Influence of local biotic processes on Sonoran Desert plant communities

Dynamics of desert plant communities have been assumed to be almost entirely determined by climatic variability. However, the few long-term datasets of perennial plant survival and abundance show extremely weak climatic signatures, indicating the potential importance of biotic interactions in determining community dynamics and stability. I am studying the nature and strength of biotic interactions between Sonoran Desert perennials, with particular attention paid to the determinants of seedling growth and survival.

Projects in which SOLUR students could participate:

- Maintenance of, and data collection from, container experiments near campus
- Data collection from small mammal exclosures in the Sonoran Desert National Monument (~1hr. from campus)
- Demographic data collection from various sites in the Sonoran Desert, ranging from Organ Pipe Cactus National Monument to Superstition Mountains
- Plant physiology and elemental analysis
- Statistical analyses
- Mathematical modeling
- Independent research projects after sufficient training on mentor's projects

Requirements:

Sophomore or higher with some background and interest in biology and ecology
Physically fit enough for some manual labor and data collection in wilderness areas
Schedule that allows for commitment of full days to field work

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