



UF/IFAS MID-FLORIDA RESEARCH AND EDUCATION CENTER

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UNIVERSITY *of* FLORIDA



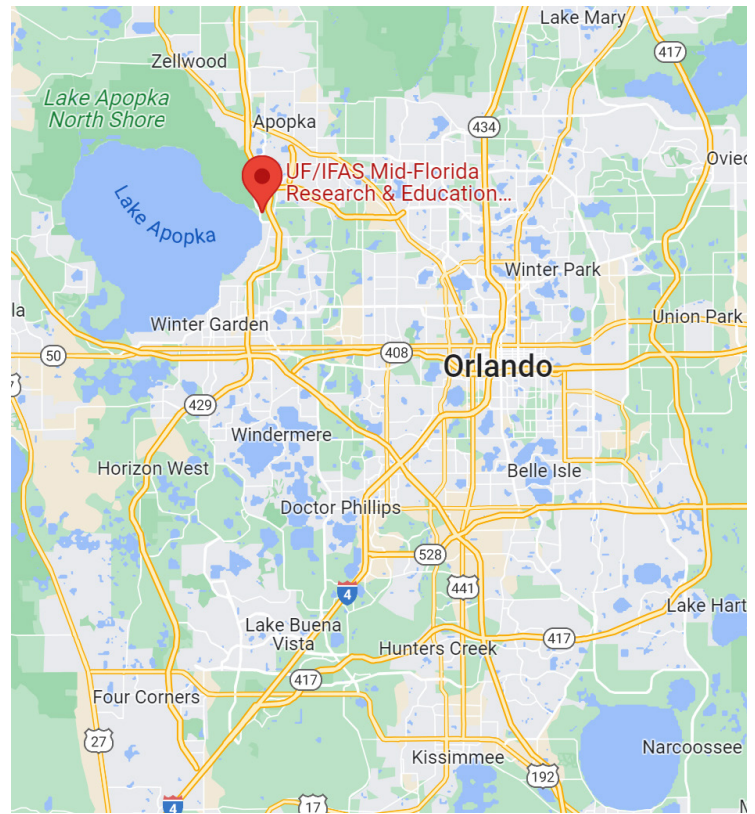
MID-FLORIDA RESEARCH
AND EDUCATION CENTER



From the heart of Central Florida, the Mid-Florida Research and Education Center (MREC) serves Florida's horticultural industry, urban food producers, homeowners, and beyond. At MREC, we pride ourselves on conducting high-impact research focused on improving individual's quality of life with plants.

With more than 60 full-time staff, including 12 faculty members, more than 130,000 square feet of grEenhouse space and 200,000 square feet of classrooms and laboratories, MREC is uniquely positioned to meet the ever-growing needs of Central Florida and its horticulture industry.

Located just northwest of downtown Orlando in Apopka, Florida provides MREC with unique opportunities for collaboration and conversation with stakeholders at the rural-urban continuum.



UF/IFAS INNOVATION LEADS TO SIGNIFICANT IMPACT...

\$155,600,000

total awarded research
funding in FY 2021

1,270,000

Extension consultations
conducted annually

#1 IN AWARDS

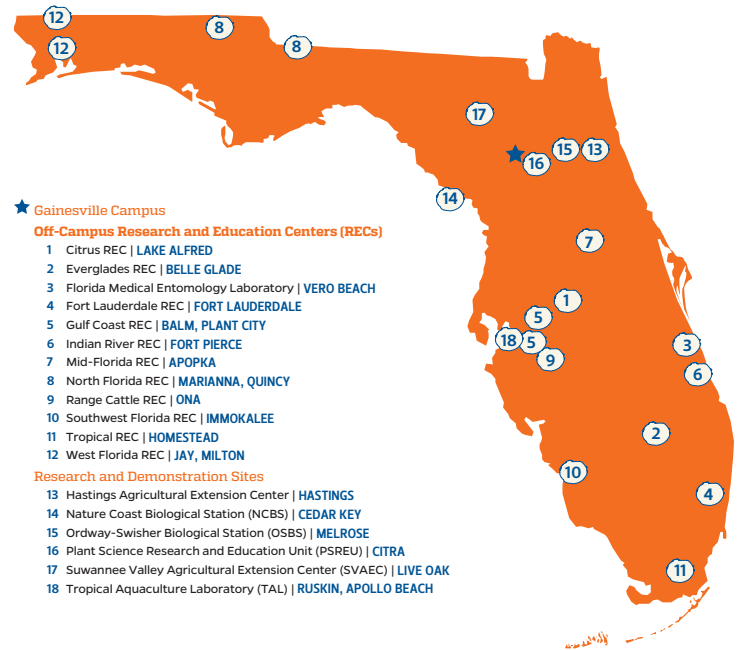
from the National Science
Foundation for Higher
Education Research &
Development in Agricultural
Sciences, Natural Resources
& Conservation

What are Research and Education Centers?

Standing as a bridge between UF/IFAS Research, Extension, Floridians and UF undergraduate and graduate students, Research and Education Centers, or RECs, serve as a connection between UF/IFAS and the state of Florida.

The primary mission of all UF/IFAS research and education centers (RECs) is to support multi-disciplinary research, teaching and Extension programs focused on commodities, natural resources and broader issues (e.g., water quality and environmental contamination) relevant to Florida. The faculty, state and director continuously interact with many public and private organizations, groups and leaders and continue to be the scientific and educational experts in local communities.

UF/IFAS Research Facilities



FLORIDA Horticulture and Nursery

Operations include those involved in growing crops of any kind under cover or growing nursery stock and flowers. "Under cover" includes the use of greenhouses, cold frames, cloth houses, and so on. These crops are sold at various stages of maturity and have both annual and perennial life cycles. Nursery stock includes short-rotation woody crops that have growth cycles of 10 years or fewer.

U.S. Ranking

1st



Landscaping palms
Broadleaf evergreens
Aquatic plants

2nd



Floriculture
Ornamental grasses
Deciduous shrubs and flowering trees
Peppers (under cover)

3rd



Mushrooms
Cucumbers (under cover)
Herbs, cut fresh (under cover)

Sources: 2017 Census of Agriculture, USDA National Agricultural Statistics Service. <https://www.nass.usda.gov/Publications/AgCensus/2017/index.php>. 2018 Census of Aquaculture, USDA National Agricultural Statistics Service. https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Aquaculture/index.php

Florida had over **108,000,000** square feet of "under cover" area, as well as **71,000** acres in the open, producing greenhouse, nursery and floriculture crops in 2019.

Category	Sales (millions)
Nursery stock	645
Foliage plants for indoor or patio use	488
Potted flowering plants for indoor or patio use	284
Annual bedding/garden plants	140
Cut cultivated greens	73



Source: 2019 Census of Horticultural Specialties, USDA National Agricultural Statistics Service. https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Census_of_Horticulture_Specialties/index.php?state=FLORIDA

Economic Contributions (2018)

\$2.06
billion in
sales revenues

19,072
jobs

When considering multiplier effects, Florida's greenhouse, nursery and floriculture producers support **\$3.079** billion in sales revenue and **24,814** jobs throughout the state's economy.

Source: Court, Christa D., and J. Ferreira. 2020. "Economic Contributions of Agriculture, Natural Resource and Food Industries in Florida in 2018." Economic Impact Analysis Program, UF/IFAS, Food and Resource Economics Department, Gainesville, FL. <https://fred.ifas.ufl.edu/economicimpactanalysis/publications/2018floridaagnatresfoodindustries/>



Central Florida, once known for its never-ending orange groves, is now the epicenter of Florida's rural-urban connection. MREC plays an important role in serving some of the state's largest grower associations and operations while also addressing the needs of more than 4.2 million residents.

MREC researchers have unique opportunities for collaboration as Central Florida is home to industries at the edge of innovation in agriculture, entertainment and hospitality.

- Florida is the 2nd largest producer of nursery greenhouse crops in the United States, with Apopka, Florida serving as the once-heart of the industry
- More than 4,200,000 residents call Central Florida home, with new Floridians joining the community every week
- State-of-the-art urban food production operations surround Central Florida, including The Villages Grown, a new 45-acre greenhouse facility, "The Grow," a 1,200 acre innovative farm-to-table community, and 4Roots Farm, a 40-acre community farm project
- Nearly 900 springs can be found throughout Florida, many in protected habitats used for recreation

Home to top-ranked primary and secondary schools and world-class attractions while being less than an hour drive from beaches on either coast, Central Florida is a wonderful place to raise a family, begin a new chapter or finally settle down.



Florida's springs are a popular overwinter destination for manatees and a place of recreation for outdoor enthusiasts.



The award-winning Winter Garden Farmers Market, located just down the street from MREC, features Central Florida agricultural producers



Cape Canaveral, just 30-minutes East of Orlando, is home to the Kennedy Space Center.

ACADEMIC PROGRAMS AND DEPARTMENTS

MREC's research focus is lifestyle horticulture: profitable yet environmentally responsible production and use of high value horticulture plants and plant products to satisfy demand driven by consumer tastes, preferences, and wellness. With more than **130,000** square feet of greenhouses and 60 staff, MREC researchers have an eye on the future of horticulture.



MREC blends expertise in all aspects of horticultural production and management, from whole plant physiology, breeding, and integrated pest management (insects, diseases, weeds), to consumer economics and water management, to focus on ways to best engage with all horticultural science stakeholders.

MREC research focuses on the protected production of high-value foliage, beverage crop, and citrus rootstock, and landscape nursery production, as well as plants used in urban plant systems such as landscapes and community agriculture.



MREC faculty have an eye on the future of plant breeding. Current research projects include:

- **Providing comprehensive solutions for producers of foliage and nursery plants**, with research into breeding, integrated pest management, optimal production systems, consumer preferences, water conservation, and weed control
- **Exploring alternative options for Florida specialty crop growers to meet changing consumer demands**, including beverage crop production, understanding optimal management for crop quality, pest control, economics, and breeding
- **Production of HLB resistant citrus rootstock** in phytosanitary greenhouses
- **Utilization of small Unmanned Aerial Systems** to understand horticultural water use at both a macro and micro level
- **Understanding the world of product marketing** using eye-tracking technology and consumer research to understand consumer preferences and behaviors when purchasing plant products
- **Expanding our understanding of plants using comparative genomic** approaches and cutting edge CRISPR biotechnology to meet modern production needs and challenges

MEET OUR FACULTY

DR. RICHARD C. BEESON

Associate Professor of
Landscape Ornamentals,
Dept. of Environmental
Horticulture



Beeson's research focuses primarily on the role water plays in plant development, focusing on how landscape plants and trees react to too much or too little water, as well as other environmental disturbances.

DR. ANA BOCSANCZY

Research Assistant Scientist,
Dept. of Plant Pathology



Bocsanczy's research aims to understand the molecular aspects of the plant pathogen *Ralstonia solanacearum*, the causal agent of the tropical plant disease bacterial wilt.

DR. JIANJUN CHEN

Professor of Plant Physiology,
Dept. of Environmental
Horticulture



Chen's research examines how genetic, environmental, and cultural factors influence the growth and development of specialty crops, working with horticulturalist to develop new management practices and cultivars.

DR. LIZ FELTER

Regional Specialized Agent,
Central District, Food Systems
and Ornamental Horticulture



Felter develops, plans, organizes, implements, and teaches educational programs that focus on food systems and ornamental plant production in Central Florida.

DR. HEQIANG HUO

Assistant Professor of
Environmental Horticulture, Dept.
of Environmental Horticulture



Huo's research focuses on the application of genetic editing, or CRISPR technologies, to improve or modify plant architecture, flowering, fruiting and growth habits.

DR. HAYK KHACHATRYAN

Associate Professor, Food and
Resource Economics, Dept. of
Food and Resource Economics



Khachatryan specializes in horticultural economics, behavioral and experimental economics, and urban environmental policy. He investigates factors that influence consumer demand for ornamental horticulture industry products and services.

MEET OUR FACULTY

DR. CHRIS MARBLE

Associate Professor of Ornamental and Landscape Weed Management, Dept. of Environmental Horticulture



Marble's research program aims to develop new methods of weed control using an integrated approach combining both chemical and non-chemical treatments.

DR. DAVID J. NORMAN

Associate Professor of Plant Pathology, Dept. of Plant Pathology



Norman's research projects are designed to examine new cultural, biological and chemical disease control methods. He also conducts research on pathogen detection, isolation and classification.

DR. LANCE S. OSBORNE

Professor of Entomology, Dept. of Entomology and Nematology



Osborne's research focuses on the management of insect and arthropod pests in greenhouse nursery production using biological, chemical and cultural controls.

DR. BRIAN PEARSON

Assistant Professor of Environmental Horticulture, Dept. of Environmental Horticulture



Pearson's research is two-fold, focusing on medicinal crop production and landscape and ornamental plant management, examining the role of plants in producing consumable, holistic products.

DR. XUAN WEI

Research Assistant Scientist, Dept. of Food and Resource Economics



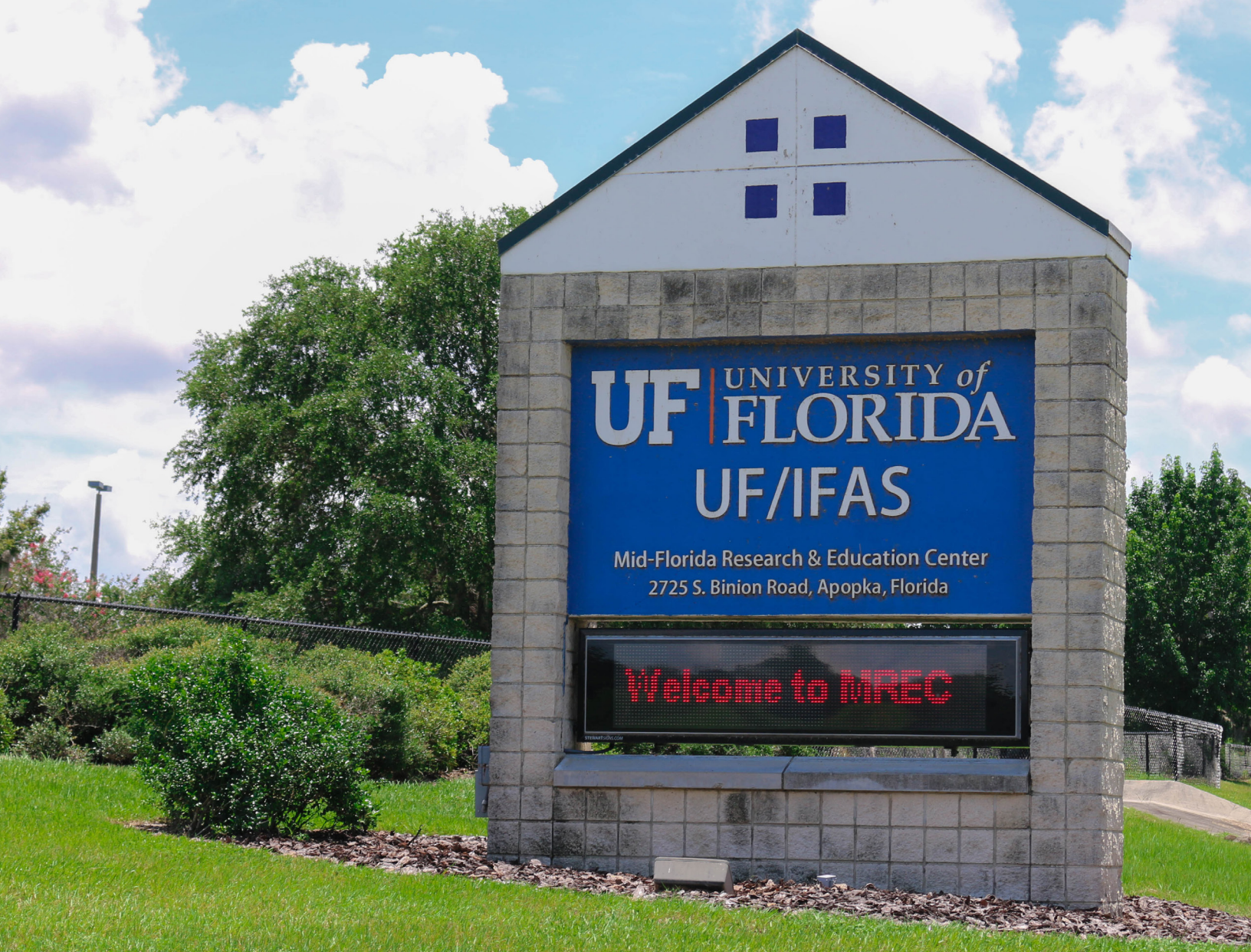
Wei's research program utilizes horticultural producer and consumer surveys, controlled experiments, and economic models to understand individual and company behavior surrounding the marketing and purchasing of plant products.

DR. YILIN ZHUANG

Regional Specialized Agent, Central District, Water Resources



Zhuang works with clientele across Central Florida to manage and promote water conservation programs as well as find solutions to challenges facing Florida's water supply.



**INTERESTED IN LEARNING MORE ABOUT CAREER
OPPORTUNITIES AT THE MID-FLORIDA RESEARCH AND
EDUCATION CENTER?**

**CONTACT US:
2725 S. BINION ROAD
APOPKA, FLORIDA 32703
407-884-2034**

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