Students, faculty study Crystal Lakes

Last October, Bloomsburg University students and faculty from three separate classes trekked to Crystal Lakes Camps to collect baseline environmental data — from measuring the amount of metal ions in water samples to collecting vertebrate and invertebrate wildlife.

Students from Steven Rier’s Freshwater Biology class spent their weekend in the wilderness near Hughesville collecting samples of zooplankton, algae and macro invertebrates, like crustaceans and insects. The goal was not only to provide valuable experience for students, but to collect baseline data before Marcellus Shale gas drilling begins.

“It’s a very good example of a pristine mountain habitat in Pennsylvania,” says Rier, associate professor of biology. “The whole idea was to follow this so we now have good baseline data. Year after year we can go up there and sample to see if things have changed and especially if things happen that could impact this area. We can look to see what the implications of drilling in this area might be.”

Students in the Aqueous Geochemistry class had a different agenda, say Christopher Hallen, professor of chemistry and biochemistry, and Cynthia Venn, associate professor of geography and geosciences; their five students collected water chemistry samples to check for alkaloids and metals. Students analyzed the data collected to create a research poster to present at the Geological Society of America conference in Pittsburgh.

The Population Biology class led by John Hranitz, associate professor of biology, conducted a research-intensive study of the dominant vertebrate species on site, the Eastern Red-Spotted Newt. They took samples of specimens and looked to catalog population records, sex ratios and size, among others.

“There is nothing better than getting students away from campus and keeping them overnight in an area with no cell phone reception. Basically they have to live the field science — whether it be biology, chemistry,” said Rier regarding the trip’s significance. “When I look back on my undergraduate days, those were the best experiences, the experiences that left the biggest impression on me.”
Roy Hoffer named Engineer of the Year

He is a certified fire and explosion specialist and student mentor in the fields of engineering and mathematics. He has 29 patents in energy conservation devices. And, now, Roy Hoffer, instructor of physics and engineering technology at Bloomsburg University, has earned the Central Pennsylvania Engineers Week Council's (CPEWC) Engineer of the Year award. The CPEWC represents about 5,000 engineers in Pennsylvania through member organizations such as the Institute of Electrical and Electronics Engineers (IEEE), which has a student branch at BU.

Each year the CPEWC gives out four awards — Young Engineer of the Year, Technical Achievement, Technical Outreach and Engineer of the Year — to engineers nominated by an IEEE committee member. Nominees must be licensed professional engineers in good standing with the 15 Pennsylvania engineering organizations comprising CPEWC.

After years of working in the engineering industry and combing injury scenes and burnt buildings as a forensic investigator and fire and explosions expert witness, Hoffer caught the IEEE's eye. But after working with students from elementary school through university level, Hoffer confesses, his interest now points toward teaching.

"As much as I enjoy fire investigation, that requires working alone. I'd rather be around people and I've discovered a passion for teaching, so that's the route I see myself going," says Hoffer. "We used to visit elementary schools as part of the Lancaster-Lebanon Science Alliance to talk to children about careers in engineering, to ignite an interest early, and I've had a lot of mentoring and student shadowing experience. It's something I really enjoy."

Another highlight of Hoffer's resume is the number of patents he has accumulated over the years, including those for developing more efficient fluorescent lights and other energy-saving devices.

"I've always been a bit ahead of my time. I was doing high-frequency fluorescent lighting research in order to reduce the amount of energy consumed years before others were looking at it," says Hoffer. "I was able to make them more than 25 percent more efficient."

The CPEWC awards ceremony took place in Harrisburg on Feb.24.

When it comes to assisting local law enforcement with digital forensic evidence, Scott Inch, professor of mathematics, computer science and statistics at Bloomsburg University, is willing to help. Inch has aided Pennsylvania State Police and local agencies in several investigations so when he received a call from investigators in Massachusetts who needed to gather evidence on a suspect he accepted the challenge.

The device Inch received was a real estate agent's stolen Global Positioning System, or GPS, that had been reset to factory settings. Although the device had been erased, Inch was able to pull out 177 address locations that corresponded with many of the realtor’s housing listings.

“The evidence was there, but the investigators couldn’t get to it, so that’s when they contacted me,” says Inch. “Even if the information is deleted it can still be there on the device’s hard drive or memory. Deleted doesn’t mean gone forever.”

By tapping into the internal memory of the GPS, Inch was able to get a low-level image showing information previously on the device, despite the thief’s best efforts to wipe it away. That evidence eventually led to an arrest.

Inch doesn’t reserve his digital forensic skills for police investigations; he teaches the same techniques and procedures he uses when working on a case to students in his Computer and Digital Forensics courses.

“My students are prepared to do these sorts of investigations as well. We go over all of the same techniques,” says Inch.

In Bloomsburg, Inch helps with local and state cases where cell phones, digital cameras, computers and other small devices containing crucial evidence come into play.

“We try to help law enforcement whenever we can so we always offer our services free of charge,” says Inch. “It’s just our way of giving back to the community.”