

periodiCALS

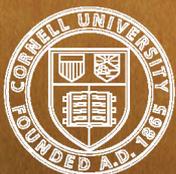
THE MAGAZINE OF CORNELL UNIVERSITY'S COLLEGE OF AGRICULTURE AND LIFE SCIENCES

VOL. 3 | ISSUE 3 | 2013



RETURN *on* INVESTMENT

CALS means business on and off campus



Cornell University





inside

[VOLUME 3 | ISSUE 3 | 2013]

12 RECIPES FOR SUCCESS

Whether it be the cheese on your cracker, the syrup on your pancakes or the wine in your glass, CALS researchers and extension specialists are helping to put New York on the foodie map.

17 DEVELOPING LEADERS

By equipping both students and community members with the skills they need to lead and succeed, CALS is making a lifetime investment in Cornell and New York State.

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The breadth and depth of CALS expertise across disciplines results in some creative and complementary collaborations, as demonstrated by these dynamic duos.

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CALS celebrated the completion of many major renovations this fall. The fully refurbished Fernow Hall, home to the Department of Natural Resources, is occupied once again after two years of construction. Highlights of the renovation include a beautiful new glass-fronted 50-person classroom (pictured, top), a rain garden to control storm water runoff, a garden terrace, and solar panels for renewable energy. The beloved Dairy Bar has re-opened with a fresh new look at the transformed Stocking Hall (pictured, bottom left). The home of the Department of Food Science has been extensively renovated and rebuilt as part of a \$105 million project, which also features a glass-fronted dairy plant, a teaching winery, and state-of-the-art labs, classrooms and conference spaces. The first phase of a \$51 million renovation of the venerable Warren Hall—home to the Charles H. Dyson School of Applied Economics and Management and the Department of Development Sociology—also wrapped up this summer, featuring a mix of old and new (pictured, bottom right). Find out more about the college's brand new dairy barn on page 36.

Visit periodicals.cals.cornell.edu for web exclusives

dean's message

While Cornell is an engine of cutting-edge scientific and scholarly discovery, and a beacon of educational excellence producing the next generation of global leaders and thinkers, it is also so much more. At the College of Agriculture and Life Sciences (CALS), we make it our explicit mission to deliver the new knowledge we create to the public at large, ensuring that the innovations we develop reach the very people for whom they will have the greatest impact.

Through our extension programs, we cultivate and maintain our vital relationship with the people of New York, magnifying value for every tax dollar invested in our university. Whether it is a county Cornell Cooperative Extension

laboratory. It also keeps us engaged with our alumni, policymakers and business leaders.

This issue of *periodiCALS* offers a unique window into some of the meaningful and enriching connections CALS faculty, staff and students have forged with communities, local businesses and individuals throughout the state. In these pages you'll discover the unique partnership between a CALS plant breeder and a world-famous chef, who've worked together to develop important new varieties of produce that appeal to New York farmers and foodies alike. You'll meet a successful alumnus, who came home to CALS to cultivate his leadership skills in the LEAD-NY program and has since undertaken advocacy, policy-making

and leadership roles in his own community. And you'll be introduced to a CALS bioengineering major who spent the summer gaining industry experience and building local ties as an intern at the Beech-Nut facility in Amsterdam, N.Y.

As you'll see, engaging with stakeholders and communities is as much a part of who we are at Cornell as the re-

search we conduct and the education we provide. It makes us exceptional. It sets us apart from the pack. It is the reason why millions of people throughout the state, across the country and around the world look to Cornell for the solutions that will help them build better lives. We deliver knowledge with public purpose. And thanks to our extraordinary extension personnel and programs, no other Ivy League institution comes close to matching the scope, vision or influence of that mission.



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



Dean Boor chats with Peter Trowbridge, professor and chair of the Department of Landscape Architecture, during CALS Summer Scoop at Stocking Hall.

educator demonstrating pruning tips for a local gardening club, an intern from the Dyson School delivering research-based information to county government officials, or a team of Cornell faculty providing the latest technical expertise to a large corporation relocating production to our state, we contribute to the economic, social and personal well-being of New York residents.

The relationships we forge with stakeholders through our extension efforts provide us with unique and precious access to critical information that assists us in developing and delivering solutions for today's problems. This, in turn, expands and enriches the educational and career opportunities we offer our students and fortifies the research we conduct on campus with practical, experiential data that only exists outside of

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The College of Agriculture and Life Sciences has sustainability as a core value. This magazine was printed regionally using soy-based inks, on post-consumer fiber paper certified by the Forest Stewardship Council, in an eco-friendly process that recycles virtually all chemical, paper, and metal waste.

around the quad

HOW ABOUT THEM APPLES? *By Amanda Garris, Ph.D. '04*

Cornell's latest two apple varieties have snappy new names: SnapDragon™ and RubyFrost™.

The catchy monikers were revealed at a crowded Fruit Field Day event at the New York State Agricultural Experiment Station in Geneva on Aug. 1, which attracted more than 320 growers and members of the media.

Jeff Crist, vice chairman of the board of directors of New York Apple Growers (NYAG), Cornell's partner in the release and marketing of the varieties, made the announcement. He shared the stage with apple breeder (and new associate director of the experiment station) Susan Brown, CALS dean Kathryn J. Boor, and then New York State Commissioner of Agriculture Darrel Aubertine.



"Research is key to the advancement of agriculture here in New York state," Aubertine said. "I cannot overstate the importance of collaboration, and of moving our industry forward with the use of research and development conducted at Cornell."

The two varieties—previously known as NY1 and NY2—have been a decade in the making, and their path to market is a first for the Cornell apple breeding program and the New York apple industry. In May 2010, Cornell forged a partnership for a "managed release" with NYAG, a newly formed industry group, to establish an exclusive licensing agreement in North America for the two apple varieties. Growers pay royalties on trees purchased, acreage planted and fruit produced, and the income is being used to market the new varieties and support Cornell's apple breeding program.

The first trees were planted in farmers' orchards in 2011, and now 400 acres are growing across the state. According to NYAG, the still-young trees will produce a limited crop this year, but intrepid consumers can search out SnapDragon and RubyFrost at Cornell Orchards and select NYAG farm stands across the state. By 2015, the varieties will be vying for space in grocery stores among the Empires, Galas, and Honeycrisps.

SnapDragon gets its bursting, juicy crispness from its Honeycrisp parent, and it has a spicy-sweet flavor that was a big hit with taste testers. Brown recognized its promise and fast-tracked it for commercialization.

"I remember my very first bite of SnapDragon. The taste, the crispness and the juiciness impressed us," Brown said. "Retailers will appreciate its other qualities as well, because although SnapDragon's harvest window starts relatively early—in late September—its long storage and shelf life means retailers may be able to offer it with consistent quality for a longer time than Honeycrisp."

RubyFrost, which ripens later in the fall and stores well, will provide a classic taste of autumn and a boost of vitamin C well into winter. Brown expects it will be popular with fans of Empire and Granny Smith.

"I think juicy and refreshing when I eat a RubyFrost," said Mark Russell, an apple grower and NYAG member. "It's a fascinating apple, with a beautiful skin and a nice sugar-acid balance, but to me the crisp juiciness is rewarding every time. I don't know how to express the idea of juice in a name, but 'frost' captures its refreshing quality."

Greater quality, better storage, and disease and insect resistance have long been the goals of Cornell's apple breeding program. In addition to SnapDragon and RubyFrost, Cornell has released 66 apple varieties since the late 1890s, including the popular Cortland, Macoun, Empire and Jonagold.

around the quad



Horticulture professor Chris Wien M.S. '67, Ph.D. '71, experiments with cut flowers to determine which varieties hold the most promise for the state's \$6.3 billion nursery industry, and he believes he's found a winner in *Eucomis*, or pineapple lily. The South African native has long, speckled 30-inch stalks, hundreds of tiny starry flowers and a long vase life of up to three weeks. Kept indoors or in unheated greenhouses, they can thrive even in the harshest Northeast winters, Wien has found.

NEW MEDIA ALLOWS REQUIRED LOVE TO KNOW NO DISTANCE

Adoration from afar need not be knotty: Long-distance couples sometimes have a better relationship than couples nearby, according to a study by Jeffrey Hancock, associate professor of communication, and Crystal Jiang, Ph.D. '11. Absence can make the communication grow fonder, Hancock said. Study par-



ticipants used phone calls, video chat, texting and instant messages to interact an average of 3.45 times a day, and the couples tended to try harder to communicate their affection and intimacy. "When a relationship is distant, research shows that we are more focused on the relationship—and we pay more attention to the relationship."

Many of the wriggly worms that composters value so highly are actually invasive organisms that can wreak havoc on natural areas, according to Cornell conservationists who are studying the ubiquitous earth movers and dealing with infestations in valuable university collections. Visit the new CALS Notes blog at cornellcals.tumblr.com to learn more about the "crazy snake worm" and what is being done to combat its invasion on campus.



Two negatives—cow manure and flies—can make a positive. Vimal Selvaraj Ph.D. '07, assistant professor of animal science and Patricia Johnson Ph.D. '83, professor and chair of animal science have joined forces with Jan Nyrop, CALS senior associate dean and professor of entomology, and Mark Milstein, clinical professor of management at the Johnson School, to examine the environmental impact and commercial potential of quickly processing dairy cow manure using fly larvae—and then feeding those larvae to other animals. The process could produce a usable fertilizer in as little as eight days, according to Selvaraj.



FROM THE GROUNDS UP, STUDY SEEKS SUSTAINABLE 'JAVA'

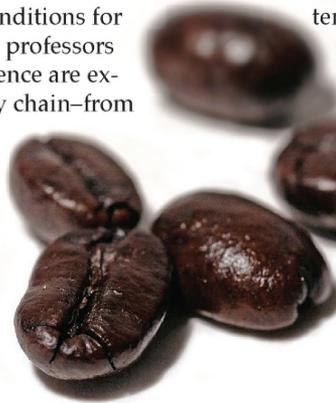
By Blaine Friedlander

Baristas rejoice! Cornell professors seek to brew agricultural, environmental and economic sustainability together for the world's smallholder coffee bean growers.

Looking to improve conditions for small farms in Colombia, professors in economics and soil science are examining the entire supply chain—from the tiny producers to the coffee drinkers—to gain insight into consistently delivering quality coffee at a fair price for all. The comprehensive study, funded by the Atkinson Center for a Sustainable Future, will also measure

the diversity of fauna, examine energy and water use, and train farmers to pollute less.

"I think we're the first team to measure the environment and biodiversity in a systematic way," said Dyson School professor Miguel Gómez, who is working on the project with crop and soil sciences professor Harold Van Es and graduate students Juan Nicolas Hernandez-Aguilera and Colleen Anunu, a buyer for Ithaca-based Gimme! Coffee.



Find out how other Cornell alumni, students and faculty are tackling malnutrition in Haiti and around the world by combatting deadly aflatoxins, a byproduct of fungal infection in peanuts, by visiting tiny.cc/cornellpeanuts

CHRIS BARRETT TO DIRECT DYSON SCHOOL *By Stacey Shackford*

Chris Barrett, the Stephen B. and Janice G. Ashley Professor of Applied Economics and Management, international professor of agriculture and a professor in the Department of Economics, has been named the new David J. Nolan Director of the Dyson School.

Barrett will take the helm of the nationally ranked Charles H. Dyson School of Applied Economics and Management Jan. 1, 2014. Ed McLaughlin, the Robert G. Tobin Professor of Marketing and director of the undergraduate program, will serve as associate director.

A member of the faculty since 1998, Barrett succeeds Loren Tauer, the Dyson School's administrative leader since 2008, who will return to teaching.

"Loren's steady and considerate leadership have served the Dyson School well, and I am confident that Chris and Ed will work with Dyson School program leaders to assure that the research, extension/outreach, and undergraduate and graduate education programs continue to be widely regarded as the



very best programs in the nation," said Kathryn J. Boor, the Ronald P. Lynch Dean of the College of Agriculture and Life Sciences.

"The Dyson School is an exceptional place, blessed with extraordinary students, staff, faculty and alumni," Barrett said. "As we begin a new era

in a renovated Warren Hall, it is an especially exciting time to work with my colleagues to further the distinctive and prestigious Cornell brand of graduate and undergraduate training in applied economics and management, as well as our high-impact research and extension/outreach programs."

CHARTING THE COURSE FOR AGRICULTURAL EDUCATION

When it comes to agricultural education, Terry Tucker, Ph.D. '98, knows his stuff. In a career that began 34 years ago as an agriculture teacher at Wellsville High School in Allegany County, N.Y., Tucker has taught farm economics and management both at home and abroad. He has held many titles: associate director of the Cornell International Institute for Food, Agriculture and Development (CIIFAD) and CALS' International Agriculture Program; director of the Hubert H. Humphrey Fellowship Program; and most recently, dean of the School of Arts and Sciences and director of the college's Center for Organic and Sustainable Agriculture at SUNY Alfred State College.

Such experience will serve him well as he takes the helm of Cornell's agricultural education program, where he will lead a conversation on the future of agricultural education throughout the state. He will direct CALS' ongoing collaborative effort with Ithaca College to expand its Masters of Arts in Teaching (MAT) degree articulation agreement to include agricultural education certification. He will also partner with fellow CALS faculty to oversee and promote the college's many agricultural outreach programs, including the Future Farmers of America at Cornell, Agriculture in the Classroom, and Agricultural Education Outreach.

A founder of Cornell's popular interdisciplinary undergraduate major International Agriculture and Rural Development (IARD), Tucker will continue to teach as a senior lecturer, as well as serve as an associate director of CALS' International Programs.



ON THE ROAD TO RENEWAL

Since 1923, Cornell has been the place to turn for New York highway superintendents and public works officials seeking technical assistance and training, thanks to the Cornell Local Roads Program, housed in CALS' Department of Biological and Environmental Engineering (BEE). CALS and the College of Engineering recently announced plans for a new shared oversight partnership that aims to combine CALS' excellence in extension and experience administering the program with Engineering's technical expertise in civil and environmental engineering. In the new plan, David Orr '87, Ph.D. '05, senior engineer in BEE, would assume daily supervision and management of the program, while faculty from the School of Civil and Environmental Engineering would lead an advisory committee and provide technical oversight. This structure will be reflected in the next application for a five-year contract for the federally mandated, state-supported program, one of 58 Local Technical Assistance Program Centers across the country. If renewed, this new path forward will secure the future of the Local Roads Program at Cornell, ensuring that it continues to deliver critical and potentially life-saving roadway expertise to New York communities.

around the quad

DANCING WITH DESIGN: STUDENT OUTREACH PROGRAM INSPIRES LOCAL TEENS *By Stacey Shackford*

Mané Mehrabyan '17 is a choreographer, but the movements she's been orchestrating lately have not come from her limbs or her fiddle—the landscape architecture student has been applying her creative talents to shape the environment around her, inspired by a unique Cornell program she attended while at Ithaca High School.

"How pedestrians move through space is like another form of dance. There's always a dialogue between nature and humans, and as landscape architects, we are the intermediaries—we choreograph movements so that we can bring the two together," Mehrabyan said.

Founded in 2011 by three graduate students—Travis North, Jesse Nicholson and Roana Tirado—DesignTeach is a youth outreach program that introduces teenagers to the concepts and skills of landscape architecture through hands-on workshops and one-on-one mentorship opportunities.

It has provided roughly 630 hours of instruction to local middle school and high school students, and the American Society of Landscape Architects recently honored it with a 2013 Student Award for community service.

Students enrolled in the program get highly coveted guest space in the department's studio, where they participate in skill-building lessons—sketching, photo collage, drafting, plant selection, modeling—as well as lectures and critiques.

They also get their own real-world project that covers on-site analysis, concept development and design, and that concludes with a presentation to a panel of landscape architecture students and professors.

Mehrabyan said the experience was

which facilitates internship placements across Cornell.

Mehrabyan said the practical skills she acquired have given her a leg up as she starts classes as a fully fledged Cornell freshman, but just as important were the soft skills she gained.



Mané Mehrabyan '17 in the studio with Roana Tirado and Jesse Nicholson.

"Being in the studio environment was fantastic. It is so vibrant," Mehrabyan said. "It changed the way I saw adults and how I communicated with them. I had to be more open to challenges and critique. I developed a tougher skin, and I think that really helped me with high school."

For North, the inspiration

transformative and fully cemented her ambition to pursue a career in the field. She came to the program through Learning Web, an Ithaca educational nonprofit. Other students are introduced to DesignTeach through the Ithaca Youth Bureau, the PEEPS backyard sustainability project at Plantations, and the New Visions Program,

has been reciprocal.

"I think it's the most rewarding thing I've done up here," he said. "DesignTeach has grown beyond its original mission. It is no longer just about introducing kids to landscape architecture. It's about mentoring kids through design and providing access to a collegiate environment."



Rhineland Revisited

A group of 14 Cornell landscape architecture students reimagined the Rhineland—the area around the Cayuga Inlet north of the railroad tracks—and documented their experience exploring the area in an innovative way. Check out their visionary designs and multimedia collections at rhinelanddreams.tumblr.com. Rendering by Jeremy Schaub.

CONTEST HELPS CREATE COMMUNITY

It's a gardening dream for one group of nature-loving neighbors in Fall Creek: a team of 15 landscape architecture students devoted to turning their yards into a haven for both people and animals alike. As part of the YardWorks contest, the residents will work with a student-professor team from the Department of Landscape Architecture to analyze neighborhood-scale landscape systems, assess individual sites, and develop design concepts for their properties. "YardWorks is a great way for landowners to visualize their yard as part of a network of properties, each with the potential to improve backyard habitat at a larger scale by working collectively with others," said assistant professor Joshua Cerra. The project, which has been partially funded by federal Smith-Lever funds, is organized in conjunction with Cornell Cooperative Extension and the Laboratory of Ornithology's YardMap program—a social, interactive citizen science project in which people draw maps of their backyards to document the environment, gather tips about improving the areas for birds and other fauna, and connect with others concerned with conservation.

around the affiliates



Photo: Tom W. Johnson

A WHALE OF A LESSON

For students enrolled in the Whales, Seals and Sharks course at Shoals Marine Lab this summer, it was an enormous and unique learning opportunity: a 25-foot, 10,000-pound minke whale that washed up dead on the coast of Maine. Within days, they boarded the lab's research vessel, the R/V John B. Heiser, to travel 40 miles from Ap-pledore Island to Cape Elizabeth, just south of Portland, Maine. Equipped with machetes, knives, waders and protective overalls, the team spent seven hours dissecting the minke in a one-of-a-kind hands-on anatomy lesson.

"It was such great timing, so we made it a big part of our course," said instructor Willy Bemis '76, professor of ecology and evolutionary biology and the John M. Kingsbury Director of Shoals.

The whale was dubbed Willy in honor of Bemis and his retirement as director after nine years. Jon Pennock, an associate professor of natural resources and the environment at Shoals's partner institution, the University of New Hampshire, will take over as interim director.

SPEAKING UP FOR THE LOUDEST MAMMAL ON EARTH

The mighty blue whale is the largest and loudest mammal on Earth. Yet its voice is getting lost in the cacophony of sounds generated by human activities, from offshore development and energy exploration to commercial shipping. Christopher Clark, director of the Bioacoustics Research Program (BRP) at the Cornell Lab of Ornithology, has made it his mission to speak up for the whale. This summer, that included a record-breaking audience of 8,500 visitors during the "Science Sunday" series at the American Museum of Natural History in New York City. Using small models, Ashik Rahaman (pictured) showed children how the BRP uses high-tech underwater recording units to monitor marine mammals, who use sound not only for communication, but also navigation, finding food and detecting predators.

"Marine mammals produce a complex array of sounds, all

important to their very survival, and we're drowning them out," Clark told AMNH visitors. "We need to encourage and accelerate the development of noise-reduction technologies on commercial ships. We need to reduce the demand for foreign-made products being shipped across the oceans. We need federal regulations on ocean noise pollution to change so we're focusing on the long-term effects of noise to marine mammals rather than the short-term."



Photo: Rod Mickens

MOVEMENTS AT MANN

Students hitting the stacks at Mann Library may have noticed some changes upon their return this fall. Temporary offices that had been set up on the second floor have been removed, allowing more room for shelves and study areas to accommodate all the extra books that will be consolidated as the fourth floor is cleared for the Department of Communication. Preliminary steps to relocate the department from Kennedy Hall are slated to begin this spring. No student study space will be lost, but some stack space will. The library is studying its circulation records and culling books and journals that haven't been checked out in the past 10 years. Those books will be stored at the Library Annex and available via interlibrary loan.

NEW INTERPRETATION AT PLANTATIONS

In Ithaca, the name Moosewood is synonymous with comforting vegetarian cooking, but did you know it is also a small maple tree (*Acer pensylvanicum*) with distinctive white stripes on its bark? Visitors to Cornell Plantations' F.R. Newman Arboretum can learn all about it—and much more—thanks to new interpretive signs and a self-guided audio-visual tour around the 150-acre site. Made possible by a \$20,000 grant from the Stanley Smith Horticulture Trust, the project aims to communicate the significance and diversity of the arboretum's key plant collections. "Before these interpretive upgrades, many visitors viewed 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, interpretation coordinator at Cornell Plantations.

student life

SILENCE IS GOLDEN FOR THIS STUDENT ENTREPRENEUR *By Sarah Thompson*

When Jacob Reisch '14 transferred to the Dyson School a year ago, he wasn't really sure what he wanted to study.

But a summer spent working for AeroFarms, a Marathon, N.Y.-based company commercializing aeroponic agriculture for urban applications, sparked his entrepreneurial spirit and led him to Professor Deborah Streeter, who helped turn his business dreams into reality.

"I've always been really impulsive. I see random, cool opportunities and kind of push the button and go," Reisch said.

In January 2013, Reisch pushed the button to launch Party Headphones. The company provides multichannel wireless headphones for silent discos, an international trend allowing partygoers to listen at their

own volume but dance together. Less than a year later, with help from Cornell's eLab Incubator by Student Agencies, Party Headphones has hired several full-time contractors, shipped its products all over the country and worked with clients such as

Nestle, Red Bull and MTV2. Streeter has been a huge resource, working with Reisch on solutions and helping him develop long-term relationships with alumni. That's how he connected with Dave Pelletier '72, CEO of Annalee Mobilitee Dolls, Inc., who now mentors Reisch and his sales team through weekly phone calls and has helped him navigate through challenges such as leading peers, negotiating international contracts and hiring.

This summer, the Geneva, N.Y. native ran Party Headphones while interning at another startup, Next Jump. Come fall,

coursework began again, as did Reisch's duties as adviser of Energy Corps at Cornell, a student organization promoting sustainability on campus, which he founded in 2012.

"Jake's experience is such a great example of the leadership challenges start-ups run into—the micro-details—and a great example of how CALS students interested in business are envisioning new things and getting lots of exposure," Streeter said.



GOING TO BAT FOR STUDENT BUSINESSES *By Alex Koeberle '13*

In his white T-shirt and jeans, Ali Hamed '14 appears to be dressed for a baseball game rather than a business meeting. But that's where he's heading. Sidelined by injuries, the former student-athlete has converted his time on the diamond to a relentless passion for entrepreneurship at Cornell.

The interdisciplinary studies major is involved in several start-ups, as both partner and investor. He co-founded POPSHOP, a collaborative space meant to serve as a launch pad for student start-ups, with seven friends and business partners. It opened for business in April 2012 with a small storefront on Dryden Avenue and has since expanded to a new location at 325 College Ave., thanks to funding from Cornell eLab.

It's not the only risk Hamed has taken as a student entrepreneur. He is also involved with CoVenture, a New York



City-based collection of young entrepreneurs who look for experts in their respective industries who have great ideas but lack the technical expertise to launch their business. CoVenture employs a team of engineers to build out tailored technologies for the budding businesses, provides mentors, and helps their owners

connect with funding sources in exchange for equity in the business. Early successes include Bib + Tuck, a members-only online community for women to trade fashion items, and Motrixi, a business that aims to build mobile advertisement technology.

"We've made six investments, helping these companies raise over \$5 million in financing and over \$8 million in revenue within a year," Hamed said. "We will be investing in 15 new companies by the end of 2015."

Hamed believes that dorm rooms are where incredible ideas are born, and he's dedicated to guiding fellow student entrepreneurs from ideas to fruition. As a partner in the Dorm Room Fund, he gives students the financial boost they need to make it happen.

"Even small amounts of capital can support huge ideas," he said.

PLANTING THE SEED OF A BIG IDEA *By Stacey Shackford*

The humble peanut is a nutritional powerhouse that has been helping to alleviate malnutrition around the world. Erica Barnell '13 and Stephanie Ball '13 are now hoping to also use the legume as a vehicle to deliver vaccines.

They have created a plan for a business, PharmaSEED, based on the genetic modification of peanuts to carry inactive strains of Hepatitis B. It won top honors at this year's Big Idea competition, sponsored by Entrepreneurship@Cornell.

Their product would work in a way similar to current Hep B vaccines, which signal the body to produce an antibody when injected. If the person comes into contact with an active strain of Hep B later in life, the body should be able to resist it because of the antibody.

The PharmaSEED peanuts will be genetically modified to produce the inactive strain of Hep B within the plant itself, then the peanuts will be ground up and included in nutrition bars. Barnell was inspired by former Cornell professor Hugh Mason, who created edible vaccinations in potatoes while at the Boyce Thompson Institute in 2000.

"The idea seems viable at this time. We do need to develop a prototype, then test



its efficacy and potency," Barnell said. The process will take at least five years, she added.

The pair plans to raise the peanuts in special community greenhouses—grown separately from other crops—in Malawi, then to use local facilities and existing food hubs to manufacture and distribute the final product.

In this way, they could help support



A rendering of the community greenhouses in Malawi where vaccine-carrying peanuts would be grown as part of the PharmaSEED proposal

local economies while also reducing transportation costs and eliminating the need for refrigeration as well as hypodermic needles and their related risk of infections.

"Pharmaceutical companies spent \$4.6 billion in 2012 simply to refrigerate vaccines," Ball said.

Their product could also help solve another problem: getting children to complete the four-dose vaccine regimen. Many parents in Malawi are wary of vaccines or unable to leave home to get hospital care.

"There is a need for a new model and a new way to get the vaccines to the families," Ball said.

The two teamed up after taking a class together in applied economics and management.

Barnell brings a background in bioscience and Ball provides the business brawn.

"I think a lot of the reasons why businesses fail in the life sciences is that it all starts on the science side, and then

scientists realize business is a completely different world," Barnell said.

"One of the greatest things about Cornell is that you can team up with a veterinarian, a scientist, a computer programmer," Ball added. "More and more, as businesses become more complex, they need to incorporate different perspectives, not just business."



Erica Barnell '13 and Stephanie Ball '13 won top prize at the Big Idea competition for their PharmaSEED business plan

How has a student helped transform the hip-hop industry after being inspired by his Cornell track and field coach? Read about the entrepreneurial efforts that led to the world's third most popular file-sharing site, Hulkshare, and watch its CEO, Teddy Brinkofski, share his business advice, at periodicals.cals.cornell.edu



SUMMER WAS ABUZZ WITH RESEARCH FOR SELECT GROUP OF STUDENT SCHOLARS

By Amanda Garris, Ph.D. '04

It's a question that has perplexed pumpkin producers for years: Why aren't patches supplemented with beehives to aid pollination producing more pumpkins?

Aspiring Cornell entomologist Alexandra Gresov '14 may have found the answer after spending her summer catching hundreds of bees on their way back to their hives and determining their foraging fidelity by examining the pollen they had collected.

She discovered the bees were commuting outside the pumpkin patch for pollen; in fact, quantities of pumpkin pollen were actually lower than any other pollen type for both honeybees and bumblebees. Corn pollen was most common on honeybees, and pea-type plant pollen (such as beans, clover and trefoil) was most common on the bumblebees.

Gresov, a biology major and president of the Cornell Beekeeping Club who worked with entomology professor Brian Nault and postdoctoral research associate Jessica Petersen, managed to get stung only three times. She said the project is just the first step in figuring out what drives pollination behavior and what is trumping proximity.

She was one of 28 students selected from top universities around the country to participate in the summer scholars program at Cornell's New York State Agricultural Experiment Station in Geneva.

Other students investigated topics in the fields of entomology, food science, horticulture and plant pathology/plant microbe biology.



TRAVEL WHETS THE APPETITE OF FOOD SCIENCE SCHOLARS *By Carine Feist*

In addition to conducting some appetizing research, food science students were treated to a taster of career possibilities as part of their summer scholars experience.

Thirteen students traveled to the Hudson Valley to visit two major food science research facilities—PepsiCo Global Research and Development in Valhalla and Kraft Foods in Tarrytown—as well as The Culinary Institute of America in Hyde Park, where they met a member of the first Food Science Summer Scholar Program, Chris Loss '96, M.S. '01, Ph.D. '05.

The Culinary Institute of America professor shared insights about the field and the importance of the research the students were able to conduct as part of the program.

"Food science is the palatable entry into science, and as time evolves we have a dire need to understand food and wellness," Loss said. "The culinary field is evolving from one of vocation and training to one of higher education and innovation, and research is both a reflection of this change and a catalyst advancing the field into a new era of evidence-based inquiry and education. This program re-energizes young people in science, as food science spans many disciplinary fields."

A trip to the Stone Barns Center for Food and Agriculture, set on 80 acres formerly part of the Rockefeller Estate, added an agricultural element. The students learned about the sustainable agriculture and local foods movement as well as outreach, as the working farm also operates as an educational center.

From research and development, sensory testing and safety, to food production, preparation and presentation, the students got a glimpse into several facets of their future professions during the three-day trip. They also got to sample some fine cuisine along the way, with a luncheon at the Culinary Institute of America's newly opened Bocuse restaurant and a farm-to-table dinner featuring several distinguished guests: Iron Chef America winner Peter Kelly, Ronnybrook Farms owner Rick Osofsky, Consumers Union food scientist Linda Greene, M.S. '85, and Valley Table Magazine publisher Janet Crawshaw.

Cornell food science student Sarah Kozak '15 said the visit to PepsiCo solidified her interest in food science, as she was impressed by the passion of the company's researchers, including alumnus Kirk Kealey, M.S. '78, Ph.D. '85, director of raw materials and supplier safety.

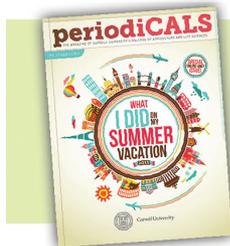
The final dinner was the highlight for Indiana University student Ellen Hallberg. "Hearing Chef Kelly and Mr. Osofsky speak was a unique addition to our trip that helped us see different sides to the food industry," Hallberg said.

The Institute of Food Technologists (IFT) co-sponsored the Department of Food Science summer scholars, and students also got to travel to the IFT annual meeting in Chicago, a hub of activity for the profession.



Food Science Summer Scholar Jenny Tian with celebrity chef Peter Kelly.

Photo: Carine Feist



From serving and surfing in Peru to planning plane routes in Chicago, CALS students had an assortment of adventures this summer. Read all about it in a special online-only issue of periodicals.CALS, available at periodicals.cals.cornell.edu/2013-summer.

COOPERATION AND INNOVATION MOVES DAIRY INDUSTRY FORWARD *By Stacey Shackford*

Opportunity has come knocking for many New York dairy farmers, and they have been quick to open their doors and embrace the potential in innovative ways.

For John Noble '76, his son Chris '03, MBA '09, and the 28 other owners of Noblehurst Farms in Linwood, N.Y., the state's burgeoning Greek yogurt and cheese industries presented a great chance to diversify. They have partnered with seven other farms—many featuring fellow CALS alumni—and Dairy Farmers of America, to construct a \$12 million cold milk separation facility.

The 14,000-square-foot plant will process more than a million pounds of milk daily to produce cream and low-fat skim milk using a high-tech technique that preserves more of the milk's protein. And it will be powered by manure. Noble, one of the first New York farmers to install a biogas digester a decade ago, has made renewable energy a key part of the plan.

"If you listen to the consumer, they want sustainable products, made in a sustainable way," Noble said. "The market is changing rapidly in the Northeast, and we are trying to skate to where the puck is going to be."



Vinnie Esposito [Finger Lakes Regional Economic Development], John Noble '76 and Chris Noble '03, MBA '09, at the announcement of the \$12 million milk plant they are building in Linwood, N.Y.

Partly inspired by a yogurt forum hosted at Cornell in November 2012, Noble consulted the Department of Food Science when developing their plan.

Another group of New York farmers has set its sights farther afield. The consortium of 21 dairy



farmers is hoping to tap into a burgeoning international market by transforming their liquid milk into powdered forms.

Kevin Ellis '96 is one of many CALS alumni involved in the effort to build an \$85 million, 108,000-square-foot powdered milk plant in Aurelius, Cayuga County. The animal science graduate is CEO of Cayuga Milk Ingredients, which was started by 21 members of Cayuga Marketing LLC, which started more than 25 years ago by eight dairy operators and now has 29 members.

There is a huge international demand for milk powder, and quality products are commanding high prices. Being able to ensure such quality is key, and for that Ellis has turned to food science professor Martin Wiedmann Ph.D. '97.

Certain spores that lead to milk spoilage are resistant to heat treatment, and can be reactivated by it—a problem for powdered milk, which is often reconstituted through heat. Wiedmann is conducting a year-long study to measure spore levels in raw milk samples from Cayuga Milk Ingredients suppliers.

"High levels of spores can ruin the products. Decreasing spore counts and coming up with low-spore processing techniques is critical for our international work, so we can target higher-end markets like infant powder," Ellis said. "Any time we need help or information, we often turn to CALS. We are excited to see all of the resources that CALS is placing into the New York state dairy sector."

A PEEK INTO POSSIBILITIES AT NEW DAIRY PLANT *By Stacey Shackford*

Yong Wee Liau came a long way to peer into the gleaming multi-ton processing tanks, homogenizers and rotary fillers at the new Stocking Hall dairy plant.

The APAC Business Development Manager of the 3M Asia Pacific Food Safety Division accompanied 25 representatives of major food companies from around Asia and the Pacific for an environmental sampling workshop hosted at the facility this summer. The 3M team also included food safety business leaders from China, Korea, Australia/New Zealand, Thailand and Japan.

They learned how to test for food-borne pathogens and where bacteria are likely to lurk. Armed with swabs and sponges, some mounted on poles and many made by 3M, the workshop participants climbed on ladders and crept under equipment to collect samples.

They then visited the lab of food science professor Martin Wiedmann Ph.D. '97 to process the samples, identify potential sources of contamination, and determine follow-up activities.

"It was a great experience for them, and Stocking Hall proved to be the perfect place for it," he said. "If they didn't understand a concept I was talking about in the classroom, we were able to walk 40 feet to the plant, where I could show them what I meant. Then we could walk another 80 feet to my lab."

It was also a rare opportunity, as private companies are not likely to let their competitors into their facilities, Wiedmann said.

It was the first of many such workshops that Wiedmann hopes to conduct at the facility, and part of a burgeoning relationship with 3M. Wiedmann previously partnered with the Minnesota-based

company to test molecular diagnostic technology, and a gift from 3M supports his Food Safety laboratory. The company also hosts Cornell graduate students for internships.

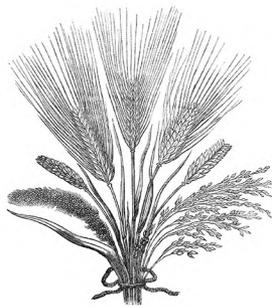


RECIPES *for* SUCCESS

BOLSTERING NEW YORK'S FOOD AND BEVERAGE INDUSTRIES

By Stacey Shackford

Whether it be the cheese on your cracker, the syrup on your pancakes or the wine in your glass, CALS researchers and extension specialists are helping to put New York on the foodie map. Our relationships with growers, grocers, chefs and consumers enable the college to strengthen the state's food and beverage industries in a variety of ways. Here's a taste of what's been added to the menu recently.



BREAD BASKET

Herbaceous and nutty, fresh Red Fife wheat bread with a moist crumb and crunchy caramel crust

When it comes to wheat, most breeders are more concerned with production and yield than flavor. That's not the case with Cornell breeder Mark Sorrells. Taste is central to his \$2.3 million project to select promising varieties of heritage grains suitable for being grown organically in the Northeast. In addition to rigorous testing in both lab and field, Sorrells is working with collaborators in New York City to arrange sensory panels at The Culinary Institute of America this winter and see how consumers react to different samples of wheat, emmer, spelt and einkorn.

"People want unique flavors and colors, and they want them grown locally," Sorrells said. "We'll be trying to verify some of the unique properties of nearly 100 varieties."

Before university breeding programs, farmers selected seeds based on what grew best in their fields. In many cases, they chose based on appearance and gave them alluring names to appeal to other farmers.

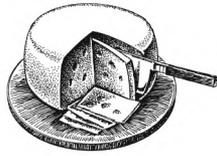
"Some are very interesting to look at, but they don't yield very well or have poor baking and milling properties," Sorrells said. "We are trying to find ones that will work well."

One variety of particular interest is Red Fife wheat. Famed for its flavor, it is believed to have crossed several continents and the Atlantic before arriving in 1842 in Canada, where it gained a foothold and spawned many modern varieties.

It is now enjoying a revival, and farmers, millers and marketers are all eager to get their hands on authentic seeds from this original "ancient variety" of heritage wheat — but in the course of Sorrells' project, he discovered some sources were not necessarily what they seemed. He found traces of semi-dwarfs — varieties that are shorter in height but higher in yield — which didn't exist until the 1950s and therefore could not be the original.

Using a combination of modern science — molecular markers — and old-fashioned research — consulting early 19th century agricultural journals and illustrations — Sorrells believes he has isolated the true Red Fife and is now growing it in the fields of Freeville.

"Making sure a variety is what the seller says it is, is really important," he added. "People want Red Fife. If what they get does not live up to their expectations, the farmers and millers lose their market edge."



CHEESE PLATE

A semi-hard cheese made from local sheep's milk with a natural rind rubbed with cocoa and olive oil

In addition to the milk, yogurt and ice cream that have forged fond food memories in the hearts of countless alumni, Cornell Dairy is expanding into new territory: cheese. Two-pound wheels of the Big Red cheddar are already available in the Cornell Store, and single-serving bags of curd are popular in on-campus dining facilities. In development: A special cheddar in celebration of the university's sesquicentennial next year.

Through a unique partnership with Wegmans Food Markets, Cornell is also working to put New York on the map for artisanal and specialty cheesemaking.

Conversations with Cornell led the retailer to begin sourcing its store-branded cheddar cheese from New York cheesemakers after years of marketing cheeses manufactured in Canada. Its mild cheddar is now made in the Great Lakes town of Adams, while its medium cheddar is made by Yancey's Fancy in Corfu and its intense cheddar hails from New York City's Flatiron District, where it is made by Beecher's.

A three-year pilot program in the Department of Food Science will provide new training opportunities for New York's 127 licensed large- and small-scale cheesemakers, as well as production enhancements that could lead to lower costs, greater efficiencies and new product lines.

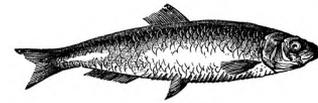
Through hands-on workshops and coursework, beginners will start with the basics of dairy microbiology and sanitation, while more advanced cheesemakers can train in molding, brining and curing, and quality assurance.

The program will enhance Cornell's existing strength in dairy development, education and extension, which also includes certificate programs in cheesemaking, fluid milk processing, yogurt and fermented products. The university has also partnered with Genesee Community College to create an associate's degree in food processing technology.

"Our goal is to support the next revolution in New York's dairy industry," said Kathryn Boor, the Ronald P. Lynch Dean of the College of Agriculture and Life Sciences.

Early participants in the program include Keeley's Cheese Co. (King Ferry), Danascara Artisan Cheese (Fonda), Sprout Creek Farm (Poughkeepsie), Goats & Gourmets (Westerlo) and Old Chatham Shepherding Co. (Old Chatham). Each debuted products at a June event in Wegmans' Pittsford, N.Y., store.

Their relationship with Wegmans will soon become even more intrinsically linked. Wegmans is building a new affinage, or cheese-aging facility, in Chili, N.Y., and is looking to buy young cheeses from the cheesemakers to reach maturity there, according to Cathy (Blodgett) Gaffney '89, Wegmans director of cheese and deli departments. It would provide a payday earlier in the process, a bonus to cheesemakers.



CATCH OF THE DAY

Wild bird leg enchiladas and bass tacos

Could your meals benefit from a walk on the wild side? A collaborative project between researchers and extension educators seeks to lure locavores to the piers and public hunting lands of the Finger Lakes.

Wild species can be considered healthier options as they tend to have less fat and higher mineral content than their farm-raised equivalents. But most people don't realize that, due to a significant information gap within the nutritional databases for the wild foods that are abundant in New York. In fact, only 38 percent of the 42 species legal to hunt in New York have nutritional information listed in the USDA National Nutrient Database for Standard Reference, which is used in food policy, research and nutrition monitoring.

Along with Cornell Cooperative Extension (CCE) human ecology nutrition resource educator Moira Tidball and natural resources senior extension associate Keith Tidball, associate professor of natural resources Paul Curtis is working to change that.

The team has been collecting samples of local fish and game and analyzing their nutritional content for submission to the national database. The first addition will be New York's state fish — brook trout — followed by Canada goose and ruffed grouse, also known as "road chicken."

The project complements another CCE initiative, Wild Harvest Table. Its mission is to bolster food and nutritional security by increasing the consumption of wild fish and game, and the team hopes to tap into the locavore movement to do so.

"Many locavores may not have grown up with hunters or fishermen in the family, or their fishing skills may be rusty," Keith Tidball Ph.D. '12 said. "For them to branch out into fishing and hunting, they often need basic information on licenses, tools and preparing fresh fish and game."

CCE is providing such information both online — at www.wildharvesttable.com, which features creative recipes for what's in season — and in person — at events such as the "Panfish to Plate" fishing workshop, which taught the basics of catching and cooking fish, with a side dish of health advisories and regulations.



WINE AND BEER

Cold-hardy Finger Lakes Riesling, with a delicate orange blossom aroma and tangy lemon flavor

New York winemakers have been raising a glass to CALS viticulture and enology experts for years. Many of Cornell's contributions are clear: the university's breeding program has introduced or improved several varieties of cold-hardy grapes suited to the region, and entomologists, pathologists and extension experts have tackled the pests and diseases that would otherwise blight growers.

But success is the sum of many small decisions, and Cornell's day-to-day technical and decision-making support is often just as valuable.

Online tools can help entrepreneurs evaluate geology and climate of prospective vineyard sites, and vineyard managers to decide when a spray will be most effective against grape berry moth larvae and how to adjust sprayer flow to reduce drift.

Winemakers can call the New York State Wine Analytical Lab, based at the New York State Agricultural Experiment Station in Geneva, for help troubleshooting an off-aroma in a finished wine, and tasting room managers can consult economic experts at the Dyson School for information about consumer behavior before investing in tasting room upgrades or staff training—which is also offered by enology extension staff.

Cornell is also providing a new talent pool for the wine industry through the undergraduate enology and viticulture major launched in 2008. The 36 alumni — with 30 more on the way — get a strong background in both scientific critical thinking and hands-on practice in wine making and grape growing. And now they will do so in state-of-the-art facilities, including a 3,000-square-foot student winery and crush pad in the newly renovated Stocking Hall.

To reach students interested in an associate's degree, Cornell faculty and staff routinely guest lecture in the Finger Lake Community College (FLCC) Viticulture and Wine Technology Program. In addition, Cornell Cooperative Extension's Finger Lakes Grape Program has partnered with FLCC to develop a 2.5-acre teaching and demonstration vineyard at Anthony Road Wine Company.

Honey blonde ale made with locally sources hops, barley and honey, light in color with a mellow flavor

The Farm Brewery Act of 2012, which removed barriers to growth in craft breweries, is creating demand for beer ingredients sourced from New York, including hops and barley, and farmers eager to seize the opportunity have turned to Cornell for advice about how to start.

In the case of hops, they can turn to Cornell Cooperative Extension specialist Steve Miller, who is working alongside entomologists and pathologists at the New York State Agricultural Experiment Station to evaluate varieties and hone methods for disease and insect control. A one-acre hop yard was recently planted on the Geneva site thanks to special funding included in Governor Andrew Cuomo's 2013 budget.

In the case of barley, they are not so lucky. Grains breeder Mark Sorrells has been fielding many calls, but he doesn't have much information to share. Malting barley is different from growing the feed barley that many farmers currently plant for their livestock. It's a craft crop for a craft industry, and it takes extra care and attention.

"It's like a completely different grain; the varieties are different, management is different, harvesting is different, marketing is different," Sorrells said. "People interested in getting involved with malting barley have a lot of things to learn."

He's still learning a lot himself. He has been testing existing varieties, most bred for Europe or the Midwest, and working with others at Cornell to tackle issues like disease resistance, soil nutrients, and harvesting and storage conditions.

"Usually I don't make recommendations until we have at least three years of data, as every year is different, especially in New York. But there are so many people out there desperate for information that we are going to make some preliminary recommendations after this year," Sorrells said.

In the meantime, brewers and hops growers have been flocking to field days and other workshops, such as a Cornell "brew school" that attracted more than 100 participants.

And the innovative Internet efforts of alumnus John Condzella '07 could bolster the hops industry in Long Island. The fourth-generation farmer used crowdfunding site Kickstarter to raise the \$27,000 he needed to buy a rare hops harvester and have the 5.5-ton machine shipped from Germany for use on his Wading River farm, as well as by his neighbors. Hops have a very tight harvesting period — about two weeks in the fall — and the labor necessary to pick them in time is beyond what most small farms could afford. The hops harvester machine is able to pick hops off 20-foot-tall plants in 30 seconds, rather than the hour it would take if picked by a person, and Condzella estimates his whole acre of hops will now take only eight hours to pick.



CHEF'S SPECIAL:

Curly purple peas, miniature potatoes and Amber Delight squash

When renowned New York City chef Dan Barber wanted a curly pea to showcase some of his stellar sauces, he knew who to call: Cornell.

"And could you make it purple?"

No problem, said Michael Mazourek Ph.D. '08, the Calvin Noyes Keeney Assistant Professor of Plant Breeding.

A new collaboration has emerged at Cornell, between scientist and chef, and both parties benefit.

There's not much point in creating a product that is not going to be successful in the marketplace, Mazourek said. Feedback from Barber and his diners at Blue Hill is valuable, as is the exposure, which could create future demand for the variety and lessen risk for farmers.

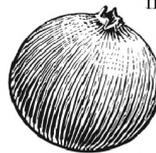
Mazourek is a frequent guest at Blue Hill and its affiliated Stone Barns Center for Food and Agriculture near Tarrytown, N.Y., often giving lectures about plant breeding alongside farm manager Jack Algiere, who trials many Cornell varieties in his fields and dabbles in seed experimentation himself. The relationship grew out of a visit several years ago to associate professor Walter de Jong's potato fields, where he selected "marker potatoes" used between the crops to mark breaks in the plantings rather than new varieties.

"Dan wanted small potatoes that were able to be eaten whole. Walter was surprised because he'd been trying to breed those out for years," Algiere said. "We wanted all those oddballs that were there because they didn't look like the others."

Barber has also served as a matchmaker between breeders and other chefs, and the connections have resulted in another emerging partnership with New York's top five culinary schools. Fruits and vegetables bred at Cornell will be prominently featured in culinary lessons. There will also be an exchange of students — Cornell science students will spend time in New York City kitchens and culinary students will visit Ithaca labs and Freeville fields to learn exactly where their ingredients come from.

Sweet, mild onions, sautéed to perfection

Chef input has been vital to breeder Martha Mutschler-Chu as she develops new lines of mild onions with a combination of flavor and texture

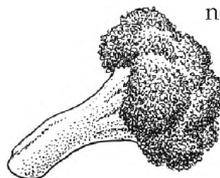


missing in existing varieties. Unlike current mild onions that spoil quickly and are mushy when cooked, the Cornell varieties last longer and have less water, meaning they are crisper when cooked. "These onions have a longer shelf life and still produce huge flavors;

I see them as being a consumer's dream," said Steve Miller, Cornell Dining senior executive chef, who with Wegmans supermarket executive chef Mike Washburn has tested about a dozen of the experimental onion hybrids.

Lush local broccoli, served raw to showcase its natural sweetness

Associate professor of horticulture Thomas Björkman has enlisted the help of Geneva, N.Y., chef Jack Woolfrey to create recipes that showcase the new broccoli he is developing as part

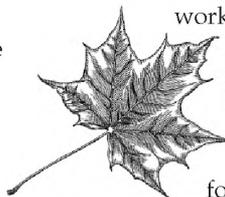


of an ambitious \$3.2 million project. Björkman also recently held an on-campus taste test to see how consumers rated his local variety against broccoli shipped from California. "If you've had really fresh broccoli, you

know it's an entirely different thing," he told *The New York Times* in a recent feature article about his Eastern Broccoli Project. "And if the health-policy goal is to vastly increase the consumption of broccoli, then we need a ready supply, at an attractive price."

Nutty, light "butterscotch" flavored walnut syrup, drizzled over heritage wheat pancakes

Similarly, Michael Farrell Ph.D. '13, director of Cornell's Uihlein Sugar Maple Research and Extension Field Station in Lake Placid, N.Y., is working with chefs to create recipes — and



a bit of buzz — for birch and walnut syrup. There are hundreds of millions of tappable birch and walnut trees in the eastern United States, providing a significant opportunity for a valuable forest crop, he said. While the intense fruity molasses flavor of birch syrup means it is unlikely to replace the mighty maple as a pancake syrup, it is great in marinades, Farrell said. As for walnut syrup, the delicacy could easily forge a place of honor on the breakfast table. "It tastes very much like a lighter maple syrup, with nutty butterscotch overtones," Farrell said.

Got an idea

for a new niche food product but need help perfecting its formulation or navigating rigorous food safety regulations? No fear, Cornell's Food Venture Center is here — well, in Geneva, N.Y. Since 2000, the center has helped 2,100 entrepreneurs in the commercialization of 7,800 food products, contributing to the creation of an estimated 800 full-time jobs. Last year alone, the center responded to more than 2,500 inquiries for assistance on marketing food products; worked with 391 entrepreneurs who needed safety evaluations of 1,030 specialty products and

processes for commercial production; and analyzed 774 samples of food prototypes to address their safety and technological feasibility. Also, more than 20,000 visitors accessed educational materials on the center's website (necfe.foodscience.cals.cornell.edu). "Comprehensive assistance to food entrepreneurs through university centers is a successful model that increases the safety of specialty foods, increases entrepreneurs' knowledge and competency, and creates local economic development," said director Olga Padilla-Zakour. The model may soon be replicated in New York City; CALS is investigating the possibility of opening a branch in Harlem or Brooklyn.

Here is a sample of success stories:

Rick's Picks

Rick Field has a penchant for pickling unconventional produce. His Smokra — pickled okra with smoked paprika — is a top-seller year after year, as well as Phat Beets and Windy City Wasabeans, the pickle that started it all. Rick's Picks features an eclectic assortment of sweet, savory and spicy pickles. What started as a stand in Union Square Greenmarket in Manhattan has grown into a 16-variety product line with national distribution in stores like Whole Foods and Dean & DeLuca. And a session at Pickling School led by the Food Venture Center in Geneva 10 years ago helped make it happen. "From the earliest days of my business, the Food Venture Center helped to formulate and commercialize my products, and it has continued to be a trusted and reliable partner all the way through," Field said. "It's enabled me to really focus on the things that are my core strengths, such as product ideas and marketing."



We Rub You



For Ann and Janet Chung, We Rub You started with a barbecue stand at Brooklyn Flea's Smorgasburg. It was such a hit that the sisters decided to bottle their marinades and encourage at-home Korean cooking. They now have two varieties — original and spicy — available at specialty food shops across New York, Ohio and Pennsylvania. And they won a top award for specialty outstanding food innovation from the Specialty Food Association, among 2,573 entries. "Whenever we had any questions about bringing our products to market or making them safe for sale, we turned to the Food Venture Center," Ann Chung said. "Starting a business is not just about great ideas and hard work, it's also about building a network of support, and Cornell was an important member of the community for us."

Grady's Cold Brew

Grady's Cold Brew is a New Orleans-style coffee concentrate that Grady Laird and his crew brew and bottle by hand in Brooklyn. Each batch is made by steeping a special blend of freshly roasted coffee and chicory in water overnight, then removing the grounds using a two-step filtration process. What's left? A bold, velvety-smooth liquid concentrate that can be mixed with milk or water and served over ice or steaming hot. Laird turned to the Food Venture Center for a shelf-life analysis on his bottled coffee concentrate. "The scientists at the Food Venture Center were an enormous help when we were first starting out. Not only were they far less expensive than commercial laboratories, but they went out of their way to explain food science in layman's terms to someone whose previous career was in magazine journalism," Laird said. "They assisted in ensuring a safe product for the public and really helped us keep costs down at a crucial point in our development."



Morris Kitchen



Want to impress guests at your next cocktail party? How about mixing your signature drink with a syrup made from locally-sourced ingredients? Brooklyn-based Kari Morris purees, juices, steeps and preserves produce with salt and sugar cane to create artisanal ginger, lemon, rhubarb and spiced apple syrups that are perfect for mixed drinks, ice cream toppers or culinary creations. "Our goal is not to reinvent the way people eat, but to share simple ingredients which can be rediscovered creatively," Morris said. Back in 2009, The Food Venture Center proved invaluable when it came to creating the company's unique Ginger Syrup. "As a small business with limited resources, the Food Venture Center made it possible for us to bring small-batch products safely to market. Having access to this network helped us grow into the company we are today," Morris added.



A Lifetime Investment for CALS, New York State By Sarah Thompson

At an Ivy League school like Cornell, leadership is the rule rather than the exception. But what is leadership? Is it one set of skills on a resume, skills with which some people are born, while others are destined to follow? Inside the College of Agriculture and Life Sciences, faculty and staff believe great leaders are made, not born, and that leadership skills cross disciplines. This belief fuels the diversity of classroom training, internship, professional development and outreach opportunities CALS offers to help develop current and future leaders who can impact communities and lives.

In the classroom, alumni speakers, international study abroad programs and class projects are helping undergraduates get more exposure to the skills they need to lead and succeed after graduation.

“Almost every student at Cornell has leadership experience of some kind,” said Deborah Streeter, the Bruce F. Failing, Sr., Professor of Personal Enterprise in the Charles H. Dyson School of Applied Economics and Management.

This means that many students need guidance to refine their leadership focus, and that often starts in business classes, which any CALS student can take as part of the new university-wide business minor or the Dyson Business Minor for Life Sciences. Regardless of major, these classes help prepare students for business leadership opportunities by giving them basic knowledge in management, marketing, finance and accounting, Streeter said.

Other departments have also recognized the need to foster leadership in the laboratory as well as the office. Freshman food science majors can learn career skills from Professor Bob Gravani M.S. '69, Ph.D. '75, while Department of Horticulture chair Marvin Pritts teaches graduate students personal and professional management skills in his course Leadership Development for Life Scientists (ALS 5100).

Laurie Gillespie, associate director of career and academic support in CALS Student Services, said it's equally important for students to develop their “soft skills”: communication, self-management, teamwork, decisionmaking, and analysis of information from diverse sources.

“These skills are in high demand by employers. While many agree that technical skills certainly help get you an interview, these soft skills may get you the job — and help you keep it,” Gillespie said.

This is where class projects, study abroad and alumni speakers can have the greatest impact. From food science to animal science, CALS faculty members are increasingly integrating alumni into their courses to provide context for case studies and

career insights. Gillespie and her team facilitate these connections, then help students plan how to integrate their academic and applied experiences into a career.

KNOW THYSELF

The leadership journeys of alumni speakers in the Entrepreneurship@Dyson one-credit entrepreneurship course can also help students in all CALS majors gain a deeper self-awareness and understanding that is critical in the cultivation of successful leaders, Streeter said.

The Dyson School's innovative Business Opportunities in Leadership and Diversity (BOLD) program takes self-awareness to a new level. It seeks to transform its undergraduate participants into ethical leaders who thrive in inclusive environments, by honing their communication skills, emotional intelligence and service learning experiences. One of the first tasks they undertake is a “strengths finder” assessment.

“Everyone has these strengths. We work on how to weave them into finding suitable professions, or using them in interviews,” said Cindy van Es, senior lecturer at the Dyson School and co-director of the BOLD program. “You have to understand yourself before understanding others; lead yourself, then lead others.”

Diversity is a central tenet of the program. BOLD hosts several affinity groups — Men of Color; Asian; lesbian, gay, bisexual, transgender (LGBT) — and its speakers come from a range of personal and professional backgrounds. Its new inclusive business certificate curriculum includes cross-cultural communications.

“Inclusion is a workforce challenge. You have to be able to work with other people, to maximize their strengths,” van Es said. “All kinds of studies show that diverse work teams produce more than other less diverse teams. In the business world, it's a bottom-line issue. At the university level, more diversity on campus increases all learning for students.”



Home and Away: Students learn to network at a 2011 Business Opportunities in Leadership and Diversity (BOLD) Connections reception (left), while members of the LEAD Class 12 travel to a private beef ranch near Madrid, Spain, as part of an international study trip.

PERSONAL GROWTH AND PUBLIC IMPACT ON THE JOB

In Debra Perosio's Marketing Plan Development course, student teams work together over a semester to develop marketing plans for organizations in the community.

"It's one of the few classes where a team project runs the entire semester. Students really learn to work in situations where resources are constrained. They learn that not all concepts work in real situations," Perosio '79, MPS '92, Ph.D. '95, said. "It's critically important for students to have applied knowledge and experience."

Summer internships and shorter externships offer many CALS students an in-depth opportunity to apply their coursework in the real world. It's also an important way future leaders start building confidence and professionalism.

"Assisting professionals has provided me with a better understanding of how a business operates, the urgency of deadlines, and exposure to a fast-paced work environment. Learning etiquette as simple as proper office attire and how to courteously interact with office professionals will aid my transition into the real business world," said Alexandra Gribbin '16, an interdisciplinary studies major and communication minor who interned with *Harper's Bazaar* this summer.

Internships also expose students to

careers they may not have considered. Angie Kamath '97 is eager to host CALS interns so she can expose them to the start-up culture of social entrepreneurship, while also helping her organization thrive. Kamath leads Per Scholas, a national nonprofit that provides technology education, access, training and job placement services for people in low-income communities.

"A lot of what I do is 'myth busting' — helping students realize that if they want to make an impact solving society's toughest problems, this is a sector that needs smart, talented people with business skills," said Kamath, a member of the Dyson School Advisory Board.

Two unique CALS internships also give students the opportunity to build skills while making a broader impact. Cornell Cooperative Extension (CCE) offers summer internships for CALS students, allowing them to work with faculty advisers and

extension educators across the state on projects ranging from developing communication materials for willow bioenergy crops, to conducting research trials on reducing herbicide use in *Vitis vinifera* grape varieties.

"The concept of getting interns into the field, away from campus and yet connected to campus research, has been a real winner," said Chris Watkins, Herman M. Cohn Professor of Horticulture and CCE associate director for agriculture and food systems.

The NYS Internship Program,

launched last fall, complements the CCE internships by connecting students to career development opportunities while tackling New York's continuing loss of young educated workers.

The program, developed by a team of CALS administrators and extension educators in Cornell's Community and Regional Development Institute, places interns in companies, nonprofits and government agencies across the upstate region. Once there, interns work nearly full time in positions related to their coursework but spend one day per week on a community engagement project to assess their communities and identify ways to improve them.

This summer, eight interns were placed with hosts, including Chobani in Norwich, N.Y., Beech-Nut Nutrition Corporation in Amsterdam, N.Y., and the Tompkins County Department of County Administration.

"Suddenly we have the opportunity to explain to students what exists here," said Joseph Vinciguerra, director of corporate and foundation relations for CALS and co-developer of the internship program. "We can expose them to these opportunities, help them build affinity to these regions or attract local graduates to stay."

CAREER DEVELOPMENT: SHAPING THE FUTURE

Right out of college, most new graduates are focused more on earning money and credentials than adding leadership responsibilities. But once they're ready, many alumni come back to CALS for LEAD NY, a two-year leadership development program for professionals with any affiliation to the food, agriculture

"You have to understand yourself before understanding others; lead yourself, then lead others."

—Cindy van Es, senior lecturer at the Dyson School and co-director of the BOLD program

and natural resource industries.

“We’re training people from a ‘servant leadership perspective.’ We’re developing leaders who will step up into leadership roles in industry and their communities,” said Larry Van De Valk ’87, MAT ’90, Ph.D. ’10, executive director of LEAD NY. “Because our cohorts are so diverse, our grads come out with a much broader, worldly perspective on the challenges facing the state and industry. The blinders are off.”

This is exactly the experience that Christian Yunker ’02 wanted when he decided to get back into the family farming business after spending six years working at an agricultural bank in New Jersey — a job that resulted from the internship Yunker had there after his junior year.

“I always had it in the back of my mind to go back to farming. For me, it took a little more perspective and leaving school to recognize the opportunities. The LEAD program made me recognize the importance of getting involved, becoming active in business, and developing myself personally,” said Yunker, who now owns and operates CY Farms in Batavia, N.Y., alongside his father Craig ’72, a Cornell trustee and LEAD alumnus.

Since graduating from LEAD, Yunker has taken on advocacy, policy-making and leadership roles in his county, its Farm Bureau, and through his local Cornell Cooperative Extension office. LEAD also motivated Yunker to get reinvolved with Cornell. In 2011, he joined the board of the CALS Alumni Association.

CALS: LEADING BY EXAMPLE, A LIFETIME RETURN ON INVESTMENT

The investment of time, energy and resources that CALS puts into developing leaders through these programs is immense, but its return is substantial.

For alumni like Yunker, that return is realized when fellow alumni become leaders in their fields and raise the value of a CALS degree. Keeping alumni leaders engaged — by speaking in classes, participating in educational programs, mentoring students or hosting interns — reinforces that value and helps CALS attract top students and faculty.

“You also hope to get some financial support to keep CALS strong and vibrant.

It’s important for alumni to be proud of where they’re from, to promote CALS to their own communities. We need the best and brightest from all over,” Yunker said.

Classes like Perosio’s, as well as CCE and NYS internships, also provide local organizations, communities and CALS faculty with a tangible return. CCE interns help speed research in the field, while Perosio’s undergraduate teaching assistants gain leadership experience mentoring and coaching her project teams.

By helping its private and public sector partners succeed, through cooperative internships and outreach, Vinciquerra said CALS is better able to deliver on its land-grant mission.

“There are regional companies like

Beech-Nut with a long history with CALS and our alumni, which have made contributions to CALS and Cornell. But they’re facing challenges. They’re concerned about attracting and retaining talent. We’re trying to help them with that problem,” Vinciquerra said. “We’re putting

students in places that are of strategic importance to New York, and to CALS, its partners and its mission.”

This long-term perspective comes full circle at the highest levels in state government. Earlier this year, Governor Andrew Cuomo appointed Patrick Hooker ’84 as Deputy Secretary for Agriculture and Markets. Hooker, an agricultural education major, has been a champion of New York agriculture — and CALS — since he began his career in the New York State Assembly.

From Hooker’s vantage point as a leader and very active alumnus, the return on CALS’ leadership development opportunities and programs is the validation of what’s being taught and studied there.

“For the people of New York, it is nothing less than the maintenance and improvement of food safety, quality, and steady forward progress on a very long list of other quality-of-life issues,” he said.

To that end, CALS programs are a proving ground for aspiring leaders, providing the infrastructure they need to create support networks and companies, serve their communities, and give back as coaches and mentors.

“There is no question that the more experiences you have, the more valuable you become,” Hooker said.

“There is no question that the more experiences you have, the more valuable you become.”

—Patrick Hooker ’84

This summer, bioengineering major Bryan Chan ’15, worked at Beech-Nut Nutrition Corporation in Amsterdam, N.Y., as a quality technologist intern through the NYS Internship Program.

Four days each week, he tested finished products against quality standards for the international company and occasionally worked on independent projects. The fifth day was spent in the community, doing activities and asking questions to help uncover what Amsterdam has to offer and how it can improve.

His eight counterparts across the state also engaged in community

immersion, and they shared their experiences in real time via Cornell’s online Mahara ePortfolio System.

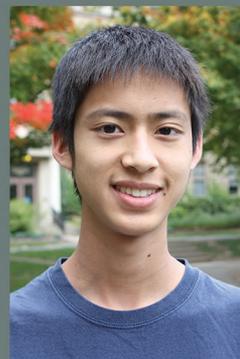
“What’s really cool is that even though we

were all in other places, we were able to see what’s going in these other communities,” Chan said.

For Chan, who’s from Fishkill, N.Y., the internship also offered another opportunity to create, which was the same aspect that attracted him to combine his love of biology with engineering when he came to CALS.

“The program aims to seek out what each community has and what it is lacking, so that the communities can assess and potentially grow,” Chan said. “I wanted to help steer them in the right direction.”

Chan isn’t new to community outreach. He interned last summer in Ulster and Dutchess counties with Cornell Cooperative Extension, working with Susan Hoskins, senior extension associate, to create new geospatial educational materials to help communities better understand coastal change over time in the Hudson River Estuary and its environmental impact. He kept a video blog about the experience, which can be viewed at blogs.cornell.edu/ccsummerinterns2012/author/bc333/.



COMPLEMENTARY ANGLES

"To raise new questions, new possibilities, to regard old problems from a new angle," Albert Einstein remarked, "requires creative imagination and marks real advance in science." The following dynamic duos, whether actively collaborating or working in parallel, are bringing their unique backgrounds to bear on the same challenges, but from different disciplinary angles. From nutrition interventions to cancer prevention to environmental protection, these pairings represent not only the spirit of interdisciplinary discovery at the heart of the college but real advances in the life, social and environmental sciences.



By: Ellen Leventry '95 | Photos: Kent Loeffler



When President Barack Obama declared recently that broccoli was his favorite food, many in the media scoffed that naming the divisive vegetable was simply a PR move. But the raw truth is that the per capita consumption of broccoli in the United States has tripled over the past three decades. Thomas Björkman Ph.D. '87, associate professor of vegetable crop physiology, and Miguel Gómez, the Ruth and William Morgan Assistant Professor of Applied Economics and Management, are helping East Coast farmers cash in on the cruciferous craze. As project director of the Eastern Broccoli Project, Björkman's challenge is to build a broccoli that embraces—rather than wilts under—the hot summer nights of states from Maine to South Carolina. Gómez is working with focus groups to see how the new regional varieties compare in consumers' minds—and in their mouths—to their California cousin. The project isn't just about economic development, but edible discovery: a regional broccoli is a sweeter, crisper vegetable that could win over critics and help diners get their recommended "5 A Day."

The Physiologist and the Analyst





The Breeder and the Behaviorist



Michael Mazourek Ph.D. '08 and David Just aren't kidding around when it comes to getting kids to eat their fruits and vegetables. The Calvin Noyes Keeney Assistant Professor of Plant Breeding, Mazourek is serious about creating playful, colorful, tasty "gateway vegetables" that appeal to petite palates and encourage further fresh produce exploration. One example: A dark purple snow pea with a sweet flavor profile. Meanwhile, Just, co-director of the Cornell Center for Behavioral Economics in Child Nutrition Programs, makes sure that young eaters mind their peas and cues, working with food service directors to implement low-cost changes in lunchrooms that subtly guide students into making smarter food decisions. Simple changes such as offering pre-cut fruit or giving veggies creative names such as "power peas" dramatically increase consumption and empower children to make healthy choices on their own, encouraging a lifelong habit of eating well. The pair will soon be partnering on a project to measure the popularity of the new purple pea.



Whether it's the perception or the physics of flavor, Anna Katharine Mansfield and Ashim Datta literally are the arbiters of taste. An assistant professor of enology, Mansfield evaluates the average consumer's experience of wine using classical sensory techniques for attributes such as aroma, color, mouthfeel, and the balance of sugars and acids—a process those who study wine call “see, swirl, sniff, sip, spit.” From blind tastings to the impact of packaging, Mansfield's work is all about mouth-to-mind perception. A professor of biological engineering, Datta takes a mechanistic approach to taste by analyzing the physics of fluids en route to the taste buds. Work in Datta's group on the obstacles fluid overcomes to eventually reach its destination, such as entering the larger structure of papillae on the tongue and transporting against the rate of saliva flow, shows taste to be the result of complex comestible engineering. Study of these tongue tides and topography coupled with traditional sensory methods may give the science of taste a whole new flavor.

The Enologist and the Engineer





The Designer and the Diviner



An apple a day keeps the doctor away, but it also keeps Drs. Susan Brown and Rui Hai Liu Ph.D. '93 at play. One of only three apple breeders in the United States, Brown, a professor of horticulture and newly named associate director of the New York State Agricultural Experiment Station, recently added two new apple varieties, SnapDragon and RubyFrost, to the college's already established canon of 66. She is currently working on varieties that taste slightly of ginger, cinnamon and anise—perfect for baking, or the more adventurous palate. Liu, a professor of food science who also holds an M.D., is the oracle of the apple, eliciting from this common fruit its uncommon ability to fight cancer and chronic illness. Liu's lab not only discovered compounds in apple peels—ursolic acid and flavonoids—that inhibited the growth of cancer cells, but also first described the novel anti-cancer compound hydroxyursolic acid. Brown and Liu will be teaming up to endow new apples with additional preventative properties, including one high in bio-active quercetin, a powerful anti-inflammatory and anti-cancer compound.



The Storyteller and the Cell Whisperer

Of all the medical maladies afflicting mankind, cancer—100 different diseases affecting 100 million people—is a challenge requiring just as many creative minds and methodologies. Angela Gonzales, associate professor of development sociology, and Carl Batt, Liberty Hyde Bailey Professor, are waging the battle against cancer through both voice and vaccine. Mining the rich tradition of Hopi storytelling, Gonzales collaborates with American Indian communities to develop culturally tailored digital messages about cervical cancer. With 75-80 percent of cervical cancer attributable to two strains of the human papilloma virus (HPV) and fewer than 50 percent of American Indian women getting recommended Pap tests, Gonzales is also investigating the efficacy of home testing kits, and working with tribal communities to increase childhood immunization. Batt, too, knows the value of vaccines, having developed a therapeutic that can potentially boost the immune system's ability to fight cancer. Currently in clinical trials, the vaccine shows promise in reducing the adverse effects of chemotherapy and the dosages required. A more futuristic approach being developed in the Batt Lab is an antibody-targeted tumor therapy that uses metallic nano-particles and heat to kill cancer cells.





The Detox Duo

There is no such thing as “dull as dirt” for associate professor of microbiology Anthony Hay and assistant professor of biological and environmental engineering Ludmilla Aristilde BFA '03, BS '03. These scientists take their soil and water—and how chemicals behave in both—very seriously. Dubbing his research “bugs on drugs,” Hay studies how microbes detoxify the active ingredients in everyday personal care products, such as ibuprofen or triclosan, an antibacterial and antifungal agent commonly found in hand soap and toothpaste. Aristilde’s more chemical approach complements Hay’s microbiological methodology. Using molecular chemistry, biochemistry and computer simulations, she explores the mechanisms of how natural and synthetic organics enter the environment, why they hang around, how they break down, and how long they persist. Together they investigate the hazards that organic chemicals found in everything from pharmaceuticals to pesticides pose to sensitive aquatic and terrestrial species, helping identify products that could be potentially harmful to both human and environmental health.



A MESSAGE FROM THE CALS ALUMNI ASSOCIATION PRESIDENT

It's no secret that the job market for graduating students has been challenging over the past five years. Nationally, more than half of graduating seniors are unemployed at graduation and jobs are going to more experienced candidates.

At the College of Agriculture and Life Sciences, with our world-class academics and strong career services, we are fortunate to have a more positive outlook, with 76 percent of students employed at graduation or enrolled in graduate school. Much of this success can be attributed to Dean Kathryn Boor and her emphasis on preparing students for the real world through meaningful internship experiences. As I assume the role of president of the CALS Alumni Association, I hope to support Dean Boor's initiatives with our own theme of "supporting students through career development and internships." I want to engage as many alumni as possible to help students bridge the gap between academics and career.

From personal experience, I can speak to the power of alumni involvement in shaping students' careers. I can trace the evolution of my career progression going back to my freshman year internship at a cheese manufacturing plant, arranged through an alumnus connection. That internship set me apart as I interviewed for

additional internships and then jobs that continuously built on that first experience. Today, as a brand manager in the foods division of a consumer packaged goods company, my experience has come full circle: I hosted two Cornell interns this past year, and they are well positioned to have successful and meaningful careers.

Getting involved in students' career development has never been easier and more rewarding. Hosting an intern is a powerful way to strengthen your ties to Cornell while experiencing the fulfillment of being a mentor and giving back. This is also a great opportunity to gain access to the talented CALS student population and assess whether your intern is a good match for your company.

As one of more than 50,000 CALS alumni, you are in a powerful position to help unlock the future potential of a Cornell student. Many CALS alumni are already hosting Cornell interns, and we encourage you to get involved as well. To learn more, please visit cals.cornell.edu/get-involved.

I look forward to a successful year.

Michelle Colban '08
2013-2014 CALS Alumni Association
President



CALS
Wants **YOU** to Stay
INVOLVED!

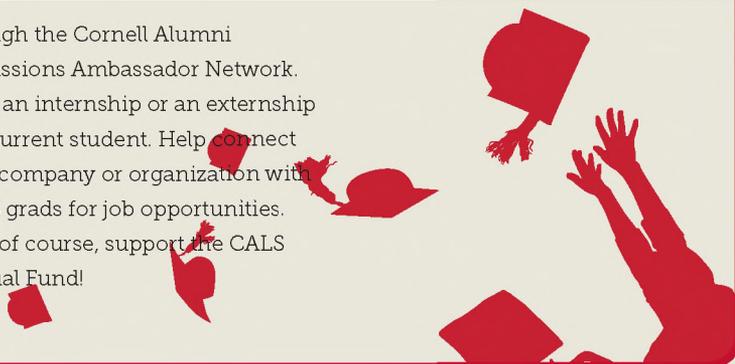
Graduation doesn't mean the end of your connection to CALS.

In fact, it's just the beginning.

For starters, Like CALS on Facebook. Follow @CornellCALS on Twitter. Stay up to date with CALS Notes on Tumblr. Keep your contact info current in the Alumni Career Link. Come back to campus or let the campus come to you by going to a Cornell event near you. Volunteer



through the Cornell Alumni Admissions Ambassador Network. Offer an internship or an externship to a current student. Help connect your company or organization with CALS grads for job opportunities. And, of course, support the CALS Annual Fund!



THE STAMPS

Lakewood Vineyards on the west side of Seneca Lake boasts 80 acres of planted grapes, a retail and tasting room, and five Cornell grads—four of them from CALS.

The Stamp family began its journey at Lakewood Vineyards in 1951, when Frank Stamp quit his dental practice and moved to what was then a peach and apple orchard. They began planting grapes and selling them to wineries and juice companies.

By the mid-1980s, the outlook was darkening for commercial grape production on a farm that size. Frank's son Monty and his wife Bev made the leap to independent wine production, putting up a winery building and pressing the first batch of grapes in 1988.

Now, 25 years later, production has grown from 4,500 gallons to about 75,000 gallons a year, and there are three generations of Stamps working side-by-side to produce the vineyard's award-winning wines.

Chris Stamp '83 is winemaker, partner and president. His wife Liz '85 works on the retail and wholesale end of the business, and his sister, Teresa Stamp Knapp '90, helps with accounting and management. Daughter Abby '13 and son Ben '11, both viticulture and enology graduates, pitch in while home for the holidays. With the help of grandma Bev they recently helped develop a new dry Riesling called 3Generations.

"I consider myself very lucky to have grown up in a family that works so well together," Abby said. "I befriended many people in CALS who plan on eventually returning to their family businesses, and I realized it is really something to be proud of."

The Stamp legacy will extend beyond their progeny, thanks to a scholarship fund established by the New York State Wine Grape Growers in memory of Monty that will provide undergraduate financial assistance to CALS viticulture and enology students.



THE SAUNDERS

You can't get much closer to the family business than Maureen Saunders was—her family lived above her father's animal hospital, and there was a lead shield under her bed to block radiation from the x-ray room below.

Burton Saunders '51, an MBA student who abandoned the degree mid-course to attend veterinary school (DVM '55), founded the Spring Valley Animal Hospital in Monsey, N.Y., in 1958. His daughter Maureen Saunders '83, DVM '87, started at the office in junior high for 50 cents an hour.

"I would always be in the office any free time I had since I was old enough to walk down the stairs," she said. "It seemed so natural for me that being a vet is what I was going to do."

After graduating from Cornell, Maureen returned to her dad's animal hospital, where the two worked together for about 10 years.

"He was a huge influence and really taught me so much," Maureen said. "Although so much has changed and progressed in veterinary medicine, some of the old-time medicine and treatments are still efficacious today, and I tell people that this is a trick my father taught me."

Cornell taught the Saunders other lessons, such as how to organize time, juggle hectic schedules, and become more well-rounded individuals. Maureen picked up some valuable service tips while managing concession stands at Cornell sporting events, and Burton picked up something else while working as the handyman at Alpha Epsilon Phi: a wife.

"Cornell gave me a diamond, one that I have cherished for 60 years—it was named Lucy Fein '54," he said.

Members of the Saunders family have been coming to Cornell for four generations now: Maureen's maternal grandfather, Morris E. Fein, graduated from the College of Engineering in 1927. Maureen's mother, sister, aunt and several cousins are also Cornell alumni—eight total in the family. And her niece, Tiana Schlossberg, entered CALS this August as an animal science major.



THE NEXT GENERATION...

Coming from a family of winemakers going back 400 years, Céline Coquard Lenerz, M.S. '12, never seriously considered any other career path. Read about her experience in winemaking on the CALS Notes blog, <http://cornellcals.tumblr.com/>

THE VIZCARRAS

Melinda Vizcarra '79 hadn't intended to return to the family farm. An idealistic child of the 1970s, she planned to travel the world doing international agriculture. But her Peruvian-born husband, Oscar Vizcarra '79, encouraged her to go back to the Gasport, N.Y., farm that had been in her family since 1894.

"You want to go off and help the third world?" he asked her. "Well, I'm the third world right here. Why don't you help me?"

When the Vizcarras began farming in 1979, the 340-acre farm had dwindled to a few tart cherry trees. The couple started small, planting their first u-pick strawberries just before they graduated from Cornell and married.

"U-pick wasn't totally unheard of, but most people thought we were crazy," Melinda said. "But Oscar grew up in the city. He knew there was a demand for people to have a farm experience. He was always totally confident this would work."

And how. From those first strawberries, the Vizcarras added more fruits and vegetables.

Then they jumped into agri-entertainment, adding harvest-season festivals, a farm market, and value-added foods like cider, pie and ice cream. In the last decade, the couple has added a winery (Vizcarra Vineyards), two wedding pavilions, a CSA and now a micro-brewery. Their entrepreneurial success prompted the New York State Agricultural Society to recognize Becker Farms as its Business of the Year in 2013.

And the next generation is contributing with its own innovations. All three of the Vizcarras' grown children have returned to help manage the farm. Amanda is the events coordinator, Oscar Jr. is CSA coordinator, and Andres is winemaker and tasting room manager.



THE EPSTEINS

In the early 1930s, Felix Epstein began selling herbs and spices out of a small storefront pharmacy in Germany. In 1940, when Epstein emigrated from Germany to New York, he brought with him his knowledge and passion for spices and seasonings.

New York City was filled with other German and Eastern European immigrants, including meat manufacturers who quickly learned the value of Epstein's spice blends. First Spice Mixing Company was born.

In less than two decades, demand for Epstein's wares had grown so large, the entrepreneur built manufacturing plants in Manhattan, Long Island City, Toronto and San Francisco.

First Spice is now a third-generation family business, with two generations of connection to Cornell and CALS. Felix's son Peter '62 led the way before passing

the reins to his three daughters: Marcy '88, Wendy '93 and Vicki.

"Felix Epstein's dream was to be remembered, and continuing his legacy has become our mission too," Marcy said.

"He started with an emphasis on continuous improvement in food safety, product development and customer service before there was ever a need for third-party review," she added. "There is a tremendous sense of pride and satisfaction in continuing our family business and bringing it up to 21st century international regulatory standards and meeting ever-changing consumer demands."

"Cornell was instrumental in developing our core skills, whether in food

science, nutrition or communications,"

Wendy said. "Cornell inspires a new generation and the circle continues to grow and innovate, which is the secret to all success. The fourth generation—Felix Epstein's great-grandsons, ages 13, 11, 7 and 5—will hopefully expand this circle."

THE RESNICKS

For the Resnicks, cancer-fighting runs in the family.

Gene Resnick '70, M.D. '74 worked as a practicing oncologist for 12 years at Weill Cornell Medical Center before transitioning to the pharmaceutical industry, where he helps groups obtain regulatory approvals for new drugs. He's currently executive vice president and chief medical officer at Aptiv Solutions.

His son, Matthew Resnick '01 is a surgical urologic oncologist at Vanderbilt University and a National Quality Scholar for the Department of Veterans Affairs.

Gene was the first in his family to attend college.

"My folks were hard-working middle class and had very clear goals of excellent education and professional careers for their two sons," he said. "They were terribly proud at my medical school commencement and were truly beaming and ecstatic at Matt's graduation from Penn School of Medicine."

Matt's interest in medicine was sparked by making rounds with his father at Cornell Medical Center on weekends, although Gene said he tried to dissuade his son from the career choice.

"He didn't listen to me and has done pretty well," Gene said.

Both father and son said their time at Cornell was invaluable.

"Cornell taught me both how to ask good questions and how to answer them," Matt

said. "The Cornell faculty challenged me to think outside the box to move the field forward."

Gene has served in myriad capacities for Cornell, including on the Board of Trustees, the University Council, the Life Sciences Advisory Board and the Weill Cornell Medical College Alumni Association. His other son Brad '06 is also a CALS grad who now works at a private equity firm.



Lynn Vacca Ambrosia '79, MBA '81

Outstanding Alumni Award

Since graduating from Cornell's business school, Ambrosia has worked in the consumer food industry in marketing and general management, including positions at Nabisco, Kraft and Campbell Soup. She repositioned icon



brands – like Campbell's "Red and White" soup and Nabisco's Ritz Crackers – turned around troubled businesses, made acquisitions and divestitures, and introduced a number of

successful new products, including Ritz Chips and "sippable" soups. Recently, she launched a management consulting firm, New Horizons Group LLC, specializing in strategy and new business development.

Ambrosia has not only left her mark in her field, but also on the field; while a student, she was an athlete on the women's lacrosse and basketball teams.



Lynn Vacca

She has returned to the Hill many times – to meet and mentor students, serve as a guest lecturer, facilitate practice interviews, co-chair annual campus-wide mentoring luncheons and to cheer on the Big Red sports teams.

Ambrosia has also hosted externs and serves on several university councils and committees, including the Cornell University Council, the President's Council of Cornell Women (PCCW), and the Dyson Undergraduate Business Advisory Council. In addition, Ambrosia's generous philanthropy has touched almost every corner of the Cornell campus.

She is married to former Big Red hockey player David Ambrosia '78 ILR, '82 MBA/JD, and they have two sons, Mike and Dan '11.

Dale Bornstein '85

Outstanding Alumni Award

Dale Bornstein was recently named CEO of global communications agency MBooth. She was previously a senior partner at Ketchum, where she built a reputation as a boundary breaker and brand builder. She was the driver behind agency efforts to create



innovative next-generation communication strategies such as Mindfire, a virtual brainstorming platform that is powered by university students at

more than 35 academic institutions around the world, including Cornell. She also oversaw the five Global Practices — the agency's global media network and global creative community — as well as Ketchum Sports and Entertainment. Her work, and that of her team, has been honored with every industry award, from the Silver Anvil and Sabre to the Cannes PR Lion. Prior to joining Ketchum, she was an assistant buyer for Saks Fifth Avenue.



She is also a dedicated Cornellian, as a guest lecturer for the Department of Communication and a member of its advisory council, as well as the Cornell University Council. She helped launch the Job CAMP alumni mentorship program in 2011, has hired many graduating seniors and helped them advance in their careers.

Outside of work, Bornstein is devoted to her 8-year-old son Carson and husband of 11 years, Harlan Reinhardt. She sits on the board of advisers for Second Chance Toys, a not-for-profit dedicated to the "reuse and recycling" of toys for underserved children. She's also a weekend warrior when it comes to figure skating.

Patrick Hooker '84

Outstanding Alumni Award

Patrick Hooker has become a powerhouse of New York agriculture. His career started in the New York State Assembly, where he was a rural affairs adviser in the Office of the Minority Leader from 1985-1987. He later served as director of the Senate Agriculture



Committee, and provided leadership to the New York Farm Bureau for 16 years as director of the Division of Governmental Affairs and as deputy director of public policy. The education graduate

became the state's Commissioner of Agriculture in 2007. He left the agency in 2011 to serve as director of agribusiness development for Empire State Development Corporation, and he was recently appointed by Governor Andrew Cuomo as deputy secretary for food and agriculture, where he oversees the Department of Agriculture and Markets and the State Liquor Authority.



Hooker has contributed to the university by serving on several boards, including: the Dean's Advisory Council, the New York State Agricultural Experiment Station Advisory Council, the New York Sea Grant Board of Governors, and the Statewide Integrated Pest Management Grower Advisory Committee.

Wine lovers also owe Hooker a debt of gratitude: he was instrumental in bringing a specific clone of Riesling grape from Germany to New York to be planted at Dr. Konstantin Frank's vineyard, earning him an industry award from the New York Wine and Grape Foundation in 2011.

Hooker, his wife Karen and their two children – Erika '13 and Mitchell – live on a 360-acre farm in Herkimer County where they harvest hay, keep horses and produce maple syrup.

Daniel Goldman '87

Outstanding Alumni Award

Daniel Goldman's interest in energy was launched at Cornell during a sophomore course on energy economics. Now, nearly 30 years later, the agricultural economics major is a leader in creating and financing innovative clean energy solutions.

As co-founder and chief financial officer of New Energy Capital Corp., Goldman started one of the first investment firms focused exclusively on clean energy projects. He also co-founded and currently serves as managing partner of Clean Energy Venture Group. During his

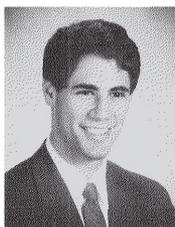


25-year career in energy, he has been involved in more than \$4 billion of energy-related finance transactions. He currently serves as president and chief financial officer at

GreatPoint Energy, which produces clean, low-cost natural gas from carbon feedstocks. He has also played a founding role in several clean energy companies, and he serves as a board member and adviser to companies and investment funds, as well as business advocacy group Environmental Entrepreneurs in New England.

Goldman has shown equal passion for Cornell. He sits on the External Advisory Board for the Atkinson Center for a Sustainable Future and the Cornell University Council, where he was chair for Sustainable Development and Environmental Stewardship. He also served on the Dyson Undergraduate Advisory Council and participated as a panelist for several entrepreneurship events.

Goldman lives with his wife, Diana '87, and their three daughters in Newton, Mass. Rachel '16 is studying at the College of Human Ecology and Katie '17 is at the Dyson School. In his spare time, Goldman is an avid road cyclist and triathlete.



Jonathan Lamb '94

Outstanding Alumni Award

For many in the New York farming community, the Lamb name is synonymous with cows: high quality animals sought out for their genes as well as their milk.

Following in the footsteps of his grandparents, Leslie and Margaret '36, and father, Gordon '64, Jonathan Lamb has helped transform Lamb Farms into one of the nation's leading dairy operations. What started out as a 45-cow operation in 1966 has grown into a milking herd of 6,000, plus 5,600 calves and heifers, and 11,000 acres of crops. Together with



his wife Alicia, brother Matthew '98, and business partner Jim Veazey, Lamb oversees three dairy farms in Genesee and Niagara counties. His innovative use of leading-edge genetic improvement techniques has

made him a frequent public speaker and chairman of the genetic advancement committee for Holstein USA. His farm is also known for its sustainability initiatives, including dried manure for bedding and an anaerobic digester that uses manure to produce enough biogas to power a 400kW grid-linked electrical generator.

Lamb is a board member and former chair of the Northeast Dairy Producers Association, as well as a member of the Farm Bureau, the New York Holstein Association and the Upstate Niagara Cooperative of dairy farmers. He and his wife are mentors for the Nioga Holstein Club. Lamb Farms also plays host to numerous groups, including the Cornell Dairy Fellows, local Boy and Girl Scout tours, and Genesee County First Grade Dairy Days. The farm has been recognized by the Upstate Niagara Cooperative for its outstanding milk quality for several years, and the Lambs were named the Holstein USA Association's Distinguished Young Breeders in 2012.



Jon Daniels '99

Young Alumni Achievement Award

At the age of 36, Jon Daniels has had more professional success than most individuals have in their entire careers. In 2005, he became the eighth general manager for the Texas Rangers — the youngest in baseball history — and under his leadership, the baseball team has advanced to the post-season for a club record three consecutive seasons.

Daniels joins an elite group of general managers to make it to more than one World Series appearance with his current team — an accomplishment that earned



Daniels Baseball America's 2010 Major League Executive of the Year. He was also selected as the 2011 Major League Executive of the Year by the Boston chapter of the Baseball Writers Association

of America.

The applied economics and management graduate began his baseball career in 2001 when he landed an internship with the Colorado Rockies. At the conclusion of the season, he was hired as the Rangers' assistant for baseball operations. He was promoted to director of baseball operations in 2003, to assistant general manager in 2004, and to president of baseball operations in February 2013.

Despite a grueling schedule, Daniels remains committed to Cornell. He has participated as a panelist at events for the Cornell Entrepreneur Network, Entrepreneurship@Cornell, ILR Sports Management Club, and the Cornell Alumni Association of North Texas.

He is also dedicated to his community. Daniels is an ardent supporter of the Texas Rangers Baseball Foundation and, together with wife Robyn, he established the Daniels Family Scholarship in 2013. They are the proud parents of three children.



The Outstanding Alumni Awards honor CALS alumni who have achieved success in their professional fields, demonstrated commitment to the college, and contributed to the betterment of society through humanitarian and charitable endeavors. Outstanding faculty and staff are also recognized for significant contributions in teaching, research, extension or administration. Visit the CALS Alumni Association site cals.cornell.edu/get-involved for more information, or to make a nomination.

Helene Dillard

Outstanding Faculty Award

Helene Dillard's involvement in the College of Agriculture and Life Sciences is nearly as extensive as the extension network she oversees. The dynamic director of Cornell Cooperative Extension (CCE) provides leadership to 52 extension associations that provide extension programming across the state, reaching nearly 3 million individuals in 2012. Last year, CCE conducted more than 100 educational activities per county, per month, led by professional staff and more than 50,000 volunteers.

Dillard also serves as associate dean in two colleges, CALS and the College of Human Ecology. She carries the titles of international professor and Atkinson Center Faculty Fellow, and she travels the state, nation and globe to speak to government officials and others on behalf of CCE.



Prior to taking the helm of Cornell Cooperative Extension in 2002, Dillard was a plant pathology professor carrying a 50 percent research and 50 percent extension assignment, with a focus on biology, ecology and management of fungal pathogens that cause diseases in vegetable crops. She is particularly interested in sustainable disease management strategies, integrated pest management, organic cropping systems and understanding host/pathogen/environment interactions.

Despite her CCE obligations in Ithaca, she still manages to devote 20 percent of her time to this research at the New York State Agricultural Experiment Station in Geneva.

In recognition of her work as an extension plant pathologist, she received a special citation for extension faculty from the New York State Association of County Agricultural Agents in 1991; the Excellence in Extension Award from the American Phytopathological Society in 1992; and APS Fellow from The American Phytopathological Society in 2006. In April of this year, she was awarded the New York Farmers Medal.

Dillard's CCE colleagues credit her with forging new strategic directions and re-branding CCE to keep it relevant for its second century. She has demonstrated the political acumen to secure budgets with county, state and federal officials, often through multi-disciplinary collaborations. She is also a strong advocate of providing opportunities for students to get hands-on experience in real world environments, and she initiated the CCE Undergraduate Extension Internship Program.

Dillard received a B.S. from the University of California-Berkeley, and her M.S and Ph.D. from the University of California-Davis. She lives in Ithaca with her husband, Victor, and their son Jamar, who is attending Binghamton University. Together they enjoy fishing, boating and the outdoor life in the Finger Lakes region.



Jeff Hancock

Rising Star Faculty Award

Want to know if someone is lying to you? Look them in the eye, listen to the words they use — or ask Jeff Hancock. The associate professor of communication and information science has become a world-renowned researcher on psychological aspects of the Internet, including deception and relationships. You may have seen him interviewed on CNN or *CBS This Morning*, where he is a frequent guest, or in the pages of *The New York Times*, *USA Today* and *Scientific American*.

He maintains a prolific research program and directs the Social Media Lab, where faculty and students investigate a variety of behaviors that take place online, such as language processes and self-presentation on social networking sites.



He also engages in the national dialogue on technology and society, through both the national and local media. His TED talk on the Future of Lying has been viewed more than 800,000 times. He is also regularly sought as a reviewer for the National Science Foundation and as a consultant for several government research agencies. And he is a firm favorite at alumni events hosted by the Cornell on the Road program and numerous Cornell Alumni Clubs.

A committed Cornell community member, he serves as a member of the Institutional Review Board and the Survey Research Institute Advisory Board, in addition to his academic appointments as co-chair of the Department of Information Science and the co-director of the Cognitive Science Program. He is also House Professor and Dean of Keeton House, where he lives in residence on West Campus.

Hancock's classes are extremely popular — a course he began in 2003 has grown from 18 to 180 — and he has been recognized as an energetic and innovative lecturer. He has received several teaching awards, including: the Merrill Presidential Outstanding Educator Award, CALS Young Faculty Teaching Excellence Award, and the SUNY Chancellors Award for Excellence in Teaching.

His work is frequently recognized with top paper awards at international conferences, and his research is supported by more than \$3 million in grants. In 2009, he received the Provost's Award for Distinguished Scholarship. He is also an associate editor at the *Discourse Processes* journal and a member of five editorial boards.

Hancock and his wife, Aimee Woodruff, MBA '04, a project manager in the Department of Communication, live in Keeton House with their young daughter, Lenox. The Canadian native is also an avid hockey player who used to work as a border patrol agent.



BEE GRAD TOASTS A LOVELY BUNCH OF COCONUTS *By Krisy Gashler*

Sometimes, even a sandwich at the Statler can be a learning experience. Dissatisfied with what was on offer, biological and environmental engineering major Vincent Kitirattagrarn '06, ME '07 asked to engineer his own, specifying the ingredients he wanted and their preparation: toasted.

"The manager saw my sandwich and he offered me a job on the spot," Kitirattagrarn said.

Seven years later, Kitirattagrarn is toasting more success as head of Dang Foods, a company he started with family members that is expected to bring in close to \$1 million in revenue just a year after its launch.

The New York native spent the first five years after graduation doing sustainability research for a San Francisco-based startup during the day and cooking for the city's Underground Farmers' Market at night.

His mother—Dang, for whom the company is named—gave



him a Thai lettuce wrap recipe that called for toasted coconut. That sparked an idea to make coconut chips and market them as a healthy snack food. Kitirattagrarn called his brother in Thailand to ask for coconut samples, and he began contacting grocery stores and trade shows. Dang Foods' Toasted Coconut Chips are now carried in 1,000 stores, including Whole Foods and Safeway chains, primarily on the West Coast. His next target: Wegmans.

"I would love for Cornellians to be able to try it," he said.

The entrepreneur hasn't given up his commitment to sustainability; Kitirattagrarn said his work in that field has informed and inspired his new food career. Coconuts require little to no pesticide or fertilizer, and the trees can produce for up to 60 years, he pointed out.

"Sustainability is great from the research side, but if you can actually put it into action, that's even more impactful," he said.

SPICING UP THE YOGURT INDUSTRY *By Stacey Shackford*

It's a smoothie with a twist: the refreshing flavor of summer fruits, warmed by winter spices, served up in a shot of milky goodness.

Amrit Singh '11 and his wife, Ipshita Pall, create chef-crafted yogurt products that incorporate the art of Indian spice cookery. Their first line of products, That Indian Drink, combines fresh fruit with New York milk to make novel varieties of lassi, a traditional Indian-style drink. Pairings include blueberry cardamom orange, raspberry cinnamon ginger, and alphonso mango rose water.

"Yogurt can be boring. I just wanted to come up with something very different," Pall said.

Their Ithaca business, The Indian Milk and Honey Co., was born around the same time as their son, Birjyot. In fact, he was part of the inspiration. It wasn't until she became pregnant that Pall began reading labels and realized that even "natural" products had a lot of ingredients, most of which she didn't recognize. She wanted something simpler and she suspected she was not alone.

"Everything does not have to have a nine-month shelf life," Pall said. "A short shelf life is okay. It means you do not need stabilizers, and without them, you are going to get fresher ingredients."

Pall knows a little something about ingredients. Formerly an IT consultant in India, she wasn't much of a cook and wanted to take a few classes to learn. The classes turned into a career; she attended Le Cordon Bleu College of Culinary Arts and then became a chef at Vermilion restaurant in Chicago and New York City, creating Indian-Latin fusion cuisine. She even appeared on



the cooking show Iron Chef.

Her husband knows a little something about business thanks to his courses in agricultural economics at Cornell. In fact, Cornell was crucial to much of the couple's success. The first batches of their drinks were formulated at the Food Venture Center at the New York State Agricultural Experiment Station in Geneva, N.Y., and its director, Olga Padilla-Zakour, introduced Singh to many key contacts, including suppliers and a dairy willing to serve as a production facility.

"I could never be a corporate CEO because of the politics, so what do people like me do? I made my own path," said Singh, who also left an IT career to come to Cornell. "I took a variety of classes, in food science, nutrition, business. In my mind there is no other institution which offers these opportunities."

The business began in October 2011, with \$20,000 and countless hours of hard work. Everything is hand-crafted—both inside the bottle and outside, including the labels. Their products are now available in seven states, including at Whole Foods, and they are building their own facility in Freeville.



alumni notes

ALUMNUS TEAMS UP WITH BANKS TO SUPPORT NEW AG ECONOMICS PROFESSORSHIP *By Stacey Shackford*

The sign of a good dairy farmer is not just how well he knows Bessie and Cornelia, his cows, but also Danny the fertilizer supplier, Donny the vet, Donelle the nutritionist, Dionne the loan officer, and the host of other people who keep his operation ticking.

Management is the key to agricultural success, according to Sheldon Brown '68, and it's the reason he teamed up with CoBank and Farm Credit East for a \$600,000 joint gift to establish the CoBank/Farm Credit East Sesquicentennial Faculty Fellowship in Economics and Management of Agricultural Production Sustainability and a student scholarship in the Charles H. Dyson School of Applied Economics and Management.

"Although it is a biological process, farming is getting more and more business-like every year. In order to survive, I think our future farmers need to be professional managers, whether they are growing 5 acres for a CSA or 5,000 acres of soybeans," Brown said.

Brown, a dairy science major and farm consultant who recently retired from full-time farming, approached the 15-member Farm Credit board of directors after being inspired by a similar gift made last year by fellow dairy farmer George Mueller '54.

Brown said his agricultural economics classes with Stan Warren still resonate with him today.

"Whether you are running a mushroom farm, an apple farm or a dairy, the management decision-making is the same; the basic premise of marketing is the same," he said. "Soon we are going to have to feed billions more people around the globe, and we are going to need intelligent decision-making by the people providing that food."

CoBank is a leading provider of credit

to rural America's vital industries. A member of the Farm Credit System, it also provides wholesale loans and other financial services to 29 affiliated Farm Credit associations, including Farm Credit East, an association serving 13,000 customers in six states in the Northeast.

Farm Credit East has a history of involvement with the College of Agriculture and Life Sciences, including support for the Dairy Fellows Program and the CALS New York State Internship Program. Executive vice president Roger



Left to Right: Bill Lipinski, Farm Credit East CEO; Sheldon Brown '68; Dean Kathryn J. Boor; and Scott Markham, CoBank Board Member

Murray '81 is also the chair of the Agribusiness Advisory Council in the Dyson School.

"We are very pleased to support this unique position at the Cornell College of Agriculture and Life Sciences because it will help expand opportunities for agriculture in our region and ultimately help enhance profitability for the farm community," said Bill Lipinski '79, Farm Credit East's chief executive officer.

"For well over a century, Cornell has been a leader in agricultural research and education, helping the U.S. farm economy to become the most productive and innovative in the world," said Bob Engel, chief executive officer of CoBank. "We're delighted to be partnering with Farm Credit East and Sheldon on this contribution, which will advance the knowledge of sustainable agriculture and also benefit students pursuing agricultural careers."

"By helping Cornell to continue to provide the very best research and education at the nexus of agriculture, business and sustainability, this generous gift represents an important investment in the future of the region's agriculture sector," said Kathryn J. Boor, the Ronald P. Lynch Dean of the College of Agriculture and Life Sciences.

OUTPOURING OF SUPPORT FOR DAIRY PROGRAM LEADS TO UNPRECEDENTED ENDOWMENT

By Stacey Shackford

Oh, what a fellow. When David Galton came to Cornell as an assistant professor in animal science in 1981, there were just 25 students in the dairy management program. When he retired this year, there were more than 140 enrolled in what has become one of the premier undergraduate dairy programs in the nation, and hundreds more graduates still call on "Doc" for career and personal advice.

His legacy at Cornell will continue thanks to a newly created endowment in support of the highly successful Dairy Fellows Program he began in 1984. Fundraising for the endowment has already surpassed \$1.8 million, making it the most successful campaign of its type in the College of Agriculture and Life Sciences. And the number of individual contributors reflects the strength of support for the college's dairy program from across the industry.

Galton and his wife, Sally, made an initial gift, joined by their business partners, Dan '04 and Nate Osborn '06 of Ridgecrest Dairy. Gifts have since come in from nearly 100 other alumni and friends of the Dairy Fellows Program, which has helped prepare more than 1,200 students for dairy industry careers through a combination of rigorous science-based classroom education and a variety of hands-on experiences, including internships, farm analyses, industry tours and international travel.

"To watch young people learn and grow through experiencing an educational program such as Cornell Dairy Fellows has been very rewarding and satisfying over the past 30 plus years," Galton said. "The success of the Fellows Endowment is a reflection of how the program is valued by the Fellows alumni and related industry professionals, businesses and organizations."

"I applaud Dr. Galton's generosity and commitment to securing the future of the Cornell Dairy Fellows Program. It remains a critical and highly acclaimed experiential learning program in our college that has a lasting impact on our graduating Fellows," said Kathryn J. Boor, the Ronald P. Lynch Dean of the College of Agriculture and Life Sciences, who also named a classroom—164 Morrison—in Galton's honor.



HAPPY COWS—AND RESEARCHERS—AT HARFORD *By Stacey Shackford*

Life's a beach for Frosty, Junior, Pancho, and the 547 other cows who have moved into their new \$8 million 105,000-square-foot home in Harford, in a bucolic setting 15 miles from campus.

They have traded in their former cramped accommodation in a stuffy, 40-year-old cinderblock facility for roomy stalls featuring deep beds of soft sand, lots of light, and fresh air.

Researchers are also rejoicing. In addition to increased cow comfort, the new college-funded Cornell University Ruminant Center—opened in September after a year of construction—features both basic and state-of-the-art upgrades that will make it easier for faculty, staff and students to conduct research on nutrient use with implications for environmental efficiency, reproduction, and dairy cattle health and well-being.

"We now better reflect what our progressive dairies are doing, from a facilities standpoint," said animal science professor Tom Overton '91. "This gives us an opportunity to focus attention on the needs at both the farm level and within the industry across New York."

It may also provide new research opportunities. Group (freestall) housing, for instance, is common in many New York dairies but not in research facilities. In addition to individual tie stalls, the new Harford barn has sections where cows can be housed in groups of 16 or 32, which will allow researchers to study

aspects of dairy cattle management in group-housed cows for the first time.

It also has a milking parlor with an underground sampling area, and separate weigh stations, holding pens and "metabolism stalls," where additional space around each stall allows for more intensive study of nutrient digestion and cow physiology.

"Our focus was creating a facility that is modern in design, with high levels of cow comfort, efficient from an operational standpoint, with a lot of functionality to do the types of research that we think are important to help our dairy farmers continue to innovate," Overton said.

Katie Schoenberg '03, Ph.D. '11, who conducted her Ph.D. research in the old 1971-era Teaching and Research Center, said the new facility will be a great asset to the university and to the dairy industry. In her new role as a research scientist for Elanco Animal Health based in Greenfield, Ind., Schoenberg relies heavily on the expertise of faculty in her former department, and she said the new facility will enhance opportunities for further collaboration.

"This is a top-notch facility. There are not many like it across the country, and it reinforces Cornell's role as a leading institution in dairy cattle research," Schoenberg said. "This is going to have a huge impact on students and researchers in the department."



The new Cornell University Ruminant Center is just one of many recent investments in dairy at Cornell.

Another new facility closer to campus—a \$5.8 million state-funded 43,000-square-foot Teaching Dairy Barn shared with the College of Veterinary Medicine—is celebrating its first anniversary. The fully renovated Stocking Hall, featuring a new glass-fronted dairy plant, opened its doors this fall.

Governor Andrew Cuomo recently announced a \$1 million investment in the Dairy Acceleration Program managed by PRO-DAIRY and Cornell Cooperative Extension. The collaboration with New York's Department of Agriculture and Markets and Department of Environmental Conservation is designed to help small- and medium-scale dairy farmers improve their businesses while maintaining a commitment to environmentally responsible growth.

Research grants include \$9.9 million from the USDA and the U.S. Department of Energy on a five-year project to study the environmental impact of dairy production systems in the Great Lakes region and develop best management practices for producers to implement on farms.

And Senator Charles Schumer (D-N.Y.) was on campus on Sept. 3 to announce his intention to make Cornell a national center of excellence in dairy and food safety. The federal recognition could help the university secure more funding for food safety research and training initiatives. It could also place Cornell more prominently on the national scene and allow the university to lead development of industry-wide quality and safety standards.

"I'm excited about all of the investment in dairy that we see going on at Cornell," said animal science professor Tom Overton '91. "It's not just exciting from an educational perspective, it's also exciting in terms of the development of the industry and the development of dairy manufacturing capacity here in New York."



MY CORNELL STORY Cathy (Blodgett) Gaffney '89

For this farm girl from Lima, N.Y., the path to success as a corporate leader at Wegmans was not a straight one. From 4-H to France, with a brief foray into fashion, it's been a fascinating journey, and one that started at Cornell nearly 28 years ago.

I first fell in love with Cornell at the age of 10, when my 4-H group won the regional finals for Dairy Bowl and our team made its way to the state finals in Morrison Hall. We won the first round when the moderator asked, "Name the four..." and I buzzed in to name the four stomachs. Good thing that was the question! Our team came in second, but CALS became my first choice for college.

The 4-H program was a central part of my life during my middle school and high school years. Dairy Bowl, dairy judging and (my favorite) showing registered Holsteins at the county, state and national levels provided life learning experiences. Cooking, public demonstrations and the teen ambassador program were really the foundation of what I love and what I do today.

It also meant many trips to Cornell. I treasured those visits, enjoying the beautiful landscape and scholarly buildings. I imagined myself there as a student, and when the acceptance letter arrived, I knew I was on my way to an experience of a lifetime.

Like any farm girl who loved biology and animals, I wanted to be a veterinarian. Well, after one semester of biology and then organic chemistry, I tried a marketing class with Gene German and got my first A. I immediately changed my major to Applied Economics and Business Management (aka: Ag Econ) and discovered just how fun the world of agribusiness could be.

At the same time, I took a position in the Office of International Agriculture. It was so interesting meeting and working with people from around the world, all challenged with a common goal: how to feed the people in their country. I also began taking more coursework in economics and food industry management.

During my senior year, I became a teaching assistant for Professor German. He commented one day that I was a "textbook buyer"; with my love of the food industry and agriculture, he suggested that Wegmans would be a great fit.

Unfortunately, I would have had to start part time, which was not an option for me as I was getting married. However, another opportunity presented itself in Rochester: a well-

renowned executive training program at Sibley's (a division of May Department Stores). With the prospect of becoming a buyer when completed, I took the position. I have a passion for fashion, too!

After a few years, however, I began to miss the food business.



Luckily, the opportunity I had been waiting for arrived: Wegmans was now offering a management intern program. After several interviews, I was offered a position as a department manager in training in the Old World Cheese Shop at the flagship store in Pittsford, N.Y.

Over the next two years, I worked in several stores, managing and training others. I also began learning the ins and outs of deli/prepared foods, and I was asked to take on a special assignment to grow our coffee business, which involved a roll-out of coffee shops across the company. Two years later, I began working with our prepared foods area at the corporate level, and I helped implement some changes to our meat department. Then another special assignment presented itself, creating a new role for the company: perishable store manager. What followed was a new restaurant concept, Tastings.

In 2003, I returned to the corporate office and to one of my initial loves: cheese! From category merchant, to group manager, to director, my role has matured over the past 10 years, and so has the business, which has grown by more than 300 percent. By partnering with Cornell (see page 13), we hope to influence and grow the state's artisan cheese industry even further.

The leadership at Wegmans is progressive and has always empowered me to run the business as my own. I love creating the future vision for both the cheese and deli departments. I look forward to work every day. Whether I am traveling to one of our stores or farther afield—meeting with cheesemakers in France, olive growers in Greece, or Prosciutto producers in Italy—I am able to combine my passions with my agricultural roots. I feel very fortunate for this and for the fantastic support system, including my husband, John, and daughter, Mary, that enables me to do so.

I have been at Wegmans now for more than 20 years. I certainly would not have found my way here without all the learning, encouragement, support and unique experiences at Cornell. The education was tremendous, but the exposure to people with so much diversity in culture and thought has always encouraged me to "think outside the box."

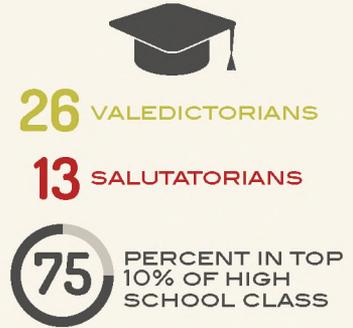
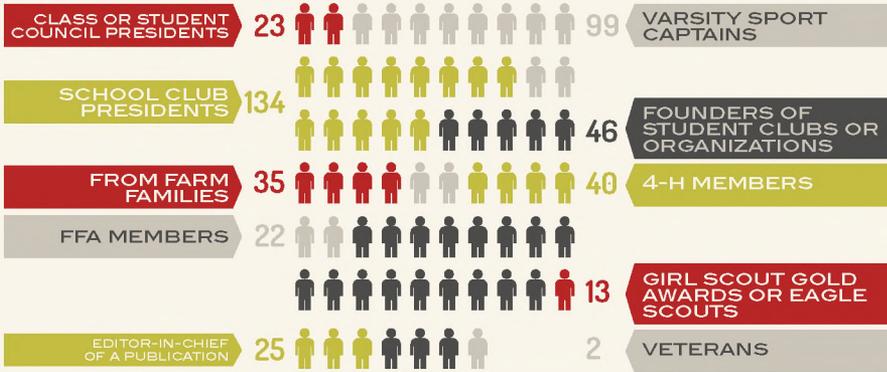
Cathy (Blodgett) Gaffney '89 is the director of the specialty cheese, deli, and kosher deli departments at Wegmans Food Markets, a family owned, 81-store supermarket chain with stores in New York, Pennsylvania, New Jersey, Virginia, Maryland and Massachusetts. In her 20 years with the company, Gaffney has held numerous positions in both the store operations environment and at corporate headquarters in Rochester, N.Y. In her current role, she travels extensively to find new products and concepts to grow these unique businesses. The applied economics and business management major grew up on a 700-acre dairy farm in Lima, N.Y., and currently resides in Rush, N.Y., with her husband John and daughter Mary.

INCOMING CALS STUDENT STATS

2013

674 FIRST YEARS 246 TRANSFERS

MEN 48% WOMEN 52%



21 Majors

Agricultural Sciences

Get a broad overview of agriculture, as well as more intense study and hands-on experience in one of five concentrations: animal science; crop production and management; sustainable agriculture; business; education and communication.

Animal Science

Prepare for study in veterinary medicine or careers in animal production, biotechnology, and conservation, in a program that has been nationally recognized in animal breeding and genetics, nutrition, physiology, growth, behavior, and dairy management.

Applied Economics & Management

The Charles H. Dyson School of Applied Economics and Management provides management education and the opportunity to specialize in accounting; agribusiness management; applied economics; entrepreneurship; environmental and resource economics; finance; food industry management; international trade and development; marketing; or strategy.

Atmospheric Science

Examine the behavior of weather and climate, and gain experience in the analysis, interpretation, and forecasting of meteorological events.

Biological Engineering

Integrate engineering and biology to solve some of the challenges facing our world, such as ensuring an adequate and safe food supply, protecting natural resources, and developing systems that monitor, replace, or intervene in the mechanisms of living organisms.

Biological Sciences

Study the fundamentals of biology while concentrating on: animal physiology; biochemistry; computational biology; ecology and evolutionary biology; genetics, genomics and development; insect biology; marine biology; microbiology; molecular and cell biology; neurobiology and behavior; human nutrition; plant biology; and systematics and biotic diversity.

Biology & Society

Examine the social, political, and ethical aspects of modern biology, research, and practice.

Biometry & Statistics

Apply statistics, mathematics, computing, and other methods to solve problems in diverse fields, from the life and social sciences to business and finance.

Communication

Study communication processes and put theory to use in understanding audiences, shaping messages, and interacting with individuals and technologies. Focus areas include: communication, environment, science, and health; communication media studies; communication and information technologies; and communication and social influence.

Development Sociology

Contribute to understanding societal development and factors to solve social problems, both local and global, in a program that is well known for international, domestic, rural, environmental, agricultural, and population studies.

Entomology

Get an education in biological and environmental sciences, with a special emphasis on insects—the most diverse group of organisms on Earth. The Department of Entomology was the first of its kind in the U.S. and remains one of the largest programs in the nation.

Environmental Engineering

Prepare for careers in the technical management of natural resources, including work in water, soil, and air quality, in a program that incorporates engineering and the study of the natural environment.

Environmental Science & Sustainability (Science of Natural and Environmental Systems)

Gain a comprehensive and integrated view of the biological, physical-chemical, ecological, and social dimensions of environmental and natural resource issues. Concentrations include: environmental biology and applied ecology; environmental policy and governance; environmental economics; biogeochemical sciences; or a student-designed concentration.

Food Science

Explore food systems from processing and packaging to distribution, evaluation, and safety, and solve real-world problems by combining chemistry, microbiology, nutrition, and engineering. Focus on food science or food operations and management.

Information Science

Examine the cultural, economic, historical, legal, and political contexts in which information systems are employed and understand their impact on individuals and institutions. Areas of study include: human-centered systems; social systems; and information systems.

International Agriculture & Rural Development

Learn about the challenges and opportunities that exist in less-developed countries, with concentrations in economics and development; agricultural and food systems; and environment and ecosystems. Overseas experiences and studies are incorporated into the major.

Landscape Architecture

Design outdoor areas including parks, restored wetlands, urban plazas, historic sites, and botanical gardens. Also work in urban development, land use planning, conservation, historic preservation and ecological designs.

Nutritional Sciences

Understand relationships among human health and well-being, food and lifestyle patterns, food quality and agricultural systems, and social and institutional environments, while drawing on chemistry, biology, and social sciences. Focus on: human nutrition; community nutrition; international nutrition; and molecular nutrition.

Plant Sciences

Study the biology, growth and development of plants, as well as the use of plants for food, fiber and ornamental purposes. Concentrations include: evolution, systematics and ecology; plants and human health; plant genetics and breeding; plant physiology and molecular biology; and sustainable plant production and landscape management.

Science of Earth Systems

Build the foundation for the future management of our planet by studying the Earth's system, with a focus on understanding and managing the resources of the lithosphere, biosphere, hydrosphere, and atmosphere.

Viticulture & Enology

Prepare to become a leader in the wine industry. The program includes coursework in grape growing, winemaking, vineyard development, economics, and management.

CHANGE SERVICE REQUESTED

FACTS ON TAP: HOW CALS KEEPS THE BEER & WINE INDUSTRIES BUBBLING



Since it launched in 2008,



36 STUDENTS have graduated with the enology and viticulture major, with

30 MORE on the way.

They will soon benefit from a new

3,000 SQUARE-FOOT student winery and crush pad in the renovated Stocking Hall.

..... CORNELL HOP YARD

30 VARIETIES in the trial

1 ACRE

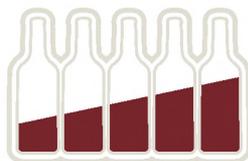
69 HOPS POLES which can grow

18 FEET HIGH



29 WINERIES
(15 featuring Cornell alumni)
donated more than

479 BOTTLES OF WINE for use in viticulture and enology classes in 2012



100 BREWERS AND HOP GROWERS

have attended Cornell's "Brew School" in the past year

Cornell Cooperative Extension boasts New York's first
HOPS SPECIALIST,
Steve Miller
of Madison County

