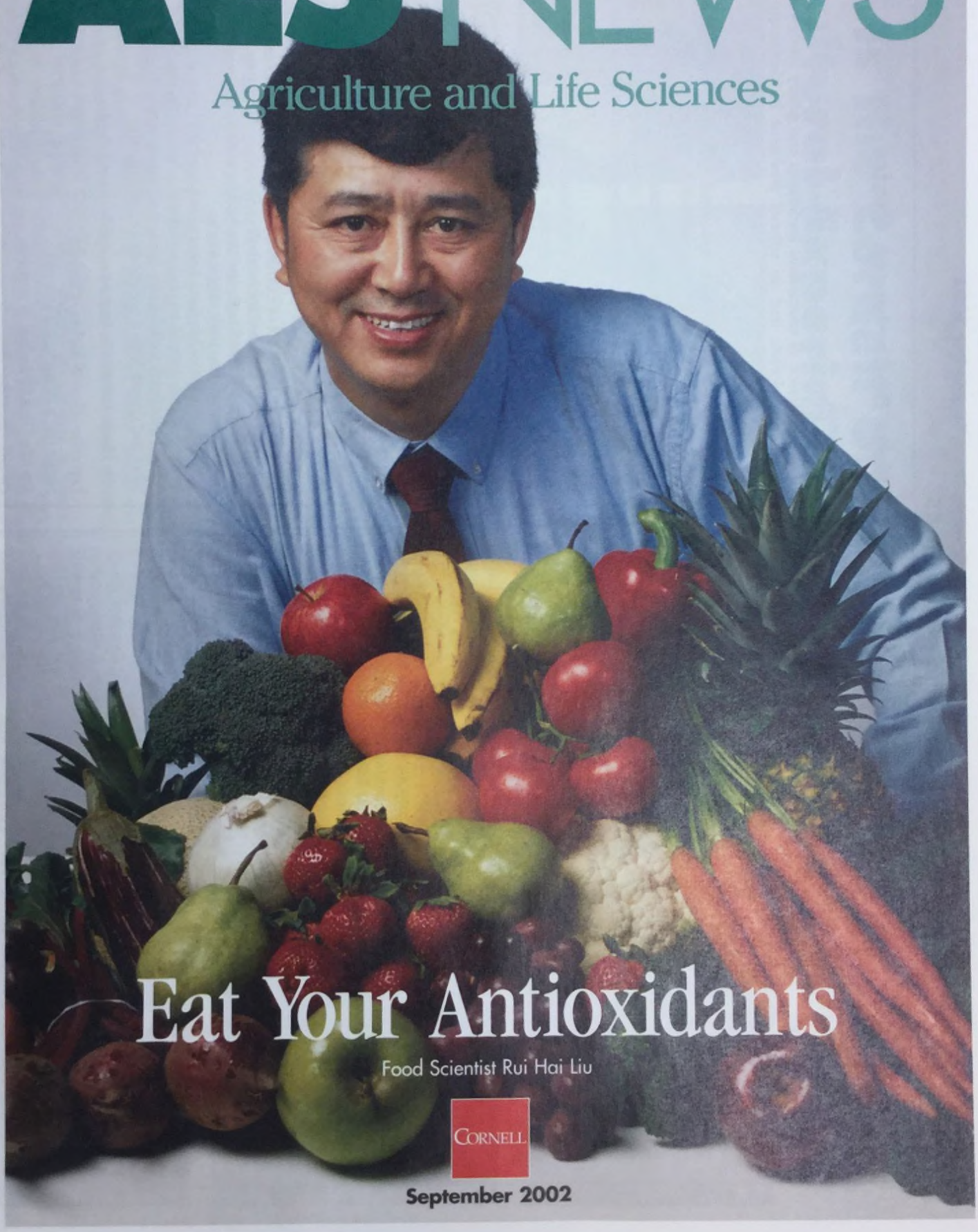
ALS NEWS

Agriculture and Life Sciences



Eat Your Antioxidants

Food Scientist Rui Hai Liu

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Photo by Frank DiVeo

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Pills Can't Mimic Nature's Mix of Nutrients

Are you popping vitamins, hoping to protect yourself against chronic diseases? Think again. Pills just can't duplicate the complex combinations of natural antioxidants found in foods.

Rui Hai Liu PhD '93 sets the bottle of vitamin C on his desk with a loud thwack. He opens the lid, takes out a half-inch yellowish tablet, and slowly rotates it between his thumb and forefinger.

"If a whole apple has only 5 mg of vitamin C in it, why take a tablet like this containing 1500 mg?" he asks. "Such high doses never occur in nature."

And it's in the multiplicity of nature, not in the singularity of the supplement bottle, that Liu says consumers will find the phytochemicals—natural antioxidants found in fruits and vegetables— that truly protect them from chronic diseases.

This physician and toxicologist who joined the Department of Food Science five years ago is swimming against the tide and knows it. Americans want a magic bullet, a single nutrient or two swallowed first thing in the morning to guarantee the job gets done. It's even tough getting research grants from the National Institutes of Health and the U.S. Department of Agriculture to take any other approach.

Yet day by day, Liu's team of a dozen researchers turns in new pages of data showing that single dietary supplements don't pack the antioxidant punch known to protect aging bodies from the disease-causing effects of oxidative stress. What reduces our chances of heart disease, cancer, stroke, diabetes, and Alzheimer's disease is a mélange of biologically active chemicals—flavanoids and phenolic acids, collectively known as phytochemicals—found in fruits and vegetables, when eaten skins and all.

"There are more than 8,000 phytochemicals in unique combinations in different plants," Liu explains. "Some are fat soluble, while others are water soluble. Each functions differently in the body—some as antioxidant, some antiallergenic, some anticarcinogenic, others anti-inflammatory, antiviral, or antiproliferative. It's impossible to mimic these combinations, even in multivitamin supplements. To get the maximum health benefit, consumers need to eat a variety of whole foods."

The press, at least, is paying attention to the idea that these health benefits result from a synergistic relationship among the various foods we eat. In the last two years, Liu's work has been the subject of several hundreds of newspaper, radio, and television reports that appeared as far away as England, Brazil, and Australia carried by major metropolitan newspapers, the Associated Press, Reuters, the BBC, FOX, CNN, CBS, NBC, and other major networks and their affiliates across the United States and around the world. The hubbub all started when Liu and his colleague Chang Lee, a food chemist at the New York State Agricultural Experiment Station in Geneva, published their apple research in the journal *Nature*.

Liu stood the nutrition community on its ear by showing that the antioxidant benefit of apples isn't due to vitamin C (there's too little of it), but rather to polyphenols—such as quercetin glycoside, phloretin glycoside, chlorogenic acid, and epicatechin—contained largely in the apple's skin.

Quercetin alone has been reported to reduce carcinogenic activity, inhibit enzymatic activities associated with several types of tumor cells, enhance the antiproliferative activity of anticancer agents, and inhibit the growth of transformed tumorigenic cells.

Since 2000, Liu has gathered together a veritable United Nations in his laboratory. Grad students and post-docs from 10 countries (a sprinkling of undergrads, too) are churning out a bevy of studies to find out why eating a variety of whole foods is so good for us. In one group of studies, they are identifying the individual phytochemicals in more than 20 different fruits, vegetables, and grains, from broccoli to blueberries to rice.

"We're finding very different combinations of phytochemicals in each of the fruits and vegetables, which is why you need to eat many different ones," Liu explains. "Too, they appear to work in teams. If you take any one of them out, they don't have the same effect."

It's in the multiplicity of nature, not in the singularity of the supplement bottle, that Liu says consumers will find the phytochemicals—natural antioxidants in fruits and vegetables—that truly protect them from chronic diseases.

The newest thrust of Liu's work is with grains. His team is finding that the composition of the phytochemicals themselves is very different from those found in fruits and vegetables.

Liu knows that these combinations are more powerful than if the phytochemicals were just added one to another. There appear to be additive and synergistic processes going on. Liu explains the difference:

"An additive relationship is when one plus one equals two. But in a synergistic relationship, one plus one results in an impact that's greater than two and therein lies the potency," he says. He is currently working on a model to demonstrate just how this happens.

Then there are the studies that examine the mechanism by which different types of chemicals influence the development of cancer. On the first floor of Stocking Hall, you will find petri dishes chock-full of colon and liver cancer cells. If you know what you're looking at, you can literally see how the phytochemicals extracted from fruits and vegetables inhibit tumor cell growth.

What's more, Liu has found that different phytochemicals from different fruits and vegetables affect colon and liver cancer cells in differing ways. All the more reason for a varied diet.

(continued on page 2)

Per capita consumption of fruits, in pounds:

Banana—28 pounds
Apples—19.3
Oranges—12.8
Grapes—6.9
Grapefruit—5.8
Strawberries—4.4
Peaches—4.3
Pears—3.1

Little known fact: Baby-food applesauce is higher in quercetin because skins are ground into the sauce. In applesauce for adults, skins are peeled and discarded.

Processed Foods Retain Antioxidant Activity

Rui Hai Liu couldn't suppress the smile if he tried.

"Let me ask you one question," he says. Clearly it's a set-up.

"We all know that fruits and vegetables—fresh ones—are healthy, but what about processed? What do most people think?"

That's a no brainer: everybody knows that fruits and vegetables lose their nutrients during processing.

At this, Liu's smile broadens into an outright grin.

"Open any nutrition or food chemistry textbook and you'll find this answer," he says. His research has found just the opposite, at least for one of the most popular of vegetables, the tomato.

How can this be?

The studies that gave rise to the popular belief that processed fruits and vegetables have less nutritional value than fresh ones were based on the loss of vitamin C during heat processing. Liu's research team verified that indeed vitamin C is lost. But as his work has shown, vitamin C in apples provides less than 0.4 percent of total antioxidant activity. This suggests that processed fruits and vegetables may retain their antioxidant activity in spite of loss of vitamin C.

Combinations of phytochemicals confer health benefits. And these, Liu's group discovered, are enhanced, rather then diminished, when heated. At least that's the case in the tomato, the second most-eaten vegetable in the United States (potatoes are first). Processed tomato products account for about 80 percent of total tomato consumption.

"Heating to the commercial processing temperature of 88 degrees C actually increases the content of lycopene—the most efficient single oxygen quencher—and also increases the total antioxidant activity," Liu explains. This is good news for people who can't eat raw vegetables and for all of us who increasingly rely on the convenience of processed foods to fuel fast-paced lifestyles. This is also good news for tomato growers and the food processing industry.

Photos by Fred DiMeo

Message from the Dean

Our Scientists' Expertise Is Helping to Protect Against Bioterrorism

Now that a year has passed since September 11, 2001, we can reflect back on how that day forever changed our lives.

One issue that was brought into sharp focus is the need for systems to protect our food from contamination by harmful biological and chemical agents, to provide rapid and accurate detection and diagnosis of potential hazards, and to strengthen the food inspection process to increase our ability to stop foodborne pathogens and toxic chemicals from spreading to consumers.

Cornell University and other universities throughout the nation are key partners in the government's effort to strengthen the security of the nation's food systems. Our policymakers and the public can rely on us to conduct critical applied research that will lead to new, faster, and more accurate pathogen detection and identification methods and new procedures for helping to prevent contaminants from entering the food supply.

We can provide accurate, trustworthy, science-based information to the public on a variety of food safety concerns. We also can be a source of expertise for lawmakers to tap, to help inform their decisions and policies and to help them understand scientific and technological issues during this critical time. We can provide training, not only by educating the next generation of researchers and food safety practitioners, but ongoing education to food producers, processors, handlers, and retailers to help reduce risks at every step of the food system. For example, Cornell Cooperative Extension provides training to food safety inspectors, retail food workers, soup kitchen volunteers, and farmers on the latest food safety practices and issues.

Among the examples of bioterrorism-relevant work at the college:

Martin Wiedmann PhD '97, professor of food science: A pathogen identity database that greatly compresses the process of identifying foodborne contaminants through genetic fingerprinting. The Pathogen Tracker software allows broad access to the database for rapid identification and comparison of bacteria strains.

Richard Durst, professor of food science and technology, Geneva: Rapid bioassays to detect pathogens and toxic chemicals in food systems and environments. Techniques are also being used to develop automated immunoanalytical systems for laboratory-based analyses of clinical analytes, environmental pollutants, and food contaminants.

Antje Baeumner, professor of biological and environmental engineering: Electrochemical and optical biosensors are being developed for the direct extra-laboratory detection of pathogenic microorganisms, pesticides, and natural toxins in the environment in food and medical diagnostics. (Baeumner's course on Biotechnology: Principles and Applications in Engineering was featured in the December 2001 issue of *ALS News*).

Carlo Montemagno '80, professor of biological and environmental engineering: Hand-held generic devices with on-chip detectors developed using nano- and micro-fabrication techniques to inexpensively and quickly detect pathogens in water and liquid foods at source.

Kathryn Boor '80 and Martin Wiedmann, professors of food science: They coordinate the Cornell Food and Water Safety Program, a cross-disciplinary program integrating research, teaching, and extension to focus on identifying and addressing food safety challenges. The program provides easy access to the Cornell food and water safety knowledge base for outside constituents.

In May it was announced that Cornell University's expertise in plant and animal diseases has attracted funding from the U.S. Department of Agriculture (USDA) program to bolster food and agricultural homeland security protections. Part of the $2.1 million channeled through New York State by the USDA will help establish facilities in both Cornell's College of Agriculture and Life Sciences and College of Veterinary Medicine. The facilities will join a network of laboratories sited strategically throughout the nation to permit rapid and accurate diagnosis of animal-disease threats and to assist states in improving their capabilities to detect plant pests and diseases, according to the USDA announcement of the $43.5 million appropriation to the states.

Cornell University and the College of Agriculture and Life Sciences will continue to be an important resource in creating solutions and developing individuals that will lead us with confidence into the future.

Susan A. Henry

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

Pills Can't Mimic *(continued from page 1)*

Liu's lab has also designed several cellular and molecular biology models. In one, his team studies phytochemically induced apoptosis. Apoptosis is like a surveillance system inside the body that detects the presence of tumor cells just as they are beginning to grow. It then sends a signal to the tumor cell to self-destruct.

"We've found that some of the phytochemicals in fruits and vegetables can induce tumor cell apoptosis, telling the cancer cells to commit suicide," says Liu of studies soon to be published.

In addition, they found that certain phytochemicals from fruits can inhibit tumor cell growth in a dose-dependent manner. That is, it can inhibit tumor cell proliferation if the fruits are eaten in sufficient quantities.

"We're finding very different combinations of phytochemicals in each of the fruits and vegetables, which is why you need to eat many different ones," Liu explains. "Too, they appear to work in teams. If you take any one of them out, they don't have the same effect."

There is also a model for anti-angiogenesis. Angiogenesis is a process whereby a tumor cell stimulates the body to grow new blood vessels to provide it with the extra nourishment it needs to grow. Liu's group has found that certain phytochemicals in fruit cut off the formation of these new blood vessels, allowing physicians to treat the tumors when they are small. Phytochemicals found in grapes and apples are particularly anti-angiogenetic.

The general public has a lot of misunderstandings about the effects of antioxidant supplements on health, Liu contends. Take the idea that if a little bit is good, then much more is even better. In the world of food chemistry, it doesn't work that way. It is this distinction between the physiological and pharmacological doses that Liu believes people find particularly confusing.

"To improve your health, you need the physiological—or nutritional—dose of a nutrient, which is much less than the pharmacological dose," Liu says. "The pharmacological dose is effective only in treating diseases and should be taken only under a doctor's guidance."

Liu repeats his message loud and clear: Don't take megadoses of dietary supplements beyond what nature gives you. That way, you do not need to worry about toxicity.

"We recommend that to get the maximum health benefits from antioxidants, you get them from whole foods—in the form of a variety of fruits, vegetables, and grains—not from pills," he sums up.

Rui Hai Liu can be reached at rl23@cornell.edu and you can see his web page at www.foodscience.cornell.edu/faculty/liu.htm.

Metta Winter

BOUNTY OF ANTIOXIDANTS

Professor Liu's research reveals that for fruit, blueberries, red grapes, and cranberries exhibit the highest antioxidant activity; next are apples and white grapes; and then oranges, grapefruit, and bananas. Vegetables with the most antioxidant activity are garlic, broccoli, and tomatoes; and then spinach, carrots, onions, and green pepper.

Faculty Obituaries

Michael Szkolnik, professor emeritus in the Department of Plant Pathology at the New York State Agricultural Experiment Station in Geneva, died March 26, 2002. He was 81.

His career at Cornell spanned 33 years; he retired in 1984. Szkolnik was internationally recognized for his work on the biology and control of fungal disease of fruit trees. His pioneering research on fungicides and their physical modes of action led to the development of new strategies for the application of fungicides.

Szkolnik was well known by growers, extension personnel, and members of the chemical industry.

Szkolnik was a member of the American Phytopathological Society, the New York State Horticultural Society, and the New York State Academy of Sciences. He was the author of numerous scientific publications.

Richard G. Warner PhD '51, professor emeritus in the Department of Animal Science, died May 10, 2002. He was 79.

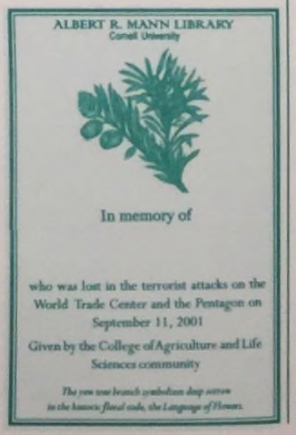
Warner was a member of the department's faculty from 1951 until his retirement in 1989. He was widely recognized for his work on the nutrition and management of the young dairy calf. He taught undergraduates and supervised more than 40 graduate students in animal nutrition. He won several teaching awards including the Professor of Merit Award and the Edgerton Career Teaching Award.

In addition to his research, teaching, and extension work, he published many articles in scientific and popular agriculture publications. He was a visiting scientist in Canada, Sweden, and Brazil, and frequently served on national committees concerned with animal nutrition.

In Memorium

A book in memory of each of these ALS alumni who lost their lives on September 11 will be donated by the College of Agriculture and Life Sciences to Mann Library with this bookplate.

Joshua T. Aron '94
Balewa A. Blackman '96
Joni V. Cesta '85
Swede J. Chevalier '98
Fredric N. Gabler '93
Eamon J. McEneaney '77
Kaleen E. Pezzuti '95
Jennifer L. Tzemis '96



Military Savvy Is Growth Medium for New Venture

Michael Hall '68 finds his years in the Air Force developing and deploying aircraft good preparation for his new endeavor: growing lettuce in a controlled environment

What do an F-16 fighter and a perfectly formed head of romaine lettuce have to do with each other?

Plenty, when you're talking to Michael Hall '68.

"We can do two reds, two yellows, romaine, and Boston bibb," says Hall, clad in a tan flight jacket with War Plane Museum insignia on the chest, standing amid 1,000 pristine heads of Boston bibb. "We know what people want."

And Hall aims to give it to them: blemish- and pesticide-free, grown fresh year round within two hours of their dinner tables. Twenty-seven years in the Air Force provides the essential know-how.

By way of explaining, Hall cites the F-16—a plane that no humans can fly on their own. Flying the F-16 has to be a constantly changing computer-driven interface of computations mediating between pilot and machine. So, too, with controlled environment agriculture (CEA), where sensors and computers provide constant feedback and adjustment to the ambient heat, light, and humidity and to the chemistry of a liquid growing medium. All are tailored to meet the precise needs of a given species of plant.

"The architecture of the F-16 computers—with their requirement of high reliability—is the same as what's needed in a CEA facility," says Hall. "The first thing I wanted to improve when I came here was the control system."

By here Hall means the 7,000-square-foot glass house on Route 13 just beyond where Route 366 branches off to come down to campus. Opened in 1999, this CEA lettuce production demonstration facility is on a commercial scale and is a major step in taking CEA technology—pioneered here in the college—into the mainstream of New York agriculture. Eighteen months ago Hall took charge of the final shakedown runs.

"Somebody has to be the bridge over troubled waters," says Hall of the role of his company, CEA Systems, in taking the rough edges off an emerging technology and bringing it up to commercial speed in both reliability and maintainability.

Much of what Hall did in the Air Force (18 years of which he was a commander of flying units) was supervising research and development work, then "deploying" the final product. What's more, his time there gave him a keen understanding of how critical the environment is for all living things.

Flying the F-16 has to be a constantly changing computer-driven interface of computations mediating between pilot and machine. So, too, with controlled environment agriculture, where sensors and computers provide constant feedback and adjustment to the ambient heat, light, and humidity.

Philosophically it was an easy leap from creating the ideal work environment for people to the ideal growing environment for plants, Hall says. (A bachelor's degree in the biological sciences with a concentration in ecological systems didn't hurt either.) And then it came down to Hall's understanding of defense technology.

"When you apply technology to agriculture, much of the patterning is the same," he says.

As a 54-year-old retiree with a new career, Hall is having a good time. He views CEA as a concept that is now where aviation was in the day of the Wright Brothers.

"Just think of what we can do in the next 20 years to meet the needs of society with this unique approach to plants," Hall says.

For starters, Hall came in "to tidy up the debris field" when the facility's first commercial partner pulled out two years ago, he says. CEA Systems joined forces with the Cornell Research Foundation, whose job it is to commercialize the intellectual property of the university. While in the process of addressing all the shortcomings in the demonstration module, Hall also set out to find someone to take the technology commercial.

He found what he was looking for in the community of Westfield, New York. Just south of Jamestown, this agricultural community had recently lost Welch's, its decades-long employer. Situated within two hours of Pittsburgh, Cleveland, Buffalo, Rochester, and Toronto, Westfield is the ideal location for a facility from which to market upward of 1,000 heads of lettuce a CEA facility can produce 365 days a year.

Fostering collaborations to promote New York's economic health is Hall's way of putting to work another realization he gained in the service.

"In the years of my military career, I experienced the strengthening conviction that military force, while perhaps necessary in the short term, is no end game," Hall says. "To save ourselves, we've got to learn how to foster cooperation and build coalitions."

For more information about controlled environment agriculture at Cornell and Hall's company, go to www.cornellcea.com.

Metta Winter

THE F-16 CHALLENGE: Hall says that he enjoyed doing research and development work on airplanes because of the challenge. Here, he is in the cockpit of an F-16.

Photo by Mathew Fordier

A MONTH TO MATURE: Michael Hall '68 holds a fully grown head of Boston bibb lettuce. Seedlings are started in a germination chamber and then are moved into the controlled-environment greenhouse to mature. The whole process takes about a month. Bob LaDue '93 (left) is the greenhouse manager.

Plants' Secret and Deadly Secretions

Leslie Weston is revealing the secrets of how some plants can kill others with their natural chemicals, and she is using them as an alternative to herbicides

Photo by Matthew Fondeur

TURF WARS: Weston is evaluating the allelopathic qualities of more than 100 different cultivars of grasses, which will ultimately result in reducing our exposure to herbicides in public gardens, parks, and golf courses.

It wasn't long ago that the mention of allelopathy wouldn't even raise an eyebrow among weed scientists sharing their latest success stories. Yet as early as 300 B.C., Greek and Roman farmers had considerable respect for this natural ability of one plant to kill another.

Today, the New York State Department of Transportation, as well as professional weed science and horticultural societies worldwide, has newfound respect for allelopathy. Thanks in no small part to Leslie Weston '80, MS '82, PhD '86.

"Even as an undergraduate here working in whole plant systems, I was interested in why things worked the way they did," says Weston, now an associate professor in the Department of Horticulture. Weston has spent her career building a research program that's put allelopathy on the map as a nonchemical alternative to weed control. "If I saw something happening in the field, I wanted to know why, to know what was happening biochemically and physiologically inside the plant, inside the cell itself."

What captured Weston's attention was an observation long held by professional nursery managers: when sorghum was planted as a cover crop, then tilled into the soil, the next year there were a lot fewer weeds.

What was going on here?

Weston first approached this question from the vantage point of chemistry—her first love. She found that as sorghum decomposed, it released some simple phenolic compounds. Further experiments identified these to be sorgoleone.

She then brought to bear her skills as a plant physiologist and turned her attention to its mode of action—that is, what sorgoleone does to other plants. She and her laboratory determined that this naturally produced chemical, which is released by the sorghum's root hairs into the soil rhizosphere, is a strong inhibitor of the photosynthesis and respiration of common, highly problematic annual weeds including crabgrass, barnyard grass, and velvetleaf. (In laboratory trials, Weston found that this plant-made chemical was a more potent photosynthetic inhibitor than the majority of synthetic herbicides.)

To go to the cellular level, Weston had to combine her background in plant genetics and plant breeding with recent advances in molecular technology. She and her team of six graduate student researchers recently isolated and sequenced the key gene involved in the actual formation of sorgoleone—a unique, rather long hydrocarbon side chain.

"It now appears that the compound may have some usefulness in the nutraceutical field as well," she says, but because of patent disclosure regulations, declined to be more specific.

If this all might seen a bit remote from everyday life, think again. For starters, New Yorkers will soon encounter the fruits of Weston's labors every time they drive down the highway.

The New York State Department of Transportation (DOT) is the largest maintainer of turf in the state. Keeping 18,000 miles of roadside grass weed-free requires a sizeable amount of herbicide.

"The DOT tried organic alternatives, but they haven't been very effective," Weston explains. "Flame burners have been disappointing and carry the added liability of runaway fires. Organic products and mulches have proven ineffective and expensive. So there's considerable interest in finding plants to do the job."

Right now Weston and her Cornell Cooperative Extension colleague Andrew Senesac, in Riverhead, N.Y., are evaluating nearly 100 of the most promising native and newly released cultivars of ornamentals and grasses that suppress weed species both through their allelopathic effects and by forming a dense cover that reduces or eliminates weed seed germination by depriving the seed and seedlings of sunlight.

Weston's work is also pertinent to public recreation areas and home gardens. Her field trials evaluating the allelopathic qualities of more than 100 different cultivars of grasses will ultimately result in reducing exposure to herbicides, which is currently the primary way to eliminate weeds in public gardens, parks, and recreational facilities such as golf courses.

"No one has used a traditional plant breeding approach to select turfgrass for species or cultivars that more effectively suppress weeds," says Weston. Until now.

In other trials she is examining a broad range of ornamental plants that would appeal to home (and public space) gardeners.

"We're working hard to identify native species and decorative ornamentals that can be placed in strategic locations," Weston says. "They'll look attractive and eliminate the backbreaking job of weeding without resorting to chemicals."

Planting these grasses and ornamentals may help stem groundwater pollution and increased human exposure caused by home gardeners as they spray ever-increasing volumes of synthetic chemicals on their grass and flower beds.

To get the word out about the efficacy of allelopathic plants, Weston offers educational programs for the turf, landscape, nursery, and greenhouse industries. Too, she's become a valued speaker to professional societies in the United States and abroad.

For the New York State Department of Transportation, keeping 18,000 miles of roadside grass weed-free requires a sizeable amount of herbicide. "The DOT tried organic alternatives, but they haven't been very effective," Weston explains. "Flame burners have been disappointing and carry the added liability of runaway fires. So there's considerable interest in finding plants to do the job."

Weston considers herself very lucky. What started out as a lonely and controversial pursuit in an unrecognized field has opened the door to an entirely new approach to managing the pests that plague horticultural and agricultural crops. Allelopathic chemicals or phytoinhibitors are present in virtually all plant species and in most tissues—leaves, stems, flowers, roots, seeds, and buds—but in differing quantities. They can be exuded through the roots, given off as volatile compounds through the leaves, or released by decomposition of plant parts, including the shoots and flowers. The trick to putting this phenomenon to work is in matching up the allelopathic plant's ability to release these products over time in great enough concentrations to allow for control of the weedy species.

Deciphering plant behaviors that have been observed for thousands of years has called upon Weston's perfect combination of scientific interests. At mid-career—with two thriving labs and an international demand for bioherbicidal products—she has much work still to do.

Metta Winter

The French Connection: Cornell, Burgundy, and the Finger Lakes Wine Industry

Leslie Weston and her students are grinning as they sit around tables covered with checkered cloths at an outdoor café in Dijon.

When these undergrads are not enjoying a good meal, they are immersed in the broad spectrum of Burgundy's fertile agriculture: red and white wines, Charolais beef, cereal grains, small fruits, mustard, and cheese. Some stay just for a fast-paced two-week tour; others are there for eight weeks participating in academic and small industry internships.

The Cornell CALS/Burgundy France Exchange is in its fourth year. Nine of our undergrads will go abroad this summer and 10 French students will come here for a look at agriculture on this side of the pond.

"These international experiences have often dramatically impacted future studies and career choices of the participating students," Weston says. "Several of our Cornell interns have gone on to work in the U.S. wine industry, international marketing, or plant biotechnology after positive experiences in Burgundy."

The program stems from contacts Weston made while on a sabbatical at Institute Jules Guyot, a viticulture and enology center at the University of Burgundy. There, she studied the gene expression of resveratrol, a natural fungicide produced by grape plants that is also responsible for lowering the incidence of artheriosclerosis when consumed in wine and grape products.

Her year in France produced unexpected consequences for the Finger Lakes wine industry. In her studies, Weston worked closely with Pascal Durand, a professor of wine economics at the University of Burgundy and a winemaker in a family-owned operation in Beaujolais. In 1998, Durand came here to collaborate with Weston on research in both grape production and wine-marketing technologies needed to expand the Finger Lakes' vinifera wine industry, particularly premier-priced Pinot Noir wines. The next year, Weston and Durand organized a study tour to introduce Finger Lakes producers to Burgundian ones. And from that tour in France, the 21-member Finger Lakes Pinot Noir Alliance was born.

The alliance members have banded together to focus on improving the quality and marketability of fine Pinot Noir wines. Last year the alliance was among the sponsors of a Cool Climate Pinot Noir Conference held at the New York State Agricultural Experiment Station in Geneva, N.Y., which attracted 130 participants from many eastern states and Ontario. Speakers came from Burgundy, Ontario, Oregon, and California, as well as New York.

This year the French winemakers are coming back to visit vineyard sites and participate in tastings and evaluations of new wine releases from the Finger Lakes, and alliance members will have the opportunity to travel to other regions of France.

"The French believe that this region offers great promise for production of fine vinifera wines, and with slight changes in winemaking practices and selection of better clones, could certainly rank as one of the finest and most profitable regions for future production," Weston says.

Metta Winter

For the Sake of Humanity's Future

A compelling course expounds on how we can stop ravaging the earth's resources and start designing systems that are sustainable

"What it really boils down to is thinking toward the future," says Norman Scott PhD '62, a professor of biological and environmental engineering who, together with Alan McAdams of the Johnson Graduate School of Management, launched the highly regarded Sustainable Development Seminar four years ago. The seminar features speakers from across the United States and around the world who show students what is needed, as Scott puts it, "to give those who follow us the same opportunities we've had, to leave things the way we've found them."

Take the town of Kalundborg, Denmark, where industries are organized in a system in which the waste of one industry becomes the input for others—including district heating for the whole village, to boot.

Take the town of Kalundborg, Denmark, where industries are organized in a system in which the waste of one industry becomes the input for others—including district heating for the whole village, to boot.

Then there's Xerox, whose engineers have designed a recycling system so efficient that new copiers can be made with 90 percent recycled parts.

In Morocco, large-scale turbine installations are capitalizing on wind as the world's fastest-growing technology to generate electricity.

And in Ottawa, Canada, a small company has built a demonstration plant that turns 40 tons of cellulose per day into commercial-grade ethanol fuel.

During the first lecture, Scott further defines sustainability by quoting Roy F. Weston '45, chairman emeritus of Roy Weston, Inc., an integrated environmental engineering firm, who said:

"Sustainable development is a process of change in which the direction of investment, the orientation of technology, the allocation of resources, and the development and functioning of institutions meet present needs and aspirations without endangering the capacity of natural systems to absorb the effects of human activities, and without compromising the ability of future generations to meet their own needs and aspirations."

Since sustainable development encompasses such a broad scope, Scott and McAdams cast a wide net when choosing speakers. They come from business, government, nonprofit agencies, and the research community. They talk about multiple economic sectors, environmental topics, geographic regions, cultural frameworks, and political and social systems. Speakers always address the three Es of sustainable development: environment, equity, and economics.

Perhaps the most urgent presentation in this year's course was made by David Pimentel PhD '51, professor of ecology and evolutionary biology and emeritus professor of entomology. He spoke about the severity with which the human population (currently at 6 billion and likely to double in just 46 years) already threatens the environment. He argues that we are already 4 billion people over the earth's carrying capacity. And that, according to Pimentel, even if a population control policy were adopted worldwide that limited families to an average of 1.5 children, it would take 100 years to reduce human numbers to a level where the earth could sustain everyone, free of poverty and starvation, and "in an environment capable of sustaining human life with dignity."

On the low-impact technology side, presenters made strong cases for the increased commercial viability of wind as a source of electrical generation. And they spoke about the promise of fuel cells and biomass as renewable energy sources.

One of the most eye-opening presentations was from the Honorable T. P. Sreenivasan, deputy chief of mission, Indian Embassy (U.S.) and chief negotiator for India at the Rio Earth Summit. Sreenivasan made plain the view of developing countries, which is that the developed countries have used natural resources for hundreds of years and "now it's our turn."

Frank Dixon, managing director of research and development with Invest Strategic Value Advisors, gave a compelling presentation on the economics of sustainability. He explained how EcoValue '21'—a rating system his company developed—demonstrates that companies with good environmental performance have an equally good record on Wall Street.

"Many students come into the class with a very anticorporate attitude," Scott says. "They have the feeling that the corporate world is out to make the bottom line and neither hell nor high water will stop them, that the environment doesn't matter."

But there are examples aplenty to show that companies don't have to destroy the environment to be successful economically.

What sets sustainable thinking apart is the idea of "systems thinking," Scott says. "You don't just think about the automobile, you think about all the things that relate to the automobile, including its impact on the whole system." He calls it "cradle to cradle" rather than "cradle to grave" thinking. Instead of using something and throwing it away, design it in the first place so you can recycle and reuse most of the parts and thereby reduce the amount of energy consumed and the amount of environmental impact.

In the end, Scott says, students come away with a broad understanding of sustainable development.

"There is no walk of life or professional area where these basic ideas don't come into play," Scott says. "Thinking sustainably can be a major factor in any profession."

See for yourself what the course is all about, even read abstracts of the speakers' presentations by going to the course web site at *www.cfe.cornell.edu/cfe/education/ABEN673/index.html*

Metta Winter

Professor Norman Scott says that instead of using things and throwing them away, we should design them so that most of the parts can be recycled and reused, thereby reducing the amount of energy consumed and the amount of environmental impact.

Gregor Smith '02 (right) designed and built this solar collector for the Sustainable Development Seminar.

ALUMNI NOTES

1930s

George "Doc" Abraham '39 and his wife **Katherine "Katy" Mehlenbache Abraham '43** of Rochester, N.Y., are celebrating their 50th year hosting the radio show *The Green Thumb* on WHAM-AM in Rochester. They also have hosted *The Green Thumb* television show in Rochester for 25 years and have published 16 gardening books. The couple has two grown children.

1940s

Allen Child '40 of Malone, N.Y., a former member of the CALS Advisory Council, was awarded a 2001 New York State Farm Bureau Distinguished Service to Agriculture Award. He operated a seed potato and vegetable farm in partnership with his brother, Stuart, and was a member and vice president of the New York State Farm Bureau board of directors.

Edwin W. Markham '42 of Bainbridge Island, Wash., still travels frequently and recently built a 40-foot rock wall for his daughter and family who live in Oregon.

Harold D. Ogburn Jr. '44 of Blue Earth, Minn., recently moved there from St. Simons Island, Ga., after purchasing a house there in May.

Wilson L. Gilbert '45 of Rushford, N.Y., is chairman of the board of the Allegany Co-op Insurance Company and the Monroe Cooperative Fire Insurance Company.

Raymond T. Fox '47 of Ithaca, N.Y., assisted the Class of '47 in their 55th reunion and oversees the decorations for Cornell's commencement, as well as the CALS Planned Giving Luncheon. Fox is also a member of the Cornell Council Committee on the Arts.

Stanley J. Reeves '48 of Syracuse, N.Y., resides in Clearwater, Fla., during the winter.

Bernard (Bud) F. Stanton '49 of Ithaca, N.Y., who is an emeritus professor in the Department of Applied Economics and Management, received an honorary doctorate from the University of Helsinki in June. Stanton was the president of his senior class and had a distinguished career in agricultural economics. He was chairman of the department at Cornell, president of the American Agricultural Economics Association, and a fellow of the Association.

Albert G. Moat '49, MS '50 of Glenside, Penn., published the fourth edition of *Microbial Physiology* with John W. Foster and Michael P. Spector. This textbook describes everything you want to know about how bacteria and other microorganisms work but were afraid to ask. The first edition was published in 1978. Moat writes, "Bringing the text up to date has been a rewarding experience for me and has given me a sense of continued accomplishment in my retirement years."

1950s

Wallace W. McDougall '50 of Celina, Ohio, is retired from the product engineering department of the Avco New Idea Farm Equipment Division and started a consulting business about farm machinery product safety and product liability defense. He has 10 grandchildren, ages 3 to 13.

Harry Merker '51 of Banning, Calif., made an emotional (first time) visit to his deceased wife's home city of Presov, Slovak Republic. He visited with the coach of a baseball league in Presov and Kosice. Merker, a former varsity player at Cornell, has a special project to donate baseball equipment, and he plans to return to Slovakia to teach baseball. Merker also was honored to have his gospel song, *He Is There*, performed as part of the Sage Chapel Memorial Program at Reunion, June 8. This year's ceremony memorialized the 22 Cornellians who lost their lives on Sept. 11.

Frederick W. Leonard '52 of Merion Station, Pa., still works part-time at the insurance agency now owned by his two sons.

Edmund N. O'Rourke Jr. MS '53, PhD '55 of Baton Rouge, La., is a retired horticulture professor from Louisiana State University. He is the co-author of *Gardening in the Humid South*.

Niles Davies Jr. '54 of Congers, N.Y., operates a 4,000-apple-tree farm in Rockland County. He was recognized by the New York State Farm Bureau with a 2001 Distinguished Service to Agriculture Award for his many lobbying efforts on behalf of New York agriculture.

Herbert Hoehing '55 of Sylvania, Ohio, is a retired economic developer from Lucas County and is the executive vice-president of the Sylvania Area Community Improvement Corporation.

George R. Askew '56 of Hampton, Conn., retired from teaching after 36 years at Eastford Elementary School. He volunteers for Habitat for Humanity and in the local schools leading electricity and astronomy projects. He also enjoys spending time with his children and grandchildren.

Jean D. Kreizinger MS '56, PhD '58 of Newton, Conn., is now professor emeritus as of May 1999.

Orlando P. Turco '56 of Ithaca, N.Y., received the honor of having the wrestling room at Ithaca High School named after him. Turco was the wrestling coach at the high school for many years.

Michael R. Makar '57 of Poughkeepsie, N.Y., is a retired elementary school teacher.

1960s

Frank R. Critelli Jr. '60 of Slate Hill, N.Y., and his family toured Europe and visited son **Jamie '98** who is a first lieutenant in the U.S. Army. The trip was also a graduation gift for his daughter **Alicia BS '00, MS '01.**

Marcia Sheehan Freeman '60 of Sarasota, Fla., is a writing-education consultant and the author of 21 books for early and emerging readers. She has been a featured speaker at International Reading Association conferences since 1995. Her latest book is entitled *The Gift*.

Carlo R. Brunori '62 of Annapolis, Md., retired from environmental consulting and looks forward to traveling, hunting, and tailgating at Cornell home football games.

James E. Munger '67 of Mexico, N.Y., retired from teaching science in July 2000.

Chelston Brathwaite MS '68, PhD '70 of Coronado, Costa Rica, is director general of the Inter-American Institute for Cooperation on Agriculture (IICA), an autonomous agency of the Organization of the American States. The IICA works to create a sustainable and prosperous agriculture sector in the western hemisphere.

Dr. Steven B. Heymsfield '68 of Mount Kisco, N.Y., is a professor of medicine at Columbia University and is the deputy director of the New York Obesity Research Center.

1970s

Dr. Susan H. Pross '70 of Tampa, Fla., is an associate professor at the University of South Florida College of Medicine. She has been married for 29 years to Ron Pross, and they have three children: Adam, a graduate of American University; Rachel, a senior at Barnard College; and Seth, a senior in high school.

Brian K. McCutcheon '71 of Buffalo, N.Y., is an assistant coach for the NHL's Buffalo Sabres.

Dr. Florence M. Higgins '74 of Rush, N.Y., is a small animal relief veterinarian in Rochester, N.Y. Her husband, John Lebens, is a researcher at Eastman Kodak, and they have two children: Greg (11) and Zack (8) and two show dogs: Kelsey, a border collie, and Lyric, a Belgian sheepdog.

Earlene Armstrong PhD '75 of College Park, Md., is an entomology professor at the University of Maryland. She was one of 10 recipients of the 2001 Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring for her mentorship to minority students in the life sciences.

Jeffery G. Huth '75 of Konigstein, Germany, works for Boehringer Ingelheim managing the prescription medicine division in the United States, Mexico, and Canada.

John L. Bramkamp '76 of San Dimas, Calif., is a sales representative for United Horticultural Supply, which distributes specialty chemicals, fertilizers, and grass seed to businesses such as golf courses and wholesale nurseries.

George W. Archibald PhD '77 of Baraboo, Wis., is co-founder of the International Crane Foundation. The foundation works to reintroduce cranes into the wild through research, breeding, habitat protection, and public education.

Dr. William E. Schweizer III '77 of New York, N.Y., is an associate professor in clinical medicine at the New York University School of Medicine. He and his wife, Alison Martier Schweizer, have twins, Noah and Elizabeth, age 5.

Candace J. Akins '79, MPS '98 of Moscow, Idaho, is the managing editor of the University of Idaho Press.

1980s

Kathryn Boor '80 of Trumansburg, N.Y., received the 2002 Institute of Food Technologists Samuel Cate Prescott Award. This national award honors an IFT member who has made outstanding accomplishments in food science research. Boor is an associate professor in the Department of Food Science at Cornell.

Jeannie Welton Lawless '80, PhD '93 of Ithaca, N.Y., is an assistant professor of nutrition at Ithaca College.

Donna J. Shaver-Miller '81 of Corpus Christi, Texas, is station leader of the U.S. Geological Survey Padre Island Field Research Station. She was honored at the Texas Coastal Treasurers 2002 Conference for her efforts to save native Texas coast sea turtles.

Gary R. Pollard '82 of Hudson, N.Y., is an associate vice president at Hudson River Bank and Trust Company. He and his wife, Tracey, have been married 21 years and have two children: Jason (16) and Beth (14).

William Hazaiah Williams III MPS '82 of Berkeley, Calif., is executive director of the Nehemiah Community Foundation, the largest nonprofit down payment assistance program in the country. The foundation works to revitalize urban areas and create jobs by encouraging individual achievement and self-sufficiency.

Laura Urevich Minsk '83 of Boonsboro, Md., is a nutrient management consultant to greenhouse and nursery owners to bring them into compliance with Maryland's Water Quality Improvement Act.

Eric H. Schultheis '84 of Woodbury, N.Y., welcomed a second son, Daniel Jonathan, on October 27, 2001.

Linda Messinger Manos '85, DVM '90 of Englewood, Colo., is a board certified specialist in veterinary dermatology in a large multi-specialty private practice. Vet dermatologists specialize in animals with skin, ear, and nail problems, often caused by allergies.

Leslie G. Lerner '86 of Lexington, Mass., has entered the technology licensing/technology transfer industry for biotechnology, pharmaceuticals, and medical devices.

Ronald M. Hunt '86 of Westport, Conn., is a partner for healthcare technology investments at Sprout Group, a venture capital/private equity firm that helps develop companies in the technology sector.

Michael P. Weiner PhD '86 of Guilford, Conn., is vice president of molecular sciences at 454 Corporation, an innovative company that develops genome-scale analysis technologies.

Michael F. Revenson '87 of Baldwin Place, N.Y., is teaching chemistry at Mahopac High School. He is a paramedic and teaches EMT classes in the evenings, and recently started a forensic science program through John Jay College of Criminal Justice.

Kathy Duffe Ambrosini '88 of New Paltz, N.Y., is director of education at Mohonk Preserve, Inc., and is an adjunct professor of elementary education at SUNY-New Paltz. She received the 2001 Conservation Education Program of the Year from the New York State Conservation Council and is the vice president for administration of the New York State Outdoor Education Association.

Joelle Maher '89 of Santa Monica, Calif., is a vice president of planning and logistics for Lucky Brand Jeans, a division of Liz Claiborne.

1990s

Denis A. Shah BS '92, PhD '01 of Niagara Falls, N.Y., completed his PhD in plant pathology at Cornell and is now an independent consultant specializing in statistical analysis of experimental data.

Aaron L. Kimmich '94 of Adams, N.Y., is vice president and branch manager for First Pioneer Farm Credit in Watertown.

Patricia Wesley Umbrell '94 of Waltham, Mass., is the new editor of *Horticulture* magazine.

Jarrid Whitney '94 of Redwood City, Calif., is an assistant dean of admission and a recruiter of Native American undergraduate students at Stanford University. He received the Anne Medicine Mentorship Award from the American Indian Staff Forum at Stanford for his outstanding mentorship of Native American students.

Jan Boll PhD '95 of Moscow, Idaho, is a hydrologist at the University of Idaho studying the water quality of Paradise Creek. He is married to **Jennifer Watts PhD '96,** a research associate at Washington State University, and they have two children: Ardina (6) and Johan (2).

David Podwall '95 of New York, N.Y., is a neurology resident at Columbia-Presbyterian Medical Center.

Kathryn J. Ehmann '96 of Somers, N.Y., is a sophomore at the University of Buffalo School of Dental Medicine.

Dr. Ivan F. Irizarry '96 of Rio Piedras, P.R., studied medicine in Puerto Rico and is an internal medicine resident at the V.A. hospital.

Monami Maulik '96 of Queens, N.Y., won the 2001 Union Square award as founder of a grassroots organization: DRUM (Desis Rising Up and Moving) working with low-income immigrant communities for racial justice. In 2001, she also received the NYC Community Fellowship of the Open Society Institute of the Soros Foundation.

Adelia Pimm '96 of Conewango Valley, N.Y., operates a dairy farm with Thomas Dayton and is involved in FFA, 4-H, and the Holstein Foundation's Young Dairy Leaders' Institute. The couple received New York Farm Bureau's 2001 Achievement Award. The award recognizes young farmers for achievement in agriculture and leadership in the community.

Adriano Manocchia '97 of Ithaca, N.Y., is a programmer/analyst for the BioResource Center at Cornell.

Paul Ballard '98 of Ithaca, N.Y., recently received certification as a LEED Accredited Professional. Leadership in Energy and Environmental Design, or LEED, is a program of the U.S. Green Building Council, a consortium of building industry groups. To date, there are less than 1,000 people in the U.S. and Canada with this accreditation. Ballard works for The Thomas Group and is a member of the American Society of Landscape Architects.

Miguel E. Dangond '98 of Barroquilla, Colombia, is an MBA student at the MIT Sloan School of Management.

Edgar Lee '98 of Fairview, N.J., started his own business representing vendors that produce women's garments for retail. He would like to thank professors Ralph Christy and Gene German for inspiring his career in business/sales.

Rebecca F. Spokony '98 of Tucson, Ariz., is a graduate student at the University of Arizona.

Benjamin Fish '99 of Flushing, N.Y., is a third-year law student at Hofstra University and argued before the appellate term for the Ninth and Tenth Judicial Districts. He got married on July 1, 2001.

Shallyn R. Fitchett '99 of Colorado Springs, Colo., finished her master's degree in physical therapy and relocated to Colorado from Rhinebeck, N.Y.

Lisa A. Fraine '99 of East Meredith, N.Y., is a student in ophthalmic technology at the University of Florida at Gainesville.

(continued on page 13)

Tim Driscoll '91 Meets with Senator Clinton

New York Senator Hillary Clinton visited SCT BOCES in Elmira, N.Y., on April 26 to learn about the mobile computer training unit, dubbed the "Education Express," which is equipped with 13 laptop computers.

Tim Driscoll '91 is the administrator of adult education and training services at SCT BOCES, and directs the Education Express, which has delivered training to over 550 students at 15 area businesses, schools, and adult literacy sites.

Senior/Grad BBQ

Dean Susan Henry sat down with students during the Senior/Grad BBQ on the Ag Quad during Senior Week. The event is co-sponsored by the ALS Alumni Association and the ALS Office of Academic Programs.

Volunteers (from left) Gretchen Jeffers, Tom Jeffers '63, Hank Parker '59, Bill Davidson '66, Alette Koenig-Davidson, and Laurey Mogil '76 arrived on campus to help with the Senior/Grad BBQ on the Ag Quad during Senior Week. Nearly 400 students and faculty enjoyed the great food and conversation.

Gatherings

Enjoying a conversation are (left to right) Kevin Malchoff '74, Paul Westfall, Tony Mangaser '97, and Sandra Sworts-Gardner '84, who were among the alumni and friends who shared dinner with Dean Susan Henry at the Protocol Restaurant in Williamsville, N.Y., during the Dean's April trip to western New York.

Scott Belsky '02, from Waban, Mass., and Julie Kelsey '02, from Canastota, N.Y., were co-recipients of this year's ALS Alumni Association Richard A. Church '64 Senior Service Award. Church is pictured here with Belsky and Kelsey. Both students were recognized for their outstanding volunteer service and leadership while students in the college. The awards were presented during the Dean's Award Reception in May at the Statler Hotel.

Professor Kifle Gebremedhin (left), biological and environmental engineering, was recognized as a recipient of the SUNY Chancellor's Award for Excellence during the Dean's Award Reception in May at the Statler Hotel. Joining him for the reception were his wife, Tsedal, and Senior Associate Dean Bill Fry. Also recognized for the same award was Professor Dave Galton, animal science.

Business!

Celebration of Undergraduate Business at Cornell Saturday, November 16, 2002

Cornell has been "in business" for more than 90 years. Join us for a celebration of the rich history and exciting future of Cornell's Undergraduate Business Program in the Department of Applied Economics and Management (AEM). Hear from leading business alumni and faculty, and network with business students, corporate partners, and friends.

The program highlights include:

Top Executive Panel
Tips from the "top" on how to meet the challenges facing today's business leaders.

Stakeholder Update
What's new, what's in store for the Undergraduate Business Program, featuring presentations by AEM faculty and students.

Networking Luncheon
An informal opportunity to renew old acquaintances, make new contacts, meet students, and touch base with faculty.

Afternoon Breakout Sessions
A "from the trenches" look at eight diverse business and applied economics issues, featuring presentations by AEM alumni followed by lively discussions.

Session I
- Marketing: New Solutions to Old Marketing Problems
- Finance: Corporate Governance
- Agribusiness: The Future of Agriculture
- Environmental Economics: Why the Sparks Are Flying in Electricity Markets

Session II
- Management: Corporate Strategies for the New Millennium
- Globalization: Emerging Markets
- Food Industry Management: Food Security in an Insecure World
- Careers & Internships: Student and Recruiter Perspectives

Business Celebration
We'll toast the Undergraduate Business Program's recent accreditation by AACSB International—the Association to Advance Collegiate Schools of Business, as well as its future success, at this gala ending celebration, cosponsored by the ALS Alumni Association.

For more details and to register, please visit the Business Celebration web site at **http://aem.cornell.edu/celebration** or contact Mary Alo at (607) 255-7651; mka2@cornell.edu.

Registrations are due by **November 1, 2002.** The registration fee is $30.

aem.cornell.edu/celebration

Safer Strategies for Managing Pests

Farmers, gardeners, schoolchildren, and golfers can thank the Integrated Pest Management program for pest management tactics that pose the fewest risks to human health and the environment

Photo by Philip Kaufman

FLIES IN THE FACE: Barn flies are an ever-present source of annoyance to dairy animals and can reduce milk yields while they transmit disease. Barn flies quickly become resistant to insecticides, and if not managed, populations can explode. Sound management includes monitoring fly populations, predator releases, baited traps, and sanitation.

Finding safer ways to manage pests in our society, in both agricultural and nonagricultural settings, is an ambitious goal. And that is precisely the aim of the New York State Integrated Pest Management program (IPM).

"Our mission is to develop pest management tools that are cost effective and have minimum impact on the environment and human health," says Michael Hoffmann, an associate professor of entomology in the College of Agriculture and Life Sciences and the director of the New York State IPM program. This most often translates into reducing our reliance on pesticides.

The program's motto in schools is "to protect children from pests and pesticides." There's a delicate balance to be struck in the state's more than 700 school districts—how to manage pests without posing risks to children.

New York's IPM program was originally created in 1984, primarily for use in agriculture to develop and promote the use of IPM in the production of fruit, vegetables, livestock, field crops, and ornamental plants.

There is an IPM team for each commodity, with a coordinator and up to two field staff often located off the Cornell campus in eastern or western New York.

In recent years, the nonagricultural side of the program—the community IPM program—has grown quickly, and now about a third of the program's 24 staffers are dedicated to educating and encouraging IPM in outdoor public areas, home gardens, residences, and schools and other buildings.

"It's your garden, it's carpenter ants in your house, it's pests on landscapes, at golf courses, in structures, hospitals, and restaurants," Hoffmann says to explain what the community program encompasses.

A large part of the community IPM program involves turf, which covers more acreage in the state than most agricultural commodities.

"There are 800,000 acres of lawns in New York," Hoffmann says. "If you broaden that definition to include managed grass—such as rights of ways along power lines, telephone lines, and highways—it's more like 2 million acres."

There are many opportunities to reduce the pesticide use on turfgrass, and the IPM program is already seeing results—from giving homeowners alternatives in lawn care to working with the U.S. Golf Association to compare organic and IPM turf management to traditional techniques. The test site for the U.S. Golf Association project is in Bethpage State Park on Long Island, the site of this year's U.S. Open.

Another part of the community IPM program focuses on schools and associated play fields. The program's motto in schools is "to protect children from pests and pesticides." There's a delicate balance to be struck in the state's more than 700 school districts—how to manage pests without posing risks to children.

Jennifer Grant, the community IPM coordinator, stresses the importance of making sure students aren't keeping food in their lockers or their desks, and that classrooms are thoroughly cleaned if food is eaten there. "You can end up with mice in a classroom because of one thing that someone did—or didn't do," she says.

Recent legislation has increased the call for IPM's services. The notification policy in New York that now requires schools and day care centers to notify everyone who uses the building in advance of the application of pesticides has served as an incentive to districts to not use pesticides at all.

Because the IPM program works in both the agricultural and nonagricultural sectors, it is well positioned to foster improved communication and trust at the agricultural-urban interface. The program attempts to engage all parties who have an interest in how pests are managed. Sometimes these parties may have opposing views, especially when it comes to the use of pesticides.

"Some of our staunchest supporters of the community IPM program are farmers. They appreciate the importance of communicating a fair image of agriculture to a consumer population that oftentimes doesn't understand where their food comes from, let alone know what is required to produce that perfect fruit or vegetable," Hoffmann explains.

"On the flip side, we can level the playing field, so to speak, by pointing out that pest management in the urban environment also comes with its own set of risks," he says. Many homeowners do not realize that their actions—weed control in lawns or insect control in gardens—present risks. Pest management is not just on the farm.

The IPM program is one of the few on campus that has its own team of writers. IPM's four writers and a webmaster convert science into information that's meant for a wide public audience. IPM staffers recently put together a package of public service announcements for 110 radio stations in the state, promoting everything from better ways of dealing with mosquitoes to improving weed control in lawns by simply letting the grass grow taller (up to three inches).

IPM staff, in cooperation with faculty and extension educators, contribute each year to pest and crop management guidelines, ensuring that farmers are up to date on the newest practices. The program's brochures promote resources like the Northeast Weather Association, its handbooks give residents a wealth of resources on managing pests in bedding plants, and its pamphlets give homeowners suggestions for dealing with grubs in their lawns, mice within their walls, and weeds in their gardens.

The IPM web site contains a wealth of other resources: http://mysipm.cornell.edu There are links to IPM's guidelines for individual crops, each of which includes crop pests, natural enemies of those pests, how to monitor for the pests, information about resistant varieties, and lists of pesticides available. The pesticides are listed as the last option to encourage the use of all other options first—a goal of IPM.

If you would like to receive IPM's annual report contact Michele Kaufman at 1-800-635-8356 or mrk25@nysaes.cornell.edu.

Joe Wilensky

Photo by Jill Shultz

IPM extension educator Lynn Braband uses a powerful water gun to remove a small wasp nest from a school building.

The IPM program is finding ways to reduce the use of pesticides on turfgrass in public spaces such as parks.

Organic Agriculture Is Blooming at Cornell

The college's new 30-acre farm in Freeville will be teeming with research projects on organic farming

Chris Wien MS '67, PhD '71 knows that time is running out.

"People are dead set against agricultural pesticides," says Wien, professor and former chair* of the Department of Horticulture. "They worry about the effects on their kids, their pets, their drinking water. If society has its way, so many restrictions will be put on conventional farming that these substances will, in effect, be outlawed."

How then will American farmers grow the safe, plentiful, and inexpensive food that consumers demand?

Ann and Eric Nordell are onto something that just might help. Slides of their weed-free, pesticide-free vegetable fields caused quite a hubbub when they showed them at the Applied Agroecology seminar this spring. The Nordells, organic farmers for more than 20 years, have virtually eliminated weeds in their vegetable fields using only crop rotations and varying times and depth of tillage.

Why do such cultural practices work so well? That's what studies at the newly established 30-acre Freeville Organic Research Farm aim to find out. It's a tall order because designing experiments in biologically based farming requires a whole systems approach new to agricultural research.

The nature of conventional farming allowed researchers to focus on individual elements. For example, would a particular fertilizer delivered at a given rate and particular point in time increase the yield of a specific crop? Or which insects are best controlled by which pesticides?

In contrast, the philosophical and practical approach taken by organic farmers is to consider the entire ecology of a given location with all the elements working synergistically and changing over time. Such a system relies on complex interactive processes not easily separated out from each other.

"So when I design studies aimed at investigating nutrient or fertility management, it is important for me to collaborate with a weed ecologist because weeds and fertility are managed very closely in an organic system," explains soil ecologist Laurie Drinkwater. Before coming here two years ago, Drinkwater, who is responsible for development of the Freeville farm, spent seven years as director of research at Rodale Institute, the pioneer in research on organic agriculture.

Drinkwater says the college is the ideal place to tackle complicated systems because expertise abounds in so many different disciplines.

For example, examining the role played by microbial community structures furthers our understanding of how plants and soil organisms interact—a fundamental concern of organic farmers. Drinkwater is not the only one working in this area; so are three faculty members in the Department of Crop and Soil Sciences: Janice Thies is an expert in soil microbes, Quirine Ketterings works with phosphorus, and Johannes Lehmann studies carbon recycling. The new tools of molecular biology, which allow scientists like Thies to examine the DNA of organisms, will make unraveling the nature of these relationships possible as never before.

Organic farmers want answers to more immediate questions, too, such as the relative benefit of legumes as green manure versus other organic amendments, including compost. They would like specific recommendations on what ratio of each works best for producing crops while maintaining soil health.

Organic farmers have a central voice in setting both the short- and long-term agendas for projects undertaken at the Freeville farm. The Cornell Organic Research Team, headed by Drinkwater, includes 13 faculty members from six departments, as well as farmers.

"In the seminars and research team meetings, scientists are asking the organic farmers: 'If you had an experiment station, what are the key questions that you would try to answer there, and how would you design it to get the answers?'" Wien says.

But first off, to meet federal and state organic certification guidelines, the land at Freeville has to be three years out of conventional production to free it from chemical residues. During this conversion process, careful records are being made of the organisms present in the soil, the number and types of weed seeds, a listing of predatory and natural enemies found in and around the fields, the soil fertility status, and a host of other factors. Baseline samples are also being preserved by deep freezing.

"Someday down the line when a scientist gets a bright new idea, the original soil will be there to test it out on," Wien says.

Because organic systems rely on nutrient recycling and biological processes for plant nutrition, the history of soil management has much more impact than in conventional systems where a farmer can just add fertilizer and completely change the soil nutrient status.

"Organic farmers talk about how their systems don't behave the same way 20 years out as they did in the first five years," Drinkwater explains. "So if you're going to make management suggestions to organic farmers, you must incorporate management history into your design."

With more than 200 "USDA certified" organic farms already operating in New York State, there is no doubt that biologically based farming is going to play an ever-increasing role in improving the survivorship of family farms.

To that end, the U.S. Department of Agriculture has awarded a $1.2 million grant to the college's Department of Horticulture for the creation of a new organic farming network. The Northeast Organic Network (NEON) is composed of university researchers, farmers, extension educators, and nonprofit organizations. It will examine ways to enhance production and consumption of locally grown organic food in the northeastern United States.

"We will coordinate research, extension, and outreach efforts among the Northeast organic community, land grant universities, agricultural experiment stations, as well as the public and private sectors, to determine how organic food production will improve small farm viability in this region," says Anusuya Rangarajan, assistant professor of horticulture and an organizer of NEON.

While even the detractors of organic agriculture agree that it is an important niche market, they still taunt Drinkwater with the question: Are you going to feed the world with organic agriculture?

Her answer: There is no evidence to suggest we should expect lower yields with organic production systems. What's more, scientists have just begun to uncover their real potential.

See www.hort.cornell.edu for more information on organic agriculture and gardening.

*On July 1, Marvin Pritts replaced Chris Wien as chair of the Department of Horticulture.

Metta Winter

Conventional farming allowed researchers to focus on individual elements. In contrast, the philosophical and practical approach taken by organic farmers is to consider the entire ecology of a given location with all the elements working synergistically and changing over time.

Photo by Frank DiVeto

FIELD OF DREAMS: Professor of Horticulture Ian Merwin MS '88, PhD '90 and student Ingrid Bauer stand in a field of Sudan grass at Dilmun Hill, Cornell's student-run organic farm.

Photo by Charles Harrington

BEGINNING OF SOMETHING BIG: Dean Susan Henry broke ground May 2 for the Freeville Organic Farm. It will be New York's largest organic research parcel.

Here is a list of the people who are on the committee for the Freeville facility:

- Louise Buck PhD '00, Department of Natural Resources, Cornell
- Brian Caldwell MS '86, Northeast Organic Farming Association, New York
- Brian Chabot, Department of Ecology and Evolutionary Biology, Cornell
- Helene Dillard, Department of Plant Pathology, Geneva Experiment Station, Cornell
- Antonio DiTommaso, Department of Crop and Soil Sciences, Cornell
- Laurie Drinkwater, Department of Horticuture, Cornell
- Steve Gilman, organic farmer and Northeast Organic Farming Association, New York
- Andrew Leed '81, organic farmer and Department of Horticulture, Cornell
- John Losey, Department of Entomology, Cornell
- Charles Leon Mohler PhD '79, Department of Crop and Soil Sciences, Cornell
- Brian Nault, Department of Entomology, Geneva Experiment Station, Cornell
- Marvin Pritts, Department of Horticulture, Cornell
- Anusuya Rangarajan, Department of Horticulture, Cornell
- Janice Thies, Department of Crop and Soil Sciences, Cornell
- Chris Wien MS '67, PhD '71, Department of Horticulture, Cornell

Outstanding Alumni Awards 2002

Robert L. Bickford MS '50 worked as an independent consultant specializing in agribusiness management, international marketing, servicing, and development of animal health products and has been a guest of more than 100 countries introducing and teaching animal health, nutrition, and management. He retired in 1984 as a director of marketing for Merck & Company, Inc., after 21 years of service. Bickford had worked previously in poultry feed research and as an instructor in poultry management.

As a recognized leader for international agriculture, Bickford is considered a pioneer in the field of animal health, particularly in Asia and South America. He is cofounder of the Animal Health Institute's International Section and served as its first chair. Bickford has served as a committee member on the National Council for the U.S.-China Trade Policy and has been active with several trade associations. He also serves as a board member for Shelburne Farms in Vermont, a model educational facility for school-age youth and adults to better understand agriculture.

Bickford's involvement with the college has included being regional Capital Campaign leader in 1990. He helped establish and served as the first chair of the Northeast Dairy Foods Research Center, a joint venture between the colleges of agriculture and life sciences at Cornell and the University of Vermont. Most recently, Bickford was asked to chair a fundraising committee in the Department of Natural Resources for maple research and development.

Bickford has a unique history of university and college leadership. His bachelor's degree is from the University of Vermont where he has served as a university trustee and received an honorary doctorate. Additionally, in 1988 he received the university's Distinguished Alumni Award and then in 1994 received the first outstanding alumni award from the university's College of Agriculture and Life Sciences. Bickford also had a close professional relationship with North Carolina State University and served as chair of the development and campaign committee for the North Carolina Agricultural Foundation.

Bickford had been an active participant with the National Agricultural Alumni and Development Association (NAADA), in which all three of his affiliated colleges are members. In 1995, Bickford was awarded that association's prestigious Outstanding Volunteer Award.

Bickford and his wife, Oletha, reside in Ho-Ho-Kus, N.J.

Robert I. Everingham Sr. '41 has been a local and state leader in agriculture and education for more than 60 years. For 47 years, he was the sixth generation to own and operate the family's Cascadale Farm, a 200-head registered Holstein dairy farm in LaFayette, N.Y.

In addition to running the farm from 1961 to 1980, Everingham worked full time as business manager for the Onondaga-Madison BOCES, including serving as business manager for the LaFayette Central Schools. His leadership in education has included serving for nearly 30 years (10 as president) for the Council on Rural Education. His work with the Council lead him to co-found the Rural Schools Program, a 40-plus board member organization that advocates for more than 300 small and rural school districts and BOCES systems and the students and communities they serve.

In agriculture, he served as chair for the Onondaga County Dairy Herd Improvement Association, president of his county Farm Bureau, and director and executive committee member for the New York Farm Bureau. Everingham also served on numerous other agriculturally related organizations.

In the early 1970s he was director for the Farm Family Insurance Company, in addition to being secretary of the Morrisville College Council. Everingham was also chair and member of the Onondaga County Board of Health for 18 years and director of Chenango Mutual Insurance Company for 17 years.

Everingham joined the board of directors of Blue Cross of Central New York in 1963 and played a major role in streamlining, restructuring, and merging the company into Blue Cross Blue Shield of Central New York. Everingham served on the board for 19 years, including two as chair.

As an active supporter of Cornell and the college, Everingham served on the college's regional committee for the Cornell Campaign and was a member of the Class of 1941's 50th reunion campaign committee. In 1988, he and his wife, Blanche, established the Robert I. Everingham Jr. Memorial Scholarship Fund to benefit animal science graduate students. Most recently, he was a member and major donor for the rebuilding campaign committee for the Alpha Gamma Rho fraternity house.

In the local community, he is an elder at the Columbian Presbyterian Church, past master of Tully Masonic Lodge, and assistant grand lecturer of Onondaga Masonic District.

Everingham is the recipient of the Outstanding Service Award of the National Rural Education Association and received the Distinguished Service Award from the Rural Schools Program. He served two years in the U.S. Army during WWII and received the distinguished Purple Heart award.

He and Blanche live on the Everingham homestead in LaFayette near daughter Carol, a professor of French at Syracuse University, and daughter-in-law Pamela.

Winston Y. Lo, MS '67 is the executive chairman of Vitasoy International Holdings Ltd., headquartered in Hong Kong, and a manufacturer of soybean milk and food products. Vitasoy is one of the largest soybean drink companies in the world with sales of more than $280 million (U.S.) per annum. The company produces fruit juices and tea drinks as well, and sells its products in over 30 countries. Vitasoy products are sold throughout the natural food stores, natural supermarkets, and some of the mainstream supermarkets. From 1979 to 1981, Vitasoy supplied about 2,000 cows to a farm in China under a Compensated Trade Agreement. The farm now supplies the bulk of the fresh milk for Hong Kong. Vitasoy also produces tofu in the eastern and western United States under the Nasoya and the Azumaya brands, together representing about half of all the tofu sold through supermarkets.

Lo chairs the Hong Kong Beverage Association and is a member of numerous professional organizations including the Fresh Milk Marketing Association of Hong Kong, the Hong Kong Institute of Biotechnology, and the Advisory Council on Food and Environmental Hygiene.

He established the Vitasoy and Lo Fellowship in Food Science at the New York State Agricultural Experiment Station in Geneva. Each year, the interest income from this fund provides support for a graduate student conducting work in the Department of Food Science and Technology in Geneva. His generosity has already assisted two graduate students in receiving their Ph.D. degrees and the fellowship has been awarded to a third graduate student last fall. Lo currently serves as a member of the Cornell University Council and as a member of the Council's International Programs Committee. He chairs the Hong Kong Tower Club Committee and has served as member of the Cornell Institute of Food Science Advisory Council. Additionally, he has been a frequent guest lecturer in Food Industry Management classes and opened doors in Hong Kong and mainland China for a Cornell study of supermarket development in China.

Within his community, Lo serves as vice-president of the Council of the Hong Kong Outward Bound Trust and on the steering committee for Clean Hong Kong, the Council of the Employers' Federation of Hong Kong, and the Listing Committee of the Stock Exchange of Hong Kong.

He and his wife, Jeannette, live in Hong Kong, and have two daughters, Joy, who graduated from ALS in 1993; and May, who graduated from ALS in 1997.

Lloyd A. "Steve" Putnam '44, retired as director of agricultural operations for National Fruit Product Co. in Winchester, Va., in 1990. In that position, he oversaw approximately 2,500 acres of apple and peach orchards in four states. Putnam began his career with Cornell Cooperative Extension of Niagara County. Then, he spent three years in the farm equipment industry as sales manager of Friend Mfg. Co. Next, he worked at a variety of positions within the New York fruit industry: he was executive secretary of the Western New York Apple Growers' Association, general manager of the Lake Ontario Fruit Growers Cooperative, and spent nearly 20 years with Sodus Fruit Farm, first as sales manager and then as executive vice president and general manager.

Putnam not only managed successful businesses, but found the time and energy to lead such organizations as the New York State Horticultural Society, Western New York Apple Growers' Association, Associated NYS Food Processors, and the NYS Agricultural Businessmen's Association. Putnam also chaired the Empire State Council of Agricultural Organizations, which developed a yearly legislative program on NYS agriculture for presentation to the governor and state legislative leaders. He was a longtime board member and served one year as president of the International Apple Institute. Additionally, he served for many years on the board of directors of the National Council of Agricultural Employers and was eastern vice president at the time of his retirement.

Putnam served on the college's Advisory Council, two years as chair. He was an active member of the Food Science Advisory Council, served on the academic review committee for the then Department of Agricultural Economics.

Over his lifetime, Putnam has been actively involved in his community. He has been a leader for churches in three states. He was a member of the Kiwanis and Rotary Clubs. He has volunteered for the United Way, the American Cancer Society, and the American Heart Association. Additionally, he served as a trustee for the Lockport Savings Bank for more than 20 years, for the Erie-Niagara Insurance Association for a like period, and was a member of the County Board of Supervisors for Frederick County, Va. Putnam served on the board and as president of the Empire State Quarter Horse Association.

Putnam was awarded the Golden Apple Award by the NYS Cherry Growers and Western NY Apple Growers. He is also the recipient of the service award presented by the National Council of Agricultural Employers. He and his wife, Mary, live in The Villages in central Florida. They have two children—Robert and William.

David R. Tetor '65 was an agriculture program leader for Cornell Cooperative Extension in Dutchess County, retiring in December 2000 after 31 years. Through the years, Tetor has offered technical support and guidance to Dutchess County farmers and raised the profile of farming locally and throughout New York State. Known as "Mr. Agriculture" in Dutchess County, Tetor is always consulted whenever an agriculture-related topic comes up. Under his guidance, Dutchess County became the second county in the state to offer farmers protection on development rights. Since 1987 to the present, Tetor has broadcast the "Farm and Ag Report," the longest-running agricultural report on radio in the tri-state area (New York, Connecticut, and Massachusetts). Prior to working for Cornell Cooperative Extension in Dutchess County, Tetor was a program leader for CCE in Herkimer County. Tetor also served in the U.S. Army with the rank of captain and was in charge of a computer network in West Germany.

Tetor donates countless hours of his time to a wide range of civic and community activities. He served as co-chair of the Dutchess County Tourism Advisory Board. Tetor has also served as the Dutchess County Soil and Water Conservation District secretary, has been involved with the *Dutchess County Ag Society and* Dairy Committee, and helped with the administrative planning for the county fair. He is also past president of the Millbrook Lions Club, past president of the Pine Plains Board of Education, and past league officer and coach of the Taconic Little League.

Tetor also has contributed thousand of hours to Cornell through his sustained involvement with numerous boards and committees. He is a past president of the ALS Alumni Association. He was steering board co-chair of the National Agricultural Alumni and Development Conference when it was held at Cornell in 1999. He also served as chair of the ALS Campus Events Committee, and was a member of the ALS Dean's Advisory Council. He is currently a member of the Cornell Mid-Hudson Alumni Association, co-chair of the Class of '65 40th Reunion, and a member of the board of directors for the NYS Agricultural Society and the Cornell Alumni Admissions Ambassador Network (CAAAN). Tetor was a recipient of the SUNY Alumni Honor Roll in 2000, the NAADA Volunteer Service Award in 1999, Distinguished Service Award (awarded by the National Association of County Agricultural Agents), Community Development Innovator Award (awarded by the Cornell Community and Rural Development Institute) in 1991, and the Dutchess County Citizenship Award 1979. Tetor was recently appointed to the Cornell University Council.

Tetor lives in Clinton Corners, N.Y., with his wife, Louise. They have three children—Brian, Michael, and Eric—and two grandchildren—Nicholas and Melanie.

Young Alumni Achievement Award

Barbara Eng '85 is the founder and chief executive officer of Eng Communications Inc., a consulting firm providing corporate communications, media relations, and special events services and workplace seminars. After graduating from the College of Agriculture and Life Sciences with a bachelor of science degree in animal science, Eng worked briefly as a technician in an animal hospital. Realizing she was not interested in pursuing a career in animal science, she took a job as an assistant in the business department of an advertising firm, stimulating her interest in the communications field.

During the next 15 years, Eng was the manager of global employee communications at NBC, was corporate publicist for the Children's Television Workshop, and also worked at several top public relations agencies before establishing her own firm. Some of her clients have included Pricewaterhouse-Coopers, Court TV, and Rainbow Media Holdings (Cablevisions). Her peers in the public relations industry have recognized Eng's achievements by honoring her with the Silver Anvil Award, CIPRA Award, the Big Apple Award, and the Mercury Award.

Eng has been a dedicated Cornell leader since graduation, *providing outstanding leadership* in a variety of areas. As president of the then three-year-old Cornell Asian Alumni Association (CAAA), she provided the direction and leadership that has made this group the strong, well-respected alumni association it is today. Under her direction, the organization expanded their Pan-Asian Banquet to include all alumni and moved the date to coincide with the Cornell Association of Class Officers' (CACO) mid-winter meeting. This event has become the highlight of this important alumni weekend and continues to attract more than 200 of Cornell's leaders and brings together a diverse group of Cornellians to celebrate and share in this cultural event.

Eng continues her involvement with CAAA, serving on the association's advisory board and as co-chair of this year's banquet. She is currently serving her second term as a member of the Cornell University Council, represents ALS on the committee for alumni trustee nominations, and serves on the ALS Alumni Association's Diversity Committee. Eng is a former director-at-large for the Cornell Alumni Federation.

Eng is the founder of "Girls with Cash," an NAIC all-women investment club where one-third of the membership is Cornell alumnae, and serves on the board for NAIC's New York City chapter. She is a former board member for the AIDS Center of Queens County.

Eng resides in Woodside, N.Y.

Outstanding Faculty/Staff Awards

Ernest F. Schaufler '48, MS '52 has studied, taught, lived, practiced, and shared his interest and expertise in floriculture and ornamental horticulture. He entered Cornell in 1941, enlisted in 1942, and was called to active service in 1943 for the Corps of Engineers. After serving in Europe until 1946, he re-entered Cornell. Then he was a 4-H club specialist in ornamental horticulture at Cornell. After a long career as a professor in the college, he retired in 1983 as professor emeritus and continued to share his knowledge with Master Gardeners, judge 4-H exhibits at county fairs, and keep publications up to date.

As a 4-H specialist, he published more than 40 member and leader guides for the Annual Flowers, Perennial Flowers, Indoor Gardening, and Landscaping youth projects. He also authored several Extension bulletins. He earned a reputation as a well-prepared teacher whose workshops and training sessions included hands-on projects.

Schaufler and his assistant developed the Talking Plant, a plant model with a tape recorder in its base. Schools used it to assemble a model plant, with large charts explaining plant parts and with students being the plant parts. More than 120 were built and used throughout the United States.

He set up the original Master Gardeners kits for Annual Flowers, Perennial Flowers, and House Plants. Using Professor Raymond Sheldrake's Pillow Pak, schools and apartment dwellers could assemble instant window sill gardens.

On one sabbatic leave, Schaufler worked with 4-H programs in Kentucky, Texas, and Oregon. He spent other sabbaticals in California and Colorado.

Schaufler received the following awards: Epsilon Sigma Phi (Extension fraternity) award for weekly radio programs, Alice Doscher Horticulture Bronze Medal from the Federated Garden Clubs of New York State, Distinguished Service Award from National Association of 4-H Agents, Epsilon Sigma Phi New York State Distinguished Service Award, and the Gold Medal of Honor Horticulture Award from the New York State Nursery/Landscape Association.

Schaufler has been an active member of his community. He was treasurer and a trustee of the Varna United Methodist Church, chair of Varna Boy Scout Troop 45, chair for the Varna Community Association, and for many years, chair of the Varna Volunteer Fire Company where he was made a life member in 1989. He also served as president of the Ithaca Memorial Society and chair for the board of directors of Acacia fraternity.

Schaufler and his wife, Beverly Pratt Schaufler '48 (HE), reside in Ithaca, N.Y., and have three children: Donald (who manages Arnot Forest), Katherine '77 (Cornell Information Center), and Douglas (Penn State).

Bruce T. Wilkins '52, PhD "67 is a professor emeritus in the Department of Natural Resources. He began his professional association with Cornell in 1959 as an assistant county agriculture agent in Broome County, N.Y. In 1963 he joined the Depart-ment of Natural Resources as a fish and wildlife specialist and served as a professor in the department until his retirement in 1996. Since 1997, he has served the department as a professor emeritus.

Wilkins is among the top leaders who have influenced the way Cooperative Extension work is conceived of and conducted, not only in New York State, but also nationally.

One of his major accomplishments was helping shape the Sea Grant Extension system. He wrote the first "bible" of Sea Grant Extension work in 1980, "Views on Sea Grant Advisory Service Work." Twenty years later, he led the team that authored the updated version. As associate director of the New York Sea Grant Program, he developed a 25-person, $1.5 million annual marine extension program aiding coastal fishermen and other marine users. In 1989, Wilkins was asked to lead a faculty committee to redesign the department's curriculum. He led the faculty through this reorganization and the undergraduate major in natural resources has been rated first in the nation in the last three *Gorman Reports*.

Wilkins has applied his commitment to outreach internationally, serving as marine fisheries consultant or a visiting professor in numerous countries worldwide. Some of his consulting work has been for the World Bank NEAP Planning Commission in Cambodia, University of Zimbabwe, Peace Corps Fishery Personnel in the Philippines, the University of South Pacific in Fiji, and as a visiting lecturer at the University of Hong Kong.

Wilkins has been dedicated, especially in retirement, to enhancing the department's involvement with its alumni. He helped plan and implement a year-long series of activities for the 50/100 anniversary (as a department and a college) celebration of the Department of Natural Resources. Most recently, he led efforts for the 50th reunion this past June, of the first graduating class from the department, of which he is a member.

Wilkins also has been an active community member. He helped spearhead the creation of the Ithaca Girls' Hockey Association, served on committees and is an Elder in the First Presbyterian Church in Ithaca, and is a member of the Finger Lakes Land Trust. Wilkins received the USDA Certificate of Appreciation for exemplary service, dedication, and sustained voluntary leadership for the Natural Resources and Environmental Management (NREM) Flagship Program, and he received the Bill Q.Wick Visionary Career Leadership in Administration Award, from the Sea Grant Extension Assembly.

Wilkins and his wife, Sandra, live in Solomons, Md., and have three children—Bruce Jr. '84 (CALS), Gregory '86 (CALS), and Sheryl '90 (Law).

ALUMNI ASSOCIATION

(continued from last issue)

Ed Staehr Elected President of ALS Alumni Association

Ed Staehr '88, MPS '94, of Cayuga, N.Y., was elected president of the ALS Alumni Association at its annual board of directors meeting on June 8, 2002. He replaces Peter Pamkowski '74 of Schenectady, N.Y. Staehr served as vice president for 2001–2002 and as a district director, representing District 15 (Cayuga, Onondaga, Oswego, and Seneca counties). He also has chaired the association's Planning Committee, Finance and Investment Committee, Nominations Committee, and Diversity Committee.

Staehr is also active in his community and has served on the Good Shepherd Catholic Community parish council and was recently involved on a Collaboration Committee to consolidate parish functions. He has served on the board of directors of the New York State Agriculture Agents Association and is a recipient of the National Association of County Agricultural Agents' Achievement Award for his professional accomplishments. Staehr is a graduate of the Class of 2001 Leadership Greater Syracuse and currently serves on the board of directors of Appleseed Trust, a nonprofit business organization that promotes business start-ups. He is the agriculture team leader for Cornell Cooperative Extension of Onondaga County, as well as team leader for multi-county programming in Cayuga, Onondaga, and Oswego counties.

Retiring District Directors

Volunteer time, energy, and creativity are key strengths behind the success of the ALS Alumni Association. We salute the following Alumni Association volunteers who ended their terms at the Reunion weekend annual meeting:

Ron Cook '91—District Director, District 27–Broome and Tioga Counties

Kimberley Thompson '89—District Director, District 23– Canada

Mike Valla '76—District Director, District 9–Saratoga, Warren, and Washington Counties

Geoff Yates MS '77—Immediate Past President

Please let us know if you are interested in volunteering in your area, especially in metropolitan areas throughout the country. E-mail: alsaa@cornell.edu

Ken Wing Retires from SUNY Cobleskill

After 10 years as president of SUNY Cobleskill College of Agriculture and Technology, Kenneth E. Wing '58, M Ed '60, PhD '66 retired on June 1. A scholarship endowment was established to honor his years of service to higher education, agriculture, and SUNY Cobleskill. The scholarship will benefit students with demonstrated leadership ability from rural areas.

Bruce Wright '75, SUNY Cobleskill professor of agricultural engineering, announced that initial gifts to the fund totaled more than $18,000 as of June 1, including gifts from Cornell alumni, faculty, and staff who worked with Wing during his term as associate dean in CALS from 1982 to 1991. Additional gifts are welcome to the SUNY Cobleskill Foundation, attention Fardin Sanai, Knapp Hall, SUNY Cobleskill, Cobleskill, NY 12043.

NORTH CAROLINA

Apex
Rolf Jesinger '65

Asheville
William A. Chater '58
Edward H. Smith '40
Janet R. Smith '47

Calabash
Albert J. Beard '52

Cary
Isaac S. Brock '57
Jessica L. Geyer '93

Chapel Hill
Joy A. Baldwin '95
Ruth C. Dy '67
Lisa M. Gangarosa '87
Karen W. Goss '85
Anoosha Mohandesi '00
John F. Spencer '54

Charlotte
William A. Babiarz '81
Ricardo L. De Soto '01
Carol B. Rosenberger '86
Jami D. Rothman '01
George W. Trunberger '46
George R. Trunberger '03

Creedmoor
Timothy L. Rumocki '76

Gallivanter
David Wuonnas '92

Davis
James F. Ritchey '54

Durham
Brian Damiano '00
Lynn A. Goldman '96
Christine M. Heuzler '00
Cindy M. Levine '00
Dwayne A. Narayan '92
Christiana Root '00
Rebecca R. Walden '01

Elm City
Douglas G. Snow '76

Fayetteville
Wendi Lynn '99
Angela G. Tarjick '00

Gastonia
Edward F. Hoerning '63

Gloucester
John F. Robinson '50

Greensboro
Cindy J. Fuller '78
Enjoli C. Lawhorn '01
Lewis Weinstock '77

New River
Tiffani D. Rogers '00

Nicolasville
Robert M. Zerest '66

Henderonville
Earl W. Helmer '38

Matthews
Barry D. Greenblatt '85
William J. Kalaf '88

Mooresville
Gordon L. Peck '62

New Bern
William J. Ash '53

Ocean Isle
Karen G. Lubadis '88

Pilot Mountain
Horace W. Stinson '64

Pinehurst
Charles W. Cameron '66

Raeford
Jayne L. Paterson '99

Raleigh
Ali A. Akhavein '67
David C. Ashby '60
Arthur E. Darlow '40
Elizabeth J. Fichtner '97
Joan C. Flood '52
Beth M. Galler '75
Rebecca R. Gamble '96
Richard S. Lee '99
C. Paul Marsh '53
Thomas H. Menges '72
Kevin R. Ford '77
Valentine B. Pratt '32
Robert D. Sherry '80
Paul M. Wright '53

Seven Lakes
Dale H. De Brise '64

Weddington
Lauren Spina-Hampton '84

West End
William S. Taylor '50

Wilmington
Lewis J. Hicks '72
Hal R. McKee '61

Winston Salem
John P. Van Zandt '48
Edward F. Sullivan Jr. '51

NORTH DAKOTA

Casselton
Larry P. Nyblad '59

Grand Forks
Lester L. Seglin '53

OHIO

Akron
Kara L. McClendon '00

Ashland
Thomas E. Crone '01

Avon
Nicholas R. Scarvely '01

Beaver Creek
Eric L. Whitty '97
Louis C. Ferraro '65

Bellevue
Valerie A. McConnell '93

Beverdam
Margaret M. Loiselle '01

Brecksville
Richard F. Scullin '01

Bucyrus
Maurie Sensel '49

Celina
Wallace W. McDougall '50

Chesterland
Richard H. Munson '77

Cincinnati
Kelly J. Brown '88
John C. Cubery '60
Peter Dyer '91
Linda K. Fiske '74
Joan M. Friedland '57
Alison Gensler '87
Francis J. O'Connell '65
Marie Robinson '00
Kevin M. Smith '87
Michelle J. Yaeth '98
Howard A. Vanslyn '74

Cleveland Heights
Harris L. Weinstein '93

Columbus
Caroline T. Barnum '99
Jennifer Brecht '93
Scott F. Inglis '98
Naquan L. Johnson '91
George R. Johnston '28
Charles M. Lewis '49
Sheldon R. Simon '66

Coshocton
Ann M. Mroczek '87

Dayton
Frederick C. Smith '38

Delaware
Angela C. Hauer '94

Dublin
Jason A. Straka '94

Elyria
Fred R. Young '16

Englewood
Jason Law '98

Fairfield
David Tisi '91

Findlay
Gunen Baslan '00
David J. Martaus '79

Hamilton
William J. Copeland '48

Helena
Glenn E. Maddy '49

Holland
Catherine Anderson '01

Kent
Thomas W. Schmidlin '84

Lakewood
Mark H. Brandt '86

Madeira
Kara A. Erlandson '99

Medina
Edward G. Hiscar '81

Mentor
Kyle Salay '01

Mogadore
Michael Barnes '00

New Albany
Charles R. Lynch '90

North Perry
Nathan J. Hicks '99

Novelty
Michael E. Moore '76

Orange
Mark L. Bogomolny '84

Oregon
Clifford J. Smith '60

Pioneering
Harold H. Kneen '75

Rushsylvania
J. Eric Juterbock '69

Scioteville
D. Robert Deal '69

Seven Hills
Steven M. Olesick '01

Shaker Heights
Brooke J. Bloom '92
Lalana J. Green '77
Karen E. Schwarz '90

Stow
Joseph P. Haefner '85

Swanton
Mary B. McConnell '85

Sylvania
Herbert Hoehing '55

Tallmadge
Donald M. Smith '52

Thompson
Thomas M. Keaty '51

Tiffin City
David M. Kapustosky '90

Toledo
Stephen L. Peyrouch '85

Downtown
Nicholas Gray '91

Upper Arlington
Katarina A. Tuovinen '98

Wapakoneta
Jonathan D. Elsass '01

Westerville
Nicole Durchinger '91

Westlake
Christopher W. Hunt '01

OKLAHOMA

Ada
Bruce E. Pivetz '82

Coweta
Katherine A. McComas '00

Edmond
Michael K. Barrett '71
Robert H. Epstein '73
Larry Numark '57

Norman
Christopher M. Godfrey '00

Oklahoma City
Daniel J. Fenti '72
Ester E. Cobb '01

Stillwater
Heather Hillman '99

OREGON

Ashland
Steven M. Werblow '88

Beaverton
Chris J. Butler '00

Canby
Christopher J. Nichols '81

Corvallis
Andrew G. Hashimoto '72
Trina K. Lee '01

Eugene
Brian P. Baker '82
Joshua Ladau '90

Grants Pass
Charles E. Crispen '71
Olivia C. Duren '01

Oregon City
Louis C. Fredd Jr. '57

Portland
Allison R. Abbott '91
Ralph E. Weinstein '77
Jennifer H. Williams '98
Stephanie Wilmot '00
Francine S. Zlewerok '63

Roseburg
Valerie R. Kamakka '70

Salem
Jonathan M. Krautmann '91
Lena A. Stugha '45

Tualitin
Garth T. Fuller '61

PENNSYLVANIA

Abington
Trina R. Russell '83

Alexandria
Neil J. Weissman '84

Allentown
Michael J. Kazarowicz '00
Jesika L. Peters '01

Annville
Louis Matura '58

Ardmore
Charles M. Samul '77

Aston
Lisa P. Fortna '95

Athens
Mary Kelly '92
Bonnie J. Norton '81
Donald E. Plunkett '81

Bala Cynwyd
Nuo Tang '91

Bangor
Jane S. Emerick '56

Barnesville
Christian J. Helman '94

Bellefonte
Robert K. Metz '63

Bernville
David C. Fulkroth '99

Biglerville
Craig A. Bishop '79

Bird in Hand
Susanne M. Engler '95

Bridgeville
Linsey K. Way '98

Bryn Mawr
Lois M. Epstein '64

Camp Hill
Katherine Principato '00

Carnegie
Dana Kowalski '99

Center Valley
Matthew S. Harting '91

Chambersburg
Kimberley A. Narayan '92

Chesterfield
Mark H. Menson '73

Christiana
Randall L. Sierk '67

Clearfield
James O. Carr '00

Conshohocken
Andrew A. Stratton '97

Coudersport
Scott J. Penner '87

Dallas
James C. Thomas Jr.'60

Denver
Tod A. Bay '83

Devon
Jennifer A. Barton '90

Downingtown
Michael S. Conlin '78
Colleen E. Molloy '01

Eagleville
Cornelius C. Jones '53

Easton
John E. Schaible '01

Eddystone
Kevin T. Kerestus '88

Enola
Laurel Raines '97

Ephrata
Robert J. Foster '69

Erie
Thomas G. Angstadt '75
Charles R. Bales '51
Ashton Chen '99

Exton
Henry J. Nestler '72

Felton
Shane Z. Ratterman '01

Fleetwood
Michael J. Zinkand '01

Gettysburg
Peter L. Callan '76

Gladwyne
Lindsay G. Conway '00

Glen Mills
Gerhard A. Schad '50

Glenolden
Albert G. Moat '49

Glenshaw
Brian W. Wilderotter '71

Harrisburg
Laura Beasley-Topcliffe '00
Amy Vasiliauscas '99
Peter J. Weisnert '00

Hershey
Larry F. Grunden '76

Hollidaysburg
Gregory K. Bixby '82
Joshua D. Trymiewski '01

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(continued from page 6)

Daniel A. Howard '99 of Liverpool, N.Y., is a systems analyst for Alcan Aluminum Corporation.

Diane Miller '99 of Rohnert Park, Calif., received an MS in atmospheric science from the University of Illinois-Urbana in May 2001. She is working at Sonoma Technology, Inc., in Petaluma, Calif., performing air quality research and issuing air quality forecasts for various cities across the country.

Michael J. Shanahan '99 of Atlanta, Ga., is a residential property manager of a 171-unit loft complex in Atlanta and is a competitive swimmer with SwimAtlanta.

Sarah Toll '99 of Washington, D.C., is a PhD student at the University of Maryland. She is marrying Matthew Christianson (Arts '99) in June 2002.

2000s

Rachel S. Anderson '00 of Argyle, N.Y., is an agriculture teacher at Argyle Central School.

Jonathan P. Bradfield '00 of Johnsonville, N.Y., is employed at Decode Genetics in Reykjavik, Iceland.

Christine Constable '00 of Fayetteville, N.Y., is a math teacher at Fayetteville-Manlius High School.

Elizabeth A. Fleming '00 of Copenhagen, N.Y., is currently a substitute teacher and in the process of starting her own business.

Rebecca Foltasz '00 of Syracuse, N.Y., works for the Natural Resources Conservation Service of the USDA.

Nicole Hedinger '00 of Elberon, N.J., graduated in November 2001 from AmeriCorps training program at the Denver, Colo., campus.

Anne M. Mattice '00 of North Blenheim, N.Y., works on her family's vegetable farm.

Claudia Sandoval '00 of Brooklyn, N.Y., is a student in veterinary medicine at Cornell.

Sabrina Siebert '00 of Madison, Wis., is a master's degree candidate in entomology at the University of Wisconsin.

Angela Hemauer '02 of Plymouth, Wisc., was named Wisconsin's 55th Alice in Dairyland. She will serve in the one-year public relations position promoting Wisconsin's agriculture commodities, products, and services as a staff member with the state Department of Agriculture, Trade and Consumer Protection. She was selected from six finalists after three days of interviews, sales presentations, speeches, and media interviews.

Natalie Walleser '03

The drawings of the tattoos and piercings for each decade are by Ithaca artist Jim Houghton.

Luncheon in Philadelphia

More than 60 alumni and friends gathered for a luncheon at the Hilton Garden Inn during the Philadelphia Flower Show on March 9. This event was a collaboration among three alumni organizations: ALS Alumni Association, Cornell Asian Alumni Association, and Cornell Club of Greater Philadelphia. Cornell Club presidents from Philadelphia and Lancaster were present at the luncheon. Pictured here are (left to right) Becky Kim '99, Cornell Club of Greater Philadelphia; John Tweedle, guest speaker; Tomoko Morinaga MPS '89, ALS Alumni Association, and Vincent Law '95 (A&S), Cornell Asian Alumni Association.

Admissions ambassadors play an important role at alumni events. Ben Wolfe '03 (left) and David Ishikawa '02 (right) hosted prospective student, Justin Miller, from Saul Agriculture High School in Philadelphia, during the luncheon. Miller received the CALS Book Award from the ALS Alumni Association this spring.

Graduation 2002

Dean Susan A. Henry poses with Brian A. Levine '02 of Babylon, N.Y., at Commencement in May. Levine received a BS degree in biological sciences. While a student, Levine was active with the ALS Alumni Association serving on the Awards Committee and the Student Leadership Committee.

What Is the Cornell University Agricultural Experiment Station?

The Cornell University Agricultural Experiment Station (CUAES) enters the 21st century with a long, proud, and productive tradition of supporting research on agriculture and other rural concerns that has benefited New York, the Northeast, and the nation. Since its inception in 1879, the mission of CUAES has been to improve people's lives by promoting research to enhance the state's and nation's agriculture and foods systems, environmental resource base, and associated human and community development. Thus, CUAES contributes to Cornell University by meeting its mission to society as a federal land grant institution.

During its 123-year history, CUAES has been directed by some of the giants in the leadership and intellectual development at Cornell and its College of Agriculture and Life Sciences (CALS), including names that now identify several buildings on campus, such as George Caldwell, Liberty Hyde Bailey, Isaac Roberts, Frank Morrison, and Albert Mann.

In recent years, CUAES has supported more than 300 research projects annually, allocating over $4 million each year toward applied research led by more than 500 faculty members. While CUAES predominantly supports faculty researchers in CALS, it also provides research funding to faculty in the colleges of Human Ecology; Veterinary Medicine; Arts and Sciences; Architecture, Art, and Planning; the Cornell Division of Nutritional Sciences; Mann Library; and the Laboratory of Ornithology.

The chief sources of funding are allocations made to CUAES on a formula basis by the Cooperative State Research, Education, and Extension Service of the U.S. Department of Agriculture. These federal formula funds originate from congressional appropriations made under the Hatch, McIntire-Stennis, and Animal Health acts.

CUAES, located on campus in Ithaca, should not be confused with the New York State Agricultural Experiment Station located in Geneva, N.Y. New York is one of only two states (the other being Connecticut) that has had two separate agricultural experiment stations since the federal experiment station system was established in the 1880s. The faculty and administrations of the Ithaca and Geneva experiment stations collaborate and coordinate to yield the greatest positive impact on New York citizens.

The Geneva Station is focused on horticulture-related research (and outreach) and has its own excellent faculty and academic departments, its research campus, laboratories, and other facilities, and specified state support through SUNY. In contrast, the Ithaca station sponsors research across a wider portfolio (agriculture, food and nutrition, community development, environment, and human development), receives no annual state funding, and depends on the expertise and facilities that interested Cornell faculty will bring to bear in their research undertaken with CUAES sponsorship.

For more information see the CUAES web site at
http://cuaes.cornell.edu/home.htm

Michael Voiland

Annual Planned Giving Luncheon Held April 30

Nearly 100 guests attended the annual Agriculture and Life Sciences Planned Giving Luncheon and Program on April 30 at Cornell. The program featured a morning seminar by food science professors Kathryn Boor '80 and Martin Weidmann PhD '97 on "Biosecurity: Protecting our Food, Water, and Environment." The keynote presentation was given by Jane McGonigal '50, who described the 90-year history of the Wigsten family and Cornell, which led to the establishment of the Wigsten Family Fund last year by her sister, Nancy Axinn '47.

Master of Ceremonies Brian Voss '02 poses for a photo with Dean Susan A. Henry.

Dean Henry greets Bill Fuerst '39.

Bob Ranger '59, Doug Brodie '55, Bob Smith '42, and Mary Smith enjoy a conversation before the luncheon.

Students Hazel Fromm MS '03 and Hannah Snyder '02 show a display to Dean Henry, Ingrid Lamont, and Roger Lamont '64.

On and Off Campus Events

Brad Grainger '79 (left) and Barbara Eng '85 (right) talk with a student when they and 12 other alumni returned to campus in April to discuss their careers and offer advice to interested students.

Duane Zonneville '50 (left) and Herbert Bandemer '51 spoke with Janet McCue, director of Mann Library, before her talk to alumni and friends at DiPacifics in Farmington, N.Y.

4-H Celebrates Centennial

4-H is celebrating its centennial this year as America's premier youth development organization. For nearly a century, 4-H has led communities and their leaders in recognizing the power and promise of America's youth. Through its historic place as a key part of Cornell Cooperative Extension and with its continuing commitment to inclusion and collaboration, 4-H has become the nation's only youth development organization spanning all of America—from family farms to urban centers, where more than 40 percent of its youth participants now live.

Today's 4-H includes more than 6.8 million youth and programs in every one of America's 3,067 counties. Over 400,000 of those youth participate in 4-H in New York State. 4-H is part of the Cooperative Extension System, which is a partnership between the USDA, state land-grant universities such as Cornell University, and local county governments.

Originally focused on agricultural projects, 4-H has followed the needs and interests of young people into urban and suburban communities. The participation of young people in developing and governing 4-H has been a key to its continuing success. 4-H draws strength from its participants by sharing decision-making responsibilities at levels ranging from local clubs to national programs. This year, to celebrate the centennial, many events are planned throughout New York State, including the kick-off of a 4-H Opportunity Scholarship Program sponsored by the NYS 4-H Foundation, which will award more than $30,000 worth of scholarships to youth pursuing higher education.

For more information about 4-H programs or the centennial, contact your local Cooperative Extension office or the State 4-H Youth Development Office (607-255-2233 or www.cce.cornell.edu/4h). 4-H is millions of opportunities, thousands of youth, one hundred years . . . one great idea!

Food Science at Cornell Celebrates Centennial October 13–15

The Department of Food Science will celebrate its centennial October 13–15, 2002, with a symposium, social events, and an open house. A distinguished panel of speakers will address the symposium on topics ranging from food safety and quality to the function of foods and food science in the 21st century. Among the scheduled speakers are Susan Henry, dean of CALS; Nathan Rudgers, commissioner of NYS Department of Agriculture and Markets; Per Pintrup-Anderson, winner of the 2001 World Food Prize; and Elsa Murano, undersecretary for food safety with USDA. Alumni, friends, students, and colleagues from across the Cornell campus are cordially invited to attend. The centennial schedule of events can be found at *http://www.foodscience.cornell.edu.*

Linda Hoffmann Named Assistant Director of Development

Linda Hoffmann joined the ALS Public Affairs staff April 29 in the newly created position of assistant director of development. Hoffmann is responsible for the stewardship of the college's endowment funds, assisting with the management and oversight of the annual fund activities, as well as providing support for the management of leadership gifts.

Hoffmann holds a B.F.A from the University of Arizona and completed graduate level work in psychology at United States International University in San Diego, California. She has extensive experience in the area of therapeutic services and support program development for clients and families, as well as experience in administration and management.

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New Department Chairs

Education
Rosemary Caffarella succeeds Dalva Hedlund as the new department chair. Caffarella was a professor of educational leadership and policy studies at the University of Northern Colorado and an adjunct professor in continuing education at the University of Calgary.

Food Science
Joseph Hotchkiss has been appointed the new chair, replacing Dennis Miller. Hotchkiss has been on the Food Science faculty since 1980.

Food Science and Technology (Geneva)
Chang Yong "Cy" Lee has been named chair of the department, succeeding Richard Durst. Lee has been a member of the department's faculty since 1969.

Horticulture
Marvin Pritts is the new chair of the department, replacing H. Christian Wien. Pritts has been a member of the faculty since 1984.

Natural Resources
Barbara Knuth succeeds James Lassoie as chair of the department. Knuth joined the Natural Resources faculty in 1986.

Neurobiology and Behavior
Ronald Harris-Warrick is the new chair, succeeding co-chairs Ronald Hoy and Andrew Bass. Harris-Warrick has been a member of the department's faculty since 1980.

Cornell Sheep Program Blankets

Created from the wool of Cornell Dorset and Finnsheep breeds and their crosses, these blankets are ideal for football games and cold nights, and as gifts for graduations, weddings, birthdays, and the holidays. Red stripes near each end and red binding accent the 100% virgin wool.

Your purchase of blankets helps to support the Cornell Sheep Program, and $10 from each sale goes to an undergraduate scholarship fund.

Each blanket is individually serial-numbered on the Cornell Sheep Program logo label and comes with a certificate of authenticity.

The blankets come in four reasonably priced sizes:

Lap robe (60 x 48 inches, 1 stripe)	$65
Single (60 x 90 inches, 3 stripes)	$89
Double (72 x 90 inches, 3 stripes)	$99
Queen (78 x 104 inches, 3 stripes)	$119

Add 8% New York State sales tax and $7 per blanket for shipping

Additional information about the blankets is available at:

www.sheep.cornell.edu
(click on "blankets")

Purchase at the Cornell Orchards, the Cornell Dairy Store, or from the Department of Animal Science in 127 Morrison Hall, Cornell University, Ithaca, NY 14853-4801 or by telephone (607-255-7712), fax (607-255-9829), or e-mail (mlc44@cornell.edu).

Maple Syrup by Mail Order

Pure Adirondack maple syrup produced at Cornell University's Uihlein Sugar Maple Field Station at Lake Placid, NY is available for shipment any time of the year. Maple syrup makes an excellent gift for family, business associates, and employees. For prearranged special orders we will also ship half-pint and 100 milliliter containers, both excellent choices for wedding and gift baskets. Your order will be packed and shipped immediately or at a later date if you wish to coincide with a special day or holiday. Please call in advance for special orders.

Prices, which include ground shipping via UPS, apply to the continental USA only:

Size			
Pint	$17.50	Half-Gallon	$35.00
Quart	$24.00	Gallon	$53.50

For orders going to Hawaii, Alaska, or international destinations call or e-mail for prices.

All New York State syrup is graded by color and strength of flavor. Our syrup is available in Grade A Light, Medium, and Dark Amber, and Grade B Extra Dark. Unless otherwise specified, we will ship medium amber syrup. If due to seasonal differences, some grades of syrup are unavailable, we will ship the next grade available. All sales of our syrup support our sugar maple research and extension programs.

Please send your order, a list of addresses (please print clearly), with a check or money order made payable to "Cornell University" to: The Uihlein Sugar Maple Field Station, 60 Bear Cub Road, Lake Placid, NY 12946.

Gifts to support the Cornell Uihlein Sugar Maple Field Station are important to sustain the work being done in research and extension. You can make a tax-deductible gift by sending a check to the above address or by calling Colin Campbell at the Uihlein Field Station phone number.

Uihlein Sugar Maple Research/Extension Field Station
Department of Natural Resources
New York State College of Agriculture and Life Sciences
Telephone: 518-523-9337
Fax: 518-523-8256
E-mail: Colin Campbell <cac49@cornell.edu>

http://maple.dnr.cornell.edu/uihlein/uihlein.asp

Thank you for your support!

Photo by Frank Oliveo

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Calendar 2002

September 1–November 30
Calling all prospective students and their families—Visit the ALS Admissions Office, weekdays 10:30 a.m. and 2:30 p.m. and selected Saturdays (September 21, 28; October 19; November 9). For more information, call (607) 255-2036 or visit www.cals.cornell.edu/admissions.

Saturday, October 5
ALS Admissions Open House for Prospective Students. For more information, call (607) 255-2036 or email als_admissions@cornell.edu.

Saturday, October 12
Fall Harvest Festival and BBQ at Baker's Acres in Lansing, N.Y. Bring the family for apple picking, hay rides, and lots more. Contact Meg Hardie Overstrom '88 at (607) 533-8632 or mhb7@cornell.edu, or Diane Irwin '94 at (315) 622-2548 or dmi2@cornell.edu for more information.

Friday, November 1
Transfer Day for Prospective ALS Transfer Students. For more information, call the ALS Admissions office at (607) 255-2036 or e-mail als_admissions@cornell.edu.

Sunday, November 10
Early-decision applications and spring transfer applications due. (Regular applications due January 1). For more information, call ALS Admissions at (607) 255-2036, e-mail als_admissions@cornell.edu or visit www.cals.cornell.edu/admissions.

Friday, November 15
ALS Outstanding Alumni Awards Banquet, Ithaca, N.Y., Carrier Ballroom at the Statler Hotel. For more information, call (607) 255-7651 or e-mail alsaa@cornell.edu.

Saturday, November 16
Celebrate Cornell's Undergraduate Business Program, Ithaca, N.Y. Executive panel, networking luncheon, afternoon breakout sessions, and afternoon celebration gala. For more information, call (607) 255-7651 or e-mail alsaa@cornell.edu.

2003

Saturday, February 22
Florida ALS and Human Ecology Alumni, Leesburg, Fla. Keynote speaker to be announced. Luncheon program. For more information, contact Don Robinson '41 at (585) 493-5169 or e-mail alsaa@cornell.edu.

Wednesday, April 23
Dean/Alumni Get-together for District 17 (Chemung, Schuyler, and Yates) and District 18 (Allegany and Steuben) counties. Location to be announced. For further details, call the Alumni Affairs Office at (607) 255-7651 or e-mail: alsaa@cornell.edu.

Tuesday, May 13
Dean/Alumni Get-together for Binghamton and surrounding counties. Location to be announced. For further details, call the Alumni Affairs Office at (607) 255-7651 or e-mail: alsaa@cornell.edu.

Visit us on the web at www.cals.cornell.edu/public_affairs/alumni/