



New Mexico Science Teachers Report on their CHTM Research Experiences

Energizing Engineering Education program gives teachers first hand taste of laboratory discovery

By Stefi Weisburd – October 30, 2013



RET and Santa Fe High Physics Teacher Anita Nugent works in Dr. Sang Han's lab at CHTM

With all the pressures on science teachers today – from preparing students for testing to keeping up with changing standards and curricula – connecting students to the wonder of scientific discovery or engineering design can be a challenge. Staying abreast of current engineering problems and analytic tools is even more daunting.

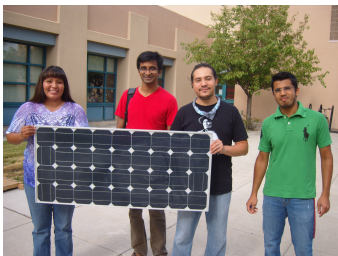
Enter the National Science Foundation–funded Research Experiences for Teachers (RET) program, which invites teachers to participate in cutting-edge research alongside faculty and graduate student mentors.

“Being in the lab working on an ongoing research project is an exhilarating experience, recharging my sense of dedication for preparing my students for post secondary education,” notes Sara Salter, a science educator at Highland High School in Albuquerque, NM. Salter is one of 14 New Mexico teachers who spent six weeks in UNM labs this summer under a recently awarded \$500,000, three-year RET grant entitled “Energizing Engineering Education (E³)”. Teachers explored energy-themed projects, from paper battery design to the fabrication of more efficient solar cells.

The RET teachers will describe their research at the New Mexico Science Teachers Association annual meeting at Centennial High School in Las Cruces, NM on November 2, 2013.

They will also talk about how they are bringing their experience back to their elementary, middle school and high school classrooms.

With the guidance of the grant's co-Principal Investigator, Dr. Vanessa Svihla, Assistant Professor in the College of Education, the teachers are developing project-based learning units, which they will implement this year. The lesson plans are aligned to the Common Core State Standards and the Next Generation Science Standards (NGSS), which for the first time incorporate engineering practice into science curricula. “E³ will allow other teachers to



Teachers Joni Hood from Wingate Elementary School in Fort Wingate and Phillip Arguello from Hillrise Elementary School in Las Cruces hold a solar panel in front of their faculty mentor Dr. Ganesh Balakrishnan and graduate student Sadhivikas Addamane.

benefit by getting access to very effective, carefully designed, classroom-tested, NGSS-aligned curricula,” says Svihla.

The session presenters at the conference include the program organizers and RET teachers. Nine posters presented by RET teachers will highlight their experiences and curricula; an overview poster will provide detail about the program and important guidelines and tips for teachers interested in designing their own Science, Technology, Engineering and Mathematics (STEM) curricula aligned to NGSS.

The RET teachers teach in Gallup, Fort Wingate, Las Cruces, Santa Fe, Belen and the Albuquerque area. Most of them work at Title 1 schools that serve communities that are typically underrepresented in the sciences and engineering. Many of the schools also host a chapter of the New Mexico MESA program, which is designed to spark middle and high school students' interest in STEM.

Dr. Charles Fleddermann, Associate Dean of the School of Engineering is the Principle Investigator (PI) of the grant.

For more information about the UNM's RET program, contact Stefi Weisburd, Education and Outreach manager in the School of Engineering: weisburd@unm.edu.