Rowan University

Winter 2009

CLASNews

The newsletter for the College of Liberal Arts & Sciences

Message from Dean Parviz Ansari

As the new dean of the College of Liberal Arts and Sciences, I am privileged to be leading the largest college at Rowan during such a pivotal time in the University's history. With the recent growth in student population, CLAS is now serving over 5,000 undergraduates and graduate students.

In order to continue our tradition of academic excellence, the College is undergoing a strategic planning initiative that is a collective effort of our faculty and other stakeholders. Together, we are examining our current issues and exploring new opportunities with the overarching goal of enriching our academic programs.

Our efforts will integrate local and global initiatives, including the future formation of the first four-year allopathic medical school in South Jersey, Cooper Medical School of Rowan University.

In our pursuit of academic excellence, we acknowledge the past accomplishments, celebrate the existing intellectual assets, and recognize the significance of our collective wisdom toward the realization of our common goals. To that end, I ask that you join me in advancing the mission of CLAS, and I look forward to working with each of you to materialize the future growth and development of our College.

CLAS goes Green

In the Cornfields: Finding a Use for Refuse

In a perfect world, the United States would be self-reliant in our fuel consumption. But since we're not there yet, Gregory Hecht is working on an alternative that would not only lessen our need for foreign oil, but promote environmental sustainability as well.

An associate professor in the Department of Biological Science, Hecht is collaborating with Gregory Caputo, an assistant professor in the Department of Chemistry and Biochemistry, and faculty members from the College of Engineering's Department of Chemical Engineering. Their goal: to turn the leftover stalks and leaves from corn harvests (corn stover) into ethanol, an alternative to fossil fuel.

According to Hecht, bioethanol is made using an organic feedstock—kind of like an ethanol "starter." The feedstock, in this case corn stover, is placed in a fermenter with a microorganism that breaks down the feedstock and converts it into ethanol.

"There isn't much of a market for corn stover, and it isn't even very efficient at decomposing," says Hecht. "So leaving it in the field doesn't return much in the way of nutrients to the soil. If corn stover could be used to make bioethanol, it would give farmers a new revenue stream."

One of the challenges, says Hecht, is that it's difficult to break down the corn stover because it's composed of cellulose.

"To get around the problem, the corn stover is treated, but part of the treatment results in toxic byproducts. Our goal is to develop microbial strains that can make more ethanol per fermentation, but require

continued on page 2

LAS professors **Gregory Hecht** (left) and **Gregory Caputo** are collaborating with the College of Engineering to turn corn husks into ethanol.

With Help from His Students, Environmental Sociologist Works to Improve the World

DeMond Miller lifted a small, blue trash container and gestured to the familiar recycling logo printed on the front.

"I'm not just concerned with recycling," says the associate professor of sociology. "I'm concerned with how this image affects society. I want to know how this symbol compels people to incorporate sustainability in our society, so we can keep from having to recycle in the future."

Miller has two books published and three more on the way, is director of Rowan's Liberal Arts & Sciences Institute for Research and Community Service, and a volunteer substance abuse counselor. But when it comes to his chosen field, he doesn't consider himself a generalist, but a specialist.

"Above all, I am an *environmental* sociologist, concerned with attitudes, opinions and behaviors as they relate to the environment," he says.

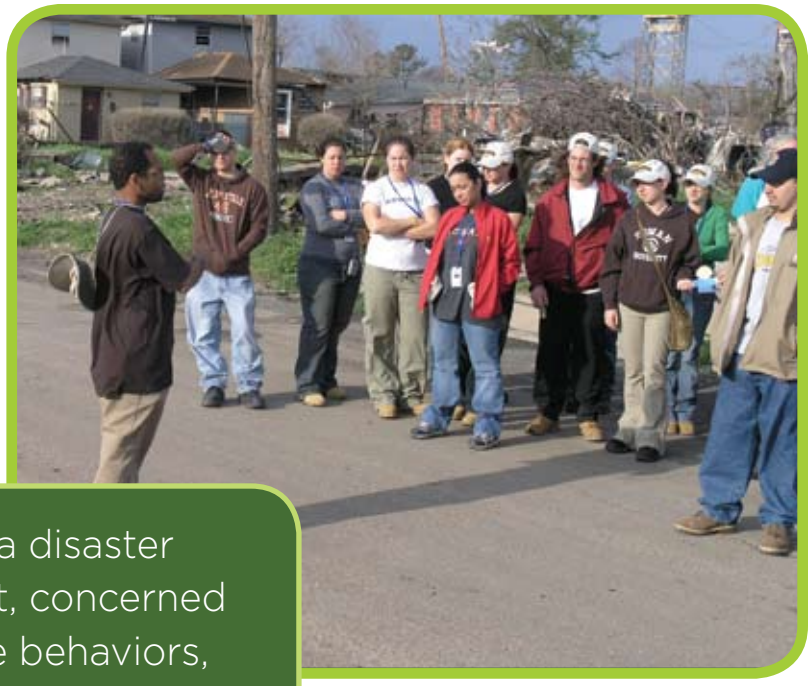
His environmental niche has an even tighter focus. "I am a disaster specialist, concerned with the behaviors, attitudes and power structures that go with the decisions to rebuild a community."

His first book, *Hurricane Katrina and the Redefinition of Landscape*, was the result of very personal circumstances. "I am from Slidell, Louisiana—about 20 miles from New Orleans. My entire family lives in Slidell. My grandmother's house was devastated.

"As a sociologist studying disasters, and with the biggest disaster in our lifetime occurring at my house, how could I not respond? How could I not use everything I knew to rebuild this community in an environmentally sustainable way?"

Perhaps Miller was destined to become a disaster specialist, having done his dissertation on the Exxon Valdez. "I was intrigued with community redevelopment in terms of rebuilding the entities that define life, while ensuring the community's resilience to future disaster."

With all of his work and scholarship, Miller's proudest moments are when he sees his students achieve. He and his colleagues have led students on three trips to New Orleans to help rebuild after Katrina. "My students were installing insulation where there was no insulation before. They were helping people help themselves. They weren't learning from their professor. They were learning from the local residents."



> 'I am a disaster specialist, concerned with the behaviors, attitudes and power structures that go with the decisions to rebuild a community'

Environmental sociologist and professor **DeMond Miller** (foreground), along with his colleagues from the College of Engineering, have led students on three trips to Katrina-ravaged New Orleans to help in the clean-up effort.

In the Cornfields: Finding a Use for Refuse

continued from page 1

less processing of the feedstock so that it would be more resistant to the toxic byproducts."

Caputo's role is to help characterize the properties of the new microbes to determine which ones would be the most useful.

Once this is managed successfully, it's still not certain that turning corn stalks into ethanol would completely eradicate our dependence on foreign oil.

"Ethanol does burn cleaner than straightforward fossil fuels, but, if we use food crops as a feedstock, it's difficult to imagine that the U.S. has enough land to turn into farmland for growing enough of it. Also, the facilities producing it use a tremendous amount of water, and transporting it over long distances is problematic."

Still, says Hecht, it's worthwhile to pursue the project. "The microbes we've developed should allow companies to make ethanol more cheaply. Even if ethanol is not the long-term answer, it's what we're using today so it makes sense to produce it as economically as possible."

Prof Helps Students Find Eco-Friendly Internships

Patrick Crumrine is on a mission. He's made a personal commitment to helping his students secure internships that are intellectually stimulating and meaningful, with the objective of preserving our environment.

That's no easy task. But Crumrine—and his students—have already achieved great success. So far, over the past four years at Rowan, he's helped place 10 students at the Atlantic County Department of Regional Planning and Development, the Bucks County Planning Commission, the New Jersey Audubon Society, and the New Jersey Pinelands Commission, just to name a few.

"We want our students to be more than just 'gophers' and technicians," says Crumrine, an assistant professor in the Department of Biological Sciences and the Environmental Studies Program. "We want them to ask questions and help solve environmental problems."

Crumrine accomplishes his goal in a number of ways. Key to his quest is his involvement with the Research Experience for Undergraduates Program (REU), funded by the National Science Foundation. "Each year, over 100 universities across the country offer opportunities to students, to gain experience working with established researchers at research universities."

One of the students Crumrine assisted was Brian Yates, who attended an REU program last summer at West Texas A&M University. "Dr. Crumrine not only helped me obtain my internship, he's also been incredibly helpful in pointing me in the right direction with my career," says Yates.

"I will be presenting the results of my experiment, with my advisor, to the scientific journal *Eco-Toxicology* early next year. I studied the effects of two herbicides—atrazine and Round-Up—on golden algae. We found that atrazine causes golden algae to produce poisons which kill fish. Fish kills have occurred in Texas since 1993 and have caused millions of dollars in damages to lost tourism revenue and state clean-up."

Crumrine was recently honored with the Junior Faculty Award of Excellence, presented by Rowan's Faculty Center for Excellence in Teaching and Learning. He won it for his approach to teaching the senior capstone course in Environmental Studies.

Crumrine's preferred area of research examines how interactions between species determine which species are able to live in a particular habitat.

"This is useful in determining how ecological interactions between species can benefit us. For example, we can determine which insect predator is best suited to naturally controlling insect pests in agricultural fields," notes Crumrine.

ABOVE: Senior **Brian Yates** will present results of his internship's experiment to a scientific journal.

LEFT: **Patrick Crumrine's** research includes the study of predator-prey interactions in dragonfly larvae and how they affect species diversity in ponds.

New CLAS Initiatives Focus on the Environment

As our environment continues to face challenges, the search for solutions grows. That quest has become a priority at CLAS, with new courses and concentrations constantly in development. All initiatives are being constructed to serve a dual purpose: to find solutions to our environmental challenges and to position students for employment after graduation.

Here's a glimpse of what's to come:

Concentration in Geosciences will provide a solid foundation in geosciences for students who'd like to pursue a career in the field, and for those who are simply interested in learning more about it. This concentration will provide a strong, marketable skill set to students.

Concentration in Geographic Information Sciences (GIS) will focus on the capture, storing, analysis, management and presentation of data linked to location. "GIS" will appear on student transcripts rather than "geography," as employers are more familiar with the former terminology.

Concentration in Planning will combine public sector planning with concerns of the environment to ensure sustainable development of air, water, soil and rock resources. Once again, marketable skills for the students are a priority in this concentration.

Anthropology/Human Geography Track within the Geography B.A. Major will serve students who wish to pursue a career in Anthropology/Human Geography, within a social services agency or non-governmental organization that serves the populations of many different international cultures. It is especially geared to students who are interested in graduate school, offering a more robust combination of courses necessary for higher level study in anthropology or human geography.

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We ask that you pass this issue on, not trash it.

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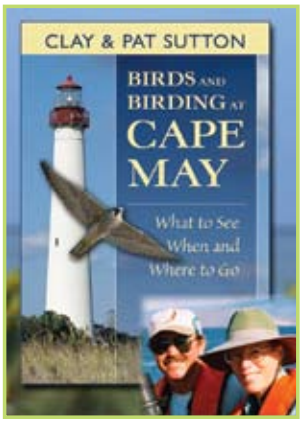
Suttons Guide Others to 'Go Green'

Husband-and-wife LAS alumni Pat and Clay Sutton share a love of many things, but nothing comes close to their shared love of the environment. The two have dedicated their personal and professional lives to preservation and to educating others about all things natural.

Both earned their master's degree in the environmental education program at Rowan—Pat in 1973 and Clay in 1979. Pat took as many journalism courses as she could squeeze into her schedule, while Clay concentrated on the sciences.

Together, they have written a number of books and written and illustrated, with their photographs, a number of articles. Pat has been a working naturalist since 1977, first for the Cape May Point State Park and then for 21 years with the New Jersey Audubon Society's Cape May Bird Observatory, where she was program director. Clay has worked as an environmental planner, was a VP of an environmental consulting firm, and is now a self-employed environmental consultant, naturalist and field biologist.



Pat and **Clay Sutton** have written and illustrated a number of environmental books and articles.

But the Suttons don't just talk the talk. They also walk the walk.

"We recycle everything possible," says Pat. "We compost, have set up rain barrels to water our gardens, and have protected one-third of our half-acre property as a woodlot for wildlife, which we maintain by digging out invasive, non-native plants.

"We've rescued several dogs, and we don't have outdoor cats, so we're not contributing to the death of wild birds. We each educate others about the natural world at every opportunity and have created quite an army of nature lovers and wildlife gardeners."

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