a Living Laboratory

By Marsha Shoemaker

Conversations about SCSU's mushrooming partnership with Camp Ripley are peppered with phrases like "win-win situation" and "everybody benefits." This unique collaboration between Minnesota's academic and military neighbors has earned high praise from both sides – and tremendous perks for the students lucky enough to be involved.

The common denominator in the partnership is the environment. SCSU students and faculty want to study the 53,000 acres of pristine water and largely undisturbed plant and animal life at the military installation, and the military needs the data from their research. Camp Ripley, located about 45 miles north of St. Cloud, is no less than a treasure trove of scientific knowledge – a living laboratory where students and faculty can engage in research and discovery.

SCSU students and faculty are conducting research and compiling and analyzing data, then sharing their findings with Camp Ripley officials, who need the data to meet federal requirements and to ensure they have the data to prove they are maintaining a healthy ecosystem on their land.

"One of the things I like about the partnership is this is sort of a model for how state agencies can work together," said Marty Skoglund, environmental supervisor for Camp Ripley. "They get the job done. It's about as cost-efficient as it can be. When we do our work plan it's a given we'll use St. Cloud State. When we have St. Cloud State in our back yard, we're going to take advantage of it."

Animal, plant life thrive at Camp Ripley.

Besides offering students superb applied research experience in the field, SCSU provides good service and a final product to Camp Ripley, said Jorge Arriagada, SCSU professor of biological sciences. In return students receive financial support in the form of tuition and stipends.

"In my field of study, students can apply classroom principles to wildlife management situations, going out into the field, managing it and seeing the application of that information to real-life management problems," said Marco Restani, a biological sciences faculty member who specializes in wildlife management. Two of his students worked at Camp Ripley this past summer in research involving the endangered Blandings turtle and surveying bird species on the Camp property.

Students Eric Hanson and Joe Eisterhold explore the effects of military activity on water, plant and animal life at Camp Ripley.

According to Restani, the military has measured the effects their training activities have on the ecosystem at Camp Ripley for 15 years, but that data has not been used to its full scientific potential. Now, David Robinson, statistics professor, and Restani's students are facilitating analysis of a long-term data set to conduct valuable trend analyses.

There's a misconception that the military tromping through fields with boots and tanks, with camping and training activities, are hard on the ecosystem, said Col. Richard Weaver, commander at Camp Ripley, the only military installation in the state. "The reality is that sensitive or endangered species often are sustained better in places like Ripley than in more conventionally used places. But we can prove this only if we have the environmental data to back it up."

Camp Ripley and SCSU began to see the possibilities of applying academic expertise to help meet the military installation's environmental needs 15 years ago when the DNR hired a crew through the late Al Grewe, biology professor, to conduct land condition trend analyses of plant and animal life on specific plots. That use of students to begin doing surveys started it all, but it was the late Professor Robert Bixby's efforts that launched a partnership that has translated into invaluable learning experiences and jobs for dozens of SCSU students and graduates.

Bixby believed in the value of moving students out of the classroom and into the field, said Richard Rothaus, assistant vice president for research and faculty development at SCSU, whose Office of Sponsored Programs is the clearinghouse for research grants involving the university. "Bixby believed that when students and faculty branch out beyond the campus, the effectiveness of the university is enhanced as they broaden their experience," Rothaus said.

"It's opened the door to do such a variety of projects," said Skoglund of the work that Bixby, then director of the Spatial Analysis Research Center (SARC) at SCSU, began 10 years ago in his field of Geographic Imaging System (GIS) mapping. "We still do a lot with that mapping," said Skoglund. Currently two SARC employees are housed at Camp Ripley.

GIS, as defined by current SARC director and SCSU graduate Gary Swenson, is a support system to help organizations and individuals make better decisions by providing visual data. In the case of GIS mapping at Camp Ripley, wetlands and other bodies of water, grasslands, trees and roads can digitally display the relationship and characteristics between the elements found on the 22-mile long and 5-to-7-mile wide Camp Ripley installation.

"GIS is so much more than a map," Swenson said. "It brings tangible and intangible benefits by bringing in more data and improving communication in decisions."

The research by Swenson and the staff and students who work at Ripley and on campus has attracted national recognition. "This is one of the best GIS programs in the National Guard," said Weaver. "They look to Minnesota."

The entire partnership with SCSU is a valued asset for Camp Ripley, said Weaver. A major training site for the Minnesota National Guard, Ripley has 600 full-time employees and trains 340,000 military and 125,000 civilians a year. "This really works out for us, and we know the students are doing something important."

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Breathing life into an ecosystem alliance

By Marsha Shoemaker

Budding "weed" specialist Jill Babski Myatt gained invaluable hands-on applied research experience at Camp Ripley.

Jill Babski Myatt's student project for Camp Ripley is legendary in environmental circles. After spending a year and a half counting and identifying invasive plant species – commonly known as weeds – on Minnesota's 53,000-acre military training facility, the graduate student has opened doors for future student research and provided the U.S. military with invaluable data for managing its ecosystem.

Babski Myatt, now a wetlands specialist with the Oregon Department of State Lands, received high praise for her efforts and for the thesis she wrote to complete her master's degree in ecology and botany, which paid off handsomely in personal and career satisfaction.

"It was a unique opportunity," she said. "I got good experience in being organized and independent. It was a lot of work and a lot went into it, but I think that's why I chose to apply." She also benefited by having her tuition funded by the Department of Military Affairs (DMA).

"I was impressed with Camp Ripley," Babski Myatt said. "I went there expecting to see it torn up, but even where there's training it's still in almost pristine condition. It's a neat, neat place."

In a letter to the university following completion of her thesis, Col. Richard Weaver, commander for Camp Ripley, wrote: "I was informed that the data collection, final report, and recommendations prepared by Ms. Babski was one of the most comprehensive and well presented research projects done on behalf of DMA."

Babski Myatt's initial research has launched what Professor Jorge Arriagada, who supervised her master's project, predicts will be several more years of student opportunities in invasive species research at the encampment. "Things are going well," he said, referring to the positive working relationship with Camp Ripley, whose personnel are happy with the return on their investment. "We receive the benefits and they receive the service."

"The word is out," said Arriagada. "Students want to participate." Joe Eisterhold is one of eight undergraduate and graduate students doing follow-up research on Babski Myatt's project on distribution and control of invasive plant species on two Army training sites.

"I'm working on the next step after inventorying the species," Eisterhold said. Already he and Arriagada have produced a report on monitoring and controlling invasive plant species. He has experimented as well with seeding of competitive grasses to see if they will take over the weeds, particularly the poison ivy that poses problems for the soldiers who head to Camp Ripley every year for training.

"Now Joe is making a name for himself and becoming an expert," Arriagada said.

While Babski Myatt determined and mapped the "hot spots" where the pesky weeds were concentrated, Eisterhold has begun to work on a long-term management plan for controlling them.

"It's all about collaboration and interaction," Arriagada said.

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Besides conducting significant research, students gain experience that has led to good jobs for 100 percent of the graduates of these research opportunities. Eric Hanson, a student of Associate Professor Matt Julius, agreed. "This will put me two legs ahead of others in the field when I apply for jobs," Hanson said. "That's significant."

SCSU graduate student Lee Anderson consults with Camp Ripley's CW4 James Hipp on a GIS mapping project.

Hanson worked over the summer at Camp Ripley collecting water samples, testing them in a laboratory, and studying water quality trends in the areas of aquatic toxicology and ecosystem analysis.

"I'm actually doing it," Hanson said. "I'm not sitting in a classroom reading about doing it. And I'm doing the same thing a person who works for the DNR would be doing in a full-time job. It will be easy for me to put on a resume that I've essentially been doing the job I'll be applying for. There's a laundry list of biology students who've gotten great jobs because they put forth the effort to do these projects."

A big part of SCSU's identity is the preponderance of high-quality field and research opportunities available to students to augment their classroom experience. "It's important to our students," Rothaus said. "When asked in an SCSU survey this past year, 68 percent of SCSU students responding said they'd had at least one opportunity to assist professors in scholarly research."

Another significant benefit of research projects is evidence of the university's success in providing quality education. "The best reward is when people say they're really pleased with the quality of St. Cloud State University students' work," said Arriagada.