
GRADUATE RESEARCH OPPORTUNITIES AT THE UNIVERSITY OF WISCONSIN, MADISON

TECTONICS

The tectonics group at the University of Wisconsin-Madison combines the strengths of the various groups within the department: geophysics, petrology, geochemistry, sedimentology, and structural geology. Ongoing projects include numerous field-based projects, geodetic measurements (GPS), geochronology, isotopic provenance studies, magnetic analyses, gravity inversions, and basin analyses. In addition to field equipment, state-of-the-art laboratories include petrographic microscopes, electron microprobe, TEM, SEM, luminoscope, and mass spectrometers. We are also adding a computer map/GIS lab to our facilities to complement the existing Macintosh, IBM, SGI, and Sun computer labs.

Alan R. Carroll

SEDIMENTARY BASINS

Research on sedimentary tectonics, provenance, and the relationship between continental weathering and sedimentation. Emphasis on lacustrine sedimentary basins, and on collaborative studies of Paleogene weathering and radiogenic isotopic provenance within the Gulf of Mexico watershed. Phone: (608) 345-0667; e-mail: carroll@geology.wisc.edu

Chuck DeMets

GLOBAL TECTONICS/GPS

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: 608-262-265-4234; Email: laurel@geology.wisc.edu

Clark M. Johnson

GEOCHRONOLOGY AND ISOTOPIC PROVENANCE STUDIES

Research includes U-Pb and Sm-Nd geochronologic and isotopic tracer studies of orogenic terranes, including ultra-high pressure terranes, as well as isotopic provenance studies in sedimentary rocks. Phone: (608) 262-1710; Email: clarkj@geology.wisc.edu

Basil Tikoff

STRUCTURAL GEOLOGY AND 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