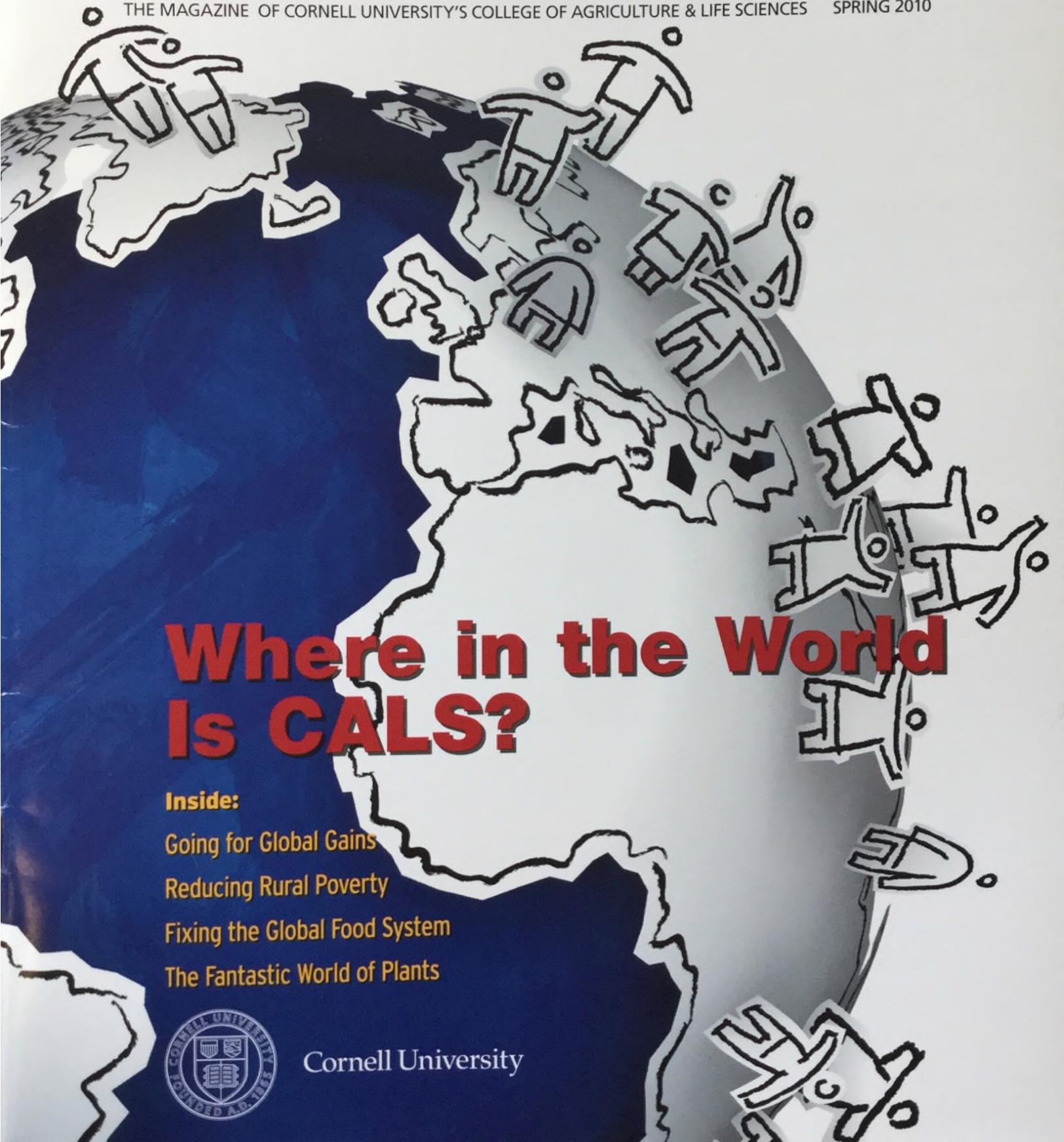


CALS NEWS

THE MAGAZINE OF CORNELL UNIVERSITY'S COLLEGE OF AGRICULTURE & LIFE SCIENCES SPRING 2010



Where in the World Is CALS?

Inside:

Going for Global Gains

Reducing Rural Poverty

Fixing the Global Food System

The Fantastic World of Plants



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Dr. Thressa Stadtman at work in her laboratory at the National Institutes of Health during the 1950s

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Provided



Cornell student Anuradha Tulachan (third from right), and Indian student Priyanka Singhal (center, wearing white), pose with community members and a frontline worker (far right) of Pateri Village in northern India.

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Dean's Message

Reflections on a Decade of Service



The experience of being the dean of this great College of Agriculture and Life Sciences (CALS) has been a remarkable and enriching experience for me. Since arriving at Cornell in 2000, I have learned so much about the history of CALS and the remarkable diversity of work our faculty, students, staff, and alumni have accomplished in so many different arenas. The college has had many, many proud moments, from our founding as the New York State College of Agriculture in 1904, under the leadership of Dean Liberty Hyde Bailey, to our engagement in international work, beginning in China in the 1920s, to the cutting-edge contributions we are making throughout New York and the world today in applied social sciences; environmental sciences; life sciences; and agriculture, food, and energy systems.

I am honored to be part of the great CALS tradition of public service.

In this issue of *CALS News*, we share a sampling of where this tradition is today—at home and abroad—under the theme, “Where in the world is CALS?” Although, as dean, I have come to ask the more pertinent question: “Where in the world isn’t CALS?”

Of particular significance to me during my tenure as dean have been my interactions with the many alumni and other CALS constituents whom I have met and come to know so well. My husband, Peter, and I have experienced such great warmth, hospitality, and friendship from the CALS community, starting from the beginning, when we first traveled throughout New York state, and later, as we traveled nationally and internationally during the college’s centennial in 2004–2005, visiting the many places across the country and around the world where so many CALS alumni live and work.

Over the years, Peter and I have come to consider ourselves part of the Cornell and CALS family. We plan to stay right here, in Ithaca, and look forward to the next chapter of our campus life together. In particular, we are eager to continue interacting and engaging with the many friends that we have made during the past 10 years. I look forward in particular to returning to full-time service as a member of the faculty.

Before returning to the classroom, however, I will enjoy a one-year administrative leave, when I expect to work more closely with my scientific collaborators, as well as devote some quality time to my garden and dote on my first grandchild! I will continue to conduct research in my molecular genetics lab in my home department of molecular biology and genetics. My research focuses on the regulation of membrane lipid metabolism in yeast and its coordination with membrane trafficking and signal transduction. During my leave, I will also start developing lesson plans in preparation for my return to teaching undergraduate genetics courses in the newly revised biology curriculum. I very much look forward to once again interacting with undergraduates in a classroom setting.

The decade I have spent as dean of CALS has been an extremely challenging period from an economic perspective. If nothing else, these challenges have instilled in me an unwavering conviction in the resiliency of our college and of its faculty, students, staff, and alumni. CALS has weathered many critical challenges in the past and has always come out stronger. I am convinced it will be the same this time.

Despite the many budget challenges we face, we will complete this academic year with our books balanced and with our academic programs intact and on track to be even better than before. The entire college leadership, including the associate deans, the department chairs, and I, have engaged in significant strategic planning. You can read about “Reimagining CALS” in the “End Note” on page 21 and on the CALS website. Under the direction of President David Skorton and Provost Kent Fuchs, Cornell will emerge more effective and relevant than ever before. And I know that CALS will continue its great tradition of making contributions to Cornell, to students, and to constituents, wherever they are, in New York and the world at large.

I will miss many of the functions and ceremonial occasions I have had the honor to be involved in while dean. Please join me at the graduation of the Class of 2010 in May and at the 2010 Reunion in June—my final commencement and reunion as dean. I always enjoy seeing the members of the many multi-generational CALS families as well as the parents and alumni that I have come to know in the course of my time here.

In closing, I want to express my sincerest, most heartfelt thanks to all of our alumni and the many constituents, stakeholders, and friends who have supported this great college through times of growth and times of retrenchment. Along with the members of the faculty, the students, and the staff, your ongoing support, engagement, and hard work on behalf of the college remain ever critical to our success.

—Susan A. Henry, PhD,

The Ronald P. Lynch Dean of Agriculture and Life Sciences

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Short Reports

Biology Research Fellows Will Diversify Students in Life Sciences

Cornell is No. 1 for sending students in life sciences to graduate school, but just like other schools, Cornell needs to boost how many minority students seek advanced degrees in the life sciences.

Now, thanks to almost \$1 million from the National Science Foundation (NSF) and \$16,000 per year from Cornell's Office of the Provost, a new Cornell program aims to broaden the pipeline of underrepresented minorities entering life sciences graduate fields.

The inaugural class of the Biology Research Fellows Program contains eight fellows, all juniors, who began the program in January 2010. The fellowships are not intended for pre-medical students, but to enhance the diversity and number of undergraduates who plan to pursue careers in biology research.

"We have never had support like this to develop and implement a program for diversifying the group of students going into research careers," says Bonnie Comella, director of academic advising for biological science and director of the Biology Scholars Program.

Myra Shulman, a senior research associate in

ecology and evolutionary biology, and Ron Harris-Warrick, professor of neurobiology and behavior, are leading the fellowship program.

The program targets juniors and seniors from underrepresented populations—including Hispanic/Latino, African American, Native American, and Native Hawaiian and Pacific Islanders—but the fellowships are also open to students who demonstrate a commitment to diversity through such activities as tutoring inner-city youths.

The fellowships provide \$21,000 per student over almost two years.

"The NSF wants to reduce the financial constraints on students," says Shulman. "It's designed to take the pressure off to [allow students to] explore the amazing research opportunities at Cornell."

Fellows will be matched with faculty mentors and given opportunities to work part time in their labs throughout the school year and



Jason Koski/University Photography

Jamie Moore '11 was one of eight students selected this year for a biology research fellowship.

full time during their junior-year winter session and summer prior to senior year. Students will also contribute to the community through peer mentoring and outreach.

—Krishna Ramanujan

Nine Projects Spotlight New York's Specialty Crops



Joe Ogrodnick

Christine Smart displays pepper plants that were used in a *Phytophthora* blight variety trial to identify plants that had some resistance to the pathogen.

For many of New York's 3,200 vegetable farmers, the risk of *Phytophthora* blight, a disease that attacks peppers, tomatoes, cucumbers, snap beans, and gourds, looms large.

A team of five researchers in CALS, working in the world's only farm facility dedicated solely to the study of the pathogen, aims to arm farmers with blight-resistant varieties and crop management strategies to beat the disease.

The project is one of nine in CALS funded with nearly \$850,000 from the New York State Department of Agriculture and Markets and the U.S. Department of Agriculture. With the grants, researchers will examine pest and disease management techniques, crop productivity, and plant health in New York's specialty crops sector, which ranges from fruits and vegetables to honey, wine, and maple products and generates \$1.3 billion annually.

The nine CALS projects funded are to:

- develop varieties resistant to *Phytophthora* blight and crop management strategies (Christine Smart, Helene Dillard, Bill Fry, PhD '70, Michael Mazourek, PhD '08, and Steve Reiners)
- develop a strategy to reduce fire blight infection in apples (Herb Aldwinckle)
- improve forecasting and management of

strawberry powdery mildew (David Gadoury and Robert Seem)

- improve the competitiveness of the snap bean industry in New York through resistance to aphid-transmitted viruses (Phil Griffiths)
- increase use of integrated pest management tools in New York's Christmas tree industry (Elizabeth Margaret Lamb, MS '81 and Brian Eshenaur)
- identify the health benefits of New York peaches and apricots (Olga Padilla-Zakour, MS '88, PhD '91)
- test new botrytis leaf blight onion lines and hybrids to better control disease on conventional and organic farms (Martha Mutschler and James Lorbeer)
- advance adoption of reduced tillage systems in conventional and organic vegetables in New York (Anu Rangarajan)
- reduce production costs and improve wine quality through root zone management (Taryn Bauerle, Anna Katherine Mansfield, and Jusine Vanden Heuvel).

—Ted V. Boscia

NSF Grant Trains Graduate Students to Tackle Food and Poverty Problems

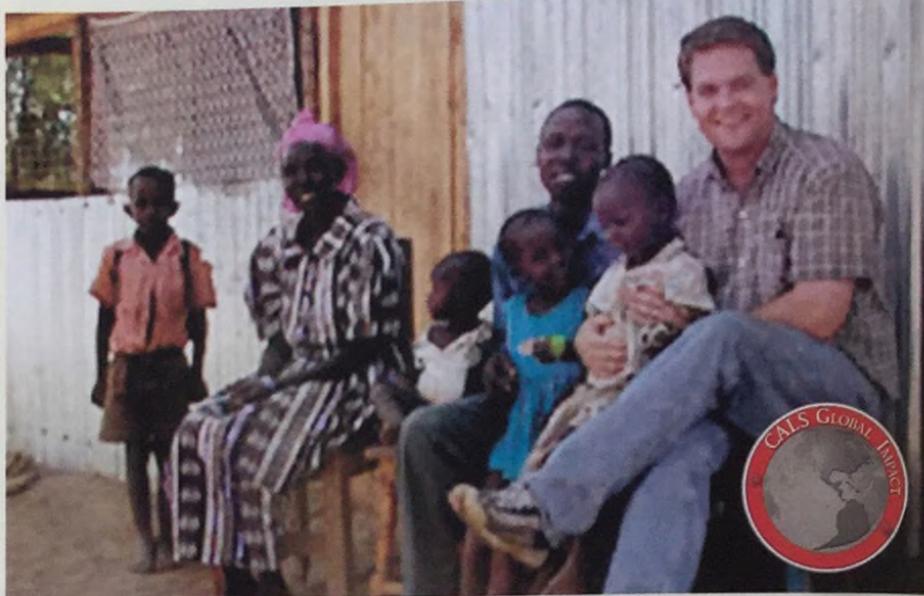
Although farming and food distribution have improved in Asia, Europe, and North America, 2.6 billion people still live on less than \$2 a day and they suffer from chronic poverty.

A new CALS program funded by the National Science Foundation (NSF) will train graduate students to use interdisciplinary approaches to tackle food systems and agricultural problems that contribute to extreme poverty.

A five-year, \$3.2 million NSF grant will support 25 Ph.D. students for two years each in the Food Systems and Poverty Reduction Integrative Graduate Education and Research Training (IGERT) program, administered through the Cornell International Institute for Food, Agriculture, and Development.

Open to U.S. citizens and permanent residents, the program will begin in August 2010 with participants from more than 20 graduate fields. The curriculum will include a seminar series; field research in Kenya and Ethiopia to study both highland and dryland agricultural systems; and a three-semester core course sequence that addresses such problems as water shortages, climate change and vulnerability to food systems, soil degradation, pests and diseases, and food supply chains.

"The idea behind the program is to expose students to different disciplinary approaches to the same problem," says Chris Barrett, the Stephen



Chris Barrett (right) visits the home of a family of maize farmers in the Rift Valley of Kenya.

B. and Janice G. Ashley Professor of Applied Economics and Management and the program's principal investigator. "If you are tackling issues related to pests and disease, for example, a food scientist's approach will be different from [that of] a plant pathologist or an entomologist"

Students also will learn to use and link together new concepts and computer modeling techniques for more integrated and dynamic insights on these issues.

Co-principal investigators of the program include Rebecca Nelson, associate professor of plant breeding and genetics and of plant pathology and plant-microbe biology; Alice Pell, professor of animal science and vice provost for international relations; Per Pinstrup-Andersen, the H. E. Babcock Professor of Food, Nutrition, and Public Policy; and Alison Power, professor of ecology and evolutionary biology and dean of the Graduate School.

—Krishna Ramanujan

CUAES 'Culture of Sustainability' Is a Model for Campus



Jean Koski, a sustainability action team member and greenhouse grower, works under new, energy-efficient lights in Guterman Complex Greenhouses.

The threat of global climate change coupled with Cornell's commitment to reach carbon neutrality by 2050 has inspired one Cornell unit to serve as a model for change from the bottom up. The Cornell University Agricultural Experiment Station (CUAES) has adopted a culture of sustainability that welcomes ideas from everyone in the organization.

CUAES director Mike Hoffmann seeks to catalyze changes across campus in accordance with the American College and University Presidents' Climate Commitment that Cornell President David Skorton signed in 2007.

The CUAES has already instigated such changes as using a biodiesel blend in tractors, retrofitting greenhouses with energy-saving light fixtures, and stabilizing a creek bank.

By offering "top-down support for bottom-up ideas," the unit has created a sustainable action team of 10 people, including greenhouse and farm staff, mid-level supervisors, and managers, who brainstorm strategies and then offer ways to implement their ideas, Hoffmann adds.

For example, CUAES, which manages seven research farms and CALS' large greenhouse

complex, relocated two workers to a campus lab from a research farm near Freeville, shutting down a large, underutilized building for the winter and saving \$1,500 a month.

Also at the Freeville farm, the staff stopped mowing a hillside and planted 5,000 mixed hardwood and softwood trees, which will sequester carbon from the atmosphere.

This spring, an energy-conservation pilot study in selected CALS buildings will be launched to better understand how human behavior influences energy conservation.

"The pilot project brings to bear the best scientists we have at Cornell to address practical issues we face on campus," said Lauren Chambliss, assistant director for CUAES communications, who leads the effort.

Also, CUAES is completing a feasibility study for the Cornell University Renewable Bioenergy Initiative (CURBI), an ambitious plan to harness 57 campus waste streams and other biomass resources for generating bioenergy for Cornell's use.

—Krishna Ramanujan

CALS in the Capitol—Hot Politics Meet Cool Science

Politics and science may mix like oil and water, but the College of Agriculture and Life Sciences is proving otherwise with a series of policy briefings on Capitol Hill that bring science to bear on pressing legislative issues.

The Washington Policy Briefing Series, intended for legislative staff, agency staff, media, and legislators, features faculty experts who provide science-based, objective information, without political agendas, on today's most salient and controversial topics. In 2009, the inaugural year of the quarterly briefings, sessions were held on climate change and agriculture, food safety, natural gas exploration, and cap-and-trade systems for reducing carbon emissions.

The series kicked off in March 2009 with climatologist Art DeGaetano and plant ecologist David Wolfe briefing staff on potential impacts to the agricultural sector from a warming climate.

On June 15, just days before a U.S. House committee voted to expand the Food and Drug Administration's power to monitor the nation's food supply, food science professors Kathryn Boor '80 and Robert Gravani, MS '69, PhD '75,

briefed Congressional staff on the science of food safety.

Equally timely was a briefing on cap-and-trade in November, a key component of the legislative effort to reduce America's greenhouse gas emissions. Cornell's Wolfe and Antonio Bento, an economist, told a standing-room-only audience that the agricultural sector can reduce its own emissions of greenhouse gases, estimated to be about 7 percent of U.S. total emissions, and further sequester additional carbon and/or replace fossil fuels with renewable energy sources.

Bento and Wolfe unveiled a model for including agriculture and forestry in cap-and-trade that would include small farms and landowners who otherwise might not be able to take advantage of carbon-offset markets.

"The staff seemed genuinely appreciative of the expertise that Cornell scientists can provide, but the challenge is on us to do our homework so that our input is highly relevant to ongoing policy debates and pending legislation," Wolfe says.



David Wolfe (left) and Antonio Bento unveiled a model for including agriculture and forestry in cap-and-trade systems at a briefing in November, 2009.

In February 2010, Susan Riha, director of the Water Resources Institute, and Rod Howe, a senior extension associate in development sociology, discussed potential environmental and community issues raised by hydraulic fracturing, or "fracking," in the Marcellus Shale and other natural gas deposits.

—E. Lauren Chambliss

Cornell Plantations Breaks Ground on Welcome Center

In a construction zone with backhoes and piles of dirt surrounded by a chain-link fence, a gray wall is built into Comstock Knoll. By the end of this year, the site will house Cornell Plantations' new sustainably designed welcome center.

On a drizzly gray day last October, visitors were cheered by a groundbreaking ceremony for the Cornell Plantations Brian C. Nevin Welcome Center at the Mullestein Winter Garden, next to Plantations Road.

"Plantations has long needed a single site where we can greet visitors, provide them with orientation and interpretation about our history and collections, and meet visitor amenity needs," says Don Rakow, MPS '77, PhD '87, the Elizabeth Newman Wilds Director of Cornell Plantations.

The building, planned for completion by Trustee/Council Weekend in October 2010, will comply with the Leadership in Energy and Environmental Design (LEED) gold certification standards. The first floor will be bermed into Comstock Knoll in the heart of the botanical garden. The contractor is using partly reused materials and is recycling the construction waste. The building will use 30 percent less energy than industry standards require and will include both a green roof and solar panels.

The center will feature a bright two-story atrium and lobby, interpretive exhibits about Cornell Plantations, a reception desk, restrooms, a gift shop, and a small café. To better serve Plantations'



Breaking ground for the Welcome Center are (from left) Cornell Project, Design, and Construction Director John Kiefer; Glenn Dallas '58 (representing Maddi Dallas '58, co-chair of the Plantations 21st Century Committee); Dean Susan Henry; and Plantations Director Don Rakow.

education and outreach programs, the second floor will include a 100-seat classroom/lecture hall and a 10-seat conference room.

The new center is the capstone project of a long series of capital improvements at Plantations that began a dozen years ago, says Rakow. Other upgrades will include a new parking area with a tour-bus drop-off zone.

"Plantations is a model for all the world to look to for its sustainable gardening and land management practices, native plant conservation, and habitat preservation and restoration," said Susan Henry, the Ronald P. Lynch Dean of Agriculture and Life Sciences.

—Krishna Ramanujan



A Decade of Leadership: 2000–2010

On June 30, when Susan A. Henry steps down as Dean of Agriculture and Life Sciences, she will have served 10 years as the first woman dean of Cornell's second-largest college—an experience she characterizes as “enormously satisfying” as well as “remarkable and enriching.” While she will miss her daily interactions with the many committed people with whom she has worked closely as dean, she expects to continue her relationships with the CALS community as a faculty member, and will return to teaching and research after a one-year sabbatical.

“I am continually impressed by the excellence of our faculty, students, and staff and the level of enthusiasm of our alumni and stakeholders for providing leadership and improving people’s lives in challenging times,” said Dean Henry. “I am very proud to have been part of that effort.”

“Susan Henry has been extraordinarily effective as the dean of one of Cornell’s largest and most complex colleges,” said Kent Fuchs, Cornell’s provost. “Her commitment to excellence and her strong leadership have made a permanent, positive impact on Cornell. CALS is very fortunate to have had the benefit of her innovative and exemplary service.”

During her tenure, Henry focused the activities of CALS around four broad priorities: the land grant mission, the applied social sciences, the environmental sciences, and the new life sciences. Working with the help of various faculty task forces, she was able to institute new majors in agricultural sciences, information sciences, and viticulture and enology, and to evolve and modernize undergraduate curricula in the environmental and biological sciences.

For each of the past 10 years, CALS has continued the pace of faculty hires and balanced the budget despite declining state support. Student applications and contributions from alumni and friends have increased, academic priorities have been redefined, the vision and mission rearticulated, new web sites launched, and administrative services streamlined. Henry has helped raise \$198 million, or 53.5 percent of CALS’ target in the Far Above Campaign.





"Susan Henry has raised the bar for deanship performance at Cornell . . . She has embraced the alumni of the college with genuineness, good humor, and a willingness to listen that has endeared her to all."

Stephen B. Ashley '62, MBA '64

One of Dean Henry's proudest achievements is the successful accreditation of Cornell's undergraduate business program in the Department of Applied Economics and Management, and its subsequent ranking in the top five by *Business Week*.

Henry has also been an effective steward of the college's facilities and farms. Under her watch, CALS completed the renovation of Mann Library and secured the commitment of state funding for the long-awaited renovations of Stocking, Warren, Rice, and Fernow halls, for which planning and designs are underway. She helped cut the ribbon for a teaching winery and biofuels laboratory on the Ithaca campus, the Vinification and Brewing Lab and the Cornell Agriculture and Food Technology Park in Geneva, and the new Lake Erie Research and Extension Laboratory in Portland, N.Y. Under her leadership, CALS was also able to secure organic certification for the Freeville Farm.

In 2004–2005, Dean Henry led a year-long celebration of the college's centennial, advancing the mission of teaching, research, and extension espoused by Liberty Hyde Bailey, the first dean, with whom she feels a deep affinity. Dozens of events were held on campus, throughout New York, and around the U.S., including Hawaii. As a component of this peripatetic celebration, she and her husband traveled around the world visiting CALS alumni and collaborators in India, China, and the Philippines.

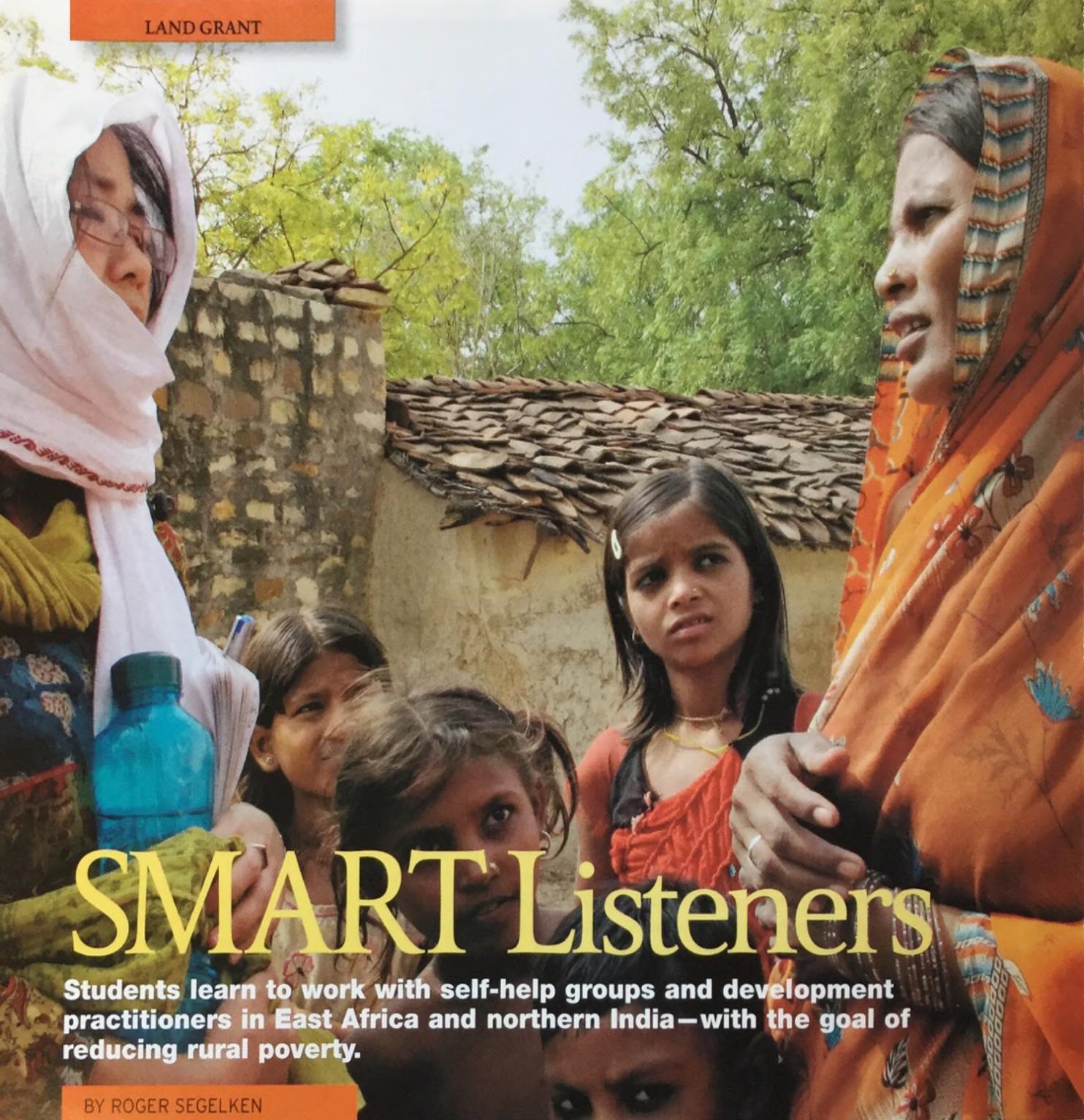
Dean Henry has collaborated with many agricultural and food stakeholders at home and abroad, where she traveled extensively. This has resulted in the establishment of dual-degree programs with universities in India and the signing of teaching and research memoranda of understanding with universities in Europe, Asia, and Africa. Closer to home, she served on former Senator Hillary Clinton's Agricultural Advisory Council, was a member of Governor Paterson's New York State Council on Food Policy, and helped create the New York Farm Viability Institute.

"Susan Henry never flinched," said Cornell trustee emeritus John S. Dyson '65. "Even with the tough times, she was always optimistic and sure we could find the right path for CALS. Indeed, she did over and over again. It has been my privilege to work closely with all the deans over the last 30 years. When the history is written, I am sure she will rank in the handful that comprise the top group."



 **WEB EXCLUSIVE**

Dean Henry's Legacy
See and hear more from faculty and alumni about Susan Henry's 10 years of innovative leadership as dean of the college.
calsnews.cornell.edu



SMART Listeners

Students learn to work with self-help groups and development practitioners in East Africa and northern India—with the goal of reducing rural poverty.

BY ROGER SEGELKEN

Nobody likes to be lectured to. And everyone has ideas and experiences to contribute. So, if we put our heads together and share what we know, we can find new ways to tackle old problems.

That is the approach taken by a resilient band of international-development students and educators from Cornell—who partnered with farmer groups, a major international development organization, grassroots development practitioners in East Africa and northern India, and with fellow college students from host countries. Here, in their own words, is what they did.

Cornell student Anuradha Tulachan (left) talks with a frontline worker in Chitrakoot in northern India.



"This activity built upon a partnership between the Cornell International Institute for Food, Agriculture, and Development (CIIFAD) and Catholic Relief Services (CRS) that began in 2007. CRS invited us to prepare and field test learning resources in several skill set areas—including group management, experimenting with innovations, basic marketing and business, and sustainable natural resource management—to strengthen educational programs for farmer groups and the extension practitioners who work with them," says Beth Medvecky, PhD '05, a CALS research associate with decades of experience in rural Africa.

"Each training session was tested and tweaked multiple times until it contained a blend of activities—stories, role plays, and skits—that engaged and energized the learners."

—Beth Medvecky

"This work now falls under CIIFAD's SMART [Student Multidisciplinary Applied Research Teams] program, which links Cornell students with experiential learning opportunities that develop their ability to work on complex problems related to food and nutrition, markets, agriculture, health, and livelihoods in developing countries," Medvecky explains.

"We rarely start this sort of work with a blank slate," says Terry Tucker, PhD '98, director of academic programs in International Programs/CALS and a specialist in adult learning and international development. "Local organizations have a wealth of experience, and plenty of educational resource materials already exist. However, committed students bring to the table a number of valuable assets, including their academic training, creative ideas, enthusiasm for teamwork, and often significant development experience of their own. It really energized and inspired the field agents to have this group of bright and eager students join them in thinking about how to strengthen

their community development programs."

In 2008, Tucker and Medvecky led a seminar that enrolled 23 students from 10 countries and diverse disciplines at Cornell. The students evaluated existing reference and extension materials in the skill set areas and tried to create practical modules that emphasized the critical concepts and knowledge. "But even after trying to boil down the materials into more digestible bites, they were still too complex and weighty, as the five students who traveled to Kenya in 2008 soon found out," Medvecky recalls. "During the process of field testing with farmer groups, students quickly realized that they needed to continue to strip away additional layers of complexity and nuance. Each training session was tested and tweaked multiple times until it contained a blend of activities—stories, role plays, and skits—that engaged and energized the learners."

For example, one story involved a fictional farmer:

"Benard awoke early on the day he was to go to the new market. He arrived earlier than the other sellers. He piled his tomatoes on the stand. He sat back and waited for the customers to line up. Hours passed and nobody had bought a single tomato . . ."

The open question "What do you think Benard could have done to attract customers to his stall?" launched a learning session on product promotion strategies. "The farmers attending the session came up with virtually every idea that a facilitator would have mentioned if he or she had prepared a lecture on the topic," Medvecky says. "But brainstorming as a group was a lot more fun and memorable. In fact, when I went back to visit a couple of months later, farmers were able to recount the do's and don'ts of marketing that they learned from Benard's trials and tribulations."

New Training Frameworks

Back in Ithaca for the next CIIFAD seminar, Medvecky and Tucker integrated some of the lessons learned during the 2008 field experience. The 2009 group of students studied the "dialogue education" methods developed by Jane Vella, a pioneer in adult

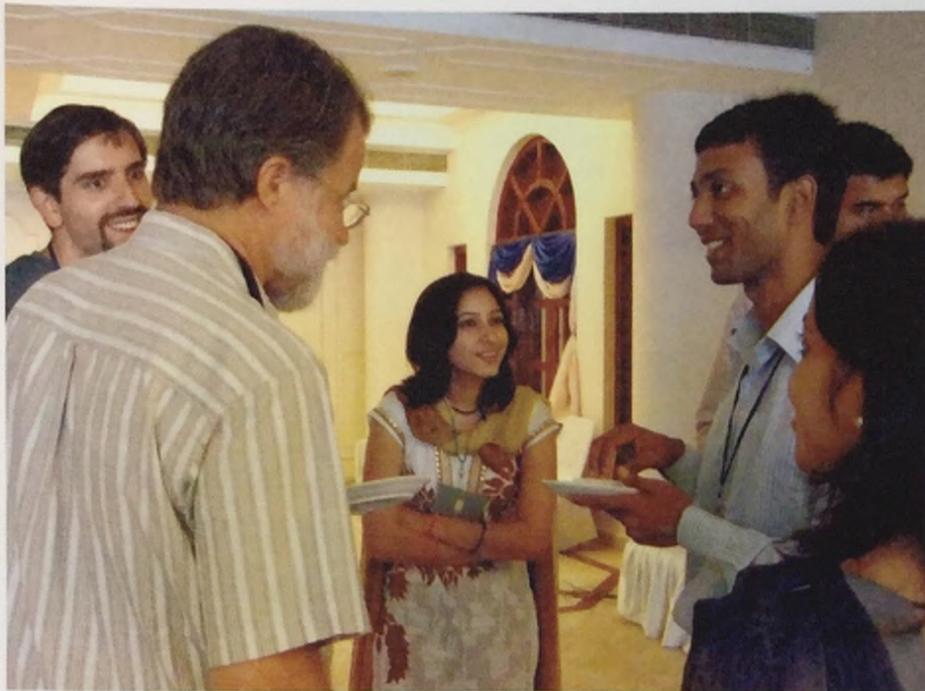


Beth Medvecky checks a cassava plant to see if it is infected with Cassava Brown Streak disease as a Kenyan farmer describes the symptoms that she learned to check for during a just-concluded training session.

learning. Students said that Vella's framework helped them to structure engaging sessions of suitable length and complexity. This came in handy as they focused on refining the skill-set modules and developing computer-based materials for field agents working on CRS's Great Lakes Cassava Initiative in East Africa.

A grant from Intel provided 250 laptops. The computers would be handed over to the field agents, beginning in summer 2009, already loaded with courses to help field agents train farmers to recognize virus diseases that affect the root crop, cassava, among other topics. Five Cornell students and three graduate students from Kenyatta University introduced the computers, courses, and adult education principles and practices to field agents in Kenya, Uganda, Tanzania, and Rwanda.

"Although the field agents were already highly experienced, they were immediately attracted to the approach that we introduced them to," says Carrie Howard '10, a Nutritional Sciences major from Groton, N.Y. "Step 1 was to ask learners open questions to discover what they already knew



Provided

Terry Tucker (second from left) meets the Indian students participating in the program.

minimal text. Our team also enlisted a local artist to help us create flipcharts about agriculture and natural resource management, such as compost making, seed production and storage, and pest and disease management. Working closely with practitioners we tried to localize learning resources and approaches to meet specific needs of the community," says Tulachan.

Between travels—briefly—in the frosty winter of 2010, Tucker reflects on the project's accomplishments and future. He knows the few hundred farmers they reached through this program are but a tiny fraction of the hundreds of millions worldwide who face food insecurity and the health problems that so often accompany it. "The scale of the work to be done is sobering. But these students are not given to hand wringing and despair. Far from it. The opportunity to work with thoughtful, inspired practitioners buoyed their optimism. Our comparative advantage is in the realm of ideas—sharing some of our own, of course, but, importantly, also to elicit and build upon the ideas of local people. Our work is also about strengthening capacity. We leverage these modest efforts in important ways by helping 'frontliners'—development professionals and community volunteers alike—be more effective," he says.

"Scaling out even the most successful agricultural development programs is a challenge," Tucker says. "Of course, it takes organization and resources—things that large organizations are often called upon to provide. But that's not enough. It takes local champions who bring a sense of purposeful optimism to their work every day. And it takes fresh ideas and a passion for innovation. There is no standard formula for alleviating poverty and food insecurity; contexts are too diverse and complex. We learn our way forward."

For a look at another SMART program, see "Going for Global Gains" on page 19.

about a topic. Step 2 was to build on that knowledge and fill in gaps. Step 3 was a practical activity that allowed participants to practice using new knowledge or skills immediately. Step 4 involved having the group reflect on ways that they would incorporate the new knowledge or skill into their daily lives."

"The field agents told us how much they appreciated the new training frameworks and pedagogical approach, without using words like pedagogical, of course," says Thomas Archibald '02, a Cornell doctoral candidate in adult and extension education from Lexington, Mass., who collaborated with students from Kenyatta University in East Africa. "And the farmers were clearly energized by this new style of learning."

While the teams of students who summered in East Africa dealt with plant and computer viruses, those who participated in the CIIFAD/CRS India program in Gorakhpur and Chitrakoot districts of Northern India's Uttar Pradesh state encountered blazing heat and the near absence of life-sustaining monsoon rains during the summer of 2009.

"These are resilient, hard-working students," says Tucker. "They found ways to remain productive despite the oppressive heat—going to the field very early in the

morning and then again in the evening to meet with farm families and to work with local community development practitioners. When it's 115 degrees by 11:00 in the morning, it's hard to keep your brain focused on the task at hand."

"The scale of the work to be done is sobering. But these students are not given to hand wringing and despair. Far from it. The opportunity to work with thoughtful, inspired practitioners buoyed their optimism."

—Terry Tucker

"Very few village women knew how to read or write," says Anuradha Tulachan, a Hindi-speaking native of Kathmandu, Nepal, and a Cornell master's student in International Development Studies. "So we quickly modified the existing modules on health and nutrition—topics like breastfeeding, complementary feeding, and anemia—to adapt adult-learning principles that were more appropriate to these specific learners' needs and perspectives. The volunteer peer educators could foster dialogue with plenty of pictures and



Professor Pinstrup-Andersen goes over global food policy issues with students Emily Nelson and Christian Pulver.

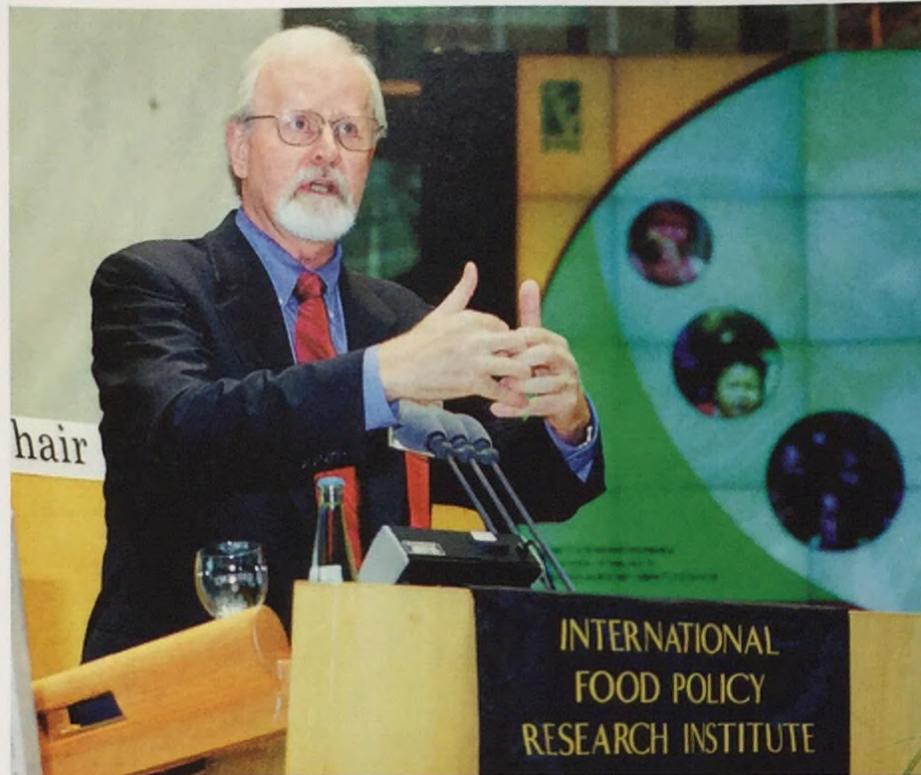
Feeding Hungry Minds

Per Pinstrup-Andersen strives to fix the global food system and eliminate world hunger, one student at a time.

BY TED V. BOSCIA

Without ever leaving Savage Hall, Per Pinstrup-Andersen's students become players in global food policy. One class session, they consider Russian land-use policies in the eyes of lawmakers and landowners. In another, the plight of Tanzanian farmers seeking broader access to international markets comes into focus. In a third, students must gain stakeholder consensus for a policy solution that reverses the degradation of Peruvian soils.





Pinstrup-Andersen served as director general of the International Food Policy Research Institute in Washington, D.C., where he launched the 2020 Vision Initiative.

Pinstrup-Andersen has adopted a social entrepreneurship approach—what he defines as “stimulating innovative and creative ideas as an alternative to the conventional wisdom and failed thinking of the past”—to educate Cornell undergraduate and graduate students about the social, political, economic, and scientific factors that influence the food system and, ultimately, world hunger. In the undergraduate course Food Policy for Developing Countries and the graduate-level Globalization, Food Security, and Nutrition, students investigate a set of case studies derived from real-world circumstances, such as the 2002 Malawi famine or disruptions in the Mexican coffee trade, and make policy recommendations.

“We are taking the case into the classroom rather than the classroom to the case,” says Pinstrup-Andersen, the H. E. Babcock Professor of Food, Nutrition, and Public Policy in the Division of Nutritional Sciences; the J. Thomas Clark Professor of Entrepreneurship; and professor of applied economics and management.

The lessons flow from Pinstrup-Andersen’s belief that technological

advancements in the biological sciences and improved agricultural practices alone cannot eliminate global hunger. Scientific innovation must be combined with investment in developing countries’ rural infrastructure, education, and health services and with diplomatic and political solutions that convince broken governments to act, Pinstrup-Andersen says.

“Corrupt governments in developing countries, fears about genetically modified crops, farm subsidies that favor developed countries, and other factors often prevent policy solutions to world hunger from taking root.”

—Per Pinstrup-Andersen

Pinstrup-Andersen gained these insights as a food and nutrition policy researcher on multiple continents and as director general of the International Food Policy Research Institute (IFPRI) in Washington, D.C. At IFPRI, he launched the 2020

Provided

Vision Initiative, which is credited with bringing about policies and programs that have reduced the hunger and suffering of more than 8 million people. In 2001, he earned the World Food Prize, widely considered as agriculture’s Nobel Prize, for these efforts.

As a result, the case studies and the professor’s charge to think entrepreneurially are more than an ivory tower exercise. Pinstrup-Andersen points out the urgent need to address the root causes of malnutrition, which afflicts 15 percent of the world population, or about 1.02 billion people, according to the United Nations Food and Agriculture Organization (FAO). (The 2009 figures are a sharp increase from FAO’s 2006 estimate of 854 million malnourished people.)

His Cornell courses are an opportunity to train entrepreneurs who can invent feasible solutions to eliminate chronic poverty and hunger.

“He often identifies that the students in his course will likely be future leaders—of institutions, enterprises, and, perhaps, countries,” says Phoebe Garfinkel, a first-year fellow at the Cornell Institute for Public Affairs who took both of Pinstrup-Andersen’s classes in fall 2009. “This type of empowerment is incredibly important and encouraging for students’ participation in the course.”

Over the semester, Pinstrup-Andersen’s classes will examine 12–15 case studies, more than 60 of which have been edited by the professor since 2004. The reports, many written by Cornell graduate students, pose policy questions related to global, national, and local food systems.

“These cases look at all angles of the international food system—health, nutrition, policymaking, international trade, and ethics,” Pinstrup-Andersen says. “The main point is to put students in the mindset of stakeholders and to train them to enact policies that address the root causes of food system failures.”

Each report portrays a historical or current food crisis in need of a solution, and a group of students act as policy advisers. They present their recommendations to

the class, with their peers representing the views of stakeholders large and small—from heads of state to small farmers. It results in a freewheeling discussion where students try to achieve a consensus that's fair to all sides.

"The students learn that there usually is no answer to these problems that will satisfy all stakeholder groups," says Pinstrup-Andersen, "and that a policy will go nowhere if there are not good reasons for all sides to participate."

To amplify their impact, Pinstrup-Andersen has allowed free access to the case studies in print, on DVD, and on the web at <http://cip.cornell.edu/gfs>. He has led workshops in Bangladesh, Uganda, China, and other countries to show professors how to apply the material. He estimates that teachers at 40 universities in Africa, Asia, and the United States use them.

"The goal is to spread the case studies as far as possible," says Pinstrup-Andersen, who in 2002 vowed to wear red socks every day until world hunger is eliminated. "People gain a great deal from them because they combine conceptual learning with real-world experience. Many of these people are leading the fight against hunger and have the power to have a genuine impact on the well-being of people in developing countries."

A New Revolution

Long before he became a World Food Prize winner, Pinstrup-Andersen was on a path to be a farmer.

In the early 1950s, at age 14, he left school to work on his family's 50-acre farm in Denmark. He planned to help his parents until he could buy his own farm. The dream died a few years later when he realized he'd never save enough.

With no more than a seventh-grade education, Pinstrup-Andersen was accepted to the Royal Veterinary and Agricultural University in Copenhagen, thanks in part to three years of practical experience in agriculture. He majored in agricultural economics and began a lifelong inquiry to understand the disparity between the extreme poverty in developing countries

and the relative wealth in much of the developed world.

"It always struck me how one portion of the world could be so prosperous while so many others faced disease, hunger, and suffering every day," he says.

"Under Per's direction, the 2020 Vision Initiative was a brilliant catalyst for policy change that jarred the international community out of a complacency it had fallen into in the late 1980s and early 1990s following the abundance achieved by the Green Revolution."

— Ambassador Kenneth Quinn, president of the World Food Prize Foundation.

In 1969, Pinstrup-Andersen completed his Ph.D. in agricultural economics at Oklahoma State University and became a researcher at the International Center for Tropical Agriculture in Colombia. There he investigated the link between human health and food systems, looking not only at food security but whether the poor were receiving adequate nutrition.

"I was the best and worse source on the subject, because I was the only one doing it," he says. "Until then, there was a firewall between human health and food systems."

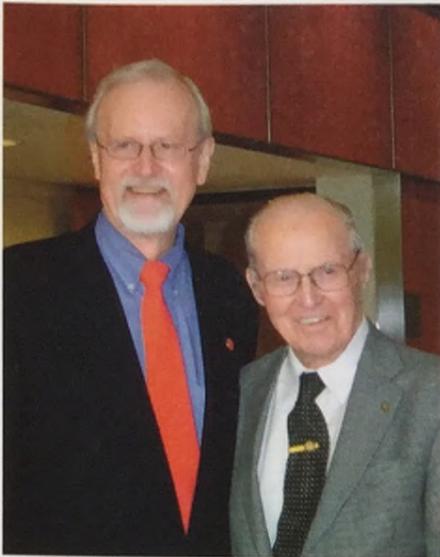
As his career advanced, Pinstrup-Andersen homed in on agricultural solutions to world hunger, largely because 70 percent of the world's poverty occurs in rural areas of developing countries, and poverty is inextricably linked to hunger. For the rural poor, access to arable land, drought-resistant crops, and functional markets—to grow and sell the crops necessary for survival—are critical to lifting themselves out of poverty. Unfortunately, corrupt governments in developing countries, fears about genetically modified crops, farm subsidies that favor developed countries, and other factors, often prevent policy solutions to world hunger from taking root, he points out.

When he became the IFPRI director general in 1992, Pinstrup-Andersen put these theories into practice. The 2020 Vision Initiative improved food policy and programs in a range of countries. In Egypt and Pakistan, leaders reformed unproductive food rationing and subsidy programs. Similar efforts in Uganda and Malawi greatly increased aid distribution.

Most of all, Pinstrup-Andersen is credited with refocusing world leaders' priorities on battling poverty and hunger, according



Pinstrup-Andersen traveled to India to receive an honorary Doctor of Science degree from Tamil Nadu Veterinary and Animal Sciences University in 1999.



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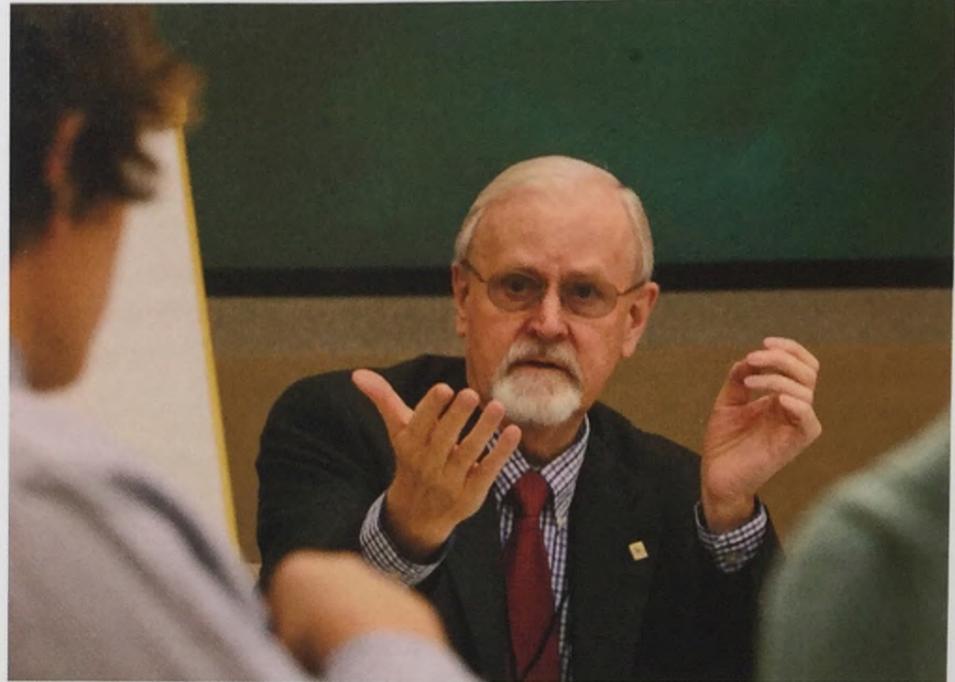
Pinstrup-Andersen (left) meets with Norman Borlaug, winner of the 1970 Nobel Peace Prize for his efforts to reduce hunger and malnutrition and founder of the World Food Prize. (Borlaug died in 2009.)

to Ambassador Kenneth Quinn, president of the World Food Prize Foundation.

“Per’s leadership of the 2020 Vision Initiative, the most comprehensive and ambitious research and dissemination program ever undertaken on global food security, engaged policymakers and researchers from around the globe, moved food policy issues back to the forefront of the international agenda, and resulted in improved food security for millions in developing countries,” Quinn says. “Under Per’s direction, the 2020 Vision Initiative was a brilliant catalyst for policy change that jarred the international community out of a complacency it had fallen into in the late 1980s and early 1990s following the abundance achieved by the Green Revolution.”

Pinstrup-Andersen returned to Cornell in 2003, soon after completing his directorship at IFPRI. (He first taught at Cornell from 1987–1992, as a professor of food economics and founding director of the Cornell Food and Nutrition Policy Program.) Pinstrup-Andersen now focuses on training students to disentangle the web of factors that contribute to food insecurity and to advocate for sensible policy solutions, an approach that has drawn repeated praise from students.

“I learned that the most important skills



Provided

Students say Professor Pinstrup-Andersen is a captivating teacher who motivates them to work to reduce hunger within real-world constraints.

you can have for policy development are the ability to assess the standpoints of the other stakeholders, and to reach a recommendation that is politically and financially feasible,” says Emily Nelson ’10, a senior in international agriculture and rural development. “As much as we found ourselves wanting to do everything possible, recognizing and working with the real-world limitations becomes critical to success.”

“These cases look at all angles of the international food system—health, nutrition, policymaking, international trade, and ethics. The main point is to put students in the mindset of stakeholders and to train them to enact policies that address the root causes of food system failures.”

—Per Pinstrup-Andersen

Nelson, who took Food Policy for Developing Countries in fall 2009, says the course “completely changed my career aspirations.” Before, she wanted to work

in agricultural research and extension. But the class inspired her to focus on reforming food policy “so that one day there will be fewer people in this world who are undernourished and malnourished.”

“Professor Pinstrup-Andersen is open to any argument from any subject area, promoting innovation and dialogue. I learned the ability to discuss any subject without falling into circular arguments. And his ability to present future scenarios that incorporate food systems, global hunger, corporate culture, and population pressure is mesmerizing,” says MPS graduate student Christian Pulver, who took the course Globalization and Food Policy.

In the final stages of his career, Pinstrup-Andersen, 70, is invigorated by such connections with students, whom he sees as the next generation of leaders in global food policy.

“It’s what excites me every working day and keeps me from retiring,” Pinstrup-Andersen says. “Cornell students are exceptionally bright, talented, and highly motivated. I have a tremendous opportunity to help prepare them for the big challenges they will meet down the road. It’s incredible to think that the students in my classroom will one day be in a position to lead the World Bank or serve as a minister of agriculture in a developing country.”

The Fantastic World of Plants

CALS plant biologists delve into diverse life forms to provide us with food, fuel, and health.

BY MARISSA FESSENDEN '09

Underneath the quiet majesty of the oak and the ubiquitous existence of grass, plants are anything but passive. As members of a loud, mobile species on an earth that clamors and crawls with creatures, we humans can sometimes forget that plants are every bit as active and interesting as ourselves.

Plant biologists do not forget. They study the way a plant defends itself from infection and damage, the astounding diversity of plants around the world, the mechanisms a plant uses to recognize pollen, the medicinal properties of plant compounds, the potential of plants as fuel, and the development of a plant from a tiny shoot to the glory of its maturity.

The basic, fundamental research in the College of Agriculture and Life Sciences highlights the many opportunities for students and researchers in plant biology.

These stories are just a snapshot of the exciting, groundbreaking research that is occurring in plant biology. Plant breeding, agriculture, human health, and the ecosystem itself are all dependent on the discoveries of researchers like CALS plant scientists.

"The College of Agriculture and Life Sciences is extraordinarily well positioned to critically train, not only the next generation of basic plant scientists, but also a generation of young scientists who will study ways to apply basic science breakthroughs to real problems," says William Crepet, professor and chair of the Department of Plant Biology.

A career in plant biology could mean being a professor and researcher, a health practitioner or nutritionist, an entrepreneur in biotechnology, an ethnobotanist, or an adventure guide.



Willow as Green Fuel



Joe Ogronick

Larry Smart

Plant biologists are helping to find solutions to our energy crisis. One of the scientists working on the next generation of green energy is Larry Smart '87, associate professor in the Department of Horticultural Sciences at the New York State Agricultural Experiment Station in Geneva.

There, he is breeding shrub willow, a bioenergy crop with many advantages.

"The product is wood chips," Smart says, "which have broad appeal as fuel in wood-fired plants or as pellets in home boilers and wood stoves. The wood chips are comparable in quality to other hardwoods." When scientists figure out how to break down the tough cellulose in plants, willow also can be used to generate cellulosic ethanol.

"Once you plant willow, you can harvest it repeatedly," Smart says. "It requires very little in terms of cultivation activity—you only have to prepare the field once, and you can successively harvest the crop for 25 years. It requires very little input of pesticides and herbicides. Overall it is very sustainable."

Smart is breeding willow to increase yield. He selects for growth traits such as stem diameter, number of stems, and height, as well as pest and disease resistance.

Willow is a relatively new contender in the bioenergy market. There is very little willow

acreage in the United States, and growers are reluctant to invest in a crop they haven't heard much about. Fortunately, Smart points out, not many changes in infrastructure are needed to use willow as a source of fuel. Growers would only need a harvester fitted with a willow cutter head; coal power plants interested in co-firing might need a milling station, some minor modifications to the boiler, and space for a woodchip pile.

"Willow is appropriate as a feedstock for heat and power, for pelletizing, and some point in the future for cellulosic ethanol," Smart says. As an ambitious target, he hopes to have one million acres of willow planted in 10 years. Currently, there are eight yield trial sites in New York and more than a dozen others across North America.

The solution to our energy needs will be a patchwork that builds on local strengths and needs. With Smart's research, willow may be one of the energy options for New York, many parts of Canada, and the upper Midwest

Plants as Warriors

Plants are vigilant to changes in their environment. They may not have eyes or ears to detect changes in sunlight and temperature, or claws and teeth to fight off invaders, but they have their own molecular tools. Jian Hua, associate professor of plant biology, studies how a plant is able to respond to changes in temperature and recognize the threat of a pathogen.

"The plant can adapt to very moderate changes in temperature—sometimes responding to a change of only a couple of degrees," she says, "but how the plant does that is unknown."

Temperature can affect whether the plant will be able to mount an immune response to pathogens. Raise the temperature a few degrees warmer than average, and a plant may not be able to resist infection.

Plants fight pathogens with their innate immune systems by identifying features common among pathogens. But some pathogens have evolved compounds known as effectors that are disguises which suppress the plant's defense response. To counter this, plants have resistance (R) genes that can recognize the effectors secreted by pathogens. The plant and the pathogen are in a constant race to see who has the best weapon and the sneakiest attack.

"These R genes are different between plant species," says Hua. "Even among members of



Jason Koski

Jian Hua

the same species, they are rapidly evolving." This variability allows the plant to recognize different pathogens and respond appropriately.

The immune system in plants is not always turned on, otherwise the plant would be in a constant state of stress, trying to fight off infections that might not be present. Higher temperatures seem to push the switch to an "off" position, leaving a heat-stressed plant vulnerable to attack. Hua is working to understand which genes regulate the system.

"We have plants with mutations in the R gene that could alter the temperature sensitivity of the plant immune system. The R gene can be active at higher temperatures where it would normally become inactive. That is sufficient to confer heat-stable resistance," she says.

As global warming occurs, if we understand the cues a plant uses to regulate its response to temperature, then we are in a better position to engineer heat-stable disease resistance in food crops and prevent famine.

Signals for Fertilization



Jason Koski

June Nasrallah

Whether transported by bird, bee, wind, or some other vehicle, a pollen grain hopes to settle down on the surface of a stigma, where, if all goes well, it will send a small tube down the style and into the ovary of the plant where fertilization takes place. June Nasrallah, PhD '77, the Barbara McClintock Professor of

Plant Biology, studies the mechanisms that allow for the communication between the pollen and the stigma.

In the crucifer family, this communication is based on a specific interaction between two genes at the S-locus—a specific location in the plant genome. “You will find that in any species there are many different S-locus variants, as many as 100,” she says. “Whenever the stigma and the pollen express the same S-locus variant, fertilization is inhibited.”

How plants fertilize is important for natural variation. A mix of genes can result in offspring better adapted to their environment, be it the forest or the field. In nature, many plants strive to outcross rather than inbreed by distinguishing between other and self.

Nasrallah discovered the two genes at the S-locus. The first codes for a protein called a receptor kinase. This protein is expressed only in the surface cells of the stigma where it is ready to receive its ligand, a small peptide expressed in the pollen grain and coded by the second gene at the S-locus. A kinase-ligand system works like a lock and key. When the lock and key match, a signal is sent and fer-

tilization cannot occur—the door is locked. Nasrallah hopes to learn how the stigma prevents the pollen grain from growing a tube.

“There are times when a plant might be in a jam—for example at the edge of the geographical range of the species,” Nasrallah says. “A plant at the edge will not have other members of the species to mate with. There is great pressure in this situation to find another way to set seed.” Self-fertilization then becomes indispensable. If through a mutation, one or both of the S-locus genes are lost, the lock never meets key and the plant is self-fertile.

Plant breeders and seed producers want to understand the mechanisms a plant uses to favor outcrossing. To combine traits like disease resistance and hardiness, plant breeders create hybrid seed. If the plant is a self-fertilizer, like the tomato, breeders must remove the pollen-laden anthers from each flower by hand, before sprinkling the plants with the appropriate, genetically distinct pollen. Using Nasrallah’s research, plant breeders could instead introduce S-locus genes, thus shutting down self-fertilization and guaranteeing hybrid vigor.

Life Begins with the Shoot

Plant stem cells hold secrets that could help us cure disease and understand cancer. Mike Scanlon, associate professor of plant biology, studies the shoot apical meristem, home to a population of the plant’s stem cells.

“Stem cells in plants are unique because, unlike animals, plants maintain populations of stem cells,” says Scanlon. “That is why plants continue to make organs—stems, flowers—throughout their life; whereas in an animal, the stem cells are mostly active very early in the embryo.”

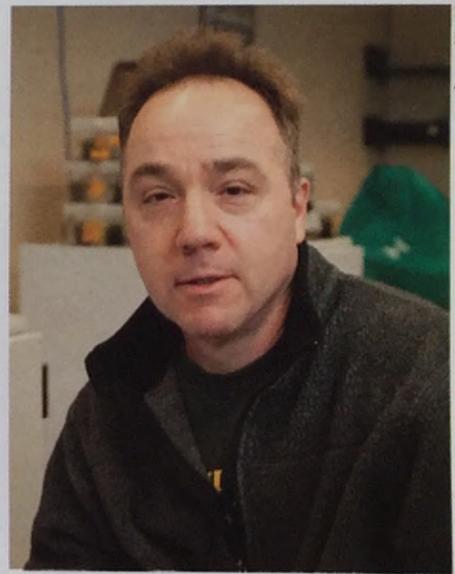
The mechanisms that regulate the cells of the shoot apical meristem are complex, involving thousands of genes. Scanlon uses laser microdissection to tease apart the cells and look at genes expressed in tissue samples as minute as a single cell. Using genetics and molecular biological methods, Scanlon discovers what makes a stem cell a stem cell and how a cell determines whether it will ultimately be a leaf, a stem, or a flower.

“Everything above the ground in the plant comes from the shoot apical meristem, so these genes affect everything from grain yield to biomass,” he says.

During a plant’s development, genes are turned on and off, resulting in the production of different proteins and RNA that then produce other proteins and RNA. This effect is known as a signal cascade, and many cellular processes are controlled through such cascades. For example, one of Scanlon’s projects is focused on a small RNA pathway that regulates leaf growth in corn. A mutation in the pathway results in thin filaments instead of normal, wide leaves. In *Arabidopsis thaliana* (mouse-ear cress), a model plant for understanding molecular pathways, the same RNA pathway regulates flowering time.

Basic research like Scanlon’s helps plant breeders understand what traits to breed for, helps chemists identify plants with medicinal compounds, and helps researchers elucidate the pathways that are deregulated in the out-of-control growth of cancer cells.

“We’ve done a lot of work to understand what genes are required to sustain the meristem,” Scanlon says. “One of these genes controls the biosynthesis of vitamin B1. Blocking the ability to utilize vitamin B1 is one way to treat some forms of cancer, which tells us that there are common mechanisms



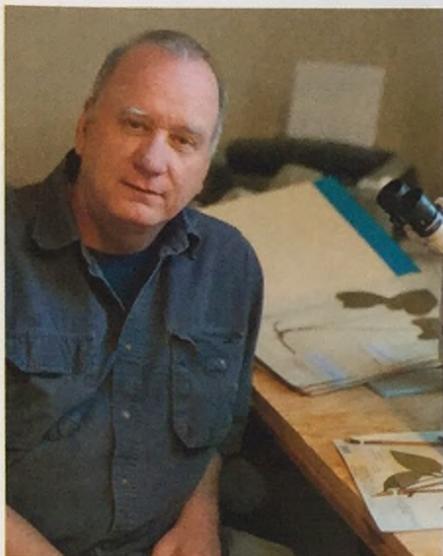
Jason Koski

Mike Scanlon

to regulate stem cells and cancer, between plants and animals.”

To the aspiring plant biologist, Scanlon has some good advice. “Keep your eyes and your ears open,” he says. “There are opportunities to expand your research into areas you might not have envisioned. There is so much we don’t know and we don’t understand.”

The Biodiversity of Patagonia



Jason Koski

Kevin Nixon

Maybe it happened while visiting the largest colony of Magellanic penguins in the world, or as they hiked above the Andes tree line, or when they reached Tierra del Fuego, home of the

southernmost forests in the world. When it happened, during a three-week trip to Patagonia, a group of students gained a richer perspective on the natural environment.

The trip took place this past January under the guidance of Kevin Nixon, professor of plant biology, with the help of Tom Whitlow, associate professor of horticulture, and through the generosity of Cornell benefactor Susan E. Lynch. The trip gave the students hands-on experience in biodiversity, ecology, and taxonomy—putting to good use the lessons learned in class the previous semester.

“Patagonia seems to have a certain appeal that transcends botany and seems mythical,” Nixon says. “People always think of the Galapagos as influencing Darwin, but a lot of his thought was shaped by what he saw passing through Patagonia.”

The students hiked sections of a transect from the Atlantic, across the dry Patagonian steppe in the rain shadow of the Andes, into the temperate rainforest in Chile, down the mountains to the Pacific, and ending in the

southernmost city of Ushuaia, in Tierra del Fuego. They observed the changes in vegetation and learned how to survey and identify many species along the way. “We saw an incredible assemblage of plants,” says Nixon. “Even though humans have been in Patagonia for a long time, it is still one of the best preserved and least populated areas in the world.”

Nixon has deep knowledge about the plants of Patagonia. His research focuses on biodiversity and developing plant databases to catalog that richness. He says that there are still untold species of plants that we might need for medicine, building materials, fuels, and food. He also points out that changes in biodiversity are good indicators of how our planet may be heading under the sway of climate change.

“Understanding and cataloguing is the first step in maintaining nature. If you don’t know what is there, you can’t protect it,” Nixon says.



WEB EXCLUSIVE
Discovering Plant Diversity in Darwin's Patagonia
calsnews.cornell.edu

Finding Botanical Cures

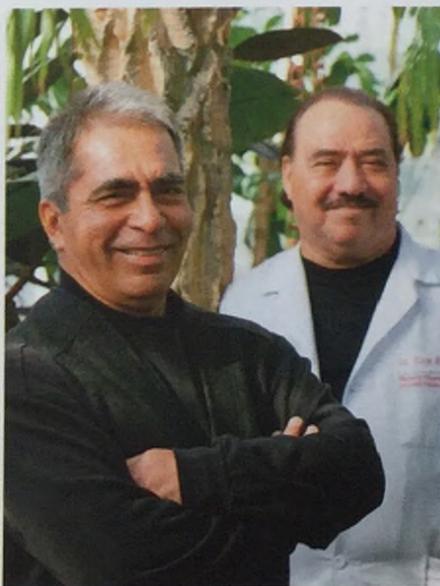
Long before modern medicine, people turned to the plant world for cures. Many of these natural remedies have been forgotten, but science and medicine are discovering that the compounds synthesized by nature have potent and useful effects.

Eloy Rodriguez, the James A. Perkins Professor of Environmental Studies in the Department of Plant Biology and Institute of Environmental Toxicology, finds the intersection between botany, health, medicine, and chemistry fascinating.

“Taxol, for example, is a drug used to treat cancer, but for years it was used medicinally by Native Americans who extracted it from the bark of the Pacific Yew.” This compound is just one of many compounds that were discovered in plants and now used in medicine.

Rodriguez has found that students are increasingly interested in natural medicine. He is committed to the complex and integrative discipline of natural medicine, teaching a course called Plant Natural Remedies and Ethnohealth/Medicine.

Rodriguez believes that for students interested in medicine, pharmacology, and nutrition, a solid training in plant biology is cru-



Jason Koski

Manuel Aregullin (left) and Eloy Rodriguez (right). “Health initiatives involve billions and billions of dollars,” he explains, “all related mostly to the drug industry. And more and more, the alternative and natural drugs are commanding a share of that market.”

Another researcher interested in the medicinal value of plants is Manuel Aregullin, senior research associate in the Department of Plant Biology, and head

of the Laboratory of Natural Products and Medicinal Chemistry.

“It is not surprising that plants have these chemicals,” Aregullin says. “They allow the plant to defend itself from potential pathogens, fungal infections, and herbivory.”

Currently, Aregullin is researching *Botrychium virginianum*. Commonly called the rattlesnake fern, it is a medicinal plant used by Native Americans to treat tuberculosis. Very little is known about the chemistry of the fern, even though it is widely distributed in North America. He also is investigating *Euonymus alatus*, the burning bush, a plant that contains an enzyme inhibitor that might fight cancer.

Aregullin’s course Strategies and Methods in Drug Discovery focuses on the scientific process that identifies chemicals in nature useful for developing new pharmaceuticals.

He is the principal investigator and director of the NIH-funded Minority Health and Health Disparities International Research Training Program, founded by Rodriguez. The program takes students to the Dominican Republic to learn about the ethnobotany and chemical ecology of the Caribbean.

Going for Global Gains

Students work with entrepreneurs in emerging economies to help companies respond to challenges and opportunities.



Cynthia Mathys '10 gets instruction in papermaking in Nepal with master paper-maker Dolma Tamang of Himalayan BioTrade Pvt. Ltd.

BY JENNY NELSON '11

Cynthia Mathys '10 is elbow-deep in paper pulp in the heart of Nepal, standing next to a vat in a vast field of paper frames that are casting deep shadows in the late-afternoon sunshine. A Nepalese paper-maker is showing her how to smooth the pulp on the wooden frame to create a sheet of lokta paper. The skyline of Kathmandu is visible over the hills. Goats bray in the distance and curious children crowd around, vying for the best view of Mathys's beginner technique.

Mathys led a group of Cornell students to Nepal in January to work with a Nepalese handmade paper company as part of a new program at Cornell started by CALS professor Ralph Christy.

"It was absolutely a once-in-a-lifetime opportunity," recalls Mathys, who is an international agriculture and rural development (IARD) graduate student. "As trip leader, I had a great experience getting students out into the field to actually see how social enterprises work."





Cynthia Mathys

Jenny Nelson '11 (left) examines a sheet of lokta paper which has been twisted, hand-dyed, and then re-dried to create patterns and textures.



Provided

Professor Ralph Christy (right) and CIPA student Beth Robertson (left), talk with an employee of a company they worked with in South Africa.

Christy, professor of applied economics and management (AEM), envisioned a program that would link students with companies, nongovernmental organizations, and communities in developing countries long before he was named director of the Cornell International Institute for Food, Agriculture, and Development in March 2009.

"Cornell, and particularly CALS, has an enormous portfolio of collaborations with agribusinesses and research institutions all over the world," says Christy. "We want to harness these activities in such a way that case studies can be produced, by students and for students. At the same time, we want to give agribusinesses in developing countries practical advice they need to

grow. It's a win-win: companies gain from the students' ideas, and Cornell students get a unique opportunity to write case studies for use by their peers."

The SMART program—Student Multidisciplinary Applied Research Teams—was scaled up in 2009 and opened to more departments across the university; 21 students from 10 Cornell academic departments were selected to work with companies in developing countries that want to grow their agriculture-related businesses.

For example, CALS students from different disciplines worked on teams with students from the Department of City and Regional Planning in the College of Architecture, Art, and Planning and from the Cornell Institute of Public Affairs. Students who normally wouldn't work or take classes together collaborated to address challenges faced in the real world.

"It's a win-win: companies gain from the students' ideas, and Cornell students get a unique opportunity to write case studies for use by their peers."

—Ralph Christy

Five student teams went to South Africa, Kenya, and Nepal over winter break in January 2010, where they met with company CEOs and employees, toured facilities, tasted products, analyzed challenges, and presented their recommendations to company leaders. Back at Cornell, they wrote up their experiences as case studies that are being published and presented at a symposium on campus this April.

From South Africa to Nepal

Christian Pulver '11 traveled to South Africa with a team led by Janice Thies, professor in crop and soil sciences, to work with an enterprise called ZZ2. This agricultural conglomerate produces an estimated 35 percent of tomatoes consumed in South Africa and is a world leader in large-scale

biological farming practices, what ZZ2 calls “Natuurboerdery,” or nature farming. Pulver and his SMART colleagues evaluated ZZ2 from several angles: farming practices, marketing, and social initiatives.

“By stepping into ZZ2’s world for those few weeks,” Pulver comments, “we were able to understand their philosophy—Create Value for All Stakeholders—which allowed us to develop a ‘systems approach’ for analyzing their business that was useful for them and for us.”

Kristin O’Planick, a graduate student in the Johnson School, went to Stellenbosch, South Africa, with a team that worked with M’hudi Wines, the only black-owned vineyard in South Africa. The Rangaka family bought the vineyard in 2003 without any farming or winemaking experience. In a few short years, with the help of neighboring farmers and a government-backed Black Economic Empowerment loan, the Rangaka family has built a world-renowned vineyard. The M’hudi SMART team, led by Ed Mabaya, MS ’98, PhD ’03, AEM research associate, concluded that the M’hudi story had grown faster than the company itself; their facilities and marketing strategy need major upgrades to promote growth.

“It’s an unusual problem to have: their story keeps spreading, but they need to translate that into consistent sales,” O’Planick says. “The Rangakas need to fund upgrades to the farm. They want to establish a conference facility to entice businesses to spend their meeting dollars at M’hudi to diversify the business and drive more wine sales. The Rangakas don’t know much about the business tourism industry either, but that didn’t stop them the first time.”

The SMART team in Nepal was paired with Himalayan Bio Trade Pvt Ltd. (HBTL), a company that makes and sells handmade paper, a traditional Nepalese craft. HBTL is the only company in the world with Forest Stewardship Council-certified handmade paper, which may—or may not—be a boon for their marketing efforts. Before coming to Cornell, Cynthia Mathys ran a company in India that devel-



Christian Pulver '11 (right) and other members of the SMART team talk with employees of ZZ2, a large-scale agricultural enterprise in South Africa.



Graduate student Kristin O’Planick samples a vintage from M’Hudi Wines in Stellenbosch, South Africa, the only black-owned vineyard in the country.

oped organic essential oils for the international market, so she was familiar with some of the challenges facing HBTL.

“Our collaborators in Nepal urged us to be practical in our recommendations, not academic,” Mathys says. “They wanted us to help them grow their business. Our

diverse competencies really enabled us to do that”

Upon her return, one of the Nepalese team members capitalized on a prior relationship to connect HBTL with Boxcar Press, a company based in Syracuse, N.Y., that is interested in carrying a line of



Above: Rachel Ullman (second from right) meets Eunice Mwongera (left), CEO of Hillside Green Growers & Exporters in Kenya. Above, right: SMART students work with Hillside, which sells fresh fruit and vegetables for export to Europe and the Middle East.

handcrafted lokta paper for the high-end letterpress trade.

Rachel Ullman '10 was a member of the team that went to Kenya to work with a horticultural company, Hillside Green Growers & Exporters. Hillside sells fresh fruit and vegetables—mainly snow peas, mangoes and avocados—to Europe and the Middle East, which requires that they adhere to food quality standards. Ullman and her colleagues had to learn about horticultural exports and certification schemes to identify obstacles and opportunities as Hillside expands its operation.

“I was able to apply what I’ve learned from my AEM specialization in Food Industry Management to a real-world situation. It was a great way to think and see beyond the classroom,” reports Ullman.

Anatomy of a SMART Trip

Each SMART trip starts with students writing a profile of the economic, social, and political situation of the country, as well as a review of the particular industry—fruits and vegetables, wines, fruit jams, or handmade paper, in the case of this year’s SMART trips.

The January SMART trips also resulted in planned future collaborations between students and the companies visited: Pulver and another student will return to ZZ2 this summer to conduct master’s degree research. Additionally, Thies, the leader of a SMART team that went to South

“I was able to apply what I’ve learned from my AEM specialization in Food Industry Management to a real-world situation. It was a great way to think and see beyond the classroom.”

—Rachel Ullman '10

Africa, hopes to set up a memorandum of understanding between Cornell and the University of Limpopo, in South Africa, to engage Limpopo students in projects with Cornell students. “Cross-institutional partnerships and student-to-student linkages are important to the evolving success of the SMART program,” says Thies.

The SMART trips give students on-the-ground opportunities to learn about small businesses in emerging economies, and a chance to give back. These companies deal with challenges unheard of in the developed world—power outages for 12 to 20 hours a day in Nepal, institutionalized discrimination in South Africa, political instability in Kenya—as well as more mundane transportation, currency, and communication problems. Yet the companies are learning to survive, and even thrive, despite these circumstances.

“We want to help entrepreneurs as they deal with these real challenges, but there’s also a lot we can learn from them,” says Christy. “Their experiences are worth studying. As the global economy grows even more interconnected, we can understand how to weather the storms of economic downturns and other crises by looking at what these businesses are doing.”

Looking toward the future, Christy adds, “CIIFAD wants to continue to grow the program, adding more trips and opportunities so more students can have this wonderful experience and more companies, agencies, and communities can benefit as well.”

Made@CALS

Finger Lakes Fresh: Business with a Conscience

Fresh, crisp, clean, and for a cause. Finger Lakes Fresh is providing New York State and six other eastern states with locally produced lettuce with a zesty twist. What began as a CALS research project on using controlled environment agriculture (CEA) to produce agricultural products year round in New York has evolved into a business with a conscience through a partnership with Challenge Industries of Ithaca.

The technology behind the hydroponics greenhouse uses precise climate control coupled with Cornell-developed improvements in lettuce "plugs" and precision lighting. Researchers in Biological and Environmental Engineering (BEE) and Horticulture worked collaboratively to produce pest- and chemical-free lettuce heads of consistent high quality year round.

Professor Lou Albright '63, MS '65, PhD '72 of BEE developed the algorithms behind the proprietary computer program that controls the lighting. The light reaching the plants is adjusted through a combination of high-pressure sodium supplemental lights and automated shades under the greenhouse's roof. Horticulture professor emeritus Robert Langhans MS '54, PhD '56 and doctoral student David Dreesen '88 improved the production of the plugs.

Using a workforce of employees with disabilities to provide high-quality, local vegetables year round, Finger Lakes Fresh, a division of Challenge Industries, is an environmentally friendly alternative to products shipped from afar. Finger Lakes Fresh grows several



Provided

Challenge President Patrick McKee (left) and Finger Lakes Fresh greenhouse manager Bob LaDue '93 watch over their crisp produce.

varieties of lettuce, arugula, baby pak choi, basil, and a salad bouquet. Providing an innovative workforce solution for the most labor-intensive parts of production and creating jobs for workers with disabilities and other employment barriers, this model has potential for replication and expansion in other areas of agricultural production.

—Emily Getty '08



Photos by Craig Cramer

Inca Lily 'Tangerine Tango' Jazzes Up Summer



Creating a fruit salad for the eyes, Cornell has developed—and patented—a new ornamental flower.

Alstroemeria Tangerine Tango is a new, winter-hardy Inca lily with vivid orange petals, intense lemon-yellow highlights, little flecks of brown, and a hint of lime tint. The plants begin to flower in June and shoot new stems for months until the first freeze of fall.

When cut, these flowers will last two weeks in a vase.

Developed by Mark Bridgen, CALS professor of horticulture and director of the Long Island Horticultural Research and Extension Center in Riverhead, N.Y., the hybrid is the second ornamental plant patented by the Cornell Center for Technology Enterprise and Commercialization. The first was Mauve Majesty—another Inca lily—two years ago.

Tangerine Tango is winter hardy in many parts of the United States, surviving cold as low as the U.S. Department of Agriculture's zone 5 (which includes western Massachusetts, mid-state New York, northern Pennsylvania, Ohio, Indiana and Illinois, much of Michigan, southern Iowa and Nebraska, northern Missouri and Kansas, and eastern Colorado).

In fact, this flower will do very well almost anywhere in the United States, says Bridgen.

Alstroemeria flowers, native to South America, are the fifth most popular cut flower in the United States, according to Bridgen. "The flowers are perfect for hotel lobbies and fancy restaurants because they don't wilt for up to two weeks," he says.

This flower took eight years to develop and is now available commercially through nurseries and mail-order companies, such as:

White Flower Farm, Richfield, Conn., www.whiteflowerfarm.com

Brent and Becky's Bulbs, Gloucester, Va., www.brentandbeckysbulbs.com

McClure and Zimmerman Bulbs, Friesland, Wisc., www.mzbulb.com

Roots and Rhizomes, Randolph, Wisc., www.rootsrhizomes.com

Tangerine Tango

Erin Troxell Practices Winemaking in Germany



Provided

Erin Troxell '10 augmented her winemaking skills during an internship in Germany's Mosel River region.

As a six-year-old, Erin Troxell '10, a senior CALS Viticulture and Enology (VIEN) major, first discovered her love for viticulture

while trailing her mother down the rows of her family's Pennsylvania vineyard. Growing up, Troxell learned to spot signs of disease in grapevines and observed the winemaking process alongside her parents.

Last summer, she received a new form of education, producing Spätburgunder and Sauvignon Blanc under the watch of a four-generation winemaking family in Germany's famed Mosel River region. The internship, funded in part by a \$4,000 scholarship from the CALS Alumni Association, introduced Troxell to German techniques for tending to cool-climate grapes.

"One of the main themes I observed in their wine industry is efficiency," Troxell says. "Because there are so many wineries, generating a great deal of competition, winery owners have adapted practices to reduce the amount of effort that they require."

For example, Troxell noted that rather than thinning grape clusters by hand, German growers often use mechanical and chemical approaches to adjust crop size and improve grape quality.

Alongside a wine consultant in a German enology lab, Troxell learned how to analyze the chemical and sensory traits of wines. She also learned about the difficulties of growing grapes on inclines and steep slopes, not unlike the terrain in upstate New York.

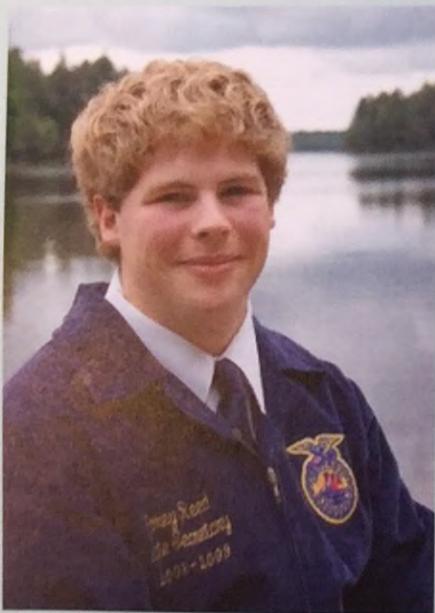
"It's important to travel to different wine-growing regions and gain exposure to what others in the profession are doing," she says.

Troxell, who entered Cornell as a Plant Sciences major before CALS added the VIEN major in fall 2008, says the internship built upon her agriculture experience as a lab assistant to Ian Merwin, MS '88, PhD '90, the Herman M. Cohn Professor of Horticulture, in the Cornell Orchards. She is on track to graduate this spring as a part of Cornell's second class of VIEN students.

After graduation, Troxell intends to go back to Europe, perhaps working in another region, such as Austria or Switzerland. She hopes to return to work at her family's vineyard, and dreams of one day running her own winery.

—Rebecca Lesser '12

Corey Reed Is Rooted in the Agricultural Community



Provided

Corey Reed '13 served as secretary of the New York State Association of Future Farmers of America in 2008-2009.

Only at Cornell can you find Ivy-League tractor drivers. Corey Reed '13 is one of them. As part of the CALS land-grant mission, the college provides scholarships to students, like Reed, who come from farming backgrounds in New York State.

"Cornell was actually cheaper because of financial aid than my surrounding community colleges," says Reed, who receives about \$15,000 in scholarship money each year.

Under Dean Susan Henry, CALS has worked to provide aid to farm and rural New York students who otherwise could not afford Cornell's high price tag. It appears that word has gotten out. The CALS Class of 2013 includes more than 40 students from farm families and an additional 130 students with agricultural, Future Farmers of America (FFA), or 4-H experience.

"Part of what attracted me to Cornell was that I knew people here who I had strong bonds with already," says Reed, who knew four students from his participation with the FFA, a youth-focused agricultural education

program, and nine other students from his high school.

Like other agricultural students, Reed grew up working on his family's farm. "I started when I was old enough to hold a flashlight," he says. Reed worked on tractors, helping to maintain his family's 12,000 acres of land, and assisted in milking the 170 cows at Reed Haven Farms.

Now Reed is furthering his knowledge of farming as he works to fulfill his double major in Animal Science and Agricultural Science Education at Cornell.

Keeping his strong ties with the agricultural community, he is still active with the FFA dairy club and participated in a trip to tour cheese factories in Florence and Rome.

Reed plans to get his teaching certification to teach science and agriculture in his hometown in Jefferson County. The Agricultural Science Education major is part of the Cornell Teacher Education program in the CALS Department of Education.

—Isabel Sterne '10

Olayan Named Cornell Entrepreneur of the Year 2010

Provided



Lubna Olayan

Cornell Entrepreneur of the Year 2010. She was honored on campus during the Entrepreneurship@Cornell Celebration April 15-16.

Founded in 1947 by her father, the Olayan Group is a private multinational enterprise engaged in distribution, manufacturing, services, and investments. Established in 1969, Olayan Financing Company is a fully diversified industrial, trading, services, and investment conglomerate that includes real

CALS alumna Lubna Suliman Olayan '77, CEO of the Olayan Financing Company, the holding entity for the Olayan Group's operations in the Kingdom of Saudi Arabia and the Middle East, has been named

estate stock funds and diversified venture capital business investments all over the world. Olayan is a member of the board of the Olayan Group.

Fortune magazine named Olayan to its "Global Power 50 Women" list from 2004 to 2009. *Forbes* named her to its "World's Most Powerful Women" list in 2005, 2006, and 2007, and *Time* magazine named her among the "Top 100 Most Influential People in the World" in 2005.

Olayan has been a Cornell trustee since 2007. She is on the board of Saudi Hollandi Bank and is a non-executive director of WWP, the world's second-largest advertising agency and media planning organization. She is a member of the international advisory boards of Rolls Royce, Akbank, and the Council on Foreign Relations. She is on the board of directors of INSEAD and King Abdullah's University of Science and Technology.

She is also a member of the board for Al Fanar, a nongovernmental, nonprofit venture that supports grassroots organizations in the Arab world, and of the Down's Syndrome Charitable Association in Saudi Arabia.

Olayan is married to John E. Xefos '76, a partner in the international law firm Baker & McKenzie Ltd. The couple met while they were students at Cornell.

The Cornell Entrepreneur of the Year award is given annually to a Cornell graduate who best exemplifies entrepreneurial achievement, community service, and high ethical standards.

For more information on the Entrepreneurship@CornellCelebration '10, go to <http://entrepreneurship.cornell.edu/events/celebration10>.

—Kathy Hovis

CALS Students and Scientists Help NYC Plant One Million Trees

Natural Resources graduate students are working shoulder to shoulder with CALS researchers to help urban forestry grow stronger roots in New York City. Christine Moskell is working with associate professor of natural resources Shorna Broussard Allred to find out what motivates volunteers to participate in urban forestry, while Alex Kudryavtsev is looking at how environmental restoration and environmental education can enhance residents' sense of place.

So far, 315,678 trees have been planted in New York City as part of the MillionTreesNYC program, Mayor Michael Bloomberg's citywide, public-private initiative to plant one million trees in the city by 2017. And only 694,322 to go.

Cornell researchers—with funding from the Cornell Center for a Sustainable Future (CCSF) and Cornell Civic Ecology Lab (CEL)—are playing a major role in making it happen by working with other New York City partners to develop the research agenda for the large-scale urban forestry project.

On March 5 and 6, for example, they helped organize a research symposium at the New School that attracted more than 200 environmental scientists and practitioners. The Cornell scientists presented their work about tree survival and community participation in urban forests.

Marianne Krasny, CALS professor and chair of the Department of Natural Resources and director of CEL, presented a paper that she and Keith Tidball, associate director of



Provided

Debbie Lay '08, in Keith Tidball's course Urban Environments: A Service Learning Course in New York City to Foster Urban Socio-Ecological Systems Resilience, planted trees in New York City.

CEL, wrote on how environmental education can contribute to the success of the MillionTreesNYC program.

"Environmental education does not only include taking kids outside the city to a more natural area, but also can become part of civic ecology practices already taking place in the city, such as the tree planting activities of hundreds of urban stewardship groups across New York City," Krasny says.

Other Cornell presentations included

research on growing trees surrounded by concrete, survival rates of young street trees, public reactions to new street-tree planting, and the benefits of using trees for stormwater management.

"Cornell is the land-grant university for New York state. Most of the state's residents live in cities, and cities are increasingly being viewed as having a critical role in the future of sustainability and climate change," said Tidball, a faculty fellow of CCSF.

—Liz Borod Wright '99

Into the Arctic Wild: CALS Grad Films Polar Bear Documentary

For five years, Arthur C. Smith III '75 captured footage of Alaskan polar bears for his documentary *Ice Bears of the Beaufort*.

Smith and his wife and fellow filmmaker, Jennifer, created the non-narrated film to upend conventional thinking about polar bears and to shed light on the threat of oil and gas development by state and federal governments to the bears' Arctic habitat. Smith moved to the 300-person Eskimo village of Kaktovik on the Beaufort Sea—in the heart of the Arctic National Wildlife Refuge (ANWR)—in 2004 and trained his camera on its large polar bear community. The rare, awe-inspiring clips led one reviewer to write that the documentary “picks up where *The March of the Penguins* left off.”

“We want to show people that the Arctic is not just a blank sheet of paper,” says Smith, an Elmira, N.Y., native who, with his wife, founded PolarArt Productions, a media company specializing in natural history films.

In November 2009, the Smiths screened *Ice Bears of the Beaufort* to a packed house at the Cornell Cinema. The documentary

has also been shown at film festivals from Los Angeles to Anchorage to Ireland. At the Cornell screening, Art Smith stressed the importance of raising awareness about the eastern Beaufort seacoast, home to one of the highest concentrations of polar bear denning and birthing habitat in Alaska. Warning that drilling would be a “death sentence” for polar bears, Smith added: “This place is a polar bear maternity ward. We hope our film will remind people what is at stake.”

Smith discovered his passion for the natural world as a boy while accompanying his father on hunting trips in the Adirondacks, where he developed a talent for photography and filmmaking. After graduating as a CALS applied economics and management major, Smith eventually became a photographer for Grant Heilman Photography, a lifelong dream. In 1993, an assignment took him to the ANWR, where, Smith says, “The hook was set . . . I knew I would have to live there someday.”

See www.polarartproductions.com and www.icebearsofthebeaufort.com.

—Isabel Sterne '10

Provided



Arthur and Jennifer Smith filmed *Ice Bears of the Beaufort* in Alaska's Arctic National Wildlife Refuge.



WEB EXCLUSIVE

Ice Bears of the Beaufort

Watch clips of this award-winning film by a CALS alumnus.

calsnews.cornell.edu

Solar Decathlon Team Finds a Home at 'Joe's Inn'



Joe Manelski '56 welcomes the entire Cornell Solar Decathlon team to his home in McLean, Va.

Jason Koski/University Photography

McLean, a comfortable Virginia suburb of Washington. His neighbors have been cabinet members and Kennedys. During the biennial contest, the Cornell Solar Decathlon team made Joe's house Joe's Inn.

“These students worked very hard, and they needed a place to relax. The students needed to network. There were hundreds of mini-meetings between the team leaders and the team members. It strengthened their *esprit de corps* and helped them achieve their objective,” says Manelski.

Cornell students curled up on sofas to complete homework, they conducted research on their computers, and they updated their Facebook accounts. Others hung out in the swimming pool and in the hot tub in their off hours.

College students are much like piranhas during feeding time. The team's pipe fitter, Scott Albrecht, Cornell plumber and general foreman, doubled as the team's sous chef for breakfast and dinner. Albrecht and Manelski produced delicious meals fit for a small army. (Manelski knows about serving armies. He

served in the U.S. Navy as a commissary officer, stocking food for his ship's half-year missions.)

Sean Tamon (Hotel '08), a graduate of the Culinary Institute of America, prepared the team's two dinners required by the competition.

Manelski admires these hardworking students, who worked late into the night on the eve of competition. He delivered dinner, made by Kim Epstein, a Cornell parent who lives nearby, to the Cornell Silo House on the Mall.

“There I was,” he says, “sitting on the Mall—between the brightly lit Capitol building and the brightly lit Washington Monument—under a full moon with these great students. It was awesome. That's a memory you don't forget.”

Among the CALS students on the team were two subteam leaders, Claire Moloney '11 and Morgan Ellithorpe '10, and a specialist, Adi Potashnick '10. CALS professor Cliff Scherer served as an advisor for the team's communications, while CALS professors Daniel Simon and Pedro Perez advised the student team on business matters.

—Blaine P. Friedlander Jr.

Herbert Kling: Milk Economist and Safety Expert

Growing up on a farm during the Depression, Herbert Kling '36, MS '40 got this advice from his parents: "The more we do, the more we lose. So you go to college so we don't lose even more." So he went off to Cornell reluctantly, being "sweet on a girl."

His parents were proven wise. An economist and milk safety expert for more than 30 years, the late Herbert Kling was responsible for the administration of New York State's milk marketing orders, licensing law, and the fair trade practices law for milk production.

Cornell librarian Janet McCue remembers that Herbert Kling had an encyclopedic knowledge of the dairy industry. "He could recite milk production statistics for any state in the union and seemingly for any year in the last century," she says. "To keep up with the latest in the dairy industry, Herb and his wife, Millie, visited dairy farms all over the country, and his colleagues throughout the U.S. Department of Agriculture and New York State regularly sent him background on pending legislation."

For 25 years, Herbert Kling served as the director of the New York State Department of Agriculture and Markets, Division of Dairy Industry Service. He was a senior economist for New York State's Legislative Commission on Dairy Industry Developments, president of the dairy division of the National Association of Departments of Agriculture, president of the International Association of Milk Control Agencies, and a bank director for 30 years. He was also a veteran of the U.S. Army.

An active Cornellian, he served on the Mann Library Campaign Committee, received the 1990 CALS Outstanding Alumni Award, and was honored by Cornell as a Foremost Benefactor in 1998.

The Herbert R. Kling '36 Preservation Department at Mann Library was dedicated when the library reopened after renovations. Funding from his estate supports preservation work and other library priorities. The estate also provided for The Herbert R. Kling Dairy Markets Assistantship in Food Science to support work on milk quality issues.



Herbert Kling and his wife, Millie.

Herbert Kling died in July 2009 at the age of 95. Even during his last years, he remained an avid correspondent with college leaders and made occasional visits to Cornell with his wife, Mildred Kling.

—Diane Lebo Wallace

Growers Group Disbands—and Donates Funds for Ag Labor Projects



Pictured (l-r): Tom Maloney, Gary Verbridge, Bill Bishop, and Dave Smith '67.

After nearly 60 years of operating housing facilities for farm workers in the heart of New York's fruit and vegetable growing region, the Wayne County Growers and Processors has decided to disband and donate all remaining funds—\$150,000—to Cornell. The money will support education and research on agricultural labor in the Department of Applied Economics and Management (AEM).

"We wanted the money to go where it would benefit farm employers and their workers," says William E. Bishop Jr., president of the Wayne County Growers and Processors and chairman of the board of Sodus Cold Storage Co. Inc. "We feel that funding Cornell extension projects is the most effective way to accomplish this objective."

Tom Maloney, senior extension associate in AEM whose extension program seeks

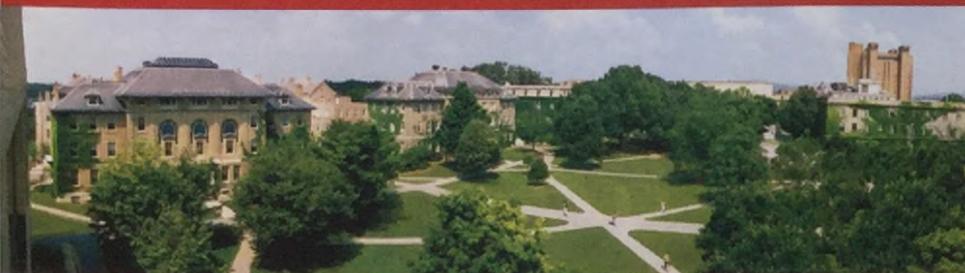
to improve the abilities of farm employers to attract and retain a productive, satisfied workforce, notes that the agricultural economy depends on the hardworking people employed on farms. "Workforce issues continue to be a major concern for New York farmers," Maloney says. "These funds will be used to continue applied research and extension projects in agricultural labor policy and human resource management."

Maloney announced the gift on behalf of the College of Agriculture and Life Sciences at the Jan. 25 Robert Becker Forum in Liverpool, N.Y., an annual gathering of the state's food and agricultural producers that Maloney chairs. According to Maloney, the Wayne County organization wanted to use its funds in the spirit in which the money had been raised, which was helping growers and processors with their workforce needs.

The Wayne County Growers and Processors group was formed after World War II, largely to house Puerto Ricans who came to work in fruit and vegetable processing plants in western New York. After many years of operating worker housing in Marion, Williamson, and Lyons, the group sold the facilities one by one. Last fall, Bishop and two other remaining board members, Dave Smith and Gary Verbridge, formally disbanded the organization and distributed the remaining funds.

—Linda McCandless '74

ALUMNI ASSOCIATION PRESIDENT MESSAGE



Make the Connection—Join Alumni Career Link



My fondest memory of Cornell was time spent working as a peer advisor in the CALS Career Development Office. As a student, it provided me the opportunity to earn money through an on-campus job, help others achieve their career goals through resume and cover letter critiques and job interview training, and network with alumni who return to campus to recruit for internships and full-time employment. Now, as an alumnus, I continue to engage in efforts of the CALS Career Development Office through participation in the Alumni Career Link—and so can you.

Students need as much information as possible to make good career decisions, and one of the best ways to learn about a particular career field is to talk with someone already working in that field. The most inspiring advice often comes from the personal experiences of others. The Alumni Career Link, a web-based service available to students and alumni of CALS and administered through the CALS Career Development Office, provides an ideal venue for connecting students and alumni. Its purpose is to assist CALS students and alumni who are exploring career options, seeking job search advice, or researching graduate and professional schools.

Unfortunately, only approximately 600 of the more than 46,000 living alumni are registered in Alumni Career Link, which limits the number of possible connections.

We need your help to make this program thrive. Whether you're an experienced professional with a wealth of information, or a recent graduate with great tips on applying to graduate and professional school or making a transition into the workplace, you'll find that assisting your fellow Cornellians can be easy and rewarding through Alumni Career Link.

What are you waiting for? Sign up today to make a difference in the lives of fellow Cornellians:

1. Simply go to <http://acl.cals.cornell.edu/login.aspx> and create a profile.
2. When prompted for a code number, type in 999999, leave the password blank, and click on Log In. This will allow you to enter and create a profile.
3. From there, you can tailor your own level of involvement, ranging from a response to telephone or email questions to hosting a summer internship.

A recent survey of Alumni Career Link users revealed that students find alumni words of advice under "Reflections and Advice" particularly helpful and interesting. Feel free to use the section to discuss anything from significant classes to job search and career advice to life in the "real world."

Supporting students continues to be a strong tradition of the CALS Alumni Association. In addition to Alumni Career Link mentoring, our Lifetime Membership Endowment continues to support deserving student internships, even after the elimination of CALS Alumni Association membership dues. Also, we appreciate the input gained from our four student board members. Finally, we always encourage the board and our fellow alumni to give to the CALS Annual Fund, at any gift level, since a good portion of that fund now helps support scholarships. Join us in the many ways to actively assist today's students.

Jim Alves '01

2009–2010 CALS Alumni Association President

1950s

Jules Janick '51 of West Lafayette, Ind., has been named to the American Society for Horticultural Science Hall of Fame—the society's highest honor. He was inducted during the ASHS annual meeting this past July. During his 58 years of service to Purdue University, Janick has distinguished himself as a teacher of horticulture and researcher in genetics and breeding.

Michael Rullison '53, MS '54 of Raleigh, N.C., is retired and volunteers with various nonprofit organizations. He keeps busy doing some website design and management.

1970s

Irving P. McPhail '70 of White Plains, N.Y., was elected to a two-year term, effective January 1, 2010, to the board of directors of the Society of Manufacturing Engineers (SME) Education Foundation. McPhail is executive vice president and chief operating officer of the National Action Council for Minorities in Engineering, Inc. (NACME).

Wendy Beth Libby '72, MBA '77 of Deland, Fla., has become the ninth president in Stetson University's 125th year history and the first woman to ever hold that position. Libby was named by the university in November 2009. Stetson University is an independent, private, liberal arts university with programs in business, music, and law at campuses in Deland and Gulfport, Fla., with satellite centers in Celebration and Tampa, Fla.

Toni Hudson Lydecker, MAT '72 of Irvington, N.Y., announces the publication of her cookbook entitled, *Seafood alla Siciliana: Recipes and Stories from a Living Tradition* (Lake Isle Press). The cookbook not only explores one of the world's great seafood traditions, but covers essential Sicilian ingredients and culinary techniques, seafood buying and handling tips, and seafood and wine pairings. For more information: www.tonilydecker.com.

Edward B. Chapman '73, DVM '77 of Fayetteville, N.Y., has owned Fayetteville Veterinary Hospital since 1990. He and his wife, Jean, have three daughters: Juliet, Meredith, and Ella.

Michael E. Valla '76 of Stony Creek, N.Y., has recently published a book entitled, *Tying Catskill-Style Dry Flies*. Valla explores the essence of Catskill flies, delving into the history of the region's rivers, fly fishers, and fly tiers and blending their colorful histories with precise step-by-step tying methods. Valla wrote the book for those not only interested in learning to tie the Catskill-style flies, but also those interested in the history of American fly fishing. It was published by Headwater Books/Stackpole Books in August 2009.

Dr. Judith O. White '77 of Shaker Heights, Ohio, is head of the Vestibular and Balance Disorders department in the Head and Neck Institute at Cleveland Clinic and was recently awarded the American Academy of Otolaryngology Head and Neck Surgery (AAO-HNS) Honor Award. White specializes in dizziness and vestibular disorders. She teaches several courses on evaluating the dizzy patient for other otolaryngologists at the academy's annual meeting.

Jean-Claude L. Balcet, MBA '78, PhD '98 of Washington, D.C., retired in May 2008 from the World Bank after 28 years. He currently works as an independent consultant for the World Bank and other organizations.

Larry A. Nielsen, PhD '78 of Durham, N.C., stepped down in May 2009 as provost of North Carolina State University. Nielsen joined the faculty in NC State's College of Natural Resources. He is committed to natural resources education and has taught more than 16 different courses in his career.

Stephen W. Hiemstra, MS '79 of Centreville, Va., works for the Federal Housing Finance Agency in Washington, D.C. For the past several years, his work has focused on enterprise risk management. He recently began work toward a master's degree in the divinity program at Gordon-Conwell Theological Seminary in Charlotte, N.C.

ALUMNI NOTES

Dr. Richard J. Pollack '79 of Needham Heights, Mass., has worked for more than 20 years as a researcher at the Harvard School of Public Health and is one of the nation's leading bedbug experts.

1980s

Scott A. Sanford '81, MEN '84 of Madison, Wisc., was given the 2009 Rural Electricity Resource Council Electric Technology Award at the American Society of Agricultural and Biological Engineers annual international meeting in Reno, Nevada. Sanford is a senior outreach specialist at the University of Wisconsin-Madison, and was selected for the honor for his dedication and outstanding contributions to energy efficiency in agriculture.

Leanne C. Wagner, MS '81 of Wayne, Pa., was recently elected to the Maternity Care Coalition board of directors. Wagner is vice president of Commercial Differentiation Strategy for Wyeth and has more than 25 years of experience in the Pharma/Biotech arena. She has worked extensively with various organizations dedicated to the advancement of women in healthcare.

Esther M. Margulies '84 of Venice, Calif., writes that her landscape architecture firm was recognized by the American Society of Landscape Architects, the Los Angeles Chapter of the American Institute of Architects, and others for civic and sustainable projects that were completed in the past year. The firm received numerous awards including the 2009 ALSA Honor Award for Planning, the President's Award for Open Space Design from Los Angeles AIA, and the Santa Monica Conservancy's President's Award for work on the Annenberg Community Beach House in Santa Monica.

Christa Duthie-Fox, MS '85 of Essex Junction, Vt., was one of the 2008 Vermont State Finalists for the Presidential Award for Excellence in Mathematics and Science Teaching; and from this, was selected to receive national recognition by President Obama on behalf of the National Science Foundation. Duthie-Fox was invited to Washington, D.C., to receive the award at a White House ceremony. In addition, she will receive \$10,000 to be used at her discretion. She is a fifth and sixth grade science and math teacher at Charlotte Central School in Charlotte, Vt. She has been teaching middle school since 1994.

Tony K. Wolf, PhD '86 of Toms Brook, Va., received the 2009 Alumni Award for Excellence in Extension from Virginia Tech University. Wolf is a professor of horticulture in the College of Agriculture and Life Sciences and a viticulture specialist for Virginia Cooperative Extension. He is also director of the Alison H. Smith, Jr. Agricultural Research and Extension Center in Winchester, Va.

Robert J. Cummings '87 of New York, N.Y., has joined StormHarbour Partners, L.P., an independent, 50-professional global markets firm that focuses on capital markets and fixed income activities. Cummings is one of two managing principals and was formerly managing director and head of Citigroup's European Credit Products Distribution.

Daniel J. Fessenden '87 of Union Springs, N.Y., was named in May 2009 to the board of directors of Tompkins Financial Corporation. Fessenden currently is the executive director of the Fred L. Emerson Foundation, a fourth-generation family foundation located in Auburn, N.Y. He also began serving on the Tompkins Trust Company board of directors in January 2009.

1990s

Kristy D. Cook, PhD '90 of Takoma Park, Md., moved back to the U.S. in 2007 following eight years overseas, while her husband worked at the U.S. Embassy. She and her husband have two children, Jonas and Hannah, whom they adopted from Ethiopia.

Chiara P. Shah '91 of Manalapan, N.J., was recognized with the New Jersey Distinguished Teacher Award from the State of New Jersey's Department of Education. Shah teaches pre-calculus honors and algebra II at Lawrence High School in Lawrenceville, N.J. She is married to Sunish Shah (BS ILR '92) and they have a son, Kiran, and daughter, Kayla.

Richard A. Jacklin '92 of Roslyn, N.Y., announced that his wife, Randi Davidoff, recently opened her flagship store in Southampton called Hampton and Company (www.hamptonandco.com). A minimum of 10 percent of all sales goes to support many important community causes. Jacklin is managing director with BTIG in New York City.

Amy Joy Lanou, PhD '04 of Asheville, N.C., recently published a new book on exposing calcium myths in preventing osteoporosis. The book, *Building Bone Vitality: A Revolutionary Plan to Prevent Bone Loss and Reverse Osteoporosis*, was co-authored with noted health writer Michael Castleman and published by McGraw Hill in June 2009.

Dineen Pashoukos Wasylik '94 of Wesley Chapel, Fla., is one of fewer than 10 attorneys in the entire state of Florida that earned Florida Bar board certification in her field of intellectual property law. Board certification is a rigorous process that includes demonstrating significant experience and knowledge of the specialty. Of the 80,000 lawyers in Florida, only approximately 4,600 are board certified in intellectual property law. Wasylik is a partner at Conwell Kirkpatrick, PA in Tampa, where she specializes in copyright and trademark litigation.

Ann M. Tillman '98 of Riverdale, N.Y., received her Master of Divinity from the General Theological Seminary in New York City in May 2008. She was ordained a transitional deacon in June 2008 and currently serves as a deacon and pastoral associate at the Church of the Atonement in the Bronx.

2000s

Jim Alves '01 of Sacramento, Calif., recently began working as director of economic development with the Sacramento Municipal Utility District. Alves previously worked as the assistant secretary for the California Health and Human Services Agency. He currently is serving as president of the CALS Alumni Association.

Bethany S. Souers '02 of Rhinebeck, N.Y., graduated from Ross University College of Veterinary Medicine in June 2009. She completed her clinical program at Ohio State University in their College of Veterinary Medicine in August 2009 and joined a practice in the Northeast.

Jaclyn Kay Buckley '03 of Pine Bush, N.Y., manages Hannaford Bros, after working at three other supermarkets including Wegmans, Tops, and SureFine (which was owned by her father). Buckley credits the advancement in her career to Cornell, especially her courses in Food Industry Management.

Hannah R. Silver '03 of Philadelphia, Pa., married Jason Smith on October 24, 2009. Silver is currently completing her studies for a PhD in biochemistry at Thomas Jefferson University.

Joanna M. Souers '05 of Rhinebeck, N.Y., has completed her second year at Escuela Latino Americana de Medicina in Havana, Cuba. The medical school program includes three years of academic education and three years of clinical training.

Sam Seob Lee, MS '06 of Seoul, Korea, is a senior researcher with NH Economic Research Institute, focusing on retailing strategies for the NACF Business Group.

Benjamin E. Crovella '07 of Brooklyn, N.Y., is currently a 1st Lieutenant in the U.S. Marine Corps deployed to Iraq for a year on a military transition team, embedded with the Iraqi Army; he is training and advising them.

Christian Andreas Burns '08 of Ithaca, N.Y., is a chemistry teacher at the Cascadilla School. Burns, who is 17 years old, graduated from Cornell with a B.S. degree in biology and life sciences. At age 14, he earned his associate's degree from Tunxis Community College in Connecticut. At 13, he gave his first professional lecture on owls. At age 10, he developed a homeopathic medication called Ascozoa for animals and created a scientific presentation for it. His mother, Debora Stevens-Burns, said it was clear from her son's toddler years that he was gifted, having learned to read capably by the time he was 1-1/2 years old.

Yi Yao, PhD '08 of Beijing, China, works at the China Economics and Management Academy in Central University of Finance and Economics in Beijing.

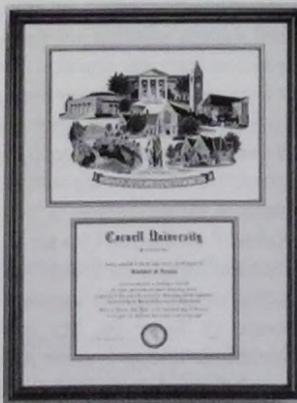
John DeWindt Castle '09 of New York, N.Y., recently accepted a position as a consultant for Ernst and Young LLP. He is interested in connecting with other alumni in the NYC area.

Hussien Ali Ali Oumer '09 of Jimma, Oromiya, Ethiopia, is a lecturer in the Department of Natural Resources Management in Jimma University.

James R. Reilly, PhD '09 of Powhatan, Va., whose doctorate is in entomology, wrote a dissertation on *The Ecology of Nucleopolyhedrovirus Transmission in the Gypsy Moth*. He received a B.S. degree in 2002 from the College of William and Mary.

Prepared by Mary Alo

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Show your Cornell pride with our **officially licensed** DIPLOMA HOLDER and PRINT.

An exquisite pencil drawing of our beloved Cornell University, created by nationally recognized artist Robin Lauersdorf, depicts Goldwin Smith Hall, Bailey Auditorium, Willard Straight Hall, McGraw Tower, Uris Library, Beebe Lake Falls, Sage Chapel, and the Ezra Cornell statue.

This new diploma holder is being offered by the College of Agriculture and Life Sciences Alumni Association to help raise funds for undergraduate scholarships and other student and alumni projects.

Our diploma holders are . . .

- an excellent way to **protect, preserve, and display** your diploma,
- triple-matted with **museum-quality** mat board and framed to a size of 20" x 28" in a rich mahogany frame,
- designed so you can easily insert your own diploma so there is no need to send it.

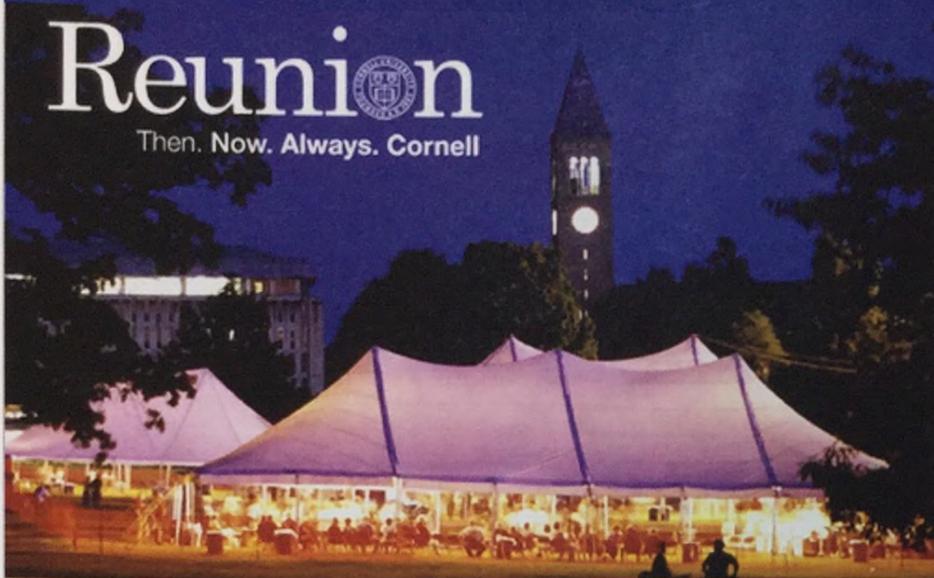
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1-800-336-5923 or visit www.alumniartwork.com

Reunion

Then. Now. Always. Cornell



REUNION 2010—Join CALS for Reunion Weekend:

June 10-13, 2010

Friday, June 11

The Food and Brand Lab—Consumer Camps

9:00-10:00 a.m., 10:00-11:00 am, 11:00-noon, 1:30-2:30 pm, and 2:30-3:30 pm Warren Hall, Room B-45 (except 2:30-3:30 pm, Room TBD) Professor Brian Wansink, the John S. Dyson Professor of Marketing in the Department of Applied Economics and Management, will offer workshops on why, what, when, and how people eat. Each workshop is limited to 200 people.

Earth and Atmospheric Sciences Open House in Air-Conditioned Snee Hall Atrium

10:00 am-2:00 pm

Visit the Timothy N. Heasley Mineral Museum, see the mastodon and fossil exhibits, and view the Snee earthquake seismograph. Enjoy a self-guided tour through the Engineering Quad Rock Parks.

Tours of Dairy and Food Processing Plant

10:00 am, 11:30 am, and 1:00 pm. Meet at the Cornell Dairy Bar—look for the Cornell cow. Food Science staff will give tours of both facilities (~35 minutes). Space limited to 30 people per tour.

Carol Kammen, "A. D. White on Beauty at Cornell"

10:00 am, Mann Library, Manelski Reading Room, 2nd Floor

Historian and author Carol Kammen will present a lecture that highlights the high standards of beauty and aesthetics held by founder A.D. White in planning the Cornell University campus. Held in conjunction with two exhibits: "Cornell (infra) Red: Photographs of Cornell Architecture by Kent Loeffler," on display in the Mann Gallery, and the historical spotlight on Cornell greenhouse and conservatory architecture in the Mann Lobby.

CALS Admissions Information Session

11:00 am, 102 Mann Library

This group session for prospective students (first-

year and transfer) presents information about the CALS admissions process. Topics include—college overview, introduction to majors, CALS graduation requirements, application tips and advice.

All-Alumni Affair with CALS Department Display Booths

11:30 am-2:00 pm, Barton Hall

Lunch tickets available on site.

Landscape Architecture Open House

1:00-4:30 pm, 440 Kennedy Hall

The undergraduate landscape architecture degree is the only one of its kind in the Ivy League. Visit the studio and new mezzanine.

Liberty Hyde Bailey Lecture: "Renewable Energy Research and Development at Cornell University"

1:00-2:30 pm, Call Alumni Auditorium, Kennedy Hall Experts at Cornell are developing renewable energy technologies including solar, geothermal, and those that convert biomass into heat and power. This panel includes Cornell experts working on renewable energy options such as anaerobic digestion that produces methane from waste streams; slow pyrolysis, a carbon-negative technology that produces combustible gasses and a valuable soil supplement (biochar); fuel cells for automotive and other applications; and geothermal systems.

Moderator: Michael P. Hoffmann, Director, Cornell University Agricultural Experiment Station; Associate Dean, College of Agriculture and Life Sciences

Panelists: Jefferson W. Tester '66, MS '67, Croll Professor of Sustainable Energy Systems, Associate Director of Cornell Center for a Sustainable Future; Largus Angenent, Associate Professor, Department of Biological and Environmental Engineering; Paul F. Mutolo '94, Director of External Partnerships, Energy Materials Center at Cornell; Thea Whitman, M.S. Candidate, Crop and Soil Sciences.

Drew Harvell, "Out of the Teeming Sea: Cornell's Blaschka Collection"

1:00 pm, Mann Library, Manelski Reading Room, 2nd Floor

Cornell has an extensive collection of glass invertebrates created by renowned 19th century glass artists Leopold and Rudolf Blaschka. Drew Harvell, professor of ecology and evolutionary biology and marine biologist, will describe the importance of the Blaschkas' work to the 19th and early 20th century study of ocean biology through a slide show of the Blaschka's glass pieces and rarely seen watercolors, highlighting current efforts to restore the exquisite collection for permanent display at Mann Library and Corson Mudd Hall.

Olin Lecture

3:00 pm, Bailey Hall

The Olin Lecture was established in 1986 through a gift from the Spencer T. and Ann W. Olin Foundation. Each year, an internationally prominent speaker addresses a topic relevant to higher education and the current world situation. The lecture is free and open to the public.

Mann Library Open House

3:00-5:00 pm

Drop in during Mann Library's Open House to explore the high technology and classic Art Deco, creative collaboration and quiet study, book browsing and bird watching, art and hard science of the renovated library. Guided tours available on request at the Mann Reference and Information Desk.

Earth and Atmospheric Sciences Faculty Lecture

3:00-4:00 pm, 2146 Snee Hall

"Energy in the 21st Century: Informing Hard Choices," featuring EAS professors Rick Allmendinger and Larry Brown.

Saturday, June 12

Reunion Run

7:30 am, Barton Hall, Garden Avenue entrance

Pre-registration encouraged for the 2- or 5-mile run.

CALS Reunion Breakfast and College Open House

8:00-10:00 am, Trillium, Kennedy Hall

(Note: later start time at 8:00 am)

Enjoy fellowship with Dean Susan Henry, alumni, faculty, and friends of the college as the dean gives her final presentation as retiring dean. Jim Alves '01, CALS Alumni Association president, will host the association's annual meeting. Enjoy the buffet breakfast and browse informational tables from more than 15 CALS departments.

Earth and Atmospheric Sciences Open House in the Air-Conditioned Snee Hall Atrium

10:00 a.m.-2:00 pm

Visit the Timothy N. Heasley Mineral Museum and inspect the mastodon and fossil exhibits while keeping an eye of the earth's last rumblings at the Snee earthquake seismograph. Take a self-guided tour through the Engineering Quad Rock Parks.

State of the University Address

10:30 am, Bailey Hall

Cornell University President David J. Skorton will deliver his annual Reunion State of the University Address. Open to all Reunion attendees and guests.

Communication Department Open House

11:00 am–1:00 pm, Kennedy Hall, 3rd Floor

Alumni and friends of the department can connect with faculty and students. Come experience the exciting things we are doing in Communication.

All-Alumni Affair with CALS Department Display Booths

11:30 a.m.–2:00 pm, Barton Hall

Lunch tickets available on site.

Plant Biology Alumni Gathering

11:30 am, G37 Plant Sciences, MacDaniels Room

Join us for some light refreshments while visiting with fellow Plant Biology, Botany, and Plant Science alumni and faculty.

Biological and Environmental Engineering Alumni Gathering

Noon–1:30 pm, Room 105, Riley Robb

Enjoy a light lunch while visiting with fellow alumni and current and former faculty.

Earth and Atmospheric Sciences Faculty Lecture

1:00–2:00 pm, 2146 Snee Hall

"Plates, Politics, and Poverty in the 21st Century: Challenges and Lessons Learned from the January 20, 2010 Haiti Earthquake Disaster" by EAS professor Chris Andronicos.

Wine Tasting

1:30–3:30 pm, Trillium, Kennedy Hall

Savor the flavor of New York State wines and meet winery owners at this popular reunion event. Free admission to all alumni and guests, 21 and older.

Tour of the Paleontological Research Institution (PRI) and Museum of the Earth

2:00–4:00 pm

See a right-whale skeleton suspended in the atrium, observe the newly installed seismograph display, view research by EAS faculty and students, and collect fossils from the Devonian seas of Ithaca. Fun for all! Free admission to alumni and families.

Allan Hosie Treman '21 Memorial Concert

2:30 pm, F.R. Newman Arboretum (Flat Rock entrance), Cornell Plantations

Annual reunion concert, featuring the Hangovers

Mann Library Open House

3:00–5:00 pm

High technology and classic Art Deco, book browsing and bird watching, art and science—explore the renovated library. Guided tours by request at the Mann Reference and Information Desk.

Natural Resources Open House

3:00–4:30 pm, Breezeway between Fernow and Emerson

Join us for wine tasting and light refreshments while you visit with fellow Natural Resources alumni and former and current faculty. Professor Paul Curtis will provide an update on the department.

Lecture at the Paleontological Research Institution (PRI) and Museum of the Earth

3:00–4:00 pm

Presentation by EAS Professor and Director of PRI, Warren D. Allmon

Cornelliana Night

9:30 pm, Bailey Hall

Join the Alumnae Chorus and the Alumni Glee Club in songs of Cornell. Reunion attendance and giving will be recognized.

Barton Hall Display Booths

**The All-Alumni Affair in Barton Hall is open to all on Friday and Saturday,

11:30 am–2:00 pm, featuring many information booths, including CALS-specific:

CALS Display Booth

Discover the key academic priorities of the college; learn more about admissions, career development, and alumni programs.

Department of Education Booth

Drop by the department's booth to learn more about its history at Cornell and the many newsworthy events currently taking place.

Paleontological Research Institute/Earth and Atmospheric Sciences Display Booth

Hands-on exhibits will feature ground-penetrating radar, an operating seismograph, and unusual rocks and fossils from the EAS/PRI collections.

Ongoing Weekend Events

Check the reunion program or website for times.

Cornell Plantations Tours

Explore Cornell's arboretum, botanical garden, and natural areas.

Mann Library Ongoing Exhibits

Thursday & Friday, 8:00 am–5:00 pm; Saturday, Noon–6:00 pm

**For more Reunion Information please visit www.alumni.cornell.edu/reunion.
For CALS Reunion Events please visit www.cals.cornell.edu/alumni-friends.**

Breakfast Registration Form (Note: New start time of 8:00 am)

Register online at www.cals.cornell.edu/alumni-friends before June 3, 2010.

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 June 3, 2010.

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

\$20 per person.

Name

(print exactly as to appear on name tag)

Class Year/Major

Address

City

State/Country

Zip/Postal Code

Telephone

E-mail:

Reunion Year

Guests

Class

Class

Membership Expiration Date

Number of Registrations

Total Amount Enclosed \$

Please make your check payable to the CALS 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 June 3, 2010.



Reimagining CALS: A Plan for Strategic Growth

By Jan Nyrop, Senior Associate Dean and Professor of Entomology; and Barbara Knuth*, (then) Senior Associate Dean, Professor of Natural Resources

In October 2009, the leadership of the College of Agriculture and Life Sciences submitted a plan to Provost Kent Fuchs to strategically position the college for future growth and address changes in the sources and levels of revenue. The plan was developed with the assistance of an advisory committee consisting of department chairs, faculty members, administrative staff, and college deans, and was designed to help achieve four broad goals:

- Align CALS programs and activities to reflect changes in revenue levels and sources;
- Adapt undergraduate and graduate curricula to be more interdisciplinary, better coordinated, and more responsive to changing student and societal needs;
- Promote research that is interdisciplinary and integrated from discovery to application, and meets dual objectives of disciplinary excellence and mission-oriented impact; and
- Refine extension and outreach activities to be most responsive and effective to stakeholders.

Provost Kent Fuchs reviewed the plan in late 2009 and directed the college to proceed with the following elements:

- Reduce the number of academic departments, beginning with the merger of the four sibling departments in Ithaca and Geneva, to a number comparable to peer colleges;
- Collaborate with the College of Engineering to recommend a future structure and vision for environmental sciences at Cornell, including careful consideration of departments and programs across the university that focus on environmental issues and the impact of such a reorganization on related departments and schools;
- Develop the concept of a plant sciences cluster, with the expectation that the college will transition to a simpler and more coherent organization of the plant sciences; and
- With input from the Provost's Office, conduct an analysis of the future evolution of the Department of Applied Economics and Management (AEM). When completed, CALS and AEM will participate in a broader university-wide planning effort for management sciences.

The mergers of Ithaca- and Geneva-based departments in horticulture, food science, entomology, and plant pathology and plant-microbe biology are nearing completion. The college leadership is reviewing recommendations regarding the overall programmatic, governance, and structural

aspects of the merged departments with the intent to formalize the mergers this July 1.

A committee with representation from CALS, the College of Engineering, and the College of Arts and Sciences is planning for the future of environmental sciences. Goals are to: (1) position Cornell to be a leader in research, teaching, and extension/outreach in the areas of environmental sciences, coupled with natural-human systems problems and understanding of complex environmental systems; (2) improve environmental literacy in Cornell students and society generally; (3) inform policy decisions for addressing environmental issues at multiple spatial and temporal scales; and (4) integrate appropriate programs to achieve these outcomes.

Planning in the plant sciences is underway to promote and maintain the preeminence of the plant sciences at Cornell through coordinated strategic planning, evolution of the undergraduate curriculum, and stronger research and extension collaborations. A committee of CALS faculty members and department chairs is developing recommendations that focus on functional relationships among the plant science departments to: (1) evolve the plant sciences curriculum to improve the visibility and coherence for prospective students, to provide students with a coordinated curriculum that is based on common foundational experiences and specialization as students progress through their educational program, and to deploy teaching and advising resources more wisely; and (2) enable strategic planning across existing departments so that faculty hiring, program support, teaching, and other resource-allocation decisions can be better coordinated.

The Department of Applied Economics and Management is also considering its evolution, paying special attention to the integration of undergraduate business and management education within the foundational areas of food and agricultural economics, environmental and resource economics, international and development economics, and business. A detailed plan for improving the quality and impact of management sciences and business education and scholarship at Cornell will be developed with the Johnson Graduate School of Management and the School of Hotel Administration.

We are confident that strategic change will enable CALS to continue to be the preeminent land grant institution. Changes to the college's educational, research, and extension programs will allow CALS faculty, students, and staff to effectively develop the knowledge, technology, and human capacity to address the most challenging issues facing society related to the environment, agriculture, food and energy systems, and community and economic development.

Follow "Reimagining CALS" at www.cals.cornell.edu

*Barbara Knuth has been named vice provost, effective April 1, and dean of the Cornell Graduate School, effective July 1, 2010.

CREATIVE WAYS TO GIVE

Charitable gifts provide essential support for the College of Agriculture and Life Sciences each year. The following examples show opportunities to support the college by addressing tangible needs such as equipment, travel funds, scholarships, furniture, and more.

The CALS Development Office is available to discuss various giving options, including gifts of stocks, securities, planned giving opportunities, and to answer your questions about gifts to endowment. For more information or to make a gift in support of one or more of these priority needs, please contact Mike Riley '87, Associate Dean for Alumni Affairs, Development and Communications, College of Agriculture and Life Sciences at (607) 255-7635 or mpr2@cornell.edu.

CALS Annual Fund Needs You

The College of Agriculture and Life Sciences relies greatly upon the generosity of alumni and friends. Gifts of all sizes are important to provide significant program and budget support. Dean Susan Henry is directing Annual Fund gifts to support the college's highest academic priorities, including: unmet undergraduate scholarship need, start-up costs for newly hired faculty, and internships for undergraduates. Your gift at this critical time will provide essential support for CALS students, faculty, and academic programs.

Weather Now

Paper weather maps have gone the way of the dinosaurs. Help update the Earth and Atmospheric Sciences map room with four dedicated computer monitors with touch-sensitive screens. \$1,500 (per monitor) (Earth and Atmospheric Sciences)

Warm and Green

Fund the installation of a grass pellet heating system at the CALS research farm to replace the use of fossil fuel heat. \$15,000 (Cornell University Agricultural Experiment Station)

Internships Are Hands-on Education

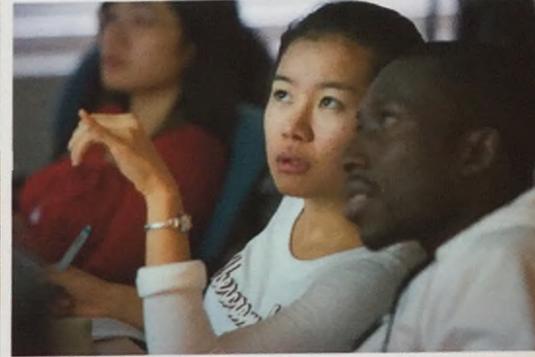
Current-use funding for undergraduate experiential learning helps students explore their interests in a career field and gives them a chance to develop skills that can give them a competitive edge in a full-time job search.

\$4,000 minimum (per student)

The Air We See

Purchase an air pollution particle sampler for meteorology course projects, so students can "see" particle concentrations in the atmosphere from different environments.

\$5,000 (Earth and Atmospheric Sciences)



Rice Is Right

Fund a Cornell undergraduate or graduate student to participate in the "Rice: Research to Production" field course taught at the International Rice Research Institute in the Philippines for three weeks in May–June every year.

\$3,600 (Plant Breeding)

Support NY Farmers by Supporting NY FarmNet

Provide support for NY FarmNet consultants to assist one farm family to increase farm profitability, evaluate business options, and improve fiscal management in challenging times.

\$1,000 (NY FarmNet)

Wearing CALS Pride

Provide shirts for CALS Ambassadors to wear when they represent CALS at on-campus recruiting and other events.

\$1,500 (CALS Admissions)

Roll up Your Green Sleeves

Support two undergraduates during the summer to help with university sustainability initiatives.

\$2,000 per student (Cornell University Agricultural Experiment Station)

Birds Gone Wild

Fund a videographer to document a birding expedition for the Cornell Laboratory of Ornithology.

\$15,000 (Lab of Ornithology)

Life on the Farm

Support an undergraduate student to serve as a farm manager for Dilmun Hill during the summer of 2010.

\$5,000 (Cornell University Agricultural Experiment Station)

Will Work for Free

Support undergraduates who take unpaid summer internship positions in the not-for-profit or community-service sectors to defray travel and living costs.

\$2,500 per student (Applied Economics and Management)

Home-Grown Fuel

Plant an acre of fast-growing shrub willow crops on NYS Agricultural Experiment Station land that will be harvested every three years over the next two decades to provide carbon-neutral biomass fuel to heat and power various university facilities.

\$800 per acre (Horticultural Sciences in Geneva)

Support Fine Wines

Send Viticulture and Enology students to scientific conferences to present their research findings to the scientific community and wine industry, as the culmination of their research projects.

\$500/student for domestic conference; \$1,000/student for international conference (Viticulture and Enology)

Recruiting the Best and Brightest

Fund a travel display for CALS Admissions that will be used by alumni and staff when they attend recruitment events.

\$3,000 (CALS Admissions)

"Weather" They Go... Depends on You

Send an undergraduate to the annual American Meteorological Society Student Conference to present the results of undergraduate research projects and interact with faculty and students from other universities.

\$1,000 (Earth and Atmospheric Sciences)

Maintaining New York Agriculture

Provide training support to equip all NY FarmNet consultants with the latest tools to work effectively with farm families.

\$15,000 (NY FarmNet)



Cornell University
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Got Game? CALS Does

From basketball to hockey to wrestling, CALS scholar-athletes have put the college on the map this winter.

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A Decade of Leadership

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