

Graduate Research Assistantship

Decomposition in Drylands: Soil erosion - UV interactions

We invite applications for a graduate research assistantship (GRA; Ph. D. level preferred; 3 years funding) from students interested in decomposition processes in desert ecosystems. Most of what is known about decomposition is from studies in high rainfall areas, but this knowledge does not translate well to dryland ecosystems. Recent studies suggest solar ultra-violet radiation is a major driver of decomposition in drylands; however, other studies indicate the level of mixing of wind/water-transported soils with litter is a key factor. This project seeks to resolve these competing explanations via a series of laboratory studies and field experiments in Arizona designed to measure light energy-soil movement-decomposition interactions. These linkages will be assessed in the context of woody plant encroachment into grasslands, a globally extensive vegetation change in drylands.

The graduate research assistant will be based at the University of Arizona with Steve Archer and Dave Breshears. The GRA will participate in an interdisciplinary investigation seeking new insights into processes affecting desert soil fertility and carbon storage by combining the disciplines of plant community ecology, ecosystem science and earth science in a novel framework. The GRA's project will be field-oriented and will quantify spatial patterns of litter input and its translocation by wind and water and litter mass loss in contrasting plant community configurations. The GRA will work closely with collaborators at New Mexico State University (Heather Throop; litter chemistry), the University of Kentucky (Rebecca McCulley; microbial communities) and Loyola University (Paul Barnes, photobiology). For additional details on the project see <http://www.snr.arizona.edu/project/decomposition>.

Starting date negotiable, but Summer 2009 is preferred. The assistantship includes an annual salary of \$14,677 (MS) or \$15,990 (PhD); waiver of out-of-state tuition; full remission of in-state tuition; and health insurance. Applications will be accepted until 31 May 2009 or until suitable candidate is found, and should include 1) a statement of interests and goals, 2) a CV with copies of transcripts and GRE scores, and 3) names and contact information for 3-5 references. For general admission requirements see <http://www.snr.arizona.edu/academic/grad>.

Applications and information requests should be directed (preferably via email) to Steve Archer (sarcher@Ag.arizona.edu), 325 Bio Sciences East, School of Natural Resources, University of Arizona, Tucson, AZ 85721-0043; 520 626-8791).