

## ***Acquisition of a Trimble GeoXT 6000 for High-precision Elevations for Paleoclimate Research***

**Guleed Ali**

*DEES Graduate Student*

### **Abstract**

The chronologic record of deglacial hydrologic variability in the western US has led many authors to posit a teleconnection to greater global climate fluctuations. The Mono Basin, one of the western-most closed-basins in the western US, shows clear geomorphic evidence for lake fluctuations during this time interval; yet sufficient dateable material along many of the high shorelines has been challenging to find. A potential strategy to resolve this problem is to use the  $^3\text{He}$  cosmogenic nuclide to constrain the time when the lake terraces, formed through wave-action, were abandoned. In order to constrain a sufficiently precise abandonment age, a local  $^3\text{He}$  production-rate calibration site is required. Such a calibration would reduce uncertainties incurred by unknown inaccuracies within cosmogenic nuclide production scaling models (Lal, 1991; Stone, 2000). In order to gather an accurate cosmogenic production-rate estimate, it is necessary to have highly accurate elevation information. Accurate elevations are also essential for constraining the lake level history of the Mono Basin. I request funds to help cover the costs of a Trimble GeoXT 6000 GNSS (Global Navigation Satellite System) receiver, which with post-processing software can achieve accurate elevations within one meter.