

PhD Opportunity:  
**PRESIDENTIAL DOCTORAL RESEARCH FELLOWSHIP IN TRANSDISCIPLINARY TECTONICS**  
Department of Geology, Utah State University

***Transdisciplinary tectonics--from Earth's interior to surface***

Modern research in tectonics crosses many disciplines of Earth science, exploring deformation that spans from Earth's surface to deep within the interior, and over different time and spatial scales. The Department of Geology at Utah State University (USU) is recruiting a highly qualified PhD student to join our research program in tectonics. Primary research themes in tectonics within the department are:

(1) What controls fault zone and plate boundary behavior through time? Research extends from fault-zone dynamics and fluid-rock interactions at the scale of individual earthquakes to construction of entire mountain belts and margins. Critical to understanding these processes are quantitative constraints on the timing and tempo of earthquakes, characterization of Earth material properties and petrology, and documenting the role of fluids on fault slip, rheological evolution of the lithosphere, and plate tectonics. Potential research mentors include Dr Ault, Dr. Bradbury, Dr. Dehler, Dr. Evans, Dr. Janecke, Dr. Lowry, Dr. Newell and Dr. Shervais

(2) What are the interactions among surface processes, tectonics, and landscape evolution? Tectonic activity is expressed in topography through important feedbacks of climate and surface process. Research in tectonic geomorphology and geodynamics involves the functioning of Earth's lithosphere and near-surface critical zone, drainages, and natural hazards. Potential research mentors include Dr Ault, Dr. Janecke, Dr. Lowry, Dr. Pederson and Dr. Rittenour

The Presidential Doctoral Research Fellowship (PDRF) provides a PhD student the opportunity to work on cutting-edge research, tackling projects that require transdisciplinary field, laboratory, and modeling approaches. Fellows will learn best practices in both research and teaching. USU Geology has state-of-the-art laboratories, including the Mineral Microscopy and Separation lab, Stable Isotope lab, Geochemistry and LA-ICPMS lab, Luminescence Geochronology Lab and the USU Microscopy Core Facility, with field-emission scanning electron microscope (FE-SEM) with energy-dispersive x-ray spectrometer (EDS) and electron backscatter (EBSD) attachments.

The USU Department of Geology has 15 faculty and USU is the land-grant and space-grant university for Utah. USU is located at Logan in northern Utah, surrounded by the Bear River Range and Wasatch Mountains with excellent outdoor opportunities.

The PDRF comes with 4 years of support, and includes full tuition and subsidized health insurance. Strong candidates should have competitive GPA and GRE scores. Please visit our website for further details on the Fellowship and our faculty research programs <https://geology.usu.edu/>. Applications are due before January 8 at <https://rgs.usu.edu/graduateschool/>. Contact [tammy.rittenour@usu.edu](mailto:tammy.rittenour@usu.edu) for questions. Women and minorities are strongly encouraged to apply.