

IMPACT

THE INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES MAGAZINE | VOL. 24 NO. 2 | FALL 2008

ORDWAY- SWISHER

A DOORWAY
TO NATURAL
FLORIDA

UF UNIVERSITY of
FLORIDA



perspective



IN “A LAND REMEMBERED” BY PAT SMITH, TOBIAS MACIVEY AND HIS FAMILY CAME TO FLORIDA IN 1863 as dirt-poor crackers, struggling for their very existence. “There were many times when Tobias thought otherwise, but they did survive. He learned many things by trial and error, and passing strangers told him of others.” He and his family gained an appreciation of the land and ecosystem.

Even in a time of economic gloom, it’s important to not forget the land’s natural treasures — but instead remember to look to them as a source of renewal for a prosperous tomorrow. This has always been a key mission of the University of Florida’s Institute of Food and Agricultural Sciences.

One of those treasures is the Ordway-Swisher Biological Station. Thanks in large part to a donation of land from The Nature Conservancy, IFAS is using the 9,100 acres of pristine and diverse landscapes ranging from wetlands to sandhills to support our tripartite mission. As a core site for the National Ecological Observatory Network (NEON), the station’s unadulterated ecology will be a key element of a national effort to track the effects of climate change, land management practices, invasive species and other factors on Florida’s environment and the nation’s natural resources.

IFAS has facilities in every one of Florida’s 67 counties, and there are 13 research and education centers throughout the state dedicated to developing the state’s \$101 billion agriculture and natural resources industry. Each year, IFAS continues to expand its efforts throughout the Sunshine State. The amount of funding IFAS garners through grants and contracts has maintained a steady climb, and has increased in the past year by \$11.3 million to \$104.8 million for 2008.

And that is money put to good use. IFAS is spearheading research and educational programs to find solutions to citrus greening, which threatens a citrus industry that has been a Florida keystone since the time of the earliest Spanish settlers. Meanwhile, in light of the recent tomato scare, IFAS faculty members have worked hand-in-hand with the Florida Department of Agriculture and Consumer Services and the Florida Tomato Exchange to develop and institute a groundbreaking set of self-imposed safety standards among the state’s growers.

We are helping to set the stage for a future of alternative fuel sources born from but not a burden to the land. A new cellulosic ethanol pilot plant on our Gainesville campus will help refine methods to turn nonfood biomass and wastes into a fuel that can help alleviate the nation’s reliance on oil. Meanwhile, new biofuel classes and educational programs offered by the College of Agricultural and Life Sciences will help give a head start to tomorrow’s leaders in the field.

Recently I announced that I have accepted an offer to become chancellor of the University of Tennessee at Knoxville, effective Feb. 1, 2009. It is with reluctance that I leave the University of Florida where I have served for more than 33 years. My wife Ileen and I are committed Gators and both our children earned their degrees here. However, I felt this once-in-a-lifetime opportunity to serve as the overall administrator of a great land-grant university would be the capstone to my career.

I want to take this opportunity to thank you for the support you have given to IFAS and our programs in teaching, research and extension. Because you have made a difference, IFAS has made, and will continue to make a difference.

Sincerely,
Jimmy G. Cheek
Senior Vice President
Agriculture and Natural Resources



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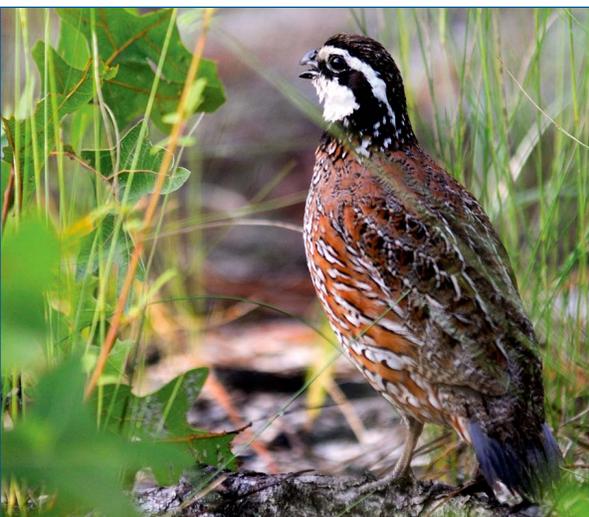
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On the Cover

Photographer Wes Marston captured this image of a male bobwhite quail at UF's Ordway-Swisher Biological Station, while preparing a photo essay that appears in this issue of **IMPACT**. Besides being a place of extraordinary natural beauty, the station serves as an important resource for IFAS scientists, and was recently designated a core site for monitoring ecological processes and environmental change, as part of the National Ecological Observatory Network (NEON).

FOR MORE INFORMATION, PLEASE SEE PAGE 14. PHOTO BY WES MARSTON



RAISING *the* BAR for TOMATO SAFETY

IFAS experts help develop, communicate new safety standards for tomatoes.



For years, Florida has been the nation's No. 1 producer of fresh tomatoes. Now, it's the nation's pacesetter for tomato safety standards.

Through the efforts of industry leaders, joined by elected officials, state agencies and the University of Florida's Institute of Food and Agricultural Sciences, the state recently enacted laws requiring tomatoes to be grown and handled according to a best-practices manual (see sidebar). Compliance became mandatory July 1, 2008; the Florida Department of Agriculture and Consumer Services (FDACS) will conduct inspections to make sure the best practices are followed.

It's a first for any U.S. state — for any agricultural crop.

"The industry has done a remarkable thing by demanding regulation," says Martha Roberts, who spearheaded IFAS' participation. A special assistant to IFAS Dean for Research Mark McLellan, Roberts is also one of the state's foremost food-safety experts and a former Florida deputy commissioner of agriculture.

The new laws will reduce the risk of Florida tomatoes being affected by pathogens such as *Salmonella* bacteria, she

said. They'll also assure consumers that Florida growers will do whatever it takes to provide a safe product.

Roberts has spent the past three years working with growers and FDACS, developing and revising the best practices manual. The standards, science based and clearly stated, cover everything from soil quality and irrigation water to worker training and lot identification numbers.

Though many growers had been voluntarily following similar practices for 10 years or more, the push for legislation began in 2004, after the U.S. Food and Drug Administration's Center for Food Safety and Applied Nutrition notified the state's tomato growers, packers and shippers that they needed to do more on food safety.

So they began their efforts to create a safety plan.

The tomato industry asked FDACS for help. At UF, Roberts was asked to focus her attention on the issue. Florida Commissioner of Agriculture Charles Bronson liked the idea of statewide standards but believed they needed the force of law. So the industry — particularly representatives of the Florida Tomato Exchange and the Florida Fruit & Vegetable Association — began discussing the idea of new statutes with legislators.

IFAS food-safety expert Keith Schneider demonstrates how he inoculates tomatoes with bacteria or other microorganisms, as a preliminary step toward testing the efficacy of sanitizing agents. **PHOTO BY THOMAS WRIGHT**

After much more discussion and collaboration — notably two national-scale events co-sponsored by UF — the Florida Legislature passed a bill that Gov. Charlie Crist signed into law in May 2007.

Now, IFAS faculty will keep the effort moving forward in new ways, Roberts said.

One is by assisting growers with compliance.

Food-safety experts Keith Schneider, an associate professor of food science, and Steve Sargent, a professor of horticultural sciences, are presenting live workshops around the state, some of which are being videotaped and will soon be available online. Schneider is also developing a PowerPoint presentation to aid training at extension offices.

“Most growers have their own training programs for workers,” said Sargent, a statewide extension specialist in post-harvest physiology. “We’re trying to keep the industry informed about basic information they need to know ... and keep them informed about updates that come along.”

Another initiative is promoting better food-safety standards for other Florida crops.

Blueberries, melons and leafy greens are expected to get their own sets of mandatory best practices in 2009, Schneider said. IFAS experts are already working on training materials specific to those crops, a task made easier by their experience with tomatoes.

And IFAS is taking steps to enhance its overall food-safety program.

Three new faculty members will soon come onboard, all of them appointed to both the Emerging Pathogens Institute



and the College of Agricultural and Life Sciences, said Doug Archer, an IFAS associate dean for research.

Two of the positions will be in the plant pathology department, one focusing on molecular virology and the other on epidemiology. The third will be in the food science and human nutrition department.

Archer said the new hires will use basic-science research, aided by technologies such as high-speed computer modeling, to solve real-world food-safety problems.

“Modeling can be a great help in predicting how diseases will spread as a consequence of weather, insect vectors and



Martha Roberts, special assistant to IFAS Dean for Research Mark McLellan, examines tomato plants at the North Florida Research and Education Center — Suwannee Valley in Live Oak. Roberts led IFAS efforts promoting new state laws that require tomatoes to be grown and handled according to a best-practices manual. **PHOTO BY THOMAS WRIGHT**

other factors,” he said. “That’s the kind of thing we have in mind.”

There are also numerous IFAS projects focusing specifically on tomato safety.

Researchers are developing better ways to eliminate surface pathogens on tomatoes, pinpoint locations bacteria are likely to grow in plants, and trace shipped tomatoes back to where they were grown.

Florida law governing tomato safety will likely continue to develop as new information comes to light, Schneider says.

The state’s growers hope to see nationwide standards enacted, to assure consistent safety and raise consumer confidence, said Billy Heller Jr., chief executive officer of PTG Management in Palmetto, Fla.

“There has to be a level playing field based on absolute expectations,” said Heller, whose company has tomato growing operations in Mexico, California, Georgia and Virginia. “There’s got to be one set of standards.”

It might be coming. In April, U.S. Reps. Adam Putnam, R-Fla., and Jim Costa, D-Calif., introduced a bill that would give the FDA power to order food recalls.

In the meantime, IFAS personnel will work with growers and FDACS to improve the industry. The relationship goes back a long way, said Marion Aller, director of FDACS’ Division of Food Safety in Tallahassee.

“You need broad collaboration in order to make good regulatory policy, and to make sure those policies are translated to practical regulations and efforts,” Aller said. 🍅

— TOM NORDLIE

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Steve Sargent, an IFAS post-harvest technology specialist, says proper sanitation programs are critical for controlling contamination of tomatoes. The decay in the top tomato probably began when a pathogen entered through the stem-end scar during harvest or packing, he said. **PHOTO BY THOMAS WRIGHT**



IN THE KNOW

Provisions of Florida's new tomato laws are found in Florida Statutes Sections 570.07(6), 570.48(2)(e), and 570.481(1)(b). Access the statutes online at <http://www.leg.state.fl.us/Statutes>

Additional provisions are found in Florida Administrative Code Chapter 5G-6.

Access the code online at <https://www.flrules.org>

The Tomato Best Practices Manual is available online at http://www.floridatomatoes.org/food_safety.html

An IFAS document, "Salmonella and Tomatoes: Q&A for Consumers," is available online at <http://edis.ifas.ufl.edu/SS484>



OPERATION: MILITARY KIDS —

Helping Children Whose Parents Serve

Even though Mara Callahan's dad has been in the military for all of her 10 years, she was too young when they moved off the Army base to remember much about life on it.

Her father, Dan, an Operation Desert Storm veteran, separated from active duty in 2001 and joined the Army National Guard.

So even though he's deployed several times since, Mara's experience never included being part of the fabric of a bigger military family.

Until now.

This summer, she and younger brother Braeden, 8, spent a week with 86 other children just like themselves.

They met at a camp organized and run by Operation: Military Kids.

Launched in 2005, Operation: Military Kids is a nationwide program that helps children of deployed — or soon to be deployed — active duty, National Guard or reservists handle the unique challenges they face when losing a parent for months on end.



A group of young people hone their archery skills during the Operation: Military Kids week at Camp Ocala in June. A group of 88 children, ages 8 to 13, attended the weeklong camp in the Ocala National Forest, hosted by 4-H. **PHOTO BY TYLER JONES**

The program, administered by the Army Integrated Family Support Network, has already helped 65,000 children and is growing rapidly. When the Army needed to reach those children, it turned to an organization that's been helping kids for almost 100 years — 4-H.

Georgene Bender, Florida 4-H's program director for Operation: Military Kids, says 4-H is suited for the task because of extension's vast reach.

"Extension is in every county of the state, and the reserve and guard are in every county of this state," she said. "In Union County, there might be just five guard families, but they don't know how to find each other. Part of our goal is to help these people connect."

Bender is working with a \$100,000 grant to get Florida's program up and running. So far, there are active programs in about half the state's 67 counties, and she's hoping that number will soon grow.

Campers at June's Operation: Military Kids week at 4-H's Camp Ocala listen as military officers brief them on the Black Hawk helicopter and what it can do. The children, who have at least one parent in the military, later enjoyed the noisy and windy thrill of watching the helicopter take off.

PHOTO BY TYLER JONES



"It's a huge program that's really beginning to see some momentum," she said. "2007 was a lean year, but in 2008-2009, the need is going to be great."

Operation: Military Kids has a number of partners, Bender said. Groups helping support their efforts include the Florida National Guard, the Army Reserve Child and Youth Services Program, the American Legion, Joint Family Support Assistance Program, and the National Association of Child Care Resources and Referral Agencies.

In late May, Bender led a group of county 4-H extension agents through a daylong training session at Camp Blanding, near Starke. They gained insight about the day-to-day lives of military families, and how they could better relate to the children.

They learned that there are many children out there who need help. Florida Army and Air National Guard families have an estimated 7,163 children under 18 — and that doesn't include the children of active and reserve members from all branches of the military.

They also learned about many components of Operation: Military Kids, which include:

- Educating the public on the impact of deployment on soldiers, families and children.
- HERO packs, often stuffed by volunteer organizations such as Girl Scout troops, are backpacks given to children at deployment send-off ceremonies. The packs include things like a writing kit, hero pins, a military family scrapbook,

4-H bandana and other fun stuff to make children feel special.

- Speak Out for Military Kids is a program for military and non-military kids to establish speaker bureaus of those 14 and up to advocate for military youth and publicize the burden they shoulder.

“They never really got to be part of a (military) post atmosphere. It’s cool — now they can see how they’re part of a bigger picture.”

—Shira Callahan, mother of two children who participated in Operation: Military Kids' summer camp in Ocala.

- Provide training for the 4-H Army babysitting course, designed to help give stressed-out parents relief by providing well-trained, responsible babysitters.
- Mobile Technology Labs that use everything from digital cameras to video cameras and DVD burners that can help children stay in touch with their deployed parents.

In mid-June, the Callahan kids were among 88 children who spent a week at 4-H's Camp Ocala in the

Ocala National Forest. The camp was made possible by Operation: Military Kids, the Florida National Guard, 4-H and the American Legion. Among the highlights was True Hero Day, where the 8- to 13-year-olds got to interact with military personnel, taste-test military rations, learn drill commands and watch a Black Hawk helicopter take off.

"We got to watch it fly off," Mara said. "It was very loud and very windy."

Another highlight was the dance near the week's end, she said, and she's definitely hoping to go back next year.

"I miss everybody now," she said.

Her mom, Shira Callahan, said the experience was great for both Mara and Braeden.

"They never really got to be part of a (military) post atmosphere," she said. "It's cool — now they can see how they're part of a bigger picture." 🌟

— MICKIE ANDERSON

Interested in helping Operation: Military Kids? Contact your local extension office, which can be located at www.SolutionsForYourLife.com.



Biofuels 101

This fall, the University of Florida will offer one of the nation's first college courses focused on bioenergy crops. The topic is so new that instructor Wilfred Vermerris had to develop a textbook for the class. Vermerris is glad to be responsible for another alternative-energy milestone at UF's Institute of Food and Agricultural Sciences, but says he's more interested in inspiring students.

For hundreds of years, farmers and scientists have developed crop varieties to emphasize desirable traits — everything from color to texture to flavor to nutritional value.

Today, interest in bioenergy has put a new spin on the quest for perfect crops. Farmers still want varieties that offer fast growth, hardiness and large yields. But the people who process plant material to make fuel have their own needs.

For example, cellulosic ethanol production — such as the method developed by IFAS' Lonnie Ingram — starts with biomass. That's a catchall term for cornstalks, sugarcane bagasse and other inedible woody materials.

From a processor's standpoint, desirable crop traits get pretty technical when you're talking cellulosic ethanol. For example, it's preferable if the plants have cell walls that are easily broken down into their chemical components.

Unfortunately, the science of breeding bioenergy crops is still in its infancy. So experts haven't had much time to focus on these traits, even for widely grown commodities.

“Traditionally, sugarcane is a crop used to extract the juice,” says Wilfred Vermerris, an IFAS associate professor of agronomy. “People haven't spent as much effort selecting sugarcane varieties for bagasse production.”

But Vermerris is working to change that. This fall, he'll be teaching one of the nation's first college courses devoted to bioenergy crops.

Currently listed as AGR 6932, Bioenergy Crops is a graduate-level course aimed at students in plant science, and those in biological and chemical engineering interested in alternative energy production.

The class focuses primarily on ethanol production, from fuel sources such as corn, sugarcane, switchgrass, sweet sorghum and pine trees. It will cover biomass composition, processing methods, bioenergy potential of various crops, and how to genetically enhance those crops.

To give students practical experience, they'll be required to develop a research proposal on any crop, or a literature review for a crop that isn't covered in the class.

(Right) Wilfred Vermerris lectures in his Bioenergy Crops class. PHOTO BY TYLER JONES

(Below) Vermerris put together the textbook for his class, Bioenergy Crops, because there was no other book available. PHOTO BY TYLER JONES



Vermerris also plans to explore background issues such as global climate change, sustainable farming and controversy over the use of food crops in conventional ethanol production.

“I think we’re at a moment in history where there are some very big challenges ahead of us, that will require some very big decisions, some trade-offs, potentially,” he said. “And I want to make sure the next generation is aware of this.”

Because there was no suitable classroom text already in print, Vermerris put one together, “Genetic Improvement of Bioenergy Crops,” published by Springer Publishing Company. He served as editor, arranging for various experts to write chapters on their specialties. The chapter authors include IFAS faculty Gary Peter and John Davis of the School of Forest Resources and Conservation and graduate student Ana Saballos. Vermerris wrote three introductory chapters.

The class itself has been in development for about two years, beginning shortly after Vermerris arrived at UF in May 2006 from Purdue University. He was expected to teach a new course, but the subject was undetermined.

Around that time, department of agronomy Chairman Jerry Bennett was contacted by a colleague curious to know if any universities in the Southeastern United States were offering courses in biomass production. Bennett wasn’t aware of any. But his department already had a long history of research on the subject.

The combination of the inquiry, the department’s past work and Vermerris’ need for a course subject got Bennett thinking.

“Dr. Vermerris has a great deal of experience with respect to genetics, formation of cell walls, biomass production of crops,” Bennett said. “So I encouraged him to consider developing a course specializing in this area.”

Vermerris wrote proposals for several courses. Ultimately, he and Bennett agreed that the time was right for a bioenergy crops class, and Vermerris set about developing one.

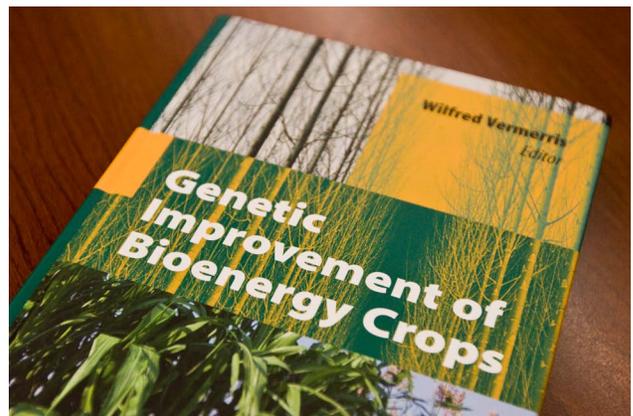
“Starting out was not the easiest thing, just because of it being a new field,” Vermerris said. “But that also makes it feel meaningful, right?”

— TOM NORDLIE

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FROM 4-H STANDOUT TO TEACHER/SCHOLAR



At 16, there was Lynn Bailey on WIS's live morning show, using flip charts, food samples and a doll to demonstrate her knowledge of nutrition: knowledge that had earned her a spot in the 1965 National 4-H Congress.

The town of Wagener, S.C., population 1,000, was bustling its buttons, glued to TV sets, watching the hometown girl who'd already bested thousands of kids from bigger towns to win first place at the state level. They celebrated her success a few weeks later, when she boarded a plane in Columbia — she remembers vividly her feathered hat and heels — bound for the national event in Chicago.

She proudly represented the state and her hometown at the National 4-H Congress and returned to Wagener even more enthusiastic about her goal to pursue nutritional science as a career.

Even after all that, her first casual mention that she might like to become a university professor someday didn't get much serious consideration.

"All of my friends thought it was hilarious," she said.

Wagener kids didn't grow up to think big thoughts in ivory towers. They grew up to work — as store clerks, or laborers in the Wagener Shirt Factory. Or maybe at the nuclear power plant, like her dad, who put in hard hours as a steamfitter.

Her mother went to college for a year, but was called back home to pick cotton — a disappointment that gnawed at her for years. She eventually became the librarian she'd hoped to be (and started the town's library, which still bears her name), but without the benefit of a college degree.

Fortunately, Bailey's 4-H extension specialist, Alpha Jenkins, didn't think it was silly for a young girl to hope for a career in academia.

"She told me 'yes, Lynn, I think you can do this,'" Bailey recalls. "I felt so inspired by that one person believing I could do it — that really stayed with me."

It wouldn't be the last time an influential mentor would make a difference to Bailey — UF's 2008 Teacher/Scholar of the Year and a renowned folate expert. Her research program and government advisory work contributed to major changes in recommended folate intake, a shared effort that resulted in significant drops in neural tube birth defects like spina bifida around the globe.

After earning her undergraduate degree at Winthrop, a master's at Clemson, and her Ph.D. at Purdue, she had begun working at Purdue, studying protein as a means to find ways to create more nutritious corn for developing countries. In short, she meant to help end world hunger.

But without an on-campus medical school, the logistics of her human metabolic studies were challenging. UF had one.

Arriving in Gainesville in 1977, she actively sought out another mentor, someone she could bounce her research ideas off of; someone she sensed had her best interest at heart. She found one in Jim Dinning, a world-renowned folate expert who had retired from a dean's post in Thailand. He'd seen the numbers of children in developing countries with birth defects, and he felt in his gut that folate would be key to reducing those numbers.

Instead of malnutrition, Dinning argued to Bailey, she needed to change the whole focus of her research to folate and birth defects.

She did.

He was right.

Bailey's research group generated data instrumental in establishing

folate-intake recommendations, including those for pregnant women, and her name grew synonymous with folate. By the early 1990s, she was named to a U. S. Food and Drug Administration committee whose recommendations were adopted as law in 1996 — mandating that all enriched foods in the United States be fortified with folic acid.

"It wasn't until the 1980s, early 1990s that we got the evidence that showed he was right," she said. "But I trusted him."

Now just four years away from retirement, she hopes to stay actively involved in her ongoing research as well as folate-related work at the national and international levels as a professor emeritus. And she's enjoying the payoff of years spent mentoring young academic minds — like Marie Caudill, now on the faculty at Cornell, and Karla Shelnett, who earned her Ph.D. under Bailey's tutelage.

"Everything I know I've learned from that woman," says Shelnett, who now teaches a nutrition and metabolism class with Bailey at UF. "She's amazing."

Looking back on her career, Bailey says landing at UF — and IFAS — was an ideal fit. She loves the idea of working in a place where extension works to get research out to the public — especially to inquisitive kids from one-stoplight towns.

"Growing up, I had this concept that if you went to college you could answer all these questions," she said. "Being in IFAS is wonderful for me. I love that there's this chance for kids out in rural communities to be inspired by a county 4-H agent. It's like coming back to my roots." 🍓 — MICKIE ANDERSON

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(Photo left) IFAS' Lynn Bailey, a world-renowned folate researcher, was honored as UF's 2008 Teacher/Scholar of the Year. Bailey, a South Carolina native, credits her 4-H roots with sparking an interest in nutrition and putting her on the path to a career in science. Shown at UF's Baby Gator playground, Bailey has helped prevent birth defects in children around the world. PHOTO BY ERIC ZAMORA





Ordway-Swisher

BIOLOGICAL STATION





As a teenager, Wes Marston spent many hours hunting and fishing on the Ordway-Swisher property. “I was fortunate to have such a place to get my hands dirty and my feet wet,” says Marston, son of the late Dr. Robert Marston, the seventh president of the University of Florida (1974-1984).

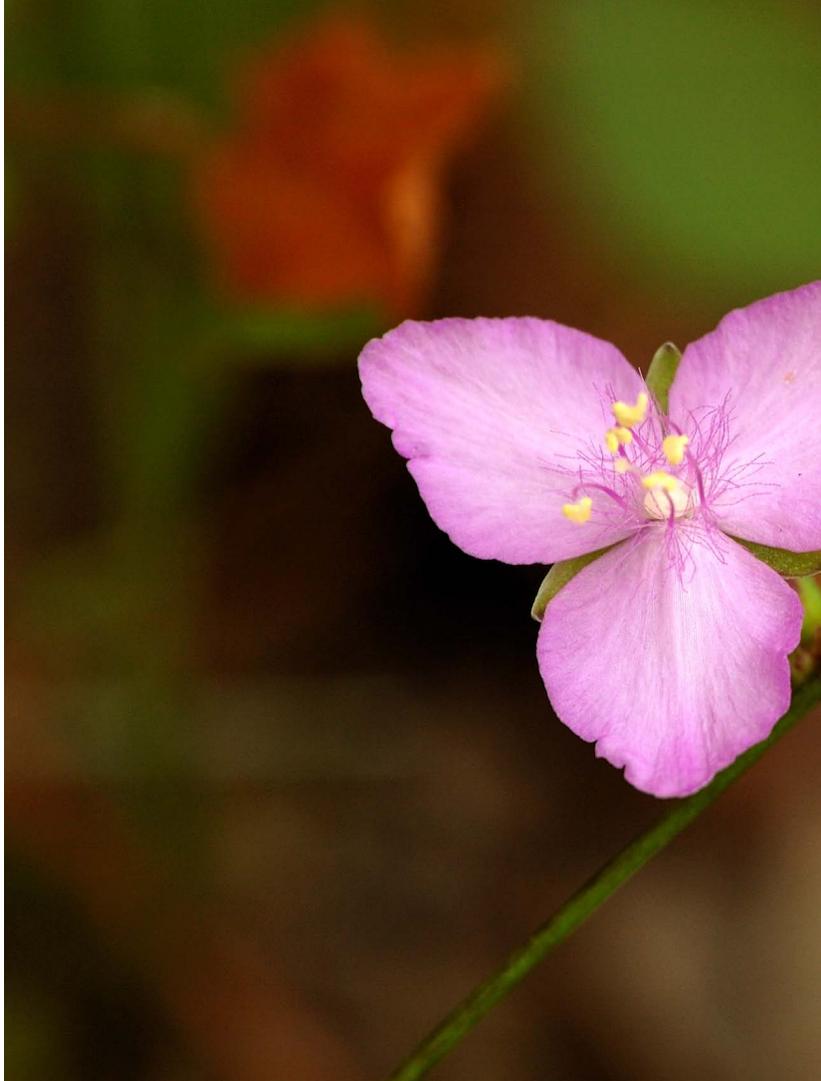
More than three decades later, he returned to the property for IMPACT magazine, this time armed only with a camera. In the following photographic essay, Wes — now a Gainesville attorney and avid nature photographer — captures the unique grace of the 9,100-acre Ordway-Swisher Biological Station.

In 1979, Dr. Marston obtained funding to buy about two-thirds of that land for UF. The Nature Conservancy obtained the remaining third, which UF managed.

The conservancy recently donated its portion to UF, an event we cover on p. 20.

To protect research projects and the property itself, the station is now closed to the public; hunting and fishing are no longer permitted. ☞





Ordway-Swisher Remembered, Revisited

Nearly 30 years has passed since I last turned onto Mason Road off of State Road 26. It hasn't changed much, still unpaved with just a few houses. I like that. I pass the old entrance to the Swisher property, a driveway that passes by the Perry home. Our drill was always the same: My dad would call Truman Perry to let him know we wanted to go fishing, then we would stop to chat with Mr. Perry and he'd tell us he would check for our tracks at dark to be sure we made it out.

I immediately notice two changes — the roads that previously had pockets of deep sand that tried to swallow our vehicles are now well packed, and the deer. In the past the deer were a rare sight, now they seem to be everywhere. Steve Coates, the property manager, is there to let me in. We chat a little, and he points out a flock of turkey hens and poults, and even a few more deer. I notice that the gopher tortoise population seems to be prospering. I'm pleased to hear fox squirrels are still abundant — they've disappeared from most places I used to see them.

I immediately head to my two favorite places to fish, Cue and Rowan Lakes. Usually, at least when Coach Ray Graves wasn't along, my dad and I would fish one of these lakes. Anderson/Cue is really two lakes joined by a short canal. They're at the bottom of a valley, or the closest thing to a valley in Florida. Sometimes my mom would come along and we would fish and picnic. It's funny what you remember. As I look around the lake, I see the spot where a bass broke off the tail of my plastic worm. I cast the remaining worm to the same spot and reeled in a bass, my worm tail sticking out of its throat. I drive over to Rowan, the prettiest of the lakes, in my view. We fished here on our last trip to the property. My dad caught an 8-pound bass on a topwater plug. An appropriate finale.

On the way back, I spot a small house, now in disrepair, where my dad and I once spent the night. We had quail hunted that day about 20 miles down the road at the Q.I. Roberts Ranch. Mr. Roberts sent us home with a few quail and a hunk of fresh venison. My dad usually looked to me to do the cooking. After walking all day and eating only snacks, we were starving. All we had was a stick of butter, some bread, salt, pepper, the meat and a cast-iron skillet. We agreed it was one of the best meals we had ever eaten.

As is often the case with photography, some of the shots I remember best are the ones I miss. The fox squirrel that jumps at the wrong time, even though I'm in pretty good position and think I'm ready for it. The gopher tortoise that built his hole in the wrong direction so the lighting is so-so, and I miss his slide into the hole. But I enjoy lying on my belly, careful to avoid cactus. The turkeys, supposedly my specialty, manage to avoid a good capture. The hen with tiny poults stays in the shadows or high grass. I try to call some predators, but only infuriate the nearby does, who blow and stomp at me.

Perhaps the highlight is the quail. I set up my chair blind in an area covered with a variety of animal tracks. I see nothing. Just as I'm about to give up, I hear a familiar call — one I seldom hear anymore. I answer his "bob-white" with my best sultry hen whistles. After a second exchange, a brown blur flies past me and lands in the nearby brush. Although out of practice, I've still got it. Too bad there isn't a market for quail callers. ☞

— WES MARSTON



The Past and Future of the ORDWAY-SWISHER BIOLOGICAL STATION

University of Florida



It's difficult to convey the full beauty of the Ordway-Swisher Biological Station in words or even pictures. But some of the significance of the site can best be captured with a few key facts.

To researchers, the more than 9,000 acres of pristine North Central Florida forests and wetlands are an ideal place to take the pulse of the natural world.

"It's the perfect area to get a clear picture of how the natural world is changing," said John Hayes, chairman of UF's wildlife ecology and conservation department. "The area is important for its unique diversity of land types that are of high conservation significance, but the station is also a fantastic natural laboratory that we are using to enhance our understanding of our natural environment and to teach the next generation of conservation scientists and decision makers."

At any given time, there are two dozen or so experiments taking place across the station. Research activities at the station are diverse. Some are tracking invasive species of plants while others are seeking to better understand behavior of the station's insect populations. Other projects range from monitoring the dynamics of diseases in local gopher tortoise populations to using new technology to better understand the influences and behavior of fire as it snakes through the underbrush.

"The station has a tremendous potential to enhance our understanding of the natural world," Hayes said. "And in many ways we are just beginning to tap the station's potential; things are about to get much more exciting."

History preserved

In many ways the station's forests and wetlands resemble how the region must have looked when Spanish explorers first set eyes upon it in the 16th century. However, surrounding land use, changes in rainfall patterns, changes in seasonal temperatures and invasive species continue to leave their unique mark on the territory, said Mel Sunquist, program director for the station.

Prior to the 1980s, the land was used mostly as an outdoor retreat for hunting and fishing. The land had been held as a preserve for half a century by the Swisher family,

owners of a Jacksonville-based tobacco company. That changed when The Nature Conservancy (TNC) secured 3,000 acres in the area, known as the Carl Swisher Memorial Sanctuary. Around the same time UF obtained the adjacent 6,100-acre Katharine Ordway Preserve, named after the heiress to 3M whose foundation funded the purchase.

For two-and-a-half decades, the preserve and the sanctuary were managed under a joint stewardship agreement between UF and TNC; and, in 2006, the collective properties were officially renamed the Ordway-Swisher Biological Station.

At an August 5, 2008 ceremony, TNC officially transferred the deed for the Carl Swisher Memorial Sanctuary to the UF Foundation. The donation officially brings the entire 9,100-acre station under UF's purview, although TNC will continue to be an important partner in research, education and conservation activities at the site.

The sanctuary is valued at \$11 million, and is the largest land gift ever donated to the university.

Stepping forward

"This is a step forward in the relationship between UF and The Nature Conservancy, and we look forward to working closely with TNC in the years and decades to come," Hayes said. "Consolidation of the station under a single ownership helps us better coordinate our efforts on our path to making this a globally significant site for research and education."

As one example of the continuing partnership between UF and TNC, the station will soon house three TNC-funded fire experts who will provide assistance for fire management in natural areas throughout North Florida. When on-site, the team will provide educational and training programs for UF students and professionals in the region on how to conduct prescribed burns and control wildfires.

An additional benefit of the new arrangement is that it paves the path for stronger cooperation with other agencies. The station has been tagged by the National Science Foundation (NSF) to serve as its core site for monitoring ecological processes and environmental change in the



Representatives of UF and The Nature Conservancy met on campus Aug. 5 to celebrate TNC's donation of the Carl Swisher Memorial Sanctuary to UF. Pictured, from left, are John Hayes, chairman of UF's wildlife ecology and conservation department; Jeff Danter, director of the Florida chapter of TNC; Jimmy Cheek, UF senior vice president for agriculture and natural resources; and Bernie Machen, UF president. **PHOTO BY TYLER JONES**

southeastern United States — from Texas to North Carolina — as part of the National Ecological Observatory Network (NEON).

NEON will be NSF's primary program to track the status of the natural world in the face of changes in climate, land use and invasive species. The program is likely to be the largest single investment in ecological sciences made by the federal government in the coming decades.

Designation as a core site is anticipated to result in a multimillion-dollar infrastructure investment by NSF in the station and 30 years of funding. This infrastructure includes arrays of sensors that will continuously monitor the station's air, water, soil and biodiversity to track changes over time.

The data collected at the station will be continuously fed into a central database, where it will be used with data from other stations to develop a comprehensive picture of environmental change within the United States and the nature of our ecological systems.

"NEON is a chance for us to be a fundamental part of research that will inform this nation's ecological progress in a time when we know that we cannot take nature for granted," said Jimmy Cheek, UF senior vice president for agriculture and natural resources. "That is not only an opportunity, but a responsibility." ❧

— STU HUTSON

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Mel Sunquist, left, is program director for the Ordway-Swisher Biological Station. He's been teaching classes at the facility for years, including the wildlife field techniques class from spring 2007 shown here. **IFAS FILE PHOTO**





ETHANOL PILOT PLANT

Ushers in New Era for IFAS Biofuels Research

Lonnie Ingram monitors the bioreactor in the cellulosic ethanol pilot plant in Rogers Hall on UF's Gainesville campus. The bioreactor uses heat, chemical reactions and enzymes to break down feedstocks before they are fermented for ethanol production. **PHOTO BY TYLER JONES**

International to commercialize the production of renewable chemicals for biodegradable plastics. In both cases, imported petroleum will be replaced with green, renewable alternatives.

But UF's role in developing this new technology has only begun. In October, a biofuels pilot plant on the UF campus officially opened operations to help usher this solution into the mainstream.

"This will be a tremendous tool for studying the nuts and bolts of biofuels and renewable chemicals for plastics so that they both can become a reality on a scale that will really have an impact on our energy economy," said Ingram, a distinguished professor of microbiology and cell science with UF's Institute of Food and Agricultural Sciences and director of the Florida Center for Renewable Chemicals and Fuels.

The pilot plant will serve as an essential stage for refining biofuel conversion processes — offering the reality of an industrial setting beyond the limitations of beakers and test tubes,

Gasoline prices in the United States have fluctuated wildly in the past two years, but this isn't the first time the nation has felt pain at the pump. Several oil crises in the '80s prompted microbiologist Lonnie Ingram to begin working on alternative fuels to meet U.S. transportation needs.

Since that time, Ingram and colleagues at the University of Florida

have been developing economical and environmentally friendly ways to produce cellulosic ethanol — a clean-burning fuel produced from materials such as yard waste and switchgrass, that could end up replacing much of the country's gasoline.

This work at UF has resulted in the formation of two spinoff companies, Verenum Corp. to commercialize cellulosic ethanol and BioEnergy

but without the inhibiting costs and unwieldy practicalities of a full industrial-scale plant.

For example, it will enable testing of feedstocks that might otherwise be overlooked. Researchers at the plant will also be able to make the already green cellulosic ethanol production even more environmentally sound by investigating new ways to recycle water and harness byproducts that can be converted into energy to help power the conversion process.

Nearly two years in development, the biofuels pilot plant was made possible as part of \$4.5 million awarded by the Board of Governors of the State University System to UF as part of its Centers of Excellence Program. Nearly half the funds went to develop the pilot plant in Rogers Hall.

That funding, approved by the Florida Legislature, is aimed at stimulating Florida's economy by simultaneously creating new high-tech industries and addressing the state's growing energy needs.

With more than 150 faculty members involved in 22 energy research centers, UF brings together the research resources to make this goal possible. In the past few years alone, UF's federal and state energy research funding exceeded \$70 million.

"We are glad to have this kind of support, because it's an essential part of developing a solid future for this country's energy demands," Ingram said.

The overall method for producing ethanol is somewhat similar to brewing automotive fuels and organic acids that can be used to make plastics. Feedstocks are first broken down by exposure to physical grinding, chemicals, heat and enzymes. The syrupy results are then put into tanks where

they are fermented with the aid of microbial agents to produce a mixture of ethanol and other products. From this broth, ethanol can be distilled to produce an automotive fuel or organic acids can be purified to make plastics.

Typical ethanol production primarily uses the edible portions of plants — such as cane sugars and the starchy portions of corn. The cellulosic process, however, introduces genetically engineered bacteria that can break down inedible portions of plant material that do not compete with food supplies.

Ingram's technology is already at work on an industrial scale. Verenium now holds UF rights to the ethanol technology, and has constructed a 1.4 million-gallon-per-year demonstration plant in Jennings, La. Additionally, in 2007, Verenium presented its first royalty check to UF from the proceeds of a 1.3 million-liter-per-year cellulosic ethanol plant in Osaka, Japan.

A second, Massachusetts-based company holds the rights from UF to produce renewable chemicals for use in biodegradable plastics. In 2007, BioEnergy International presented UF with its first royalty check for renewable chemicals which are being produced commercially in Salamanca, Spain.

With \$20 million recently awarded by the Florida Legislature, UF has also partnered with Florida Crystals Corp. to plan and construct a demonstration

plant in South Florida which will focus on the unique feedstocks available in Florida.

The campus pilot plant currently houses two boilers. One runs to three small-scale fermenting tanks, each just slightly taller than an average person. Another runs to a bioreactor, a series of tanks with a total footprint of a large pickup truck, used to experiment with methods for breaking down feedstocks before fermentation.

Along with industrial centrifuges, mixing tanks, distillation equipment and various other tools used in the cellulosic ethanol production process, the plant also houses equipment such as gas and liquid chromatography machines used to analyze chemicals and products on a molecular scale.

"This technology is moving forward on a large scale, but there are many things that are too costly to experiment with at that level," said Pratap Pullammanappallil, an assistant professor of agricultural and biological engineering and director of the plant. "We have to keep pushing hard to move the state of the art further along, and that's exactly what this pilot plant at UF will allow us to do." ❧

— STU HUTSON

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Lonnie Ingram explains to Florida Gov. Charlie Crist how cellulosic ethanol is produced from the inedible portion of plants in his laboratory in the Microbiology and Cell Science Building on UF's Gainesville campus. In 2007, Crist appointed Ingram to his Action Team on Energy and Climate Change. **IFAS FILE PHOTO**




 A man with glasses, wearing blue overalls, is sitting cross-legged in a field of green grass. He is surrounded by several black and white cows. The background is a cloudy sky. The man is smiling slightly and looking towards the camera.

We Are CALS

Jason De La Paz and friends. PHOTO BY ERIC ZAMORA

Jason De La Paz, D.V.M., Class of 2012

Jason De La Paz, 30, of Homosassa, Fla., is one of six UF students — that's right, six — headed for a career in food animal science. Nationwide, there are big shortages of food animal veterinarians, and IFAS officials are working hard to reverse the trend. De La Paz, a first-year doctor of veterinary medicine student, told *IMPACT* magazine why he wants to pursue this specialty.

His motivation: "I didn't grow up on a farm or anything like that. I didn't grow up around livestock, really. It's something that I was just drawn to because I thought it was really an important profession. It's challenging and to me it's important because you're working on the food supply."

His take on why more students haven't been drawn to the field: "I think it has a lot to do with the public being so disconnected from farming in general. In the past, it's had

a stigma of being a job where you work more hours (than vets who work in clinics), because a lot of times food animal vets work out of their truck. It's been more of a solitary veterinary practice, where one vet is dealing with all the emergencies."

Why cows deserve our thanks: "I just have a lot of respect for dairy cows, just because of the role they serve. I think it deserves our compassion and respect. They're doing something that's so valuable. I have a dog I love very much, but I think there's something special about working on the country's food supply, versus working with somebody's pet."

What he loves about the work: "I like the idea of getting out in the field, not being confined to a clinic. Well, when it's not raining." 🐾

— MICKIE ANDERSON

HOW IT WORKS

Transferring genes from one plant to another

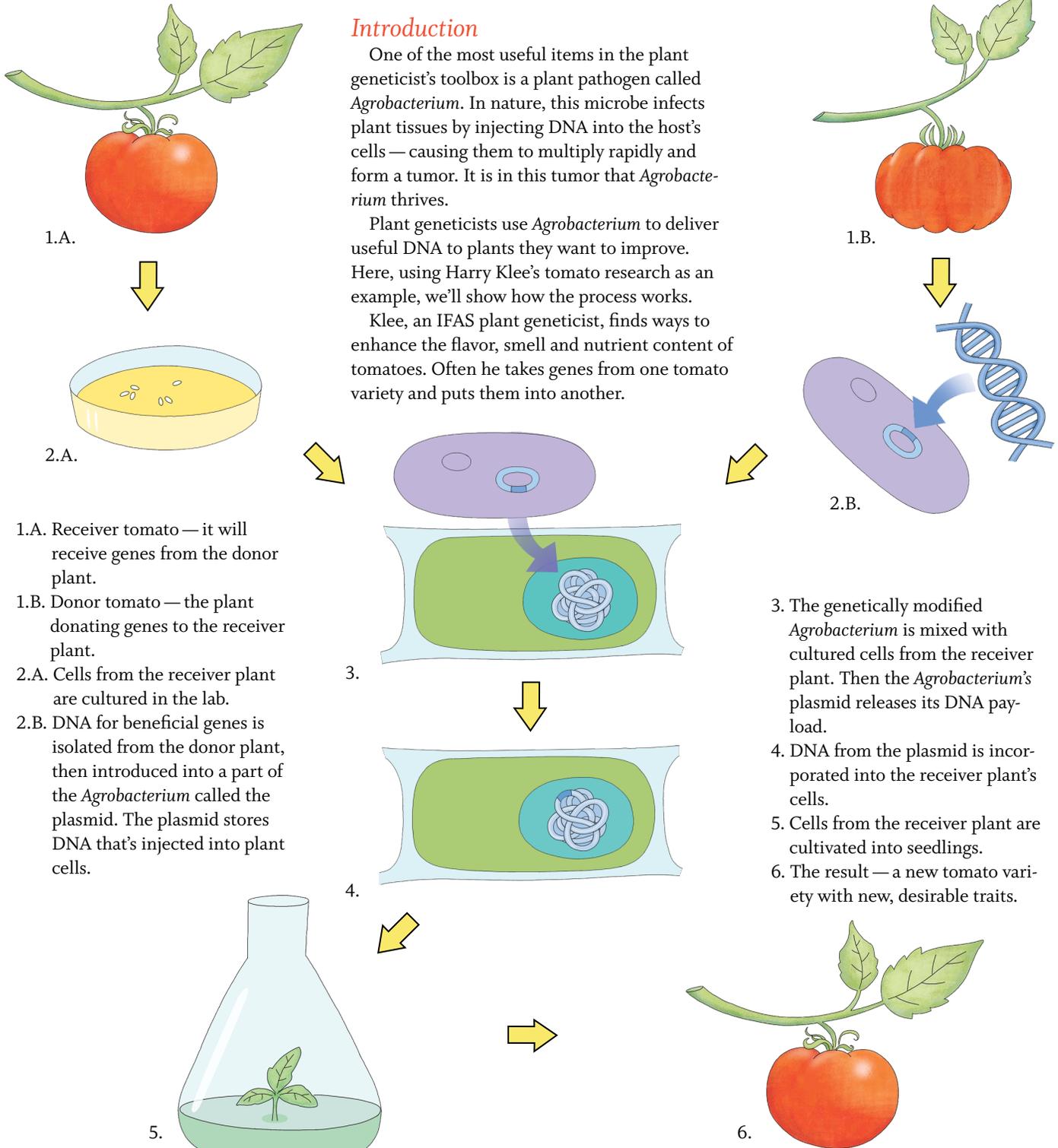
In this recurring feature, we'll explain technical processes used frequently in IFAS research.

Introduction

One of the most useful items in the plant geneticist's toolbox is a plant pathogen called *Agrobacterium*. In nature, this microbe infects plant tissues by injecting DNA into the host's cells — causing them to multiply rapidly and form a tumor. It is in this tumor that *Agrobacterium* thrives.

Plant geneticists use *Agrobacterium* to deliver useful DNA to plants they want to improve. Here, using Harry Klee's tomato research as an example, we'll show how the process works.

Klee, an IFAS plant geneticist, finds ways to enhance the flavor, smell and nutrient content of tomatoes. Often he takes genes from one tomato variety and puts them into another.



- 1.A. Receiver tomato — it will receive genes from the donor plant.
- 1.B. Donor tomato — the plant donating genes to the receiver plant.
- 2.A. Cells from the receiver plant are cultured in the lab.
- 2.B. DNA for beneficial genes is isolated from the donor plant, then introduced into a part of the *Agrobacterium* called the plasmid. The plasmid stores DNA that's injected into plant cells.

- 3. The genetically modified *Agrobacterium* is mixed with cultured cells from the receiver plant. Then the *Agrobacterium*'s plasmid releases its DNA payload.
- 4. DNA from the plasmid is incorporated into the receiver plant's cells.
- 5. Cells from the receiver plant are cultivated into seedlings.
- 6. The result — a new tomato variety with new, desirable traits.

WRITTEN BY STU HUTSON • ILLUSTRATION BY JULISSA MORA

CFCS Meeting



Florida isn't part of the Caribbean, but geographically it's right in the neighborhood.

And the Sunshine State shares many things with nearby nations, including weather conditions, environmental constraints, crops and pest threats.

Highlighting this common ground, the Caribbean Food Crops Society (CFCS) held its annual meeting in Miami July 13-17, the first time in 44 years the event took place on the U.S. mainland. The meeting, organized and partially sponsored by IFAS International Programs, was also the largest-ever meeting of the CFCS, with more than 300 participants from 22 nations.

CFCS is a nonprofit, interdisciplinary organization of farmers, academicians, government officials, research scientists and business leaders from all around the Caribbean Basin and beyond, including Mexico and parts of Central and South America. Important trading partners, including Canada, Spain and France, were also represented at the meeting.

“By hosting this meeting, UF sent a message that we share the region’s broad concerns,” said IFAS International Programs Director David Sammons, “and we’re willing to go the extra mile with Caribbean partners to confront and solve the problems we all encounter.”

At the meeting, Sammons was elected to the CFCS board of directors. Jimmy Cheek, UF senior vice president for agriculture and natural resources, served as the 2008 CFCS president.

The first day was devoted to the meeting’s theme, “Repositioning Caribbean Agriculture: Challenges and Opportunities for Sustainability.” Speakers included Charles Bronson, Florida Commissioner of Agriculture; keynote speaker Compton Bourne, president of the Caribbean Development Bank; Bruce Knight, under secretary for marketing and regulatory programs with the U.S. Department of Agriculture; and Chelston Brathwaite, director general of the Inter-American Institute for Cooperation on Agriculture.

Other topics took center stage later in the meeting — invasive pests, livestock production, agricultural trade and the food shortages plaguing many Caribbean Basin nations.

Numerous collaborations were initiated. In one notable example, Caribbean Basin nations voiced significant interest in 4-H. Earlier this year, extension agents Norma Samuel of Marion County and Nicole Walker of Polk County used an International Programs grant to establish 4-H clubs in Antigua. At the meeting, they found folks from other countries in the region eager to launch their own 4-H programs.



— TOM NORDLIE

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New Butterfly Publications



Butterfly lovers used to catch, mount and collect the beautiful insects, but in recent years, just watching them has become popular.

To encourage hobbyists, UF recently issued four publications aimed at newcomers, written by Jaret Daniels, an assistant professor with the University of Florida’s Institute

of Food and Agricultural Sciences and assistant director for research with the McGuire Center for Lepidoptera and Biodiversity at the Florida Museum of Natural History.

The publications, produced in collaboration with the Florida Fish and Wildlife Conservation Commission, cover butterfly watching basics, Florida butterfly gardening, 50 common butterflies of Florida and a butterfly checklist. They’re sold as a package, titled “Florida Butterfly Encounters,” available for \$7 from UF’s IFAS Extension Bookstore, www.ifasbooks.com.



— TOM NORDLIE

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Climate-Response Programs



Two new grants will enable University of Florida experts to plan an institute focused on responses to climate change and launch a new center devoted to carbon sequestration. Designed to help the state's agricultural and natural resources industries, these new programs will establish UF as the Southeast's leading university in carbon sciences and climate-response research.

The grants, awarded in September, were provided by the Florida Agricultural Experiment Station, research arm of UF's Institute of Food and Agricultural Sciences.

Planning for the universitywide Climate Response Institute for Agriculture and Natural Resources will be

supported by a two-year grant awarded to Jim Jones, a distinguished professor with the agricultural and biological engineering department.

During the planning process, Jones will confer with producers, network with colleagues and seek funding sources. Planning will begin immediately with a goal of launching the institute within the next year, he said.

A second two-year grant will launch the Carbon Resources Science Center; it was awarded to Tim Martin, an associate professor with the School of Forest Resources and Conservation.

The center will take shape this fall, Martin said. It will investigate ways of mitigating carbon dioxide levels in the atmosphere by sequestering solid carbon in trees and other crops.

"We believe that enhancing our capacity in climate response and providing the world a science center on carbon sequestration are central to our mission," said Mark McLellan, IFAS dean for research. "I see UF becoming recognized as a global leader in this field." ❧ — TOM NORDLIE

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Florida Ag Value



At a time when the nation's slowing economy is tipping toward recession, one of the largest and most stable sectors of Florida's economy continues to thrive, according to a University of Florida study released in 2008.

The nearly \$102 billion annual value-added impact of agriculture, natural resource, food and

fiber product manufacturing, distribution and related service industries is larger than ever, and these industries will continue to play a vital role in Florida's 21st century

economy, say UF Institute of Food and Agricultural Sciences economists.

Agricultural economist Alan Hodges, lead author of the study, said this economic sector continues to be strong and generates the second-largest number of jobs in the state.

In addition to farms, forests and fisheries, the agricultural economic sector includes activities such as mining, fertilizer manufacturing, sawmills, fruit and vegetable processing, landscaping, food stores, restaurants, building material and garden stores, pest control, golf courses and recreational fishing, he said.

Agriculture, natural resource and related industries produced \$137 billion in output or sales revenues, expressed in 2007 dollars. They also generated \$61 billion in revenues for other economic sectors due to supply chain and employee spending multiplier effects. Combined, they provided nearly \$200 billion in total output impacts.

The study is available at <http://edis.ifas.ufl.edu/fe702> ❧

— CHUCK WOODS

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MyPyramid Poster for Older Adults

Eating well as you age can be tricky. You generally need fewer calories, but the foods you do eat must pack a nutritious punch.

With that in mind, faculty at the University of Florida's Institute of Food and Agricultural Sciences adapted the federal government's MyPyramid poster to apply to older Americans in February 2007.

Researchers then tested the poster's effectiveness in increasing nutrition knowledge at six lower-income senior centers in North Central Florida.

Karla Shelnut, coordinator of UF's Elder Nutrition and Food Safety program, or ENAFS, presented an overview of the project at the Society for Nutrition Education's annual conference in Atlanta in July. Faculty members Linda Bobroff, ENAFS program director, and program evaluation specialist David Diehl also worked on the study.

Participants were tested before and after a review of the poster. Those who correctly identified beverages low in added sugars increased from 56 to 77 percent. Those who could identify vitamins that should be obtained from fortified foods or supplements (vitamin D and vitamin B₁₂)

increased from 70 to 93 percent. And those who identified the two sources of fiber among four possible answers went from 79 to 83 percent.

In addition, 96 percent of the participants said they planned to make at least one behavior change, including drinking more water or other low-sugar beverages (79 percent); eating more fiber-rich foods (75 percent); eating foods from all five food groups each day (63 percent); and eating more fortified foods (61 percent).

The MyPyramid for Older Adults poster is aimed at those 60 and older, but is most critical for those over 70, Shelnut said, because for this age group, getting good nutrition is challenging, especially for those on fixed incomes.

Download the poster at <http://enafs.ifas.ufl.edu> or order quantities at the IFAS Extension Bookstore,

<http://www.ifasbooks.ufl.edu> . ☞

— MICKIE ANDERSON

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New Finance Booklet

To help families struggling to make ends meet, the University of Florida's Institute of Food and Agricultural Sciences has published a new bottom-line guide to personal finances.

Titled "Managing in Tough Times," the 40-page booklet is available free at county extension offices and online at <http://fycs.ifas.ufl.edu>.

Published in English and Spanish, the booklet contains 18 chapters that address topics from saving and teen employment to stress

and low-cost entertainment. Each chapter was written by UF experts.

But users will need to do more than read the booklet, they'll need to take action, said Michael Gutter, a family, youth and community sciences assistant professor who led the project.

For example, one of the most important steps in financial management is determining your net worth, which means taking stock of assets and liabilities, Gutter said. The process may take a little time, but it provides a road map for progress.

"We encourage people to assess their situation right now," he said. "But we also want them to look ahead just a bit." ☞

— TOM NORDLIE

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Curbing Parakeet Populations

When monk parakeets began to infiltrate the United States in the 1960s, some people feared they would ravage farm crops as they often had in their native South America.

Instead, the birds caused a different problem: They built huge, heavy nests atop power substations and utility equipment, causing power outages, fires and headaches for utility companies from Florida to Washington. These problems began in the 1980s and worsened in the 1990s.

But a U.S. Department of Agriculture researcher has a solution — trimming the parakeet population by feeding them contraceptives.

“The birds will still be there, but by reducing their numbers over time, that should go a long way toward solving the problem,” said Michael Avery, a wildlife biologist at the USDA’s National Wildlife



Research Center in Gainesville. He outlined the findings in August’s *Journal of Wildlife Management*.

Avery, a courtesy faculty member with the University of Florida’s Institute of Food and Agricultural Sciences, hopes the contraceptive approach will be more palatable to the public than euthanizing the bright green birds.

In March 2006, Avery’s team went to South Florida, where nests were causing big problems for Florida Power & Light. They installed feeders and gradually got the birds accustomed to the avian contraceptive DiazaCon.

At 10 sites during the two-year study, researchers found that DiazaCon reduced nestlings by 68 percent. 📈

— MICKIE ANDERSON

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Terminating Termites

Each year in the United States, termites gnaw away more than \$1 billion in structural damage despite an ever-growing array of insect control techniques. In this battle, the next generation of weapons could target the termites’ very genes.

“The trend in insect control is to find methods that eliminate the problematic insect without affecting anything else in the environment,” said Michael Scharf, an entomologist with the University of Florida’s Institute of Food and Agricultural Sciences. “What could possibly be more specific than genes that are unique to the insect itself?”

In a paper published online in May in the journal *Insect Biochemistry and Molecular Biology*, Scharf, along with colleagues Xuguo Zhou, Faith Oi and graduate student Marsha Wheeler, describes the effects of a mixture that, when consumed by termites, causes them to be cripplingly deformed after molting.

Because the pesticide specifically targets termite DNA, it would be unlikely to affect other animals, unlike many current pesticides that can have neurotoxin-like effects if misused.

Any marketable genetic pesticide is still many years away from development, Scharf said. When they are put into use, however, they may solve another major problem.

Many insects quickly build resistance to modern pesticides. It would be much more difficult for insects to adapt to an attack on their DNA. And, even if they did, there are thousands of genes within an insect’s genome that could be similarly targeted. 📈

— STU HUTSON

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On the Job

Stacy Strickland, D.P.M., 2003

Who he is: Strickland, one of the first graduates of the IFAS Doctor of Plant Medicine program, has been a multicounty extension agent based in Brooksville, Fla., since 2004. The program, expected to have 46 graduates by the end of 2008, was created to respond to a need for broadly trained plant health practitioners.

On a typical day: He spends a lot of time identifying mystery items for backyard gardeners, farmers and others. On a recent day, he fielded questions about everything from nematodes on corn to muscadine grape production and parasites on chickens. His four-county area includes some citrus, lots of blueberries, hay, sweet corn, squash, zucchini, peas and livestock.

Weirdest thing he's had to identify: "Oh boy... they will bring in anything and everything. We've had live coral snakes in the office, everything."

How his IFAS degree helps in his work: "I tell ya, I use not just soils, but entomology and plant pathology every day. Of

course, the things I didn't think I needed to know in school are the things I need every day. I thought it would be all row crops, but about 10 percent of my clients are organic growers, and I never thought I would work with that."

Favorite CALS teacher: Professor Emeritus Tom Kucharek. "He's great. A plant pathologist. Wonderful guy, I still talk to him."

When he's not working: He's spending time with his wife, Keri, and their three dogs — a border collie, a "brilliant purebred mutt" and an English bulldog. They go out in their boat on the Withlacoochee or Weeki Wachee rivers and see what's biting.

Obvious follow-up question — What happened with the coral snake?: "I let it go into the woods beside the extension office. Live and let live!" 🐍

— MICKIE ANDERSON

Eubanks Wins Horizon Award



EMILY EUBANKS

Communications professional Emily Eubanks is the winner of the 2008 Horizon Award given by the University of Florida's College of Agricultural and Life Sciences.

The award goes to a graduate of the past decade for contributions or potential leadership in the agricultural, natural resource, life science and related professions.

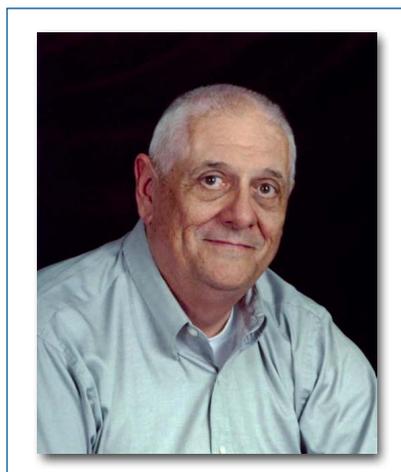
Eubanks, of Micanopy, is the communications coordinator for the IFAS Center for Landscape Conservation and Ecology. Besides writing news releases and providing Web content, Eubanks helped create the "Gardening in a Minute" radio segment, which won five national awards in its first year.

Eubanks earned her bachelor's and master's degrees from UF in agricultural communication in 2001 and 2004, respectively.

As a UF student, she served as secretary/treasurer for the National Agricultural Communicators of Tomorrow. Today, Eubanks serves on the program committee for CALS Alumni and Friends, leads the Stars and Stripes 4-H club and coordinates Web activities for the Alachua County Cattlemen's Association. ☞

— MICKIE ANDERSON

CALS Honors Buddy Johnson



BUDDY JOHNSON

A Fort Pierce citrus industry leader is the winner of the 2008 Award of Distinction, given by the University of Florida's College of Agricultural and Life Sciences.

Sherwood "Buddy" Johnson, who received his bachelor's and master's degrees in agriculture from UF in 1966 and 1968, respectively, won the honor. He and his wife Patricia own Sherwood Johnson & Son Grove Management, Buck Hammock Groves and Hilliard Groves.

"I was elated when I received the letter," said Johnson, a third-generation citrus grower. "It's a great honor."

The Award of Distinction is presented to CALS alumni or friends to recognize outstanding contributions to UF, the Institute of Food and Agricultural Sciences, CALS and related professions.

Johnson is a charter member of the UF National Alumni Association, chaired the IFAS Special Help for Agricultural Research and Education (SHARE) Council, serves as president of the Treasure Coast Agriculture Research Foundation and is a longtime supporter of the Indian River Research and Education Center. ☞

— MICKIE ANDERSON

IMPACT NEEDS YOUR ALUMNI NEWS

Beginning with this issue, IMPACT will feature an alumni news section, including personal profiles, short feature stories, updates and more. To do it, we need your help.

If you're a CALS alum, please let us know about your recent activities and accomplishments — it could be

a new job, promotion, award, appointment or other distinction.

Send your alumni news to Tom Nordlie at tnordlie@ufl.edu or P.O. Box 110275, University of Florida, Gainesville, FL 32611-0275. Submissions may be edited for clarity and length.

Spotlight — Faculty Distinctions



Lonnie Ingram

The Southeastern Universities Research Association (SURA) presented Lonnie Ingram with the 2008 SURA Distinguished Scientist Award for his work on biofuels in April. SURA is a consortium of more than 60 universities across the country that promotes initiatives in alternative energy sources, information technologies, coastal research and technology commercialization.



Rebecca Darnell

Horticultural sciences professor Rebecca Darnell has begun a three-year leadership role with the American Society for Horticultural Science. She recently started a one-year stint as vice president-elect and will follow that with a two-year term as the organization's research vice president. As research vice president she will oversee about 45 research groups within the organization.

The Florida Nursery, Growers & Landscape Association presented its Friend of the Industry Award to Jimmy Cheek, UF senior vice president for agriculture and natural resources, in June. The award honors individuals outside the association who have contributed to the advancement or improvement of the environmental horticulture industry.



Laurie Trenholm

Laurie Trenholm, an associate professor with the environmental horticulture department, was awarded the first-ever Turfgrass Educator Award of Excellence from Turfgrass Producers International, a nonprofit professional organization. The award, presented in April, recognized Trenholm's efforts to educate consumers, turfgrass producers, lawn-care professionals and government decision makers.

The Florida State Horticultural Society named Wagner Vendrame recipient of its 2008 Presidential Gold Medal

Award in June. Vendrame, an associate professor at the Tropical Research and Education Center in Homestead, was recognized for publishing outstanding articles in the journal *Proceedings of the Florida State Horticultural Society*.

Lori Warren, an assistant professor of animal sciences, received the 2008 Florida Agri-Women Founder's Award in August. Warren teaches several undergraduate courses, mentors graduate students, conducts research in equine nutrition and serves Florida horse owners through her extension work. The annual award recognizes women who are actively involved in Florida's agricultural industry.



P.K. Nair

In April, agroforestry pioneer P.K. Nair received his fourth honorary doctorate, this time from the Universidade de Santiago de Compostela in Spain. Nair was honored for his contributions to the development of global agroforestry, the practice of growing trees and other crops together to achieve greater benefit than would be possible if they were farmed separately.

Paul Willis, executive assistant to Jimmy Cheek, UF's senior vice president for agriculture and natural resources, has been honored for his long-term service to the National Agricultural Alumni and Development Association. In June, he was presented with the Founders Distinguished Service Award, which recognizes an individual who has made substantial contributions to the association.

In May, the 2008 Florida Energy Achievement Award was presented to Ann Wilkie, an associate professor with the soil and water science department, to honor her extensive work in creating bioenergy from animal waste. The award recognizes significant achievements in the efficient utilization of energy, energy conservation, energy education or renewable energy in the state of Florida. It is presented by the Florida Solar Energy Center, a research institute of the University of Central Florida.

Three IFAS faculty members were honored at the annual meeting of the American Society of Agricultural and Biological Engineers in July. Professor Ray Bucklin and professor emeritus Bill Miller were inducted as fellows, recognizing their professional distinctions and long-term membership in the society. Fedro Zazueta, director of UF's Office of Academic Technology, was awarded the Kishida International Award, the society's highest award for international work. All three men are with the agricultural and biological engineering department.

FAES launches award event

More than 75 IFAS researchers were honored at the inaugural Florida Agricultural Experiment Station awards ceremony in April. The ceremony, developed to celebrate research accomplishments, included some brand-new awards as well as several recognitions for previous honors.

Among the newer awards:



Mark Brennan

Richard L. Jones New Faculty Research awards — Mark Brennan, Natalia Peres

Best Doctoral Dissertation — Phillip Aaron Kirkland

Best Master's Thesis — Caitlin Hicks

Researchers with more than \$1 million in grants, fiscal year 2006-2007 —

Nayda Torres, Lonnie Ingram, James Jones, Harry Klee, Frank Mazzotti, Wiley Kitchens, William Haller, Robert McGovern, William Overholt, Laurie Trenholm



Joseph Larkin

IFAS Research Innovation awards — Rosemary Barnett, Mark Brennan; Maria Gallo, Christine Chase; Graciela Lorca, Joseph Larkin III; Lena Ma, Max Teplitski, Balasubramanian Rathinasabapathi, Charles Guy; Lisa House, Carmen Carrion-Flores; Cortney Ohs, P. Chris Wilson; Michael Scharf, Xuguo Zhou, Aurelein Tartar, Drion Boucias, William Farmerie, Faith Oi, Marsha Wheeler; Jason Smith, John Davis, Tom Kubisiak, C. Dana Nelson; Gurpal Toor, Amy Shoher, Sabine Grunwald, Geoffrey Denny, Christopher Martinez; Xin Zhao, Jeremy Edwards, Eric Simonne, John Scott



Lena Ma

Plant patent holders — Ronald Barnett (oat cultivar “Horizon 321,” triticale cultivar “342”); David Clark (coleus cultivar “Twist and Twirl®”); Craig Chandler (strawberry cultivar “Carmine”)

Utility patent teams — Lonnie Ingram, Shengde Zhou, (Recombinant Hosts Suitable for Simultaneous Saccharification and Fermentation); Lonnie Ingram, Kazuyoshi Ohta, Brent Wood (Recombinant Cells that Highly Express Chromosomally-Integrated Heterologous Genes); Ahmed Abouzid, Jane Polston, Ernest Hiebert (Materials and Methods for Producing Geminivirus Resistant Plants); Nan-Yao Su (A Semiochemical Reservoir to Attract Subterranean Termites Tunneling in Soil); Larkin Curt Hannah, Joanna Marie-France Cross (Variants of ADP-Glucose Pyrophosphorylase Affecting Phosphate Sensitivity and Other Parameters); David Clark, Holly Loucas, Harry Klee, Kenichi Shibuya (Genetic Elements Conferring Petal-Specific Transgene Expression); Balasubramanian Rathinasabapathi, Suresh Babu Raman (Beta-Alanine N-Methyltransferase); Zhijian Li, Dennis Gray (Nucleotide Sequences of 28 Albumin Gene and its Promoter from Grapes and Uses Thereof); James Cuda, Lewis Long (Materials and Methods for Controlling Pests); Howard Johnson, Prem Subramaniam, Mustafa Mujtaba, Lawrence Flowers (Inhibitors of Autophosphorylation Protein Kinases); David Clark, Kenichi Shibuya (Enhancing the Fragrance of an Article); David Clark, Holly Loucas (Floral Organ Tissue-Specific Expression of Isopentenyl Transferase); James Jawitz (Device and Method for Passively Measuring Fluid and Target Chemical Mass Fluxes in Natural and Constructed Non-Porous Fluid Flow); Howard Johnson (Orally-Administered Interferon-Tau Compositions and Methods); Philip Koehler (Methods for Eliminating Termite Colonies); Larkin Curt Hannah, Thomas Greene (Heat Stable Mutants of Starch Biosynthesis Enzymes); Ann Wilkie (Fixed-Film Anaerobic Digestion of Flushed Manure); Baldwin Torto, Drion Boucias (An In-Hive Trap and Attractant Composition for the Control of the Small Hive Beetle)

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

UF Research Foundation Professors — Thomas Frazer, Peter Hansen, Rongling Wu, Murat Balaban, Willie Garner Harris, Yuncong Li

IFAS DEVELOPMENT *News*



Harriet B. Weeks, left, with her daughter Robin. PHOTO COURTESY OF THE WEEKS FAMILY



State wildflower license tag. IMAGE COURTESY OF THE FLORIDA WILDFLOWER FOUNDATION



Luke and Jocelyn McKathan. PHOTO COURTESY OF THE MCKATHANS

Harriet B. Weeks Estate Gift

UF's Institute of Food and Agricultural Sciences received a gift of \$3.8 million from the estate of Harriet B. Weeks. Combined with matching funds from the state of Florida, the gift will total \$7.6 million.

The gift created three new permanent-endowed funds titled, "The Harriet B. Weeks Forestry Education and Research Fund," "The Harriet B. Weeks Bovine Research Fund" and "The Harriet B. Weeks Professorship in Bovine Medicine Fund."

The forestry education endowment will support IFAS' overall forestry programs and activities in teaching, research, technology and academic programs, including those in the School of Forest Resources and Conservation. The bovine research endowment will support teaching, research and extension programs in the animal sciences department. The bovine medicine endowment will support a research professorship in the College of Veterinary Medicine.

Weeks was a schoolteacher and owned cattle and agricultural operations in Glades County. She died in February 2005. The charitable bequest from her estate was received by the University of Florida Foundation in December 2007.

The Florida Wildflower Foundation

The Florida Wildflower Foundation's mission is to enrich lives with native wildflowers. It achieves this by using money donated through sales of the state wildflower license plate to advance wildflower education, research and planting.

To boost research, the foundation established "The Gary Henry Endowment for the Study of Florida Native Wildflowers" in honor of Gary Henry, a board member and former executive director who helped create the license tag. The endowment is administered through the environmental horticulture department.

"The endowment is an important tool in achieving long-term research support for our efforts," said Lisa Roberts, the foundation's executive director. "Research helps us better understand wildflowers and the roles they play in Florida's ecosystems. It also is extremely beneficial to the development of a native wildflower seed and plant industry in Florida."

McKathan Farms Donates Thoroughbreds

Luke and Jocelyn McKathan, owners of McKathan Farms of Reddick, Fla., donated a thoroughbred stallion and two thoroughbred mares valued at \$205,000 to the animal sciences department's Horse Research Center. The horses will be used in teaching programs and will aid research on nutritional and reproductive issues important to the equine industry. The Horse Research Center is a 320-acre complex located seven miles north of Ocala in Marion County.

Southern Precision Inc. Provides Equipment and Training

Southern Precision Inc., formerly Southern Laser Inc., of Lutz, Fla., donated advanced technology equipment including a spatial scanner, software package and accessories valued at more than \$102,000 to the School of Forest Resources and Conservation. The company also provided its training services, all of which will be used for teaching and research in SFRC's geomatics surveying program. Southern Precision serves construction, survey and agricultural markets throughout the Southeast.

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

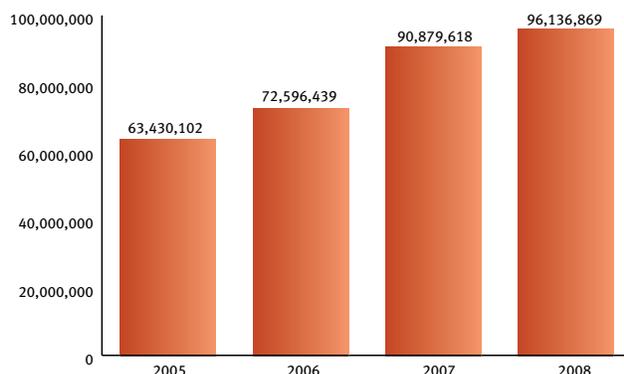
There are several ways to support IFAS:

- 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*)

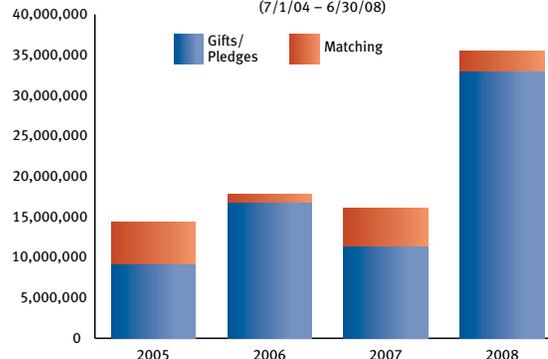
UF/IFAS Endowments

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 June 30, 2008, there are 256 UF/IFAS endowments valued at more than \$96 million established by individual College of Agricultural and Life Sciences alumni, businesses, associations and friends of UF/IFAS.

IFAS Endowment Values
(as of 06/30/2008)



IFAS FY Gift History
(7/1/04 – 6/30/08)



Total Gifts for Fiscal Year 2007-08

In fiscal year 2007-08, IFAS received a total of \$35,525,142 in gifts, pledges and state matching monies, making this a record year for support.

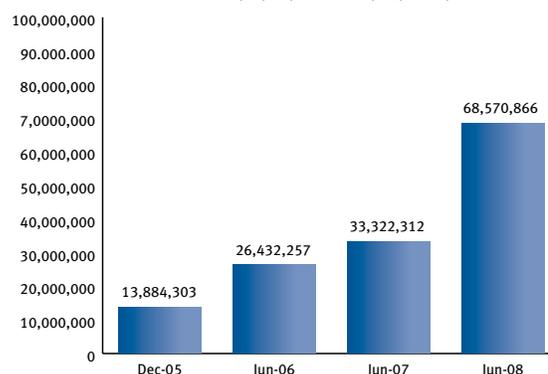
Florida Tomorrow Campaign

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 Florida Tomorrow Campaign Totals
(07/01/2005 - 06/30/2008)



FOR MORE INFORMATION, CONTACT THE IFAS DEVELOPMENT OFFICE

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EREC gets HISTORICAL MARKER

On April 8, 2008, IFAS officially dedicated a historical marker at the Everglades Research and Education Center in Belle Glade. It's the second installation by the University of Florida Historical Marker Program commemorating major accomplishments by the university.

Originally known as the Everglades Experiment Station, the facility's history reaches back to 1921 when the Florida Legislature authorized funding for its construction; it contributed greatly to the development of agriculture in South Florida.

Today, the Everglades REC employs about 60 faculty and staff who conduct research and extension programs focused on improved, sustainable crop production.



PHOTO BY THOMAS WRIGHT

Pictured at the ceremony are, from left, Christine Waddill, current EREC director; Rick Roth of Roth Farms, representing the EREC advisory board; Joe Orsenigo, representing EREC emeritus faculty; Joe Joyce, IFAS executive associate vice president; Mark Trowbridge of the UF Alumni Association Board of Directors, representing the UF Alumni Association; and George Wedgworth of the Sugar Cane Growers Cooperative of Florida, a guest speaker. 🍷

FOR MORE INFORMATION, CONTACT:

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