briefs

PROJECT DESIGNED TO HELP WOUNDED TROOPS

Eagle, Idaho-based TenXsys Inc. was awarded $749,000 from the U.S. Department of Defense for the second phase of a project with Boise State to develop and test new technologies to help military personnel who have lost limbs to effectively use prosthetics.

The project is designed to develop small sensors that could be used as part of rehabilitation efforts for amputees. TenXsys will team with researchers in Boise State's Center for Orthopaedic and Biomechanics Research (COBR) in the College of Engineering to test the sensors.

More than 500 U.S. soldiers serving in Iraq have suffered major amputations as a result of roadside bomb explosions or other military actions, according to recent news reports. The project supports DOD efforts to rehabilitate amputees and even allow soldiers with prosthetics to return to active duty if they're both willing and capable.

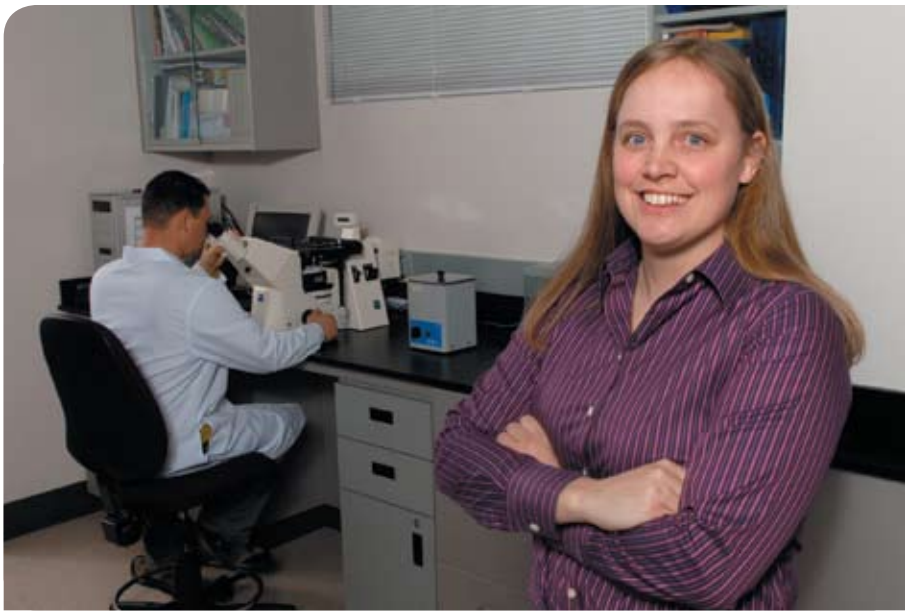
TenXsys has developed sensors that can be worn on the body to measure movement pattern and energy use. Known as SMART, or Sensor Monitoring and Relay Transmission, the sensors transfer information by radio telemetry to a nearby computer for interpretation. By providing instant feedback about subtle balance problems or fatigue, the sensors could speed the rehabilitation of amputees. The technology also has many other potential applications, including training athletes and monitoring patients in a wide range of conditions.

BSU RESEARCH TEAM STUDIES NANOPARTICLES

Biology professor Denise Wingett presented a Boise State research team's findings on how nanoparticles could someday be used to help treat multiple sclerosis, psoriasis and other diseases at the Keystone Symposia's conference on Nanotechnology in Biomedicine. Physics professor Alex Punnoose, biology professor Kevin Feris, and several undergraduate, graduate and postdoctoral students are also part of the team.

The conference was the first research presentation by the BSU team, which recently organized to study possible medical applications, as well as possible toxic side effects, of certain kinds of nanoparticles — tiny particles that take on new properties when manipulated on a molecular level.

In laboratory experiments, the researchers have shown that nanoparticles have the ability to kill certain types of bacteria while having a minimal effect on human immune cells. The researchers have also successfully linked a variety of antibodies to the nanoparticles.



CARRIE QUINNEY

Frary selected Boise State because of its commitment to integrating research and teaching.

Young engineering professor honored for teaching, research

By Janelle Brown

Less than two years after receiving a Ph.D. from the Massachusetts Institute of Technology, Boise State engineering professor Megan Frary has received the National Science Foundation's most prestigious award for early career faculty.

Frary, an assistant professor in the Department of Materials Science and Engineering, will receive $488,457 over five years as part of the NSF CAREER program. The program recognizes outstanding faculty from across the nation who have shown exceptional ability in integrating research and teaching, and who are most likely to become the academic leaders of the 21st century.

The NSF grant will support Frary's research program, and will also provide funding for Boise State graduate and undergraduate students to work in her lab.

"I feel very honored to receive this recognition from the NSF, especially so soon after coming to Boise State," says Frary, who joined the College of Engineering faculty in fall 2005. "I have found that learning really comes alive for my students when they can apply new concepts in a laboratory setting."

Frary received a bachelor's and master's degree from Northwestern University before earning a doctorate at MIT. Her research program involves studying the microscopic boundaries or interfaces between the grains that make up a metal. These boundaries are subject to damage by corrosion and cracking, but the application of high temperatures and pressure can result in boundaries that behave in novel ways.

After graduating from MIT, Frary could have taken a job at any one of a number of top universities across the nation, notes Amy Moll, chair of the Department of Materials Science and Engineering. Frary chose Boise State because of the College of Engineering's commitment to integrating research and teaching and the opportunity to help build a new program in the university's young engineering college.

"For Dr. Frary to receive this NSF career award during only her second year at the university, and on her first try, speaks to just how outstanding she is," Moll adds. "This is the award people in the halls of the NSF talk about as the measure of exceptional promise. Dr. Frary certainly meets that high standard."