FILLING THEIR BOWLS

COLLABORATIVE RICE RESEARCH FINDS NEW WAYS TO FEED TOMORROW’S GENERATION

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New tricks for a very old crop

As challenges—from yields to climate change—to the world’s rice crop grow, researchers at Cornell are collaborating across disciplines to ensure this vital crop’s future. The wild ancestors of cultivated rice hold the key to ensuring that this global staple crop will thrive in a changing environment.

Viewpoint

Janelle Jung recalls learning and inspiration while getting down and dirty in the rice paddy.

By Krishna Ramanujan

Department with a singular vision of plant breeding with genetics

By Daniel Aloi

Research spotlight

How to make a Cornellian quilt—just stitch a few carbon atoms together

By Anne Ju

Outreach

Students’ designs help others sit up and take notice

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End Note

Why teamwork is the new research paradigm of life sciences

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By Anne Ju

Rodrigo Hasbún is one to watch

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New faculty

The latest academic talent on campus

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By Jennifer Campbell

Hotel School selects Hilton family for industry icon award

By Lauren Gold

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North Star eatery provides east-west choice and taste on a grand scale

By Franklin Crawford

worth supporting

A conversation with David Croll ’70: Why hiring new faculty without delay makes sense

By Jennifer Campbell

Hotel School selects Hilton family for industry icon award

By Lauren Gold

From the publisher

A bowl of rice. Nothing could be more iconic as an image for feeding the world. In Asia and Africa, this staple food feeds billions. But as the global population soars and the environment changes, rice production is under pressure. Current yields will not suffice, and shortages of water and costly fertilizers spell trouble for dependent populations.

That’s why Cornell research into increasing rice production for coming generations is so important. And that’s why our research faculty, working across multiple disciplinary boundaries, are playing a role that one day will benefit the entire world. That’s the story we are telling in this issue of Ezra.

This is not only about ensuring a staple crop’s future, but also about the culture at Cornell that encourages talented researchers to connect, work together and solve problems with a single aim: changing the world. The members of the faculty involved in this research and daily to Cornell’s far-reaching reputation of scientific research in the public interest, as Andrew Bass, our associate vice provost for research, puts it in his End Note in this issue.

Our cover story looks, in particular, at one remarkable researcher, Susan McCouch, a Cornell professor and a world expert in rice genetics. She is inspiring her colleagues here at Cornell and around the world with collaborative spirit that is producing novel solutions for coping with looming food shortages. McCouch, in turn, praises her own institution. “We have a university that allows us to work effectively across disciplines and recruit some of the most talented people in the world,” she says. McCouch also a terrific teacher, and our Viewpoint essay by graduate student Janelle Jung spells out how a great mentor can point the way to the experiences and life changes that turn a student into an inspired researcher.

Thomas W. Bruce

Vice President, University Communications

Cover photo: Lindsay France/University Photography.

Robert Harrison elected next chair of Cornell’s board

Trustee Robert S. Harrison ’76 (below, left), chief executive officer of the Clinton Global Initiative, was elected chair of the Cornell Board of Trustees at the board’s March 11 meeting in Ithaca. Harrison has been a student trustee, a Rhodes scholar, a lawyer and a managing director of The Goldman Sachs Group. Harrison’s two-and-a-half-year term begins Jan. 1, 2012, when he will succeed Peter C. Meinig ’61 (below, right). The board also extended Meinig’s term to the end of the year.

“This is a tremendous honor. This is really quite an amazing circle closed for me, and I’m very honored and privileged,” Harrison said. Said Meinig: “Bob has demonstrated his capability for many years on the board.”

President David Skorton noted that Harrison had “successfully helped lead the board through the economic crisis of the last two years, and he has played a critical role in bringing our Ithaca and New York City campuses together.”

Harrison is a major Cornell benefactor, endowing the directorship of the Institute for the Social Sciences in 2005 and the Hans Bethe House’s Dale R. Carson House Professorship in 2009.

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All too often, collegiate apparel is manufactured by overworked employees laboring in poor working conditions for well below poverty-level wages. That is changing, and Cornell is part of that change.

Last November the Cornell Store introduced the Alta Gracia line of tees and hoodies. Alta Gracia apparel (altagraciaapparel.com) is manufactured in the Dominican Republic by workers who earn nearly three-and-a-half times the average hourly wage in that country. Cornell’s is one of more than 350 college stores carrying the line.

“Allta Gracia apparel means freedom from poverty through job creation, living wages and education,” says Joe Bozich, CEO of Knights Apparel, who founded Alta Gracia.

Above: Joyce Jones, clothing manager at the Cornell Store, looks over the Alta Gracia apparel. The sign reads, “With every purchase, you are supporting a better life for our community.”

Doctorow’s ‘Homer & Langley’ for reading project

Summer reading for new students entering Cornell in the fall will include E.L. Doctorow’s most recent novel, “Homer & Langley,” Vice Provost for Undergraduate Education Laura Brown announced.

The 2009 novel is a fictional recreation of the lives of the Collyer brothers, whose story became a New York urban legend that, in Doctorow’s words, “seemed ... a Satanic mockery of what we all stand for.” After their parents’ deaths in the flu pandemic of 1918, Homer and Langley create a world of their own within the family mansion on Fifth Avenue, apart from but intimately and paradoxically connected with events of 20th-century American history. The real brothers died in 1947; in the novel they live through the 1970s.

“‘Homer & Langley’ is an interesting choice, first because it is based on a real New York story and thus raises issues about fictionalizing the news,” said Charlotte Rosen, Johnson School senior lecturer of management and a member of the selection committee. “I believe that a community read should reflect something about belonging to (or rejecting) a community, and this thread runs throughout the brothers’ tale.”

The reading project, now in its 17th year, is supported by a website with a blog and other resources at http://reading.cornell.edu.

Spanish immersion

Alexandra Migoya ‘93 (on left in above photo; her father is from Spain; her mother, from the Dominican Republic) is a graduate of Georgetown University Law Center and previously worked as a corporate lawyer; she also is a prize-winning author of short fiction related to Latin American culture. Cornell “was the setting where I was able to really deepen my passion for Latin American and Spanish literature as well as my passion for education overall,” says Migoya, who founded the program in 2009 with Pilar O’Leary (on right in photo), a former Georgetown classmate.

Isabella & Ferdinand Spanish Language Adventures (www.isabellaandferdinand.com), a Spanish language learning program for children.

The curriculum stresses learning the language while experiencing art, music, literature and the culture of the Spanish-speaking world.

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Isabella & Ferdinand is releasing its first CD, “Ole & Play! The Songs of Isabella & Ferdinand Spanish Language Adventures” on April 23 (Cervantes Day in Spain and Latin America).

Migoya notes that after Mandarin Chinese, Spanish is spoken by more people across the world than any other language. “This is a language of beauty, of excellence - of heroes, of people who contributed to global society,” she says.

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ACCOLADES

Alums garner Oscars, Sundance prize

David Seidler ’59 has won an Academy Award for his original screenplay of “The King’s Speech.”

“The King’s Speech” won the best picture, best actor, best director and best original screenplay Oscars Feb. 27. At 73, Seidler is the oldest person to ever win the award in his category.

Seidler shared citizen- ship - and a stutter - with reluctant monarch George VI (known in the family as Bertie), who had no choice but to take the throne when his brother abdicated. Seidler always wanted to tell the story of how Bertie overcame his stammer with speech therapist Lionel Logue, and after many colorful decades he returned to the idea in 1982. The Queen Mother, Bertie’s widow, asked Seidler to wait until after her death to write about her husband. She died.

Two other Corneliains walked away with Oscar gold: Ryan Silbert ’02, for producing “God of Love,” the Best Live Action Short Film; and Chris Allen ’94 won a technical achievement Oscar for helping to develop software for movie making.

Also in film award news, “Hell and Back Again,” a documentary directed by Danfung Dennis ’05, won the World Cinema Jury Prize: Documentary and the World Cinema Cinematography Award: Documentary at the 2011 Sundance Film Festival.

SHELF LIFE

Happy 50th, Olin

At 7:50 a.m. Monday, Feb. 6, 1961, John M. Olin Library opened its doors for the first time.

Fifty years later, much has changed. Computers and study spaces have replaced the massive card catalog; students can search for their own books in the stacks rather than waiting to be paged; circulation workers don’t need punch cards; the first floor hosts a busy café instead of a smoking lounge. Olin has grown into a renowned research facility with world-class collections.

Olin Library will receive a round of applause during reunion festivities this spring: a major exhibition, online and in Olin and Uris libraries, as well as speakers and a birthday cake in Libe Café. Keep an eye on the library website, library.cornell.edu, and reunion listings.
New tricks for a very old crop

Working across disciplines, rice researchers on campus are finding novel ways to head off global food shortages

Mounting challenges to the world’s rice crop, from insufficient yields to climate change, are engaging the international scientific community. Some solutions are on the horizon, thanks to work by researchers from across disciplines at Cornell, who are weeding through the past to ensure this vital crop’s future.

That past is embodied in wild rice strains, which are the ancestors of cultivated rice, but until recently rice breeders would never have dreamed of crossing these progenitors with cultivated rice. Wild rice strains are considered weeds with undesirable traits— for example, they hold just a few, thin reddish seeds that easily fall off their panicles.

But when Cornell plant geneticist Susan McCouch identified yield-related genes from a type of wild rice, and her collaborators at the National Rice Research Center in Stuttgart, Ark., bred those wild yield genes into a widely planted U.S. long-grain called Jefferson, the resulting offspring was a sturdy new variety that withstood the onslaught of Hurricane Ike in 2008 while outperforming the Jefferson parent’s yields by a whopping 20 percent.

Collaborators in China, Indonesia, Brazil, Korea and Sierra Leone have had similar results with their varieties, breeding in favorable yield alleles (gene variants) from wild rice and getting 15 to 20 percent yield advantages in field trials all over the world.

The findings are key, for they point to a strategy for preventing future global food shortages: exploiting the genetic variation found in these ancestors of cultivated Asian and African rice to breed entirely new varieties that address a litany of looming challenges.

McCouch, a Cornell professor and a world expert in rice genetics, could not do this innovative work without the aid of plant physiologists, geneticists, computational biologists, agronomists and engineers. Collaborating across disciplines, they play a role in developing and making publicly available genomic technologies and knowledge that breeders can use to accelerate their work of developing rice with increased yields under drought conditions or that withstand high temperatures or absorb nutrients more efficiently so crops may grow in poor soils with little fertilizer.

This is a major example of how universities like Cornell are turning to their highly talented faculty to apply their expertise across many disciplines to help solve some of the world’s most serious problems in energy, food production, the environment, human health and poverty.

“We have a university that allows us to work effectively across disciplines and recruit some of the most talented people in the world,” says McCouch. “We recruit great talent and provide a fertile environment for people to work together on novel applications that can make a difference in the real world, even in a rice paddy. And that kind of innovative environment is something that in many parts of the world you don’t have access to.”

Nor does this pipeline end at Cornell. To supply rice...
breeders with modern tools and the knowledge needed to discover genes in exotic rice collections that will confer desirable traits. McCouch partners with researchers and breeders in public, governmental agencies, private companies and universities both domestically and in rice-growing countries in Asia, Africa and South America.

Rice is the staple crop for more than half the world’s population, including the majority of the world’s poorest, providing more than one-fifth of global calories consumed. But it will have to be grown differently to meet the calorie needs of a global population that is projected to hit 9 billion by 2050, McCouch emphasizes. Rapid climate change poses additional hurdles, as heat, drought and lack of fresh water will require people to rethink how rice has been grown for thousands of years.

“There’s a global imperative to double the production of cereal crops in the next 20 to 50 years,” says McCouch.

Using the modern tools of cutting-edge genomics to access and track ancient variations, breeders are developing new varieties in just a few years, as opposed to a dozen years that traditional breeding methods required. Nor is this using the varieties in just a few years, as opposed to a dozen years that traditional breeding methods required. Nor is this using the desirable traits, McCouch partners with researchers and breeders in public, governmental agencies, private companies and universities both domestically and in rice-growing countries in Asia, Africa and South America.

The green revolution of the latter half of the 20th century brought major rice varieties while tailoring plants to grow under very specific conditions of irrigation using large applications of synthetic fertilizers and pesticides. This system, it’s now realized, harms the environment, is too expensive for poor farmers and requires the use of diminishing supplies of costly fossil fuels. As a result, rice today faces a number of challenges. The future will require crops that produce more grain on less land as human populations encroach on arable farmland. Already, 30 percent of the world’s total land area is inadequate for crops due to the triple threat of soil acidity, aluminum toxicity and phosphorus deficiency.

As climate changes projected for this century bring heat and precipitation shifts, and as humans draw more and more water out of underground reserves, lack of fresh water will soon force rice growers to abandon the paddy system that has controlled weeds for thousands of years. Why, then, not use herbicides and genetically engineered rice to withstand the chemicals? Ineffective, because the major weed in a rice field – wild rice – is sexually compatible with the crop, so genes transfer immediately to the weeds, making them also herbicide tolerant.

Instead, breeders must develop new rice that grows in dryer soils, with deeper taproots that search for scarce water, and shoots that use water efficiently within the plant. “We need to understand the entire root system, and the way roots take up nutrients and water, as part of that big global picture,” McCouch says.

With these problems, and with a narrow window of time, researchers across several disciplines must turn to a new agricultural revolution, learning to combine genes in new ways and taking advantage of the power of genomics to do so efficiently. Genetic variation

There are 22 different species of Oryza, the genus we call rice, and shoots that use water efficiently within the plant. “We need to understand the entire root system, and the way roots take up nutrients and water, as part of that big global picture,” McCouch says.

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and of those, two were independently domesticated, one in Africa (Oryza glaberrima) and one in Asia (Oryza sativa), likely in the Yangtze River Valley, around 10,000 years ago. Early farmers selected the obvious, visible traits they desired, saving seeds from plants with upright stems, quick growth, larger, aromatic, flavorful grains, and seed hulls that didn’t shatter for harvesting ease. But once they made such selections, they rarely went back and mixed their domesticated rice with the wild rice to see what other useful traits might be garnered.

As a result, today’s cultivars hold a small subset – perhaps around 40 percent for Asian rice – of the variety of genes available in their ancestors. Oryza rufipogon, the wild ancestor of Asian rice that McCouch and her colleagues work with, comes in hundreds of different forms. All are low-yielding with thin, red grain; some types are small and upright; others quick growth, larger, aromatic, flavorful grains, and seed

M. Smith can confidently say her Department of Plant Breeding and Genetics is the best of its kind in the nation – and not just because it happens to be the only one. The National Research Council recently gave the department’s graduate program its highest score, based on a poll of plant sciences peers from 118 institutions. And over the last four years, the department has brought in an average of $4 million a year in grants.

McCouch is the only university to dedicate breeding and genetics within a single department. While Cornell is a leader in unraveling molecular mysteries and sequencing genomes, it is unusual in maintaining its focus on the application of science at a time when many other programs have abandoned product development and field testing in favor of the more grant-attractive genomics research.

Walter De Jong, associate professor of plant breeding and genetics, is a leader in this.
SNPs are identified by comparing the genome sequences of diverse individuals with a reference genome – the first completely sequenced rice genome from the Japanese sushi cultivar Nipponbare. Through a $1 million USDA grant, McCouch’s group and Cornell-partner Affymetrix Co. recently developed a 1 million-SNP genotyping chip that allows researchers to rapidly and efficiently analyze variations in thousands of individual rice plants and then analyze the data. Now a breeder can make a cross between two genetically different parents, evaluate the genetic composition of the offspring using the SNP chip and determine which genes of interest are in particular offspring. The result, after only three or four generations, is a new plant that contains a desired trait from one starting parent, but also looks and behaves in important ways like the other starting parent.

Cornell also has the advantages of equipment, computing power and expertise to process vast amounts of genetic data on campus. The genotyping – identifying the makeup and locations of SNP variation and genes – is done at Cornell, with the help of Peter Schweitzer, director of the Genomics Facility in the Cornell University Life Sciences Core Laboratories Center. The raw data is provided by researchers in the McCouch lab from purified lines of rice they have grown.

Eventually, terabytes of phenotypic and genotypic data will be analyzed in collaboration with computational biologist Jason Mezey, an assistant professor with an appointment in biological statistics and computational biology at Cornell in Ithaca and in genetic medicine at Weill Cornell Medical College in New York City. Mezey develops algorithms for answering questions in genomics and collaborates with medical researchers and plant geneticists alike to find the statistical evidence that a phenotype may be correlated with a genetic sequence.

“If you have a characteristic with a complicated genetic basis, such as grain size, there are a number of genes where if you were to alter their sequence in the right way, you would be able to alter grain size,” Mezey says. “Identifying these genes is challenging.”

“So this is the kind of thing we are developing bit by bit. Eventually, terabytes of phenotypic and genotypic data are where it happens,” says McCouch. “But people simply don’t know much about roots.”

Janelle Jung, a chief plant breeding graduate student in McCouch’s lab, and Randy Clark, a bioengineering graduate student in Kochian’s lab, are working to characterize root architecture. Jung has spent the last three years in Cornell’s greenhouses growing a diverse set of wild species that is ancestral to cultivated Asian rice and which is considered a noxious weed in the United States, and phenotyping their above-ground characteristics by measuring 20 to 30 vegetative and seed traits.

Using an advanced 3-D root imaging system and software package developed by Clark in Kochian’s lab (see sidebar, page 13), Jung and Clark are investigating root architectures – deep and narrow taproots vs. shallow, spreading root systems. By comparing the root and shoot trait data from each plant with each plant’s genetic fingerprint using the SNP chip, McCouch and Mezey’s labs are able to make associations between traits and the genes underlying those traits. “We now have a chance to get at the genes that determine these different root architectures,” McCouch says.

Joshua Cobb, a graduate student in both Kochian’s and McCouch’s labs, is also using the genotyping power of the new SNP chips to understand the genetics of mineral and heavy-metal uptake in rice. Once he has all his data, he will try and identify what regions of the genome are associated with accumulation or exclusion of these nutrients, minerals and toxic metals such as arsenic and cadmium. “This has implications for human nutrition but also plant nutrition,” says Kochian.

Acidic soils affect half the world’s potentially arable land, mostly in the tropics and subtropics. Aluminum in acidic soils becomes toxic to life and binds up phosphorus, creating phosphorus deficiency. “It inhibits root expansion and cell division, and you end up with a stained and damaged root system that can’t take up water and nutrients,” adds Kochian.

McCouch, Kochian and their graduate students have also used SNPs to identify genes from divergent strains of rice that confer greater aluminum tolerance and have bred them.
Maize, soybean and cotton are crops with strong market value in the United States – where more than 70 percent of U.S. production consists of genetically modified (GM) varieties – and these crops are heavily backed by corporations that own the patent rights to GM seeds. Rice is not another story when it comes to corporate support. Rice is not commercially produced as a GM crop anywhere in the world. Furthermore, the U.S. is a relatively small player, producing only about 1.5 percent of the global rice crop. Unlike major GM crops that are grown primarily as animal feed or fiber, rice is the main foodstuff consumed within a few miles of where it is grown. While there are hundreds of maize and soybean geneticists in the United States, the number of rice geneticists in the country can be counted on two hands, McCouch says. She and her colleagues, supported by government and private – not corporate – funds, do pioneering work exploiting the natural genetic variation found in wild rice. Public sector institutions around the world can use the open-source platforms created at Cornell to facilitate breeding local varieties of rice – not corporate – funds, do pioneering work exploiting the natural genetic variation found in wild rice. Public sector institutions around the world can use the open-source platforms created at Cornell to facilitate breeding local varieties of rice.

**Rice plants in a Cornell greenhouse, their seed panicles bagged so the plants self-pollinate instead of cross pollinating with others in the greenhouse.**

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**GUY IN THE MIDDLE WHO PICKS APART ROOTS, GENES AND SOFTWARE**

Randy Clark ’04 began photographing roots the year he graduated, when he began working for two years as a technician in the lab of Leon Kochian, director of the U.S. Department of Agriculture’s Agricultural Research Service at Cornell.

Kochian, who studies aluminum toxicity in cereal crops, wanted to better understand how some plants withstand the metal’s toxicity on acidic soils, so Clark grew tomato, sorghum and corn hydroponically, laid the plants’ roots on a light table and photographed and measured them.

Five years later, Clark, now a Cornell graduate student in bioengineering, has devised a system of cylindrical glass containers and gel for growing rice seedlings and imaging their roots in three dimensions as they grow, and has also developed software to quantify root growth in rice plants based on specific genes.

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— IUSAN McCOUCH
**Museum is a place of solace, inspiration, community**

Frank Robinson stops by a Johnson Museum gallery as a group of schoolchildren view Alberto Giacometti’s sculpture “L’Homme qui Marche II (Walking Man II),” one of Robinson’s favorites. The museum offers educational programs to thousands of children each year.

**ILV**

‘You can come into this place and look at the views, but to get the most out of the museum, you need to say, “I want to learn.”’

— FRANK ROBINSON

I’m here” and spends about 100 days a year on the road – “and those are usually 14-hour days,” he says. He travels primarily for fundraising, although he tries to visit museums in whatever city he’s in. Attendance has grown considerably under his stewardship, and the Johnson now attracts more than 80,000 visitors a year and schedules more than 1,000 programs including tours, lectures, and off-campus outreach. The permanent collection is 33,000 objects and growing, with more than 1,200 pieces added in the last two years alone, and there is an ongoing digitization project to catalog the entire collection, Robinson says. To him, they are much more than objects. They’re a constant source of inspiration.

Among his favorite works displayed at the Johnson, Pablo Picasso’s “Head of Fernande” from 1909 and Alberto Giacometti’s “L’Homme qui Marche II (Walking Man II),” from 1959, are “arguably the two greatest pieces of sculpture of the 20th century,” Robinson says. “One is so concerned with experimentation, the other with expressing the experience of the Holocaust.”

Robinson is as proud of the museum’s future direction as he is of his own history. There he shows off plans on the wall for a new three-story wing now under construction. The wing, opening later this year, will add nearly 16,000 square feet of programming, exhibition and storage space.

With the new wing and recent renovations and upgrades to the original 1973 building, including a video gallery and open storage display cases in a former lecture room, the museum will be better able to present its extensive Asian art collection, African and pre-Colombian art we’ve never been able to show, Robinson says. “We’ll be able to show close to 1,000 works we’ve never been able to show before,” Robinson says.

Even in retirement, Robinson plans to stay involved with Cornell, working part time with the Division of Alumni Affairs and Development. He also will continue to guide art lovers on future trips abroad for Cornell’s Adult University.

— D.S. MARTIN SENN

http://ezramagazine.cornell.edu

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**Favorite things**

"Funerary jar [Chinese, Zhejiang province, 265-316 A.D., glazed stoneware, Yue ware]

"Portrait of Daniel Lock F. S. A. " (William Hogarth, British, 1762, oil on canvas)

"Bust of a Boy " (Roman, Antonine period, 140 A.D., marble)

"Untitled [Portrait of Two Young Boys] " (Susan C. Waters, American, 1843-45, oil on canvas)
How to make a Cornelian quilt – just stitch a few carbon atoms together

Images from new Cornell research could be mistaken for colorful patchwork quilts, but they are actually pictures of graphene – one atom-thick sheets of carbon stitched together at tilted interfaces. Researchers have unveiled striking, atomic-resolution details of what graphene “quilts” look like at the boundaries between patches, and have uncovered key insights into graphene’s electrical and mechanical properties.

The multidisciplinary Cornell collaboration, published online in January in the journal Nature, focuses on graphene – carbon atoms bonded in a flat crystal lattice like a honeycomb or chicken wire – because of its electrical properties and potential to improve anything from solar cells to cell phone screens.

But graphene doesn’t grow in perfect sheets; rather, it develops in pieces that resemble patchwork quilts, and have uncovered key insights into graphene’s electrical and mechanical properties.

At the boundaries between patches, and have uncovered key insights into graphene’s electrical and mechanical properties.

The work was supported by the National Science Foundation through the Cornell Center for Materials Research and the Nanoscale Science and Engineering Initiative. Images: False-color microscopy image overlays depict the shapes and lattice orientations of grains in graphene.

Students’ designs help others sit up and take notice

At New Roots Charter School, a newly public high school located in the 180-year-old Clinton House in downtown Ithaca, students attend class in what used to be two adjoining hotel rooms. A long wooden bar runs across another. The gymnasium is a few blocks away, and the building lacks lockers, science labs and other amenities of an established school.

To remake the one-time lavish hotel into a community-based school, New Roots leaders are relying on ideas from classes taught by Lorraine Maxwell, associate professor of design and environmental analysis (DEA) in the College of Human Ecology.

At a more traditional educational setting, Caroline Elementary School (also in the Ithaca school district), Maxwell’s students have advised library staff in the past year on how to alter the floor plan to prolong the life of the space and lessen interruptions to student use. In both instances, the Cornell students have focused on economical, research based interior design strategies to create optimal learning environments that are based on the needs of faculty, students and staff.

“The research is clear that the quality of a school’s physical environment is closely linked to academic performance,” says Maxwell, an environmental psychologist who’s been teaching the course, Programming Methods in Design, since 2004. “If students are distracted by noise or crowding, too hot or too cold, or can’t see the research is clear that the quality of a school’s physical environment is closely linked to academic performance,” says Maxwell, an environmental psychologist who’s been teaching the course, Programming Methods in Design, since 2004. “If students are distracted by noise or crowding, too hot or too cold, or can’t see because the lighting is dim, they’re not likely to succeed. Fortunately, many of these issues can be corrected through improved design – in some cases at little or no cost.”

At New Roots, after learning about the school’s most pressing facilities needs and class observations, interviews with staff and student surveys, three graduate students prepared a strategic facilities plan to outline the school’s long-term space needs. DEA undergraduate teams followed up with detailed programming documents with advice for overhauling the school’s various spaces and suggesting surrounding locations to use for off-site services. Among their key suggestions are ideas to expand storage space for students, create a student lounge and reassign teacher and administrative staff offices.

“By repurposing the Clinton House, we have saved resources that might otherwise have been expended on building a new structure, while putting public tax dollars to the dual purpose of providing a relatively low-cost school facility while supporting historic preservation. This is truly sustainable thinking at work,” Maxwell says. DEA undergraduates performed a similar analysis for Caroline Elementary School’s circulation area, office rooms and its computer lab. They discovered that children tended to cluster at the story time area near the circulation desk, creating gridlock. In addition, bookcases sometimes blocked staff views of student areas, so children were prone to act up when out of sight. The school has subsequently, as recommended, developed a plan to improve the ergonomics of its computer lab and reorganize the library to reduce clutter and congestion and invite more student participation.

“They did almost exactly what we suggested,” says DEA student Justine Dupal ’11, who toured the revamped library. “They did almost exactly what we suggested,” says DEA student Justine Dupal ’11, who toured the revamped library. “They did almost exactly what we suggested,” says DEA student Justine Dupal ’11, who toured the revamped library. “They did almost exactly what we suggested,” says DEA student Justine Dupal ’11, who toured the revamped library. “This new method could apply to other two-dimensional materials and sheds new light on the previously mysterious way that graphene was stitched together at grain boundaries. Further analysis revealed that growing larger grains, the size of the patterns didn’t improve the electrical conductivity of the graphene, as was previously thought by materials scientists. Rather, it is impurities that sneak into the sheets that make the electrical properties fluctuate. This insight will lead scientists closer to the best ways to grow and use graphene.

The work was supported by the National Science Foundation through the Cornell Center for Materials Research and the Nanoscale Science and Engineering Initiative.

Images: False-color microscopy image overlays depict the shapes and lattice orientations of grains in graphene.
Recalling the origins of ‘Slaughterhouse-Five’

World War II’s Battle of the Bulge, the Dresden firebombing, imprisonment in Slaughterhouse-Five – Gifford Doxsee ’48 survived them all. A religious man, he attributes this good fortune to the power of his mother’s prayers. Five days after Doxsee’s division was deployed at the European front, the Germans launched the Battle of the Bulge. They surrounded Doxsee’s regiment the first morning. Ordered by radio “to dig in on all sides and hold off the Germans to the last man, if need be,” Doxsee’s unit persevered for three long, bloody days. Finally their commander surrendered. Doxsee, 86, recalls Dec. 19, 1944, as “the darkest day of my entire life.” The captured troops were marched east past Germans moving toward the front, and Doxsee got a firsthand view of what he feels is the greatest reason for the Allied victory: Germany’s lack of fuel. Most of the German vehicles on the road that night were horse-drawn, he recalls, “and those vehicles that were motorized were emitting the most noxious and strange odors because of the ersatz fuel being burned.”

Doxsee was imprisoned in Slaughterhouse Five, along with novelist Kurt Vonnegut (who spent three years at Cornell’s lightweight crew) and portrayed the German captivity by eating grass and dandelion greens – and whatever the innkeeper’s wife, Frau Hanni Hippe, could smuggle to them. Childless, she saw the soldiers as the sons she never had.

“She rose above the hatreds of the war to reach out to us as a guardian angel,” says Doxsee. “That’s a message that I think needs to be shared. In every society there are good people. You cannot categorize an entire society as evil.”

Doxsee has lived that message; he has spent the past seven years volunteering weekly in a local prison. “It’s very easy for most of us to stereotype people,” says Doxsee. “But after you get to know these prisoners, you see them as unique individuals. They’re like the rest of us except they’ve made mistakes.”

After his honorable discharge in 1945, Doxsee attended Cornell. He lived in the Theta Delta Chi house, where half the residents were veterans, half recent high school graduates. Though only a few years separated the groups, “the veterans were men, and the others were boys,” says Doxsee.

Cornell’s lightweight crew proved a vital part of Doxsee’s postwar recovery. Rowing restored his energy to what it had been before his capture in the war, though it took a full year. He recalls the crew as a “remarkable group of people.”

Doxsee received a Ph.D. from Harvard, where he grew interested in the breakup of the colonial empires after World War II. He wanted to understand firsthand the view of the colonized, so he found a job in Beirut, Lebanon, teaching history. “Those were three life-transforming years for me,” he says, adding that his ability to teach both European and Middle Eastern history are what landed him a history professorship at Ohio University, where he taught from 1958 to 1994.

By eating grass and dandelion greens – and whatever the innkeeper’s wife, Frau Hanni Hippe, could smuggle to them. Childless, she saw the soldiers as the sons she never had.

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just beyond the decorated arches and rows of small family-owned retail shops that have become synonymous with New York’s Chinatown, a crown of Cornellians and friends gathered Jan. 22 for the 20th annual Cornell Asian Alumni Association’s New Year’s Banquet at the Grand Harmony Palace.

The annual event attracted more than 350 people, including many Cornell alumni living in the metropolitan area and a number of Cornell deans, vice presidents, trustees and directors, as well as State University of New York Chancellor Nancy Zimpher, Robert S. Harrison ’76, CEO of the Clinton Global Initiative and chair of the Cornell Board of Trustees’ Executive Committee, and trustee and Pulitzer Prize winner Sheryl WuDunn ’81 (accompanied by her husband, Nicholas Kristof, senior writer and national correspondent for The New York Times).

This year’s annual banquet honored Roderick Chu, MBA ’71, vice chair of the Cornell University Council, and announced its 48th, 49th and 50th scholarships. The event also raised more than $60,000. Some of the funds will be used to develop a Pan-Asian garden at Cornell’s Platations to be located adjacent to the Ten Eyck classroom in the recently completed Brian C. Nevin Welcome Center. The garden will include elements of the great landscape design traditions from China, Japan and Korea.

The Class of 1978 was the first Cornell class with more than 200 Asian students. This was “a tipping point,” says Matthew Palumbo ’83, who was marketing director for this year’s CAAA banquet. Members of that graduating class were a large part of the driving force behind CAAA’s founding in 1990 – the first Asian alumni group in the Ivy League.

Since then, the group’s growth has mirrored the creation of Asian studies programs across the country, the rising number of Asian students on campus and the influence of Asians at Cornell and around the globe. An estimated 20 to 25 percent of the student body on the Ithaca campus is Asian-American or of Asian descent.

The banquet included a 10-course Chinese meal, a traditional Chinese face change dance and Korean Pungmul drumming by Shintah, a Cornell student group.

In his acceptance talk, Chu talked about the importance of supporting education even in the worst of economic times and working hard to keep Americans competitive in a global market. Chu was New York’s first Chinese-American commissioner of taxation and finance, a partner at Arthur Andersen and chancellor of the Ohio Board of Regents.

Recalling the origins of ‘Slaughterhouse-Five’

By Linda B. Glaser

20th Asian alumni banquet brings hundreds to Chinatown

By John Mkytuck
North Star eatery provides east-west choice and taste on a grand scale

To clear your palate before reading, remove the word “cafeteria” and the term “food factory” from your mind. Good. Let’s go.

North Star, located in the Appel Commons on Cornell’s North Campus, offers a diverse, all-you-care-to-eat dining experience that is actually healthful – if you choose to make it so – and “choose” is the operative term here. The university’s flagship dining hall represents what Cornell dining administrators, executive chefs, nutritionist, frontline cooks and staff all refer to as a shift in “dining culture” at Cornell (think: bamboo-steamed dim sum, couscous, vegan pizza with locally grown tomatoes on a dough made from scratch).

The seating at North Star is not plush, and the facility serves some 2,600 meals daily. But much of what is found here is as good or better (think: New York maple syrup) than what’s offered at the more upscale, intimate eateries in the area. North Star staff operate six food stations and excel at cooking up a variety of ethnic cuisines as well as vegan and vegetarian dishes. In addition, there is one station dedicated to gluten-free foods – a health-conscious nod to the rise in food allergies. In Cornell Dining across its 30 campus eating facilities.

As for his responsibilities as head chef, he credits Cornell Nutritionist Michele Wilbur for constant reminders when creating and planning wholesome menus.

Wilbur – who works in tandem with Cornell Dining’s Executive Chef Steve Miller – is a savvy food scientist and a force behind much of the change in Cornell Dining across its 30 campus eating facilities. For example, all culinary and line staff are now trained in National Environmental Health Association practices and are fully informed about food allergies; trans fats are not used in any Cornell kitchens; as often as possible, ground beef is sourced from local, lean-bred cattle; low-fat dairy items are produced by Cornell Dairy; $2 million a year is dedicated solely to purchasing regional fruits and vegetables from July to October; and Cornell Dining, which serves about 35,000 pounds of fish a year, follows the Monterey Bay Aquarium’s sustainable fishing guidelines for restaurants and consumers.

From town to gown

At the center of North Star’s flowing Feng Shui-influenced food court is a town-gown story homegrown in the best sense: Chinese-American food vendors King and Jean Tang. The Tangs are former owners of the popular Asiatic Garden, a downtown Ithaca icon for more than three decades. They came to North Star in 2001.

“This was a great move for us,” says Jean Tang. “We closed up the restaurant in spring of 2001, and by August we were here.”

King Tang’s father was a cook aboard U.S. Navy ships and eventually settled in Syracuse, then came to Ithaca where he opened Asiatic Garden.

“For new Chinese immigrants in the East [in the 1920-30s], you either went west to work on the railroads or to the cities to work in restaurants and laundries,” says King Tang, who was born in Syracuse and raised in Ithaca. Jean came to the United States from China in 1965. When she speaks about a happy marriage, she’s not just referring to her relationship with King, but to their relationship with Cornell Dining and North Star, she says.

“We know the students by name and what they like to eat and serve them special meals if they ask. Sure, we may be serving many more people during a dinner or lunch than we used to, but once we’re done, we’re done.”

Cornell alumni who know the Tangs from downtown come to North Star for a meal when they’re on campus – and a whole new generation of alumni who know them from North Star are coming back to see them again, King says.

The Tangs prepare dinner Monday through Thursday (their eggs and rice in oyster sauce is a daily favorite), on Fridays they handle lunch. Tuesdays they are truly the center of attention for their weekly Cantonese-style General Tso’s chicken (which can draw about 1,100 students, faculty and staff).

Their weekends are their own business. “We didn’t have any trouble getting used to that schedule,” says Jean, beaming.

Opposite page, top: North Star dining, located in the Appel Commons on Cornell’s North Campus, serves 2,600 meals a day. Above, clockwise from top left: Views behind the counters at North Star; Harold Evans, executive chef for North Star; King and Jean Tang run one of the dining hall’s most popular food stations; flipping pizza dough at a food station; diners at North Star; Harold Evans, former three-year guest chef to the U.S. Tennis Open, Playboy Clubs and the Hyatt chain. You’d expect to find him in an urban setting, running his own show. But he liked what he saw when he was hired by Cornell Dining Director Gail Finan, who has been driving Cornell’s food culture revolution. Evans’ specialty is on the rich and robust side. But two life-changing events altered his ideas about food and eating in general. First, he became diabetic. Then his son converted to Judaism and now eats kosher.

“My palate and my ideas of what constitutes a good meal have evolved,” he says. “It was a big change for me, but a good one.”

Evans adds that, by following Cornell Dining’s Eating Well plan, he’s lost 25 pounds since taking the job in September 2008 and says he has more energy as a result. As for his responsibilities as head chef, he credits Cornell nutritionist Michele Wilbur for constant reminders when creating and planning wholesome menus.

Wilbur – who works in tandem with Cornell Dining’s Executive Chef Steve Miller – is a savvy food scientist and a force behind much of the change in Cornell Dining across its 30 campus eating facilities. For example, all culinary and line staff are now trained in National Environmental Health Association practices and are fully informed about food allergies; trans fats are not used in any Cornell kitchens; as often as possible, ground beef is sourced from local, lean-bred cattle; low-fat dairy items are produced by Cornell Dairy; $2 million a year is dedicated solely to purchasing regional fruits and vegetables from July to October; and Cornell Dining, which serves about 35,000 pounds of fish a year, follows the Monterey Bay Aquarium’s sustainable fishing guidelines for restaurants and consumers.

Related links

For more about North Star dining:
www.cornell.edu/video?video
Culinary Science Made Delicious video
www.cornell.edu/news/culinary-science-made-delicious
Eating Well with Cornell Dining program:
www.cornell.edu/video?video
Cornell Dining nutritionist:
www.cornell.edu/video?video
CU in the Kitchen: “Nutrition Made Delicious” video
www.cornell.edu/video?video
A conversation with David Croll

Hiring many new faculty now makes good academic and strategic sense

David Croll ’70 earned a degree in engineering and then went on to Harvard Business School and a three-decade career as a venture capitalist. Talk to him about Cornell for even a few minutes, and this dual pedigree is evident. Croll brings both the focused, solutions-orientation of an engineer and the incisiveness of a high-stakes investor to his roles as donor, trustee and chair of the Cornell Board of Trustees’ Finance Committee. In June 2010 Croll made the lead gift—$5 million—to launch Cornell’s Faculty Renewal Initiative. The aim is to raise $100 million in current-use funding over five years so that Cornell can recruit leading faculty members ahead of the coming wave of retirements in higher education.

In 2007 he endowed the David D. Croll Professorship of Sustainable Energy Systems in the College of Engineering, currently held by Jeff Tester, who was recruited from the Massachusetts Institute of Technology for the position. We recently talked with Croll about his views on faculty renewal and what it means for Cornell in today’s economy.

Why have you advocated for making faculty renewal a top priority?

Two words: be strategic. Most people who analyze this know what’s coming in the next five to 15 years. There’s a massive lump in the boa constrictor: Over half the faculty in higher education are retiring. There aren’t enough newly minted Ph.D.s coming through the system to cover them. You cannot imagine the stress coming through the system to cover these retirements, especially where the middle ranks of a department are thin. To maintain the quality of the academic departments, it will be necessary to hire away midcareer faculty from other institutions. Plus, Cornell needs top researchers to maintain our research dollars. Cornell is one of the top three universities in the country in National Science Foundation (NSF) and National Institutes of Health funding. That money goes where the great professors are. We can’t let that slip. A newly minted Ph.D. won’t get a $20 million grant from the NSF. When a top person retires, you’ve got to have someone stepping into the slot who can make that happen.

What are the faculty recruitment goals?

We need to get back to hiring 35 to 50 professors per year. Before the economic crisis we were hiring, on average, 50 per year. Last year, through attrition, the total number of professors at Cornell declined by 3%. That’s significant for a faculty of our size. I know the president and provost are committed to getting back to hiring 50 per year right away.

Isn’t Cornell similarly vulnerable to recruiting from outside?

Sure. But right now many of those institutions aren’t hiring because of the financial squeeze, so it’s a really good job market for Cornell to enter. There’s going to be a hiring tsunami starting in about five years. We’ve got to think long term and get out there before others do, and hire aggressively.

Part of it is stickiness. Once professors and their partners come to Cornell and become acclimated to Ithaca’s lifestyle, the chance we will keep them is much higher. We can still lose people, but the chances are lower.

And we have to be good at figuring out employment for accompanying partners. The hard part about Ithaca is that, unlike Cambridge or even Princeton, there aren’t always a lot of opportunities for the spouse or significant other.

Is the university in a financial position to hire aggressively?

Even though we feel a little poor right now—this is the endowment’s down—we’re recovering from a recession—we’ve got to be strategic. There’s no reason not to do this.

Now that financial aid has doubled and made totally competitive with our peer group—which was David Skorton’s first priority—the absolute next priority is to hire faculty now. We have got to deal with this waterfall; this run-off, of our most prestigious faculty. We can certainly raise $100 million for this purpose out of our $4 billion campaign, in this context this is not a big deal.

That $100 million will be for the operating budget and not for rebuilding the endowment. Why?

Five years from now, because of the retirements, existing faculty lines will start to free up, and we’ll have more money. So we don’t need to endure these highs. We need to bridge—so that we can start hiring in this environment instead of waiting. And I would say this is the top priority for every dean.

Why does the number of professors we hire matter so much?

Part of it is rankings. In a few years our faculty-student ratio will be one from eight-to-one. That’s caused us to slip in the U.S. News & World Report ranking. So not only is it strategic to hire people now, but a collateral benefit is that rebuilding the numbers could help Cornell to maintain its stature.

We can all say there are flaws in that ranking, but believe me, every kid applying to college knows what our rank is and knows whether it’s going up or down. And so do the professors we interview to come to Cornell.

What motivates your personal investments in faculty?

In every educational venue I’ve been involved in, all my philanthropy has been targeted at faculty. I believe strongly that if you have an excellent faculty, everything else will follow. Students will come to Cornell not because we offer more generous financial aid. They’ll come to Cornell because it’s a top-rated school with top-rated faculty—the intellectual capital of the university.

The first $5 million gift I made was to recruit Jeff Tester from MIT as the first Croll Professor of Sustainable Energy Systems because I really wanted to accelerate sustainability at Cornell. He’d been head of the MIT energy lab for the past 12 years. I wanted us to bring in a leader in the field. And in the meantime, I became chair of the Finance Committee. I felt it was very important to make the statement that the important thing right now is to renew the faculty. Maintaining the excellence of the faculty is the No. 1 priority.

David Croll ‘70 made the lead gift in 2010 to launch Cornell’s Faculty Renewal Initiative.
Biological weapons, robotics, fungi abound in ‘Spiral,’ Paul McEuen’s debut thriller novel

Nowhere in Paul McEuen’s long list of research accomplishments is there any mention of fungi, or microorganisms — or biological weapons, for that matter.

But for the subject of his debut novel, McEuen, Cornell’s Goldwin Smith Professor of Physics, wanted to delve into science he didn’t know. The result was “Spiral,” a nearly eight-year endeavor that began hitting American bookstores March 22 through Dial Press, part of Random House Publishing Group.

“One great fun of being a novelist is you get to learn about something you don’t know anything about,” says McEuen, who is also director of the Kavli Institute at Cornell for Nanoscale Science, and whose research expertise is in the electrical properties of carbon nanomaterials. “It’s a great opportunity to push your knowledge.”

Where he pushed was mycology, which formed the basis for his scientific thriller about a fungal organism that’s the key to a terrible biological weapon dating back to World War II. There was no singular moment when he settled on fungi, although he recalls reading about ergot poisoning during the Middle Ages and the French Revolution, and its possible role in the Salem Witch Trials. “This little organism had had all these interesting effects on history, so I got sort of fascinated by it and that just became my organizing principle,” he says.

Evenings hunched over an undergraduate biology textbook were soon bolstered by Internet searches that led him to Kathie Hodge, Cornell associate professor of textbook were soon bolstered by Internet searches that led him to Kathie Hodge, Cornell associate professor of mycology in the Department of Plant Pathology and Plant-Microbe Biology. He asked her for help with the science, and as he continued to write, she greatly influenced the development of a central character, Maggie Connor.

Not everything had to be heavily researched. His novel is set at — where else? — Cornell, and his main characters are scientists who become ensnared in an international conspiracy involving biological warfare. He describes Cornell in vivid detail, and the pages are peppered with Cayuga references, from the Cayuga Dog Rescue organization to a nature preserve in Ellis Hollow.

He also drew plenty of inspiration from colleagues around him — Hodge, of course, as well as those who helped him create protagonist Liam Connor, who is an elder statesman in his field. McEuen describes him as a sort of fictional mash-up of Freeman Dyson and Thomas Eisner, with a sprinkling of Hans Bethe.

McEuen started seriously devoting time to the novel during his 2004 sabbatical year. With the help of his agent, he finally sold it in 2007. He recalls, with a chuckle, a “power lunch” in New York with his agent and editor after he’d sold the manuscript.

By the end of the meeting, he timidly pointed out that they were, in effect, asking him to toss his idea in the garbage can. “Some great advice,” he says. “Sometimes you do an experiment, and your beautiful idea doesn’t work. So you throw it out and keep going. We’re used to working really hard on something, tossing it and moving on.”

The hard work is paying off. McEuen has sold the novel in 16 countries, and he is working with a screenwriter on a screenplay adaptation, as the book has been optioned for film by Clockstone Pictures (with no guarantee that a studio will actually produce it). An audiobook will be released with the hard copy. He is already working on a second novel.

McEuen will introduce “Spiral” to the Cornell community April 6 at 4 p.m. in Schwartz auditorium, where he will be interviewed by Hodge and read an excerpt. Copies will be available for sale, and McEuen will sign books after the event.
Scott Palguta boosts soccer’s U.S. profile by riding the Rapids

Scott Palguta ‘05, a four-year letterman with Big Red men’s soccer, helped lead the Colorado Rapids professional team to victory last fall – the team’s first Major League Soccer championship in its 15-year history.

It’s rare for a former Cornellian to be part of a pro team that wins its top league championship. In the entire history of Cornell men’s hockey, for example, only two players – Joe Nieuwendyk ‘86 and Ken Dryden ‘69 – won Stanley Cup titles.

Major League Soccer (MLS), the top soccer league in the United States, has quietly established a foothold in the U.S. sports landscape and is beginning its 16th season of operation. The quality of play on the field continues to improve each year, and the league continues to grow, having expanded to 18 teams this past season with the addition of franchises in Portland, Ore., and Vancouver, British Columbia. More than half of the teams in the league play in their own stadium, including the defending league champion Colorado Rapids, which have called the sparkling Dick’s Sporting Goods Park home since the 2007 season.

Palguta’s Big Red playing career jump-started his professional career, when he was signed by the second-tier Rochester Rhinos in 2005, he was the first player from the Ivy League to be drafted into the United Soccer League’s First Division. Palguta played for the Rhinos for four seasons.

“When the Ivy League is having a strong or weak year relative to other conferences, you won’t find games more competitive anywhere in college soccer,” Palguta says. “With a strong regular season being your only way into the NCAA tournament, your season hangs in the balance with every game. Playing in the Ivies took my competitive edge to a whole new level.”

Former head coach Bryan Scales always viewed the game as 11 individual battles and stressed the importance of winning your own,” Palguta explains. “It’s simple to see why: For the most part, if seven or eight of the guys on your team outplay the guy playing across from you, you’ll win the game. When I take the field as a professional, my mindset is very similar – do everything in my power to get the best of the guy standing across from me. This is vital for success at the MLS level, and it was engrained into my mentality during my time at Cornell.”

Palguta is entering his third year with the Rapids, the team won last season’s championship in Toronto with a 2-1 victory over FC Dallas in November. “When I reflect on the 2010 season, the game we played in Los Angeles against the LA Galaxy [Oct. 16] sticks out in mind, not necessarily as a turning point in the year, but the moment I thought we became one of the league’s best teams,” Palguta says. “We went into L.A. against the best team in the league, in front of a sellout crowd, and scored three unanswered goals after conceding one early in the game. It was the first come-from-behind win for the club in nearly four years, and I think that game proved not only that we could hang with the elite teams, but also that we were extremely adaptable and could find a way to win in nearly any scenario or environment.”

While his second year with Colorado saw Palguta on the field less than his first season in 2009, he still cherishes the experience of winning his first championship as a professional player. “Last season was a bittersweet one for me,” he says. “While winning the MLS Cup is a dream come true and an accomplishment … it wasn’t easy to watch from the sidelines during the championship game. My competitive spirit is one of the biggest reasons why I’ve been able to make it to this level, and I always want to be on the field – period. I think I’d be disappointed in myself if I were ever content to be left out of the starting lineup.”

But “I certainly carried my weight when called upon throughout the season and was pleased with my performances as a whole. I also realize my MLS championship medal is something that can never be taken away, and I’m proud to have played a part during such a magical run,” Palguta adds.

While the league features players from around the world, one of the stated goals of Major League Soccer is to develop soccer talent in the United States. To that end, 20 of the 25 players on the 2010 roster for Colorado – far more than most of the teams in the league – played at least some college soccer in the United States.

Palguta’s club option for the 2011 season was picked up, meaning he will be a part of the club as it tries to defend its MLS Cup title this season.

“It’s difficult to look too far into the future because there’s so much uncertainty in professional sports these days,” Palguta says. “You never really know when one door could close and another might open. I’d always be willing to listen if an opportunity to play abroad rose, not just because of the obvious career incentives, but also for the cultural experience a move overseas would provide. Right now, though, I’m content to be playing for Colorado and am really looking forward to what should be an extremely exciting 2011 campaign for the club.”
The latest talent on campus

Introducing four new members of the university’s faculty

Professor, immunology, and chair of the Department of Microbiology and Immunology
College: Veterinary Medicine
Academic focus: Regulation of signal transduction and immune cell activation and the development of fung immune responses.
Previous positions: Distinguished Professor, Department of Veterinary and Biomedical Sciences and director of the Center for Molecular Immunology and Infectious Disease at Pennsylvania State University at University Park, 1999-2010.
Academic background: B.S., medical technology, California State University at Los Angeles, 1987; Ph.D., immunology, Weill Cornell Graduate School of Medical Sciences, 1994.
In his own time: Husband and father of three daughters; drum and bass music, travel, dance and visual art.

Assistant professor, chemistry and chemical biology
College: Arts and Sciences
Academic focus: Total synthesis of rare natural products, method development for new bond disconnections and elucidation of nature’s enzymes and reactivity.
Previous positions: Postdoctoral associate, Scripps Research Institute, 2008-10.
In her own time: Enjoying music, travel, dance and visual art.

Assistant professor, linguistics
College: Arts and Sciences
Academic focus: Formal semantics and pragmatics, dynamic semantics, philosophy of language and cognitive science, tendow, Cheyenne and other understudied languages.
Previous positions: Mellon dissertation fellow, Rutgers University, 2008-10; teaching assistant, Center for Cognitive Science, Rutgers University, 2008-09.
Last book read: “Simply Separate People” by Lynn Crawford.
In her own time: Vegetarian cooking, photography, gardening and watching movies.

Assistant professor, immunology
College: Veterinary Medicine
Academic focus: Formal semantics and pragmatics, dynamic semantics, philosophy of language and cognitive science, tendow, Cheyenne and other understudied languages.
Previous positions: Postdoctoral associate, Scripps Research Institute, 2008-10.
Academic background: B.Sc., University of Alberta, Canada, 2002; Ph.D., Yale University, 2008.
Last book read: “Essays” by Plutarch.
In his own time: Enjoying time with family.

Professor, English
College: Arts and Sciences
Academic focus: Aesthetic responses to historical trauma; the role of literature and visual culture in social movements; 20th- and 21st-century African-American literature; and race and gender theory.
Previous positions: Associate professor, African-American studies, University of Massachusetts-Amherst, 2008-09; assistant professor of English, Indiana University 2003-08; assistant professor of English, Vassar College, 2001-03.
In his own time: Enjoying music, travel, dance and visual art.

Why teamwork is the new research paradigm of life sciences

C ornell has long been culturally adapted to research that transcends traditional disciplinary boundaries. The story in this issue about the rice genomics project led by Cornell researchers is emblematic of how our scientists are reaching across disciplines to improve global welfare.

Cornell also has a far-reaching reputation of scientific research in the public interest, and the rice genomics project demonstrates how life science research has grown on this campus in recent years. In particular, starting in 1997, a grassroots movement, the Cornell Genomics Initiative (CGI), began creating a new dialogue between research scientists on the Ithaca campus with those at the Geneva Agricultural Experiment Station and two Cornell-based independent organizations, the Boyce Thompson Institute for Plant Research and the Agriculture Research Service’s Robert W. Holley Center for Agriculture and Health.

CGI faculty spearheaded a campuswide effort to recruit a new generation of life scientists who were versatile in using such recently discovered genomic technologies as DNA sequencing to answer fundamental questions about organisms and their responses to environmental challenges. In 2003 CGI morphed into the New Life Sciences Initiative (NLSI), whose central vision was to lead the life sciences at Cornell into the future by fostering interactions with engineering, computer sciences and the physical sciences.

So where are we now?

Interdisciplinary bridges nurtured by the NLSI, like those created in the rice genomics project by Susan McCouch (plant breeding and genetics), in collaboration with Cornell faculty Jason Mezey (biological statistics and computational biology) and Leon Kochian (plant biology, USDA Agricultural Research Service), and bioengineering graduate student Randy Clark, are pointing the way to Cornell’s increasing involvement in global health and nutrition issues.

McCouch and her colleagues are demonstrating to Cornell’s newly extended community of life scientists how to deal head-on with a wide swath of rapidly changing challenges to populations’ health and welfare as well as to their surrounding environment. Thus we find teams of scientists on and between each of Cornell’s campuses in Ithaca, Geneva and at Weill Cornell Medical College in Manhattan developing, for example, innovative technologies for noninvasive imaging of biological events associated with tissue injury and repair, computationally intensive analytical methods to interpret an ever-expanding genomic library that will help us understand the process of evolution, new approaches in geriatric psychiatry and medicine to deal with the stresses of an aging human population, and novel nutritional supplements and biofuels that will (quite literally) propel us into the future.

Cornell’s collaborative research spirit also infuses its undergraduate teaching. As more undergraduates become engaged in research, they experience – as do our graduate students – a remarkable learning environment. Not only are they learning independent thinking, problem solving and integrative inquiry at the interfaces of organizational and molecular biology, computational sciences, physical sciences, engineering and social sciences; they are also discovering that interdisciplinary teamwork with biologists, engineers, physicists, computer scientists, mathematicians and chemists is the new research paradigm of the life sciences.

As we move toward the university’s sesquicentennial in 2015 we are strengthening and renewing our tradition for research and teaching that transcends the more traditional disciplinary boundaries, and we plan to recruit more faculty, staff and students that can benefit from this environment, contribute to it and set it in new directions.

In this way, Cornell can fully realize both its traditional and unique disciplinary strengths by renewing our commitment to far-reaching institutional teamwork.

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