Educational Quality Indicator – Student Research Topics

(Relevance of *student research topics* to SAHRA's strategic mission and integrating questions and their contribution to building multi-disciplinary understanding)

In 2004, SAHRA student research contributed to SAHRA's mission and the broader multidisciplinary community by making significant contributions to SAHRA's science activities. These contributions are too many to name but can be reviewed in detail by viewing the students' research posters presented at the 2004 Annual Meeting. The following are examples of student contributions to SAHRA research by macro-theme:

River Systems
Student field and laboratory studies have been instrumental in improving understanding of nutrient and salinity fluxes on the San Pedro River and the Rio Grande. Students have collected and analyzed the atmospheric and plant flux data related to riparian and rangeland plant water needs in particular. Their results allow us to better model riparian plant communities and suggest that some desert species store water through hydraulic redistribution.

Basin Scale Water Balance
Student field and laboratory studies have been instrumental in setting up and collecting base-line data associated with the Valles Caldera Basin transect. Students continue to be active in developing new and improved methods to estimate precipitation and snow water equivalent from rugged western watersheds using remotely sensed data. Student efforts have also been directed to analyzing mountain block recharge (in both SAHRA focus basins) and groundwater salinization along the Rio Grande. Our students have also been able to respond to the need for post-fire hydrologic response studies in Arizona and California following the 2003-2004 fire season.

Integrated Modeling
Students have taken leading roles in developing new modeling software and systems in support of our research and outreach in decision support models for water resources management, non-market natural resource valuation and agricultural irrigation. Students have participated in center-wide exchanges and collaboration, particularly with Sandia National Labs. Students continue to play a significant role in developing forcing model data sets and sensitivity analysis for Center-wide meso-scale modeling efforts.