

IMPACT

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The Plant Innovation Program

Using Innovative
Research to Develop
Better Crop Cultivars

UF UNIVERSITY of
FLORIDA

perspective

“What’s your job?”



Sometimes that’s one of the most revealing questions you can ask.

Pose the question to environmental horticulture faculty member Mike Kane, and he’s likely to say that — aside from using cutting-edge science to foster plant species essential to Florida’s ecosystems — his primary job is cultivating the scientific prowess of his

students.

Ask Seminole County Extension Director Barbara Hughes and, in her perpetually upbeat way, she’ll probably give you a well-explained list of duties (written sometime between early morning budget planning, calls from concerned farmers and working with local 4-H).

The answer from Michael Olexa, director of the Center for Agricultural and Natural Resource Law, is likely to be that he prepares students to answer legal questions that will impact Florida agriculture in the future: How do we best regulate the rapidly evolving worlds of food, fiber and fuel production? What about water quality, biotechnology, international trade and all the other issues facing a new generation of agriculture and natural resource professionals?

Ask Rick Lusher, and he’ll talk to you about the weather. Rick and his team built and maintain the Florida Automated Weather Network (FAWN) website, which was viewed more than 126,000 times by farmers and other Floridians seeking guidance in the record-breaking cold of January and February.

These are just a few of the “job descriptions” within IFAS. No matter what an individual’s daily tasks or

title, however, we all carry a common charge: to always work toward a better tomorrow. As our mission states, we are dedicated to enhancing and sustaining the quality of human life by developing knowledge in agriculture, human and natural resources, as well as in the life sciences.

In doing so, we support sectors of Florida’s economy that carry a total \$76.5 billion dollar impact and help provide more than 1.6 million jobs. And, we’re working hard to pave new paths for industries tied to Florida agriculture and natural resources, so that even more people will have their own job descriptions to proudly tell.

The following pages of IMPACT magazine hold even more stories of projects and individuals within IFAS. I have no doubt that, collectively, the dedicated faculty and staff of this institute will continue to help pave a bright future for the Sunshine State.

That’s IFAS’ job.

On a personal note, my own job situation is changing. Since January 2009, I’ve had the honor of serving as interim senior vice president for agriculture and natural resources.

Effective June 1, I’ll be resuming life as a professor in the agricultural education and communication department as we welcome our permanent senior vice president, Jack Payne, formerly of Iowa State University.

Leading IFAS has given me a better understanding of the hard work, commitment and talent of our people. It’s also made me more appreciative of the support we receive from stakeholders, elected officials, alumni, friends and the general public.

I’d like to thank everyone who helped make this experience so rewarding. There are thousands of you. Please accept my gratitude, and warm wishes for success in the future.

Go Gators!

A handwritten signature in black ink, appearing to read "Larry R. Arrington". The signature is fluid and cursive.

Sincerely,
Larry Arrington
Interim Senior Vice President
Agriculture and Natural Resources

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Features

- 4 Rx Fire
- 6 How It Works
- 8 Consumers' Choice
- 12 Smart Regrowth
- 14 Agricultural and Natural Resource Law
- 16 A Different Kind of Forestry

News Updates

- 18 News Briefs

People, Places and Things

- 7 Student Profile
- 22 Faculty Profile
- 23 Extension Profile
- 24 Students, Alumni and Friends
- 26 Spotlight
- 30 IFAS Development News



On the Cover

CALS students (from left) Ashlyn Wedde, Deidra Slough, Michael Schwieterman and Correy Jones admire a flower bouquet in David Clark's laboratory. Clark is a leader in the Plant Innovation Program, a unique collaboration aimed at developing better crop cultivars. Several of its projects focus on increasing cut flower sales to Generation Y, people born in the 1980s and 1990s.

FOR MORE INFORMATION, PLEASE SEE PAGE 8. PHOTO BY TYLER JONES



Rx FIRE

Controlled Burn Team Makes Sure Florida Ecosystems Stay Healthy

BY STU HUTSON
PHOTOGRAPHY BY JOHN HAYES,
TYLER JONES, ERIC ZAMORA

Many people assume fire has only negative effects on wildlands.

But periodic, small-scale fires are beneficial to some ecosystems, promoting new plant growth and maintaining habitat for animals like the Florida scrub jay and the gopher tortoise. When an area goes too long without a burn, it can become overgrown — prime territory for dangerous wildfires.

The solution to this problem is a controlled burn, sometimes called a prescribed burn. Here, trained personnel carefully introduce fire where it's needed, then supervise the burn and monitor its aftermath.

"It goes without saying that you want to know what you're doing when you set fire to an area," said Zachary Prusak, state fire manager for The Nature Conservancy.

One group responsible for controlled burns is the Northeast Florida Resource Management Support Team.

Managed by The Nature Conservancy and supported by IFAS, the team provides aid to public agencies and private land managers in areas east of Interstate 75, from Orlando to the Georgia border. Housed at the Ordway-Swisher Biological Station in Putnam County, the team consists of Parker Titus, Andrew Rappe, Andrew Slack and Daniel Godwin.

The team began operations in August 2008, funded by a Florida Fish and Wildlife Conservation Commission grant. Since then, the four have conducted nearly 90 burns and spent more than 120 days preparing soon-to-be burned areas.

Students and an instructor study a map during a basic course on wildland firefighting conducted by UF, The Nature Conservancy and the Natural Areas Training Academy.



Titus and his crew also teach others the basics of controlled burns. In August 2009, the team worked with 40 students as part of a weeklong basic wildland firefighter training program conducted by UF, The Nature Conservancy and the Natural Areas Training Academy.

Writing the Prescription

Before a controlled burn, days are spent evaluating the site and writing a “prescription” describing how the burn will be conducted and what outcomes are expected.

The fire team checks the site’s average rainfall and temperature in recent months. The type, amount and moisture content of the ground clutter are important, too. These parameters are fed into a computer program that predicts the fire’s behavior under a range of weather variables such as air temperature, humidity, wind speed and wind direction. Using these predictions, the team can determine what weather conditions are favorable.

The computer models also help the team prepare for possible shifts in weather or fire behavior. And they develop backup plans, such as calling in help from local emergency response teams.

The planning process also includes the burn ignition plan, the organization of members involved in the burn, numerous safety and health scenarios, notification of the general public and local authorities, and steps to be taken after the burn to monitor and rehabilitate the area.

A Dose of Fire

Though burns can require weeks of planning and waiting, the fires themselves are over in just a few hours.

The area to be burned is isolated with a perimeter of firebreaks, either cleared strips of land several feet wide or natural breaks such as a river. The team leader or “burn boss” positions various crews, decked head-to-toe in fire resistant clothing, around the perimeter.

The burn typically begins with a line of fire lit along a firebreak and allowed to burn toward the oncoming wind. This is called the “backfire.”

Then, crew members set a “headfire” at the opposite end of the burn area, to meet the backfire. The

Palmetto and pine trees, seen here, are damaged but not killed by a controlled burn. Fire is a natural part of the life cycle for many Florida ecosystems.

burn is kept from spreading perpendicular to the wind by workers called a “handline.”

Meanwhile, a designated crew member keeps tabs on the weather, informing everyone about upcoming conditions frequently.

“It’s a highly coordinated effort,” said Stephen Coates, program coordinator for the Ordway-Swisher Biological Station.

Follow Up

Usually, the best burn is a “mosaic burn,” where patches of plant life are left to help the area regenerate. After the burn, crew members do a walk-through inspection, making sure standing fires are extinguished and badly damaged but still-standing trees (dubbed “snags”) are extinguished or cut down.

The entire area is monitored for several days to ensure that the fire doesn’t come back and that lingering smoke doesn’t cause problems. A crew may return for months or even years to make sure the area is recovering properly.

“It’s amazing how fast the wildlife returns to areas here in Florida,” Titus said. “Sometimes, just a week afterwards, you’ll return to an area and see a deer eating some of the new plant shoots or turkey scratching for food. It’s easy to see that this is a natural part of the cycle for the environment — essential for its health.” ■



HOW IT WORKS

Written By Stu Hutson

ILLUSTRATION BY JULISSA MORA

Anatomy of a Controlled Burn

Each year, Florida wildfires burn more than 100,000 acres and cause millions of dollars' worth of property damage. However, using controlled burns, groups such as the IFAS-housed Northeast Florida Resource Management Support Team can reduce the threat of wildfires by removing the natural clutter that serves as kindling for them.

Controlled burns can involve nontraditional tools such as flaming arrows, flare guns or torches carried on horseback. But there are important fundamental basics to each burn — the most important of which are safety and thorough planning.

WEATHER: The wind, temperature and environmental moisture must be ideal for the desired direction and rate of spread of the fire. A light, constant wind is preferable.

BACK FIRE: Set first, this fire moves slowly against the wind and is often used to burn the most area.

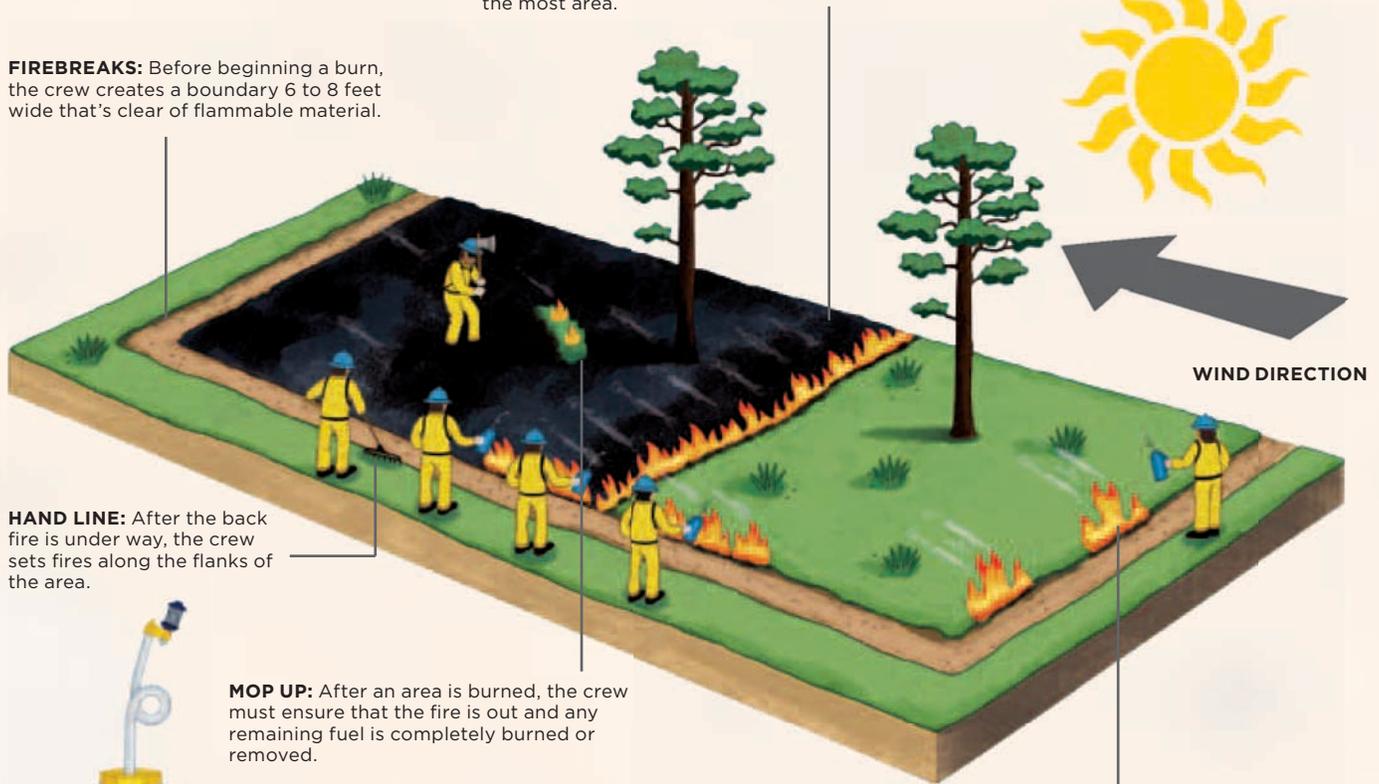
FIREBREAKS: Before beginning a burn, the crew creates a boundary 6 to 8 feet wide that's clear of flammable material.

HAND LINE: After the back fire is under way, the crew sets fires along the flanks of the area.

MOP UP: After an area is burned, the crew must ensure that the fire is out and any remaining fuel is completely burned or removed.

EQUIPMENT: Aside from the full complement of protective gear, the most common tool for a controlled burn is a drip torch, which is used to spray a mixture of burning diesel fuel and gasoline.

HEAD FIRE: Driven by the wind, this fire burns quickly and meets the oncoming back fire to finish the burning.



Lindsey Christ was just an eighth-grader when she first knew the environment might be her life's work.

Her science teacher assigned the class to debate the pros and cons of using particular pesticides and as she studied, she grew alarmed and puzzled by the idea of humans using potentially harmful pesticides.

"I just got so passionate about it," she recalls. "Suddenly we became the house with all the dandelions in the yard."

The next year, she argued her way out of her grade-level basic science class and into an ecology class, where she read Rachel Carson's "Silent Spring," the 1962 book that exposed the dangers of DDT.

And that, as they say, was that.

Christ expects to complete her master's thesis this summer with IFAS entomology researcher Jim Cuda, and spent the summer of 2009 working in Brazil to study a psyllid that may someday be used to stop Brazilian peppertree — an invasive plant that was brought to Florida in the mid-1800s as an ornamental, but quickly began elbowing its native competition out of the way.

Christ hopes to return to her native Ohio for doctoral work, but

won't forget her time in the College of Agricultural and Life Sciences — especially the trip to Brazil. Speaking only a little Portuguese, she slept on a mattress on the floor, toughed out homesickness and learned what it's like to be far outside of one's comfort zone.

"I would definitely have to say being fortunate enough to go to Brazil was the highlight," she said. "It was a once-in-a-lifetime opportunity I won't forget." ■

— Mickie Anderson



we are cal's

PHOTOGRAPHY BY ERIC ZAMORA

An eighth-grade assignment led Lindsey Christ to entomology research in Brazil

These bouquets are essential to Plant Innovation Program projects studying consumer preferences for cut flowers. The bouquet at right is traditional, the one at center has a modern, asymmetric composition. The third bouquet, at left, is the most unusual of the three.



CONSUMERS' CHOICE:

A New Approach to Developing Cultivars

By Tom Nordlie
PHOTOGRAPHY BY TYLER JONES

Better bouquets, tastier tomatoes and bigger market shares for Florida agricultural producers are just a few goals of the Plant Innovation Program, a unique research effort based in IFAS.

For decades, IFAS researchers have developed plant cultivars that grow faster, get bigger and stay healthier than existing varieties.

Now, an interdisciplinary research program based in IFAS seeks to revolutionize the way new plant cultivars are developed for industry. Called the Plant Innovation Program, it formally launched in summer 2009. Its basic premise: learn what consumers want, then find ways to deliver it.

A simple idea, but one that requires a new perspective, says plant geneticist David Clark, an environmental horticulture professor. He's a leader of the program, along with marketing expert Tracy Irani, an associate professor in agricultural education and communication, and Jeri Callaway, head of a Texas-based business consulting firm.

Take cut flowers, a \$9 million industry in Florida. Affluent women age 50 and up buy 75 percent of America's cut flowers. But the typical flower breeder is a male scientist.

"We find that men and women have very different preferences on what they like in a flower," Clark said. "Men prefer flowers with basic colors like red, yellow and blue, but women prefer mixtures like pink and purple. So it stands to reason, if we can find out what consumers want, we can use that to help guide genetics research."

The program has about 10 members, including experts in plant genetics, food science, marketing, sales and psychology. The group meets regularly to discuss recent activities and potential new projects.

That sort of collaboration seems logical, but it's actually rare in academia, Clark says.

"At any university you have a lot of people doing science, a lot of people doing marketing, a lot of people doing business. But not all three in a cohesive, integrated approach," he said. "That's what makes this unique."

The researchers hope to raise awareness of UF-developed plant cultivars, open new national and global markets for them, and accelerate the development of new cultivars.

"This is coming together at a critical time for UF," Clark said. "It will put us in a good position for world markets."

To get UF cultivars to market faster, the program will forge new relationships with private industry and strengthen existing ones, Callaway said. Several of the researchers already receive attention from major agribusiness firms, which may be eager to consider licensing new discoveries.

One industry professional who'd like to see the program succeed is Peter Moran, CEO of the Society of American Florists, the only national trade association representing all aspects of the U.S. floral industry.

"Done right, anytime consumers can have a say in what comes to market is a good thing," Moran said.

Several projects are under way: Three focus on increasing cut flower sales to Generation Y, people born in the 1980s and 1990s. There are efforts to develop better-tasting tomatoes and strawberries. Researchers are trying to develop low-carb fruits using a plant-based sweetener called Miraculin. Another project looks at amino acids essential to aroma and taste.

Smile for the Camera ... Or Don't

The projects sometimes involve novel research approaches. Take an experiment investigating viewers' reactions to floral arrangements:

Volunteers are shown three arrangements, one at a time. The first is pretty, very traditional — white carnations, mums and roses. The second is asymmetrical and includes sprigs of bright green grass, tiny violet hydrangeas and small orange roses.

The third is decidedly avant-garde. It's dominated by a large pink protea flower edged with black, fur-like filaments. The arrangement features mushrooms, thin green vines and hot-pink wire.

As the volunteers view each arrangement, they're asked what they think about it. Video cameras record their physical reactions. Later, researchers will use analytical software to determine how much approval (or disapproval) registers in facial expressions and body language.



Plant Innovation Program team members Charlie Sims, left, and Linda Bartoshuk attend a tomato tasting in the Sensory Testing Lab. Sims, a food science professor, is in charge of the lab, which plays a key role in much of the program's work. Bartoshuk, a professor with UF's College of Dentistry, studies human behavior as it relates to smell and taste. She developed questions that will provide insight into participants' taste preferences.

The researchers are testing a hypothesis — members of Generation Y are more likely to desire novelty in floral arrangements, because they value novelty in almost everything they buy.

“There’s a big move to do physical response measurements in consumer research,” explains Tracy Irani. “There’s also a lot of interest in attracting newer, younger consumers for flowers.”

A Question of Tomato Taste

To learn what consumers want, researchers must ask the right questions.

That challenge fascinates Linda Bartoshuk, a professor with UF's College of Dentistry and a member of both the Plant Innovation Program and the UF Center for Smell and Taste, a campuswide research group with wide-ranging goals.

She developed questionnaires used in a project aimed at developing better-tasting tomatoes. It's being conducted in the UF Sensory Testing Lab with about 100 participants, all tomato lovers.

They're asked to recall wonderful and horrible experiences and use those experiences to establish a personal scale of good and bad. They use the scale to assess one commercially produced tomato and five heirloom varieties. Typing on computers, they answer questions about sensory qualities such as sweetness,

tartness and overall flavor. Over several weeks, they'll rate 20 to 30 varieties.

“We'll do the same thing with strawberries, but we won't do it this year because the cold weather has impacted the crop,” says Charlie Sims, a food science professor. He's in charge of the Sensory Testing Lab and part of the tomato and strawberry teams.

After the participants finish their evaluations, researchers will sift through the data and develop taste profiles for several ideal tomatoes. Then plant geneticist Harry Klee, an eminent scholar in the horticultural sciences department, will take those profiles, along with other research results, and work backward, determining which chemicals contribute to the desired flavors and aromas for those varieties.

Ultimately, researchers will pinpoint the genes involved, decide how much those genes should be expressed to achieve the desired results, and engineer plants to do the job.

The Nose Knows

One project under way doesn't involve any crops. It focuses on volatiles, chemicals that readily vaporize. These particular volatiles represent essential amino acids, protein-building nutrients that can't be produced in the body.

David Clark, an environmental horticulture professor, leads the Plant Innovation Program, along with marketing expert Tracy Irani, an associate professor in agricultural education and communication, and Jeri Callaway, head of a Texas-based business consulting firm.



David Smith, a UF psychology professor, oversees the project. He's a member of the Plant Innovation Program and the Center for Smell and Taste. In one study, he investigates how well mice detect volatiles.

A typical experiment has a mouse discriminate between the odors of plain distilled water and distilled water containing a tiny percentage of propanol, an alcohol.

How much propanol? 0.000000000001 percent.

A computer tallies the mouse's answers. At the end of a 40-minute session, the monitor shows her final score. In 100 trials, she made a correct identification 97 times.

Propanol isn't a nutrient volatile, it's used to test the system because it has a strong odor. Some of the nutrient volatiles under study include beta ionone, cis 3 hexanal and phenylethanol, also called rose oil, which are all found in tomatoes.

The rationale is, if mice are exceptionally sensitive to a volatile, there's probably good reason. One possibility is that the volatile signals the presence of an amino acid mice need to stay healthy. And if mice are hard-wired to crave particular amino acids, people probably are, too, Smith says.

He's also working with human subjects, to find out how much of a volatile must be present in an odor before a person can determine its presence.

Smith's findings will help geneticists adjust the volatile content in tomatoes and other crops.

One More Benefit

There's one more potential benefit to studying tomato taste, Bartoshuk says. Not only can scientists develop cultivars that appeal to people who like tomatoes, perhaps they can develop cultivars that appeal to those who don't.

"We know that it's very, very difficult to stop people from eating what they want to eat," she said. "Can we take things we know are healthy and make them have better sensory characteristics to make people want to eat them?"

Harry Klee thinks it's possible.

"Every volatile important to tomato flavor is linked in some way to an essential nutrient in the human diet," he said. "That tells us there must be significance."

So, the Plant Innovation Program might end up doing more than putting extra dollars in Florida farmers' pockets. Perhaps it'll help the world shed some extra pounds.

"We want to produce a method anybody can use," Bartoshuk says. "And will the end product be a lot more people eating fruits and vegetables? We hope so." ■

Smart Regrowth

By Stu Hutson

PHOTOGRAPHY BY TYLER JONES

Hal Knowles is one of the few Floridians who can say that, even in these hard economic times, he's always happy to see his electric bill. At a time when the average U.S. household spends more than \$2,000 a year on home energy costs, Knowles' renovated 1950s style ranch home — equipped with solar cells, a tankless gas water heater and energy-efficient appliances in every room of the house — always produces an electricity surplus that he sells back to the utility company.

With efficient toilets and plumbing, the household uses 34,000 gallons of water a year, compared to 150,000 for an average home. Then, of course, there is recycling and composting to reduce trash.

For Knowles, a doctoral student and research assistant in UF's Program for Resource Efficient Communities, living with the adaptations comes naturally. Since its inception in 2004, the program has sought to help Florida's booming population make the best use of natural resources. PREC's mission is to promote the adoption of best design, construction and management practices that measurably reduce energy and water consumption as well as environmental degradation.

And now, after suffering the first decline in state population since World War II, that message is more important than ever, said Pierce Jones, the program's director.

Three years ago, Florida added nearly 1,000 new residents each day. More than 200,000 single family homes were built in 2005 alone. Most of these were in sprawling master-planned communities that did not take the local ecosystem or resource efficiency into account.

In 2008, economic crises halted the growth, although new projections indicate that as many as 23,000 new residents may have returned to Florida by April of 2010.

"The reports of Florida's demise have been greatly exaggerated," Jones said. "We are still going to grow in upcoming years, but we owe it to ourselves to use this slowdown to begin to build in a way that is more economically and environmentally viable."

A good example of such growth, he said, is a new community called Restoration, recently approved by the City of Edgewater and Florida's Department of Community Affairs.

When designed four years ago, Restoration was envisioned as a golf course community with 8,500 homes that spread across 5,200 acres. The sprawling land use pattern was rejected by regional planners and so the developers brought UF's PREC in to work with the project's design team to develop a more resource-efficient plan.

Now, the project will neatly organize the same number of homes into a compact, walkable town,



Pierce Jones, left, director of IFAS' Program for Resource Efficient Communities, and Hal Knowles, a doctoral student with the program, with a display of next-generation electric cars at UF's Reitz Union.

preserving more than two-thirds of project's natural area. Instead of golfers, Restoration will continue to host important native species such as gopher tortoises, swallow-tailed kites and bald eagles.

Outside, streetlights will be solar-powered and windmills will pump water from ponds to help irrigate public areas. The houses will be prewired for solar photovoltaic units and preplumbed for solar water heating.

The most important eco-friendly quality of the new development, however, might be something that's not seen — the new design only needs half as many miles of roadway built. Not only will this save \$120 million in construction costs, the entire development is designed to minimize the need for vehicles.

The clustered and mixed-use nature of the community will make it easy for residents to walk to stores and parks, and will improve use of public transportation such as trolleys and buses. This could add up to significant savings, given that the average U.S. household spends 7 percent of its annual expenditures on household utilities, while spending 18 percent to fuel their vehicles.

And, of course, efficient travel is of larger importance to Florida and the nation. Nationally, nearly a third of U.S. energy consumption goes to power transportation.

"Our current economic situation has really forced all of us to take a closer look at what things really cost us and our community — and what fuels our cars is, I think, at the forefront of that introspection," said Wendell Porter, a UF specialist in energy and resource efficiency.

As we continue to build efficient community infrastructures, we should also explore a diversity of systems to power vehicles, such as ethanol blends, electricity and even compressed natural gas. Being energy efficient with transportation is just as important as turning off a light bulb, he said.

In fact, vehicles may soon play a role in determining how a community's energy is managed by utilities. For more than a year, Jones has been working with Progress Energy to test a hybrid electric car. The vehicle has a computerized interface that, when plugged in, could interact with the electrical grid and actually provide electricity during periods of high demand — thus improving the stability of the grid.

"This is exactly the time when we need good examples of how we can resume our growth in a more intelligent way," Jones said. "I think people are paying attention." ■



CENTER FOR AGRICULTURAL AND NATURAL RESOURCE LAW

Prepares
Students for
the Future

By Tom Nordlie
PHOTOGRAPHY BY TYLER JONES

Michael Olexa, director of the Center for Agricultural and Natural Resource Law, relaxes in the rare book room at UF's Levin College of Law. In 1999, the center launched the nation's first undergraduate minor in agricultural and natural resource law curriculum.

These days, success in the agricultural world requires more than just technical know-how and hard work. Education in agricultural and natural resource law has become extremely important.

Regulation of food, fiber and fuel production promises to change dramatically in the next two decades; some of the areas most likely to be affected are water quality and use, biotechnology, land management, carbon credit markets and international trade.

Many legal and public-policy issues will arise, demanding careful analysis by industry professionals and the public. To be ready for those issues, tomorrow's leaders need to develop a knowledge base today.

Fortunately, University of Florida students have a great resource to help prepare them — the Center for Agricultural and Natural Resource Law.

The center, located in the food and resource economics department, focuses on teaching and extension, emphasizing an innovative, proactive and pragmatic approach, says Michael Olexa, center director and a professor with the department.

Its teaching activities include a longstanding course in agricultural law and policy at UF's Levin College of Law, and the nation's first undergraduate minor in agricultural and natural resource law curriculum.

The curriculum consists of three core law courses and numerous elective policy-oriented courses. Established in the summer of 1999, the minor boasts 160 graduates and enrollment has consistently increased — so much that multiple sections of the core courses were needed.

Other land-grant institutions are interested in starting similar programs based on the IFAS model, said Olexa, who holds a law degree and a doctorate in plant pathology, and is a former owner/operator of a plant nursery.

"It's not just students from the College of Agricultural and Life Sciences that are taking the curriculum," he said. "We're getting students from other colleges across campus as well. Non-ag students are learning about the importance of, and challenges facing, Florida agriculture and the career opportunities this curriculum provides."

Students take the minor for varying reasons, he said. Some want to pursue agricultural careers and need to be informed about the laws and policies that will someday impact their work. Others are considering law school and use the program to get their feet wet. Post-graduation interviews indicate that completing the curriculum enhances employability.

"We have former students all over the state; some of them have gone to law school — everywhere from UF to Duke," Olexa said. "We're also heavily networked with the Florida Bar. It's been a real good relationship."

To help those already in the work force, the center's extension program creates publications for the online IFAS Electronic Data Information Source, or EDIS. Here, fact sheets address a variety of topics that include farm labor, water law, fence and property law, hazardous waste management and state law updates.

To date, the center has produced more than 300 EDIS fact sheets published in both English and

Spanish. Most were written by Olexa, along with law students and colleagues. In 2009, the center's online publications received more than 280,000 hits.

Some of the largest publications are also published in hard-copy format and distributed to county extension offices.

"Our job is to provide basic educational/informational resources," Olexa said. "All publications are field- and classroom-tested. And if readers want additional information not in the fact sheets, federal, state and local addresses and phone numbers are provided in print."

As chairman of the Florida Bar's Agricultural Law Committee, Olexa works with fellow attorneys to produce an agricultural law update seminar every other year. It's held at the Florida Farm Bureau Federation headquarters in Gainesville, and Olexa said he's grateful for the federation's assistance.

"They've helped us from the beginning," he said.

Olexa remains the center's primary faculty member, teaching all core courses. Past instructors have included risk management expert Carol Lehtola of the agricultural and biological engineering department. UF alumni provide seminars and guest lectures.

Florida is the perfect location for the center, Olexa says, because it's a bellwether state for agricultural and natural resource issues.

"You've got it all here — population pressures, an economically productive agricultural base and natural resource issues like water," he muses. "This perfect storm puts us years ahead of what will happen elsewhere in the country."

One of the center's perennial challenges is finding common ground between people with seemingly competing interests. Take, for example, those who farm and ranch and those who wish to preserve wild areas.

"From a proactive perspective, we've tried to point out the importance of agriculture to the natural resource base," he said. "Agriculture can serve as an excellent buffer for the retention of natural systems."

Olexa expects to retire in a few years, but he has one more goal before he leaves — establishing an endowed chair in agricultural and natural resource law.

"I've taken the center as far as one person can take it, now it's ready to be taken to the next level," he said. "I really, truly believe that this program is extremely valuable to the future of this state." ■

To learn more about the Center for Agricultural and Natural Resource Law, visit <http://www.aglawcenter.ifas.ufl.edu>

To find many of the center's EDIS publications, visit http://edis.ifas.ufl.edu/topic_a86033770

A DIFFERENT KIND OF FORESTRY

*Tampa Bay Watershed
Forest Working Group
Encourages Stakeholders to
See Trees in a New Light*

By Tom Nordlie

PHOTOGRAPHY BY TYLER JONES

Trees aren't usually considered a public utility. But in cities and suburbs, it can be useful to look at them that way, say Rob Northrop and Michael Andreu, founders of the Tampa Bay Watershed Forest Working Group.

In summer, trees provide shade that cools buildings. In winter, they buffer wind, reducing heating costs. And year-round, they reduce air pollution, contribute to clean water, store the greenhouse gas carbon dioxide and provide habitat for wildlife.

The same goes for a community's shrubs, gardens, turfgrass and even the weeds growing on vacant lots.

Collectively, this plant life is called "urban forest." In recent years, some people have begun referring to urban forest as a form of infrastructure. Northrop and Andreu call it "green infrastructure," because it provides benefits measurable in dollars and cents.

Seeing plants as infrastructure requires a new perspective. That's one reason Northrop, a Hillsborough County extension agent, and Andreu, a forestry assistant professor at the Gulf Coast Research and Education Center, founded the working group.

"Often, the focus in Florida forest management has been on the 'timber belt' — from Ocala, north," Andreu said. "There's a different need here in Central and South Florida, because we do not have access to commercial markets. Instead, many of our forests are managed for the ecosystem services that they provide."

In the fast-growing Tampa Bay watershed, forest management tends to focus on plant life in areas that are already developed or experiencing development — what they call the "urbanizing forest."

Northrop and Andreu are convinced that everyone benefits when local decision-makers take steps

to protect and promote plant life that's impacted by land-use projects. Those projects can involve anything from building new roads and subdivisions to establishing parks and redeveloping older urban areas.

Frequently, multiple agencies are responsible for decisions that impact the urban and urbanizing forest, Northrop said. To make things happen, the right people must communicate — that's the forest working group's mission, in a nutshell.

"The idea was to create a 'collaboratory,' as we like to call it," Northrop said. "What we're doing is creating the mechanisms that allow science to be translated to management and education, and find ways to collaborate."

Participation is voluntary; the group itself has no power to make or enforce policy. It's the non-binding quality that makes the group appealing to so many, he said.

Participants include representatives from the business community, Tampa city government, Hillsborough County government, the University of South Florida, the Florida Department of Agriculture and Consumer Services, the Southwest Florida Water Management District, the U.S. Forest Service and U.S. Environmental Protection Agency.

One of the group's first projects was an urban ecological analysis of Tampa and northern Hillsborough County. It involved personnel from UF, USF and the Hillsborough County Extension Office.

Published online at <http://edis.ifas.ufl.edu/fr265>, the study included an inventory of trees, shrubs, ground cover and impervious surfaces, such as concrete. It also explained how the system functioned ecologically. The study has been woven into the city's land-use plan.



Rob Northrop, left, and Michael Andreu founded the Tampa Bay Watershed Forest Working Group. Andreu, a forestry assistant professor at the Gulf Coast Research and Education Center; and Northrop, a Hillsborough County urban forestry extension agent, started the group to help local governments maintain plant life in developed and developing areas.

The forest working group has succeeded so well that officials in neighboring Pinellas County have asked Andreu and Northrop to assess the carbon sequestration potential of the county's parks and preserves. They're following through, with one of Andreu's graduate students in the natural resource conservation program at Gulf Coast REC.

Many undergraduate and graduate students from the Gulf Coast REC participate in forest working group activities, Andreu said. They attend meetings, conduct research and help communicate research findings to policy makers, all of which may help in future job searches.

Two others have played a large role in the group's success: Melissa Friedman, a biological scientist and graduate student who works with Andreu; and Shawn Landry of USF's Florida Center for Community Design and Research.

Over the next year, Andreu and Northrop plan to refine the working group's approach so they can offer it to other communities around the state.

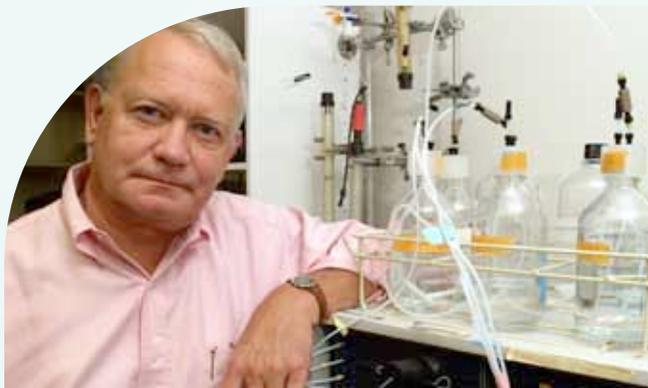
"While this is unique now to the Tampa Bay area, because of how it's designed and developed, it's readily transferrable to any major or minor municipality in the state," Andreu said. "This kind of group could be started in Jacksonville, Miami or Pensacola."

In May, the working group will present a state-wide workshop on conservation easements, in conjunction with the Conservation Trust for Florida, the Florida Stewardship Program and the Tampa Bay Conservancy. And in late summer, they'll host a state-wide workshop on diseases threatening the cabbage palm and hold a second annual Urban and Urbanizing Forest Science and Management eXchange. ■

To learn more, visit The Tampa Bay Watershed Forest Working Group: A case study on building a collaborative, <http://tampabayforest.org/participants/michael-g-andreu/other-documents/>

NEWS BRIEFS

RESEARCHERS EXPLAIN ZINC'S IMMUNE BOOST



Zinc can help fight off infections, and now IFAS scientists believe they know how — by ramping up production of white blood cells, one of the body's primary lines of defense.

The UF research team — Bob Cousins (pictured above), Tolunay Aydemir, Juan Liuzzi and Steve McClellan — reported their findings in the August

2009 issue of the *Journal of Leukocyte Biology*. In the study, healthy volunteers took 15 milligrams of zinc each day, a dosage at the upper boundary of the recommended daily allowance. Volunteers in a control group took a placebo.

Researchers drew blood samples from the volunteers to examine their T-cells, an essential part of the body's immune function.

The study showed that, when exposed to chemicals known to evoke an immune response, T-cells from the group of volunteers taking zinc supplements showed much greater biochemical activity than T-cells from volunteers taking the placebo.

In particular, the researchers observed stimulation of the T-cell protein ZIP8. This protein transports zinc into a specific region inside the T-cells, where it triggers a chain of events that prime the cell for action.

The study could be a first step toward developing medicines that work by triggering these mechanisms, said Cousins, a renowned zinc researcher and director of IFAS' Center for Nutritional Sciences. ■

UF RELEASES NEW CITRUS CULTIVAR



Sugar Belle, a bold mandarin orange hybrid, is a new UF-created citrus variety intended for commercial production.

The fruit is a mix of sweet Clementine and the colorful, bell-shaped Minneola and has a rich taste and strong aroma, said Fred Gmitter, a geneticist and breeder who developed the variety at IFAS' Citrus REC in Lake Alfred.

"Many old-timers in citrus have said this is the best-tasting citrus they've ever had," Gmitter said.

Recently, Florida Foundation Seed Producers Inc., a direct support organization of UF, awarded an exclusive U.S. license to the New Varieties Development and Management Corporation.

Funded by the Florida Citrus Commission, the not-for-profit corporation was set up in 2005 to help assure Florida growers access to new patented citrus varieties, manage new varieties and direct resources to citrus breeding research.

Peter Chaires, the corporation's executive director, said he believes the variety will make a big splash in the \$52 million specialty citrus market. The fruit matures early, so it should be a good fit for the December holiday market, he said.

Sugar Belle, which has a patent pending, has been in the works since 1985.

Gmitter, who arrived at the Citrus REC that year, began developing the variety after he noticed a tree with unusually tasty fruit in an old research grove. ■

IFAS RESEARCHERS RECEIVE FEDERAL GRANT TO STUDY WOOD-QUALITY GENE



A newly discovered gene may be the key to producing fuel ethanol more efficiently from trees, and the IFAS researchers who discovered it have received a prestigious federal grant to investigate further.

The gene, which helps regulate wood growth and the composition of wood fiber, could also lead to improved tree varieties for pulp and paper.

Matias Kirst (pictured at left) and Gary Peter, plant geneticists with the School of Forest Resources and Conservation, lead the team. They received a three-year grant for \$643,000, one of seven grants awarded by the Plant Feedstock Genomics for Bioenergy program in 2009.

The funding will support research on how the gene helps regulate cell wall chemistry and structure. The scientists will also investigate when and where its effects occur.

Eventually, they'll create genetically engineered trees that overexpress or

underexpress the gene, known as *cpg13*, to study resulting changes in wood composition and biomass growth.

It appears *cpg13* controls how much of the carbon taken up by a poplar tree is used to make cellulose and lignin, two major building blocks of plant cell walls. Wood with high cellulose and low lignin content is better suited for producing ethanol, as well as pulp and paper.

What's more, there's apparently a link between high cellulose content and fast tree growth, Kirst said. So it may be possible to engineer trees that not only produce large amounts of wood quickly but also have ideal qualities for the biofuel and paper industries. ■

FAWN HELPS FLORIDA COPE WITH COLD



As Florida's winter weather broke records for both low temperatures and most consecutive below-freezing days, more residents than ever turned to the online Florida Automated Weather Network, or FAWN, for reliable decision-making information.

In January and February alone, the site was visited more than

visits, each with an average time of 4 minutes.

"This shows that more and more people are recognizing that this site can be a valuable tool," Lusher said. "It's not just the kind of stuff you find on the Weather Channel or your local news."

FAWN was begun by IFAS extension in 1998 after the National

126,000 times, with each user staying an average of 35 minutes. These numbers represent a dramatic increase in Web traffic, said FAWN director Rick Lusher (pictured at left). In all of 2009, for example, the site experienced 50,000

Weather Service discontinued special forecasts for agriculture. In 2007, the FAWN team launched a new version of the website that features 24-hour live updates from 35 solar-powered weather stations located at rural sites around the state.

Each station measures air temperature at 2, 6 and 30 feet above the ground, as well as soil temperature, wind, rainfall, relative humidity, barometric pressure, leaf wetness and solar radiation. The site also features specialized weather forecasts and other information relating to disease control, irrigation scheduling, fertilizer application and other crop management programs.

FAWN's Web address is: <http://fawn.ifas.ufl.edu>. Real-time weather data from the network is also available via phone at 866-754-5732. ■

NSF AWARDS \$1.4 MILLION TO INVESTIGATE LOBSTER DISEASE



With an annual \$27 million harvest, the Caribbean spiny lobster is one of Florida's top commercial seafood species; however, a recently discovered virus is killing the crustaceans and threatening the industry.

Now scientists with UF and other institutions have received a \$1.4 million grant to research transmission of the virus, known as PaV1.

The research should answer many lingering questions about the spread and geographic distribution of

the pathogen. It could also lead to management strategies and new methods for identifying infected lobsters, said Don Behringer, an IFAS assistant professor in fisheries and aquatic sciences.

One of the main issues to be investigated: whether or not the virus is dispersed long distances by lobster larvae, which can float hundreds of miles during their first months. Infected spiny lobsters have been found in the Florida Keys as well as parts of Mexico, Belize and St. Croix.

The PaV1 virus attacks blood cells and tissues, causing lobsters to become listless and solitary. Most eventually die from metabolic depletion, a condition characterized by loss of energy.

Beginning with the 2000-01 lobster season, harvest declined about 30 percent from previous years and has yet to rebound. Some experts believe the virus plays a role in the situation.

Florida produces more than 90 percent of the nation's spiny lobsters. In 2007 the harvest was about 3.8 million pounds, with a dockside value of \$27 million, according to the Florida Department of Agriculture and Consumer Services. ■

SMALL FARMS CONFERENCE A BIG SUCCESS



The vast majority of Florida's 47,000 farms are classified as "small" by U.S. Department of Agriculture standards, but there's been little opportunity for the people behind those farms to meet and work toward common goals.

That changed in August 2009, with the first Florida Small Farms and Alternative Enterprises Conference. The statewide event was such a success that organizers plan to repeat it yearly, said Bob Hochmuth, an IFAS multicounty extension agent.

More than 800 farmers and agricultural professionals attended the event, held at Osceola Heritage Park in Kissimmee. Hosted by IFAS and Florida A&M University, it featured more than 100 speakers, 30 educational sessions, over 80 exhibitions of new products and technologies, networking opportunities and livestock displays.

Highlights included a welcome address from Florida Agriculture Commissioner Charles Bronson, an impassioned keynote speech by nationally known small farms authority John Ikerd, and the presentation of Florida Innovative Farmer Awards to three attendees. Another detail that set this conference apart — much of the food served was prepared with items produced by Florida's small farms.

The 2010 conference will take place July 31 and Aug. 1, again at Osceola Heritage Park.

Information about the 2010 conference is posted at the small farms website maintained by UF and FAMU, <http://smallfarms.ifas.ufl.edu>. The site also contains helpful information for anyone operating or launching a small farm in Florida. ■

TV SHOW HELPS GARDENERS



Floridians have a new tool to help them in the garden, but you won't find it at the hardware store.

It's a weekly television show called "Your Southern Garden," produced by the Florida Cooperative Extension Service and the University of Georgia's College of Agricultural and Environmental Sciences.

The program began airing in May 2009 on public TV stations in the Tampa Bay and North Central

Florida areas. Beginning in April 2010 it will air throughout most of North and Central Florida and the Georgia Public Broadcasting viewing area.

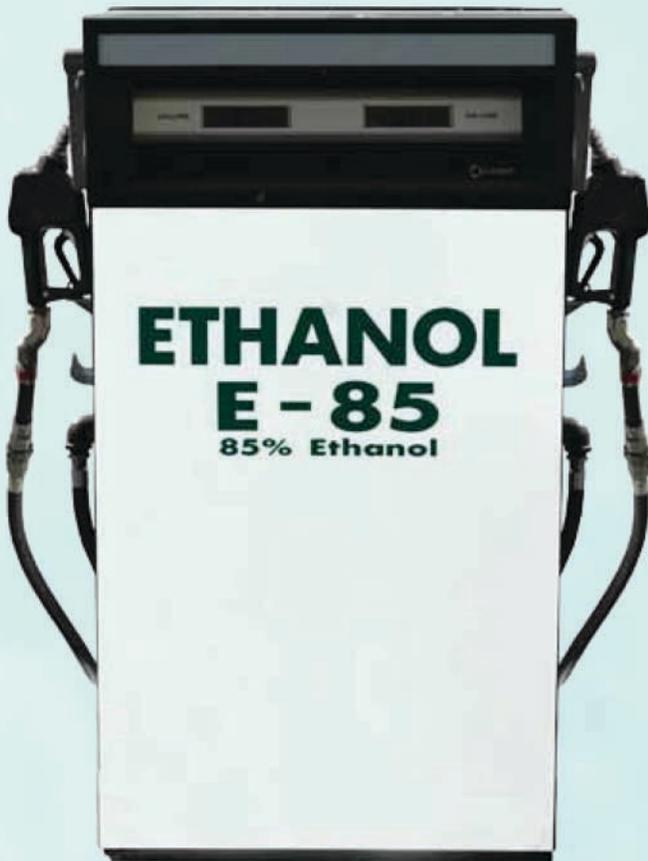
Host Walter Reeves, a retired UGA extension agent, brings expertise and down-home charm to the program. Each episode includes a blend of how-to projects, local-site visits and tips.

Millie Ferrer-Chancy, IFAS interim dean for extension, says the program aims to teach viewers how they can maintain beautiful yards using sustainable methods.

"Our faculty have the expertise to really know what works in our growing zones," Ferrer-Chancy said. "'Your Southern Garden' will showcase plants, maintenance tips and conservation techniques that really work in this region."

Check your local public broadcasting station's programming schedule for "Your Southern Garden" and visit <http://yoursoutherngarden.com> for more information about the program. ■

GROUNDBREAKING FOR CELLULOSIC ETHANOL PLANT



In March, IFAS and Buckeye Technologies Inc. held a groundbreaking ceremony for the Stan Mayfield Biorefinery Pilot Plant in Taylor County.

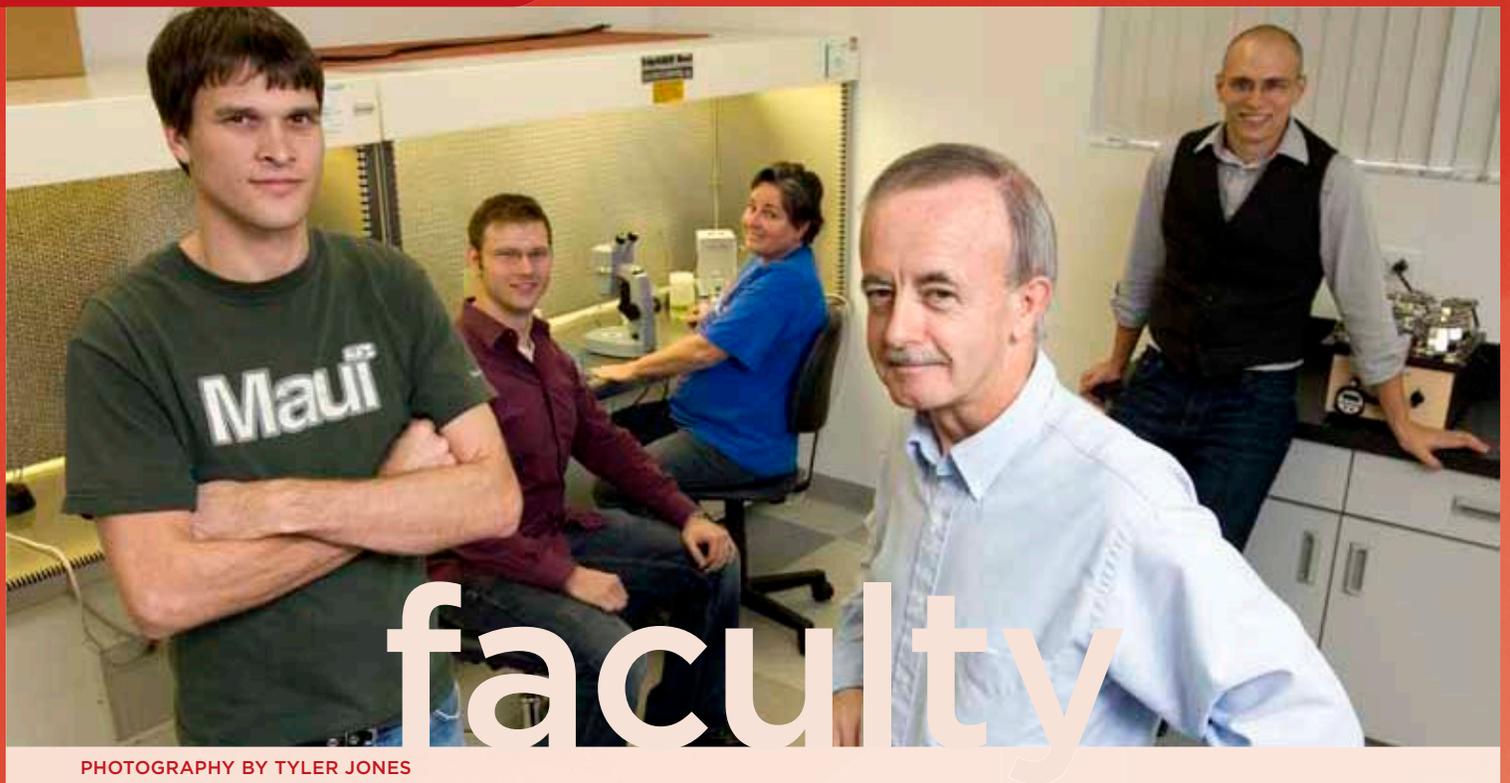
The biorefinery will be built in partnership with Buckeye at its facility in Perry. Located just two hours from the UF main campus in Gainesville, the research and development plant will be operated as an IFAS satellite laboratory, concentrating on the use of cellulosic biomass to produce fuel ethanol. It was originally slated for construction in South Florida.

The UF Board of Trustees named the plant for the late Stan Mayfield, an alumnus of UF's College of Engineering and a member of the Florida House of Representatives from 2000 until his death in 2008. He was well known for supporting energy research.

The project was funded by a \$20 million appropriation from the Florida Legislature. It will use UF-developed technologies, including genetically modified *E. coli* bacteria developed by Lonnie Ingram.

Cellulosic ethanol is made using woody, inedible portions of plants, and can be adapted to whatever feedstocks are nearby, reducing transportation costs. The new plant will experiment with a wide variety of feedstocks, including forest products, sugarcane and sugar processing byproducts.

Headquartered in Memphis, Tenn., Buckeye is a manufacturer and worldwide distributor of cellulose-based specialty products made from wood and cotton. ■



PHOTOGRAPHY BY TYLER JONES

Plants and People

Whatever surprises might be in store for him this year, life will be hard-pressed to match all it hurled at environmental horticulture researcher Michael Kane in 2009.

He hit a career milestone in June when he was made a fellow in the Society for In Vitro Biology. His grown daughter took a job in Denver. He was chosen as a Florida Blue Key distinguished professor, and in November, he was awarded the USDA-sponsored 2009 Southern Regional Teaching Award from the Association of Public and Land-grant Universities.

And somewhere in there, between the career highlights and family events, he landed in the hospital undergoing major surgery.

"I always thought, 'I'll work hard and have fun now and then later someday I'll retire,' but all of a sudden, the uncertainty of that plan was staring me right in the face," Kane says.

But if anyone was ever prepared to go through such a wrenching year and come out better for it, it's Kane, who, after a couple weeks of pondering important life issues, recalibrated back to his usual state of good humor.

Years of faithful jogging prepared him to bounce back quickly from the surgery and late in the year, he was already on a treadmill for physical therapy.

Returning to campus, Kane was back to his favorite things: plants and people.

His research focuses on alternative techniques for producing native plants — in short, growing plants in a sterile lab environment using tissue cultures. It allows plants to be grown quickly and efficiently, and Kane has taught growers around the country how to employ the

techniques. Sea oats and orchids have been the objects of his lab's most recent studies.

Tim Johnson, a doctoral student who works with Kane, says he never dictates what a young researcher will work on and instead tries to figure out what fascinates them. In Johnson's case, he'd been intrigued by orchids since seeing a fictional, toxic version of the plant portrayed in the James Bond movie "Moonraker."

Letting students forge their own paths created a bevy of young scientists who have been prolific publishers of quality research studies, such as Daniela Dutra, a Kane protégé who won the 2008 best master's thesis award within the Institute of Food and Agricultural Sciences. Several years earlier he co-chaired the supervisory committee of another graduate student, Carmen Valero-Aracama, who received the 2006 best dissertation award.

For Kane, creating this sort of creative and positive research environment is a no-brainer. He left a blue collar background to go to college, specifically to avoid the kind of joyless work life his father had. And he once left a doctoral program just before starting, after being told he'd have to do research in an area other than the one he'd been promised.

Johnson said Kane's quick recovery from his health troubles, both mentally and physically, came as no surprise.

"He's very optimistic," Johnson said. "Certainly there are times where we're frantic about getting things done or meeting a deadline, but he's just got an optimistic worldview." ■

— Mickie Anderson



extension

PHOTOGRAPHY BY TYLER JONES

Seminole County Extension Director Barbara Hughes

January 12, 2010 was a bad day for Seminole County farmers. Overnight, temperatures had plunged into the 20s — for the third night in a row — damaging crops.

For Barbara Hughes, the county's extension director since 1993, the situation held a terrible irony. Her office has been trying to raise public awareness of agriculture in Seminole County, one of the state's fastest growing urban centers. Now, the weather was providing that awareness.

The cold snap was wreaking havoc on farms throughout the county and the state. Reports filtered in to Hughes all day — cucumbers wiped out, farmers' markets temporarily closed. More than once, she worried aloud that some producers might go out of business.

Nonetheless, she remained chipper, forging ahead with the business of the day.

At a morning staff meeting, the office budget took center stage. Agents should prioritize their needs and file their activity reports, she said. Other topics included a Disney-sponsored drive to promote

volunteer work, 4-H camp, efforts to reach 4-H alumni, a local agriculture expo, an energy fair, Master Gardener training, and classes that teach residents to live on a budget.

Afterward, Hughes helped prepare the extension office's auditorium for a meeting between farmers and county personnel, to discuss a proposed wastewater tax. The heater in the auditorium was on the fritz; everyone wore jackets. The meeting turned out to be long and detail-oriented, but friendly. One farmer offered the assemblage a box of fat hydroponic tomatoes, and there was a palpable sense of relief that something had survived the cold.

In the late afternoon Hughes telephoned local agricultural venues, arranging photo shoots for the next day. She's helping the local tourism board develop a brochure promoting agritourism in the county.

She stayed late to type the minutes from the morning staff meeting, then called it a day.

The overnight forecast predicted no freeze, a welcome change. ■ — Tom Nordlie

STUDENTS, ALUMNI AND FRIENDS

EACH FALL, THE COLLEGE OF AGRICULTURAL AND LIFE SCIENCES PRESENTS ITS CALS ALUMNI AND FRIENDS AWARDS AS PART OF THE TAILGATOR CELEBRATION. THE 2009 EVENT TOOK PLACE NOV. 7 IN THE STEPHEN C. O'CONNELL CENTER.



The 2009 Award of Distinction honored three individuals, **DONALD BENNINK**, **CARROL WAYNE HAWKINS** and **H.E. "ED" JOWERS**, for their outstanding contributions to UF, IFAS, CALS and related professions.

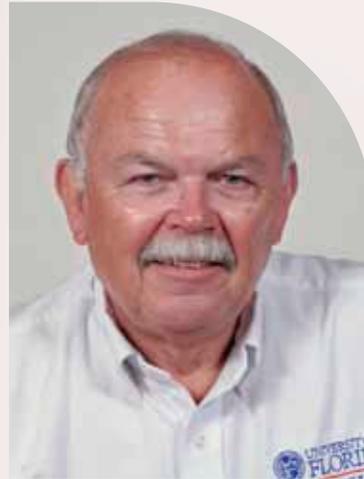
Donald Bennink is a founder and managing partner of the North Florida Holsteins dairy. A

Cornell alumnus, Bennink has cultivated a unique relationship with the UF animal sciences department and College of Veterinary Medicine, making cows available for graduate and faculty research. He also allows onsite training of veterinary medicine students and has hosted hundreds of international interns.



Carrol Wayne Hawkins (B.S., Agricultural Economics, 1960) earned his bachelor's degree in agricultural economics and has dedicated his 40-year career to helping Florida growers unite for mutual benefit. He organized cooperatives, managed the Florida Fruit and Vegetable Association's production and marketing division and was the Florida

Tomato Committee's manager.



H.E. "Ed" Jowers (B.S., Agricultural Education, 1964; M.S., Animal Science, 1972) earned his bachelor's degree in agricultural education, served five years in the U.S. Air Force, then returned to UF, earning a master's degree in animal science. He had a 37-year career with the Florida Cooperative Extension Service, working with 4-H,

livestock producers, soybean farmers and peanut farmers.



The 2009 Horizon Award went to **SHARON SPANN** (B.S. and M.S., Agricultural Education and Communication, 2000 and 2002, respectively), a legislative researcher for the Florida House of Representatives. The award recognizes a graduate of the past decade for contributions or potential leadership in the agri-

cultural, natural resource, life science and related professions.



Three students received the 2009 CALS Alumni and Friends Scholarship, in recognition of their academic achievements, leadership and extracurricular activities. They are (clockwise from top left): **BENJAMIN ANDERSON**, an entomology and nematology senior; **ZACHARY HIRSCH**, a microbiology and cell science senior; and **CHRISTOPHER**

MARTH, a microbiology and cell science and chemistry senior.



MANRIQUE and **JERROD PENN**; lecturer **MIKAEL SANDBERG** was the team adviser. UF also won national championships in 2000 and 2002-2005.

Speaking of national championships, UF's student chapter of the National Agri-Marketing Association took top honors for the second straight year at the association's annual student marketing competition in April 2009 in Atlanta. The team included **PETER ALMEIDA, JENNIFER BELL, EMILY CECIL, BRANDON DAVIS, SKEETA DE MATAS, GEORGE ENSTAD, BRETT JOHNSON, KRISTEN KOVALSKY, JOHN LAI, JESSICA MANNING, CAROLINA MARTINEZ, DAVID REED, KYLE RITSEMA, GISELLE RODRIQUEZ, ENRIQUE SALAZAR, MELISSA SHORT, SARAN SRICHOMKUAN, PATRICK THOMPSON, JOANNA WEBER** and **BLAIR WILLENBORG**.

QUICK TAKES

Agronomy doctoral student **OLUBUNMI "BUNMI" AINA** took first place in the Minority Student Poster Contest at the 2009 International Meetings of the American Society of Agronomy, Crop Science Society of America and Soil Science Society of America.

SCOT WEISS (B.S., Food and Resource Economics, 1988) has started a company in Orlando, The Holden Synergy Group Inc., to market a line of swimming pool maintenance products he developed. Weiss previously worked in finance and accounting but changed tracks to pursue a career as an inventor and entrepreneur.

MARVIN MILLER (Ph.D., Food and Resource Economics, 1983), a market research manager for Ball Horticultural Co. in West Chicago, Ill., has received the 2009 Paul Ecke Jr. Award from the Society of American Florists. The award recognizes exemplary devotion to the floral profession, industry and community. ■



For the sixth time in a decade, a UF student team has won the National Academic Quiz Bowl championship at the Agricultural and Applied Economics Association's annual meeting in Milwaukee in July. Team "Florida Orange" (**KRISTEN KOVALSKY, JOHN LAI** and **STEPHEN MORGAN**) defeated Texas A&M University for the title. And "Florida Blue" (**LISA HIBBARD, FELIPE MARTINEZ** and **ALEXIS NEMATI**) took third place. Alternates were **RUKMINI**

Send your alumni news to Tom Nordlie at tnordlie@ufl.edu or P.O. Box 110810, University of Florida, Gainesville, FL 32611-0810. Submissions may be edited for clarity and length.

SPOTLIGHT

ART TEIXEIRA, a professor with the agricultural and biological engineering department, was one of two UF faculty members to receive the 2009 International Educator of the Year Award. Teixeira was the senior faculty recipient; Guolong Lai, an assistant professor of art history, was the junior faculty recipient. The awards were presented in November.

Teixeira was also named 2009 IFAS International Fellow. Fellow honorees were **ROB GILBERT**, an associate professor of agronomy at Everglades REC, who received the IFAS International Achievement Award; and **STEVE FUTCH**, a multicounty citrus extension agent, who received the IFAS Award for Excellence in Internationalizing Extension. The extension award is new, said Walter Bowen, director of the IFAS International Programs office; it was created to recognize the unique challenges internationalization presents to extension faculty.



ANGELEAH BROWDY

In April 2009, both of UF's campuswide academic advisement awards went to CALS personnel. **ANGELEAH BROWDY**, a lecturer and adviser in the food science and human nutrition department, was named Faculty Adviser of the Year; and **CHRISTINE HOLYOAK**,

an adviser in microbiology and cell science, was Professional/Staff Adviser of the Year. They were honored at the annual Faculty Awards Banquet at Emerson Hall in Gainesville.

Entomologist **LANCE OSBORNE**, a professor at Mid-Florida REC in Apopka, received the 2009 Alex Laurie Award for Research and Education in September from the Society of American Florists. The award honors an individual for broad-scope, long-lasting contributions to research and education in the floriculture industry.



DON GRAETZ

IFAS faculty members were in the spotlight at the 2009 International Meetings of the American Society of Agronomy, Crop Science Society of America and Soil Science Society of America. **JOHN CISAR**, an environmental horticulture professor at Fort Lauderdale REC, was named a

Fellow of the CSSA. **KEN BOOTE**, an agronomy professor, received the L.R. Ahuja Ag Systems Modeling Award for his work on modeling crop growth and yield. **DON GRAETZ**, an emeritus professor in soil and water science, was presented with SSSA's Soil Science Distinguished Service Award for career achievement.



NORM LEPLA

The Entomological Society of America named **NORM LEPLA** a 2009 Fellow at their annual meeting in December in Indianapolis. He was chosen for the honor based on career achievements, particularly his work in integrated pest management.

CLARENCE AMMERMAN, an animal sciences emeritus professor, received the 2008 Distinguished Alumnus Award from the University of Kentucky's Department of Animal and Food Sciences. At UK, Ammerman earned a bachelor of science degree in animal science in 1951 and a master's in animal nutrition in 1952. He's been with UF since 1958.



GENE MCAVOY

Hendry County Extension Director **GENE MCAVOY** received the 2009 Excellence in Crop Advising Award, presented by the Florida Farm Bureau Federation and the Florida Certified Crop Advisers Program. A multicounty vegetable extension agent, McAvoy was honored in

October at the federation's annual meeting.

Several IFAS educators were recognized for teaching excellence by being named 2009 Teacher Fellows of the North American Colleges and Teachers of Agriculture, at the organization's annual meeting in



LISA HOUSE

Stillwater, Okla. in June. They were:

LISA HOUSE, professor, food and resource economics; **TRACY IRANI**, associate professor, agricultural education and communication; **GAIL KAUWELL**, professor, food science and human nutrition; **ALAN LONG**, professor, forest resources

and conservation; **BRIAN MYERS**, associate professor, agricultural education and communication; and



GRADY ROBERTS

GRADY ROBERTS, associate professor, agricultural education and communication. **ANDREW THORON**, a doctoral student in agricultural education, received a Graduate Student Teaching Award.

MIKE KANE, a professor of environmental horticulture, was one of six 2009 regional winners of the USDA's Higher Education Programs/Multicultural Alliances National Awards Program for Excellence in College and University Teaching in the Food and Agricultural Sciences.

SPOTLIGHT

Several IFAS faculty members were recognized at the 2009 American Society of Horticultural Sciences annual meeting in St. Louis in July. **JACKIE BURNS**, a professor of horticultural sciences and director of the Citrus REC, was named an ASHS Fellow.

SANDRA WILSON, an associate professor of environmental horticulture, was named the Outstanding Undergraduate Educator. Vegetable Publication Awards went to **STEVE SARGENT** and **JAY SCOTT**, professors of horticultural sciences; **JERRY BARTZ**, an associate professor of plant pathology; and **SARAH SMITH**, an environmental horticulture doctoral student.



SANDRA WILSON

FAES HONORS 65 AT AWARDS EVENT

University of Florida horticultural sciences researcher **PAUL LYRENE** struggled to keep a grasp on five plaques he received, marking five plant patents for blueberry cultivars he created.



PAUL LYRENE

"I think I won the most pounds of awards," he joked as the second annual Florida Agricultural Experiment Station awards ceremony ended May 12, 2009, at the

Harn Museum of Art, in Gainesville.

Lyrene, one of more than 65 researchers honored, said he believes the ceremony helps scientists learn what their peers are up to.

MARK MCLELLAN, IFAS research dean and FAES director, thanked the researchers for their dedication and hard work.

"It is time to salute some exceptional researchers for their passion ... for their search and discovery of new ideas, and their intensity to create solutions — solutions for our lives," he said during the ceremony.

UF President **BERNIE MACHEN** addressed the scientists, noting that it was a refreshing change to focus on research accomplishments rather than tight budgets.

"The times we're facing are indeed challenging, and sometimes we can get lost in the morass," he said. "This last hour helps bring us right back to why we're here ... solving the problems of our world."

The award winners included:

Richard L. Jones New Faculty Research Awards — **MATIAS KIRST**, **KATI MIGLIACCIO**

Best Doctoral Dissertation — **JENNIFER ZASPEL**; Adviser, **MARC BRANHAM**

Best Master's Thesis — **DANIELA DUTRA**; Adviser, **MICHAEL KANE**

Researchers with more than \$1 million in grants, fiscal year 2007-08 — **KELLY MORGAN**, **MAURICE MARSHALL**, **FRANK MAZZOTTI**, **JAMES JONES**, **MICHAEL DUKES**, **FREDERICK GMITTER**, **LONNIE INGRAM**, **CARRIE HARMON**

IFAS Research Innovation Awards — **PATRICK INGLETT**, **STEPHEN OPSAHL**, **JAMES JAWITZ**, **ALAN COVICH**; **CLAUDIO GONZALEZ**, **BYUNG-HO KANG**, **JOSEPH LARKIN III**; **PAUL FISHER**, **BRUCE WELT**, **ERNESTO FONSECA**; **ARTHUR BERG**, **MELANIE CORRELL**, **RONGLING WU**, **KENNETH BOOTE**, **C. EDUARDO VALLEJOS**, **JAMES JONES**; **DON ROCKWOOD**, **JUDE GROSSER**, **MATIAS KIRST**, **J.Y. ZHU**; **BIN GAO**, **PRATAP PULLAMMANAPPALLIL**, **JAMES JONES**, **NICHOLAS COMERFORD**; **GLENN ISRAEL**, **BRIAN MYERS**; **ANITA WRIGHT**, **MITCHELL KNUTSON**; **AMR ABD-ELRAHMAN**, **AHMED MOHAMED**, **MICHAEL ANDREU**, **GURPAL TOOR**, **SCOT SMITH**; **WILLIAM OVERHOLT**, **JAMES CUDA**, **DEAN WILLIAMS**; **SANJAY SHUKLA**, **ROBERT GILBERT**, **ZANE HELSEL**, **LONNIE INGRAM**, **KELLY MORGAN**

Plant patent holders — **PAUL LYRENE** (blueberry cultivars Snowchaser, FLX-2, FLX-1, Farthing, Scintilla); **BRIAN SCULLY** (zoysiagrass cultivar BA-305); **RONALD BARNETT** (oat cultivar Trophy, rye cultivar AGS 104); **DANIEL GORBET**, **BARRY TILLMAN** (peanut cultivar Florida-07)

Utility patent teams — **JULIE MAUPIN-FURLOW**, **LEE ANN TALARICO BLALOCK**, **LONNIE INGRAM** (Cloning and Sequencing of Pyruvate Decarboxylase Genes from Bacteria and Uses Thereof); **DENNIS GRAY**, **RICHARD LITZ** (Selection of Fungal Resistant Grape Somatic Embryos)

Recognition for previously held honors:

National Academy of Sciences members — **ROBERT COUSINS**, **LONNIE INGRAM**

Eminent Scholars — **WILLIAM DAWSON**, **ANDREW SCHMITZ**, **HARRY KLEE**, **ROBERT COUSINS**, **ANDREW HANSON**, **MARJORIE HOY**

Distinguished Professors — **JAMES JONES**, **DANIEL CANTLIFFE**, **RAMACHANDRAN P.K. NAIR**, **LONNIE INGRAM**

Graduate Research Professors — **K. RAMESH REDDY**, **HOWARD JOHNSON**

UF Research Foundation Professors — **JEFFREY BRECHT**, **NICHOLAS COMERFORD**, **JESSE GREGORY**, **JEFFREY JONES**, **GARY PETER**, **JAMES SYVERTSEN**

SPOTLIGHT

EXTENSION PRESENTS AWARDS AT EPAF MEETING

The Extension Professional Associations of Florida held its 2009 Professional Improvement Meeting Aug. 31 to Sept. 3 at the Buena Vista Palace Hotel & Spa in Lake Buena Vista. As part of the event, 15 faculty members were honored with Professional Enhancement Awards.

The Alto and Patricia Straughn Extension Educational Improvement Award was presented to **ELEANOR FOERSTE**, an Osceola County natural resources agent. The award provides a term professorship and program support for continuing education and other professional improvement.



SARAH HENSLEY

SARAH HENSLEY, a Sumter County 4-H/youth development agent, received the Alto Straughn 4-H Extension Professional and Enhancement Award. Hensley was chosen on the basis of creative contributions and outreach programs related to 4-H and youth development.

The Art Hornsby Distinguished Extension Professional and Enhancement Award recognizes creative contributions and outreach programs related to soil and water sciences. This year's honoree was **MARK CLARK**, an assistant professor in the soil and water science department.

LINDA BOBROFF, a professor in the family, youth and community sciences department, was chosen for the Christine Taylor Waddill Extension Professional and Enhancement Award. The award is presented to a state or county faculty member who promotes outstanding educational programs and demonstrates scholarship in extension.

One state-level and one county-level faculty member is selected for the Dallas Townsend Extension Professional Enhancement Award. It honors demonstrated ability to plan and implement extension programs that address needs which have been identified in consultation with clientele. The recipients



GERALD EDMONDSON

were **GERALD EDMONDSON**, the Okaloosa County extension director; and **ERIC SIMONNE**, director of the Northeast Extension District.

The John and Martha Woeste Professional Development Award went to **ROBERT KLUSON**, a Sarasota County agriculture/natural resources extension agent. The award is presented on the basis of a proposed professional improvement plan that will impact the effectiveness of the Florida Cooperative Extension Service.

DONALD RAINEY, a commercial horticulture agent in Sarasota County, received the Marshall and Mildred Watkins Professional Improvement Award. It's presented to an outstanding county or state faculty member with a strong proposal for professional development.

Longtime faculty working in family, youth and community sciences are eligible for the Mary Harrison Extension Professional and Enhancement Award. This year's honoree was **JUDITH CORBUS**, a multicounty extension agent based in Washington County. The award provides a term professorship and support for a specific development activity.

One of Florida's most visible Master Gardeners, **THERESA FRIDAY**, was presented the Master Gardener Distinguished Extension Professional and Enhancement Award for dedication and excellence. Friday, an environmental horticulture agent based in Santa Rosa County, writes columns that appear in local media.

The Sadler Distinguished Extension Professional and Enhancement Award honors two Central Extension District faculty members who have developed an exemplary education program for citizens in Central Florida. The recipients were **JOSEPH STRICKLAND**, a multicounty agriculture/small farms agent based in Hernando County; and **MARK WARREN**, a Flagler County livestock/natural resources agent.

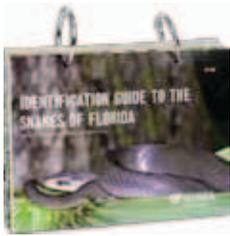
MARY LAMBERTS, a Miami-Dade County vegetable agent, received the Seymour Goldweber Extension Professional and Enhancement Award. It honors a South Florida family and consumer science agent who has developed an outstanding education program and has received national recognition from a professional organization or society.

The Wachovia Extension Professional and Enhancement Award recognizes faculty members with a distinguished record of extension programming in public policy, including land and water use, urban/rural interface, families and children, environmental quality, human resources and competitiveness/trade. **HENRY GRANT**, the Gadsden County extension director, received the honor.

This year's Jim App Team Award was presented to the Sustainable Recreational Fisheries program, which promotes responsible angling, catch-and-release, water quality improvement and other factors needed to keep Florida fishing great. Among the honorees were **CHUCK ADAMS**, a food and resource economics professor and chairman of the program; and **JOHN STEVELY**, a Manatee County marine science agent and co-chairman. ■

NEW FROM THE IFAS EXTENSION BOOKSTORE

We offer educational resources that deliver practical solutions for the challenges Floridians face. Our products are the result of collaborations between research scientists and educators from the UF campus, 13 Research and Education Centers, and 67 Cooperative Extension Service offices statewide.



Identification Guide to the Snakes of Florida

This user-friendly ID deck is a must for anyone who spends time outdoors in Florida. Expert UF herpetologists provide color photos and critical information on identifying Florida's 46 snake species, paying special attention to venomous snakes and safety issues.

SP 456, \$18



Hydroponics for Small Farms and Gardens

Whether you're a home gardener looking for a challenge or a commercial grower interested in new opportunities, this 99-minute DVD is a great way to get started in hydroponics,

the practice of growing plants without soil. It covers growing systems and media, nutrient delivery, pest management, produce varieties and marketing, and building hydroponic floating gardens. **DVD 1247, \$25**



Understanding White-tailed Deer: Florida and the Southeast

Until now there has been little information about the white-tailed deer in Florida, where its habitat needs are unique. This beautifully illustrated 231-page book focuses on the biology and ecology of whitetails in our region, and management strategies to keep their populations healthy and abundant. **SP 447, \$18**



Munchy Adventures With Chef Nicky

This 4-H project book introduces children ages 8-10 to the basics of nutrition, while teaching them to make good food choices, prepare healthy snacks and participate in fun physical activities. Chef Nicky, a cartoon guinea pig, leads youngsters through the lessons. **SP FNM 10, \$2**



Desórdenes y Enfermedades de las Palmas Ornamentales

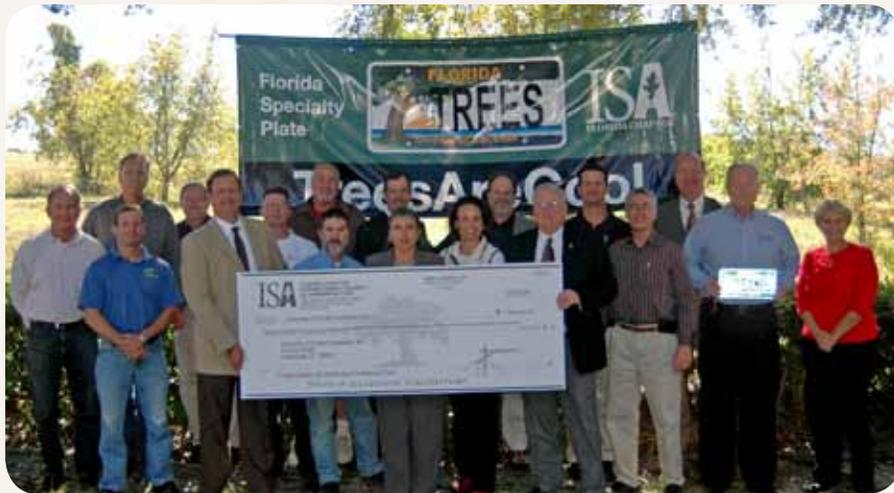
(Disorders and Diseases of Ornamental Palms, 2nd Edition, Spanish Version)

This Spanish-language ID deck is a diagnostic tool for landscape professionals and backyard hobbyists. Photographs and text help users identify and distinguish between the nutritional deficiencies, physiological disorders and common diseases of ornamental palms. **SP 360-S, \$12**

FOR MORE INFORMATION GO TO
IFASbooks.com
OR CALL **1-800-226-1764**

UF UNIVERSITY of
FLORIDA
IFAS Extension

IFAS DEVELOPMENT *News*



Florida Chapter ISA presents its gift to IFAS. Chapter President Mike Robinson, left, and UF Interim Senior Vice President for Agriculture and Natural Resources Larry Arrington pose with an oversized check representing the group's \$300,000 pledge. Also shown are IFAS SHARE Council Executive Director Ken DeVries, Department of Environmental Horticulture Chairman Terril Nell and the Florida Chapter ISA board of directors. **PHOTO COURTESY OF FLORIDA CHAPTER ISA**

Florida Chapter ISA pledges \$300,000 from license plate proceeds

The Florida Chapter of the International Society of Arboriculture has pledged \$300,000 over the next five years to establish the Florida Chapter ISA Arboriculture Endowment Fund, which will support teaching, research and extension for the arboriculture program in the environmental horticulture department.

"Endowment support is particularly appreciated because it provides a stable and renewable resource for our IFAS programs," said Larry Arrington, interim senior vice president for agriculture and natural resources. "This special fund will truly provide the margin of excellence for the IFAS arboriculture program."

Based in Sarasota, the Florida Chapter ISA is an organization of arborists dedicated to the advancement of tree care and planting methods. Funds for the endowment will be generated by sales of the "Trees Are Cool" specialty license plate.

FNGLA - Action Chapter establishes endowment for Mid-Florida REC

The Florida Nursery, Growers and Landscape Association - Action Chapter has donated \$30,000 to establish the FNGLA - Action Chapter MF-REC Excellence Endowment Fund, which will support undergraduate scholarships, graduate assistantships, research, education and programs at the Mid-Florida Research and Education Center in Apopka.

Regina Thomas, Action Chapter board member, SHARE Council member and state board representative, presented the check to SHARE Council Chair Ray Goldwire at the annual SHARE Event held Nov. 7, 2009.

FNGLA is a network of professionals who work to shape the future of Florida's nursery and landscape industry, which has an estimated \$15.2 billion in annual sales.



Randy Strode, left, president and owner of Agri-Starts Inc., examines a plant with Wayne Mackay, director of the Mid-Florida Research and Education Center in Apopka. **PHOTO BY CHRIS FOOSHEE**

Endowment from Agri-Starts Inc. will benefit plant industries

Agri-Starts Inc. of Apopka has pledged a combined cash and deferred gift totaling \$130,000 to establish the Innovation Propagation and Production Training Endowment. The fund will support an IFAS extension technical training program focusing on innovations for the foliage, floriculture and ornamental plant industries throughout Florida and the region.

In addition to a \$30,000 cash pledge, Agri-Starts donated a \$100,000 charitable life insurance policy naming the University of Florida Foundation Inc. as sole beneficiary of the proceeds, for future benefit of the endowment.

Agri-Starts, a biological technology company owned by Randy Strode, produces and sells tissue-culture liners on a wholesale level. Tissue culture is a procedure that uses small tissue samples to produce exact duplicates of a plant.

UF | **FLORIDA**
TOMORROW
THE CAMPAIGN FOR THE UNIVERSITY OF FLORIDA

IFAS *Development*

"Private Gifts Providing the Margin of Excellence"

What Is IFAS Development?

The IFAS Development program serves as the central fundraising effort to secure private support for the University of Florida's Institute of Food and Agricultural Sciences in partnership with the SHARE Council direct support organization and the University of Florida Foundation Inc. Charitable gifts provide the "margin of excellence" for IFAS academic programs, research, extension and facilities.

Ways to Give

There are several ways to support IFAS:

- **Cash**
- **Charitable Bequests** (*wills and trusts*)
- **Real Estate** (*residential or farmland*)
- **Life Income Gifts** (*charitable remainder trusts, annuities, retained life estates and retirement planning*)
- **Stocks** (*especially appreciated stocks*)
- **Life Insurance** (*new or existing policy*)

IFAS Endowments

Endowments are named permanent funds that provide annual renewable support for donor designated IFAS programs. Endowments are managed and invested by the University of Florida Foundation. As of December 31, 2009, more than 250 IFAS endowments have been established by individual alumni, businesses, organizations, associations and friends.

Matching Gift Programs

The state of Florida currently provides generous matching funds for endowed gifts of \$100,000 or more through its Major Gifts Trust Fund according to the following state matching gift levels:

GIFT	MATCH
\$100,000 to \$599,999	50%
\$600,000 to \$1,000,000	70%
\$1,000,001 to \$1,500,000	75%
\$1,500,001 to \$2,000,000	80%
\$2,000,001 or more	100%

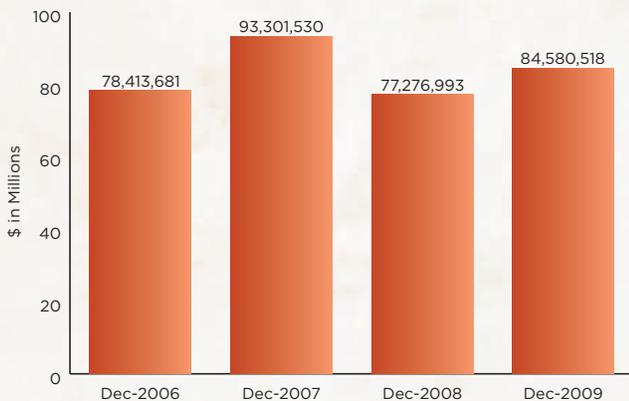
Florida Tomorrow Campaign

In July 2005, the University of Florida launched its third and largest ever comprehensive campaign with a goal to raise \$1.5 billion in private gifts. To enhance funding for its teaching, research and extension programs and facilities, IFAS has set its campaign goal at \$100 million.

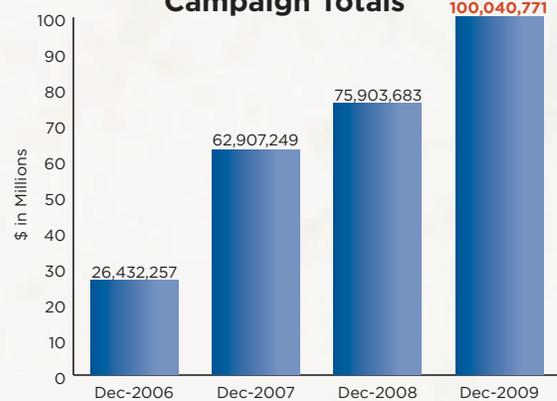
UF/IFAS Campaign Goals

Faculty Support	\$42,500,000
Graduate Support	\$9,000,000
Undergraduate Student Support	\$8,000,000
Program Support and Research	\$29,500,000
Campus Enhancement	\$11,000,000
Total	\$100,000,000

■ **IFAS Endowment Values**



■ **IFAS Florida Tomorrow Campaign Totals**



FOR MORE INFORMATION, CONTACT THE IFAS DEVELOPMENT OFFICE

Ken DeVries, assistant vice president for IFAS Development, (352) 392-5424

Joe Mandernach, senior director of development, (352) 392-5457

Office: (352) 392-1975 • Fax: (352) 392-5115 • Online giving: development.ifas.ufl.edu

Albert and Friends



PHOTOGRAPHY BY TYLER JONES

On Nov. 7, 2009, alumni and friends of UF's College of Agricultural and Life Sciences gathered in the Stephen C. O'Connell Center for the 13th annual TailGATOR barbecue. This year's theme was "Gators and 4-H — A Florida Tradition," honoring the 100th anniversary of the Florida 4-H Youth Development Program. As always, TailGATOR offered great food, opportunities to catch up with old friends and recognition of outstanding alumni and students (see pages 24-25 for more details). The event is coordinated by the College of Agricultural and Life Sciences.