



# Florida Tomorrow

Institute of Food  
and Agricultural Sciences



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



## From the Vice President

The numbers tell us our state is in the midst of rapid change — underscoring the importance of the University of Florida’s *Florida Tomorrow* capital campaign. Fifty years ago, Florida’s population was about five million. Today there are more than 18 million people in the state. In the next 50 years, there will likely be twice as many residents to feed. The numbers also tell us that millions of acres will be converted to urban use, and development will surround more land now used for agriculture, forestry and conservation. This dramatic growth will have considerable impact on agriculture and the environment, including green space, wetlands, wildlife habitat, water and other natural resources.

While changes present many challenges, UF’s Institute of Food and Agricultural Sciences has a unique mission to provide research-based information to solve problems for agriculture, natural resources, land use and renewable energy. IFAS is committed to the future growth and viability of Florida’s \$98 billion agricultural and natural resources industries in the global economy through its research, academic and extension programs.

With 40 graduate and undergraduate majors, the College of Agricultural and Life Sciences is an international education leader. Graduates — well prepared to meet the demands of a complex job market — are in high demand by business, academia and government. Many become successful entrepreneurs. The college also has an exceptional record of placing graduates in professional and graduate schools.

State-of-the-art research is conducted by the Florida Agricultural Experiment Station in Gainesville as well as 13 research and education centers throughout the state. Our scientists are unraveling the mysteries of citrus greening and developing methods of controlling fire ants, termites and other pests. Faculty are also creating ways to convert trees and urban waste to ethanol, and developing other bio-energy sources.

IFAS Extension offers programs about sustainable landscape management, nutritional counseling for limited-resource families, technical seminars for agricultural producers and 4-H activities for youth. It serves clientele through offices in every county. Its Web site — [SolutionsForYourLife.com](http://SolutionsForYourLife.com) — provides information on health and nutrition, sustainable living, urban pest control and the environment.

Our faculty work in UF’s Genetics Institute, and IFAS is one of three main components in the Emerging Pathogens Institute. By fusing key disciplines, we are fighting invasive species, developing new plant varieties and studying plant diseases to preserve the health and economy of the state.

The *Florida Tomorrow* campaign is about realizing opportunities for the Gator Nation. With your generous support, we can continue to build on past accomplishments and achieve the “extra margin of excellence” to ensure UF’s future as a world-class university focused on solving problems in Florida. We welcome your partnership in this campaign.

Sincerely,

Jimmy G. Cheek

Senior Vice President, Agriculture and Natural Resources

# Florida Tomorrow

## ... and the Institute of Food and Agricultural Sciences

### The Promise of Tomorrow

The University of Florida holds the promise of the future: *Florida Tomorrow* — a place, a belief, a day. *Florida Tomorrow* is filled with possibilities. *Florida Tomorrow* is for dreamers and doers, for optimists and pragmatists, for scholars and entrepreneurs, all of whom are nurtured at Florida's flagship university: the University of Florida, the foundation of the Gator Nation.

What is *Florida Tomorrow*? Here at the Institute of Food and Agricultural Sciences, we believe it's an opportunity, one filled with promise and hope. It's that belief that feeds the university's capital campaign to raise more than \$1 billion.

The *Florida Tomorrow* campaign will shape the university, certainly. But its ripple effect will also touch the state of Florida, the nation and the entire world. *Florida Tomorrow* is pioneering research and spirited academic programs. It's a fertile environment for inquiry, teaching and learning. It's being at the forefront to address the challenges facing all of us, both today and tomorrow.

### Institute of Food and Agricultural Sciences *Florida Tomorrow Campaign Goals*

Faculty Support	\$42.5 million
Graduate Support	\$9 million
Undergraduate Student Support	\$8 million
Program Support and Research	\$29.5 million
Campus Enhancement	\$11 million
<b>TOTAL</b>	<b>\$100 million</b>







# Florida Tomorrow is a place ...

where economic and environmental sustainability is the key to a high quality of life for residents in one of the nation's fastest growing states.

## Sustainable Florida

At a time when managing Florida's breakneck urban growth is a major challenge, IFAS is helping ensure future economic and environmental sustainability through a variety of research and education programs designed for residents as well as the state's \$98 billion agriculture and natural resource industries.

In one of the most innovative programs designed to protect water resources and expand natural habitats, IFAS is working closely with other state and federal agencies and the World Wildlife Fund on the new Florida Ranchlands Environmental Services Project. The project compensates ranchers who protect their water resources, wetlands and wildlife habitats from development. It creates an incentive for land to remain in ranching instead of being used for urban development — land uses that would further aggravate water quality and other environmental problems.

To help restore the Florida Everglades, IFAS has developed best management practices that reduce the amount of fertilizer in water from farms and residential areas. IFAS has also developed similar recommendations for citrus and vegetable growers to reduce their need for fertilizers and pesticides. Well managed micro-irrigation systems, which may reduce water use by as much as 80 percent, are now being widely used by fruit, vegetable and ornamental growers throughout the state. IFAS research is helping dairy farmers manage animal waste and protect ground-water supplies.

IFAS scientists are also developing a substitute for methyl bromide, a widely used soil fumigant. The fumigant, which controls pest and disease problems in the soil, is essential for the production of many fruit, vegetable and ornamental crops in Florida. Without a cost-effective substitute, Florida producers will not be competitive with other production areas.

IFAS Extension education programs, such as Master Gardeners and Florida Yards and Neighborhoods, help residents become more energy efficient and reduce their use of fertilizer and irrigation water. Extension's Program for Resource Efficient Communities promotes the adoption of best design, construction and management practices in new residential community developments that measurably reduce energy and water consumption and environmental degradation.

Finding realistic and equitable solutions to a wide range of important growth management and sustainability issues — especially those that affect agriculture, green space, water resources and energy — is easier thanks to a partnership between the statewide IFAS Extension Service and UF's Levin College of Law. Extension works closely with the law college's Conservation Clinic to promote smart growth and sustainability solutions throughout the state. The clinic provides environmental and land use law services to Florida communities and non-government organizations and university programs such as the Extension Service.



# Florida Tomorrow is a day ...

when the use of renewable fuels from biomass and environmentally friendly technologies makes the state and nation less dependent on traditional energy sources.

## Bioenergy

A breakthrough technology developed by IFAS researchers will produce fuel ethanol from biomass at a new \$20 million research and demonstration facility in Florida. Site selection is under way.

Funded by the 2007 Florida Legislature, the facility is designed to commercialize the process of making ethanol from inedible plant biomass, such as sugarcane residues, rice hulls, municipal green waste, trees and wood waste, and other organic materials.

Florida could produce as much as 90 million tons of biomass each year, enough to make 9 billion gallons of ethanol — nearly double the 4.8 billion gallons now made mostly from corn nationwide. Converting biomass to fuel ethanol could replace half of the imported petroleum in the United States.

The bioconversion technology, selected by the U.S. Department of Commerce to become landmark patent No. 5,000,000, is also being commercialized by Verenium Corp., a UF licensee headquartered in Cambridge, Mass.

Additional support for bioenergy research comes from the U.S. Department of Energy, which recently awarded \$750,000 to IFAS for developing sorghum as an ethanol feedstock. Sorghum — a plant species related to corn and sugarcane — is an attractive biomass crop because of its high sugar content. IFAS genetic research is aimed at identifying and combining desirable plant traits so

that sorghum can be used for commercial bioenergy production.

In Florida's largest biotechnology program for commercially important species of grasses, IFAS researchers are working to enhance the process of converting grass biomass into low-cost ethanol. The research is currently focused on developing plant-based technologies for high-level expression of cell wall degrading enzymes — a promising technology for reducing the cost of producing ethanol from biomass.

By identifying all the major genes controlling specific wood properties and disease-resistance in loblolly pine trees, IFAS researchers are increasing their understanding of the highest-valued crop in Florida and eight other Southern states. Loblolly pines, which cover just 6 percent of forest land in the United States, account for 58 percent of the nation's total wood production. Wood is a renewable energy source, and increasing productivity through genetics will help reduce the nation's dependence on nonrenewable energy.

A wood-to-energy outreach program, coordinated by IFAS in cooperation with the USDA Forest Service and other agencies, is helping Gainesville and other Southern communities learn about the economic and environmental aspects of using wood as a fuel source for electricity.





UNIVERSITY OF  
**FLORIDA**  
HORTICULTURAL SCIENCES  
PROTECTED AGRICULTURE



# Florida Tomorrow is a belief ...

that the University of Florida is destined to become one of the nation's top-tier institutions — recognized internationally for outstanding research, academic and extension programs.

## Better Plants for Florida

Many varieties of the most important crops in Florida — ranging from fruits and vegetables to ornamental plants, turf grass, pine trees and agronomic crops such as peanuts and pasture grasses — came from IFAS plant genetics programs. While most of these were produced by traditional plant breeding methods, scientists are increasingly using biotechnology to enhance the process — accelerating the development of new varieties with higher yields, disease resistance and other improved genetic traits for the state's unique environment.

A top priority in the IFAS plant biotech program is managing citrus canker and citrus greening — bacterial diseases that threaten the state's \$9.3 billion citrus industry. Scientists are making progress in developing disease-resistant citrus varieties and other management strategies to combat these destructive pathogens.

The state's \$500 million tomato industry benefits greatly from varieties developed by IFAS. Major achievements in the tomato breeding program include improved fruit quality, superior flavor and resistance to troublesome diseases such as Fusarium wilt. A new variety has heat-tolerant fruit setting ability, allowing Florida tomato growers to expand their production during hot weather in the fall.

IFAS strawberry varieties, including many with improved earliness, flavor and disease-resistance, have been key to the growth of Florida's \$200 million strawberry industry. The state's \$30 million blueberry industry is largely based on IFAS research,

resulting in disease-resistant and heat-tolerant varieties that ripen earlier with bigger berries, better taste and higher yields. IFAS also has developed award-winning grape varieties for the state's expanding wine industry, and scientists are using genetic engineering to develop a grape variety with resistance to Pierce's disease — the most destructive bacterial disease affecting grapes.

To remain competitive in world markets, Florida's booming \$15 billion environmental horticulture industry depends on an almost continuous flow of new and improved landscape plants, flowers, foliage plants and turf grass from IFAS. New caladiums give consumers dazzling leaf-shape and color options. New lisianthus flowers now account for 75 percent of the crop grown in the state. A slow-growing St. Augustine grass will require less mowing and has improved resistance to chinch bugs over current varieties. Biotech research is boosting the fragrance and longevity of roses and other cut flowers.

IFAS leads the way in peanut research for Florida and the Southeast. The Florunner peanut variety was grown on more than 70 percent of all peanut acreage in the United States for more than two decades, and the SunOleic 95R was the world's first heart-healthy, high-oleic peanut. Three IFAS peanut varieties released in 2007 have higher yields, heart-healthy oils and strong resistance to tomato spotted wilt virus, the No. 1 peanut disease. IFAS researchers are also developing a non-allergenic peanut for those who are sensitive to peanut allergies.



## Our Vision of Tomorrow

While the University of Florida traces its roots to 1853 and the establishment of the state-funded East Florida Seminary, the Morrill Act of 1862 created the land-grant university system from the sale of public lands to establish “colleges of agricultural and mechanical arts” in each state. The establishment of Florida Agricultural College in 1884 at Lake City under the federal act marked the beginning of what is now UF’s Institute of Food and Agricultural Sciences.

Thanks to public and private support — and the accomplishments of outstanding faculty and students — IFAS is now recognized as one of the nation’s premier land-grant programs in agriculture and natural resources. IFAS is committed to excellence in teaching, research and extension.

**Teaching:** With 5,000 students in 40 degree programs, IFAS offers an education in agriculture and life sciences that’s second to none. Alumni are working in leadership positions throughout the United States and other nations of the world — making a

difference in everything from crop production in South Africa to profitability and sustainability of agriculture in Florida.

**Research:** A major focus of the IFAS research mission is to develop knowledge to improve Florida’s \$98 billion agriculture and natural resources industries. Ranked No. 1 by the National Science Foundation in agricultural R&D, IFAS sets a world-class standard for innovation and transfer of new technologies to the marketplace.

**Extension:** IFAS Extension provides Florida residents with life-long learning programs in cooperation with county governments, the U.S. Department of Agriculture and Florida A&M University. The wide array of extension educational programming in each county is offered in response to the local needs of residents, community organizations, regulatory agencies, schools and industry. In an overall measure of excellence, IFAS Extension programs have more support at the local level from county governments than any other extension program in the nation.

To achieve its unique statewide research and education mission, IFAS depends on funds from county, state and federal sources. However, at a time when many demands are being made on these resources, critical IFAS research and education programs may be compromised when revenues fall short, and other sources remain constant or decline.

The *Florida Tomorrow* capital campaign is designed to improve the availability of funding for IFAS programs and provide an “extra margin of excellence” for the future. While IFAS will always rely on state, county and federal support and student tuition as well as grants and contracts, private support makes the crucial difference between good public universities and truly outstanding programs. IFAS needs your support to enhance facilities for our programs and provide the quality education that will prepare students for their first job as well as their future role as state, national and international leaders.

Private support makes it possible to attract top quality faculty members who conduct cutting-edge research, development and extension education programs on critical issues such as food safety and human nutrition, renewable energy, water resources, and invasive pests and diseases. Private support will improve the ability of IFAS faculty to address other challenges ranging from population growth and urban sprawl to global competition, climate changes and labor shortages.

Private support will help the statewide IFAS Extension Service develop new methods of disseminating research-based educational information to producers, consumers and other clientele groups.

Your participation in the *Florida Tomorrow* campaign will also enhance other IFAS programs, including the creation of endowments to provide critical support for faculty as well as scholarships and fellowships for outstanding students.





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