

ISU researchers on cutting edge

What marks a great research university is the number of faculty conducting cutting-edge research. Last month, for example, a team of Idaho State University students and faculty had the rare opportunity to include their scientific experiments in a NASA rocket that carried their experiments to an altitude of 73 miles. The experiments measured acceleration, pressure, temperature and radiation throughout the flight, and the information they obtained will help engineers build space capsules that can better withstand the intense stress of space flight. The team also included on the rocket specimens for researchers in ISU's Biological Sciences Department.

The team of researchers was headed by professor Tim Frazier from the Department of Mass Communication, and included Ben Nickell, a computer systems administrator, and Charles Burns, a senior in the College of Engineering's computer science program.

Another ISU researcher, Professor Corey Schou, is a world-renowned pioneer in the field of "information assurance," an area of study devoted to protecting and defending digital information and information systems. As the world stores more and more of its information electronically—including highly sensitive and even top secret data—the need to protect that information from theft or vandalism is becoming a major priority. Professor Schou helped



create the science of encryption and protection that has become so important in our digital age.

Professor Schou serves as ISU's director of Informatics Research, and he is also the director of the National Information Assurance Training and Education Center, a program

housed at ISU where students research and learn ways to keep important information secure. Graduates advance to work for the federal government in information security, including high-level positions where they play a critical role in defending the nation's most sensitive data. In fact, these students are so valuable that federal departments seeking to recruit them often find themselves on a waiting list.

Schou and his team also work at the Simplot Decision Support Center to help national and local agencies research information security and create information assurance standards. Workers at the center can use ISU-developed digital brainstorming technology, anonymously offering opinions and ideas that help improve the collaborative decision-making process. Employees of the Federal Bureau of Investigation, Boeing, Federal Express and the National Security Administration (our nation's top secret espionage organization) are just some who have benefited from the center's capabilities.

You would think that with all this work, professor Schou has his hands full (he recently returned from a whirlwind visit to 22 universities, including schools in Singapore and the

United Kingdom, where he taught faculty how to integrate computer security into their curriculum). But he somehow finds time to take on a number of other scholarly projects.

He has brought more than \$4 million in research funding to ISU, working in fields from anthropology to education. Right now, he is working with anthropology professor Herb Maschner on a visualization tool for anthropologists. Through the researchers' VZAP Program, anthropologists can search a database of bones collected in the Arctic. The bones are photographed, catalogued, and can be viewed three dimensionally at a resolution so high even a thumbprint is visible.

He is also working with anthropology professor Skip Lohse to create a searchable database for arrowheads. professor Lohse (who is also the director of the Idaho Museum of Natural History) and Schou have built an artificial intelligence tool that will enable scholars to take a photo of an arrowhead in the field and use the program to identify its origin. This work is the basis for a Virtual Museum project for the Idaho Museum of Natural History.

As you can see, the programs professor Schou and his colleagues are creating will change the way we view and study information in the future by making it safe, secure and (when appropriate) accessible. And the experiments conducted in the NASA rocket by ISU researchers will potentially improve space flight. These are only a few examples of the cutting-edge work being done at ISU every day.

Gary A. Olson is provost and vice president at Idaho State University.