We are looking for highly motivated and self directed students who are comfortable working with their hands as well as with computers. Our projects are interdisciplinary; students will be exposed to perspectives and experimental techniques from disciplines including high pressure physics, materials science and geoscience. An undergraduate degree in geosciences, other physical science or engineering is required. Does this sound like you? Get in touch with us and let’s talk!

**Why do earthquakes occur at great depths?**

With the aide of recent technological developments we are conducting entirely new types of high pressure deformation experiments that allow us to investigate how deformation at the micro scale relates to large scale deformation behavior. Our experiments focus on the effect of pressure on the strength of Earth materials which is important to many aspects of Earth’s behavior from mountain building to the mixing of geochemical reservoirs in the mantle.

Our experiments utilize synchrotron x-ray diffraction, the D-DIA multi-anvil apparatus, Diamond Anvil Cells, and a modified Griggs piston cylinder rock deformation apparatus. This equipment is used to reproduce the conditions found in the deep earth. We conduct microstructural studies using Scanning Electron Microscopy (SEM) and Electron Backscatter Diffraction (EBSD) to see what is going on in our samples and a variety of types of numerical modeling including Finite Element Modeling (FEM), to visualize what we cannot see; all with a goal of understanding how our results can be applied to the earth.

For more information check out our web site: http://faculty.unlv.edu/pburnley/index.html or contact:
Dr. Pamela Burnley, Department of Geosciences University of Nevada, Las Vegas, Box 454010, 4505 Maryland Parkway, Las Vegas, NV 89154-4010
Burnley@physics.unlv.edu
(702)895-5460

Apply to the UNLV program in Geosciences: http://geoscience.unlv.edu/jobs.html
All application materials must be received by Feb 1, 2016
Our goal is to use geology to help first responders during nuclear disasters distinguish more easily between variations in natural background radiation and radioactive contamination. We use geologic maps and remote sensing imagery, combined with published geochemical analysis of bedrocks and soil to model how natural radio-nuclides are distributed across the earth’s surface. Our work is highly interdisciplinary and had implications for other areas such as surficial processes and sedimentary provenance. The project involves working with gamma-ray spectroscopy, geologic maps, geochemistry and GIS.

We have funding for PhD & MS students starting in Spring or Fall 2016 to work on this project.

For more information about this project see our web site: http://faculty.unlv.edu/pburnley/index.html
Dr. Pamela Burnley, Geosciences, UNLV; Burnley@physics.unlv.edu

Apply to the UNLV program in Geosciences: http://geoscience.unlv.edu/jobs.html
All application materials must be received by October 1, 2016 for spring semester admission and Feb 1, 2016 for fall semester.