



NATURAL RESOURCES 

HUMAN SYSTEMS 

AGRICULTURE 

UF/IFAS Florida Agricultural Experiment Station
**2015 UF/IFAS RESEARCH
DISCOVERIES**

Introduction

The research mission of the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) is to discover new knowledge, develop applications for that knowledge and devise new technologies in order to help Florida maintain productive agricultural and natural resource industries, to improve the lives of all Floridians and to protect Florida's natural environment.

The UF/IFAS research mission is carried out by some 500 faculty members with research appointments. These men and women, many of them internationally known experts, are stationed at the UF main campus in Gainesville as well as 12 Research and Education Centers and other sites around the state. All UF/IFAS research is conducted under the auspices of the Florida Agricultural Experiment Station (FAES) and the oversight of the FAES Director, who also serves as UF/IFAS Dean for Research.

As the research component of a land-grant university, FAES has unique responsibilities to conduct studies that address basic and crop-specific production issues. These responsibilities were established by the federal Hatch Act of 1887. In recent decades, as Florida became more populous and its economy diversified, FAES has become more involved in research addressing natural resources and human systems.

Priorities

Florida has the nation's third-largest population, about 19.9 million people, and the fourth-largest gross state product, about \$750 billion in 2013. Despite a dip in growth from 2005 through 2012, Florida has a steady increase in population and one of the nation's fastest growing states.

The agricultural and natural resources sector provides the state's second-largest economic engine, after tourism. In calendar year 2012, Florida's agricultural and natural resources industries were responsible for \$141.79 billion in revenues and 2.1 million jobs, the latter figure constituting 21 percent of all Florida jobs.

Many FAES programs support Florida's most economically significant commodities. According to recent data, these include greenhouse and nursery crops (cash receipts of \$1.8 billion in 2012), vegetables and melons (\$1.68 billion in 2012), oranges (\$1.4 billion in 2012), sugarcane (\$677 million in 2012), cattle and calves (\$668 million in 2013), milk (\$568 million in 2013), tomatoes (\$456 million in 2013) and strawberries (\$268 million in 2013).

Products and activities drawing upon the state's natural resources contribute greatly to the economy as well. For example, Florida's nearly 17.5 million acres of forestland

supported economic activities that generated \$16.37 billion in total output impacts in 2012. Florida aquaculture producers reported total cash receipts in 2012 of \$89 million, based upon a survey conducted for the Florida Department of Agriculture and Consumer Services, Division of Aquaculture. The estimated value of Florida's seafood harvest was over \$231 million in 2013. In 2014, wildlife viewing activities generated more than \$4.9 billion for Florida's economy.

The agricultural topics most actively researched by FAES include management practices, improved crop cultivars, pest and disease control, biotechnology, livestock reproduction and health, food safety, irrigation and nutrition management.

Natural-resources topics under study by FAES researchers include climate variability and climate change, water quality, water conservation, energy conservation, wildlife, invasive species, fisheries, forest science, ecotourism and ecology.

In human systems, studies by FAES personnel investigate global competitiveness, labor-saving technologies, marketing, consumer behavior, personal and family financial management, child and family development, youth development, agricultural education, housing, sustainable development, food safety, human nutrition, and other topics.

Funding

According to National Science Foundation figures, UF has ranked first or second among U.S. universities in total agricultural sciences research expenditures since fiscal year 2004. In fiscal year 2012 those expenditures totaled \$150.3 million, of which about \$33.3 million were federally funded.

Financial support for UF/IFAS research activities comes from a variety of sources, including federal grants, state appropriations, check-off programs sponsored by producers, contracts, revenues from the licensing of crop cultivars, and products and technologies developed by UF/IFAS personnel.

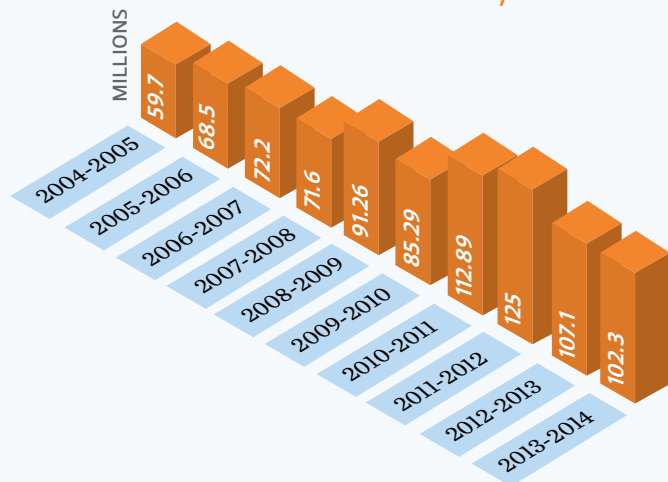
In fiscal year 2014, UF/IFAS researchers received a total of 1,256 sponsored research awards, totaling \$102.3 million.

To ensure the best possible odds of our faculty members obtaining competitive research grants, UF/IFAS maintains a grantsmanship program, designed to help graduate students and newer faculty members maximize their ability to construct and present compelling grant proposals.

Faculty

UF/IFAS employs close to 500 faculty members with research appointments, along with a similar number of research support employees such as lab managers and technicians.

UF/IFAS Sponsored Research Awards by Fiscal Year



Many UF/IFAS researchers are internationally recognized experts, who publish papers in leading peer-reviewed journals and often garner achievement awards for their work. Many of our faculty members are inducted into prestigious organizations such as the National Academy of Sciences and the American Association for the Advancement of Science.

Depending on their appointments, some UF/IFAS researchers devote 100 percent of their time to research, while most have additional responsibilities in teaching and Extension. Findings from UF/IFAS research are used as the basis for Extension programs taught statewide via publications, classroom teaching, distance education and field day events, and are the foundation of many of the classes taught by our faculty.

Facilities

UF/IFAS provides research support for faculty members working in 14 academic departments and two schools on the UF main campus, and off-campus facilities including 12 Research and Education centers, four Research and Demonstration sites, a research forest, a biological field station, an 850-acre dairy farm and a fuel ethanol pilot plant.

UF/IFAS researchers also play leading roles in campuswide research initiatives such as the Emerging Pathogens Institute, Florida Climate Institute, UF Genetics Institute and UF Water Institute, and UF/IFAS-based centers of excellence such as the Center for Agricultural Law, Center for Aquatic and Invasive Plants, Center for Food Distribution and Retailing, Center for Landscape Conservation & Ecology and the Center for Public Issues Education in Agriculture and Natural Resources.

History

FAES is one of the few current University of Florida programs that predates construction of the main campus in Gainesville. The experiment station was founded in 1887 at Florida Agricultural College in Lake City, the state's original land-grant institution.

After 18 years in Lake City, FAES relocated to Gainesville, where UF officially commenced operations in fall 1906. The first FAES director at the Gainesville location was Peter Rolfs and the first UF president, Andrew Sledd, was a former FAES director; the campus academic building Rolfs Hall and dormitory Sledd Hall are named for the two.

For much of the 20th century, FAES was headquartered in Newell Hall on the UF main campus, named for Wilmon Newell, FAES director from 1921 to 1943. In recent decades, FAES directors have included James Davidson (1986-1992), Richard Jones (1995-2004), Mark McLellan (2005-2011), John Hayes (2011-2014), and now Jackie Burns (2014-present).

The first off-campus FAES facility was the Citrus REC in Lake Alfred, established in 1917 to aid the state's citrus growers. It was followed by the Everglades REC in Belle Glade, North Florida REC at Quincy and the Tropical REC in Homestead, all of which were established in the 1920s. Additional facilities were opened in the decades that followed, increasing the FAES statewide presence.

The Future

Florida is always changing, and FAES is committed to constant refinement, improvement and re-evaluation of its programs, to ensure maximum benefit to our stakeholders. Here are some initiatives emerging to meet the state's needs:

As the U.S. economy becomes more globally connected, UF/IFAS researchers are taking steps to increase international collaboration and address challenges in other countries with conditions similar to Florida's. In addition to creating a global impact, this work is pivotal to understanding and addressing problems here in Florida.

To cope with increasing demand for Florida's water resources, UF/IFAS researchers are helping to develop Best Management Practices, including new methods of reducing irrigation water loss to evaporation.

To help producers cope with climate variability, UF/IFAS researchers with the Florida Climate Institute and the Southeast Climate Consortium are finding better methods of predicting weather patterns and developing new management strategies, and UF/IFAS plant breeders are striving to produce cultivars that are more drought- and heat-tolerant.



★ **Gainesville Campus**

Off-Campus Research and Education Centers (REC)

- 1 Citrus REC | LAKE ALFRED
- 2 Everglades REC | BELLE GLADE
- 3 Florida Medical Entomology Lab | VERO BEACH
- 4 Fort Lauderdale REC | FORT LAUDERDALE
- 5 Gulf Coast REC | WIMAUMA, PLANT CITY
- 6 Indian River REC | FORT PIERCE
- 7 Mid-Florida REC | APOPKA
- 8 North Florida REC | MARIANNA, QUINCY
- 9 Range Cattle REC | ONA
- 10 Southwest Florida REC | IMMOKALEE
- 11 Tropical REC | HOMESTEAD
- 12 West Florida REC | JAY, MILTON

Research and Demonstration Sites

- 13 Florida Partnership for Water, Agriculture and Community Sustainability | HASTINGS
- 14 Suwannee Valley Agricultural Extension Center (SVAEC) | LIVE OAK
- 15 Ordway-Swisher Biological Station (OSBS) | MELROSE
- 16 Plant Science Research and Education Unit (PSREU) | CITRA
- 17 Tropical Aquaculture Laboratory | RUSKIN