

Research Faculty

Mohamed G. Abdelsalam (abdelsam@umr.edu), Ph.D., University of Texas at Dallas, 1993. Research activities focus on studying the dynamics of deformation belts (both extensional and compressional) with Structural Geology and Remote Sensing using the East African Rift and the East African Orogen as natural laboratories.

Stephen S. Gao (sgao@umr.edu), Ph.D., University of California, Los Angeles, 1995. Research interest in earthquake seismology, global tectonics, and the study of structure and dynamics of the Earth's deep interior beneath Eurasia, Africa, North America, and South America using computing-intensive data analysis techniques.

John P. Hogan (hogan@umr.edu), Ph.D., Virginia Tech University, 1990. Research interests include the origin of isotopic heterogeneity in granites and igneous rock textures as a means of understanding magma chamber dynamics and mechanisms for magma transport and emplacement in the crust, and utilizing igneous rocks to constrain tectonic histories of orogens.

Robert C. Laudon (rlaudon@umr.edu), Ph.D., University of Texas at Austin, 1975. Department Chair. Research interest in the area of petroleum geology including clastic sedimentary petrology, depositional systems associated with various tectonic settings, especially salt tectonics, fluid flows in the subsurface and potential contamination.

Kelly H. Liu (liukh@umr.edu), Ph.D., University of California, Los Angeles, 1998. Research interest in both exploration and solid-earth geophysics including 3-D seismic data interpretation, computational and observational seismology, seismic hazard mitigation, and using converted waves to detect layered structures in the Earth's mantle.

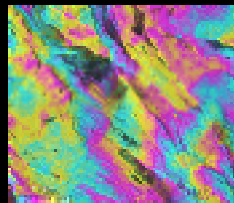
Francisca E. Oboh-Ikuenobe (ikuenobe@umr.edu), Ph.D., University of Cambridge, 1991. Program Head. Research activities focus on the use of palynology and sedimentology for biostratigraphy, paleoclimatic and paleoenvironmental reconstructions, and sequence stratigraphy of non-marine to deep-sea Phanerozoic sequences in North America, western and southwestern Africa and Australia.

David J. Wronkiewicz (wronk@umr.edu), Ph.D., New Mexico Institute of Mining and Technology, 1989. Research interests include mechanisms controlling the redistribution of trace metal contaminants in the environment, fluid evolution, corrosion processes, mineral precipitation during water-rock interaction, radioactive waste disposal, and origins of iron-concretions and implications for the presence water and life on Mars.

Research Scientist - Nathan Miller - Carbonate Petrology and Geochemistry

Emeriti Professors - Richard Hagni, Geza Kisvarsanyi, Richard Rechtien
Gerald Rupert, Alfred Speng

Adjunct Professors - Eliot Atekwana, Estella Atekwana, Jay Gregg



Differential Interferometric Synthetic Aperture Radar (DInSAR) image of active deformation in Afar, Ethiopia



CONTACT

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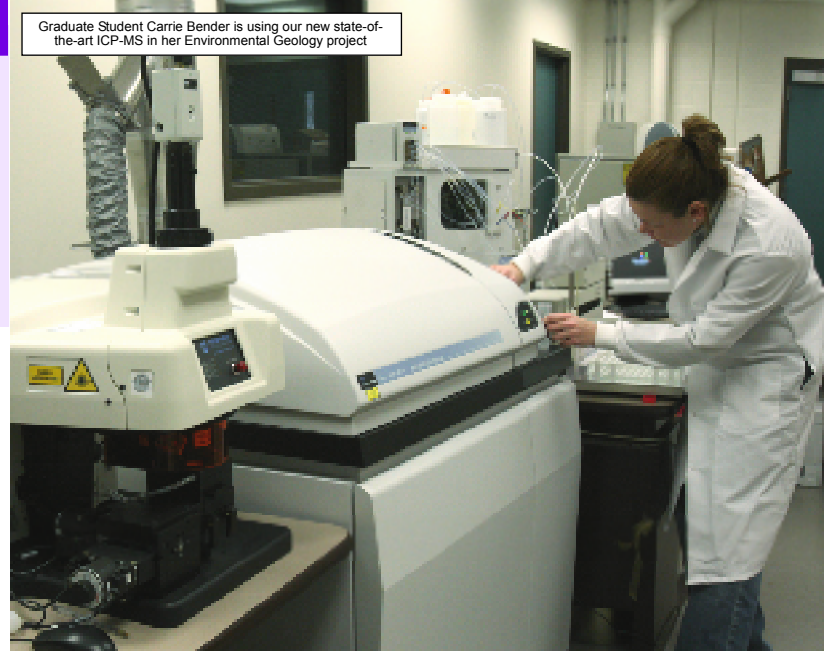
Our Sedimentology - Stratigraphy - Petroleum Geology faculty and graduate students discussing where to drill for oil. From left to right: Professor Kelly Liu, Professor Bob Laudon, Graduate student Cherie Telker, Professor Franca Oboh-Ikuenobe, and Graduate student Hesham Refayee

The University of Missouri - Rolla
Department of Geological Sciences and Engineering
Geology and Geophysics



geology and geophysics GRADUATE PROGRAM

Graduate Student Carrie Bender is using our new state-of-the-art ICP-MS in her Environmental Geology project



geology and geophysics GRADUATE PROGRAM

Our Graduate Program

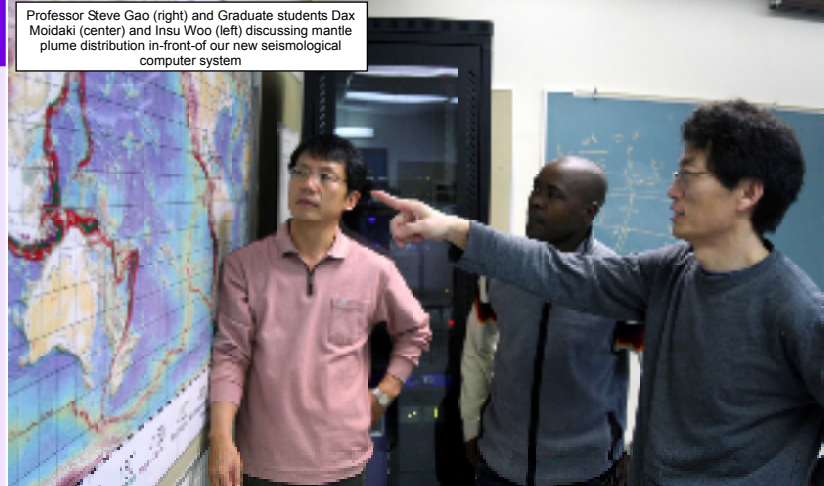
The Geology and Geophysics Graduate Program (M.S. and Ph.D.) at the University of Missouri - Rolla (UMR) provides students with the educational and technological expertise in the Geosciences to graduate as independent scientists, whose careers lead to the creation of new knowledge for understanding our planet Earth, protecting our environment, and wisely utilizing our natural resources. We accomplish this by providing challenging, intellectually-stimulating, hands-on graduate courses, and through extensive student involvement in cutting-edge, externally-funded research projects. In the past ten years we have graduated over 145 MS students and 15 Ph.D. students, who are currently enjoying successful careers in academia (15%), petroleum and mining industries (30%), and environmental and government agencies (50%). Our research faculty and graduate students have published over 100 per-reviewed articles in the past ten years as well as generating over \$3 million of external funding from governmental and non-governmental agencies.

The recent addition of new faculty and new technologies are enabling us to advance even further UMR's strong tradition in education and research in the Geosciences. We have recently established state-of-the-art laboratory facilities in Geochemistry, Geophysics, and Remote Sensing. In addition, there are well-equipped laboratories in Sedimentology, Paleontology, Petrology, and Structural Geology. These facilities allow our graduate students, who are typically supported through external funding or through scholarships provided by the \$2.5 million Radcliffe Trust to conduct cutting-edge research.

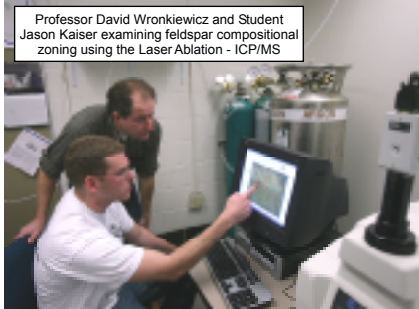
HIGHLIGHTS OF OUR RESEARCH FACILITY

- * Inductively Coupled Plasma/Mass Spectrometer (ICP/MS) with auto-sampler
- * ICP/Optical Emission (OES), ultrasonic nebulizer, and auto-sampler
- * New wave-Merchantek 213 nm laser ablation system
- * JEOL 733 Super Electron Microprobe and Scanning Electron Microscope
- * Sun dual processor server with 8 GB of RAM, a Sun workstation with dual processors, and 6 TB of hard disk space
- * 3-D Seismic Interpretation, Remote Sensing and GIS Labs
- * Well-equipped Paleontology, Stratigraphy, Structural Geology, Petrology, and Mineralogy Labs

Professor Steve Gao (right) and Graduate students Dax Moidaki (center) and Insu Woo (left) discussing mantle plume distribution in-front of our new seismological computer system



Professor David Wronkiewicz and Student Jason Kaiser examining feldspar compositional zoning using the Laser Ablation - ICP/MS



Degrees Offered

- * Ph.D. in Geology and Geophysics
- * M.S. in Geology and Geophysics
- * Master of Science for Teaching (MST) in Earth Sciences
- * Fast-Track M.S. Program
- * Graduate Certificate in Geospatial Information Sciences



Professor John Hogan and students discussing fold mechanisms, Paint River site, Michigan