

Characterization of Heavy Metal Binding by Functional Groups Found in Biomaterials

Jesus Cantu and Jacob Urquidi (advisor)

**Department of Physics
New Mexico State University**

PURPOSE OF STUDY

Phytoremediation, or the use of plants and plant material, to clean up sites contaminated with heavy metals has gained the interest of many scientists concerned with protecting freshwater resources. Little is known about the transport mechanisms of metals in soil and how such metals are captured by the plant system. The researchers will study the physical characterization of the functional groups believed to be responsible for heavy metal uptake in plants to understand better how such processes work.

STUDY UNDERWAY

- The researchers will use small angle scattering techniques to analyze the physical characterization of the R-group of the acrylamide or styrene polymer chain, which is believed to be responsible for heavy metal uptake in certain plants.
- These measurements will be compared to plant biomass that has undergone metal uptake.

BENEFITS

- Understanding the natural mechanisms by which plants, such as the creosote bush, bind metals is important to improving and developing phytoremediation and other technologies that will improve water quality.



Professor Jacob Urquidi (left) and Jesus Cantu work with a 10-meter small angle instrument in their research. Jesus, originally from San Antonio, Texas will graduate with a B.S. in physics in spring 2008.

