This summer, Andrew Craft, associate professor of chemistry in the College of Art and Sciences, and two undergraduates, Naima Millette ’09 and Gilberto Jimenez ’09, studied the ability of a variety of metals to store and release hydrogen, using laboratory space in the Integrated Science, Engineering, and Technology complex.

“Think of the metal like a sponge that sucks up water and holds it in its pores. When you wring out the sponge, you release the water,” explains Craft. “Certain metals have the ability to do that with hydrogen. The trick is to wring out the hydrogen without harming the metal.”

Craft has been conducting research into the use of hydrogen as an alternative to fossil fuel since 1983. That research has led to 35 published articles in professional journals. His work is funded primarily by a grant from the Petroleum Research Fund of the American Chemical Society.

“Hydrogen makes for a potentially attractive alternative to fossil fuels,” notes Craft. “It’s much more energetic than conventional fossil fuels, much more abundant, and it burns cleanly in the environment.”

Then why aren’t we pumping hydrogen into our tanks today? Think back to the Hindenburg disaster of 1937, when a dirigible filled with hydrogen burst into flames. “Hydrogen can be very unstable,” says Craft. “If you just liquefy it and fill your tank with it, heaven help you if you have an accident. You need a safe storage medium.”

Today, with the cost of gas topping $3 a gallon, he’s a pretty popular guy around town…any town.
Waging War against the Sea Squirt

It sounds like something out of the 1958 cult film classic, *The Blob*. An indestructible jellylike creature invades Earth and consumes everything in its path, growing larger and larger. “Nothing Can Stop It!” reads the movie’s tagline.

To be sure, Stephan Bullard, assistant professor of biology at Hillyer College, is not going *mano a mano* with a creature from another planet. Instead, his nemesis is *Didemnum*—a type of sea squirt that is blanketing much of the sea floor of Long Island Sound, covering and smothering everything in its path. This summer, Bullard and a student assistant, Jennifer Capece ’08, traveled to Groton, Conn., where they joined several marine biologists from the University of Connecticut’s Avery Point campus and the Smithsonian Institution to research the impact of the slimy sea squirt on the area’s aquaculture.

“One of the major problems facing any ecosystem is invasive species—species that have come to our coast from foreign waters, probably brought in on the hulls or in the ballast of boats,” says Bullard.

Often these creatures are harmless. But not always. Some run rampant and present both an ecological and financial menace to their new environment. Such is the case with *Didemnum*, whose East Coast populations, according to Bullard, are “massive,” and who are threatening the area’s economy by invading marine aquaculture facilities, where they kill shellfish or render them unmarketable.

Interviewed in mid-June, Bullard said he would be spending a lot of time out on a boat diving in the Sound. What exactly would he be looking for? “We’ll examine the growth rate of the species in different environments and look for a means of controlling the population.”

Stephan Bullard
Assistant Professor of Biology

A Secret Society Still Holds Power in Nigeria

When the holidays roll around this December, don’t expect to find Amanda Carlson sipping eggnog or lighting candles. The College of Arts and Sciences assistant professor will be celebrating in Calabar, the capital of the Cross River State in Nigeria, where she will be attending the fourth International Ekpe Festival. An eye-popping parade of colorful costumes, masks, pantomime, and dance, it is part New Year’s party and part religious celebration.

Carlson, whose trip to Africa is made possible in part by a Greenberg Junior Faculty Research Grant, will be studying members of a secret organization in Nigeria known as the Leopard Society, also called the Ekpe.

“The arts of Cross River State, Nigeria, have spawned from ritual organizations that were the primary governing bodies in pre-Colonial times,” says Carlson. “Traditional organizations like the Ekpe now coexist with branches of the modern local, state, and federal governments in Nigeria.

“A renaissance of masquerading traditions is taking place in Cross River State, and I believe it is because these masquerades constitute a cultural tradition that continues to wield real power.”

The Leopard Society is a men’s association consisting of centuries-old cultural and religious traditions that include carefully guarded secret rituals and sacred knowledge involving the Leopard Spirit, a figure often depicted in their secret written language.

Carlson, whose doctorate is in art history and African studies, will use her summer to prepare for the trip. With her December visit, the former Fulbright Scholar will cap 15 years of fieldwork on the arts of the Cross River region.