

# 7 THINGS TO KNOW ABOUT ENERGY RESEARCH AT UCF



**WITH MORE THAN 247 ACTIVE ENERGY-RELATED PROJECTS**, UCF is contributing to innovations in renewable technologies, power generation, photovoltaic systems, alternative fuels, and high-power integration systems. In 2018 UCF launched an Energy Initiative to help direct multiple efforts to meet the rapidly increasing national demand for clean and economical energy. It is a wise investment. According to 2020 U.S. Energy & Employment Report, about 7 percent of all new jobs created nationwide in 2020 were in the energy sector.

## 1 Industry Partnerships

UCF has many partnerships with local and national companies that are leaders in energy production, technology, and management. Among them: Lockheed Martin, Siemens, GE/Alstom, Pratt & Whitney, Duke Energy, Mitsubishi Hitachi Power Systems, Texas Instruments and many more.



## 2 Specialty Centers

Innovation takes imagination, which is why UCF is home to several centers helping industry solve problems today.

- Resilient, Intelligent and Sustainable Energy Systems (RISES) Center with a focus on integrating distributed energy resources and making our electricity grid resilient and secure.
- Florida Solar Energy Center (FSEC) with a focus on solar energy, building efficiency, energy systems, electric vehicles and workforce training.
- Center for Advanced Turbines and Energy Research focused on turbomachinery and associated technologies for power generation, aviation and space propulsion.
- Multi-functional Integrated System Technology, co-founded with the National Science Foundation, to push the next generation of Smart electronics.
- Microgrid Control Lab powered by Florida Power & Light Company and GE Digital

## 3 National Impact

UCF is a trusted leader in energy research. Scientists and engineers are working on 247 projects funded by government and private industry looking at everything from energy generation, A.I. and its promise of making the energy systems smarter and sustainable. From the US Department of Energy and NASA to Siemens and Duke Energy, UCF has generated more than \$45 million in energy-related research awards in the past decade.

## 4 Starts at Home

UCF cares about energy and sustainability. Our campus has 28 LEED certified buildings covering 1.3 million square feet. Our goal is to become a climate neutral site by 2050.



## 5 The Consumer

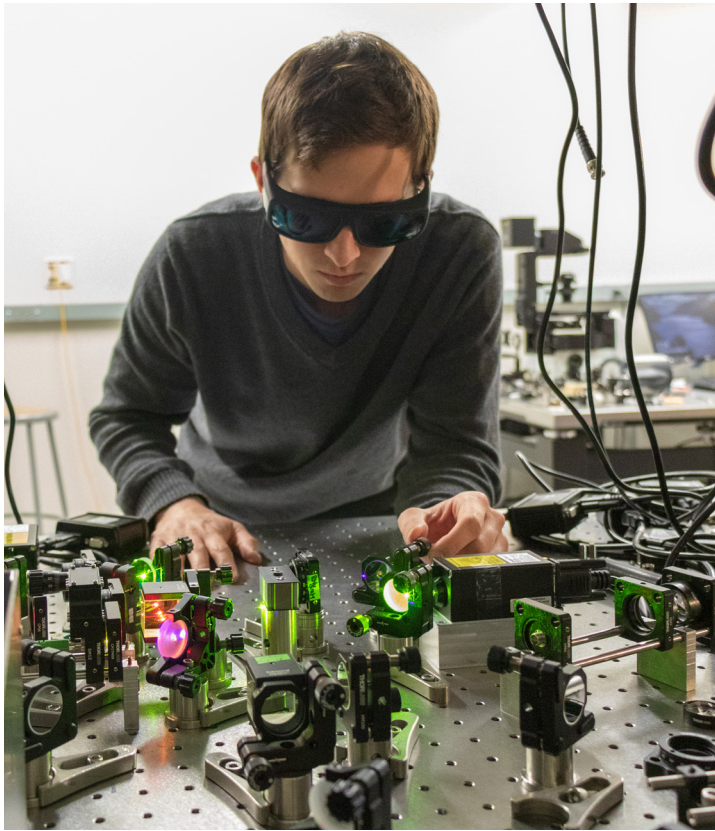
U.S. Department of Energy is working with UCF through its Building Technologies Office initiative to invest in projects to drive innovation and early-stage research and development that will improve the energy performance of building envelopes and heating, ventilation, and air conditioning (HVAC) systems in American homes. UCF is working to identify research-based best practices for the building and HVAC industries and is helping consumers understand what they can do to conserve energy and lower their electric bills.

## 6 Next Gen Energy Workforce

UCF is training the workforce of the future, which will work seamlessly with traditional and renewable energy sources. Our graduates will anticipate and solve problems in real time. Some will become entrepreneurs who develop the next generation of engines and energy technology that will do everything from powering missions to Mars to developing the next generation electrical grid. Our one-of-a-kind facilities such as Siemens Digital Grid Lab, FPL/GE Microgrid Control Lab, Siemens Data Analytics Lab, the Smart Grid Lab and Siemens Energy Center provide unique opportunities for students. Our graduates are work ready on day one.

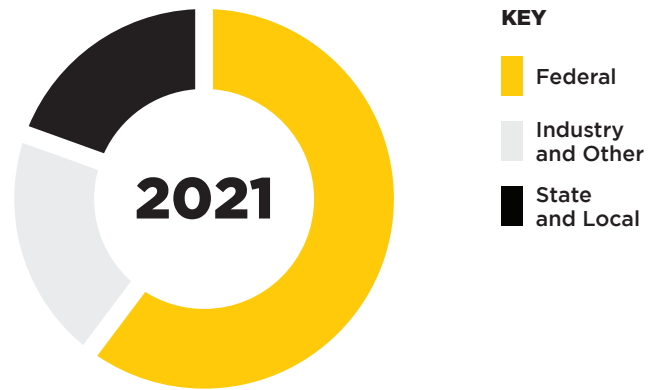
## 7 Power Clusters

UCF is home to two research clusters that bring interdisciplinary faculty together to solve critical energy challenges. The Resilient, Intelligent and Sustainable Energy Systems (RISES) Cluster focuses on renewable energy technology and making the nation's power grid more resilient and secure. The Renewable Energy and Chemical Transformation Cluster (REACT) focuses on developing technologies that enhance catalytic production, increase energy storage efficiency and reduce carbon emissions without slowing down economic growth. Together these clusters uniquely position UCF to be a leader in energy research and development.



## RESEARCH BY THE NUMBERS

### TYPES OF FUNDING



	2020	2021
Federal	110.82M	128.78M
Industry and Other	46.63M	42.33M
State and Local	46.69M	41.83M

Totals are in United States Dollars (USD)

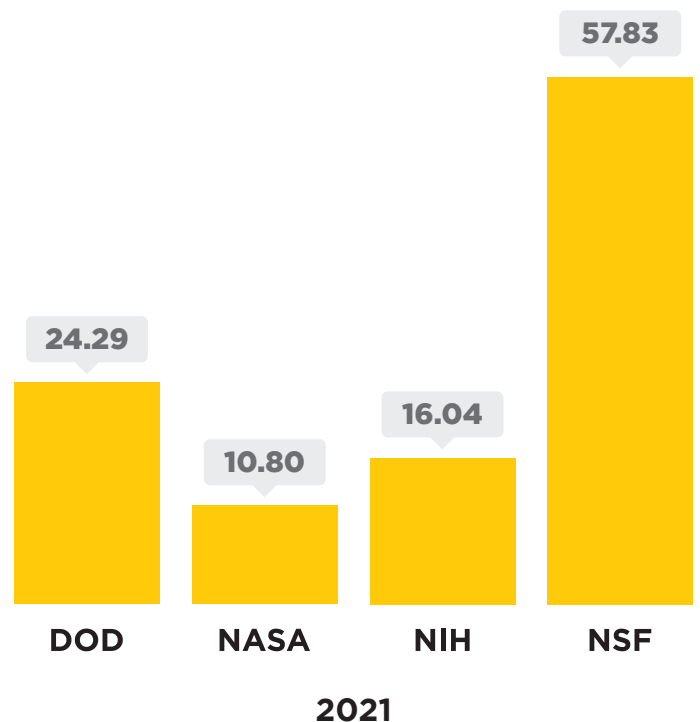
## UCF Office of Research and College of Graduate Studies

The University of Central Florida (UCF) is one of the largest universities in the nation with more than 71,000 students, including 10,000 graduate students pursuing degrees in more than 220 programs. UCF is classified as a very high research activity institution according to The Carnegie Foundation of Advancement of Teaching.

The Office of Research fosters the creation of intellectual capital that can solve today's pressing problems, improve the quality of life, and provide an engine for economic growth. The Office serves as the official liaison among researchers and government and commercial sectors. UCF's strength in innovation and research propelled the university to \$212.9 million in funding in FY 2021. We are known for many things, but are internationally recognized for our College of Optics and Photonics and our Institute of Simulation and Training.

UCF is home to 13 colleges developing the next generation of scientists, engineers and technology leaders with critical thinking skills and hands-on research skills to tackle any problem.

### KEY FUNDING SOURCES



Totals are in United States Dollars (USD)

Department of Defense
National Aeronautics and Space Administration
National Institutes of Health
National Science Foundation

### PRIDE POINTS

UCF is among the **TOP 100** in the World for Patents.

UCF is among the **TOP 50** Public Research Universities in the Nation.

27 UCF Graduate Programs Ranked among the **TOP 100** in the Nation.

UCF Ranked among the **BEST IN NATION** for Research Leading to New Tech and Spin Offs.

**20 UCF FACULTY** are National Academy of Inventor Fellows.

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