Winning the Food Fight: Finding Local Solutions to Global Hunger
A Rose By Any Other Name:

As the common name of this giant bloom suggests, the corpse plant sure was a stinker when it made its rare appearance on campus March 28. “Wee Stinky,” as it was named in a public poll, was still a beauty that attracted thousands of visitors to the Kenneth Post greenhouse during its two-day bloom. More photos and story on page 31.

Credit: Alan Nyiri, alan.nyiri@comcast.net
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S P R I N G  2 0 1 2

GOING LOCAL, ON A GLOBAL SCALE
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BRINGING CORNELLIANS CLOSER TO THEIR FOOD
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WHAT'S THIS?
A QR (Quick Response) code allows you to access a website via your smartphone without entering the web address. To use, download a QR code reader app to your phone, then launch the app and scan the code using your phone camera. This code will take you directly to the offline version of this magazine.
Welcome to the first issue of the redesigned magazine of the College of Agriculture and Life Sciences. This issue reflects more than just a change in name, from CALS News to periodiCALS. While we will certainly still provide a broad update on recent accomplishments and news, the features will offer more in-depth content focused on a central theme. CALS has a remarkably wide scope of disciplines and expertise; approaching a central idea in each issue will provide us with an opportunity to illustrate how these sometimes seemingly disparate parts actually complement and enhance one another.

In this issue, we are exploring a challenge that speaks to an aspect of our core mission: food production and supply for a global population that is forecast to reach 9 billion people—a 30-percent increase—by the year 2050. Around the globe, an expected increase in family income is predicted to result in increased demand for more and better food, such as for fresh fruits, vegetables, and meats. These demands are expected to take place while we are experiencing limits in the overall amount of fresh water and land appropriate for growing food. To meet projected local and global demands for food and fuel, we are and will continue to be pressured to evolve American agricultural technologies to further enhance production capacity while minimizing negative impacts on the environment in the context of changing climate conditions.

As Alice Pell noted in the main feature, “Going Local, on a Global Scale” (page 11), simply producing enough food to feed the world’s growing population will not be sufficient, and we will not be able to use a single approach to solve such a complicated problem. The breadth and depth of expertise at the College of Agriculture and Life Sciences allow us to tackle the issue on several fronts and position us well to lead in delivering multiple solutions. Some of these solutions originate right here in Ithaca, on campus farms, in university dining halls and at community markets, as described in “Bringing Cornellians Closer to Their Food” (page 16). Alumni like the distinguished Pedro Sanchez are helping to shape solutions to world hunger (page 32), and current students are already applying their knowledge with a public purpose in Kenya, Zambia, and other places around the globe (page 8).

The goal of meeting the needs of future generations—whether across the world or across the road—makes now the time to invest in research in innovative agricultural practices. I make this statement at a moment when public investments in agricultural research are declining at local, state, and federal levels. To achieve viable agricultural systems, three key sectors must jointly support and provide broad funding for agricultural research that incorporates an understanding of true sustainability: private industry, growers’ groups, and public support from tax dollars.

I hope you enjoy this issue of the new periodiCALS. As always, I welcome your feedback and look forward to meeting more of you as I enter my third year as dean. It’s been a fantastic journey so far, and I’m very proud of all we have accomplished.

Kathryn J. Boor
Ronald P. Lynch Dean of the
College of Agriculture and Life Sciences

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THE RONALD P. LYNCH DEAN
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FAKE MARS MISSION ATTRACTS HUNDREDS OF GASTRONAUTS
By Stacey Shickford

Researchers at Cornell are working to determine the best way to keep astronauts well-nourished during their journeys to and stays on the Red Planet.

Jean Hunter, associate professor of biological and environmental engineering, and Bruce Halpern, professor of psychology and neurobiology and behavior, have teamed up with Kim Binsted, associate professor of information and computer science at the University of Hawai‘i-Manoa, to conduct a NASA-funded study on the diets of mock astronauts in a simulated Mars habitat on the barren lava fields of Hawai‘i for four months.

Menu fatigue—the food boredom induced by restricted dietary choice—can put astronauts at risk for reduced food intake and concomitant nutritional deficiencies. The study will assess the palatability of instant and crew-prepared food, determine whether food preferences change over time, and track resources required for meal preparation and cleanup.

Micro-gravity itself is also suspected to reduce astronauts’ pleasure in food by compromising their sense of smell. In space, the body fluids normally held in the legs and feet by gravity redistribute headward, causing nasal congestion. The research team is studying these effects too, using bedrested subjects at the NASA Flight Analogs Research Center in Galveston, Texas.

A call for volunteers in February garnered more than 600 applicants, and the selected team will begin with a four-day workshop at Cornell’s School of Hotel Administration, where they will learn to cook interesting, varied meals from shelf-stable ingredients, track their food intake and perform olfactory tests on each other.

Food fatigue can be a challenge on long space missions. Here, astronaut Edward M. (Mike) Fincke, plays with some fruit in the International Space Station. Credit: NASA

Credit: NASA
NO WONDER WE FEAR SNAKES

Have the urge to flee when you see a snake? A new study by Cornell herpetologist Harry Greene indicates this may be a well-grounded response based on the long and complex evolutionary history between snakes and primates. The study, conducted with Thomas Headland, an anthropologist at the Summer Institute of Linguistics (SIL) International in Dallas, provided proof that humans and large snakes such as pythons are each other’s prey, predator, and competitor. Modern hunter-gatherers in the Philippines and rural Asians who share the jungle hunting grounds with huge reticulated pythons (*Python reticulatus*)—capable of growing to 28 feet in length—provided evidence that the snakes actively attack and eat humans, including ambushes on land and in water, as well as foraging in human dwellings for a meal. More than a quarter of Agta Negritos men in the Philippines reported surviving a python attack. However, the Agtas also routinely ate pythons as well as deer, wild pigs, and monkeys, which the pythons also ate. Furthermore, natural history observations from all over the world show that each major lineage of primates, including lemurs, tarsiers, and Old and New World monkeys, eats and is eaten by snakes, implying similar complex relationships date back more than 70 million years, to the origin of primates.

SUSTAINABLE SEAWEED: RESEARCHERS EXPLORE ALGAE ANIMAL FEED

Livestock in the lab of Cornell animal science professor Xingen Lei have been feasting on an unlikely diet for landlocked Ithaca: marine algae. Dried defatted algae is a byproduct of a biofuels project led by Chuck Greene, professor of earth and atmospheric sciences, and Jeff Tester ’66, MS ’67, professor of chemical and biomolecular engineering, and it can replace up to one-third of the soybean meal in pig and chicken diets. With its high lipid and protein content, algae feed not only replaces a portion of traditional feed, it transforms a biofuel byproduct into a valuable commodity and frees up valuable acreage for the production of human food.

REVOLUTIONARY WAVE GLIDER TOOL TRACKS FISH

Reliable ocean and fisheries forecasting is on the horizon, thanks to revolutionary solar powered, surfboard-sized, remote-controlled Wave Gliders. Professor of earth and atmospheric sciences Chuck Greene is helping to optimize the Wave Glider, developed by Liquid Robotics, Inc., for oceanography. The devices collect acoustic data with an echosounder, providing researchers with real-time information on fishery migration and feeding patterns. Wave Gliders can cover about 12 miles a day and remain at sea for months. If they can replace the expensive manned research vessels currently required for studies, the enhanced observational presence will enable researchers to monitor ecosystem and population changes in real time.
RESEARCHERS DISCOVER A COMPOUND THAT CONTROLS LISTERIA

By Krishna Ramanujan

In a year when cantaloupe tainted with Listeria monocytogenes killed 30 people, the discovery of a compound that controls this deadly bacteria—and possibly others—is great news.

Cornell researchers have identified a compound called fluoro-phenyl-styrene-sulfonamide (FPSS) that is safe for mammals but stops Listeria in its tracks. The discovery, reported in the November/December issue of mBio, was made by Kathryn Boor, professor of food science and the the Ronald P. Lynch Dean of the College of Agriculture and Life Sciences; Mary Elizabeth Palmer, Ph.D. ’10; Soraya Chaturongakul, Ph.D. ’06; and Martin Wiedmann, Ph.D. ’97, professor of food science.

For a foodborne pathogen like Listeria to infect a human, it must be able to survive rapid changes in its environment, from the cold of refrigeration to the heat of cooking and from the highly acidic stomach to the anaerobic conditions of the small intestines.

“We were the first to characterize the molecular linchpin—called sigma B—in the transition of this organism from a harmless environmental microbe to a human pathogen,” Boor said. “It allows these single-celled pathogens to survive environmental assaults associated with transmission in foods, followed by transit in the human body.”

In a screen of 57,000 natural and synthetic small compounds, they found that FPSS inhibited sigma B in both Listeria and Bacillus subtilis, a soil bacterium and food contaminant that survives high heat.

FPSS interrupts a mechanism that controls the genes that are switched on when the bacterium experiences a rapid change in its environment.

FPSS is non-toxic to humans and eventually may be developed as a drug to combat listeriosis and other bacterial infections.

HOW TO FOIL PICKY EATERS

A recent study led by Brian Wansink, the John S. Dyson Professor of Marketing in the Charles H. Dyson School of Applied Economics and Management, identified what kids find visually appealing on a plate of food, information parents can use to coax picky eaters into nutritious meals. Preteen children and adults were shown photos of 48 different combinations plated food that varied by the number of items, placement of entree and organization. Children preferred entrees at the front of the plate in figurative designs—such as smiley faces or hearts—with seven different items and six colors, whereas adults preferred only three items and three colors.

HOW TO FOIL DIETS

New Cornell research shows that variety may be the spice of life, but it can also induce eaters to pack on the pounds. In the study led by David Levitsky, professor of nutritional sciences, participants were served the same foods prepared either individually or in a stir-fry (onions, corn, carrots, peas and broccoli) or a pasta dish (onions, celery, tomatoes, penne pasta and cauliflower). Participants ate significantly more calories when the foods were served separately versus as a “one-pot” dish. The study contributes to the growing body of research that illustrates that the mealtime environment influences how much we eat.
in the capitol

STUDENTS BECOME ADVOCATES FOR AID

By Amanda Garris, Ph.D. '04

Universities are important because of their impact on society, and Cornell is no exception. The university’s undergraduate programs have been instrumental in shaping the future of our country and the world. However, it is important to note that not everyone has equal access to these programs due to financial constraints. To address this issue, students at Cornell have become advocates for aid.

In a recent interview, Reed, a member of the university’s Board of Trustees, stated, “We are committed to ensuring that all students have the opportunity to pursue their academic goals, regardless of their financial situation.”

The students have been working to bring attention to the need for increased financial aid. They have met with representatives from the White House and the Department of Education to discuss the importance of financial aid for undergraduate students. Reed added, “We are grateful for the support of our policymakers in Washington, D.C., who are committed to addressing the needs of our students.”

The students have also been involved in raising awareness about the importance of financial aid through social media and other online platforms. They have posted videos and articles that highlight the challenges faced by students who are struggling to pay for college.

Reed concluded, “The students have been instrumental in bringing attention to the need for increased financial aid. We are committed to working with policymakers to ensure that all students have access to the resources they need to succeed.”
ADVANCED ACCOUNTING GIVES DYSON STUDENTS AN EDGE
By Stacey Shackford

In the wake of high-profile corporate accounting scandals and increased regulatory requirements, the need for qualified accounting students is greater than ever.

Thanks to the dedication and generosity of two CALS alumni who helped shape a unique undergraduate program in accounting, graduates from the Charles H. Dyson School of Applied Economics and Management are in a prime position to meet the needs of the financial sector.

The origin of the program goes back nearly a decade. Jerry Goldman ’72, a senior partner at Ernst & Young at the time, observed that the accounting profession was challenged with recruiting enough outstanding graduates to feed increased demand for talent with strong accounting backgrounds. He also recognized a golden opportunity for his alma mater to establish itself as the preeminent Ivy League accounting program.

He approached Cornell professor William Lesser, then chair of AEM, about introducing intermediate accounting classes to the CALS curriculum. Goldman then teamed up with his fellow Ernst & Young partner, Gary Kozlowski ’89, to raise the funds necessary to make it happen.

With the participation of other Cornell alumni throughout the firm, they exceeded their initial $195,000 fundraising goal. Under the leadership and guidance of senior lecturer Jack Little, a curriculum was developed, and great interest among students and administrators soon followed.

Two years later, as Cornell was seeking accreditation to transform its AEM program into an undergraduate business school, Goldman and Kozlowski took it a step further, pushing for additional advanced courses. This time, they had the support of the Ernst & Young Foundation. A $600,000 grant from the foundation funded three advanced accounting courses for a three-year period. An accounting specialization was also added.

“This was a big step. Now, for the first time, if undergraduates wanted to pursue a Certified Public Accountant track, they could do it, while also getting a well-rounded Cornell education,” Goldman said. “Whether they are going to be accountants, financiers, bankers or CFOs, understanding the fundamentals of balance sheets, income statements and how a business is run will make for a better, well-rounded professional.”

Student response to the offerings has been extraordinary, Goldman said.

“The introductory classes are often oversubscribed, the intermediate classes are large and full, and enrollment in the advanced classes has surpassed everyone’s expectations,” he said.

While the original foundation grant has expired, the program still receives significant annual contributions—and foundation matches—from alumni at Ernst & Young. Goldman remains committed to ensuring the program continues and has recently helped establish an Endowment for Accounting Excellence, which will help provide lasting support for the program, with the first contribution coming from Goldman himself.

He hopes to build upon the momentum generated by the recent successes of the applied economics and management program.

Designated as the Charles H. Dyson School of Applied Economics and Management in 2010, the program has ranked No. 3 in Bloomberg Businessweek’s list of best undergraduate business schools.

“It’s now a preeminent business school, offering a very robust accounting program that, I believe, is very true to the mission of the college,” Goldman said. “CALS does a phenomenal job of exposing students to the entire university and encouraging a diversified course load. I think the accounting program has complemented that philosophy.”

This model partnership between Cornell, Ernst & Young, and alumni benefits not just the principal sponsor, but the entire industry it represents and others it supports, Little added.
OUT OF AFRICA: CORNELL CHEESE CLUB’S KENYAN ADVENTURE

A partnership between a Kenyan cheese company and the Cornell Cheese Club may give chocolate mint ice cream some competition from flavors from the equator, including chocolate tree tomato, lemon basil vanilla, and lavender with honeycomb crunch.

I was among a group of four food science graduate students who traveled to Kenya in January to develop new products, analyze the factory workflow, and research export markets for Brown’s Cheese Company, run by Cornell alumni Andy ‘01, MEN ‘02, and Delia Stirling ‘02.

The company, founded by Delia’s parents Sue and Dave Brown, has grown from a small, home-based business into the leading producer of gourmet cheese in Kenya. The company makes more than 14 styles of European style cheeses, including Gouda, Brie, Camembert, and Blue style cheeses, in one of the country’s most productive farming areas, surrounded by tea and flower plantations.

Our trip was part of the Cornell International Institute for Food, Agricultural and Development’s Student Multidisciplinary Applied Research Team (SMART) program, which sends teams of students and faculty members to partner with agricultural organizations and entrepreneurs in developing countries.

For two weeks, we tackled new products for the Brown’s Cheese brand, including cottage cheese and ice cream, that are not readily available in Kenyan supermarkets. Fresh milk from cooperatives was brought to the farm each morning in aluminum milk churns, sourced from more than 3,000 smallholder farmers.

Matthew Ranieri ’06, M.S. ’09, focused on cottage cheese, a challenging endeavor because it requires precise control of temperature and acidity, while Pajau Vangay ’13 and I formulated new super premium ice cream bases and flavors.

One of the most successful flavors was the tree tomato, a local fruit that smells and tastes like a papaya. Once it’s stewed, it resembles a berry jam with a slight tomato aftertaste. We came up with a chocolate and tree tomato blend that was really nice.

In addition to expanding in their home market with these new fresh products, the Stirlings are looking for opportunities in export markets. Cornell Institute for Public Affairs fellow Stephanie Bryant investigated the United Arab Emirates as a potential market for Brown’s Cheese and developed a market entry plan for the company.

FIELD NOTES
“…We got up early this morning to meet with ICIPE and Land O’Lakes. We discussed using Brown’s whey byproduct as a growth medium for a fungal pesticide, since horticulture is one of Kenya’s main exports, but they have already developed and commercialized a product using oil as the medium. Andy thinks that using the whey as a biogas may be their best option since they are using 3,000 liters of diesel a day. We witnessed a gas shortage first-hand: long, long lines at the only gas station with gas.”

To read more journal entries and see photos from other student trips as part of the SMART program, visit: periodicals.cals.cornell.edu/journals

PRESERVING ZAMBIA’S FORESTS BY PRESERVING ITS FOOD

How do you turn a poacher into a farmer? Food science graduate student Matt Stasiewicz, MS ’10, found that one essential ingredient is food technology.

Stasiewicz spent four weeks in January in Zambia working with COMACO, a nonprofit corporation whose goal is to reconcile farming with conservation of wildlife and habitat in the Luangwa Valley. One of its most effective strategies is to purchase farmers’ surplus harvest to make value-added products for the IT’S WILD! line of food products.

Supplemental income can reduce rural poverty, giving farmers a viable alternative to poaching wildlife or burning forests for charcoal. Dealing with farmers’ surplus, though, requires rapid and safe handling of large quantities of a crop quickly, and finding creative uses for low-value crops.

“Mangoes ripen during a short period during the rainy season, and they will rot if they are not properly preserved—a challenge because of the lack of sun to dry them in the rainy season,” Stasiewicz explained.

Stasiewicz, a recipient of an National Science Foundation grant in Food Systems and Poverty Reduction, helped COMACO implement new technology—a used food dryer—that allows them to dry 1.5 tons of mangos in just three days.

Another less welcome surplus is broken rice grains. Although as nutritious as their unbroken counterparts, they are of less value because they can only be sold as livestock feed. COMACO’s goal was to use them to make puffed rice cereal, which could fetch a higher price.

Stasiewicz helped develop a basic formula and process for extrusion. Production will require additional equipment and engineering of the production line, a project Stasiewicz hopes will tempt Cornell students with engineering expertise.

“Like most students in food science, I most often work with processed foods for the U.S. market,” Stasiewicz said.

“Working in Zambia was exciting because it took me back to the heart of the discipline of food science: taking raw commodities and preserving them as food for people.”
STUDENT GROUP CONNECTS YOUNG DESIGNERS TO LOCAL COMMUNITIES

From recreational trails to shopping malls, aspiring designers and planners are making their marks on local communities through a novel student-run organization.

DesignConnect brings together graduate and undergraduate students who work in interdisciplinary teams and collaborate with communities in Upstate New York on pressing projects.

Gary Ferguson, director of the Downtown Ithaca Alliance, has asked the students to help create a concept and visuals that will energize the community into backing the Six Mile Creek Walk project.

"It's going to be a fantastic, and very important, transportation link and recreational amenity for our community, and that's why I thought it would be a great project for the students to help us get started," Ferguson said.

The Collegetown Neighborhood Council has also enlisted student help to bring a grocery store to College Avenue.

In the Town of DeWitt, on the outskirts of Syracuse, DesignConnect students are helping for guidance on how to approach a new joint comprehensive plan, a project that could involve tackling tricky zoning issues and gas drilling.

DesignConnect has also been called upon to help assess the historical significance of buildings in the main business district of Elmira Heights. There, they may draft architectural guidelines and a redevelopment plan, as well as design new streetscapes.

"We are really excited about the projects this semester," said DesignConnect co-chair Gilad Meron '11. "The deliverables we produce are going to really have a big impact."

Formed in the spring of 2008 and established as an independent student organization in 2010, DesignConnect gives students the "opportunity for real world experience, while also serving communities in need," said Alyson Fletcher, a member of the group's administrative board and a graduate student pursuing a dual degree in Regional Planning and Landscape Architecture.

Members primarily hail from the departments of Landscape Architecture, City and Regional Planning, and Architecture, but students from all interests are welcome, and Meron would like to see more novel collaborations evolve this semester.

"It provides a good opportunity to experience public participation and politics in a way you might not experience even in 'real world' class projects," Fletcher added.

BUILDING A NEW CITY CAMPUS

By Stacey Shackford

When the Class of 2012 landscape architecture students leave Cornell next month, they will have left their mark on more than just Ithaca. Their fingerprints will be all over the designs of the new CornellNYC Tech—Home of the Technion-Cornell Innovation Institute, on Roosevelt Island in New York City.

Not only are the 42 members of the Capstone Studio class drafting designs for the exterior space of the eight- to 10-acre site, they have teamed up with their peers in the Real Estate program at the College of Architecture, Art, and Planning to weigh in on all aspects of its built environment, from academic spaces and business incubator labs, to hotel, housing, and a conference center.

By the end of the semester, each of the six interdisciplinary teams will have undergone their own market analysis and costing exercises based on site visits. They will have assessed transportation and utilities, and interviewed with community residents and other stakeholders. Their project will culminate in a presentation to administrators and the campus architect, Gilbert Delgado.

Department of Landscape Architecture chair Peter Trowbridge said the project presents a great opportunity for students to situate issues of the built environment, both pedagogically and demonstrably, in a real-time project.

"They get to conduct research about environmental engineering and then physically create an environment that it is situated within a master plan," Trowbridge said. "They won't be focusing on just the interior or exterior, but the entire campus together, like a living machine. It will be fantastic to create that kind of showcase in New York City."

Student renderings of the Roosevelt Island project site. Credit: Roana Tirado, Rana Mirabueno, Rosaura Trejo

Trowbridge said it is an ambitious project, and a complex one, especially as Goldwater Hospital still occupies the site, but he is confident his students are well equipped to handle it, and they are excited to do so.

"There's nothing like having the reality and the consequences of what you do be meaningful," Trowbridge added. "It's helped with the momentum of the class, because they see the real value in what they are doing."

He hopes such contributions will continue as the city campus grows, from both students and faculty. The site's development timeline extends 25 years, with 300,000 square feet built by 2017, and more than 2 million square feet by 2037. The vision of the campus includes a "hub" concept, with initial focus areas in Connective Media, Healthier Life, and Built Environment.

"I see the built environment as an area where we can provide a lot of proofs of concept and help take those ideas to create tangible demonstrations," Trowbridge said.
JEEPERS, PEEPERS YardMap Project Enlists Backyard Birders in Unique Social and Scientific Experiment

Wondering where to hang the bird feeder or how to encourage successful nesting in your yard? Want to connect with other backyard birders or get local recommendations for plants that will grow well in your garden?

The Lab of Ornithology’s new citizen-science project, YardMap, aims to map the small-scale habitats in backyards, community gardens, and parks; investigate the impacts of bird-friendly and carbon-neutral practices; and share information using social media.

The process starts with a bird’s-eye view of a landscape, provided by Google Maps satellite images. Users locate their property and add habitat features such as vegetation, buildings, water sources, rocks, and bird feeders.

For backyard birders, YardMap will provide feedback on creating bird-friendly landscapes. For Lab of Ornithology scientists, the project is the basis for understanding how the management of small-scale habitats affects bird populations.

The habitat information people share will complement the tens of thousands of citizen-science bird observations the lab receives daily.

“The data can be used by spatial ecologists who have questions about the relationship between what people do in their yards and the ability of birds to successfully reproduce there,” said project leader Rhiannon Crain.

“For example, we don’t have great data about the impact of household cats on bird populations or the role that native vegetation plays in breeding success. If there is a direct relationship, YardMap should provide another source of data to get at this problem.”

MANN LIBRARY OPENS NEW CHAPTER IN ACCESS TO HISTORICAL BIOLOGICAL LITERATURE

A rich stream of historical life sciences literature from Mann Library’s renowned collections will soon be online, free and available to the public, as part of the Biodiversity Heritage Library (BHL). Mann is spearheading the new partnership between the BHL and Cornell University Library, which opens a new chapter in scholarly access to important treasures in the literature of the biological sciences. The BHL is a nonprofit consortium of museums and libraries that cooperate to create a digital “biodiversity commons” of historic scientific literature that would otherwise be highly fragmented or possible to view at only a limited number of physical libraries. Participating institutions—which all contribute content to BHL’s online library—hail from the U.S., Europe, Australia, and China. Cornell is the second academic institution to become a member of BHL, joining Harvard Library. The next focus of Mann’s participation will be the digitization of Cornell’s entomology collection, which is one of the largest and finest in the world.

PLANTATIONS AIDS TO ENHANCE VISITOR EXPERIENCES

There’s more to the Cornell Plantations than meets the eye. Over the course of the next year, visitors to the Cornell Plantations will be greeted by a wealth of beauty and information courtesy of a $20,000 grant to enhance visitor services from the Stanley Smith Horticulture Trust.

“Currently, due to the limited interpretation in the F.R. Newman Arboretum, many visitors view the space as a beautifully manicured park, not as an arboretum with significant plant collections that are used for educational and research purposes,” said Sarah Fiorello ’98, interpretation coordinator at the Plantations. “It’s our hope that these visitor enhancements will help bring a fuller awareness of plant diversity, how plants affect human well-being, and encourage gardening and land management that conserves biodiversity.”

Expanded services for visitors will include new interpretive and way-finding signs as well as self-guided audio-visual tours via mobile phones that highlight key plant collections within the 150-acre arboretum.

SHOALS SPONSORS NEW MARINE BIOLOGY CONCENTRATION

Seafaring students can now earn credits toward their degree at Shoals Marine Lab on Appledore Island, six miles off the New Hampshire Coast.

The new marine biology concentration will help prepare students for careers in aquaculture, resources management, or environmental or maritime law through coursework in marine ecology, biogeochemistry, anatomy, and physiology.

“Shoals is a nurturing ground for marine biology on campus,” said Jan Hewson, M.S. ’88, Ph.D. ’90, an assistant professor of microbiology and director for undergraduate studies in the marine biology concentration. “Although Shoals courses are not required for the major, it offers several classes, including Marine Evolution and Diversity, which count as biology core requirements.”

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WINNING the FOOD FIGHT:
Finding Local Solutions to Global Hunger

The world population is expected to reach 9 billion by 2050. But with 1 billion hungry people on Earth today, how will we feed 9 billion?

It will require both good policies and good science. There is work to be done in water management, soil quality, seeds, fertilizer, livestock production, distribution systems, nutrition, education, women’s rights, and a host of other areas. Which are CALS researchers working on? Pretty much all of them.

From Freeville to Faisalabad, we take a look at what’s being done by students, faculty and extension specialists on campus and around the world to address some of the most pressing problems facing our growing population.
GOING LOCAL, ON A GLOBAL SCALE

It was once unthinkable that our planet could support 7 billion inhabitants. But during the “Green Revolution” of the 1940s to 1970s, researchers found ways to increase yields, decrease losses, and maximize efficiency. Annual milk production per cow has quadrupled in the United States since 1944, for example, and cereal yields in the developing world have tripled.

Cornell and Cornell-educated researchers contributed critical links in the chain of progress that became the Green Revolution.

Plant breeders, who developed new seeds and especially rice varieties, are well known for their research, but “many, many people played roles” in achieving the extraordinary gains of the last century, said Alice Pell, vice provost for international relations.

Along with new plant varieties, new management techniques, and increased use of fertilizer and some pesticides, there was also progress in understanding nutrition, natural resource degradation, and the economics of food systems, Pell said.

“Simply producing food isn’t always sufficient,” she said. “You need to market it, make sure it gets into the hands of the people who need it. You need to make sure the environment isn’t being degraded in order to produce that food. You can’t use a single approach to solve a complicated problem.”

“Simply producing food isn’t always sufficient. You need to market it, make sure it gets into the hands of the people who need it. You need to make sure the environment isn’t being degraded in order to produce that food. You can’t use a single approach to solve a complicated problem.” – Alice Pell

TACKLING HUNGER INVOLVES TACKLING POVERTY

Despite these extraordinary advances, many still go hungry.

“The hunger problem is fundamentally a poverty problem,” said Chris Barrett, the Stephen B. & Janice G. Ashley Professor of Applied Economics and Management and director of the Food Systems and Poverty Reduction Integrative Graduate Education and Research Traineeship program.

Roughly half the countries in Africa don’t produce enough food to meet their needs, and poor people, especially in rural areas, can’t pay for transported food, Barrett said.

“That’s a matter of attending to the productivity of poor people so they begin to have control over their own lives,” Barrett said.

“Markets can help us, once people have the means to generate adequate livelihoods for themselves. But when they suffer high rates of illness, have little institutional infrastructure, and virtually no police protection or property rights, it’s very difficult,” he added.

According to Per Pinstrup-Andersen, H. E. Babcock Professor of Food, Nutrition and Public Policy, the main bottleneck is “very low priority to the eradication of poverty and malnutrition by developing country governments.”

Pinstrup-Andersen received the 2001 World Food Prize for his commitment to food policy research to reduce suffering and starvation among poor children.

“What’s needed is public expenditure so that the private sector can operate effectively,” Pinstrup-Andersen said. “And the governments of most developing countries do not prioritize nutrition improvements very highly because the politicians’ children are usually well-nourished.”

Governments of developed countries also share some of the blame, Pinstrup-Andersen said. Market-distorting agricultural policies in the European Union, United States, and Japan make it harder for poor farmers in developing countries to compete, he said.

THE GLOBAL GRAB FOR LAND

Skyrocketing food prices, climate instability, and declining natural resources have led governments, corporations, and wealthy individuals to size up the world’s farmland as both an investment opportunity and a hedge against food crises and political turbulence.

Often, the losers in this race for land are smallholder farmers, pastoralists, forest dwellers, and commoners, said Philip McMichael, professor in development sociology and international agriculture and rural development, and consultant to the Food and
Agriculture Organization of the United Nations and La Via Campesina.

For leaders of land-rich but capital-poor countries, land leasing and acquisition offers a chance to reduce debt, earn foreign exchange, or receive kick-backs. But by shifting their priorities from domestic production to servicing global demand, they are often unable to feed their own people. International trade rules exacerbate the problem, McMichael said. Nations should be able to consume, rather than trade, their own food, and farming and indigenous peoples should have secure land tenure to encourage environmental stewardship.

“We need to shift to a right-to-food initiative. We need to reinvigorate, restore, and promote smallholder farmers,” McMichael said.

There are up to 500 million small farms around the world, with 2.4 billion people involved in agriculture. Peasants feed at least 70 percent of the world population, McMichael said.

“Farmers have been working their land for decades and centuries. The world is better off betting on these people and supporting them than having investors acquiring land to grow environmentally unsustainable industrial crops that are increasingly fungible, depending on relative prices for food, fuel, and biomass crops.”

McMichael said he doesn’t think we can solve these problems with Green Revolution technology, whose abundance was short-term, but whose long-term sustainability is now in question—farming ecologically is key.

“Land grab is simply the tip of the iceberg. I think we really are at the beginning of a long-term historical transition. Development is no longer about improving on the past, but how to manage the future,” McMichael said. “Will it be agribusiness as usual? Or support for stabilizing rural cultures, local knowledge and sustainable farming practices?”

STARTING WITH STUDENTS IN SIMENYA

In Simenya, Kenya, the high rate of HIV/AIDS has wiped out a generation of farmers—and parents.

As a Cornell undergraduate studying abroad, Laura Smith ’07 saw the devastating consequences first hand: at one school, 20 percent of the students are orphans, and many go hungry.

The school can’t afford a lunch program, and many children have to travel far to attend, so they often leave their houses before breakfast and don’t eat all day.

“One of the things that stuck with me is, how can we teach these kids when they’re hungry?” Smith said.

Smith returned a year later, intent on helping. She sought out the school headmaster and the Simenya village chief and learned what they really needed was a school farm, to provide food for those hungry children and to teach them how to provide for themselves in the future.

Village mothers and grandmothers pitched in to help fund the project and raise money for school fees by making baskets that Smith could sell in the United States, including at Ithaca-area establishments Stella’s Barn and GreenStar.

Upon her return to her hometown of Newfield, Smith launched a non-governmental organization called Growing Hope Together with her sister Erin ’10, her mother Linda ’81, and the support of Newfield Superintendent William Hurley and a startup grant from the United Way Youth Philanthropy Grant program. Through the program, children in Newfield and Simenya are learning about farming and about each other.

Smith, now a Ph.D. student in nutrition, said the 1.5-acre farm in Simenya began with only maize, but with her encouragement and help they’ve added bananas, sweet potatoes, and several local vegetables.

“It doesn’t meet the needs of all the kids in the school yet,” she said, “but it’s a start.”

THE NEXT REVOLUTION

In Bolivia, post-doctoral associates Steve Vanek ’94, MAT ’95, MS ’02, Ph.D. ’10, and Andy Jones, Ph.D. ’11, are taking a multidisciplinary approach to see how farming and nutrition really interact in areas that suffer from chronic malnutrition.

Vanek, a crop and soil scientist, and Jones, a nutritionist, decided to challenge some assumptions made in each of their disciplines, such as: if a family grows a lot of food, its children will be well-nourished.

Young children taste test a nutritious weaning food newly created by their own mothers during a recipe trial in northern Potosí, Bolivia. Credit: Andrew Jones
Based on a survey of about 300 households, they found this was not necessarily true.

When the researchers asked whether families felt they had enough food, their answers corresponded nicely with the things one might expect: number of acres, animals, and total farm productivity.

However, that didn’t necessarily link to whether children were growing adequately, Vanek said.

Better predictors were whether families were growing six different crops instead of three, or how intensively they were managing and fertilizing their land, he said.

“Healthier soils and more diversity on the farm may also mean more nutritious diets for children, if the right choices are made along the way,” Jones said.

**WASTE NOT, WANT NOT?**

Food technology is an emerging and critical science in India, a country that produces vast quantities of fruit, vegetables, milk, and grain that are often wasted—or unsafe to eat—because only 2 to 5 percent of the food produced is subjected to safe food handling or processing practices.

Food science professor Syed Rizvi worked with Alok Jha, who came to Cornell in 2006 as a Borlaug Fellow, to establish a center of food science and technology at Banaras Hindu University (BHU). The program awards Ph.D. and master’s degrees in food science, and it will begin accepting undergraduates in 2013.

“The program is a valuable resource for farmers in Uttar Pradesh and an important addition to BHU’s agricultural curriculum,” Jha said. “I was able to apply so many things I learned at Cornell, from curriculum building to extension work, to efficient ways to keep food laboratories clean and safe.”

He also invited his Cornell mentors, Rizvi and plant breeding professor KV Raman, to train BHU faculty and staff.

The program, and others like it, are being funded in part through the Feed the Future initiative by the United States Agency for International Development and its Agricultural Innovation Partnership, launched in February 2011 with Cornell as its lead institute.

**BIOLOGY IS CULTURE**

Ecological changes in human habitats affect far more than biology, according to Karim-Aly S. Kassam, Ph.D. ’05, international associate professor of environmental and indigenous studies in the Department of Natural Resources and the American Indian Program.

In the Pamir Mountains of Afghanistan and Tajikistan, for example, Kassam is working to help indigenous populations cope with the biological and cultural changes being wrought by climate change.

The warming climate impacts not only which crops farmers can grow and where they can grow them, but it also changes the way these agrarian societies sustain their culture, he said.

“When the seasonal rhythm is disturbed, the cultures are under systemic stress. In the Pamirs, the Gregorian Calendar is used to measure time, but villagers are now plowing, planting, and harvesting two weeks earlier, so the festivals associated with these activities are out of sync, too,” Kassam said. “People’s social cohesion, as well as what they have on the table, being able to feed themselves, comes into question.”

By listening to members of the local community, Kassam discovered that prior to the Soviet Union’s imposition of the Gregorian calendar, people in the Pamirs told time using a “Calendar of the Human Body.” These habitat-specific, adaptable calendars linked parts of the body with biological, agricultural, and cultural functions, such as changes in the weather, planting, and festivals.

Many details of these calendars had been lost, but Kassam was able to track them down. Along with Cornell graduate student Morgan Ruelle, MS ’10, and visiting fellow Umed Bulbulshoev, of the University of Central Asia, Kassam established a collaborative working relationship with communities in the region. They supplemented Russian archival sources and ancient manuscripts with local interviews, and compiled 17 calendars of the human body, which they’re making available to people in the Pamirs.

“In order for us to address the concerns that communities have, we need to work with them. In tandem with our knowledge, we need to recognize the relevance of their knowledge,” Kassam said.

**ADDRESSING FOOD SAFETY**

Much of the world population is dependent on single staple crops, such as corn. In some cases, these foods can be deadly.

Rebecca Nelson, a professor of plant pathology and plant breeding and scientific director of the McKnight Foundation Collaborative Crop Research Program, studies researchers and students in CALS are providing logistical and intellectual support for an ambitious national media project, “Food for 9 Billion,” which includes public radio and television reports, an interactive website, and educational materials.

“Our hope is to reach as many ordinary people as we can with a sense of the complexity of the challenge, and also a sense that they might make a difference. So it’s not a question of waiting for things to happen, but helping make things happen,” said Ithaca-based producer Jon Miller.

Find out more at: periodicals.cals.cornell.edu/feeding

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carcinogenic mycotoxins, which are poisonous byproducts of fungi.

In one area in Western Kenya, she found that 60 percent of maize samples contained fumonisin over the legal limit. Fumonisin has been shown to stunt growth, cause cancer, and lead to developmental defects.

An important tool to reduce mycotoxins and to combat a host of other productivity-sapping diseases is genetic resistance. Nelson’s lab conducts field studies in Aurora, N.Y., and in Africa, to identify natural genetic variants of maize genes that can protect crops and reduce losses and health burdens.

“I was born at a time when there was a lot of excitement about dealing with the problem of world hunger,” Nelson said. “Then I grew up with a lot of cynicism that science would save the world.”

But she remains hopeful when she sees the work being done by her colleagues and her students.

“There’s a lot of fantastic energy and commitment here,” she said. “I’m filled with hope because I see the creativity and fighting spirit of the next generation. If you care, you can make a huge difference.”

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**THE SCIENCE OF NUTRITIOUS, PRODUCTIVE PLANTS**

**Green Beans**

are Kenya’s most important horticultural export, earning farmers five to 10 times more than the dry beans they traditionally grow. However, they can currently only be grown at high altitudes, where the climate is more temperate but land is harder to come by. Susceptibility to high temperatures and bean rust fungus have been further barriers to the expansion of this lucrative market. By tapping traits in varieties developed in Cornell’s breeding program, Phillip Griffiths has been able to offer some solutions and create new opportunities for low altitude farmers. He now hopes to apply lessons learned while combatting black rot in New York cabbage to another important African vegetable, sukuma wiki.

**Rice**

breeder Susan McCouch, Ph.D. ’90, is a pioneer in using wild rice varieties to enhance the performance of modern, high-yielding cultivars and preserve the diversity of the crop. The System of Rice Intensification (SRI) International Network and Resource Center, also based at Cornell, advocates for the increased productivity and sustainability of irrigated rice through changes in the management of plants, soil, water, and nutrients. SRI researchers have found that simple methods such as transplanting seedlings at the right time, spacing them farther apart, and keeping soil aerated can lead to twice as much yield and up to 50 percent less water. Similar practices are now being adopted for other crops, including wheat, sugarcane and millet.

**Wheat**

yields need to increase one ton per hectare by 2020 to keep pace with the growing population. Rising temperatures and new, virulent diseases like Ug99 pose additional challenges and are already exerting pressure on developing countries, where wheat provides 20 percent of the daily protein intake for the average person. Luckily, enhanced breeding techniques, such as the shuttle breeding practiced by adjunct professor Ravi Singh and the molecular marker work done by geneticist Mark Sorrells, are helping to create new durable, disease resistant varieties that will also increase yields. And the Durable Rust Resistance in Wheat project, based at Cornell under the leadership of Ronnie Coffman Ph.D. ’71, continues to lead an international effort to mitigate the threat.

**Corn**

is essential to the diets of hundreds of millions of people in developing countries, yet the staple often does not provide a sufficient supply of vitamin A; this, in turn, can lead to health problems like xerophthalmia, an eye disease that affects some 40 million children. Corn contains carotenoids, such as beta-carotene, which our bodies convert to vitamin A, but very few varieties have naturally high carotenoid levels. Edward Buckler, an adjunct professor of plant breeding and genetics, has discovered two genes in corn linked to higher beta-carotene levels; certain variants of those genes could increase provitamin A levels up to 16-fold. He is also studying the flowering time of corn, which affects the crop’s adaptability to different environments across the globe, and drought tolerance.
BRINGING CORNELLIANS CLOSER TO THEIR FOOD

For the past three years, thousands of pounds of fresh produce have been grown in the rich soil on one end of Cornell’s sprawling campus and served to thousands of hungry students on the other.

Several of the steers that graze on the grass at Cornell’s Teaching and Research Center in Dryden end up nourishing diners at Trillium.

And food waste is sent to Farm Services, where it is composted and used to grow next year’s crops for the dining halls, completing a cycle that contributes to the university’s commitment to sustainability.

The growing collaboration between Cornell Dining and the farms operated by the Cornell University Agricultural Experiment Station is evidence of a concerted effort to increase the share of locally grown food served on campus, and research done on those farms is also helping promote sustainable agriculture and food systems in communities that are increasingly hungry for healthy food produced nearby.

FROM THE FIELDS OF FREEVILLE TO THE TABLES OF TRILLIUM

At Campus Area Farms, supervisor Tim Dodge sold about 15,000 pounds of research-grown potatoes to Cornell Dining last year. At the Freeville Farm, where 30 acres of cropland have been certified organic, manager Steve McKay sets aside about four acres for sweet corn and butternut squash to feed hungry students in dining halls across campus.

Beef is the latest addition to the local foods offered on Cornell menus. Since March of 2010, Cornell has purchased three steers of cattle per week from local farms, amounting to 59,221 pounds of locally raised and processed beef. The steers are finished at the Cornell Teaching and Research Center for three months before being processed at a family-owned slaughterhouse in nearby Troy, Pa. Cornell uses the entire animal, serving the prime cuts of local beef in Cornell Dining’s all-you-care-to-eat dining rooms and Cornell Catering.

“This is an ongoing program that we intend to continue to grow,” said Cornell Dining director Gail Finan ’69. “Not only is it part of our commitment to sustainability, but it will put thousands of dollars in the hands of local farmers and businesses.”

Students and the public will have another way to connect more closely with their food on campus when the new four-story Stocking Hall building is unveiled next spring. The project started in the fall of 2010 with $105 million from the State University Construction Fund, and it will give both the Department of Food Science and Cornell Dairy new state-of-the-art homes.

The open design of the dairy plant encourages the public “to better understand how our food is made; how milk is processed and packaged,” according to Jason Huck, MS ’06, general manager of Cornell’s dairy operations. Its glass front, observational balcony and “how it’s made” educational displays are designed to prompt viewers to think more about the ice cream they are about to enjoy in the adjacent Dairy Bar.

“It will give the general public a view of a dairy plant they wouldn’t normally see and help folks understand how milk is transformed from cow to the cup—or cone for those ice cream lovers,” he said.

The adjacent Stocking Hall lobby also includes an extension conference room, which will allow the facility to continue its mission of teaching and research as well as public education. Huck said not only will the public learn from the new building, but New York State Department of Agriculture and Markets inspectors, industry personnel, and graduate students will all benefit from trainings conducted at the enhanced facility.

Although the dairy plant has ceased making the popular Cornell ice cream during the renovation and has stopped packaging all types of milk for on-campus consumption, it continues to produce yogurt and pudding products. It also pasteurizes and packages Cornell Orchards’ cider, as well as a variety of other bulk-packaged juices and seasonal eggnog. These products are distributed to dining areas and kitchens across campus, and they are packaged for sale at Cornell Dining convenience stores and the Cornell Orchards retail store.

Once the new plant is up and running, it will begin production of fluid milk and ice cream once again.

“We’re lucky because we have a vital community surrounding Cornell with a lot of activity relating to the food system and sustainability.”

- Laurie Drinkwater

“On the coming months, we will begin to take suggestions for new ice cream flavors from Cornell Dairy fans following us on Facebook and Twitter,” Huck said.

With enough interest, Huck said they would like to make a frozen yogurt and soft serve mix for campus dispensers. They’re also exploring the feasibility of drinkable yogurt and brewed ice tea products.

The plant is also giving a nod to local cheese lovers. Working with scientists in the Department of Food Science and the dairy industry, Cornell Dairy is developing Cornell Big Red Cheddar, a medium aged cheddar wheel that will be sold on campus and served to guests at the
Statler Hotel and at Cornell Catering events. The first few batches of the cheese will be taste tested later this year.

REACHING OUT TO SMALL FARMERS AND COMMUNITIES

The College of Agriculture and Life Sciences has long supported farming in its many forms, and its research and innovation in the fields continues to evolve in response to emerging needs and interests. Recently this has manifested itself in a variety of ways.

A five-year collaboration between Cornell, Ithaca College, the University of Wyoming, and five communities in three states aims to engage students, faculty and staff in their local food movements through community-based learning and action research.

Funded by the U.S. Department of Agriculture, the Food Dignity Project is being led by Christine Porter, Ph.D. ‘10, an assistant professor of public health at the University of Wyoming. Cornell participants include Laurie Drinkwater and Scott Peters from horticulture, Philip McMichael from development sociology, Jonathan Matthew Russell-Anelli, MS ‘98, Ph.D. ‘00 from crop and soil sciences, and Suzanne Gervais, Ph.D. ‘99 from the Division of Nutritional Sciences. Jemila Sequeria, coordinator of the Whole Community Project for Cornell Cooperative Extension of Tompkins County, is providing leadership for the Food Dignity Project in the Ithaca community.

“We’re lucky because we have a vital community surrounding Cornell with a lot of activity relating to the food system and sustainability,” Drinkwater said.

In her own research, Drinkwater often works with local vegetable and grain farmers to improve their nutrient and soil management practices, which gives her students excellent experience in the field and also gives local farmers like Red Tail Farm and Blue Heron Farm insights on how to improve their own farming practices.

“In particular, we’ve been focusing on sustainable soil management practices that help to maintain their soil fertility over time and reduce greenhouse gas pollution, by working with cover crops,” she said.

The Cornell Small Farms Program supplements such work with established farmers through an ambitious campaign to educate and inspire beginning farmers across the region: the Northeast Beginning Farmers Project.

Program Coordinator Violet Stone said the project has revolutionized services to small farmers. From the project website, www.nebeginningfarmers.org, aspiring farmers can read tutorials, use online worksheets, and watch informative online videos featuring everything from in-depth interviews with successful farmers to up-close methods of farm operations, like chicken processing.

“Basically, you can work your way through the templates and end up with the foundation for a business plan,” Stone said.

They also offer about 20 online courses during the farming off-season, taught by educators and farmers, and they are working with agricultural educators to bring the craft of farming back into the classroom, Stone said. In the future they hope to cater some of their services specifically to urban and minority farmers.
FEEDING A NEED

Food grown on campus is also used to feed the hungry across the community. This past year, Steve McKay’s Freeville research farm donated 174,000 pounds of produce to area pantries, including Loaves and Fishes in Cortland, the Food Bank of the Southern Tier, and Friendship Foods of Ithaca, which increases access to fresh vegetables for families in need. Cornell Orchards, which sells around 670,000 pounds of apples per season, also donated around 15,330 pounds of fruit to local charities last year.

A new collaboration with farmers and New York’s food banks hopes to increase the amount of food donated directly from farms to the state’s hungry. Called gleaning, it is an ancient concept that dates back to the medieval feudal system, when farmers and large landowners were encouraged or required by law to allow the poor to gather crops in the field after the harvest. These days, gleaning generally refers to the collection of food from fields left behind because of mechanical harvesting losses, cosmetic blemishes or lack of markets for the crops, or from farmers’ packing lines and storage houses.

The Cornell Gleaning Project was launched in the summer of 2011 to answer the call of farmers who wanted more guidance about the opportunities and obstacles of gleaning.

Food bank directors also expressed an interest in New York farmers as sources of food for donation because the food is locally grown, farmers are perceived to be community-minded, and New York lacks the volume of food processing and manufacturing facilities that are sources of donations in other states.

“We have got to go to the source to get food donations. The more money that is invested in the product [as it moves through the supply chain], the harder it is to get it donated,” said Peter Ricardo, director of special nutrition projects for the Food Bank of Central New York.

Although many farmers expressed a strong desire to increase donations from their farm, they were also wary about the potential liability of allowing volunteer harvesters on private property.

The research conducted by the group—a collaboration between Cornell Cooperative Extension, the New York State Agricultural Experiment Station in Geneva, and the Cornell University Agricultural Experiment Station—did find several limiting factors, including access to gleaning programs and suitable logistics for their success.

In a report presented to the New York State Council on Food Policy, they also noted that in some cases, it is useful for unharvested crops to be left in the field to decompose and add organic matter back to the soil, or to suppress weeds and reduce erosion.

But they also uncovered many benefits throughout the food supply chain, and future plans include a gleaning pilot project and the development of guidelines for farmers who want to donate food.

BREAKING THE CHAINS

In conjunction with these efforts, two economists at the Charles H. Dyson School of Applied Economics and Management—Miguel Gómez and Edward McLaughlin, the Robert G. Tobin Professor of Marketing—have devoted some of their research to comparing local and mainstream food supply chains.

As part of a larger, nationwide study conducted in 2010, they found that the lowest priced apples in Syracuse were those sold at the farmers market, contrary to the common perception that prices at farmers markets are often higher than in supermarkets.

“This finding challenges the conventional view that farmers markets target primarily affluent customers who are willing to pay premiums for local products,” Gómez said.

They suggest that public policy makers should release certain constraints on local growers to combine the best of local and mainstream distribution channels and to enhance links with established infrastructure, such as supermarkets and food service.

Such findings are being put into practice by the Cornell Farm to School Program, which works to integrate more local produce into institutional settings, such as grade schools and colleges. Its use of outreach education and research to promote healthier foods in schools in a way that supports local farmers recently prompted the Mother Nature Network to list it among the top 10 “Most Impressive Farm to School Programs.”

Diners at Trillium get to enjoy local beef and produce grown on Cornell farms. Credit: Robyn Wishna
CALS Class of 2012

Senior Portraits

From naming one of the top species of 2012 to empowering young women in Tompkins County to addressing malnutrition in the Andes, the works of these 12 CALS seniors represent and reflect the breadth and depth of the College of Agriculture and Life Sciences itself.

More photos will be on display in Roberts Hall during graduation weekend, and then in Mann Library Gallery.

Photos: Kent Loeffler | Text: Ellen Leventry ’95 & Hannah Stamler ’12
Arjun Potter
At 9 years old, Arjun Potter was the youngest member of the New Haven, Conn., bird club. At 22, he is one of only a handful of people to have studied the White-naped Tit, and he will be writing his honors thesis on this rare bird. This summer, the natural resources major will be researching endangered wild cattle on the island of Java while on a Fulbright Scholarship.

More: periodicals.cals.cornell.edu/arjun

Rachel Boochever
For Rachel, Facebook posts, text messages, and emails are more than just a daily ritual—they are a microscope through which to view personality disorders. A communication major, her senior honors thesis analyzes the language used in social media in relation to psychopathy, narcissism, and Machiavellianism. After graduation, she will be applying the research skills she's learned at CALS as an analyst at The Nielsen Company.

More: periodicals.cals.cornell.edu/rachel

Alfonso Doucette
Not only does plant sciences major and orchid taxonomy enthusiast Alfonso have an orchid named after him (Maxillaria x doucetteana), but his recent description of one of the flowering plants, Dracula immunda, recently garnered a nomination for the 2012 "Top Ten New Species" list, compiled by the International Institute for Species Exploration. These honors recognize his work toward a career in plant systematics, in which he hopes to discover why orchids are such a diverse family.

More: periodicals.cals.cornell.edu/alfonso
Claudia Pazlopez

Claudia's passion for food comes from her parents: her father's Peruvian roots and her mother's sensitivities to certain food preservatives. While her mother's allergies prompted her to start asking questions about food design, her current research focuses on the nutrition of high-altitude communities in developing nations in South America. When not combining science with social justice, this Hunter R. Rawlings III Presidential Research Scholar takes part in Institute of Food Technologists design competitions.

More: periodicals.cals.cornell.edu/claudia

Lee Carlaw

At the age of seven, Lee strapped himself to the roof of his Bethesda, Md. home so he could witness first-hand the wonder and power of a violent thunderstorm. While no longer strapping himself to buildings, Lee, an earth & atmospheric sciences major and broadcast meteorologist for Ithaca College's television station, is still fascinated with severe weather and will be researching how improvements in radar tracking systems can save lives as global climate change affects storm intensity.

More: periodicals.cals.cornell.edu/lee

Shauna-kay Rainford

Born in Jamaica and raised in Florida, Shauna-kay saw first-hand the effects of air and water pollution on both urban populations and sensitive eco-systems. Coming to Cornell as an engineering student, the Hunter R. Rawlings III Cornell Presidential Research Scholar soon decided to pursue her passion for conservation as a natural resources major, examining the effects of 24 different plants, including the white pine, on the American toad. This past summer she presented her findings at the Ecological Society of America conference.

More: periodicals.cals.cornell.edu/shauna-kay
Caitlin Dreisbach

When Caitlin transferred to CALS her sophomore year, she wasn’t sure what she wanted to study. Three years later, she has created a completely unique program combining communication, biology & society, and a minor in global health. After spending a semester in Nepal, she has incorporated her experience into an honors thesis about the transition of traditional and western medicine in the rural Himalayas.

More: periodicals.cals.cornell.edu/caitlin

Casey Knapp

From Organic Valley’s “Generation Organic” to TEDx in Manhattan, Casey isn’t your grandpa’s dairy farmer. Hailing from a family of farmers who transitioned from conventional to organic milk production, this animal science major has attended conferences and gatherings in the U.S. and abroad on food and nutrition, sustainable agriculture, and national agricultural policy. After graduation, he plans to head to Texas or California to pursue opportunities in the industry.

More: periodicals.cals.cornell.edu/caity

Matthew Linderman

When Matthew leaves the Dyson School of Applied Economics and Management, he’ll already have a great portfolio, thanks to internships at Citigroup and Deloitte and Touche. But it’s one extracurricular in particular that will make his resume stand out: founding the Cornell Business Review. From start-up to campus establishment, the magazine, which covers business issues and trends relevant to Cornell students and alumni, now has a run of over 3,000 copies a semester.

More: periodicals.cals.cornell.edu/matt
Janet Nwaukon

Janet may hail from Springfield Gardens, N.Y., but her heart lies with the young ladies of Project Lansing. The biology & society major started the initiative to provide female mentors to residents of the Lansing Residential Center, a juvenile detention facility for women ages 13-17, located just north of Ithaca. Mentors teach lessons on nutrition, physical awareness, HIV/AIDS education, etiquette, CPR/First Aid, dancing, singing, and beauty in order to prepare these young women for futures full of possibility.

More: periodicals.cals.cornell.edu/janet

Won Joon Seol

Joon knows a thing or two about dedication, following in his grandfather's and father's footsteps in the family landscape architecture business and returning to CALS to finish his landscape architecture degree after a two-year hiatus serving in the Republic of Korea Marine Corps. Joon is just as dedicated to creating innovative sustainable landscape design that reintroduces nature to urban environments and provides eco-friendly park and recreation space.

More: periodicals.cals.cornell.edu/joon

Kaitlin Hardy

Varsity gymnast Kaitlin confronted her epilepsy the same way she approaches her favorite apparatus, the balance beam: face on. Co-founder of FACES (Facts, Advocacy and Control of Epileptic Seizures), the neurobiology & behavior major helps those with epilepsy and their families cope with seizures, raises awareness about their social and psychological effects, and combats the stigma surrounding the condition. The group also manages Cornell's first student-run laboratory, which conducts research as well as mentoring and educational programs for Ithaca youth.

More: periodicals.cals.cornell.edu/kaitlin
FESSENDENS
The Fessendens are hardworking people. The first to enroll as Cornellians—sister and brother Marcia '49 and Edwin '54—grew up on a three-generation family farm in King Ferry, N.Y. Marcia (Fessenden Helbig), a College of Human Ecology graduate, enjoyed a long career as a school teacher and still works at a school in Connecticut, said nephew Daniel Fessenden '87.

With his College of Agriculture and Life Sciences degree in hand, Ed Fessenden made the fourth generation of the Fessenden family farm the most successful yet. From 20 milking cows, Ed expanded to 120 milkers and 700 acres of crops. Today, the family farm milks 600 cows and grows crops on 1,200 acres.

The Fessenden family boasts 11 current or former Cornell students, including nine in CALS—number 12 will be Daniel's daughter Madeleine, who was recently accepted early decision to the Hotel School.

Farming continues to be an important vocation, but family members have also used their Cornell educations in the fields of finance, public service, agri-business, philanthropy, and education. For example, Ed's sixth child, John Fessenden '85, works for Farm Credit East. He also serves on the Animal Science Animal Industry Advisory Council and is currently on the ProDairy Advisory Council and on the board of FarmNet. Brother Daniel served in the New York State Assembly from 1993 to 1999, and is currently director of Tompkins Trust Company and executive director of the Fred L. Emerson Foundation. He serves on the University Council and is a past member of the CALS Advisory Council. Granddaughter Kathleen Fessenden McAndrews '02 is a dairy nutritionist and

YUNKERS
Carl Yunker began his formal education in a one-room schoolhouse in Wyoming County, N.Y., and ended it at Cornell, becoming the first of three generations of Yunkers to graduate from CALS.

In high school, Carl's agriculture teacher was so impressed with his potential, he encouraged Yunker to become the first in his family to attend college. He enrolled at 16 years old and graduated in 1944.

Being a younger brother, Yunker bought his own farm. Now overseen by Carl's son Craig Yunker '72, CY Farms is a 5,600-acre diversified operation, producing field crops, vegetables, dairy heifers, and turfgrass sod.

Carl's children, grandchildren, and grandchildren-in-law—seven total, six of them CALS graduates—have used their Cornell degrees as they pursued careers in agriculture, bioengineering, finance, business, and the military.

Craig believes his family has remained committed to Cornell over the generations because of the perspective and worldly exposure the university provides its students.

"Maybe it's because we came from humble backgrounds and Cornell exposed us to the world," he said. "It was just very impressive and really gave us a lot of depth. So we got more than an education—we got exposure and perspective that I think we wouldn't have gotten at some other colleges."

During the capital campaign that began in 2006, Craig said he strongly wanted to establish a Yunker Family Fund for Excellence in CALS. He shared the idea with all the CALS graduates in the family and found that each one wanted to be involved.

"I'm very proud that every member of the family is contributing," he said.

Members of the Yunker family donate their time, as well. Christian '02 serves on the board of Genesee County Cooperative Extension, and Craig, a CALS Outstanding Alumni Award recipient, serves as a university trustee, vice chair for the Government Relations Committee, member of the Buildings and Property Committee, and co-chair for the 40th reunion campaign drive. He has also served on the Executive Committee, the Academic Affairs Committee, and the CALS Advisory Council.

GELLERTS
The first member of the Gellert clan to attend Cornell, Imre Thomas Gellert '27, may have gotten more of a Cornell education when he left school than he ever did in Ithaca. Gellert left Cornell early when he was needed to help run his family's luxury garment business. Later, sensing an opportunity, he sold the business and bought a poultry farm in Hillsdale, N.Y.

"Not knowing anything about poultry, we started a poultry farm," said son George Gellert '60, MBA '62, JD '63. "We got all our knowledge from Cornell, from the extension service."

In what would become a pattern for the Gellerts, the poultry farm became one of the largest in the Northeast.

Imre's example of Cornell attendance and gusy entrepreneurship has now passed down through three, and soon four, generations of Gellerts. In his direct line, there have been 15 Cornellians with 25 Cornell degrees between them, including 14 CALS grads. The youngest is Matthew Gellert, who will be entering this fall.

"My brothers and I all studied business," George said. "Cornell gave us the background to really be entrepreneurs."

And how. After his graduation, George joined his father-in-law's
operates a dairy farm in Minnesota. She is a board member of the Cornell Club of Minnesota and is chair of Cornell Alumni Admissions Ambassador Network.

Service to Cornell is also a family tradition—Ed received the Outstanding Alumni Award from CALS in 2010 in recognition for his decades of volunteering in myriad capacities, including the CALS Regional Committee, Dean’s Advisory Council, and Campaign Committee, and Daniel received the Young Alumni Achievement Award in 1995.

The Fessenden’s connection with Cornell began largely because of proximity, but family tradition and Cornell’s excellent offerings have kept the younger generations coming back, Daniel said.

“The fact that Cornell provides so many excellent educational offerings in a broad range of fields continues to attract the next generation of Fessendens,” he said.

Cornellians run in clans— it seems they all bleed Big Red. Several generations of alumni leave legacies to the university through their accomplishments and service. Here are just a few notable families. To nominate others, contact cals-comm@cornell.edu

WICKHAMS

In the 1930s and ’40s, Irwin Wickham did just fine for himself without a college degree. A busy man and a very good entrepreneur, Wickham owned a sauerkraut factory, farmed cabbage and other crops, and served as town supervisor in Stanley, N.Y.

But being smart, as well as busy and entrepreneurial, Wickham saw the growing value of higher education and encouraged his son, Donald I. Wickham, to go to college. He chose Cornell, graduated in 1955, and became the first of 12 Wickhams to do so—all from CALS. Current agricultural sciences and interdisciplinary studies student Paige Wickham will soon bring the total to 13.

Although the original family farm has been sold, the younger generation still holds strong ties to agriculture. Several family members farm, and three work for agricultural cooperatives, said Greg Wickham ’78, who works as CEO at Dairylea Cooperative Inc.

Along with their commitment to agriculture, the Wickhams have remained committed to Cornell. Don and sons Greg, Andrew ’81 and Bill ’86, and Bill’s son, Kevin ’11, are all active members of Alpha Gamma Rho fraternity. Don, Bill, and Greg served on the fraternity’s fundraising committee and helped raise $1.4 million to renovate the fraternity house at 203 Highland Ave. The family personally gave between $50,000 and $70,000, and a wing of the house is named in their honor.

“Because of our agricultural heritage, the College of Agriculture, coupled with the other colleges, was very, very important to us,” Greg said. “It’s just a great Ivy League institution with agricultural roots, and so you’ve got a blend of people there who are from the big city as well as from the country. We all found that very appealing and comfortable.”

THE NEXT GENERATION...

Jeremy March ’13 and J’avail ’15 and Xavier Bourne ’14 wasted no time making a family connection to Cornell—the three siblings all entered the university last fall.

Ithaca natives who were raised by their grandmother on East Hill, J’avail entered Cornell straight from Ithaca High School, while Jeremy and Xavier both transferred (from Tompkins Cortland Community College and Vaughn College of Aeronautics and Technology in Queens, N.Y., respectively).

Jeremy and J’avail are both studying development sociology in CALS while Xavier has chosen the School of Hotel Administration.

“My first semester at Cornell was definitely a learning experience,” J’avail said. “I can now start to call Cornell my own.”

“Meeting great people and getting involved with clubs around campus enhanced my experience greatly,” Xavier added.

business, Atalanta Corporation, and grew it into what is now the Gellert Global Group, a food importing industry with combined revenues of nearly a billion dollars. Many other family members are involved in managing Gellert Global Group and its daughter companies. For example, William Gellert ’83, MBA ’90, runs Gellman Management Corporation, which operates Five Guys and Cinnabon, among others. The handful of family members who didn’t study business have gone into marketing, engineering, and family literacy.

The Gellert family’s service to Cornell has been equally stellar. To name just a few: George is a Presidential Councilor and former Trustee; he and brothers Phil ’58, MS ’60; Joe ’68, MBA ’71; and Robert ’63, MBA ’65, are all on the University Council. In the younger generation, Tom Gellert ’94, MBA ’99, JD ’00, is on the CALS Advisory Council, and Andrew ’89 is on the Food Science Advisory Council.

Among the generation of George’s and his brothers’ children, only three went somewhere besides Cornell.

“They’re sort of the brown sheep of the family,” he joked. “We hope to continue to have many more Cornellians.”
THURSDAY, JUNE 7
Earth and Atmospheric Sciences Open House
10:00 a.m. – 4:00 p.m., Snee Hall Atrium
Visit the Timothy N. Heasley Mineral Museum and inspect our mastodon and fossil exhibits while keeping an eye on the earth's last rumblings at the Snee earthquake seismograph. Enjoy a stroll with the self-guided tour through the Engineering Quad Rocks.

Liberty Hyde Bailey Lecture, “Social Media Matters”
1:00-2:30 p.m., Call Alumni Auditorium, Kennedy Hall
Social media is in our everyday lives. It presents opportunities for increased connectivity, as well as deception. Did the text message you just receive from your friend contain a “baker lie”? Is Facebook an ego booster or buster? The panel will explore how we are all affected by ever-changing social media outlets, how social media is impacting health, and the similarities between Twitter and Victorian diary entries. And find out how social media research will be incorporated in the new CornellNYC Tech initiative.
Moderator: Geri Gay, Kenneth J. Bissett Professor and Chair of Communication and Stephen H. Weiss Presidential Fellow, Director of the Interaction Design Lab
Panelists: Assistant Professors, Jeremy Bimholz, Sabra Byrne, and Lee Humphreys

FRIDAY, JUNE 8
Earth and Atmospheric Sciences Open House
10:00 a.m. – 4:00 p.m., Snee Hall Atrium
Visit the Timothy N. Heasley Mineral Museum and inspect our mastodon and fossil exhibits while keeping an eye on the earth's last rumblings at the Snee earthquake seismograph. Enjoy a stroll with the self-guided tour through the Engineering Quad Rocks.

CALS Admissions Information Session
10:30 – 11:30 a.m., Plant Science 233
This information session includes an overview of the college, its academic opportunities, and the application process. Students who wish to learn more about the College of Agriculture and Life Sciences (CALS) and its majors are encouraged to attend. The session, which includes a question and answer section, lasts approximately one hour.

Shiny Mobile Devices, or, There’s an App for That!
1:00 p.m., Stone Computer Classroom, 1st Floor Mann Library
Come hear the latest updates on new trends and applications for the use of iPads, Kindles, and other mobile devices in getting information. We’ll be demonstrating some of our favorite apps and giving advice on how to pick the best ones for accessing the wide range of electronic resources that are available to Cornell alumni.

Landscape Architecture Open House
1:30-4:30 p.m., 460 Kennedy Hall
The undergraduate landscape architecture degree is the only one of its kind in the Ivy League. Visit the studio and mezzanine, enjoy drinks and snacks, and chat with faculty, staff, and fellow alumni.

COMMUNICATION DEPARTMENT OPEN HOUSE
2:30 – 3:30 p.m., Kennedy Hall, 3rd Floor
This reception is for alumni and friends of the Department of Communication. It is a chance to connect with Communication alumni who are returning to campus, as well as to mingle with current faculty and students from the department. Stop by to learn about the exciting things happening in the Department of Communication at Cornell.

State of the University Address
10:30 a.m., Bailey Hall
Cornell University President David J. Skorton will deliver his annual Reunion State of the University Address. All registered Reunion attendees and their guests are welcome.

Taste of Ithaca: All-Alumni Lunch
11:30 a.m. – 1:30 p.m., Barton Hall
Take in the sights and sounds of Barton Hall at Reunion - enjoy music, alumni of all ages, and food by Cornell Catering. Lunch tickets available on site.
Plant Biology Alumni Gathering
11:30 a.m. - 1:00 p.m., G37 Plant Sciences, MacDaniels Room
Join us for some light refreshments while visiting with fellow Plant Science and Plant Biology alumni and current and former faculty.

Do-It-Yourself Cheesemaking with the Cornell Cheese Club
11:30 - 1:00 p.m., 360 MVR
Join founders of the Cheese Club at Cornell at a hands-on session to learn the ins-and-outs of making cheese at home (no experience required). We'll set you straight with a crash-course on rennet, cultures, milk, and stretching curd by hand. Then we'll all get to stretch cheese curds into milky, delicious, fresh mozzarella. Tasting of curd and mozzarella masterpieces will be encouraged.
Participation is limited to 50 people. Sign up in advance by emailing Kristine Lange at ks5@cornell.edu or calling (607) 255-8711.

Wine Tasting
1:30-3:30 pm, Trillium, Kennedy Hall
Savor the flavor of New York wines and meet winery owners at this very popular annual Reunion event. Free admission to all alumni and guests,
alumni notes

As the world prepares to celebrate the 2012 Olympics in London, the College of Agriculture and Life Sciences reflects on some of its own star athlete-scholars. Several went on to take home medals for their countries, while others made their marks on the ice, in the gym, or as managers for top teams.

REBECCA JOHNSTON ’12

Canadian Rebecca Johnston ’12 has been playing hockey since she was 4 years old, including many years competing on Ontario boys’ teams before joining the Cornell women’s hockey team in 2007 as a forward. After two impressive seasons with Cornell—she led the Big Red in both goals and points—scouts picked Johnston to try out for a spot on Team Canada for the 2010 Winter Olympics. The decision to take a year off from Cornell paid off handsomely: The team won the gold. Johnston was the second Cornell women’s hockey player to compete in the Olympics, joining Dana Antal, who played in 2002 in Salt Lake City to win a gold medal with Team Canada.

Olympic gold medalist Rebecca Johnston ’12 on the ice with the Cornell women's hockey team. Credit: Patrick Shanahan

MORGAN UCENY ’07

Fans of track star Morgan Uceny ’07 are hoping 2012 is the year for Big Red gold. Uceny, a communications graduate with a minor in applied economics and management, will be trying in late June to qualify for the London Olympic Games in the 1,500-meter. Uceny won the 1,500 at the 2011 Diamond League and is the reigning “world’s best” in her distance, according to Track & Field News. At Cornell, Uceny was a four-time All-American. She now trains in Mammoth Lakes, Calif., under coach Terrence Mahon.

Olympic hopeful Morgan Uceny ’07 was a four-time All-American when she ran at Cornell. Credit: Cornell Athletics

KYLE DAKE ’13

At the NCAA tournament in St. Louis on March 17, Kyle Dake ’13, development sociology, became the first wrestler to win three national titles in three different weight classes. That win also scored him one of 10 wildcard positions for the 2012 Olympic Team Trials in men’s freestyle, which will be held April 21-22. Wrestling at 157 pounds for the Big Red, Dake went 35-0 this season. Last season he won the title at 149 pounds, and as freshman he took it at 141 pounds. Dake, along with Cam Simaz ’12 and Steve Bosak ’12, nutrition and business management, also set a Cornell record by winning three NCAA national titles. “It’s amazing to do something that no other wrestler has been able to do, and I don’t think that I could have done what I have at any other university,” Dake said.

Kyle Dake ’13 made wrestling history when he won the NCAA Div. I National Championship at the 157-pound weight class. Credit: Lindsey Mechalik
THE ULTIMATE FIGHTER

By Krisy Gashler

Wall Street broker by day, professional mixed martial arts fighter by night. It may sound like the setup for a comic book, but it's real life for John Cholish '06.

At Cornell, Cholish excelled in applied economics and management while helping the Big Red's Varsity Wrestling Team place fourth and fifth in the NCAA Division I National Championships. He said camaraderie among Big Red wrestlers is one of the reasons he chose Cornell.

After graduation, Cholish took a job with Morgan Stanley. Wanting to stay in shape, he found the Renzo Gracie gym one block away and began training in jiu jitsu.

Just six months later, Cholish did his first professional MMA fight. Though he lost that first fight, he's won all eight since. Ultimate Fighting Championship, signed Cholish to a professional contract over a year ago. His next fight is May 5 at the Izod Center in New Jersey, and it'll be broadcast on FOX.

Somehow, Cholish's phenomenal MMA rise hasn't dampened his Wall Street prospects. He now works at Beacon Energy Group, a subsidiary of Intercontinental Exchange, where he brokers natural gas and crude oil options.

"I don't have a lot of free time, but I love both of my jobs," Cholish said. "That's the biggest thing I took from Cornell: when you're a Division I athlete, you really have to be good with time management."

Cholish credits his parents with the support and work ethic that led him to Cornell and now to double professional success. And while Dad comes to every fight, Mom can't watch, Cholish said.

"She's hilarious. I called one time after a fight to say, you know, 'Mom, I won,' and she said, 'How's the other guy? Is he OK?' I'm like, 'Yeah, I'm fine, mom. Thanks.'"

LEADING THE PACK

It's the athletes who get all the glory, but for sports to move beyond neighborhood courts or icy ponds, it takes managers. That's why sports fans in Toronto should keep a special place in their hearts for Larry Tanenbaum '68. As Chairman of Maple Leaf Sports and Entertainment Limited, Tanenbaum is a management-style triple threat: he's a Governor of the NBA (Raptors), the NHL (Maple Leafs), and Major League Soccer (Toronto FC). At Cornell, Tanenbaum was a student manager of the Big Red hockey team and an economics major. Much of Tanenbaum's professional career has been spent in heavy construction and broadcasting: his Kilmer Van Nostrand Co. built subways in Caracas, Atlanta, Calgary, and Toronto; and CUC Broadcasting Limited, where he sat on the board, helped introduce cable TV to the United Kingdom.

A lifelong philanthropist and volunteer, Tanenbaum has served on a host of educational, municipal, and community boards, including the Cornell University Council.

For Toronto Raptors fans and hard-core NBA enthusiasts, Bryan Colangelo '87 is a household name. The Raptors president and general manager has twice been named NBA Executive of the Year by Sporting News for his skillful turnarounds of the Phoenix Suns and then the Raptors. Colangelo is an applied economics and management graduate who played reserve guard for the Big Red men's basketball team and lettered in 1986-87. Colangelo worked for the Phoenix Suns for 15 years, including seven as team president, before joining the Raptors. He was part of the new ownership group that purchased the Toronto franchise in 2004. Two other CALS graduates are help shaping American basketball with high-level management positions in the NBA. Chris Granger '93 and Mark Tatum '91 are executive vice presidents for the National Basketball Association. Granger oversees Team Marketing and Business Operations, advising NBA, WNBA, and Development League teams on issues like ticket sales, marketing, and customer retention. Tatum is in charge of global marketing partnerships for the NBA, WNBA, NBA Development League, and USA Basketball, working with top executives from brands like Gatorade, Nike, and Coca-Cola. He also oversees NBA media sales, including with league partners ABC/ESPN and TNT. Additionally, he is a member of the CALS Advisory Council.

A native New Yorker, Jon Daniels '99 made history in 2005 when at age 28 he became the youngest general manager in Major League history. After earning a degree in applied economics and management from Cornell, he first worked for wine and food conglomerate Allied Domecq in Boston. Drawn into the world of baseball by his Cornell classmate and fraternity brother A.J. Preller '99, he landed an internship with the general manager of the Colorado Rockies in 2001. The following year, he joined the Texas Rangers as an operations assistant and quickly rose through the ranks to director of operations in 2003, assistant general manager in 2004, and general manager in 2005. As general manager, Daniels helped lead the Texas Rangers to an American League pennant and the team's first-ever World Series in 2011.

CALS OLYMPIANS

Walker Smith '20
Track and Field
(1920 Belgium)

John "Jack" Watt '18
Track and Field
(1920 Belgium)

Walter Wright '24
Wrestling (1924 Paris)

Peter Sparhawk '54
Rowing (1956 Melbourne)

David Auble '60
Rowing (1968 Mexico)

Kevin Freeman '63
Equestrian (1964 Tokyo, 1968 Mexico, 1972 Munich)

Dick Edmunds '69
Rowing (1968 Mexico)

Marion Greig '76
Rowing (1976 Montreal)

Pete Pflitzinger '79, MBA '82
Track and Field
(1984 Los Angeles)

Darren Eliot '83
Ice Hockey (1984 Sarajevo)

Curt Hampstead '86
Track and Field (1988 Seoul)

Kent Manderville '93
Ice Hockey (1992 Albertville)

Tom Murray '91, MS '01
Rowing (1996 Atlanta)

Joe Nieuwendyk '88
Ice Hockey (1998 Nagano, 2002 Salt Lake City)

Travis Mayer '05
Freestyle Skiing
(2002 Salt Lake City, 2006 Turin)

Ken Jurkowski '03
Rowing (2008 Beijing)

Jennifer Kaido '03
Rowing (2008 Beijing)

Rebecca Johnston '12
Ice Hockey (2010 Vancouver)
PELLETIER COMPLETES DEGREE AFTER 14-YEAR PRO HOCKEY CAREER

After his sophomore year at Cornell in 1997, Jean-Marc Pelletier was drafted into the NHL.

"It was one of the hardest decisions I ever had to make, but the Philadelphia Flyers made me an offer I couldn’t refuse, and I don’t regret it," Pelletier said. "But I always finish what I start. It was important for me to say to my daughter: 'I graduated from a great school.' Nobody can ever take that away from me."

Pelletier continued to take classes during his years as a pro, and when he retired a year and a half ago, he needed only 12 credits to earn his degree from Cornell’s Charles H. Dyson School of Applied Economics and Management. He returned to campus for the fall 2011 semester, attending classes with students who were four years old when he left Cornell.

Fourteen years after leaving the Hill for the ice, Pelletier was one of about 300 graduates in the Dec. 17 ceremony in Barton Hall. He began his new job with Lego, the Danish toy manufacturer, Jan. 3.

Pelletier said taking the road less traveled—or skated—has paid off: "A Cornell degree is really worth something, and I’m proud to have one."

ALUMNA’S $1 MILLION BEQUEST WILL BOOST AG SCIENCES

Marcia Stofman Morton ’61 made her first gift to Cornell in 1969: $5 in cash. Now, some 40 years later, she is leaving a $1 million bequest to Cornell’s College of Agriculture and Life Sciences.

The bulk of her gift—$750,000—will fund undergraduate scholarships in the agricultural sciences program, an interdisciplinary major that allows students to pursue a general education in agriculture. The remaining money will be used to create a new summer internship for a student at the Cornell Plantations and fund undergraduate research at the Lab of Ornithology.

"I think ever since I graduated and began to save a little bit of money, I’ve wanted to give money to Cornell," Morton said.

"I appreciated my education and the Wood Foundation scholarship I received during my sophomore year, when my father, the co-owner and manager of a movie theater in Atlantic City, N.J., lost his business."

AMERICAN INDIAN PROGRAM GETS SCHOLARSHIP BOOST

The American Indian Program (AIP) in CALS is building upon its long-time partnership with Frank Bonamie, the founder of pallet supply company Ongweoweh Corp., to provide more scholarship opportunities for students. Bonamie, a former chief of the Cayuga Indian Nation of New York, made a commitment of $375,000 to enhance his current scholarship, taking advantage of the ongoing Scholarship Challenge, which matches new gifts for undergraduate need-based scholarships on a one-to-three basis.

He is joined by his son Dan Bonamie, president and CEO of Ongweoweh, who has committed $500,000 from Ongweoweh for a new scholarship for the AIP. In addition, CALS is moving forward with several new partnerships with Ongweoweh, including sustainability projects, summer internships, and other activities to support Native American/Indigenous student recruitment and mentoring.

EMERITA GIVES THE GIFT OF EDUCATION

Her contributions to the study of education at Cornell spanned 32 years, and now the legacy of Helen L. Wardeberg will support student scholarship for many more. The former chair of the Department of Education (from 1968 to 1986) left a $650,000 bequest to the College of Agriculture and Life Sciences and Mann Library when she died on Feb. 27, 2011. Half of the gift will support scholarships for transfer students. The rest will be used to establish a named fund for Mann Library acquisitions and services.

"It is wonderful to get a gift like this from an emeritus faculty member," said library director Mary Ochs ’79. "It demonstrates to us in a very clear way the value that the faculty place on the library. This gift will have a clear impact: It enhances our ability to maintain Mann’s world-class collection so it can continue to support the work of the next generation of CALS faculty at the highest level."
THE (NOT SO) SWEET SMELL OF SUCCESS

By Stacey Shackford

Wee Stinky made big waves across campus and around the world when it began to bloom on March 18. Approximately 10,000 people flocked to campus, waiting in line for hours to see—and smell—the rare “corpse plant” during its brief two-day bloom, and thousands more tuned in online to watch a live video feed.

The titan arum (Amorphophallus titanium) wasn’t exactly wee, towering above the crowds at 67 inches (nearly 6 feet) tall. But it was stinky, with some describing the scent as a cross between rotting cabbage and decaying fish, with hints of garlic, strong cheese, and mothballs.

In the rainforests of Sumatra, the plant’s native habitat, the scent is meant to attract carrion flies, which feast on rotting flesh, to aid in pollination.

What looks like an individual flower is actually a group of flowers called an inflorescence. The actual flowers are very small and hidden inside. There are about 450 female flowers, which open for a day, and 500-1,000 male flowers, which open later and provide pollen for one day. If successful, bright red fruits are formed.

In cultivation, it generally takes seven to 10 years to bloom and may die or flower only rarely thereafter.

The Cornell specimen was grown from seed from a plant that bloomed at the University of Wisconsin in 2002, and it became part of the Department of Plant Biology’s Liberty Hyde Bailey Conservatory collection. This is the first time it has flowered.

During its bloom, faculty and students took several scent samples and pollinated the plant with pollen from Binghamton University, where a titan arum bloomed a few years ago.

The departments of Plant Biology and Horticulture, and greenhouse managers from the Cornell University Agriculture Experiment Station, opened the doors of the Kenneth Post greenhouse to the public as soon as the plant showed signs of imminent blooming on March 14, and kept them open well into the night once it opened.

“So many people thanked us for opening it up the public and providing them with an incredible opportunity,” said CALS Communications Specialist Ellen Leventry ’95. “But this is part of our land-grant mission; we are here to share really exciting research and discovery with our community.”

And, as land-grant university to the world, Cornell shared the bloom, which on record has only been observed some 140 times in history, globally via two live streams, which received more than 600,000 views. Among many correspondents, a teacher in Georgia sent a photo of her class watching the Cornell live stream and a woman in Scotland wrote in with questions.

Some 53 percent of 2,000 online and paper-ballot voters dubbed the plant “Wee Stinky,” with the name “Uncle Ezra” coming in second with 33 percent of the votes, and “Big Red” third with 14 percent of votes.

AND THE WINNER WAS...

In the Fall 2011 issue, we asked you to help us name this “bug,” captured with the help of panoramic composites and a Photoshop polar coordinates filter by plant pathology photographer Kent Loeffler. We received many clever contributions, but the top entry was:

“Weilligig” by Doreen Jones ’82

Thanks to all who participated!

CORRECTION: Ladybug images that appeared on page 11 of the Fall 2011 issue of CALS News were credited incorrectly. The photographer was Peter Priolo.
MY CORNELL STORY
Pedro A. Sanchez
CALS BS ’62, MS ’64, Ph.D. ’68

When I was about four years old, living in Cuba, I often played with my dad’s fur-lined gloves while he told me strange stories about a far-off frigid place called thaca where he studied poultry science and where I would follow—amid Eskimo, walruses and polar bears, I imagined.

Fourteen years later, trudging up the hill as a freshman, I was glad for the gloves.

I made many trips back to the warmth of Cuba, but my returns ended in my sophomore year, when my father, Pedro A. Sanchez-Diaz, CALS MS ’33, informed me I would have to strike off on my own financially because he could not take money out of Cuba. I survived thanks to a CALS tuition scholarship, and several jobs: I washed dishes at my fraternity house for my board, served as a house officer to pay for my room, and cleaned laundromats downtown at night to have pocket money to date girls and put gas in the VW Bug I had bought from profits I made selling eggs at my father’s farm.

I had hoped to return to Cuba with a BS degree and join my father in business, but it soon became evident this was not going to happen, so I looked elsewhere.

I was particularly drawn to seminars warning that India’s 200 million population was going to starve and precipitate a global catastrophe. So I went to see Dr. Nyle Brady, then head of the Agronomy Department, regarding a Ph.D. in tropical soils. When he said there was no such course, I reminded him of Ezra’s famous words, “I will found an institution where anyone can get instruction in any study.”

He acquiesced, saying that if I did well, I could go to the Philippines, where the esteemed Richard Bradfield—a founder of the International Rice Research Institute (IRRI) and namesake of Bradfield Hall—could be my mentor. So I did, teaching an undergraduate soil fertility course at the University of the Philippines at Los Baños and doing my field research at IRRI. This was roughly during 1965-67, at the start of the Green Revolution, so it was an exciting time.

I then joined the faculty at North Carolina State University, where my first assignment was to bring the Green Revolution of rice to Peru. Working in the irrigated coast, rice yields doubled in three years, making Peru self-sufficient in the crop.

While there, I became fascinated by slash-and-burn agriculture. I returned to campus in 1972, wrote the first edition “Properties and Management of Soils in the Tropics,” and had a profusion of graduate students working at long-term research sites in Yurimaguas, Peru and Brasilia, Brazil—the latter in collaboration with Cornell.

Of my 23 years at NC State, 10 of them were spent living in the tropics. I spent another 10 years falling in love with Africa, alongside my new wife, soil ecologist Cheryl Palm. As director general of the International Center for Research in Agroforestry in Nairobi, Kenya, now called the World Agroforestry Center, I transformed the organization into a research center that helped many farmers get out of hunger by advocating for agroforestry as a science. During this time, I received two very special honors: The World Food Prize in 2002, and chief of the Luo Community as “Odera Akang’o,” a name by which I am still known across Western Kenya.

While on a sabbatical at the University of California, Berkeley economist Jeffrey Sachs whizzed through campus and offered Cheryl and I positions we could not refuse: senior research scientists at Columbia University, running the UN Millennium Project Task Force on Hunger and establishing a small Tropical Agriculture and Rural Environment Program.

We began the Millennium Villages Project to help empower 80 hungry, disease-ridden and poor villages in 10 African countries to accomplish all the Millennium Development Goals by 2015. I also helped open two regional offices in Bamako and Nairobi, and assisted then UN Secretary General Kofi Annan to call for a uniquely African Green Revolution that focused not only on eliminating hunger, but also improving nutrition, markets and policies in environmentally correct ways.

We both have assisted efforts that increased cereal yields from 1 to 3 tons per hectare in about 10 percent of poor rural African households and sharply reduced child stunting in the Millennium Villages. I am also leading the development of a digital map of soil properties in Africa, and am writing a much-delayed second edition of my tropical soils book.

At age 71, I look back with pride and gratitude at the education and opportunities Cornell gave me. Surrounded by a loving family consisting of a superb wife, three children (one of whom, Jennifer Adriane Sanchez, graduated from CALS in 1988), their spouses and 5 grandchildren, I remain healthy enough to continue to assist farmers across the tropics to have a chance for a better life. This is more meaningful to me than all the kudos I have received, including the MacArthur “genius” award and three honorary degrees. As grateful as I am for these honors, I am proud that all Cornell degrees have to be earned, none conferred as honorary ones.

Tigoni, Kenya

"At age 71, I look back with pride and gratitude at the education and opportunities Cornell gave me."
CALS ISN'T YOUR TYPICAL AG AND LIFE SCIENCES SCHOOL.

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cals.cornell.edu/admissions

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When two Cornell undergraduates and a recent graduate went on a field research trip to Papua New Guinea in 2008, little did they know it would lead to entries in the Guinness Book of World Records and a groundbreaking research paper. Michael Grundler '10, Eric Rittmeyer '08, and Derrick Thompson '09 discovered the two smallest frog species in the world, *Paedophryne amauensis* and *Paedophryne swittorum*, pictured here, which measures just 7.7 millimeters in length.