

# 2020 ANNUAL REPORT

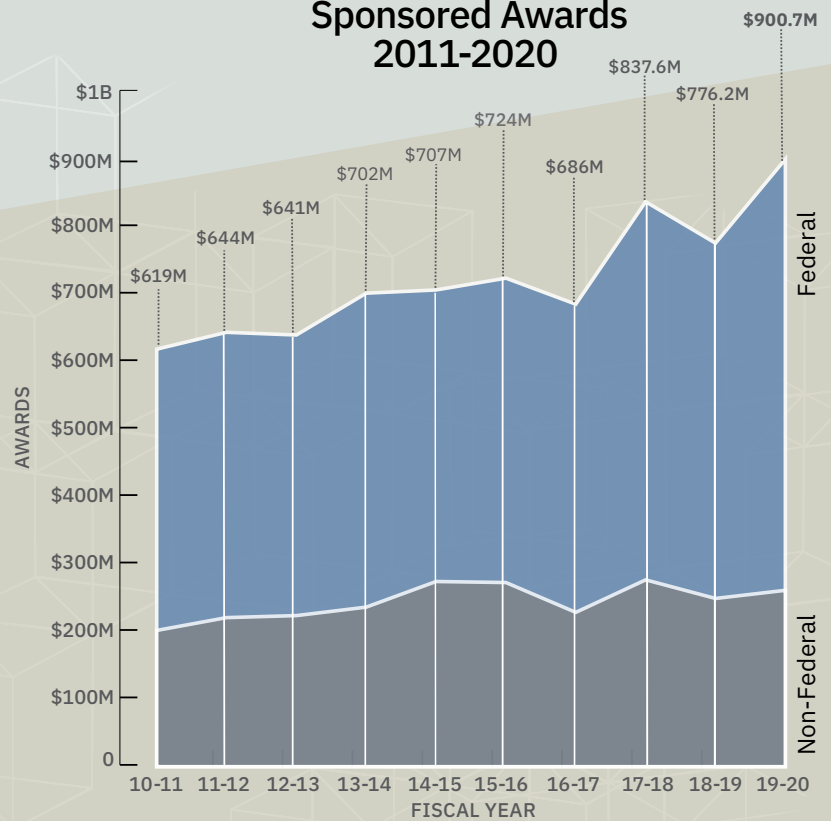
**UF** | Research  
UNIVERSITY *of* FLORIDA

# SUSTAINING SCIENCE

2020

Total Awards  
**\$900.7M**

## Sponsored Awards 2011-2020



**\$112M**  
FOUNDATIONS

**\$47.5M**  
INDUSTRY

**\$43M**  
STATE/LOCAL

**\$59M**  
OTHER

**\$639.2M**  
FEDERAL

HHS	\$321.8M
USDA	\$66.6M
NSF	\$63.0M
DOD	\$61.3M
Education	\$39.9M
Energy	\$17.8M
VA	\$16.0M
DOT	\$12.1M
NASA	\$11.5M
USAID	\$10.3M
Commerce	\$6.4M
Interior	\$4.4M
EPA	\$3.4M
Other	\$3.1M
Justice	\$1.6M

\*amounts rounded

2020 Awards by **SPONSOR**

# R&D Expenditures at Public Institutions

(SOURCE: NATIONAL SCIENCE FOUNDATION, FY 2019)

1	University of Michigan	\$1.68B
2	University of California, San Francisco	\$1.60B
3	University of Washington	\$1.43B
4	University of California, San Diego	\$1.35B
5	University of California, Los Angeles	\$1.31B
6	University of Wisconsin, Madison	\$1.30B
7	University of North Carolina, Chapel Hill	\$1.15B
8	University of Maryland	\$1.10B
9	University of Pittsburgh	\$1.08B
10	University of Minnesota	\$1.01B
11	M. D. Anderson Cancer Center	\$969.50M
12	Georgia Institute of Technology	\$960.20M
13	Texas A&M University	\$952.20M
14	Pennsylvania State University	\$949.70M
15	Ohio State University	\$929.30M
16	<b>University of Florida</b>	<b>\$928.60M</b>
17	University of California, Davis	\$804.30M
18	University of California, Berkeley	\$802.90M
19	University of Arizona	\$734.30M
20	Michigan State University	\$725.70M

# UF INNOVATE

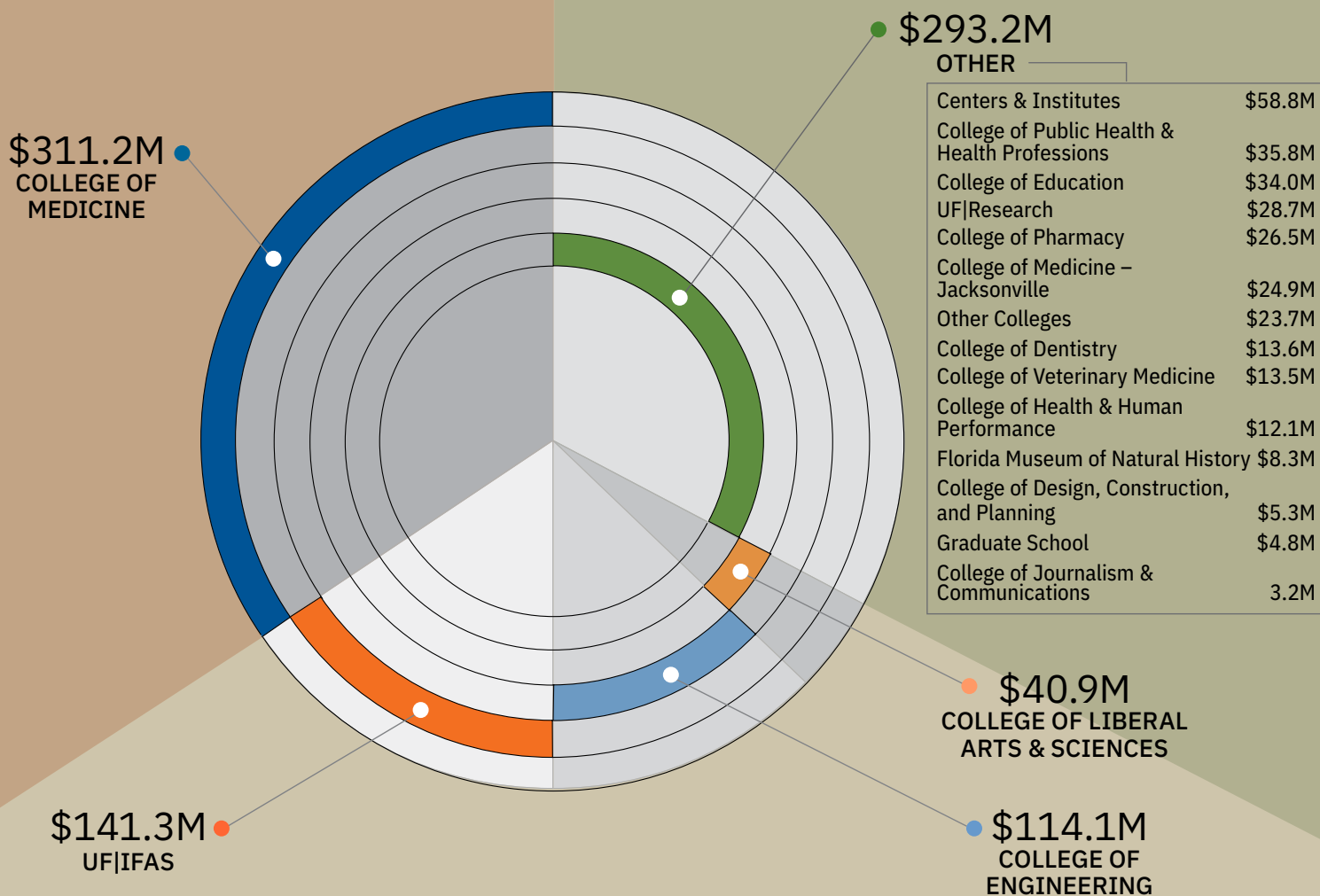
Building Business On Innovation

2020

393  
DISCLOSURES

16  
STARTUPS

264  
LICENSES/OPTIONS



2020 Awards by **ACADEMIC UNIT**



David Norton, Vice President for Research

Like so much of the world, the University of Florida suffered significant disruptions when the COVID-19 pandemic reached our shores in March 2020, but despite many activities being paused for months, our faculty still earned a record \$900.7 million in research funding in fiscal year 2020.

This milestone is testament to the commitment and resilience of our faculty. Even with the significant challenges presented by the pandemic, UF researchers did whatever they could to keep science moving forward. Some pivoted to address the disease itself and the public health crisis it created. Others stuck to their ongoing research — they brought samples home, they wrote new software, they published papers, and they submitted nearly 6,000 proposals in fields as diverse as agriculture and medicine, engineering and English.

Almost as soon as the shutdown began, we started thinking about how to reopen. We established a task force of research leaders from throughout the university who developed a phased reentry strategy that balanced the need to resume research activities, the type of research environment and the density of research personnel, while keeping the health and safety of faculty and staff paramount. We began reopening in mid May and within a month had authorized more than 7,000 people to return. By year's end almost all research facilities were operating under a new normal.

Much has changed in the world and at our university, but COVID-19 did not change the need for solutions to medical, environmental, social and other challenges that are immune to the demands of the coronavirus. Faculty returned to their research labs because they know that science delayed is opportunity lost for people who could benefit from their discoveries, whether it's a new medical treatment, a new agricultural commodity or a new engineering solution.



At UF Health, there were significant advances in pediatric brain tumor research, including joining the Pediatric Brain

Tumor Consortium, which is funded by the National Cancer Institute and combines the expertise of competitively selected institutions to develop and conduct novel clinical trials for the treatment of pediatric brain tumors. UF Health also received a \$2.5 million grant from the pediatric cancer foundation CureSearch for Children's Cancer to undertake a first-in-human clinical trial to test a novel form of immunotherapy to treat the most aggressive forms of malignant brain tumors.

"Approval by the FDA for this first-in-human clinical trial is a huge accomplishment in the translational research milestones for our brain tumor center," said Duane Mitchell, co-director of the Preston A. Wells, Jr. Center for Brain Tumor Therapy.





UF received several awards near the end of the year through the National Science Foundation's RAPID program to address

COVID-19. Researchers associated with UF's Emerging Pathogens Institute received a \$104,000 RAPID grant to study ways to use nanotechnology to kill virus particles on personal protective equipment. A team of electrical and computer engineering researchers was awarded a \$185,000 RAPID grant to support development of a low-cost smart multi-patient ventilator system. And the College of Medicine's Department of Pediatrics received nearly \$1 million from the Federal Communications Commission to expand telemedicine services and equipment among underserved and vulnerable populations during the pandemic.

Biostatistics Assistant Professor Natalie Dean became a leading voice in explaining everything from infection rates to vaccine efficacy.



\$50 million in gifts from UF alumnus Chris Malachowsky and NVIDIA, the computer graphics company he co-founded, are the cornerstone of UF's major artificial intelligence initiative, which will include the most powerful AI computer at any university in the nation. UF had many other AI-related projects funded in 2020, including nearly \$800,000 to use AI to reduce the amount of weed killers needed to maintain fields and \$302,000 to study radio waves in the ionosphere.



# Research



UF/IFAS scientists continued their assault on citrus greening. Researchers sequenced the genome from trifoliate orange,

in collaboration with scientists from the University of California at Berkeley, the U.S. Department of Energy's Joint Genome Institute and UF's Interdisciplinary Center for Biotechnology Research. The new genome will help in the breeding of new citrus trees that will survive under today's challenging conditions, including invasive pests, viruses and changing climates. The research provides a powerful new tool to control the deadly consequences of the greening disease, which has severely damaged the state's multibillion dollar-a-year citrus industry.

"Most people — even citrus growers — rarely see trifoliate orange. This is because they usually are the rootstock part of the tree, mostly underground," said Fred Gmitter, a UF/IFAS professor of citrus breeding genetics. "Releasing the first trifoliate orange genome can be valuable for our citrus gene-editing efforts."



UF is partnering on a \$26 million National Science Foundation grant to develop new technologies and systems that will help

farmers produce more food with less water and energy. UF will be represented by at least a dozen faculty members and graduate students from the Herbert Wertheim College of Engineering, the Institute of Food and Agricultural Sciences, and the College of Education.

Diane Rowland, professor of plant physiology and chair of the Agronomy Department, will help lead the Agricultural Sensor Systems team.

"For this research project to work, plant scientists had to team up with engineers. Plant scientists can explain what information we need from the field and what it means. Guided by this understanding, engineers can design systems and AI that can transmit, gather and interpret that information quickly and at a large scale," she said.





The Herbert Wertheim College of Engineering continued to lead in the cybersecurity

field. The Defense Advanced Research Projects Agency (DARPA) awarded \$7.8 million to the Florida Institute for Cybersecurity Research, led by Professor Mark Tehranipoor, to allow security features to be inexpensively incorporated into computer chips.

“The objective of the program is to develop a hardware and software ecosystem that will allow security to be inexpensively incorporated into chip designs with minimal effort and expertise, ultimately making scalable on-chip security ubiquitous,” said Tehranipoor.



A premier syndicate of life sciences investors announced \$107 million in

venture capital financing to create AavantiBio, a gene therapy company focused on transforming the lives of patients with rare genetic diseases. This is one of the largest venture capital investments ever in a Florida company.

AavantiBio is co-founded by UF gene therapy researchers Barry Byrne and Manuela Corti. AavantiBio's lead program is in Friedreich's Ataxia, a rare inherited genetic disease that causes cardiac and central nervous system dysfunction.



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