Clifford H. Thurber

SEISMOLOGY

Research areas include seismic tomography, fault zone studies, volcano seismology, nuclear explosion monitoring, and subduction zones.

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Basil Tikoff

STRUCTURAL GEOLOGY & TECTONICS

Research includes fieldwork (California, Idaho, Utah, Canadian Shield, and Norway), theoretical strain analysis, magnetic analysis (paleomagnetism and AMS), numerical modeling, and physical (scaled) modeling, particularly related to three-dimensional deformation.

Phone: (608) 262-4678; Email: basil@geology.wisc.edu

Harold Tobin

MARINE GEOPHYSICS AND FAULT MECHANICS

Research areas include plate boundary fault processes at subduction zones in southwestern Japan, San Andreas Fault, and other field locations. Tools include 3D seismic reflection imaging, laboratory rock studies, and ocean drilling.

Phone: (608) 265-5796; Email: htobin@wisc.edu

Herbert F. Wang

GEOMECHANICS

Laboratory rock physics, numerical modeling of poroelastic phenomena in hydrogeology and earthquake mechanics, thermal modeling of tectonic events. Phone: (608) 262-5932; Email: wang@geology.wisc.edu