



From left, Michelle Lund, Ann Fruhling and Kevin Weiss. Photo by Tim Fitzgerald / University Affairs

When Ann Fruhling, Ph.D., assistant professor of information systems at the College of IS&T, initially envisioned the project, she saw it as a means to better address urgent health care issues in rural Nebraska, like the area near Kearney where she grew up.

China, quite literally, was the farthest thing from her mind.

Packing a punch with STATPack

But public health systems in China and other countries across the world could be the beneficiaries if there is a global release of work done in Omaha by Fruhling, her students,

other IS&T faculty and the health care professionals at the University of Nebraska Medical Center (UNMC) and the Nebraska Public Health Laboratory.

The project is the Secure Telecommunications Application Terminal Package (STATPack), a computerized emergency response system for public health laboratories.

STATPack allows remote hospital or diagnostic laboratories to send digital images of suspicious culture samples electronically to a state public health lab for identification. It saves pre-

vious diagnostic time and eliminates the inherent risks of having the sample hand-delivered by courier to the state lab.

"We think STATPack is a great public health tool that has potential applications nationwide and globally," says J. Rex Astles, Ph.D., senior health scientist in the Laboratory Systems Development Branch of the Centers for Disease Control and Prevention (CDC) in Atlanta. "In China, for example, not many people are trained in public health issues. The country geographically is so big, STATPack would be a real boon for someone in a public health agency in Beijing to be able to look at a culture sample that's under a microscope in a laboratory clear across the country."

STATPack incorporates secure, dedicated, Web-based technology with a camera attached to a microscope and a remote-controlled digital Web cam connected to a computer, all linked

directly to a state public health laboratory. There, a lab technician can focus the camera in on a suspicious organism, download the image and respond to the lab where the organism is being studied. If the organism is deemed a public health threat, the STATPack system can be used to send an alert to every lab in the network.

"For some of these distant laboratories, it is difficult if not impossible for them to describe to us what they see in a culture sample," says Steven Hinrichs, M.D., director of the Nebraska Public Health Laboratory (NPHL) at UNMC. "STATPack allows us to actually see the sample immediately and assist with the diagnosis in a matter of minutes."

The NPHL has deployed 20 STATPack systems throughout Nebraska. The Oklahoma State Department of Health Laboratory is placing STATPacks throughout the state, and the Kansas Department of Health and Environment will begin deploying STATPack systems in 2007.

Fruhling says the STATPack system exemplifies the mission of the College of IS&T to provide innovative technology solutions, knowledge and community service to all of Nebraska, not just metropolitan Omaha.

"The project also gives our students an incredible opportunity to be on the forefront of technology, working with industry and health care professionals to improve the quality of life in Nebraska," she says. "That's important for everyone, but it's especially important for our rural communities."

Michelle Lund, who received her bachelor's degree in management information systems (MIS) from UNO in 2004, has been with the project since the beginning and is a systems developer for the STATPack software. "I've learned so much, not just about information technology but also the health-related side of things. It really opened my eyes to the public health environment and its needs."

Matt Puumala participated in the

project while studying computer science at UNO. He now works as a STATPack software developer part-time while employed at the University of Minnesota.

Puumala says the project afforded him a comprehensive look into the real-world demands of system administration, database design and the dynamics of team programming. "It gave me great respect for the balance and effort required to develop new

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**Ann Fruhling,
assistant professor**

software," he says, "and I could apply my coursework in a concrete way."

Kimberly Tyser worked as a research assistant to Fruhling while studying for her master's degree in

MIS, which she earned last December. She says the team aspects of the STATPack project continue to benefit her in her job with a U.S. Department of Defense contractor. "Each of us had very different areas of expertise that we were able to share and apply to the project."

Kevin Weiss received a bachelor's degree in computer science and works full time on the STATPack project as a software engineer. He administers routine security audits, monitors the network, maintains the hardware and travels to STATPack sites to perform installations and general maintenance.

"Working on the STATPack project has definitely been a positive experience," he says. "I owe Dr. Fruhling a great deal for the opportunity. She has given me the tools and confidence I needed to excel."

Fruhling is equally complimentary of her students.

"They take a lot of pride in what they do," she says. "If an issue arises, they're right there, ready to roll up their sleeves, get involved and solve the problem."

"I think they're proof that if you surround yourself with good people, everything goes well."

Sailing with Admiral Fruhling

Ann Fruhling, Ph.D., has considerable experience as an instructor and in the corporate world, and she has applied both in her nine years at UNO.

She earned her bachelor's degree from Colorado State University and her master's degree in business administration from UNO. She received her doctorate in management information systems from the University of Nebraska-Lincoln in 2003.

As an assistant professor in the Information Systems and Quantitative Analysis department at the College of IS&T, Fruhling conducts research that includes system usability studies specifically regarding the health-care needs of rural Nebraska residents, agile methods focusing on Xtreme Programming, and design and implementation strategies and assessment for emergency response systems.

Fruhling lives in rural Gretna with her

husband, Brad. The mother of two teenagers, she enjoys gardening and golf, when she has the time, and is an avid runner.

In October, she received the honorary title "Admiral of the Great Navy of the State of Nebraska" from Gov. Dave Heineman for her contribution to the state through her work on the "Infectious Disease Early Warning and Surveillance System."

She says teaching is rewarding personally and professionally.

"I do hear back from my former students, and when they call to share news of career advancement or the terrific positions they've earned, quite often they tell me that the classes I've taught or their experience working with me on research projects really made the difference," she says. "I feel a lot of satisfaction through their successes."