Funded Master of Science in Biology Position

New Mexico Institute of Mining and Technology (NM Tech)

The Duval Lab of Applied and Systems Ecology at New Mexico Tech is soliciting applications for a funded Master's student position studying arid-land biogeochemistry. There is room for independent development of a thesis answering questions about native plant response to climate change via interactions with soil physical structure and soil microbiota. The student will be expected to contribute to a 21-year study examining the effect of climate and soil on pinyon, juniper and scrub oak seed production. The student will also play a critical role in the establishment of a long-term litter decomposition experiment (D-DIRT) that is part of an international network of studies designed to explore the role of above- versus belowground carbon inputs from vegetation to soil (more information on the network at: https://dirtnet.wordpress.com/santa-rita/). The student will work at the Sevilleta National Wildlife Refuge, and help establish other experimental sites in grassland and conifer forests in the Chihuahuan desert and Magdalena Mountains near Socorro, NM.

In addition to field work in the diverse landscapes of central New Mexico, NM Tech boasts excellent laboratory facilities in the Biological and Earth sciences, and the student will gain hands-on expertise with a variety of instruments to analyze field samples. These include: FTIR gas analysis to measure trace gas flux (CO_2, CH_4, N_2O and NO), inductively coupled mass spectrometry (ICP-MS) for elemental analysis of plant tissue and soil at the New Mexico Bureau of Geology and Mineral Resources, and the opportunity to learn stable isotope analysis through the Department of Earth and Environmental Science (EES) at NM Tech. The Duval Lab is equipped for routine soil nutrient analysis, soil enzyme assays, maintains space in two research labs, and has dedicated greenhouse research space on campus. We also collaborate with microbiologists and geneticists within the Biology Department, work with the Chemistry and EES Departments at Tech, the Agricultural Science Center in Los Lunas, NM, and researchers at Sandia National Laboratory.

Student support will be provided with a combination of teaching (Intro Ecology Lab & Ecosystems Field Course) and research assistantship in the first year. The second year of support is to be determined based on Department needs and Lab funding. We hope to identify a suitable student as soon as possible, as there is funding to support a Research Assistant position on related projects beginning in May or June of 2018, which would provide an hourly wage and the opportunity to begin collecting thesis data prior to enrolling for Fall 2018 classes.

Interested students should *email* **Dr. Benjamin Duval** (benjamin.duval@nmt.edu) with a 1) brief statement of interest, 2) CV or resume that includes contact information for one *professional* reference and one reference that can *speak to the prospective student's work outside of the classroom* (summer employers or supervisors). More information about New Mexico Tech, the Biology Department, the Duval Lab and living in Socorro, NM can be found at:

www.duvalecology.org

www.nmt.edu