Field Experience

Thirteen BU students enrolled in the department of geography and geosciences’ recent special topics course, Appalachian Transect. This course, a 10-day, field-intensive camping trip, detailed the geology of different regions from the shoreline of North Carolina to the Appalachian Plateau northeast of Knoxville, Tenn.

The class, taught by Brett McLaurin, Cindy Venn and Stephen Whisner, included a visit to Vulcan Materials Co. quarry operations, a tour of the Reed Gold Mine, gem mining in Spruce Pine, N.C., and a stop in the Great Smoky Mountains National Park.

Students enrolled in the course were: Philip Anzelmo, Katie Daud, Sheri Dube, Lynnette Eichenlaub, Ted Grimm, Logan Haga, Richard Hampson, Shane Levengood, Samantha Pfister, Steve Shorter, Kerry Treacy, Jaclyn Yamrich, and Eva Yuen.

Opportunities in Cameroon

Timothy Phillips, chair of the department on instructional technology, and colleagues Helmut Doll and Mary Nicholson traveled to the University of Buea, Cameroon, in May to discuss distance learning opportunities.

The Bloomsburg University delegation conducted an assessment of the University of Buea’s hardware and software, taught workshops on the use of distance learning technologies and provided insights into how the department conducts distance courses through the use of both synchronous, or live, and asynchronous, or self-paced, courses.

Currently, plans are being discussed to create a partnership involving an exchange of ideas about distance learning and, possibly, the creation of a reciprocal arrangement for students from both countries to study together via distance learning.

Solar support

Ned Greene, professor of physics and engineering technology, and Jeff Brunskill, assistant professor of geography and geosciences, were awarded two BU grants for a solar energy project — a President’s Strategic Initiative grant for $5,000 and a Margin of Excellence grant for $10,000. The first phase of the project will focus on installing an array of photovoltaic panels on the south-facing slope next to Ben Franklin Hall, which should be completed by the end of 2011. The second phase, an educational kiosk that is tied to the solar array, will be installed in 2012.

Grant supports water research

Cynthia Venn, associate professor of geography and geosciences, and Chris Hallen, professor of chemistry, were awarded a $27,500 grant to support research on the waters of the Susquehanna River watershed. The grant supports the projects of four summer interns, who are in the field sampling and in the lab analyzing samples.

Their projects are:

- Derek Weicht, environmental science major, geochemistry of Oneida number 3 mine drainage and its effect on Tomhicken Creek
- Jackie Yamrich, environmental science major, geochemistry of streams in the watershed of the West Branch of Little Fishing Creek
- Eliza Reed, allied health major, chemistry of the Susquehanna River downstream of the confluence of the West Branch and the North Branch
- Caitlin Heller, biology major, comparison of the water chemistry across the Susquehanna River at Danville, Watsontown, Milton, and Shamokin Dam.
Observing adaptation in nature

Naturalists Charles Darwin and Alfred Wallace set the world on fire when they coupled their observations of organisms in the field and lab with a robust existing base of scientific knowledge and ideas of their own. The idea of evolutionary adaptation is simple yet weighty in terms of its larger implications and consequences, such as the burgeoning field of evolutionary medicine. Although many approaches to studying evolutionary adaptation have come a long way, one thing that hasn’t changed is the relationship between form and function. How an animal uses its body to perform daily tasks is at the center of Clay Corbin’s research.

Corbin, associate professor of biology and allied health sciences, is specifically interested in linking ecology and anatomy through behavioral performance. “To study ecomorphology,” Corbin says, “you have to spend a lot of time in the field just watching and then trying to interpret what you just saw.”

The crux of scientific behavioral performance, however, is trying to figure out how to quantify it. So, Corbin says, “when you hear about shrimp on treadmills and birds jumping up and down on inkpads, it isn’t a bunch of frivolous taxpayer-funded circus acts. There’s a lot of hard science behind it.”

Corbin’s recent research includes quantifying the shape of bird jaws, wings and associated musculoskeletal systems and then measuring the capacities of those systems in nature. In the field in Puerto Rico and Arizona, he caught birds and measured how hard they could bite finding, in many species, the forcefulness of the bite matches the morphology.

However, Corbin says, “There are a lot of fakers out there. Some bird species, like the groove-billed anis, sport impressive bill dimensions but don’t use them forcibly. Others, such as the Puerto Rican grassquit, have the dimensions and the force to go along with it, but mostly eat food that doesn’t require large, crushing forces. A third group of birds, like the chickadees, have somewhat puny bills, but are unpredictably feisty and downright ferocious.”

The behavioral performance that isn’t easily explained by the anatomy makes for the most interesting science, Corbin says. “We are finding that there are a lot of factors other than anatomy that explain behavioral performance, such as phylogenetic ancestry and current state of health and motivation.”

Biologist Clay Corbin studies how birds make form meet function in the wild.