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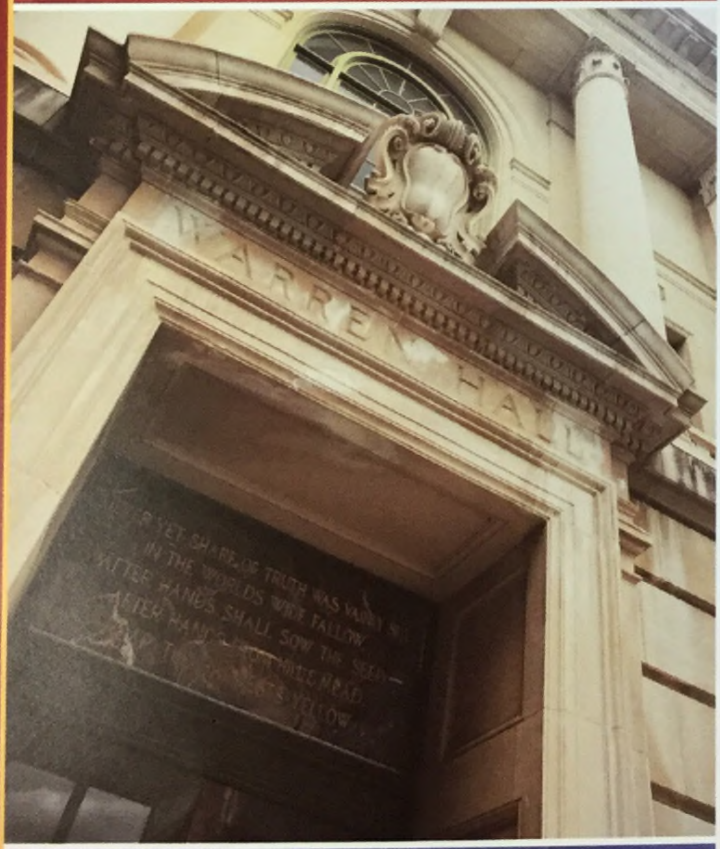

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Spring 2006

Features

Improving Agriculture and Nutrition in Afghanistan

On the Cover:
Some Malian children are malnourished; orange hair may be a sign of malnutrition. Photo courtesy of the Institute for Genomic Diversity.

Departments

Message from the Dean

Cornell Names Skorton as President; Funding Change for Land-Grant Mission

The most momentous news of the last few months, certainly, is that David J. Skorton has been chosen to lead Cornell University. President-elect Skorton—who is a practicing cardiologist; a professor of internal medicine, biomedical engineering, and electrical and computer engineering; a jazz saxophonist and flutist; and a Latin jazz radio show host—is also the beloved president of the University of Iowa. His wife, Robin Davisson, an associate professor of anatomy and cell biology and radiation oncology at Iowa, is a widely respected functional genomicist. Both will hold joint faculty appointments in Ithaca and at Weill-Cornell Medical College.

Skorton will succeed Hunter Rawlings, one of his predecessors as president of the University of Iowa. President Rawlings, who served as Cornell's 10th president from 1995 to 2003, returned to Day Hall as interim president when Jeffrey Lehman stepped down at the end of June 2005.

Among the many issues that matter to Cornell, one of the important ones for us in CALS is the land-grant mission. President-elect Skorton cited this as one basis for his interest in Cornell, along with our university's commitment to "public service and outreach, economic development, and technology transfer." He is a committed proponent of international education. Other commonly held values that he noted include our "very proud legacy of leadership in promoting diversity" and the balance Cornell strives to maintain among the natural sciences, humanities, fine arts, and social sciences.

When the president-elect met with the deans the morning of the announcement, I found him to be exceptionally engaged and engaging. He is ready to lead Cornell University with energy, passion, imagination, good humor, and great intellect. I am delighted to join my colleagues in welcoming both President-elect Skorton and Professor Davisson to Cornell.

Another recent development has promising implications for our ability to carry out our land-grant responsibilities. Through the efforts of President Rawlings and SUNY Chancellor John Ryan, Cornell has worked out an agreement with Governor George Pataki and the State University of New York to change the way money is appropriated to Cornell to fund our land-grant mandate.

Until now, Cornell's SUNY allotment has been calculated according to such metrics as student enrollment and competitive grant funding, factors with no relation to our land-grant activities. Because CALS bears a considerable responsibility for land-grant activities, we have borne an especially great burden from past cuts to SUNY funding.

Under the new agreement, the amount budgeted to Cornell for land-grant activities will be determined separately from the SUNY budget. The governor's current budget proposes $60 million for research and extension related to the land grant. Cornell and SUNY had asked for $73 million. As this magazine went to press, the final number was still to be decided. Also yet to be decided is the allotment Cornell will receive via SUNY to support higher education.

To get a sense of the scale and breadth of our extension and outreach efforts, take a look inside the new Impact portal at www.cals.cornell.edu/cals/public/impact. There you will find nearly 600 reports by our faculty on projects reflecting many facets of our academic priorities—the land grant, the applied social sciences, environmental sciences, and the new life sciences. These Impact statements, all fully searchable, were rolled out in January with the launch of our entirely revamped CALS web site. Check the article on page 5 of this magazine for a full description of its many exciting features.

As we prepare to welcome a new president, the work of this vast research, teaching, and extension enterprise moves continually forward. President Skorton can be counted on to put his distinct visionary stamp on this university, just as Cornell can be counted on to stay true to its deeply rooted institutional values and further extend its reach as a truly great land-grant university to the world.

—Susan A. Henry, Ph.D., the Ronald P. Lynch Dean of Agriculture and Life Sciences

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NEWS

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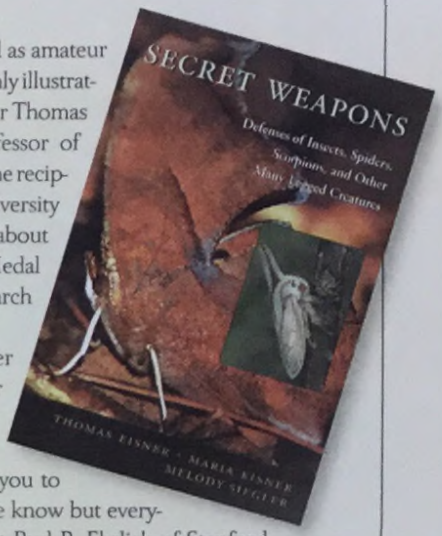
Short Reports

Bugs' Secret Weapons—from Froth to Venom—Detailed in Eisner's New Book

When a darkling beetle performs a headstand, why a tortoise beetle's larva builds a shield out of its own feces, and how a bombardier beetle manages to blast a 100-degree spray at will are a few of the 69 stories in a new book about how insects and other many-legged creatures protect themselves.

Secret Weapons: Defenses of Insects, Spiders, Scorpions, and Other Many-Legged Creatures (Harvard University Press) by Cornell University's Thomas Eisner and Maria Eisner and Emory University's Melody Siegler is in equal parts handbook, field guide, and photo album, chronicling the diverse and often astonishing defensive strategies that have allowed insects and other multilegged creatures to thrive.

From cockroaches and termites to carpenter ants and honeybees and dozens of other miniature creatures from around the world, the authors describe the creatures' arsenals of sprays, venom, froth, feces, camouflage, and sticky coatings. They not only provide a bug's-eye view of how these secret weapons actually work, but also explain the science behind them, from taxonomy and natural history to organic chemistry, chemical ecology, and behavior. The book also contains an appendix with instructions for studying chemical defenses at home.



Intended for researchers as well as amateur naturalists, the 372-page book is richly illustrated with photographs by first author Thomas Eisner, the J. G. Schurman Professor of Chemical Ecology at Cornell and the recipient of the 2005 Rockefeller University Lewis Thomas Prize for Writing about Science and the 1994 National Medal of Science. Maria Eisner is a research associate of biology.

"*Secret Weapons* is another triumph from the fabled Eisner laboratory—a report on wonderful science backed up with spectacular pictures. It will introduce you to a fascinating world that few people know but everyone should know," writes biologist Paul R. Ehrlich of Stanford University in a review of the book.

Susan S. Lang

Stick to Wild Salmon Unless Heart Disease Is a Risk Factor

When the risks of chemical contaminants are considered, a new study shows that the net benefits of eating wild Pacific salmon outweigh those of eating farmed Atlantic salmon, even though farmed salmon has more heart-healthy omega-3 fatty acids than wild salmon. There are important regional differences, however.

Those are the conclusions of Barbara Knuth, CALS professor of natural resources, who specializes in risk management associated with chemical contaminants in fish, and Steven Schwager, CALS associate professor of biological statistics and computational biology and an expert in sampling design and statistical analysis of comparative data. The two co-authored a benefit-risk analysis of eating farmed versus wild salmon in the *Journal of Nutrition* (November, 2005 Vol. 135).

Jason Koski/University Photography

Barbara Knuth

"None of us *[study authors]* argues that the benefits of salmon are not real. But the dirty little secret is that there are risks," said Schwager, noting that even taking into account the risks, the benefits of eating salmon may be particularly worthwhile for some groups. For middle-aged men with previous heart problems, the benefits from the omega-3 outweigh the risk of pollutants, but for younger people, at risk for a lifetime of accumulation of pollutants, the benefits are not great enough to outweigh the risks.

Knuth added: "Because we found regional differences in contaminants in farmed salmon—Chilean salmon showed the lowest levels and European (particularly Scottish) farmed salmon showed the highest levels—careful consumers with a history of heart disease could choose farmed salmon from Chile for their high omega-3 content and relatively lower level of contaminants." She noted that farmed salmon from North America would be a better second choice than European farmed salmon.

To help consumers make informed choices, Knuth serves as a scientific adviser to Seafood Safe, a new voluntary fish-labeling program for companies, retailers, and restaurants. "The program uses certified, independent laboratories to test for environmental pollutants, particularly mercury and PCBs, in fish," she says.

Knuth advises Seafood Safe to help develop methodology, standards, and labels on how to communicate a product's risk to consumers. The labels indicate how many meals consumers can eat of the product each month without being exposed to dangerous levels of contaminants. The labels use standards derived from Environmental Protection Agency (EPA) guidelines.

Susan S. Lang

Biology Students Explore Careers with D.C. Alumni

Robert Lipsky '83 (foreground center) poses with the students.

While most students were savoring the last week of winter break, 20 biology students from CALS and the College of Arts and Sciences were experiencing a fast-paced three days in Washington, D.C., meeting 39 people with science careers—28 of them Cornell alumni. More than a sightseeing trip, these lucky students were able to explore career options they never knew existed, as well as do some valuable networking for the future.

Students heard firsthand reports about a wide array of jobs from speakers from places such as the National Cancer Institute, the National Science Foundation, the National Institutes of Health, the National Academy of Science, the National Zoo, and the National Aquarium. They talked with alumni at all stages of their careers.

"Getting the younger alumni's perspective was very valuable, and it was great talking to people in positions where I'm expecting to be soon," said senior biology major Kristen Pellingra '06.

Robert Lipsky '83 at the National Institutes of Health was impressed with the students' attitudes. "Although the students had a general idea of a career in the life sciences, they welcomed hearing the perspective each of us could give about navigating their career path after graduation," he said.

Last fall, a different group of students went to Boston for a similar experience, visiting and networking with alumni in the biotech and pharmaceutical industries.

Rita Calvo, senior lecturer in the Department of Molecular Biology and Genetics, said, "The Washington trip had an immediate effect on 20 undergraduate biology students. Given the student network at Cornell, I have no doubt that many more students will hear about the new opportunities. This trip exemplifies the great value active alumni add to students' Cornell experience."

Samantha Wickham

Cultivating the Next Generation of Garden Leaders

Since the founding of Cornell Plantations' graduate fellowship program in public garden leadership in 1999, six of the program's eight graduates have attained leadership roles at public gardens in the United States and Britain. The other two have leadership roles in closely related fields. Their positions include director of education, collections manager, curator, nursery manager, conservatory manager, and children's program coordinator.

The fellowship program, collaboratively offered by Cornell Plantations and the CALS Department of Horticulture, is designed to provide a balance of academic training and practical experience for students, culminating with a Master of Professional Studies (MPS) degree in horticulture.

During the four-semester program, fellows complete coursework, do a summer internship at a public garden, gain practical experience at Cornell Plantations, engage in leadership development, and carry out a problem-solving or action project appropriate to the public garden profession.

"Public gardens serve so many vital roles in our society—from educating people to conserving biological diversity. This program provides students with the tools they'll need to be the progressive public garden leaders of the next generation," says Don Rakow, the Elizabeth Newman Wilds Director of Cornell Plantations.

The program's directors are currently enhancing the program by emphasizing leadership development and helping students better understand leadership theory, practice, and application. There is also a commitment to providing funding for students' professional development, such as travel to professional conferences, visits to public gardens, and expenses related to student projects.

Attaining more practical experience is another new component. In addition to completing an internship at a public garden, students are now required to get additional hands-on experiences at Cornell Plantations, such as by designing an education program or assisting in garden development and maintenance. These experiences further students' understanding of particular skills as well as increase their marketability after graduation.

Celebrating at Cornell's graduation ceremony last spring are Plantations MPS program graduates Anna Halverson '05 (left), now the children's program coordinator at the Lewis Ginter Botanical Garden, and Jenny Evans '05, now a nursery manager at Sanibel-Captiva Conservation Foundation.

Julie Warsowe MPS '04 is now director of continuing education at the Brooklyn Botanic Garden. She says the program was "an incredible opportunity and invaluable learning experience."

Sonja Skelly

1,000 Web Pages and Counting! www.cals.cornell.edu

The recently launched CALS web site features a fresh look, expanded information about the college, and robust architecture for further expansion.

"Users will notice the more attractive design and improved navigation," says Aaron Goldweber, the college's webmaster, who managed the 14-month project with a team of content managers and Bob Marteal, the college's web designer. "As they explore, we hope they'll find more content to help them connect with the college in new and important ways."

The web site provides 35,000 monthly users with an audience-based navigation system with links intended for prospective students, current students, alumni/families/friends, faculty/staff, and the general public. The homepage highlights CALS news stories and links to information about the college's academic priorities, vision and mission, and administration and a directory of the various campuses associated with CALS. Prominent links will bring users to information about the college's teaching, research, and extension program areas: www.cals.cornell.edu.

The CALS Admissions site is modeled on their recently published viewbook for prospective students. It focuses on making the application process to CALS informative and easy to follow. Located one level down from the section for prospective students, it directs potential applicants to information about the college, including profiles of current students, information about the faculty, and overviews of all the possible majors within CALS. It also contains links to online applications: www.cals.cornell.edu/prospective/admissions.

Because CALS has a strong land-grant focus, the revamped homepage also includes links to Impact statements that offer a wealth of information about how CALS research and extension programs benefit New York, the United States, and many places around the world: www.cals.cornell.edu/cals/public/impact.

Linked from this page is the Impact portal, which delivers nearly 600 examples of the college's research, teaching, and outreach projects, directly reported by faculty. This completely new content area is based on a fully searchable database and will be updated yearly: http://research.cals.cornell.edu/index.jsp?home=6.

The CALS Research Portal—another innovation—is a content-heavy database that provides information about the people, grants, collections, projects, events, and facilities that make the CALS research environment so vibrant: www.cals.cornell.edu/research.

The CALS web team welcomes feedback and suggestions at calsweb@cornell.edu.

Samantha Wickham

$3.8 Million Libyan Payment for Student Killed in Lockerbie Bombing Funds CALS Professorship

Seventeen years after Pan American flight 103 exploded in the sky over Lockerbie, Scotland, a $3.8 million settlement paid by the Libyan government is funding a professorship named for Kenneth J. Bissett, a member of the CALS Class of 1989, who died in the bombing.

Bissett was returning from a semester with the Syracuse-in-London Program when he was killed, along with 258 others, on Dec. 21, 1988, when a Libyan bomb hidden in a suitcase destroyed the Boeing 747 airliner over Lockerbie.

The Kenneth J. Bissett '89 Senior Professorship in Communication was created from the estate of his mother, Florence Bissett, who directed that any proceeds from the settlement pass to CALS. Cornell received the first of the funds in early 2005. The first holder of the professorship will be Geri Gay, chair of the Department of Communication and director of the Human-Computer Interaction Group at Cornell.

"This gift obviously holds very special meaning for us," said Susan A. Henry, the Ronald P. Lynch Dean of Agriculture and Life Sciences. "Florence Bissett transcended unspeakable loss to make the ultimate expression of belief in the path her son had chosen. This legacy offers us a tremendous opportunity to further enhance our program in communication. We will do everything possible to honor her desire to have her son's aspirations realized through others."

After Lockerbie, Florence Bissett and her husband, John, who has since died, gave part of the proceeds from their son's life insurance policy to Cornell. Their gift established the Kenneth J. Bissett Communication Award, which annually gives $1,000 to a worthy junior or senior in the Department of Communication, and the Kenneth J. Bissett Memorial Jazz Fund, which underwrites a yearly jazz concert presented by the music department.

According to senior lecturer Brian Earle, who was Kenneth Bissett's academic adviser in the Department of Communication and later organized his memorial service at Cornell, the student was a jazz fan, a poet, and an artist who spent his first two years at Cornell studying engineering. He had transferred into CALS only one semester before leaving for London.

Florence Bissett died in December 2002, four months before the Libyan government accepted responsibility for the Lockerbie bombing and set up a fund to pay as much as $2.7 billion to the victims' survivors. Still, Earle believes that she lived long enough to be assured that the money would one day come to Cornell. "Florence signed the papers for the settlement in early December and then died literally weeks later," he said. "I think she hung on until she was confident that the settlement would go through."

Kenneth Bissett's interest in computing and in the uses of technology in communication would have made him a good fit for the current department, Gay said. "I think this department is closer now to what Ken Bissett would have liked to see, with our concentration in computer and information technology where it is today," she said. "He had interdisciplinary interests and didn't want to be just an engineer or just a social scientist. Our emphasis on understanding computing in its social and legal contexts would have been a perfect match for him."

In addition to establishing the Bissett Professorship, CALS has incorporated designs for a community center into the renovation plans for Mann Library that will be named for Kenneth Bissett.

Jeannie Griffith

A Kuchi girl tends her flock near the high pass through the Hindu Kush mountains.

Growing Possibilities: CIIFAD Explores Afghanistan

Professors Alice Pell, Peter Hobbs, and Ian Merwin and PhD student Emily Levitt explore how the college can help Afghans meet their agricultural and nutritional challenges.

BY JEANNIE GRIFFITH

A

According to an ancient Afghan proverb, there is a path to the top of even the highest mountain. In that isolated, brutally rugged country, there are even greater challenges to conquer than the terrain. After 30 years—not to mention 30 or so centuries—of alternating conflict, anarchy, and occupation, the path to surmounting Afghanistan's problems will be long, arduous, and endlessly complicated. But many goals can still be reached.

Three CALS professors and one graduate student traveled to Afghanistan last October to survey the approaches to one major set of problems. The group—Alice Pell, professor of animal science and director of the Cornell International Institute for Food, Agriculture, and Development (CIIFAD); Peter Hobbs PhD '72, professor of crop and soil sciences; Ian Merwin MS '88, PhD '90, professor of horticulture; and Emily Levitt '99 (A&S), MS '03 (HE), a doctoral student in the Program in International Nutrition—spent two weeks there assessing the country's critical nutritional and agricultural needs.

"It was really an exploratory trip to find out what needs to be done in areas in which Cornell could usefully play a role," Pell said. "What we're trying to do, particularly in some of the more remote areas, is to find out exactly what people are growing—and whether they are actually growing the foods that they need. So it's very much an integration between agriculture and nutrition."

Afghanistan recently suffered a five-year drought, the worst in perhaps 60 years. Although wheat harvests have increased significantly with the easing of the drought in 2004, crucial seed stocks have been depleted, the traditional kerez system for tapping groundwater for irrigation has been largely destroyed by war, and opium poppies, which fetch 10 times the price of wheat, are the number-one cash crop. Between 60 and 80 percent of Afghanistan's orchards and vineyards, which once produced raisins, figs, apples, almonds, apricots, and pistachios in sufficient abundance to be exported throughout central Asia, have been destroyed. Many of the trees were used as firewood during the war; the drought claimed many more.

Emily Levitt (left) and Alice Pell visit the property of an Afghan farmer in the Hindu Kush mountains, en route to Mazar-e-Sharif.

Staff from the United Nations and government health offices relax with Panjshir Valley residents after a meeting to train provincial nutrition officers.

Afghan children in traditional dress pose at the Ministry of Public Health after a performance for World Health Day, 2005.

While about 80 percent of Afghans depend on agriculture to make their living, arable land accounts for a mere 12 percent of the country's nearly 250,000 square miles. Less than half of this land is irrigated, and wealthy warlords control much of that. The rest, dependent on very limited and variable rainfall in a normal year, now breaks into chunks the size of small boulders under the plow. Grazing land, which accounts for 45 percent of the total area, is virtually devoid of vegetation in the dry season. Up to 95 percent of the livestock belonging to the nomadic pastoralists were killed by the drought, Pell says. After more than a century of deforestation, only two percent of land is forested, a serious state of affairs in a country where many people cook and heat with wood. The remaining land has nothing to give.

"Forages are sold in the marketplace," Pell says. "Overgrazing is a big problem. There's a period in the winter that's very definitely hungry months. Thirty-eight percent of children and 25 percent of nursing or pregnant women suffer from anemia. One in five children dies before reaching the age of five, and 54 percent of kids under five are stunted. They've resorted to throwing packages of vitamin C out of airplanes, and they're trying to provide vitamin A through the health service. Our approach is to ask why they aren't growing more pumpkins and squashes, good sources of vitamin A that are part of the local diet."

Pell, Merwin, Hobbs, and Levitt made the trip with representatives of Global Partnership for Afghanistan, a New York City–based nongovernmental organization (NGO) founded by two Afghan-Americans and two Americans for the purpose of reviving agriculture in Afghanistan. Members of the organization had their first discussion with Cornell faculty and others during an April, 2005, conference call organized by members of Senator Hillary Rodham Clinton's staff. In the course of several subsequent meetings on campus, dozens of CIIFAD members expressed their willingness to travel to Afghanistan.

Of the four who were selected, only Emily Levitt had been there before. From January to April last year, she conducted research for the Afghan Ministry of Public Health aimed at developing a growth-monitoring and promotion program to improve children's nutrition.

From Kabul, the CALS group traveled south to Lowgar and then north over the mountains in a westward arc through Pol-e-Komri and into Balkh province, just south of the border with Tajikistan and Uzbekistan. In Mazar-e-Sharif, they met up with Mark Henning '93, MS '00, the local representative for Joint Development Associates (JDA), another NGO. Henning arranged visits to fruit-growing villages in the Kholm District; the group also viewed JDA crop trials and helped plan wheat tillage experiments. During their two weeks in Afghanistan, the Cornell group gave workshops on sustainable agriculture and conservation tillage; met with ministry officials, community health workers, and international aid agencies; toured a milk-processing facility; and surveyed areas with potential for irrigation. "In the farm villages, we were bombarded with every question," Pell says. "I have never seen such hunger for knowledge."

The training of farmers has suffered along with every other aspect of education in the past 30 years, and bringing back agricultural education will require a lot of grassroots creativity. "Imagine being in a 30-year time warp," Pell says of Afghanistan's universities. "All the faculty were either trained before 1978 or trained by those faculty, and there's been almost no incoming information since then.

"They have extremely limited library resources," she continues. "TEEAL—the Essential Electronic Agricultural Library—is available at the University of Kabul, but they only have five computers for 40 faculty and 800 students. Electrical irregularities are nothing unusual, but at Balkh University in the north, the supply is extremely erratic."

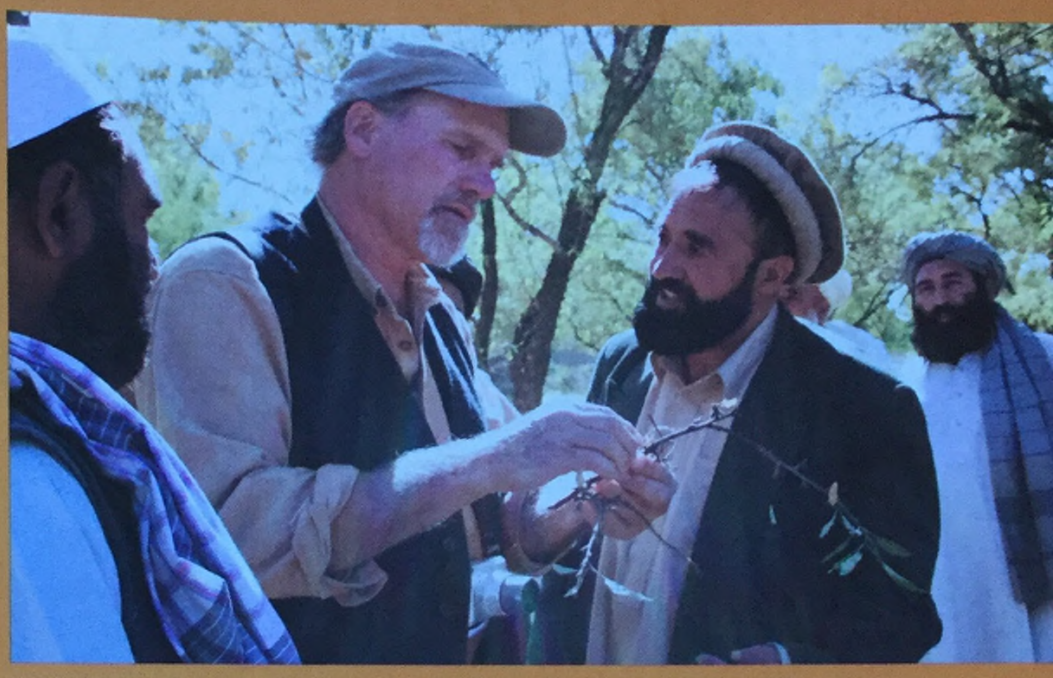
Without reliable electricity and electronic equipment, access to many learning resources like the recorded lectures offered through Cornell's Transnational Education Program is very limited. Pell and her colleagues are considering how to offer short courses and make other materials available.

The experimental farms at the universities of Kabul and Balkh have fallen into disuse, and the idea of reestablishing them was raised during their trip, Pell says. The Cornell group is more interested, however, in helping the universities form partnerships with local farmers. "If students are going to do crop or soils or livestock research, why not do it on land that's already under cultivation and try to get some creative extension projects underway?" she asks.

Beyond food security is the issue of developing products for export. Afghanistan's climate and soil are well suited to orchards and vineyards. But with no facilities for storing the fruit, it must be transported over the border and then reimported for consumption. "By the time you've walked a load of apples for five days down a mountain path to a road, and then bumped them over the road to Kabul and on to Pakistan, those apples may not be in very good shape," she says. "Now, that's an area of real opportunity—is there a way to establish a juice plant?"

Probably, Pell thinks, but first the universities must develop a food science curriculum to teach the necessary skills. And on the farming side, she points out, "You need to figure out what people are going to do for the next five years as the trees get going.

"There is no one place to start, because all of these things are so interdependent," she concludes. "We're just one little cog in a much, much bigger effort."



Horticulture professor Ian Merwin works with Afghan farmers in an orchard. (Photo by Suzanne Thomson, Global Partners for Afghanistan.)

The difficulty of finding flexible funding for a start-up project will impose the biggest limit on the scope of Cornell's involvement. Pell is very encouraged, however, by the fact that Levitt has funding for her thesis research that will enable her to return to Afghanistan this April. Once there, she will work with Henning to establish at least a toehold for scholarly exchange with the University of Kabul and Balkh University. "We're going to have to choose some very small projects like Emily's to get our feet on the ground, develop some partnerships, and figure out what we can and can't do," Pell explains.

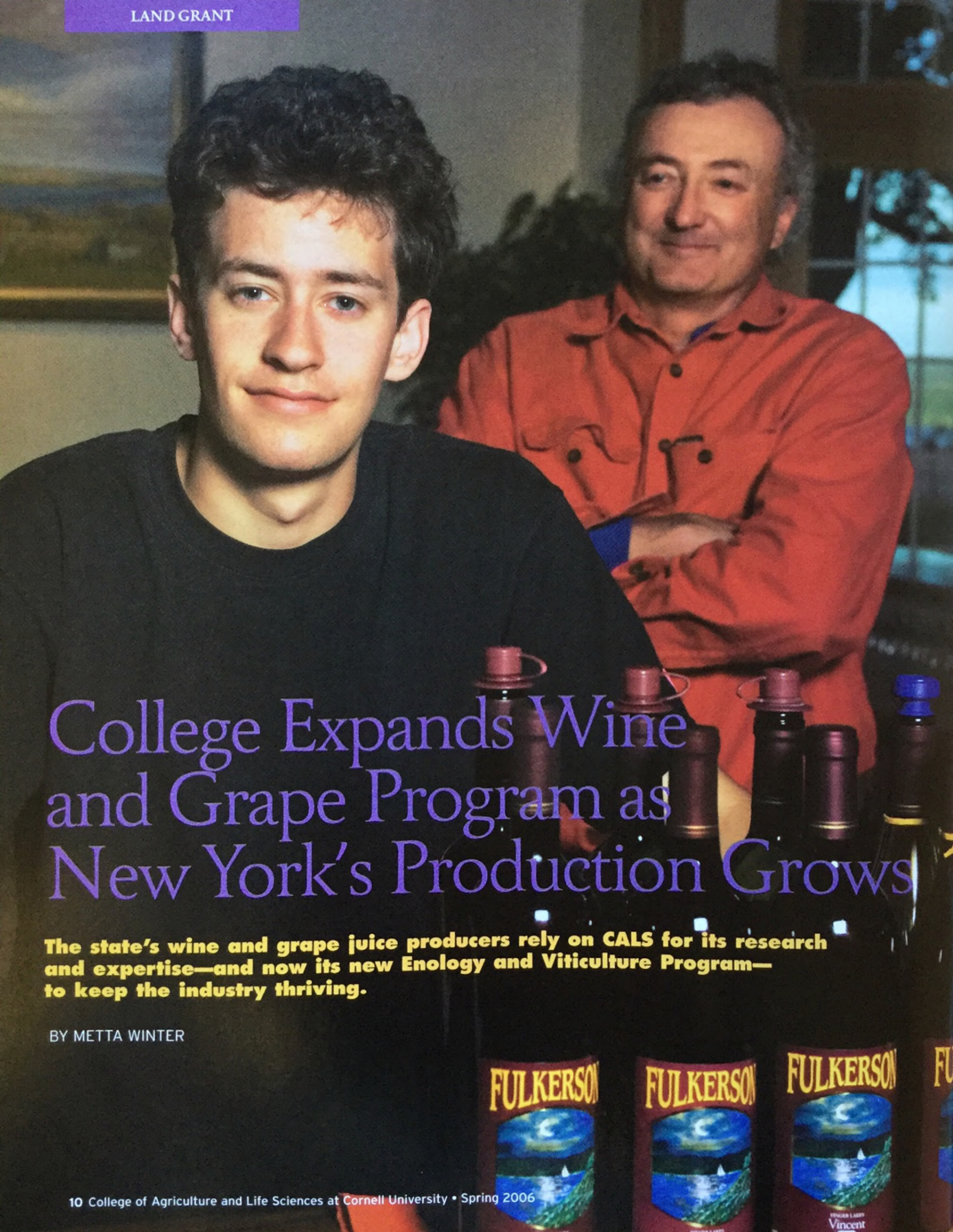
But she is optimistic that the group can be effective. "CIIFAD really works on social capital," she says. "There's a group of faculty at Cornell who love working in developing countries and who have expertise that's highly relevant. And there are all sorts of opportunities to increase agricultural production and food security that aren't technically difficult. Pulling the pieces together is exactly why we took the group of people that we did. We already know how to do a lot of these things; the question is just one of getting information out to people."

Pell also has great faith in the determination and resilience of the Afghan people. "It's very easy to paint a really bleak picture without looking at what some of the strengths are," she says. "There's a spirit there that hasn't been quashed. There's a richness to the country that we don't see in the Western media. It doesn't mean that they aren't starting from some pretty difficult places, but you also get the feeling that there's an awful lot of pride and ingenuity that will go into coming up with solutions."

Two images have stayed with Pell that symbolize for her the poetry and optimism of the Afghan people. The first were "some of the most beautiful rose plants that I have ever, ever seen—breathtakingly beautiful," she says. The second was the sight of men and boys standing on the dome of the mosque at sunset, flying their kites.

One flower does not bring spring, says another Afghan proverb. But Alice Pell and her colleagues do believe that spring will come again to Afghanistan.

Photos provided by Ian Merwin and Emily Levitt.



College Expands Wine and Grape Program as New York's Production Grows

The state's wine and grape juice producers rely on CALS for its research and expertise—and now its new Enology and Viticulture Program—to keep the industry thriving.

BY METTA WINTER

Stellar news about the economic value of New York's wine and grape industry is all the sweeter when it comes from the Napa Valley. Six billion dollars a year! That's how much the growing of grapes and making of wine, grape juice, and other grape products contributes to the state's economy, according to a study recently conducted by MFK Research, the industry's foremost economic and market research firm. As it happens, MFK Research is in the heart of California's wine country.

"This economic analysis has generated huge response across the board and stimulated further interest at the state level in supporting the wine and grape industry," says CALS associate dean Thomas Burr. "With its expanded program in enology and viticulture., the college is ahead of the curve."

"Expanding" is the operative word, notes Tom Davenport, director of viticulture for the National Grape Cooperative Association, whose member-growers provide grapes for Welch's, the world's foremost marketer of Concord and Niagara grape–based products. Davenport points out that, besides Cornell, the other major contributor of viticulture and enology research in the United States—the University of California, Davis—has reduced its program due to state budget cuts.

"In my judgment—and I work with grape growers across the country—Cornell is the leading viticulture research institution in the United States, maybe even the world," Davenport says. "The Concord growers, as well as vinifera and hybrid growers, have all come to rely on the technical expertise at Cornell."

Winery owners agree. "We depend on the program to develop new techniques to grow Finger Lakes grapes economically while pursuing high-quality fruit that will result in world-class wines," says John Martini, owner of Anthony Road Wine Company, whose vineyards overlook Seneca Lake.

Such trust is built on more than 125 years of success stemming from an industry collaboration with CALS scientists in Ithaca and at the New York State Agricultural Experiment Station in Geneva (NYSAES). Their discoveries have been quickly put to the test in real production settings by forward thinking growers continually striving to produce the highest-quality grapes for wine and juice.

Take the area of mechanization. The Geneva Double Curtain training system, and a mechanical grape harvester paired with it, have become an industry standard worldwide. Other discoveries have been tailored to New York's industry, such as grape varieties bred to thrive on the state's 946 vineyards. Fifty-three new varieties of grapes have been released at the station; of the six that are hybrid wine grapes, Cayuga White has been particularly successful.

Today, New York growers can get clones of any grape variety that they think will improve their business, thanks to an import permit and a virus-screening program at the station.

"This opens the whole world to New York growers," Burr explains. "On their travels, if they learn about a clone of, say, Riesling that has particular characteristics that would be an improvement over the Riesling they currently grow—perhaps more winter hardiness or a particular growth habit or nuance of flavor—the certification program will offer a means for obtaining these vines and eventually planting them in their own vineyards with confidence that they haven't introduced any harmful viruses into New York State."

In addition to focusing on the quality and characteristics of grape varieties, more than 40 scientists at the station conduct viticulture research in all areas of grape growing from biological control (using mites to control powdery mildew) to improving production in acid soils with rootstocks and soil management to evaluating the effectiveness of novel pesticide sprayers.

Such a range of research is vital because, compared to California, New York is a tough place to grow grapes. The environment is conducive to the development of all the major diseases of grapes, and major insect pests of grapes thrive here, too.

"It's essential to have scientists like ours run highly productive research programs and stay on top of these industry threats," Burr says.

The intellectual power of the station is increasing through new college hires (three in enology and viticulture in the past year alone) and also the addition of federally funded scientists coming to the U.S. Department of Agriculture's Agricultural Research Service (USDA–ARS) facilities at Geneva. The National Clonal Repository for cold-hardy grapes (containing 1,275 different genotypes of *Vitis*) is housed there in the USDA–ARS sponsored Plant Genetic Resources Unit. And existing research will be expanded at the new 59,000-square-foot USDA Grape Genetics Research Center slated for construction in Geneva in 2007.

"Scientists working on grape genomics will apply very cutting-edge technologies to investigate how specific genes influence major challenges from cold-hardiness to disease resistance," Burr explains.

Cornell Cooperative Extension associates play a major role in getting the latest research into the hands of growers. The state's varying microclimates and soil types necessitate careful choices in grape varieties and production

Kevin Stearns/University Photography

Sayre Fulkerson '75 and son Steve, who is currently a student in the college's Enology and Viticulture Program, carry on the family tradition of growing grapes on the western slope of Seneca Lake. The Fulkersons opened their winery in 1989.

Tough Times for Grape Juice

New York State has been the backbone of the grape juice industry since Thomas Bramwell Welch first pasteurized grape juice to produce "unfermented wine" in 1869. In fact, 71 percent of New York's grape production goes for juice. But times are tough for growers of Concord and Niagara grapes. The popularity of low-carbohydrate diets has driven down the sales of fruit juices at the same time that companies using juice concentrates have begun buying cheaper varieties grown in California, Chile, Argentina, and elsewhere off shore.

"If we are going to be competitive, we've got to be competitive in our production on the farm," says Tom Davenport, director of viticulture for the National Grape Cooperative Association. "So the value of Cornell research in developing new technologies is critical."

Also, scientists in the Department of Food Science are continually developing new Concord grape products to entice calorie-conscious consumers.

In addition, the college provides transitional assistance to growers who want to leave farming altogether, convert part of their operation to wine grapes, or start their own winery.

The staff of New York FarmNet provides free, confidential consulting to growers on how to preserve financial capital and other aspects of selling a farm business.

For those who want to plant wine grapes or begin their own winery, finding a buyer for their raw product or developing their own business plan before making any changes is the key to future profitability. Growers can get personalized help from business management specialists with Cornell Cooperative Extension and faculty, among them Gerald B. White, a professor in the Department of Applied Economics and Management. White, with the help of graduate students Mark Pisoni MS '01 and Trent Preszler MS '02, has produced four publications that offer a guide to vineyard establishment and production cost, a business planning guide for small premium wineries, an example of a business plan for a small premium winery, and an analysis of strategies for marketing premium wine in New York City.

"Growers see Cornell as an unbiased source of information when talking about transitioning wherever it may take them," Davenport notes. "What people from Cornell say carries a lot more weight and opens people's eyes."

Metta Winter

practices. The Finger Lakes are ideal for Old World whites such as Riesling; Long Island is primarily congenial to growing Merlot and other Old World reds; and Concord and Niagara thrive primarily in the western part of the state. Each region has a specialized industry support program tailored to meet its own growers' concerns.

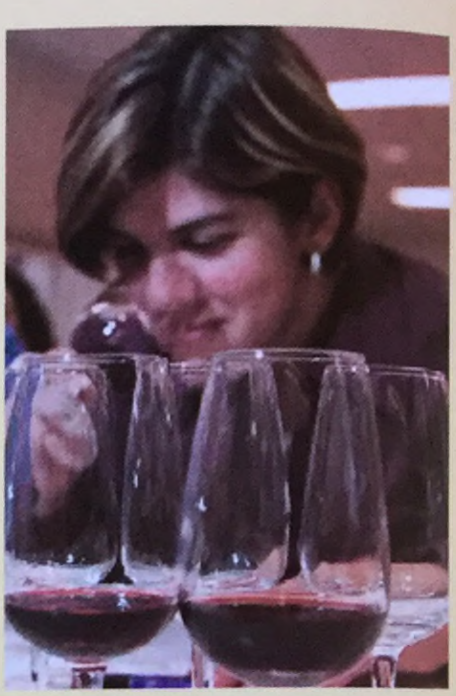
At the Long Island Horticultural Research and Extension Center in Riverhead, Alice Wise, the viticulture extension specialist, addresses the needs of grape growers and wineries on Long Island. Steven McKay works with growers in the Hudson Valley. The two often can be found out at a vineyard evaluating fruit damage from inclement weather or advising a grower on the best cultivation practices.

Extension associates also organize annual regional conventions such as the Finger Lakes Grape Growers Convention, which more than 300 industry members attend to learn the latest technologies to help improve quality and efficiency.

"The researchers have always been forthcoming with relevant information that has helped us improve the quality of our grapes and the quality of our wines," says Scott Osborn, owner of Fox Run Vineyards, whose list includes 18 types of white and red wines, a blush, and two ports. "Their cooperation with us is one of the major reasons that the Finger Lakes is one of the top wine regions in the world."

Since the 1950s, the bulk of research and extension activities addressing the needs of Concord and Niagara producers has centered in the 30-acre Cornell Vineyard Laboratory in Fredonia, N.Y., site of the Lake Erie Regional Grape Program. This program, a joint venture of the college and Pennsylvania State University, was formed a decade ago because the geography, the growers, and the dynamics of the industry are the same in western New York as they are in northwestern Pennsylvania. Juice processors and wineries value the program so much that they voluntarily donate 75 cents per ton of processed grapes annually to its support.

"This is a unique research funding model," Davenport points out. "Even in California, there is no formal system to collect funds from wineries and processors cooperatively."



University Photography

A student develops her "nose" in the college's basic course, Understanding Wine and Beer.

Increasingly, growers in western New York are moving away from Concord to producing grapes used to make wine—hybrids such as Cayuga White as well as Pinot Noir, Riesling, and other premier vinifera grapes—following a trend that began elsewhere in the state 50 years ago. (Concord grapes now sell for $150 to $200 a ton, while Riesling brings in $1,400 to $1,700 per ton.)

An Expanding Wine Industry

The college began research in winemaking in the 1960s. In 1976, the Farm Winery Act was passed by the state legislature, allowing grape growers to open their own farm wineries, and nine registered. Today, more than half of the state's counties have one or more wineries; the current total of 212 grows almost daily.

This explosion is due in no small part to the efforts of Thomas Henick-Kling, a professor in the Department of Food Science and Technology, who came to Cornell in 1987 to conduct enology research and direct the Cornell Enology Extension Program. The Wine Analytical Laboratory and Wine Data Bank he established at the Geneva experiment station provides winemakers with technical analysis for quality assurance and problem solving.

"Professor Henick-Kling and his group are

exactly what is needed at this stage of the New York wine industry," says Charles Massoud, owner-manager of Paumanok Vineyards, a 77-acre estate winery on the North Fork of Long Island. Massoud turns to the lab with requests for help or a specific chemical analysis.

"If you don't know what you need, they will work with you to understand the problem and recommend a solution. Their availability and readiness make it easy to connect even from a remote location," Massoud says.

Henick-Kling and his colleagues at the laboratory conduct research on the physiology of lactic acid bacteria of wine, adaptation to low pH, ecology and metabolism of wine year, the effect of yeast and bacteria on wine flavor, and the development of starter cultures for wine fermentation.

The published results of the laboratory's research on topics such as the genetic characterization and flavor contribution of the major wine spoilage yeast *Brettanomyces* has garnered broad recognition for the high-quality work done there.

Winemaking trials are also conducted in the pilot plant at Geneva to investigate the effects of viticultural production and vinification techniques on wine quality.

The enology group is expanding with the current addition of a specialist in wine microbiology and another with expertise in wine chemistry. Both of those faculty members will have half-time responsibility for teaching in the college's undergraduate degree program on the Ithaca campus.

"This is the first time that four-year bachelor's degrees of this kind have been offered in the eastern United States," writes Eric Arnold in "The Winemaking Degree Goes Ivy League" appearing in the January 2006 issue of the widely regarded and internationally distributed magazine *The Wine Spectator*.

"We're very excited about the new Enology and Viticulture Program at Cornell," says Frederick Frank '79, president of Dr. Konstantin Frank Wine Cellars, whose grandfather Konstantin pioneered winemaking in the Finger Lakes. "The eastern wineries will grow much faster with the addition of new graduates from Cornell who will help improve the professionalism of our industry." (If he has his way, Frank's three children will someday be among them.)

A first-rate program to educate tomorrow's wine industry professionals was launched in 2003 after years of urgent pleas from New York's winery owners and vineyard managers. The dearth of qualified personnel is a long-standing problem nationally, attracting transfer and out-of-state students in addition to those looking forward to careers in the Empire State.

Students primarily interested in learning how to turn grapes into wine enroll as majors in the Department of Food Science, with a concentration in enology and a minor in plant sciences. Students who enroll in the Department of Horticulture have a plant sciences major in which they study the cultivation of grapes while taking enology courses. Courses in the economics of vineyard management and wine marketing will be added in time.

"To make good wine, students must be familiar with food analysis, food chemistry, food microbiology, and other basics of food science," notes Joseph Hotchkiss, chair of the Department of Food Science.

Because enology and viticulture rely greatly on technique, an internship is included in the curriculum. The Cornell Wine and Grape Industry Expo was held for the first time this spring to introduce winery and vineyard owners to students and familiarize students with potential employers. Massoud looks forward to the recruitment opportunities that lie ahead.

"Initially we want to explore recruiting summer interns and, down the road, hire graduates as needed for permanent positions in grape-growing and winemaking," Massoud says.

Last June, the New York State Assembly passed bill 07379, amending the alcoholic beverage control law to allow direct interstate shipment of wine and paving the way for phone and Internet sales.

"Many New York wineries have hundreds and even thousands of out-of-state consumers in their computers who have wanted to buy their wine," says Jim Trezise, president of the New York Wine and Grape Foundation. "This will also transform New York wine from a regional industry to a national player. Many prominent wine writers know and love New York wines, but can't write about them because their readers haven't been able to get them—until now."

New York Wine and Grape Foundation

Thomas Henick-Kling, director of Cornell's enology program, checks the progress of test batches of wine.

American Indian Program Has Historic Connections to Cornell

BY AARON GOLDWEBER

The names Seneca, Onondaga, Oneida, Cayuga, Mohawk, and Tuscarora are immediately recognizable to anyone who has spent time in the Ithaca area. Popularly known collectively as the Iroquois, these Indian nations have for centuries called their confederacy by another name: Haudenosaunee. As the original stewards of the land, the Haudenosaunee—whose political structure influenced the development of the U.S. Constitution—are indelibly linked to this region's past, present, and future.

Jane Mt. Pleasant is director of the American Indian Program.

The Haudenosaunee are also linked to Cornell because of its location and land-grant status. "Cornell University sits in the heart of the homelands of the Haudenosaunee," explains Jane Mt. Pleasant, director of the American Indian Program. "The university's service to Native Americans of this region and this country is natural and expected."

The American Indian Program (AIP) promotes the link between Cornell and Native populations through its work in student services, curriculum development, and outreach into American Indian communities. These three major components of the program's mission are integrated into a mixture of education, research, and community relations borrowing from diverse academic fields. With an academic appointment as associate professor in the Department of Horticulture, Mt. Pleasant identifies herself as an agricultural scientist, but it doesn't take long to recognize her own ties to the social sciences.

For Mt. Pleasant, the application of scientific research to boost cultural knowledge is where she finds her home in the AIP. "I'm interested in all the ways that plants intersect with people," she says.

The beginning of the AIP was more modest than the thriving program in evidence today. In the early 1970s, an unfunded group of staff, faculty, and students formed the American Indian Affairs Committee to serve Native American Cornell students and to raise campus awareness of issues of concern to them. Student recruitment efforts started at this time, and in six short years, 1975 to 1981, the number of Indian students on campus grew from a handful to more than 30.

Those early days of "patching things together," as Mt. Pleasant puts it, led to a funding proposal; stout support from President Frank Rhodes, Provost Keith Kennedy, and then-CALS dean David Call; and the formal establishment of the American Indian Studies Program, later renamed the American Indian Program. During the 25 years since its formal establishment, the AIP has widened its influence beyond the campus, extending throughout the state and throughout the country.

University Photography

The annual powwow held at Cornell's Barton Hall draws participants from many Indian nations in the United States and Canada.

Enriching the Campus: Recruitment of Native Americans

From the beginning, as the foundation for what would become the AIP was being laid, Frank Bonamie (Cayuga) and Barbara Adams (Tonawanda Seneca) focused on students—from serving the needs of Native students already on campus to establishing a strong model of recruitment. In fact, Mt. Pleasant, whose father came from a Tuscarora reservation near Buffalo, was recruited as a student into a young AIP.

Three Sisters Mound System

An example of the integration of applied research and outreach connected to the American Indian Program is Jane Mt. Pleasant's work with a research project titled "The Science Behind the Three Sisters Mound System." The project seeks to demonstrate that this indigenous cropping technique represents a sophisticated knowledge system that incorporates and uses the same agronomic principles as our science-based contemporary cropping methods.

"I want to validate the knowledge embedded in the Three Sisters and to show how it incorporates practices that contribute to the long-term sustainability of the system," Mt. Pleasant says.

The system uses the intercropping of corn, beans, and squash because each crop offers a valuable piece: the broad leaves of the squash work to inhibit weed growth, and corn stalks provide sturdy poles for the beans, which provide soil-enhancing nitrogen. To the uninitiated, plots using this system might look rather unkempt, but, like the incredibly diverse and thriving Native woodlands and grasslands of North America, this tangle of vegetation makes an ideal, long-term growing environment for chosen crops.

"The project has been particularly successful in showing the sustainability of Native agricultural systems. Though not as intensive, it is more sustainable," she explains. "Furthering knowledge about the Three Sisters has potential to influence diverse areas including Native American communities and large-scale commercial agriculture."

University Photography

Akwe:kon, whose Mohawk name means "all of us," is the only American Indian residential house built on an American university campus.

To this day, more than 30 years later, Bonamie is still intimately involved in supporting the recruitment efforts of the program.

"During the 1970s, I couldn't believe how few Native students were on campus; I felt that as a land-grant institution, Cornell had an obligation to the Native students and that they deserved an entry into a prestigious university. I worked with Presidents Corson and Rhodes and Dean Dave Call to help out where I could—splitting the cost to buy computers for Native students, contributing to the annual powwow. In 1999 we established the June and Frank Bonamie Scholarship Fund," Bonamie explains.

Mt. Pleasant touts the recent success of recruitment efforts such as these. "The number of entering undergraduate students in the program has jumped in recent years—more than 30 have been entering each year since 2003. Currently enrolled through the program are 25 Native graduate students and 100 Native undergraduates," she notes.

Competition for top students is fierce, with Stanford, Harvard, Dartmouth, and Cornell all looking to sign the same prospects. Students who are not from the traditionally college-bound populations prove to be the toughest recruiting challenge, and many of them live on reservations.

Cornell and the American Indian Program are recognized for their success in retaining Native American students once they come to campus, however. Between 70 and 80 percent of matriculated students graduate—double the national average of "majority" (non-Native) institutions.

"Good retention comes from good recruitments. The university has made a firm commitment to Native students and the numbers reflect that commitment," says Mt. Pleasant.

Inclusiveness: Curriculum for Natives and Non-Natives

The AIP's student services are directed toward Native Americans, and the program's academic curriculum, American Indian Studies (AIS), is for every student on campus.

The AIS curriculum has two minors: one for undergraduate students in any of the seven undergraduate colleges at Cornell and one at the graduate level for students in fields within the Graduate School.

The curriculum offers a multidisciplinary program focusing on the unique heritage of American Indians and their multidimensional relations with other peoples and nations in the United States and Canada. Students address such topics as the sovereignty rights of Indian nations and the contemporary relevance of Indian attitudes toward the environment.

According to Mt. Pleasant, there's plenty of intellectual firepower coming from the faculty ranks. "We're quickly gaining top scholars," she says. "Our 11 professorial faculty are teaching wide-ranging courses of study that build on our curriculum mission: to build the intellectual foundation for the resurgence of Native community and nation through rigorous scholarship and research."

Social Movements for Social Justice (AIS 311/DSOC 311), a CALS undergraduate course, addresses this mission. Taught by Angela Gonzales (Hopi), assistant professor in the Department of Development Sociology, the course introduces students to the causes, characteristics, and consequences of social movements using the underlying rationale that social movements have important influence on society and culture. For case studies, the course uses 20th-century U.S. movements for social justice, including the environmental justice movement, the American Indian (Red Power) movement, and the antiglobalization movement.

Other courses on campus that are cross-listed with American Indian studies include Cultures of Native North America, Seminar in Iroquois History, Native American Philosophies, American Indian Women's Literature, and Federal Indian Law: the Legal Construction of Indian Country.

Building Communities: Outreach Has Impact

Along with student services and curriculum, the third major piece of the AIP is outreach into Native communities. As a part of fulfilling its land-grant mission, the program's outreach activities are expanding.

"Dean Susan Henry challenged us to increase and improve our outreach activities," Mt. Pleasant says. "Our outreach is becoming more visible. Charles Geisler, the program's associate director of outreach, is charged with pushing this even further."

As an example of this renewed commitment to outreach, Mt. Pleasant cites the New York State Water Management Project, which is in the proposal stage for federal formula funds. The project, "Community-Based Co-Management of New York Water Resources: Forging a Multiethnic, Full Circle Approach," seeks "water wellness" for New York communities.

Deeply integrative, the "full circle" approach leverages Cornell-based applied research on water-related topics with outreach from the Haudenosaunee Environmental Task Force and Cornell Cooperative Extension to educate communities and policymakers—key to sustaining a viable water supply for the state.

Mt. Pleasant is particularly excited about the project's collaboration between Native and non-Native communities: "It's an opportunity to work with Native communities on water rights issues where there are common concerns and common solutions." She contrasts this with the land-claim issues that dominate much of the social and political relationships between Native and non-Native communities.

"This one is a possible win-win for everyone," she says.

Cornell's Native American Collection on Display at Kroch Library

Recently swelling by more than 40,000 volumes and manuscripts, Cornell's renowned Native American Collection is now the centerpiece of the University Library's extensive holdings on American Indians. Selected treasures from the collection—"Vanished Worlds, Enduring People"—are on display in the Hirshland Exhibition Gallery of the Kroch Library through June 2, 2006.

Acquired in 2004 from the Huntington Free Library in the Bronx, N.Y., the Native American Collection documents the aboriginal peoples of the Western Hemisphere. Its wide-ranging array of documents supports inquiry into almost any topic relating to indigenous peoples, from the pre-contact era to the present day, and spanning the hemisphere from the Arctic Circle to the southern tip of South America.

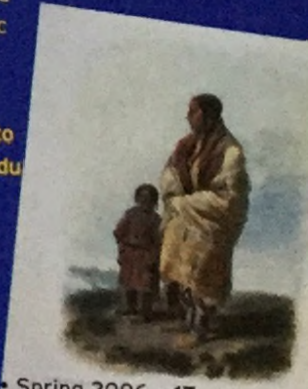
Among the items in the Kroch exhibit are illustrations of native communities and leaders, rare dictionaries of Native American languages, early accounts of encounters between European explorers and indigenous peoples, captivity narratives, and historical records of tribal communities. The exhibition also includes the manuscripts of prominent anthropologists and those who fought for Native rights.

The core of the Native American Collection was formed in the early 1900s when George Heye, founder and director of the Museum of the American Indian, acquired the private libraries of two renowned anthropologists, Frederick W. Hodge and Marshall H. Saville. In 1930 the museum transferred its Native American book collection to the Huntington Free Library, and over the next 70 years the collection grew as the library added materials donated by scholars, collectors, and others committed to the preservation of American Indian history.

Other highlights of the collection include original drawings of American Indians by the artist George Catlin; field notes by 19th century ethnographers, and papers of archaeological expeditions; a German prince's account of travels in North America's interior—considered one of the finest early 19th century works on American Indian life; and a 1765 original manuscript peace treaty between the Delaware Nation and Britain's superintendent of Indian affairs.

Appraised at $8.3 million in 2001, the collection will be fully catalogued at Cornell, with online records made available in national and international bibliographic databases.

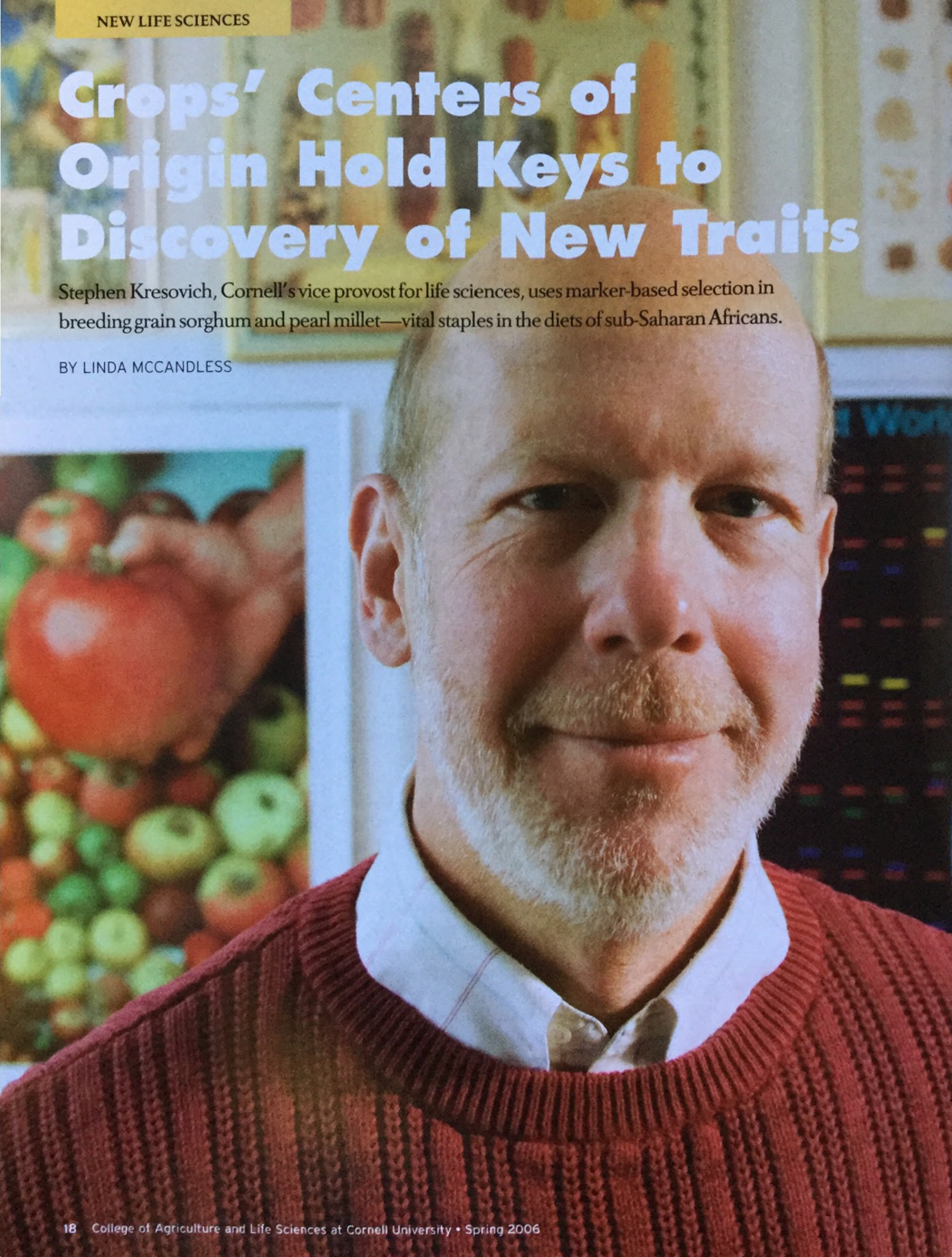
For more information, go to http://nac.library.cornell.edu



Crops' Centers of Origin Hold Keys to Discovery of New Traits

Stephen Kresovich, Cornell's vice provost for life sciences, uses marker-based selection in breeding grain sorghum and pearl millet—vital staples in the diets of sub-Saharan Africans.

BY LINDA MCCANDLESS



Stephen Kresovich is religious about applying plant agriculture to human well-being and is fairly single-minded about his purpose: "What I want to do is understand molecular and population genetics as they relate to effective conservation and use of crops," he says.

His daily creed—about which he says he is "obsessively compulsive"—includes shooting hoops and running stadium steps. "It's the best way I know to keep my mind clear and priorities straight," says the plant geneticist, whose well-worn sneakers and gym bag sit ever ready by his office door in the Biotechnology Building at Cornell. He grins, "Some of my colleagues will tell you it doesn't always work."

Kresovich has a lot of priorities to keep straight. In addition to overseeing an active research program in the Department of Plant Breeding dedicated to the conservation and improvement of grasses like maize, grain sorghum, and pearl millet, he directs Cornell's Institute for Genomic Diversity (IGD), heads up the university's New Life Sciences Initiative, is helping oversee construction of the $158 million Life Sciences Technology Building, and serves as Cornell's vice provost for life sciences. "My plate is full," he says. "My limitation is time."

Kresovich has been pursuing molecular and population genetics since he conducted research on maize, sorghum, and sugar cane for ethanol production at a research institute in Ohio in the late 1970s. From there it led him to a Ph.D. in physiology and genetics from Ohio State University in 1982, and then to consecutive stints as supervisory geneticist for the USDA–ARS Plant Genetics Resources units in Geneva, N.Y., and in Griffin, Ga. He assumed his current position as professor of plant breeding at Cornell in 1998, the same year he established the IGD. At any one time, there are more than 20 people in his lab, from Ph.D. students to postdoctoral candidates to visiting scientists and technicians.

In Geneva, Kresovich concentrated on acquiring, characterizing, maintaining, evaluating, documenting, and distributing genetic resources of apples and brassicas (broccoli and its relatives). In Georgia, he did the same with peanuts and grain sorghum. Now he applies marker-based selection to the breeding of grain sorghum and pearl millet—both vitally important staples in the diets of sub-Saharan Africans.

For Kresovich, the effective conservation and use of crop diversity is an iterative process. "It's about knowing what's in collections, whether it's in a plant gene bank like the repository in Geneva or in breeders' programs around the world. And then it's about knowing what's in nature and seeing how well we can discover new traits. We're always comparing what is available to breeders and geneticists versus learning about what isn't accessible," he says.

He believes that preserving native landraces from their centers of origin for future study and use is essential. "Maybe we won't utilize them immediately, but as the science advances, we ultimately will," he says. "At present, the biggest problems are finding and collecting germplasm."

Plant exploration in sub-Saharan Africa, which is the center of origin for crops like grain sorghum and pearl millet, is a challenging business. The climate is severe, the politics are unstable, and there are real dangers, like coming into areas filled with land mines. In Sudan, for instance, where grain sorghum is likely to have originated, land mines may be tagged by the local populations, but weather events like flooding and associated mudslides during the rainy season can relocate them.

Efforts to unravel the genetic secrets of grain sorghum and pearl millet are not progressing as rapidly as work on the maize, rice, and tomato genomes. "The study of maize attracts a greater number of geneticists and breeders. They are able to do a better job of acquiring and understanding the genetics of the wild relatives because maize is native to the New World," Kresovich explains. "Research on grain sorghum and pearl millet lags behind, because the areas of Africa where the wild relatives are located are so inaccessible."

But Kresovich is undeterred in his commitment to using plant conservation, diversity, and crop improvement to make better links between plant agriculture and human well-being. For grain sorghum and pearl millet, he is looking for traits that improve yield, nutritional quality, disease resistance, and the plant's ability to survive drought. In addition to Mali, Nigeria, and Ghana,

Storage bins in Mali hold millet and sorghum, two grains known for their remarkably long storage life. Sorghum is growing behind the bins.

Who Eats Pearl Millet and Grain Sorghum?

Millet, a fast-growing grain, grows well in the dry Sahara, where wheat and barley fail to thrive.

According to the Food and Agriculture Organization (FAO) of the United Nations, sorghum and millets are the most important staple foods for millions of people in the semi-arid tropics of Africa. These cereal grains are an important source of protein, starch, vitamins, and minerals. Harvested from grasses—and similar in genetic structure to barley, wheat, rye, triticale, rice, and corn, to which they are evolutionarily related—sorghum and millet can be grown in harsh environments like the Sahel where other crops do not grow well.

According to the FAO, any improvement in the production, availability, storage, utilization, and consumption of millet and sorghum will significantly contribute to household food security and the nutritional levels of the inhabitants of those areas.

"The FAO and the International Food Policy Research Institute (IFPRI) tell us that investment in production agriculture is one of the most efficient ways to reduce poverty and bring benefits directly to poor people," Kresovich says. "Meeting current demands for food as a means of eradicating extreme poverty and hunger, reducing child mortality, improving maternal health, combating disease, ensuring environmental sustainability, and developing global partnerships for development are specific goals of the Millennium Summit, and priorities at Cornell."

Pearl millet, the world's sixth most important cereal grain, has been growing in what is now the Sahara Desert for over 4,000 years. It is currently planted on more than 14 million acres in Africa, and 500 million people depend on it for their survival. A staple crop throughout the semi-arid region of Africa that stretches from Senegal to Somalia, pearl millet is drought-resistant and has a higher level of heat tolerance than grain sorghum.

Per capita food consumption of pearl millet varies in the Sahel. It accounts for about 30 percent of the total cereal food consumption in Burkina Faso, Chad, and Gambia; 40 percent in Mali and Senegal; and over 66 percent in Niger. About 10 percent is used to feed animals.

Grain sorghum, which originated in the northeast quadrant of Africa, is the second leading cereal grain on the African continent, after maize. It is somewhat drought-resistant and able to withstand periods of water-logging. Production of sorghum in Africa has increased from 11.6 million tons in 1976 to 20.9 million tons in 2001, not because of improvements in yield, but rather because there has been an increase in the total amount of land used for cultivation.

Yields in Africa are very low: typically less than one ton per hectare. High-input farm systems can yield three to five times that much.

In Ethiopia and Somalia, per capita consumption of sorghum can reach as high as 100 kg per year. In Burkina Faso, about 45 percent of the total annual calorie intake from cereals comes from grain sorghum.

Jason Koski/University Photography

Stephen Kresovich (back row, far left) poses with his lab members on the Cornell campus.

where he is working now, he would like to foster closer collaborations with plant breeders in Niger, Burkina Faso, Chad, Sudan, and Ethiopia.

In January, Kresovich and his team at the IGD were awarded a grant from the Syngenta Foundation for Sustainable Agriculture to study grain sorghum and pearl millet. "Our goal will be to compile, develop, and improve plant scientists' access to molecular breeding support tools for these two important cereal crops," Kresovich says. He will work with scientists Theresa Fulton MS '96, PhD '02 and Alexandra Casa PhD '02 at IGD to compile resource materials like genetic maps and databases, making resources available through a centralized web site, helping train scientists in Africa, and developing a longer-term plan for the development of further resources to improve grain sorghum and pearl millet.

Kresovich and his team work closely with plant breeders in host countries. "We are sensitive to the cultural practices of our collaborators in Africa. They help us understand how grain is grown; how it is harvested, stored, and transported; how seed is saved and distributed; and how it is eaten. They also help us understand certain cultural preferences, like color or texture, that can make or break the introduction of a new variety."

As a researcher, Kresovich lives in two worlds: a world where he wants to do good, basic research that focuses on genomic organization and evolution in

Clockwise from above: In a typical Mali village, the median age is 16 and people subsist on one meal a day. Women husk corn. They wash millet before cooking. Millet can be harvested in 45-65 days. Farmers stand in a field of sorghum.

cereal crops, and a world where he wants to use good, translational science to apply that scientific understanding to Africa and the semi-arid tropics. "So we have this revolution in genomics, but what does it mean for breeder A, B, or C in Africa?" he asks. "What does it mean for the people who consume the grain? To address the issue of food security in developing countries, we need to support nutritional goals and yield stability and help the farmers produce more, in less-than-optimal environments, so that they get a stable crop they can count on as a source of energy."

To make the connection between plant agriculture and human well-being requires multidisciplinary teams at home as well as in Africa. Kresovich is especially appreciative of the links between Cornell researchers and scientists at the Boyce Thompson Institute and at the two USDA facilities in Ithaca and Geneva. Scientists at the four institutions use genomics to unravel plant biochemistry, which is relevant to both human nutrition and renewable domestic energy.

In addition, Kresovich values the intellectual collaborations he enjoys with his life science peers at Cornell: Chip Aquadro, in evolutionary and population genetics; Ed Buckler and Margaret Smith '78, PhD '82, on maize genetics and breeding; Steve Tanksley, on tomato evolution and domestication; Susan McCouch PhD '90, on rice genetics; Mark Sorells, on small-grain breeding and genetics; and Rebecca Nelson, on cereal pathology.

"Cornell is an international leader in applying comparative genomics to provide solutions to real-world problems," Kresovich says. "Natural science intersects with social science and the humanities here in ways that are truly unique.

"I honestly love to get out in the field away from Ithaca, but I also love to come back," he says. "There is so much meaningful and important work going on, and so many important collaborations across the entire university. Cornell is a really exciting place to work."

In the Plant Breeding 404 Crop Evolution course he teaches, Kresovich plays the "F" game with his students. "Look at everything plants provide us: food, feed, fiber, fuel, feedstocks (chemical), fragrances, and 'farmaceuticals'" he says.

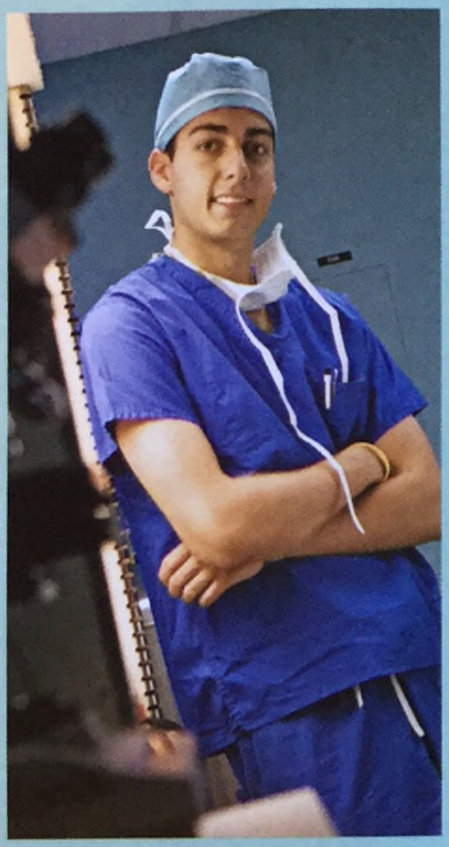
To which we add: For a plant geneticist like Kresovich, the focus is function.

For additional information:
www.igd.cornell.edu
www.syngentafoundation.org
www.icrisat.org

Mali photos provided by the Institute for Genomic Diversity.

People

Eugene Licht '05 Considered Ethics while Preparing for Med School



Jesse Winter

Eugene Licht, a biology major who graduated in spring 2005, realized that becoming a doctor would be the natural outcome of blending his two loves: biology and people. He's now a first-year student at Weill Cornell Medical College in New York City. But med school hadn't been Licht's destination when he arrived on campus his freshman year. "I knew that I wanted to study biology but I didn't know what I wanted to do with it afterwards," Licht says. "It just kind of developed based on the experiences I had at Cornell."

One of those experiences was interacting with sick and injured students as an emergency medical technician with the Cornell Emergency Medical Service. The service responds to calls from all over campus.

Another was designing and conducting his own original research. Licht had spent his college summers working as an embryologist for a fertility clinic near his home in Plainview, N.Y. Licht says that being a Cornell student played a big part in landing his summer job at the Long Island laboratory. The lab staff told him, "You went to Cornell and did well in biology there; that stood out." Licht also says that a lot of people working at the lab were Cornell graduates, so that helped too. "They looked at my application differently than they would have if I'd come from somewhere else," he says.

During the academic year, he ran his own experiments as part of a research program in animal reproduction, working under the supervision of a faculty member in Animal Science.

"It was exciting to be working with faculty members who were doing world-class research and publishing their results in top scientific journals," he says.

Licht had also been exploring the ethical questions raised by working with embryos and stem cells. In his freshman year, he joined the Bioethics Society of Cornell, becoming its president two years later. As editor-in-chief of *The Ivy Journal of Ethics*, which gives undergraduates a forum for thinking about bioethics, Licht put out a call for papers, edited those selected for publication, and supervised distribution of the journal to select colleges and universities nationwide—all with the financial backing of Cornell.

"At Cornell, if you show initiative and effort, the administration will back you in creating anything that you want," he says.

Metta Winter

Her Two Obsessions—Ice Hockey and Turtles—Run Neck and Neck

When Jennifer Munhofen '06 found out that she could play for the Big Red women's ice hockey team, this native of Alpharetta, Ga., was so incredulous that she remembers her reply word for word. "I told the coach, 'You mean I could go to an Ivy League school and play my favorite sport?'" Munhofen recalls.

During her freshman and sophomore years, Munhofen rotated through the forward positions—center, left, and right wing—and led the team in scoring.

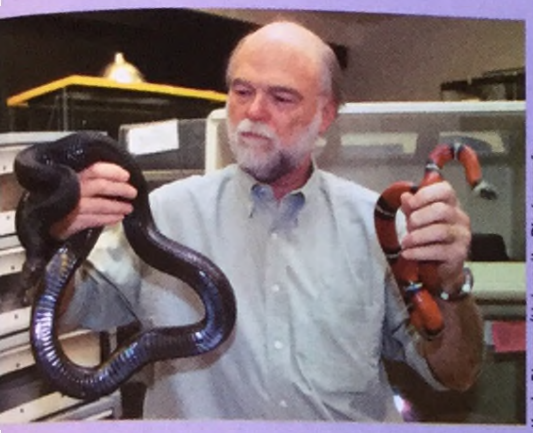
The thrill of wearing a Cornell varsity sweater runs neck and neck with the kick Munhofen gets from working with turtles. As a little girl, she came upon some toothless reptiles in the wild and remembers feeling an "instant connection" that has become an obsession. With her sights set on a career in herpetological research, Munhofen spent the summer after her sophomore year in Mexico working in a sea turtle conservation program. The next summer, she interned in a sea turtle rescue and rehabilitation center in North Carolina. These experiences have convinced her that she's discovered her life's work (she also has 10 pet turtles at home).

During the school year, Munhofen finds Ithaca an ideal setting for someone who loves being outdoors and studying natural resources. And she particularly appreciates that the Natural Resources major in the College of Agriculture and Life Sciences places subjects as distinctly different as forest ecology and organismal biology side by side.

She says of her experience in leaving the Atlanta suburbs to attend Cornell: "When I first came here it seemed a bit intimidating, but the professors, your faculty adviser, and the coaches are willing to do anything to help you achieve your dreams," she says.

Metta Winter

Harry Greene Is Entangled with Serpents



Kevin Stearns/University Photography

More than 40 years of snake hunting have taken Harry Greene, Cornell professor of ecology and evolutionary biology, to 18 countries on six continents. He has slogged through snake-infested jungles, forests, deserts, rain forests, swamps, and savannas, camping for weeks at a time. He has squeezed out prey from the guts of slithering serpents to see what they eat and implanted tiny radio transmitters into their body cavities to track where they go. And although he has handled hundreds, if not thousands, of specimens and has been bitten hundreds of times, only once was it by a venomous snake. And that was when he was an inexperienced 17-year-old.

Greene's fascination with reptiles started at the age of seven, reading the same books on snakes and lizards over and over again, while his family traveled around with his father, who was in the U.S. Air Force. When Greene was 13, his father took him to a seminar given by a prominent reptile ecologist who became Greene's role model. Greene went on to publish two scientific papers while he was still in high school and another four in college (to date he has published about 150).

He was not, however, always successful. After nearly flunking out of Southwest Texas State University at the end of his sophomore year, he got his act together and transferred to Texas Wesleyan College, where he not only attended school but also worked full time as an ambulance driver. After graduation he was drafted into the Vietnam War, where he worked as a medic for two years in Germany.

While Greene is currently researching the social behavior of rattlesnakes, using radio telemetry to track the same snakes for years at a time, he is also a popular professor who teaches a basic course in biology for nonmajors and a course in herpetology (the study of reptiles and amphibians), for which he keeps a collection of some 50 live snakes.

"Being a professor is pretty much my life," said Greene, who has won three teaching awards. "I love teaching and studying biology. And since I have no children of my own, my students are my kids; I just love watching them go through such incredible growth from their freshman to their senior years."

Susan S. Lang

Larry Walker Receives $750,000 for Biofuel Research

Larry P. Walker has been awarded $750,000 by a New York state research agency to explore the use of plant and microbial resources to produce biofuels, industrial chemicals, natural products, and other consumer goods.

Walker, a professor in the Department of Biological and Environmental Engineering in CALS, received the award through the New York State Office of Science, Technology, and Academic Research's (NYSTAR) Faculty Development Program. The funds assist universities in the recruitment and retention of leading research faculty in science and technology fields with strong commercial potential.

The award was part of more than $4.4 million in funding to researchers at five universities in New York State.

Walker's NYSTAR-funded research will concentrate on integrating nanotechnology with classical molecular biology and microbiology techniques to engineer industrial enzymes or to identify novel microorganisms that are important in the production of biofuels and industrial chemicals. His research group has been actively involved in developing more efficient and cost-effective enzymes (cellulases) that can convert plant-derived cellulose into fermentable sugars and developing the processes that can convert these sugars into ethanol, hydrogen, and other important fuels or industrial chemicals.

Another major focus of Walker's research group is to develop a lab-on-a-chip device for an accurate and detailed description of bacteria and to identify novel industrial microorganisms and enzymes that could be employed in bioconversion.

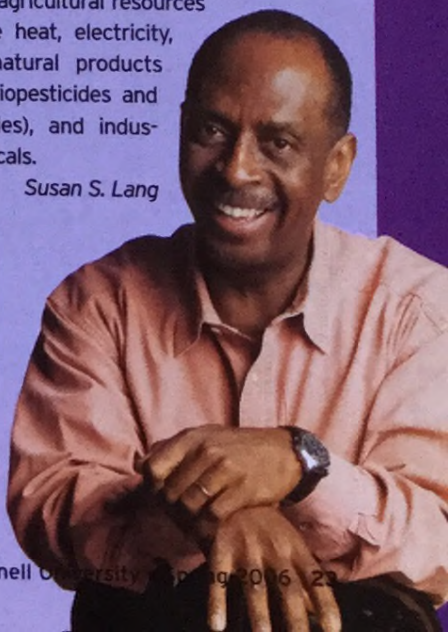
Walker has been involved in a number of biomass-to-energy and chemical projects, including an assessment of New York State biomass resources available for ethanol production, on-farm methane production and cogeneration, the application of nanotechnology to discover and study important biocatalysts for industrial biotechnology, and the optimization of solid-state fermentation for the production of biocontrol products.

Walker is currently the director of the Northeast Sun Grant Institute at Cornell, which was awarded more than $8.2 million in federal funding over four years through the recent signing of the federal transportation bill.

"With our global community entering a less certain oil future over the next 10 to 25 years, there will be a major transition to agricultural-based bio-industries," Walker said.

Cornell has been tapped by the federal government as one of five Sun Grant Centers of Excellence—regional hubs that will take the lead in researching the use of plant biomass in energy and chemical production; for education and outreach activities; and for soliciting and funding proposals that focus on using renewable agricultural resources to produce heat, electricity, biofuels, natural products (such as biopesticides and bioherbicides), and industrial chemicals.

Susan S. Lang



Robert Barker/ University Photography

People

For Wayne Meichner '79, Teamwork Pays in Many Ways

The teamwork he learned on Cornell's lacrosse fields, combined with the hard work he put in to get his degree, serve Meichner well as president of Polo Ralph Lauren Retail Stores.

From Cornell's lacrosse fields to an executive office at one of the world's fashion trendsetters, Wayne Meichner '79 has shown a knack for following opportunity where destiny takes him. Guiding him on that journey are a chest-swelling pride in his family, a fierce sense of loyalty, and his experience as a team player.

"A sense of team is critical," said the president of Polo Ralph Lauren Retail Stores. "I try to recognize and appreciate all individuals for their contributions, and I believe this team approach has helped me to succeed in business and in life."

Meichner, a Long Island native, manages the 50 U.S. and 13 European stores of the Polo Ralph Lauren Corporation. He moved to Madison Avenue in 2002, after 23 years with Saks Fifth Avenue. At the time, Meichner was Saks's executive vice president of merchandising. Saks was his first employer after graduating from the CALS business management and marketing program (now the Undergraduate Business Program in the Department of Applied Economics and Management).

Spending 20-plus years at one company may be rare today, Meichner acknowledges, but "working at Saks really groomed me to do what I do now." Saks had 64 stores when Polo, which had 35, came calling. Two years after Meichner switched companies, Polo added management of its European stores to his responsibilities.

"It was the best decision I ever made," he says. "I had great opportunities at Saks but it's an exciting new chapter to run retail in Europe as well."

Meichner's most recent opportunity is heading up the launch of Rugby, Polo's newest brand designed for the 16- to 25-year-old crowd. Debuting in 2004, the line is sold exclusively in Rugby's five retail stores in Boston; New York City; Chapel Hill, N.C.; Charlottesville, Va.; and New Canaan, Conn. Plans call for opening 10 more stores in 2006.

While sitting atop retail in the fashion world, Meichner exudes a sense of grounded realism: "You don't mind working hard and being stressed if you're accomplishing something and seeing results."

Courtesy of Polo Ralph Lauren Retail Stores

Members of Polo's "Rugby" store team join Wayne Meichner (center) and Ralph Lauren (third from right) at the December 2005 opening of the Rugby store in New Canaan, Conn.

That hard work included putting himself through Cornell while earning a spot on the lacrosse team during its heyday in the late 1970s. Giving kudos to his teammates, Meichner says with a chuckle that he made the varsity team but "got to see some good games from the bench." His results: graduating from Cornell, working his way from Saks's executive training program to president of retail at Polo, reporting directly to Ralph Lauren himself, helping coach his two sons' lacrosse team, and picking up the stick again himself—at age 48—for a local team in New Canaan.

"I'm blessed to have two healthy boys and a wife who are the center of my universe."

Staying committed to his alma mater, Meichner joined CALS' Undergraduate Business Program (UBP) Advisory Council. It meets twice yearly—once each in Ithaca and New York City—to develop ways to improve the program, which affords students a multidisciplinary business education combining business, economics, and management courses with the humanities and biological and physical sciences.

Meichner also relishes opportunities to interact with UBP students, such as those in the Introduction to Business Management course taught by Pedro Perez, assistant professor in Applied Economics and Management.

"As the president of retail for Ralph Lauren, Wayne's visit was eagerly anticipated by the 600-plus students in the course, and he did not disappoint!" says Perez, who has Meichner returning to his class this spring. So inspiring was Meichner's visit that Perez says one of his students decided to enter the fashion retail business.

Of his Cornell experience, Meichner says, "To me, Cornell was pivotal in my life. It's something that gives me a source of pride, a source of accomplishment, and a quiet confidence—if I can get through Cornell, I can do anything."

J. R. Clairborne

Father and Son Onion Growers Agree on Management Principles

Paul (left) and John Ruszkiewicz.

Whether it's clocking 10-hour days in the summer, wrapping up harvest before their help leaves for the fall fishing season, or dealing with shortages due to extreme weather, when it comes to running the family business, "we're pretty much on the same page," boast John and Paul Ruszkiewicz, both graduates of the College of Agriculture and Life Sciences.

"During growing season, we sometimes only talk five minutes in the morning about the day, but we know what needs to be done," says Paul Ruszkiewicz '98, MPS '00. "When the day is done, there are no strings left hanging."

The father-and-son duo runs Ruszkiewicz Farms, 180 acres located in the prime Pine Island muck of Orange County, N.Y. The former swamp is perfect for the farm's claim to fame: growing onions. The usual harvest nets 3,375 tons—or 150 semi-trailer loads—for market. That's more than three million 2-pound bags in local supermarkets.

John Ruszkiewicz '57, MBA '58, says, "There are fundamental principles of management that, if you live them every day, become natural."

Falling back on those principles proved quite fundamental this past harvest season. The extreme weather of 2005 was a challenge for farmers across the Northeast. John, a retired U.S. Army lieutenant colonel, points to the record-setting heat of the summer, heavy fall rains, and two 50-year floods within six months (April and October) that resulted in a lost soybean crop for their farm—but timing saved the onions. The farm has six employees plus one of John's brothers who help at planting and harvest time. Fortunately, the onions harvested in 2005, while fewer, "were diamonds," or high quality, he says.

"Mother Nature does what she does," John says matter-of-factly.

The farm and Cornell experience are a family affair. Paul is a fourth-generation onion grower and second-generation Cornellian (three of the family's six children are Cornell alumni).

Father and son credit their CALS education for teaching them teamwork. Despite the gap of 40 years in their graduations, they've studied a similar curriculum, understand the farm and agriculture industry, and have become leaders in agriculture-related organizations.

J. R. Clairborne

Profs. Lassoie and Madsen Teach How Humans Impact the Earth

The biosphere is complex and so is human behavior. The impact of humans on the many biotic and abiotic components of the biosphere is still being discovered—as are management and economic solutions to environmental problems. These are key messages delivered by Professors James Lassoie and Eugene Madsen, who teach the new course, Introduction to the Science and Management of Environmental and Natural Resources. Students include freshmen in both the Department of Natural Resources and in the new CALS Science of Natural and Environmental Systems major.

Professors Madsen and Lassoie say that they want to instill in the students an appreciation for the many facts and principles that allow environmental problems to develop. These same facts and principles, ranging from human behavior to biology, chemistry, and the economic sciences, can lead to strategies for solutions. To convey this message, the professors enlist the aid of many other CALS faculty members who help deliver lectures and offer field experiences to the students; topics range from the ecological impacts of war to counting salamanders in Arnot Forest.

Students are required to participate in weekly field trips and encouraged to develop dialogue in the classroom. They learn some amazing things about the Earth; for example:

- The chemical reactions leading to the hole in Earth's atmospheric ozone shield was predicted years in advance of detection by atmospheric chemists.
- Cornell's Lake Source Cooling project reduces the university's energy consumption for cooling by 86 percent.
- A diminishing drinking water supply is one of the major crises facing humanity.
- As many as 13 of our planets may be necessary to support humanity, if current population growth rates continue and the newcomers consume resources as intensively as Americans.

James Lassoie

Students simulate deer browse at Arnot Forest with Gary Goff, senior extension associate.

1930s

Ruth Shellhorn '33 of Los Angeles, Calif., was awarded her 1933 Cornell Bachelor of Landscape Architecture degree on June 4, 2005, at a special dinner in Los Angeles, Calif. When she was a student, she had to leave Cornell just before she had finished her degree. Ruth has been a prominent landscape architect, having been recognized as a Society of Landscape Architects fellow and a member of the original Disneyland design team.

George N. Asai '38, PhD '43 of Earlysville, Va., has retired as U.S. Army Major after serving 21 years during and after WWII. During his service, George went to Europe, Japan, and Korea. His current hobbies include golf, gardening, and swimming.

Donald H. Dewey '39, PhD '50 of Green Valley, Ariz., retired from Michigan State University in 1983 and has permanently relocated to Arizona.

1940s

Richard T. "Dick" Meister '40 of Willoughby, Ohio, celebrated his 94th birthday last year and his career as a horticulturist by doing a cover story with Doc Childers in *American Fruit Grower* magazine. Though he has retired, Dick still participates in the activities of Meister Media Worldwide (formerly Meister Publishing Co.), a company that is expanding into data-based publishing.

James L. Kraker '42 of Gouverneur, N.Y., is proud that his grandson **Jeremy Kraker '07** is a fifth-generation Cornellian, whose great-great-grandfather **Agustus J. Rogers** was a member of the Class of 1871, the first class to attend Cornell.

Joseph C. Hickey '43 of Falmouth, Maine, and **Allan P. Drake '43** of Lake Placid, N.Y., talk regularly and had a mini-reunion in May 2005.

William E. O'Brien '43 of Fort Worth, Texas, joined the army after graduation and contracted lobar pneumonia; he was ironically treated by Dr. Blumen, his Cornell professor in Hygiene! Later he volunteered in the flight school, where he remained until 1964.

Louise Schall Faryna Van Arsdale '43 of Santa Rosa, Calif., is redoing the 20-year-old landscaping on her property. Louise especially enjoys gardening.

1950s

Gerhard A. Schad '50 of Chadds Ford, Pa., remains professor of parasitology at the University of Pennsylvania's School of Veterinary Medicine.

Joe Antognini PhD '51 of Charleston, S.C., celebrated his 61st wedding anniversary to wife, Jean, in January 2005. Their son, Jay, works for Northrup on the B-2 Bomber in Oklahoma City, while their daughter, Teri, runs her own business in Charleston, S.C.

John J. Brozdowski '52 of Middletown, N.Y., has retired and is no longer actively farming.

Raymond E. Borton '53 of Davis, Calif., and his wife, Verena, have been awarded the 2005 Davis Citizen of the Year Award for their outstanding service to the community in the arts, education, and international affairs. The award was presented at the annual Davis Chamber of Commerce installation dinner.

John W. Mastalerz PhD '53 of South Chatham, Mass., has published a new book entitled *Notes from John's Garden,* a collection of essays about gardening.

Frank G. Dennis '55, PhD '61 of East Lansing, Mich., spent countless hours listening to the tapes of George H.M. Lawrence, former director of the Bailey Hortorium, interviewing Liberty Hyde Bailey, former professor and dean of the college. The recordings had remained in the Hortorium for 20 years. Frank corrected the transcript of the interview and gave a copy to University Archives.

Walter J. Saidak MS '55, PhD '58 of Ontario, Canada, is quite active in urban vegetable production. He also keeps busy by walking and enjoying his grandchildren's company.

William Zawicki '57 of Freehold, N.J., started a mosquito control chemical distribution business with his wife, **Nancy O'Brien Zawicki '57**, after he retired from Chevron Chemical in 1984. After selling the business in 1999, he was president of the American Mosquito Control Association and the New Jersey Mosquito Control Association. William is a Master Gardener for Monmouth County.

Kenneth E. Pollard '58 of Cayuga, N.Y., is enjoying his retirement. He keeps busy by writing for the Agriculture Museum, as well as other doing other projects.

1960s

Gary H. Heichel PhD '64 of Martinsburg, W. Va., retired in August 2004 as professor and head of the Department of Crop Sciences at the University of Illinois in Urbana-Champaign. He is now professor emeritus and building a new house in West Virginia.

Christopher B. Zippel '63, MS '65 of Union Springs, N.Y., is a volunteer at the William H. Seward House in Auburn and serves as treasurer for the Union Springs Fire Department. He has two grandsons.

Margaret L. "Peggy" Haine '65 of Trumansburg, N.Y., retired in 2004 from a diverse 26-year career at Cornell. She recently married Peter Hoover, an editor at Cornell. The couple spent many years as co-editors of the *Finger Lakes Wine Gazette.* Daughter Rebecca Hoover (A&S '96) practices medicine on the Zuni Reservation in New Mexico. Since retiring, Peggy has begun a new career in real estate.

John Wort MS '66, PhD '68 of Seattle, Wash., currently works as both Seattle's director of the Washington Park Arboretum, as well as director of the Center for Urban Horticulture.

Heinz K. Wutscher PhD '67 of Winter Park, Fla., has retired but keeps up with what's going on with Cooperative Extension.

1970s

Christine "Chris" White MA '70 of Arlington, Va., has joined the 650-attorney law firm of Nixon Peabody LLP as the firm's first director of professional personnel. She oversees hiring, training, and evaluation of personnel in all of its 15 offices.

Henry J. "Bud" Nestler '72 of Exton, Pa., covers the metro New York and Long Island areas for Princeton Nurseries in Allentown, N.J. Bud is also secretary for the Long Island Nursery and Landscape Association. He and wife, Emily, have two children: Laurie A. Nestler-Williams, and Timothy Nestler '03, a second-year student at Cornell Law School.

Richard H. Munson MS '73, PhD '81 of Oxford, Ohio, is the manager of Conservatory of Miami University. He also teaches in the Botany Department.

Larry K. Hiller PhD '74 of Pullman, Wash., is currently serving as the 2005-2006 president of the Potato Association of America, after having served as president-elect from 2004-2005.

Sudabathula Raja Rao MS '77 of St. Louis, Mo., has retired. Upon graduating from Cornell, Sudabathula received his PhD from Louisiana State University. He then worked for PPG Industries in Barberton, Ohio, and then for Monsanto Co. in St. Louis.

Soon Chye Tan Pom MS '77, PhD '79 of South Perth, Australia, is the principal post-harvest research officer at the Department of Agriculture Western Australia and the market development manager of the Asia Region. Soon Chye's and wife, Angie, have two sons.

Marcia Durso, PhD '79 of Rancho Santa Fe, Calif., lives in a horticulturally rich area and invites all of her former students to contact her to enjoy the wonderful exhibits, outdoor gardens, and botanical sites. Marcia is the landscape consultant for the community.

Alumni Notes

1980s

Gerard A. Lordhal '80 of New York City, N.Y., is the director of the Council on the Environment of New York City and president of the American Community Gardening Association.

Lewis Weinstock '77, MS '80 of Greensboro, N.C., has recently joined the U.S. Environmental Protection Agency in Research Triangle Park, N.C., to work on new air pollution measurement technology.

Debby Chessin Dabney '82 of Oxford, Miss., has recently received tenure and promotion in the Department of Curriculum and Instruction at the University of Mississippi, where she teaches undergraduate and graduate classes in elementary science and math education.

Daphne Mobley '83 of Nanuet, N.Y., was promoted to vice president of corporate diversity with Wyeth Pharmaceuticals. She received a DVM from the University of Florida and a B.S. degree in animal science from CALS.

Dale B. Gallenberg PhD '84 of Brookings, S.D., was named dean of the University of Wisconsin at River Falls' College of Agriculture, Food, and Environmental Sciences. Dale previously was head of the Plant Science Department at South Dakota State University.

Chen Chang "Rudi" Tsai '85 of Hong Kong is senior vice president and head of syndication and structured finance at Fubon Bank in Hong Kong. Rudi has built a career in investment banking, having previously worked with DBS Bank, JP Morgan, and Schroders.

Pamela S. Marten '87, MS '90 of Binghamton, N.Y., was promoted in November 2004 to the head of the Systems Unit at Processing Center 4 of the New York State Division of Disability Determinations.

Karen M. Rowehl '87 of St. Louis Park, Minn., is a registered dietitian working at the Eating Disorders Institute at Methodist Hospital in St Louis Park, Minn.

Jonathan X. Di Cesare '88 of Cobleskill, N.Y., recently joined Realty USA as a real estate salesperson. He lives in Cobleskill with his wife, Caroline, and their three children, Jonathan, Islay, and Juozas.

Benyamin Lakitan '89 of Indonesia is on the Staff on Food Affairs for the Ministry of Research and Technology. Prior to this, Benyamin was working in the Agriculture Department at Sriwijaya University and for the Provincial Government of South Sumatra. Benyamin's son, Benadri, is studying at Bandung Institute of Technology.

1990s

Tim Vanini PhD '91 of Buffalo, N.Y., recently completed another PhD in turfgrass science at Michigan State University.

J. Roger Harris PhD '94 of Blacksburg, Va., is an associate professor of horticulture at Virginia Tech. Roger's wife, **Susan D. Day MS '03,** is a research assistant professor in Virginia Tech's Forestry Department. The couple has two children: 8-year-old daughter, Camilla, and 5-year-old son, Gillous.

Stephen D. Ebbs MS '95, PhD '97 of Carbondale, Ill., is an associate professor of plant biology at Southern Illinois University, Carbondale. Stephen received the university's "Excellence through Commitment Award."

Thomas C. Hughes '95 of North Syracuse, N.Y., is a PhD student at the SUNY College of Environmental Science and Forestry in Syracuse, studying walleye on eastern Lake Ontario. Thomas resides with his wife, **Kelly B. Gonzalez '96**.

Ruth R. Minja '93 of Dar es Salaam, Tanzania, works in the agronomy section of the Agricultural Research Institute in Dar es Salaam. She is currently working on a proposal to improve horticulture in coconut-growing areas.

Juvenal "Juv" Marchisio '95 of Bethlehem, Pa., was married to Dayana Anlas on October 2, 2005. The two met in an unusual circumstance: during a USC alumni football game, Juv accidentally collided with Dayana, leaving the two bruised. When Juv proposed a dinner to make up for the misstep, Dayana agreed and they have been together ever since.

Michael Haug '96 of Libertyville, Ill., is working as a landscape architect for the Lake County Forest Preserves in Chicago, after seven years of working in residential landscape architecture.

Vincent "Vince" Lalli, MPS '96 of Romulus, N.Y., was recently selected by *USA Today* as a member of its "2005-2006 Teacher Team" for his work in education. Five years ago, Lalli started a horticulture program at a center for troubled children ages 12-18. He helps nurture these youth by teaching them to raise flowers, herbs, and vegetables.

Greg M. Sandor MS '96 of Bayport, N.Y., launched his own labeled wine called Bridge Vineyards, specializing in merlot.

Heather Hillman Phillips '99 of Riverside, R.I., is the associate veterinarian at Gansett Animal Hospital in East Providence, R.I.

Eduardo Oyanedel PhD '00 of Quillota, Chile, and wife, **Mary Aurora Hopkins MS '01,** both work at the Pontificia Universidad Catolica de Valparaiso in Quillota. Eduardo is an associate professor of vegetable crops. Mary is a lecturer in technical English. The couple has a 2 1/2-year-old son, Nicholas.

2000s

Benjamin M. Brucker '01 of Philadelphia, Pa., graduated from the University of Pennsylvania Medical School in May 2005. He is currently completing a residency in urology at the university.

Jamie Blackburn '02 of Philadelphia, Pa., married his wife, Krista, last May. They reside in Miami, where Jamie is the rainforest and horticultural exhibits manager at Fairchild Tropical Botanic Garden in Coral Gables, Fla.

Jackie S. Castro '03 of White Plains, N.Y., simultaneously works in advertising sales at BriteVision Media and in real estate at Barhite & Holzinger.

Jordan M. Hase '03 of Spring, Texas, is working on a three-year sports law program at St. Thomas University Law School, where he is also working on a master's in sports administration.

Heidi Salmen Rapp MS '03 of West Sacramento, Calif., married **John Cianchetti '99** at a winery-brewery in Placerville, Calif. Heidi is a cantaloupe breeder for Syngneta Sees, Inc., and travels to Peru, Chile, Mexico, Florida, Georgia, South Carolina, and Indiana.

Danielle Schulman '03 of New York, N.Y., is a student at the New York University College of Dentistry.

Editor's Note: **Claire Herrick Yetter '40** was erroneously listed in both the Class of '40 and Class of '67 in the last issue. We apologize for the print error.

Emily A. Réjouis '08
Alumni Notes student writer

Robert Baker, Creator of Chicken Nuggets and Cornell Barbecue Sauce, Dies at 84

Robert C. Baker '43, the poultry science and food science professor who helped develop chicken nuggets, turkey ham, and poultry hot dogs into ubiquitous American fare, and who created the famous Cornell chicken barbecue sauce, died at his home near Ithaca on March 13. He was 84.

Baker researched and developed innovative ways to use poultry. His Cornell barbecue recipe has stood the test of time, having been showcased for more than five decades at his Baker's Chicken Coop at the New York State Fair in Syracuse, N.Y. Baker developed the recipe while working for Penn State University, but the barbecue sauce was not appreciated until he joined the Cornell faculty with a mandate to promote New York State's poultry industry.

During his career, Baker developed dozens of poultry products. For chicken nuggets, Baker found a way to keep the breading attached to them during the frying process. Today they are a staple in grocery stores and fast-food restaurants.

Prior to 1980, chicken was packed on ice and shipped to restaurants and grocers. Baker and Joseph Hotchkiss, then an assistant professor of food science and now chair of the department, worked to develop modified atmosphere packaging and vacuum packaging to improve the chicken-shipping process. The late chicken magnate Frank Perdue implemented these ideas immediately, and the processes are used to this day.

Baker earned a bachelor's degree from Cornell in 1943, majoring in pomology at the College of Agriculture. After college, he worked for Cornell Cooperative Extension in Saratoga County. He then earned a master's degree from Penn State in 1949 and a doctorate from Purdue University before joining the Cornell faculty in 1957.

In 1970 he founded Cornell's Institute of Food Science and Marketing and served as the institute's first director. He retired in 1989. Baker was also a longtime member and supporter of Alpha Zeta fraternity. He was inducted into the Poultry Hall of Fame in 2004.

A memorial service and chicken barbecue were held in Lansing, N.Y., on Saturday, March 18, attended by more than 500 people.

Donations to a graduate student fund in the CALS Department of Food Science may be sent to the attention of Joseph Hotchkiss, Department of Food Science, 116 Stocking Hall, Cornell University, Ithaca, NY 14853.

For the recipe for Cornell barbecue sauce, go to **http://counties.cce.cornell.edu/erie/cu-bbqsauce.html**.

Blaine Friedlander

Moving?

Stay in touch with your alma mater through uninterrupted delivery of *CALS News* by returning the change-of-address form. Mail to Cornell University, College of Agriculture and Life Sciences, Office of Alumni Affairs, 274 Roberts Hall, Ithaca, NY 14853-5905.

Name

Class Year

I.D. #

☐ Alumnus ☐ Faculty ☐ Friend

Former Address

New Address

Phone

The Importance of Alumni Association Membership

Many of us paid our first ALS Alumni Association membership dues with pride in having graduated from a world-class institution, and we were excited to enter that alumni world full of opportunity and promise.

Today, as I reflect back on my year as president, I would like to take you behind the scenes and show you why it is so important for all of us to take the small, but critical, step of joining our alumni association.

First, a quick nod of admiration to the original leaders of the association. They were wise investors and created an endowment with the original lifetime memberships and vowed to use the interest to provide scholarships to deserving students. That tradition still holds true today. In addition, we have benefited from a generous bequest that established the Julian '37 and Alberta Carter Fund. That fund provides flexible resources for creative student activities, including opportunities for students to travel with staff to events where they can mingle and share their current experiences with alumni.

Your membership dollars also support the CALS Career Development Alumni Career Link program, which connects students with alumni through e-mail, phone calls, site visits, on-campus alumni panels, job shadowing, and even internships.

Endowment funds are the foundation of our strength as an alumni association. The university offers free gift planning advice and proposals to help in making decisions about significant gift options like this.

Our annual operating budget also provides critical budget relief for Dean Henry, supporting communication projects like this magazine and event mailings. Our budget also funds regional and campus events and much of our Reunion activities. The annual faculty speaker series and our outstanding faculty and alumni awards program are possible only because of our budget. All of our networking and social events are sponsored by the alumni association. In total, we provide Dean Henry with more than $50,000 worth of budget relief—no small matter in an era of decreasing state funding.

Our alumni association is committed to continuing that level of support. In fact, with additional memberships, we could provide the dean with a line of discretionary funds for special needs.

You can help us continue to make a difference. Show your pride and support by becoming a member today. If you are already a member, please consider an additional annual gift to our fund. Lifetime membership can be paid through installments, and you receive a beautiful lapel pin.

We have the second largest undergraduate college at Cornell, with almost 50,000 alumni, parents, and friends. I would be thrilled to see a spike in membership in my last quarter as president, because now I know how instrumental membership is in supporting important outreach and basic programs. Membership shouldn't replace your annual gift to the college, but it's a wonderful supplement. Above all, it makes a difference.

Developing Leaders, Improving Lives. That's what our college does, and I hope you will help me keep that vision strong and successful. Thank you.

Jim Ward '90 ALS Alumni Association President

If you need to check on the status of your membership, please e-mail Kristine at alsaa@cornell.edu or call 607-255-8711. Pay online: www.cals.cornell.edu/cals/alumni-friends/alumni-association/join-online.cfm.

Membership Form

Membership levels available:

- ☐ 2-yr $29
- ☐ 4-yr $54
- ☐ Lifetime $350
  - ☐ $125 toward 3-yr installment

Spouse

- ☐ 2-yr $21*
- ☐ 24-yr $38*
- ☐ Lifetime $245*
  - ☐ $88 toward spouse 3-yr installment

*30% discount for joint memberships only.

__Additional gift to ALSAA Fund

Name

Class Year/s

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Telephone

County

Please make your check payable to the ALS Alumni Association or pay with a credit card:

☐ Discover Card ☐ MasterCard ☐ VISA

Expiration Date

Account #

Signature

Mail to: Office of Alumni Affairs, 274 Roberts Hall, Ithaca, NY 14853-5905

Gift Membership to the ALS Alumni Association of the College of Agriculture and Life Sciences at Cornell University (great gift from parents to graduating seniors!)

To:

From:

New for Alumni Notes:

Join CALS for Reunion Weekend · June 9–10, 2006

All Weekend

Exhibit, Mann Library Addition, 1st Floor
"Kettles, Peepers & Adder's Tongue: Cornell's Ringwood Nature Preserve": A special exhibit on the natural history of the Ringwood Nature Preserve—a protected natural area and salamander breeding ground near the Cornell campus.

Friday, June 9

Salamander Crossing: Amphibian Conservation and the Ringwood Nature Preserve, Exhibit Talk, 2nd Floor, Mann Library, 10:00–11:00 a.m.
A multimedia program puts the spotlight on an ecological treasure being stewarded by Cornell researchers and students. Professor Kraig Adler of the Department of Neurobiology and Behavior will highlight the current efforts to preserve the Ringwood area amphibian population and touch on the problem of dwindling amphibian populations in global perspective.

A Handheld Tour of the Asian Galleries, Herbert F. Johnson Museum of Art, 10:00–11:30 a.m.
Through exciting and innovative uses of technology, the Johnson Museum is expanding how art is presented. Tours with handheld computers engage museum visitors and broaden understanding of individual works in the galleries through the addition of maps, images, music, the spoken word, and web links. This program is in collaboration with the museum and the Human Computer Interaction (HCI) group, part of the Department of Communication.

Open House in Air-Conditioned Snee Hall Atrium, 10:00 am–2:00 p.m.
Visit the Timothy N. Heasley Mineral Museum; see the new PRI exhibit, and view the earthquake seismograph. Enjoy the stroll and self-guided tour through the Engineering Quad Rock Parks.

CALS Display Booth, Barton Hall, 11:30 a.m.–2:00 p.m.
Discover what's happening at the college in classrooms, admissions, career development, and alumni programs.

Earth and Atmospheric Sciences Display Booth, Barton Hall, 11:30 a.m.–2:00 p.m.
Hands-on exhibits will feature a tornado in a bottle, minerals and fossils, and a seismograph to demonstrate how seismic waves generated by earthquakes are detected. Faculty members and students will be on hand to answer questions.

Showcase of Cornell Science, ILR Conference Center, 1:15–2:45 p.m.
Cornell is building two new science buildings: the New Life Sciences Technology Building and the Physical Sciences Building. Come to hear what these new facilities will mean for the advancement of science, including potential discoveries in human and animal health, medicine, plant science, the environment, and many other areas. Please join us for this joint college panel, which will feature Mike Scanlon, associate professor of plant biology, who just joined the CALS faculty a few months ago.

The Social and Economic Implications of Sustainability, B05 Sage Hall, 1:30–2:45 p.m.
Sustainability embraces wide-ranging areas of concern and endeavor. This multicollege panel will focus on the social and economic issues of sustainability and discuss new research and applications. Join Cornell's sustainability coordinator, Dean Koyanagi, and faculty Stuart Hart, the Samuel C. Johnson Professor of Sustainable Global Enterprise and Professor of Management (The Johnson School); Rebecca Nelson, associate professor of plant pathology (CALS); and a faculty member from the College of Human Ecology.

Admissions Information Session, 177 Roberts Hall, 2:30 p.m. 255-2036

Saturday, June 10

CALS Reunion Breakfast, Trillium, Kennedy Hall, 7:30–8:45 a.m.
Enjoy fellowship with Dean Susan Henry, alumni, faculty, and friends of CALS. Jim Ward '90, ALS Alumni Association president, will host the association's annual meeting at this event. Reservations requested (see next page).

Alice Pell: Liberty Hyde Bailey Lecture, "Growing Possibilities," Call Alumni Auditorium, 9:00–10:00 a.m.

Incomes of less than a dollar a day and a severely degraded environment are problems faced daily by the rural poor around the world. Figuring out how to increase agricultural productivity and generate employment without harming the environment is one of the challenges being addressed by the Cornell International Institute for Food, Agriculture, and Development (CIIFAD). Alice Pell is CIIFAD's director and a professor of animal science.

Open House in Air-Conditioned Snee Hall Atrium, 10:00 am–2:00 p.m.
Visit the Timothy N. Heasley Mineral Museum; see the new PRI exhibit and view the earthquake seismograph. Enjoy the stroll and self-guided tour through the Engineering Quad Rock Parks.

Plant Biology Alumni Gathering, Mac Daniels Room G37 Plant Science, 11:30 a.m.–12:30 p.m.
Join us for light refreshments while visiting with fellow Plant Biology alumni and current and former faculty.

CALS Display Booth, Barton Hall, 11:30 a.m.–2:00 p.m.
Discover what's happening at the college in classrooms, admissions, career development, and alumni programs.

Earth and Atmospheric Sciences Display Booth, Barton Hall, 11:30 a.m.–2:00 p.m.
Hands-on exhibits will feature a tornado in a bottle, minerals and fossils, and a seismograph to demonstrate how seismic waves generated by earthquakes are detected. Faculty members and students will be on hand to answer questions.

Views of Sustainability: Natural Changes, Natural Disasters, Natural Resources Seminar, 1:00–2:00 p.m., 1120 Snee Hall
Presented by the Department of Earth and Atmospheric Sciences.

Tour of the Paleontological Research Institution (PRI), Museum of the Earth 2:00-4:00 p.m. (buses leave Snee Hall 1:45 p.m.)

Celebrate the new affiliation between Cornell's Department of Earth and Atmospheric Sciences and the PRI by joining us for light refreshments and a tour of PRI's Museum of the Earth. A right whale skeleton suspended in the atrium welcomes you to the beautiful new museum, in which the major transformations of life through the ages are displayed through fossils and videos. You can collect fossils from the Devonian seas of Ithaca! Fun for all ages! Free admission. Buses will leave from Snee Hall at approximately 1:45 pm. (Feel free to sneak out of the seminar to catch the bus!).

Reunion Forum: "Cornell's Women In Science," MVR (Human Ecology), 1:30-3:00 p.m.

Experience the commitment of women scientists at Cornell who are striving to meet the changing needs of human society around the globe. Cornell has an unusual breadth and depth of top programs and faculty, a deeply rooted interdisciplinary research culture, and nationally and internationally recognized research centers and facilities. Please join us for this joint college panel, hosted by Dean Lisa Staiano-Coico, the Rebecca Q. and James C. Morgan Dean of the College of Human Ecology, and featuring Laura Harrington, assistant professor of entomology for CALS.

Wine Tasting, Trillium, 2:00-4:00 p.m.

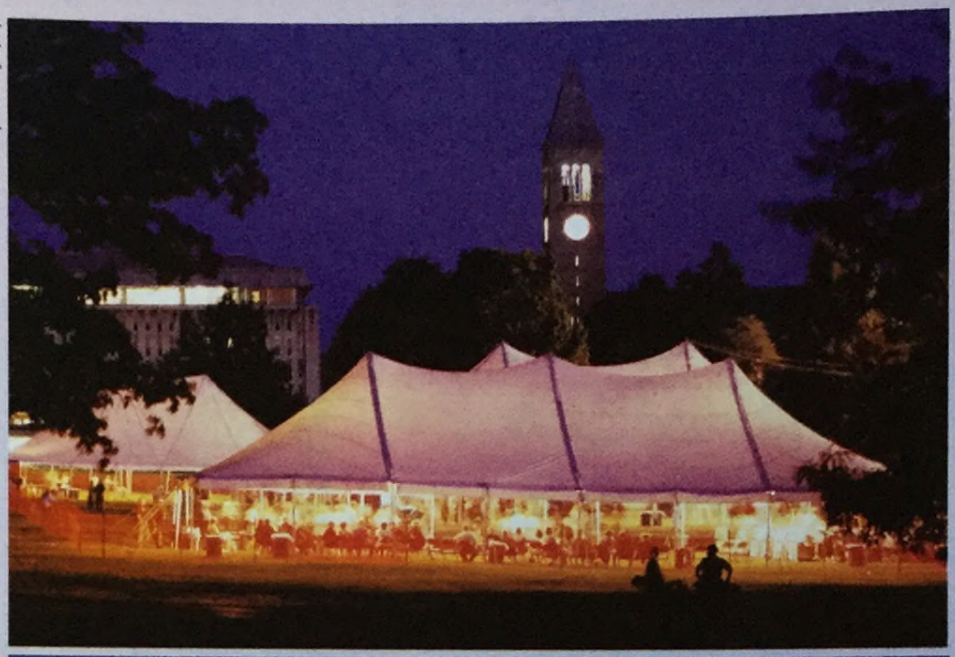
The College of Agriculture and Life Sciences, the Cornell Vinification and Brewing Technology Lab (based at the Geneva experiment station), and the Finger Lakes wineries invite you to taste some of the region's top wines. Only people 21 years of age and older, please.

Natural Resources Alumni Gathering, 304 Fernow Hall, 3:00-4:30 p.m.

Join us for wine tasting and light refreshments while you enjoy visiting with fellow Natural Resources alumni and former and current professors. There will be opportunities to share recollections of your days in Fernow and at field sites. The department chair, Barbara Knuth, will provide a brief update on the department and its programs. There will be displays of our collection of historical photos, posters of recent faculty and graduate student projects, and programs at the Arnot Teaching and Research Forest.

For more University Reunion information, click on http://reunion.alumni.cornell.edu

University Photography



Breakfast Registration Form

Registrations are recorded on a first-come, first-served basis.
Please note that your registration is not complete until the breakfast fee is paid.

Registrations should be received no later than Thursday, June 1, 2006.

A name tag will be given to each registered guest upon arrival at breakfast.

$15.00 for members of the ALS Alumni Association and each guest.
$17.00 for nonmembers and each guest.

Name _____
(Print exactly as to appear on name tag)

Class Year/Major _____

Address _____

City _____

State/Country _____ Zip/Postal Code _____

Telephone _____

Reunion Year _____

Guests _____ Class _____

_____ Class _____

Membership Expiration Date _____

Number of Registrations _____

Total Amount Enclosed $ _____

Please make your check payable to the ALS Alumni Association or pay with

☐ VISA ☐ MasterCard ☐ Discover Card

Expiration Date _____

Account # _____

Signature of Cardholder _____

Mail to CALS Reunion Breakfast, Cornell University, 274 Roberts Hall, Ithaca, NY 14853-5905; Phone: 607 255-7651; E-mail: alsaa@cornell.edu; Fax: 607 254-4690. **Must be received no later than Thursday, June 1, 2006.**

End Note

U.S. Navy Lieutenant Bibianna Danko Knows How to Be 'Different'

Bibianna Danko '99, red-headed and just five feet tall, was the first female pilot in her Navy squadron, and is "different" in other ways as well. For one, the Cornell ROTC grad flies the MH-53E Sea Dragon, the largest helicopter in the Navy's air fleet.

"Part of me likes to do things people don't expect me to do," Danko says. "It's certainly a surprise for some people when they see a short, red-headed woman come out of that cockpit."

Circumstances and events since graduation have further taught Danko the value of being different.

Soon after assignment to her first squadron in Corpus Christi, Texas, in January 2002, Danko planned to blend in "as one of the guys," but learned that some of the female sailors expected different. "Even though I tried to make myself an available and active leader to all the enlisted of my squadron, I learned there is specific guidance a female leader can provide to her female subordinates that is extremely valuable."

During Christmas 2004, Danko's squadron was among the first called to action in the wake of the tsunami that devastated Southeast Asia and parts of Africa. Danko and her crew transported thousands of flood victims in Indonesia to safety, flew VIPs around to survey damage, performed emergency medical evacuations, and delivered more than one million pounds of supplies to victims whom other vehicles could not reach. Among her biggest challenges was finding a landing spot stable enough to hold the weight of the aircraft (38,000 pounds empty) long enough for the supplies to be unloaded.

Danko and her crew thought they had seen enough destruction until, in the fall of 2005, hurricanes Katrina and Rita showed them more. In New Orleans, the rescue squadrons found extensive flooding and wind damage; the constant presence of water; countless numbers of people in danger; an extreme number of helicopters operating in the area (all five U.S. military branches plus a number of civilian sources had aircraft present), and what seemed like a wide disregard for the military's efforts. Punctuating that sense of disregard were public complaints from the mayor about the absence of the military, and rescue aircraft (including Danko's) being shot at or getting hit from firefights on the ground.

"Certainly all the people I evacuated and delivered supplies to were grateful, but the closest I've ever come to gunfire wasn't in the Middle East—it was in New Orleans," Danko says.

But Danko was inspired by the multinational rescue effort. Military units from several countries, including Mexico, came to the aid of the hurricane victims. Danko believes it was the first time the Mexican Navy was able to help the United States, an extremely valuable contribution.

Today, Danko is a special projects pilot and safety officer at the Naval Surface Warfare Center in Panama City, Fla. Her squadron tests new equipment—such as modified Sea Dragons and equipment designed to detect waterborne mines—before they are sent to the Navy's fleet.

In the future, Danko believes she will trade in her pilot's joystick for books and manuals to pursue a master's degree in environmental and public policy. But she says she'll always seek out adventure.

"I am one of those people who is slightly anxious about not making the most of my life and experiencing as much as I can," she says. "I hope to either get over those fears or live up to them."

J. R. Clairborne

Photos, top to bottom: Robin Williams mugs for the camera as he flies with Lt. Danko between USO shows in Bahrain; Lt. Danko stands in the shadow of an MH-53E Sea Dragon, the largest helicopter in the Navy's fleet; and the massive wall of water that hit Indonesia in December 2004 carried coastal items inland, such as the tugboat in the middle of this neighborhood in Banda Aceh.

CALS Creative Ways to Give

Charitable gifts provide essential support for the College of Agriculture and Life Sciences. The following department and program funding needs provide a direct opportunity to support the college by addressing tangible needs such as equipment, travel funds, scholarship, furniture, and more.

For further information or to make a gift in support of one or more of these priority needs, please contact Mike Riley, Associate Dean for Alumni Affairs, Development, and Communications, College of Agriculture and Life Sciences at (607) 255-0359 or e-mail mpr2@cornell.edu.

Dean's Discretionary Fund

Dean Henry relies greatly upon unrestricted gifts to allocate funds where they will have the greatest impact.

Undergraduate Research Scholars

CALS research covers both basic and applied studies in agriculture, food and nutrition, life sciences, environmental sciences, and social and behavioral sciences designed to improve people's lives in New York State, the nation, and the world. CALS undergraduates are often a part of this research, and funding is needed to support their endeavors.

- A $25,000 endowment supports the minimum annual grant ($350) for at least three students in the Research Honors Program.
- $2,000 provides annual support for at least one student's summer research stipend.
- $1,000 provides annual support for at least two students' academic-year research.

Food, Glorious Food!

Sponsor a student to attend the Food Marketing Institute's annual convention in Chicago. $750
Applied Economics and Management

Wine Anyone?

Help an enology student gain international wine-making experience by funding expenses during a semester or internship abroad. $5,000
Food Science

Got Books?

Help one of our undergraduates facing financial difficulties start the semester off on the right foot with an Undergraduate Book Award. $5,000
American Indian Program

Best Summer Ever!

Help a Native high school student experience life at an Ivy League institution by sponsoring a Summer College Scholarship. $7,100
American Indian Program

How's Baby Doing?

A portable ultrasound scanning unit is needed for pregnancy diagnosis and fetal imaging in sheep. $12,000
Animal Science

A Hub of Activity

Help build facilities that allow students and faculty to collaborate and connect via "wireless" classrooms. 6 wireless hubs, $5,000
Communication

Doctor, Doctor, What's Wrong with My Plant?

New microscopes will allow plant doctors to teach and diagnose at public outreach events such as Fun on the Farm, New York State Fair, and 3rd-grade summer science camps. Three stereo microscopes, $500 each
Plant Pathology—Geneva

Grow! Grow! Grow! Organically!

Cultivation equipment is needed for the new organic farm at Freeville. $8,000
Horticulture

How's the Weather Out There?

A weather station with web cam for Oneida Lake will help scientists understand links between fish production and weather. $5,000
Natural Resources

Kenya Send a Student to Nairobi?

One graduate student can provide vital educational outreach to a village in need. But they need you to provide a round-trip ticket. $1,800
CIIFAD

Ticket to India, Please?

Your support will allow a student to participate in the Agriculture in Developing Nations course field trip—a life-altering experience. $2,800
International Programs

Ithaca: Center of Design World?

Fund a symposium at the new Cornell design center in Manhattan to explore opportunities for Cornell landscape architecture in New York City. $5,000–10,000
Landscape Architecture

Cultivate a Collection

The collections in Mann Library would benefit from additional support. $100 buys one book, $500 helps cover a journal subscription, $5,000 sustains growth in the library's research resources through a named acquisitions endowment.
Mann Library

Wild Outings

Fund a summer of field behavioral research for a graduate student, such as bird mating systems in Africa or social interactions among insects in Costa Rica. $6,000
Neurobiology and Behavior

Seeds and Blights

Purchase a controlled-environment seed germination chamber for studying seed transmission of fungal diseases in plants. $12,000
Plant Pathology

Get Me There!

Fund a travel fellowship for an undergraduate student to attend a scientific/professional conference to present results. $500–$1,000
Nutritional Sciences

Environmental Exploration

Provide a graduate student with a Student Environmental Research grant, which enhances student research on the environment and extends research findings to environmental problem solving. $5,000
Center for the Environment

BioExpo

This annual event, sponsored by the student group Institute for Biological Engineering, brings industry and students together. Help develop a rolling fund of up to $25,000 to cover annual costs of $4,000.
Biological and Environmental Engineering

It's Raining, It's Pouring—in Africa

Fund an undergraduate student's research summer internship for the study of annual rainfall variability in West Africa. $3,000
Earth and Atmospheric Sciences

Wanted: Student Help!

Cornell Plantations fall lecture series needs a student to help manage the logistics. Fund one student, part-time, for 13 weeks. $1,200
Cornell Plantations

The CALS Deans Garden

University Photography

Stay connected via E-mail!

- Are you interested in receiving our monthly e-mail newsletter with the latest news from CALS and Cornell?
- Would you like to receive invitations to local alumni events via e-mail?

If so, please send an e-mail to us at alsaa@cornell.edu and request to be signed up for the alumni list-serv.

Visit the college's new web site at

www.cals.cornell.edu

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