



November 16, 2021 Academic Excellence and Student Success Committee

Board of Trustees

UCF Main Campus, Neptune Community Multipurpose Room 195 | Virtual Option

Nov 16, 2021 10:00 AM - 11:30 AM EST

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Board of Trustees
 Academic Excellence and Student Success Committee
November 16, 2021 - 10:00 – 11:30 a.m. – or upon adjournment of previous committee meeting
 UCF Main Campus - Neptune Community Multipurpose Room 195

Livestream: <https://ucf.zoom.us/j/92141225777?pwd=MzFpNkF3VjZ5bGtNQStUcy9xZE5BUT09>
 Webinar ID: 921 4122 5777

Conference call number: Join by Phone -Phone Number: 1 929 205 6099
 Meeting ID: 921 4122 5777

AGENDA

- | | | |
|----------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Call to Order and Welcome | | Beverly Seay, <i>Chair, Academic Excellence and Student Success Committee</i> |
| 2. Roll Call | | Gwen Ransom, <i>Executive Assistant</i> |
| 3. Minutes of the September 22, 2021 meeting | | Chair Seay |
| 4. Reports | | Chair Seay |
| | DISC – 1 | Provost Update
Michael D. Johnson, <i>Interim Provost and Vice President for Academic Affairs</i> |
| 5. Action | | Chair Seay |
| | AESC – 1 | New Degree Program -
Ph.D. in Biomedical Engineering
Timothy D. Letzring, <i>Vice Provost for Academic Affairs</i> |
| | AESC – 2 | Student Career Planning and Development -
UCF Response to HB-1261
Adrienne Frame, <i>Interim Vice President for Student Development and Enrollment Services</i> |
| | AESC – 3 | Tenure with Hire
Michael D. Johnson |
| | AESC – 4 | Conferral of Degrees
Michael D. Johnson |
| 6. Discussion | | Chair Seay |
| | DISC – 2 | The Role of Research in a Metropolitan University
Elizabeth A. Klonoff, Ph.D., ABPP
<i>Vice President for Research and Dean of the College of Graduate Studies</i> |



DISC – 3

Accountability Plan Review
Paige Borden, *Associate Provost and
Chief Analytics Officer,
Analytics and Integrated Planning*

7. New Business

Chair Seay

8. Adjournment

Chair Seay



Board of Trustees

**Board of Trustees
Academic Excellence and Student Success Committee
September 22, 2021
MINUTES**

CALL TO ORDER

Trustee Beverly Seay, chair of the Academic Excellence and Student Success Committee, called the meeting to order at 10:02 a.m.

Committee members present were Vice-Chair Joseph Conte and Trustees Tiffany Altizer, Meg Hall, Joseph Harrington, and Caryl McAlpin. Board of Trustees' Chair Alex Martins and Trustees Jeff Condello and John Miklos also attended.

MEETING MINUTES

The Academic Excellence and Student Success Committee unanimously approved the meeting minutes of June 16, 2021.

REPORTS

Provost Update (DISC-1)

In his provost update, Interim Provost Michael Johnson provided details on these topics:

Recognitions

Interim Provost Johnson welcomed the UCF Computer Programming Team as special guests. The team has reached the world finals of the International Collegiate Programming Contest each year for the past decade.

Johnson noted such success requires excellent practice and preparation and strong faculty support. He praised the contributions of faculty adviser Ali Orooji, who has advised the team for three decades, and coach Glenn Martin, who helped the team that reached the world finals. He also recognized committee Chair Seay for being a champion supporter of the group. The world final team's three student members – Sharon Barak, Seba Villalobos, and Daniel West – discussed the benefits of competing and how the experience has enhanced their personal, academic, and professional growth. Johnson wished the team much success at the world finals.

Fall Academics and COVID-19

Johnson said the university had returned mainly to pre-pandemic class schedules. He said half of UCF's students are experiencing an in-person campus environment for the first time.

Although COVID-19 cases spiked in Florida and Central Florida as the semester began, UCF has avoided runaway infections. Student cases are declining, and faculty and staff numbers remain low.

UCF maintains safety measures that include tracing, extra cleaning, isolating, quarantining, and distributing masks. The university also launched the Armor Up Campaign to promote vaccinations among students and provide incentives for those vaccinated by October 15. The incentives feature three drawings for tech bundles, textbooks and other supplies, and tuition and fee waivers. A random sampling of a selected cohort of students in the first week of fall classes showed over 72 percent with one shot and two-thirds of students as fully vaccinated. The Student Health Center has administered more than 1,000 vaccinations this semester.

Enrollment

Johnson called on Dr. Gordon Chavis, associate vice president of Enrollment Services, to discuss enrollment. Chavis said a strong freshman class included a record GPA of 4.22, a record 107 National Merit Scholars, an average SAT two-score of 1323, and an ACT score of 28.6. Forty-six percent of UCF's students are of color. The First Time in College (FTIC) 2021-22 class retention rate is approximately 92 percent. Preliminary, degree-

seeking fall enrollment is 70,106. Chavis said UCF realized a goal established in 2018 to reduce the annual enrollment growth rate from 3 percent to 1 percent over three years.

UCF HEERF Funds

Johnson said UCF received \$314.4 million in three tranches from the federal Higher Education Emergency Relief Fund (HEERF), of which \$77 million remains to be allocated and will be spent by May 2022. Uses of the money include lost revenue, technology, HVAC repairs, testing, and extra cleaning. UCF received \$130 million in emergency student aid for students, awarding so far 77,000 grants totaling nearly \$102 million to help cover their debt, tuition, fees, housing, and more. The remaining \$28 million for students will be disbursed this fall.

President's 2021-22 Strategic Investment Program

Johnson provided details on the President's Strategic Investment Program. Made possible by reimagining a portion of funds from the central administration and colleges, the program aims to advance UCF's academic excellence, student success, and impact through investment in faculty and staff projects in three fund categories:

- *Academic Excellence*: Designed for big ideas of substantial impact.
- *Student Success*: Advance student retention, progression, graduation, and career success.
- *JumpStart*: One-time projects or purchases under \$500,000 that will amplify our impact.

He said 17 awards are pending for the JumpStart program. Submission deadlines have passed for the other two funds, with proposal reviews underway.

U.S. News & World Report Rankings

Johnson called on Dr. Paige Borden, associate provost and chief analytics officer, to present the latest university rankings featuring those from *U.S. News and World Report*.

She said UCF had moved up ten spots to No. 67 among the magazine's best public national universities and 12 spots to No. 148 among best national universities overall. UCF is only one of three institutions to show public ranking improvements five years in a row. Among the Most Innovative university rankings, UCF is first in Florida, eighth across public institutions, and 15th overall. Also, Borden said UCF ranked an impressive 25th among consolidated student outcomes, which includes categories such as graduation rate performance, social mobility, graduation and retention, and graduate indebtedness.

Class of 2020 Make-up Commencement Day

As a part of UCF's 50th Homecoming Week, Johnson said a make-up commencement ceremony for 2020 graduates is scheduled for November 5, 2021. Approximately 1,750 graduates have said they will attend.

In closing, Interim Provost Johnson expressed gratitude to faculty and others who have seen the university through this historic and challenging pandemic period.

Student Government President Report (DISC-2)

Trustee Meg Hall, Student Government president, reported on Student Government's executive branch and plans for the 2021-2022 academic year. She highlighted priorities for academics and government, athletics, diversity and inclusion, safety and transportation, sustainability and innovation, and communications and outreach.

Faculty Senate Chair Report (DISC-3)

Trustee Joseph Harrington, Faculty Senate chair, summarized the Senate's mission, structure, operations, and plans for the 2021-2022 academic year. Harrington outlined policy priorities, oversight and shared governance, Senate structure, and funding. The priorities complement the president's strategic planning initiative and objectives of the Board of Trustees' Ad-Hoc Strategic Planning Committee.

ACTION

2021 SUS Textbook and Instructional Materials Affordability Report (AESC-1)

For committee approval, Dr. Timothy Letzring, senior associate provost for Academic Affairs, delivered the 2021 State University System Textbook and Instructional Material Affordability Report. An amendment to Florida House Bill 7019, Section 1004.085, requires each university to submit this report annually by September 30 to the chancellor of the State University System. The annual report addresses:

- No-cost textbooks and instructional material
- Low-cost materials
- Specific university policies for posting textbooks and instructional material

Trustee McAlpin motioned to approve, and Trustee Harrington seconded. The committee unanimously approved the 2021 SUS Textbook and Instructional Materials Affordability Report.

DISCUSSION

Academic Programs Update (DISC-4)

Letzring presented the Academic Programs Update with details and highlights on programs approved between 2017 and 2019 including three bachelor's degrees, two master's degrees, and a doctoral program.

Accountability Plan Review (DISC-5)

Borden reported on UCF's performance on metrics in the plan, the strategic impact of the metrics, and how UCF compared to other SUS institutions. She said upcoming Academic Excellence and Student Success committee meetings would explore different segments of the plan.

INFORMATION

FY22 Workplan and Charter Review (INFO-1)

This information item allows the committee members to review and offer input on the Academic Excellence and Student Success committee's work plan for the 2022 fiscal year. It outlines the committee's anticipated reports, actions, discussions, and informational items for each meeting.

Also, the committee's inaugural charter was submitted with this information item to reference the committee's purpose, authority, roles, and responsibilities under the new committee structure.

Legislation Implementation Updates (INFO-2)

This second information item updates the implementation of significant academic legislation passed in the 2021 state legislative session that became effective July 1, 2021. The committee received details on several House bills and other educational policy changes affecting the Florida SUS.

NEW BUSINESS

N/A

ADJOURNMENT

Chair Seay adjourned the Academic Excellence and Student Success Committee meeting of September 22, 2021, at 11:26 a.m.

Reviewed by: _____ Date _____
 Beverly Seay
 Chair, Academic Excellence and Student Success Committee

Submitted by: _____ Date _____
 Mike Kilbride
 Associate Corporate Secretary



**Board of Trustees
Academic Excellence and Student Success Committee
November 16, 2021**

DISC-1: Provost Update

Information

Discussion

Action

Meeting Date for Upcoming Action: N/A

Purpose and Issues to be Considered:

Committee members will receive a fall update from Interim Provost Michael Johnson to include these topics regarding the academic enterprise:

- Fall and Spring Operations/COVID-19
- Student Success
- Strategic Planning
- President’s 2021-22 Strategic Investment Program Awards
- Key Searches
- Accolades

Background Information:

UCF’s return to a typical fall academic calendar began amidst a spike in COVID-19 cases in Central Florida and the Sunshine State. However, reported student cases began to fall on campus in September, and reports of faculty and staff cases remain low. As October began, UCF projected 75 percent of students as having received at least one vaccine shot and 71 percent being fully vaccinated.

The provost will update the committee on the latest COVID trends and vaccination results along with the how faculty and students are faring in navigating the current pandemic environment. He will also address academic programming plans for spring.

Student Success

The provost will update on the latest data on student success, including graduation and retention rates. Also, he will briefly address where UCF landed on enrollment this fall and projections for spring.

Strategic Planning

The first meeting of the Board of Trustees Ad Hoc Strategic Planning Committee formally kicked off UCF’s next strategic planning initiative on September 23, and the process to develop UCF’s next strategic plan is underway. The provost will briefly address goals for fall and how stakeholder input is being collected from the students, community and faculty.

The President’s 2021-22 Strategic Investment Program

The provost’s report will summarize awards made in the [President’s Strategic Investment Program](#). Launched in July, the initiative will award up to \$50 million this fiscal year to projects proposed by faculty and staff that can elevate UCF’s academic excellence, student success, and impact. The funds resulted from a strategic reallocation of \$10 million in central recurring funds and \$20 million in central nonrecurring funds, plus matches from colleges and units.

Following a review process, President Cartwright and Interim Provost Johnson are selecting projects that are divided into three priority fund categories: Jump Start, Academic Excellence, and Student Success. [The provost's website](#) details each fund and its specific goals, submission requirements, guidelines and time frames for using the money.

Seventeen projects from six colleges and the Office of Research have been awarded Jump Start money with the winners announced [in UCF Today](#). Under review are 58 proposals for Academic Excellence funds and another 60 submissions for Academic Success funds.

Key Searches

Following national searches, UCF hired two deans who are stepping into their roles. UCF's new dean of the College of Sciences, [Dr. Maggie Tomova](#) from the University of Iowa, began on October 18. [Mr. Beau Case](#) from the University of Toledo began as the founding dean of libraries on November 12.

A nationwide search is underway for to replace the dean of the College of Community Innovation and Education, Dr. Pamela "Sissi" Carroll, who retires in January. Also, an internal search is underway for the [associate provost of UCF Downtown](#). A national search is also in progress for [the next director](#) of the Karen L. Smith Faculty Center for Teaching and Learning.

Accolades

The provost will report on significant achievements, awards and honors by faculty and students since the committee's last meeting.

Recommended Action:

N/A

Alternatives to Decision:

N/A

Fiscal Impact and Source of Funding:

N/A

Authority for Board of Trustees Action:

N/A

Contract Reviewed/Approved by General Counsel **N/A**

Committee Chair or Chair of the Board has approved adding this item to the agenda

Submitted by:

Michael D. Johnson, Interim Provost and Vice President for Academic Affairs

Supporting Documentation:

N/A

Facilitator:

Michael D. Johnson



**Board of Trustees
Academic Excellence and Student Success Committee
November 16, 2021**

AESC-1: New Degree Program Proposal – Ph.D. in Biomedical Engineering

- Information Discussion Action

Meeting Date for Upcoming Action: November 18, 2021

Purpose and Issues to be Considered:

The College of Engineering and Computer Science (CECS) and Department of Mechanical and Aerospace Engineering (MAE) seek approval of a new Ph.D. program in Biomedical Engineering (BME). The proposed Ph.D. degree program will build upon the reputation the department has established in this field.

Background Information:

The Mechanical and Aerospace Engineering (MAE) Department has worked to meet a strategic goal of the CECS by establishing Biomedical Engineering programs aimed at significantly enhancing its growth, reputation and ranking, to meet strong demand from motivated students, that typically includes a significant proportion of women, minority and students with disabilities, and to promote productive research collaborations with the UCF College of Medicine (UCF-COM) at the Lake Nona campus and, more generally, with biomedical researchers throughout UCF and Central Florida. The CECS has established a successful Bioengineering Minor that complements BS degrees in Engineering and Computer Science. The CECS has collaborated with the Burnett School of Biomedical Sciences at UCF to establish a companion Bioengineering Minor that was launched in 2019 and the Medicine-Engineering Double Degree (MEDD) program established in 2016 for pre-med students. Finally, MAE launched the Master of Science in BME in Fall 2016. The MAE department has made a substantial number of strategic hires, four of which were made through the Bionix and DAT UCF faculty cluster initiatives. The department has an extensive history of BME research funding that supported the production of BME theses and BME-related dissertations. The next strategic step is to formalize this latter effort by adding the Ph.D. in Biomedical Engineering.

Recommended Action:

Approve the proposed Ph.D. program in Biomedical Engineering

Alternatives to Decision:

Do not approve

Fiscal Impact and Source of Funding:

Fiscal impact is minimal for a STEM graduate program as the expertise and courses are building on faculty already in place based as a result of the master’s degree in Biomedical Engineering. The courses for this degree program are already offered for students in the current mechanical engineering programs as part of their research focus or elective interest. The enrollment potential for this program is demonstrated in the cover page table and the funds are internal to the MAE department.



Authority for Board of Trustees Action:

University Regulation UCF 2.040 Development, Approval, Termination, and Suspension of Degree Programs

Contract Reviewed/Approved by General Counsel **N/A**

Committee Chair or Chair of the Board has approved adding this item to the agenda

Submitted by:

Michael D. Johnson, Interim Provost and Vice President for Academic Affairs

Supporting Documentation:

Attachment A:

Request to Offer New Degree Program - Ph.D. in Biomedical Engineering

Please click the link below to view the full proposal:

<https://bot.ucf.edu/wp-content/uploads/sites/5/2021/11/UCF-Biomedical-Engineering-PhD-Proposal-and-App-A-E-UCF-Approved.pdf>

Attachment B:

Analysis Summary for New Degree Program Authorization - Ph.D. in Biomedical Engineering

Facilitator:

Timothy D. Letzring, Vice Provost for Academic Affairs



Board of Governors, State University System of Florida
REQUEST TO OFFER A NEW DEGREE PROGRAM

In Accordance with BOG Regulation 8.011

(Please do not revise this proposal format without prior approval from Board staff)

University of Central Florida

Institution Submitting Proposal

College of Engineering and Computer Science

Name of College(s) or School(s)

Biomedical Engineering

Academic Specialty or Field

14.0501

Proposed CIP Code (2020 CIP)

Fall 2022

Proposed Implementation Term

Mechanical and Aerospace Engineering

Name of Department(s)/Division(s)

PhD in Biomedical Engineering

Complete Name of Degree

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

 Date Approved by the University Board of Trustees

 President's Signature Date

 Board of Trustees Chair's Signature Date

 Provost's Signature Date

PROJECTED ENROLLMENTS AND PROGRAM COSTS

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1 in Appendix A. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 3 in Appendix A. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

Implementation Timeframe	HC	FTE	E&G Cost per FTE	E&G Funds	Contract & Grants Funds	Auxiliary/Philanthropy Funds	Total Cost
Year 1	11	8.25	\$15,759	\$130,013	\$200,000	\$0	\$330,013
Year 2	16	12.00					
Year 3	18	13.50					
Year 4	22	16.50					
Year 5	27	20.25	\$7,618	\$154,262	\$472,727	\$0	\$626,989

*Note: This outline and the questions pertaining to each section **must be reproduced** within the body of the proposal to ensure that all sections have been satisfactorily addressed. Tables 1 through 4 are to be included as Appendix A and not reproduced within the body of the proposals because this often causes errors in the automatic calculations.*

**Analysis Summary for New Degree Authorization
Program Name: Biomedical Engineering PhD**

	Criteria	Proposal Response to Criteria
1.	The goals of the program are aligned with the university’s mission and relate to specific institutional strengths.	<p>Met with Strength</p> <p>The proposed PhD in BME program aligns with the UCF strategic mission to be a leading research university and with the SUS BOG Strategic Planning Goals, which specifically identify biomedical engineering as a key enabling industry that: (1) provides jobs with high average annual salaries, and (2) fits within the overarching strategy of building a stable Florida economy based on knowledge and innovation. The terminal degree program will produce highly trained graduates to meet the demands of the growing biomedical industry in Florida and nationwide.</p> <p>The program is interdisciplinary building upon existing collaborations among the UCF College of Engineering and Computer Science and the UCF College of Medicine and Burnett School of Biomedical Sciences and local industry partners such as Orlando Health, Advent Health, and Nemours. Moreover, the program leverages the substantial institutional investment in the Bionix (prosthetic interfaces) and Disability, Aging and Technology (DAT) faculty cluster initiatives.</p>
2.	If there have been program reviews or accreditation activities in the discipline or related disciplines pertinent to the proposed program, the proposal provides evidence that progress has been made in implementing the recommendations from those reviews.	<p>Met with Strength</p> <p>The BME MS program in MAE Department completed an Academic Program Review in 2018-19 with external consultants. The recommendations were (1) continue to target a high-quality diverse pool for graduate student recruitment, (2) enrich curriculum content in biomedical engineering and assure course offering availability, (3) improve student career preparation, and (4) increase student financial support.</p> <p>The MAE Department has made substantial progress in implementing recommendations by hiring diverse faculty and recruiting a diverse graduate student population, enriching its curriculum by offering a substantial number of BME courses, and providing additional assistantships as a consequence of the growth of the BME faculty research portfolio (for example NIH RO1 and two NSF CAREER awards).</p>

Criteria	Proposal Response to Criteria
<p>3. The proposal describes an appropriate and sequenced course of study. Admissions and graduation criteria are clearly specified and appropriate. The course of study and credit hours required may be satisfied within a reasonable time to degree. In cases in which accreditation is available for existing bachelor's or master's level programs, evidence is provided that the programs are accredited, or a rationale is provided as to the lack of accreditation.</p>	<p>Met</p> <p>The 72-hr curriculum consists of a core set of seven required courses (21 hours) that have been approved by the BME faculty and an additional 12 elective courses (36 hours). The additional 12 elective courses could include independent study and directed research but must include a minimum of six hours of formal coursework chosen from a selection of graduate elective courses. The courses are being offered regularly so that they will be readily available to the doctoral students. Students will have the ability to develop specializations within the broad curriculum.</p> <p>Courses such as biomaterials, biomechanics, and bioelectricity are often components of Biomedical Engineering graduate curricula. The proposed courses are primarily focused on biomechanics. The curriculum could be made more interdisciplinary and strengthened by including additional electives related to biomedical sciences from computer science, electrical engineering, materials science from CECS and others related to biomedical sciences such as physiology, anatomy, and biochemistry from the Burnett School of Biomedical Sciences and nanomedicine from the College of Medicine.</p> <p>Admission consideration will be given to applicants with undergraduate degrees in: Biomedical Engineering, Aerospace Engineering, Mechanical Engineering, Materials Science and Engineering or closely related disciplines such as Electrical Engineering.</p> <p>Graduate engineering programs in MAE do not require professional accreditation, but MAE undergraduate programs have been accredited until 2027 by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering & Technology (ABET). The MAE Department has an industrial advisory committee that reviews the curriculum and informs the department and department chair annually regarding industry needs and trends.</p>

Criteria	Proposal Response to Criteria
<p>4. Evidence is provided that a critical mass of faculty members is available to initiate the program based on estimated enrollments, and that, if appropriate, there is a commitment to hire additional faculty members in later years, based on estimated enrollments. For doctoral programs, evidence is provided that the faculty members in aggregate have the necessary experience and research activity to sustain a doctoral program.</p>	<p>Met with Strength</p> <p>UCF and the MAE Department have invested substantial resources in preparation for the PhD in BME program through recruiting a strong core of faculty (12) who will teach the required courses and provide exciting research opportunities for the doctoral students.</p> <p>The BME-focused MAE faculty have earned their doctorate degrees in BME and/or have received formal postdoctoral training in BME. The number of BME faculty in MAE is comparable to that of most BME departments. These faculty members can support the projected growth of the PhD program from 11 students estimated to enroll in year one to the 27 students estimated in year five. This is an average of 2.45 PhD students/faculty member which is achievable without hiring additional faculty. Furthermore, the number of UCF BME-engaged faculty is considerably larger, and the UCF BME expertise is broader when you consider the collaborating faculty from the Biionix and DAT clusters and other research groups (e.g., computer vision, nanoscience, materials engineering, biomedical sciences) outside of MAE.</p> <p>The BME faculty have been successful in securing research grant support from NSF, NIH, American Heart Association, local industry, and private foundations. Notably two faculty members (a female and an African American) were recently awarded NSF CAREER Awards. In addition to the CAREER, Dr. Huang also has an active NIH RO1.</p> <p>The foundation for the BME PhD degree program has been strategically constructed. The successful undergraduate minor in bioengineering in CECS began in 2011 (and joined with the BSBS in 2019), and the MS in BME began in 2016. Historically, several doctoral dissertations in ME have had BME emphases. As a result of these efforts, the coursework for the doctoral program has been largely developed. Thus, the proposed PhD program will not place an instructional burden as the curriculum are currently being delivered through the MSBME and the PhD in ME programs.</p>

Criteria	Proposal Response to Criteria
<p>5. Evidence is provided that the necessary library volumes and serials; classroom, teaching laboratory, research laboratory, office, and any other type of physical space; equipment; appropriate fellowships, scholarships, and graduate assistantships; and appropriate clinical and internship sites are sufficient to initiate the program.</p>	<p>Met with Strength</p> <p>The UCF Libraries journal and database holdings will meet the needs for the proposed program. A review of peer institution library resources shows that UCF has the necessary databases, journals, and books to support the BME PhD program. There are no additional library costs associated with the proposed BME PhD program. This is a consequence of prior investments made by the college in support of the BME MS program initiated in 2016.</p> <p>The BME faculty have collectively 11,210 sq. ft of specialized research lab space located mainly in the College of Engineering and Computer Science and also at the UCF College of Medicine, and the UCF Nano Science and Technology Center. All faculty members have dedicated office space in Engineering I.</p> <p>The MAE Department has 7,272 sq ft of teaching lab space that will support the BME PhD program. The program will have access to the UCF-COM anatomy lab for the prosection experiences in Mechanics of Biostructures I and II, which are currently taught at the UCF COM.</p> <p>Additional resources include the CECS Ideas innovative suites, machine shop, 3D printing facilities, specialized characterization equipment at the UCF Materials Characterization Facility, the UCF Central Cleanroom facility with 3,500 sq. ft of class 1000 and 1,200 sq. ft of 1200 class clean rooms.</p> <p>There is commitment from local industry such as Orlando Health and Advent Health for clinical experiences and collaborations. BME faculty have sustained grant support to offer graduate research assistantships and several funding opportunities are identified for additional support by the program.</p>

Criteria	Proposal Response to Criteria
<p>6. Evidence is provided that there is a need for more people to be educated in this program at this level. For all degree programs, if the program duplicates other degree programs in Florida, a convincing rationale for doing so is provided. The proposal contains realistic estimates of headcount and FTE students who will major in the proposed program and indicates steps to be taken to achieve a diverse student body.</p>	<p>Met with Strength</p> <p>Evidence is provided from the Bureau of Labor Statistics that employment of bioengineers and biomedical engineers grew 27 percent from 2012 to 2019. This sector is projected to grow by 5 percent from 2019 to 2029, faster than the average for all occupations. Evidence shows Florida to be one of the states with the highest published employment growth of BME positions. From 2019-2020 growth in BME-related employment in Florida was nearly 4%.</p> <p>In the CAVP review, a UF BME representative stated that it has an excess of applicants and there will definitely be applicant demand for any new BME doctoral program in the state. Three surveys (2017, 2019, and 2021), showed a strong interest in the proposed BME PhD program by current UCF undergraduates.</p> <p>The proposal describes the four PhD in BME in the Florida SUS (UF, FIU, FSU/FAMU and USF) as well two private PhD in BME programs (University of Miami and FIT) most of which emphasize research at the cell and tissue levels and focus on drug delivery. At UCF such research is well-established at the Burnett School of Biomedical Sciences. Although there are some small overlaps with some of the existing programs, the proposed BME program has an emphasis on biomechanics and biofluids focusing on biomedical issues at the level of the body mainly concerned with treatment planning, rehabilitation, and medical device development and does not substantially duplicate other degree programs in Florida.</p> <p>The proposal estimates a headcount of 11 in the first year which is reasonable given the number of current UCF ME PhD students who requested to transfer if the BME PhD is implemented. The head count is expected to grow to 27 by year 5 which is typical of the growth seen in previous PhD programs in MAE. The FTE is estimated at 0.75 average per year which is estimated based on the mix of graduate students progressing at different stages of the program. The first year is expected to generate 8.25 FTE and year five to generate 20.25 FTE.</p> <p>The program is committed to achieve a diverse student body. UCF is a member of GEM (Graduate Engineering Minority) Consortium and the George Louis Stokes Alliance for Minority Participation. The program has hired highly successful BME faculty members nearly half of whom are under-represented in STEM (three females and two African Americans). These faculty members serve as role models and attract students from varied backgrounds. The BME PhD degree is ranked 3rd among engineering PhD degrees awarded to women in 2021 at 36.9%. The proposal identifies several mechanisms to recruit a diverse student population.</p>

Criteria	Proposal Response to Criteria
<p>7. The proposal provides a complete and realistic budget for the program, which reflects the text of the proposal, is comparable to the budgets of similar programs, and provides evidence that, in the event that resources within the institution are redirected to support the new program, such a redirection will not have a negative impact on undergraduate education. The proposal demonstrates a judicious use of resources and provides a convincing argument that the output of the program justifies the investment.</p>	<p>Met</p> <p>The budget for the program primarily represents salary support for the 12 faculty currently engaged in BME research and teaching in the MAE department which will be re-directed to the program when approved. This will not negatively impact MAE.</p> <p>There is a commitment of \$200K in stipends from contracts and grants in year 1 which is escalated to \$472 with the projected growth in year 5. This amounts to a roughly \$22k/year stipend which is typical for engineering PhD stipends at UCF. But this somewhat low for the cost of living in central Florida and below stipend levels of aspirational peers. There are no graduate teaching assistantships associated with the program.</p>
<p>8. The proposal provides evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service.</p>	<p>Met with Strength</p> <p>There is strong evidence provided that indicates that the faculty of the host academic unit, the Mechanical and Aerospace Engineering Department (MAE), is highly productive:</p> <ul style="list-style-type: none"> • MAE undergraduate student head count has more than doubled from 1,830 in AY 2010-2011 to 3,980 in Fall 2020, • MAE graduate student count has more than doubled from 170 (118 MS and 52 PhD) in AY 2010-2011 to 401 (254 MS and 147 PhD) in Fall 2020 • in AY 2019-2020 the MAE faculty graduated 114 graduate students • MAE research expenditures were nearly \$7M in 2020 • MAE faculty members published 3+ journal papers on average • MAE faculty are Fellows or Associate Fellows of national and international professional societies of such as ASME, AIAA, AIMBE, AAAS • MAE faculty members are on the Editorial Boards of numerous professional journals such as ASME Journal of Heat Transfer, ASME Journal of Mechanisms and Robotics, and IEEE Transactions on Neural Systems and Rehabilitation Engineering. <p>MAE faculty members have won numerous highly prestigious and competitive early career research awards such as the ONR Young Investigator Award, the US DTRA Young Investigator Award, and DARPA/MTO Young Faculty Award. Nine members of the MAE faculty won NSF CAREER Awards (two of whom are identified as BME faculty in the proposal).</p> <p>MAE faculty members have been recognized at the institution level though UCF Trustee Chair positions, Pegasus Professor Positions, and Reach-for the Stars Awards in recognition of excellence in teaching, research, and service.</p>



**Board of Trustees
Academic Excellence and Student Success
Committee November 16, 2021**

AESC-2: Student Career Planning and Development – UCF Response to HB-1261

Information

Discussion

Action

Meeting Date for Upcoming Action:

Purpose and Issues to be Considered:

The purpose of this action item is to present the University of Central Florida’s plan for the development of an online module to enhance career planning and development for undergraduate students during their first year of enrollment as required by HB 1261, passed in the 2021 legislative session.

Background Information:

To further promote informed consumer choice and give prospective and current students better access to student outcome data, the 2021 Legislature passed HB 1261 requiring the Board of Governors to create an online dashboard. The dashboard must present data, by academic discipline, of graduates of state universities, including the following information:

- (a) Post-graduation median salary 1, 5, and 10 years after graduation.
- (b) Median student loan debt.
- (c) Debt-to-income ratio.
- (d) Estimated monthly loan payment as a percentage of gross monthly income.
- (e) The percentage of graduates who have continued their education beyond the baccalaureate level.

The online dashboard must be available by January 1, 2022, and a link to the dashboard must be prominently displayed on each university’s office of admissions website.

To comply with the new law, each university board of trustees must adopt procedures to connect undergraduate students to career planning, coaching, and related programs during the first academic year of the student’s enrollment. For these purposes, “undergraduate students” include full-time or part-time degree-seeking, first time in college students, transfer students and readmitted students.

The procedures must be approved by the Board of Governors and include placing a hold on student registration before the end of the first year of each student’s enrollment. To lift the hold and register for classes, each student must:

1. Register with the university’s career center.
2. Complete a career readiness training module provided by the career center.
3. Be directed to the dashboard.
4. Affirmatively indicate that he or she has been provided with the information required and is aware of the employment and wage prospects for his or her declared major.

Recommended Action:

Each university’s plan must be approved by its board of trustees and submitted to the Board of Governors by December 15, 2021. Board of Governors’ approval of a university’s plan is required by March 1, 2022. It is recommended that the UCF Board of Trustees approve the plan so that it may be submitted to the Board of Governors on or before December 15, 2021 for further approval.



Alternatives to Decision:

HB 1261 requires the Board of Trustees' approval to be in compliance with state law. If an alternative plan is required, the Board will need to take formal action to approve the alternative plan on or before December 15, 2021.

Fiscal Impact and Source of Funding:

The career planning online module will be offered through UCF's webcourse platform and is being designed in partnership with the divisions of Student Development and Enrollment Services and Student Learning and Academic Success. Ten thousand dollars (\$10,000) in carry forward E&G funds has been provided by Student Learning and Academic Success to cover costs associated with video production and editing of portions of the career planning and development module.

Authority for Board of Trustees Action:

Fla.Stat.s. 1006.751(3)

Contract Reviewed/Approved by General Counsel N/A

Committee Chair or Chair of the Board has approved adding this item to the agenda

Submitted by:

Michael D. Johnson, Interim Provost and Vice President for Academic Affairs

Supporting Documentation:

None

Facilitator:

Adrienne Frame, Interim Vice President for Student Development and Enrollment Services



**Board of Trustees
Academic Excellence and Student Success Committee
November 16, 2021**

AESC-3: Tenure with Hire

Information Discussion Action

Meeting Date for Upcoming Action: November 18, 2021

Purpose and Issues to be Considered:

The recommendation of a faculty member for tenure shall signify that the president and the Board of Trustees believe that the employee will continue to make significant and sustained professional contributions to the university and the academic community.

The primary purpose of tenure is to protect academic freedom. The award of tenure shall provide annual reappointment until voluntary resignation, retirement, removal for just cause, or layoff.

Background Information:

New faculty members are hired each year with tenure. Normally, such faculty members have earned tenure at their previous institution and meet UCF's requirements for tenure. For others, tenure is part of the hiring package when senior faculty members are hired for administrative positions. Department faculty members and the university's administrative officers have approved granting tenure to these faculty members.

Recommended Action:

The department, college and Provost support the recommendations for tenure with hire.

Alternatives to Decision:

N/A

Fiscal Impact and Source of Funding:

Faculty are considered employees of the university and like other employees, compensation is negotiated during the hiring process. Recommendations for tenure are considered independently from compensation. Faculty who are awarded tenure will have annual reappointment until voluntary resignation, retirement, removal for just cause, or layoff.

Authority for Board of Trustees Action:

University Regulation UCF 3.015(4)(a)5 – Promotion and Tenure of Tenured and Tenure-earning Faculty

Contract Reviewed/Approved by General Counsel N/A

Committee Chair or Chair of the Board has approved adding this item to the agenda

Submitted by:

Michael D. Johnson, Interim Provost and Vice President for Academic Affairs



Board of Trustees

Agenda Memo

Supporting Documentation:

Attachment A: Tenure with Hire Justification

Facilitators:

Michael D. Johnson

Jana L. Jasinski, Vice Provost for Faculty Excellence and Pegasus Professor of Sociology

Attachment A

Tenure with Hire Justification Board of Trustees Meeting November 18, 2021

Maggy Tomova, Professor College of Sciences, Department of Mathematics

Dr. Maggy Tomova received her Ph.D. in mathematics from the University of California, Santa Barbara. She comes to UCF from the University of Iowa, where she was a tenured professor of mathematics. At UCF, Dr. Tomova will serve as the dean of the College of Sciences. While at the University of Iowa, she held the position of associate dean for the Natural, Mathematical, and Social Sciences, in the College of Liberal Arts and Sciences, and served as chair in the Department of Mathematics. Dr. Tomova has received over \$2.2 million dollars in research funding as a principal investigator or co-principal investigator, including \$956,000 from the National Science Foundation. She has published numerous peer-reviewed journal articles, and has presented at regional, national, and international conferences and invited lectures. Dr. Tomova has teaching experience at the graduate and undergraduate levels, advised graduate and undergraduate students, and was Assistant Director and Research Mentor, for the Research Experience for Undergraduates (summer program), California State University Channel Islands. Dr. Tomova has significant experience leading efforts to support students and faculty and her focus on inclusive excellence has led to better student outcomes and increased faculty research. She serves on the editorial board for ***Algebraic and Geometric Topology*** and serves as reviewer for several national and international peer-reviewed journals, among many other service activities in the profession, college, and university. The Department of Mathematics and College of Sciences support the recommendation for tenure with hire.



**Board of Trustees
Academic Excellence and Student Success Committee
November 16, 2021**

AESC-4 Conferral of Degrees

Information Discussion Action

Meeting Date for Upcoming Action: November 11, 2021

Purpose and Issues to be Considered:

Approval for Fall 2021 Conferral of Degrees

Background Information:

UCF expects to award the following degrees during the Fall commencement ceremonies on December 17 and 18, 2021.

Baccalaureate Degrees:	5,163
Master’s Degrees:	909
<u>Doctoral and Specialist:</u>	<u>156</u>
Total:	6,228

Recommended Action:

Recommend approval of the conferral of degrees during the Fall 2021 Commencement.

Alternatives to Decision:

N/A

Fiscal Impact and Source of Funding:

N/A

Authority for Board of Trustees Action:

BOG 1.001 (4)(a)
UCF BOT AESC Charter

Contract Reviewed/Approved by General Counsel N/A

Committee Chair or Chair of the Board has approved adding this item to the agenda

Submitted by:

Michael D. Johnson, Interim Provost and Vice President for Academic Affairs

Supporting Documentation:

Attachment A: Fall Graduation Count

Facilitator:

Michael D. Johnson

UCF Fall 2021 Commencement

College	Bachelor	Master	Doctorate	CollegeTotals
College of Arts and Humanities	326	31	3	360
College of Business Administration	734	57	1	792
College of Community Innovation and Education	597	332	33	962
College of Engineering and Computer Science	739	150	72	961
College of Graduate Studies	0	13	0	13
College of Health Professions and Sciences	539	123	0	662
College of Medicine	163	6	3	172
College of Nursing	187	28	23	238
College of Optics and Photonics	10	8	10	28
College of Sciences	1,232	94	11	1,337
College of Undergraduate Studies	312	0	0	312
Rosen College of Hospitality Management	324	67	0	391
Degree level totals:	5,163	909	156	6,228



**Board of Trustees
Academic Excellence and Student Success Committee
November 16, 2021**

DISC-2: The Role of Research in a Metropolitan University

Information Discussion Action

Meeting Date for Upcoming Action: N/A

Purpose and Issues to be Considered:

Trustees often ask what the role of research is in a major metropolitan university. The goal of this presentation is to provide some context about why research is one of the most important components of what faculty and students do.

Background Information:

Although research is often a part of the Board’s discussion, and there was a major research presentation made over a year ago, the BOT has asked for an annual update. This update is timely, as research will be an integral part of the new strategic plan. This quick overview will cover the 6 reasons major universities do research and provide information on how those reasons are actualized at UCF. The 6 reasons include: 1) to benefit society; 2) to be a source of some types of revenue; 3) to serve as one of the major impactful experiences for undergraduates; 4) to provide our diverse student body with both a career path and unique skills (such as problem solving and critical thinking) that may not be available through other means; 5) to serve as the major broad scale research entity in the region; and 6) to enhance UCF’s reputation.

Recommended Action:

N/A

Alternatives to Decision:

N/A

Fiscal Impact and Source of Funding:

N/A

Authority for Board of Trustees Action:

N/A

Contract Reviewed/Approved by General Counsel N/A

Committee Chair or Chair of the Board has approved adding this item to the agenda



Board of Trustees

Agenda Memo

Submitted by:

Michael D. Johnson, Interim Provost and Vice President for Academic Affairs

Supporting Documentation:

Attachment A:

Facilitator:

Elizabeth A. Klonoff, Ph.D., ABPP, Vice President for Research and Dean of the College of Graduate Studies

Attachment A

The Role of Research in a Metropolitan University

November 16, 2021

Vice President of Research Elizabeth Klonoff

What is a Metropolitan University?

We, the leaders of metropolitan universities and colleges, embracing the historical values and principles which define all universities and colleges, and which make our institutions major intellectual resources for their metropolitan regions:

- Reaffirm that the creation, interpretation, dissemination, and application of knowledge are the fundamental functions of our universities;
- Assert and accept a broadened responsibility to bring these functions to bear on the needs of our metropolitan regions;
- Commit our institutions to be responsive to the needs of our metropolitan areas by seeking new ways of using our human and physical resources to provide leadership in addressing metropolitan problems, through teaching, research, and professional service.

What is a Metropolitan University?

Our teaching must:

- Educate individuals to be informed and effective citizens, as well as capable practitioners of professions and occupations;
- Be adapted to the particular needs of metropolitan students, including minorities and other underserved groups, adults of all ages, and the place-bound;
- Combine research-based knowledge with practical application and experience, using the best current technology and pedagogical techniques.

What is a Metropolitan University?

Our research must:

- Seek and exploit opportunities for linking basic investigation with practical application, and for creating synergistic interdisciplinary and multidisciplinary scholarly partnerships for attacking complex metropolitan problems, while meeting the highest scholarly standards of the academic community.

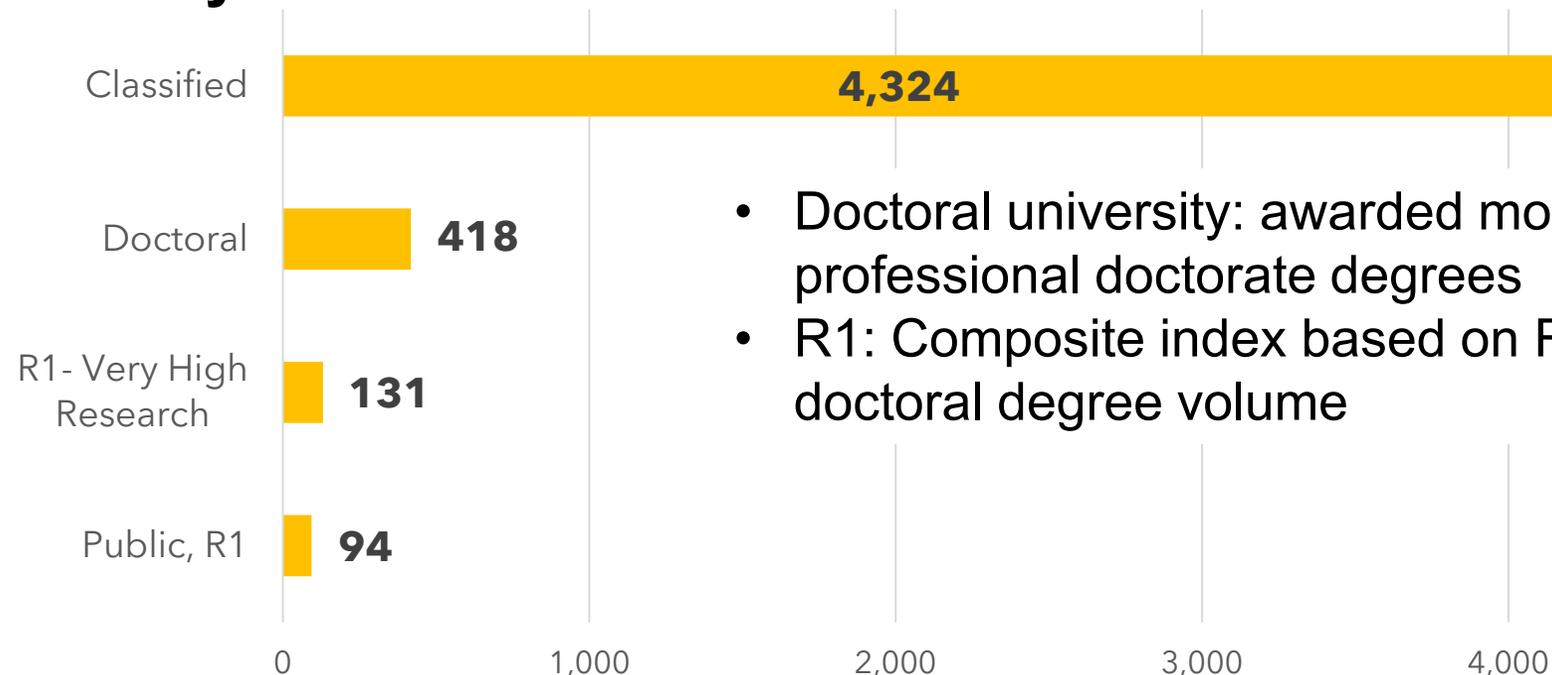
What is a Metropolitan University?

Our professional service must include:

- Development of creative partnerships with public and private enterprises that ensure that the intellectual resources of our institutions are fully engaged with such enterprises in mutually beneficial ways;
- Close working relationships with the elementary and secondary schools of our metropolitan regions, aimed at maximizing the effectiveness of the entire metropolitan education system, from preschool through post-doctoral levels;
- The fullest possible contributions to the cultural life and general quality of life of our metropolitan regions.

What is a Carnegie R1 University?

- Carnegie Classification® has been the leading framework for recognizing and describing institutional diversity in U.S. since 1970
- Revised frequently, most recently in 2018
- **UCF classified as R1: Doctoral Universities – Very high research activity**



- Doctoral university: awarded more than 20 research or 30 professional doctorate degrees
- R1: Composite index based on Research Expenditures and doctoral degree volume

Source: 2018 Carnegie Classification of Institutions of Higher Education by Indiana University Center for Postsecondary Research.

Why Do Universities Do Research?

- To benefit society
- To provide an alternative revenue stream
- To impact undergraduate and underrepresented student education and success
- To serve as a catalyst for the economic and intellectual development of region
- To enhance reputation

Benefits to Society

Benefits to Society

University research matters because of its three-part impact that aligns with our mission

- Lays foundation for major advances that benefit humans in medicine, communications, energy and national security.
- Fuels the economy and has led to the US being a world leader in innovation.
- Helps educate and train a diverse workforce that can tackle problem and solve some of the biggest challenges facing us.

What kind of research are we talking about?

It's not corporate R & D that has a quick ROI, but it can change our reality...

- Google started with students at Stanford.
- CRISPR, the genetic slicing technology came out of the University of California Berkley.
- The award-winning film “One Flew Over the Cuckoo’s Nest” was written by Graduate student Ken Kesey while he was in a Master of Fine Arts program.

Expanding Our Knowledge



Oct. 16, 2021. Lucy Mission Launch from Kennedy Space Center

Long-Lasting Disinfectant Spray



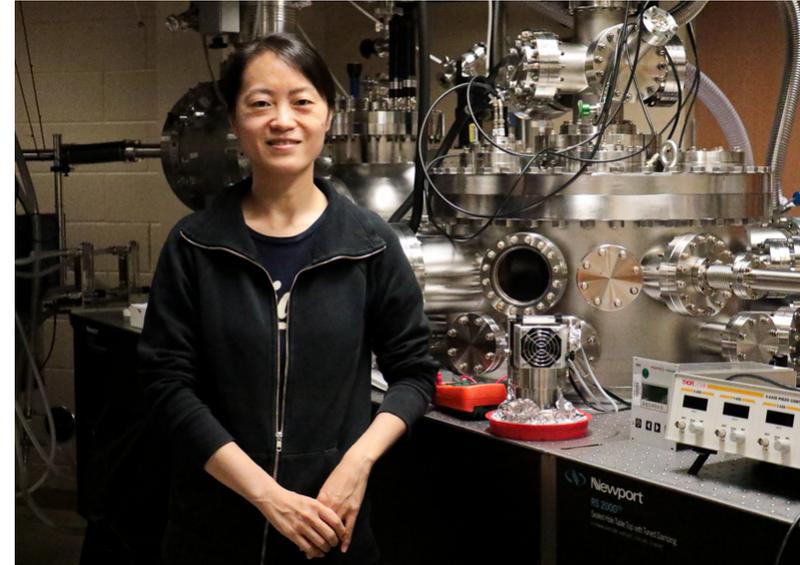
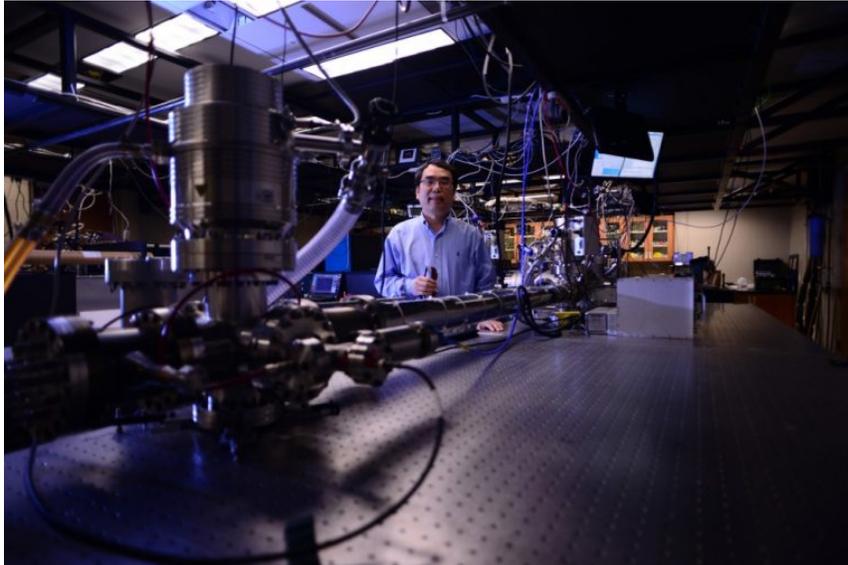
UCF researchers have developed a nanoparticle-based disinfectant that can continuously kill viruses on a surface for up to seven days – a discovery that could be a powerful weapon against COVID-19 and other emerging pathogenic viruses.

Cancer Fighting Tools



College of Medicine Associate Professor Alicja Copik's nanoparticle technology that helps stimulate natural cancer-killing cells is now in the hands of Sanofi, which hopes to find new blood-cancer treatments.

Breakthroughs with Impact



In the same way high-speed cameras can record slow-motion video of flying bullets, attosecond light pulses allow scientists to capture images of fast-moving electrons in atoms and molecules with unprecedented sharpness.

Providing an Additional Revenue Stream

Revenue Sources and Alternative Streams: Opportunities

External Sources Current



Grants and contracts from
federal agencies



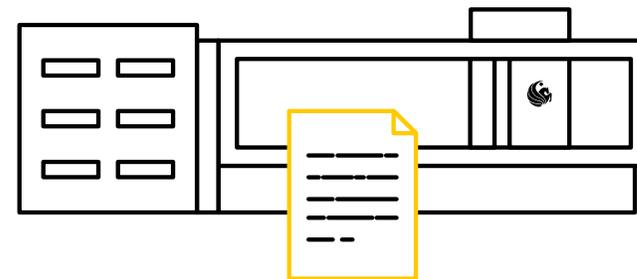
Grants and contracts from
private industry

Internal Examples

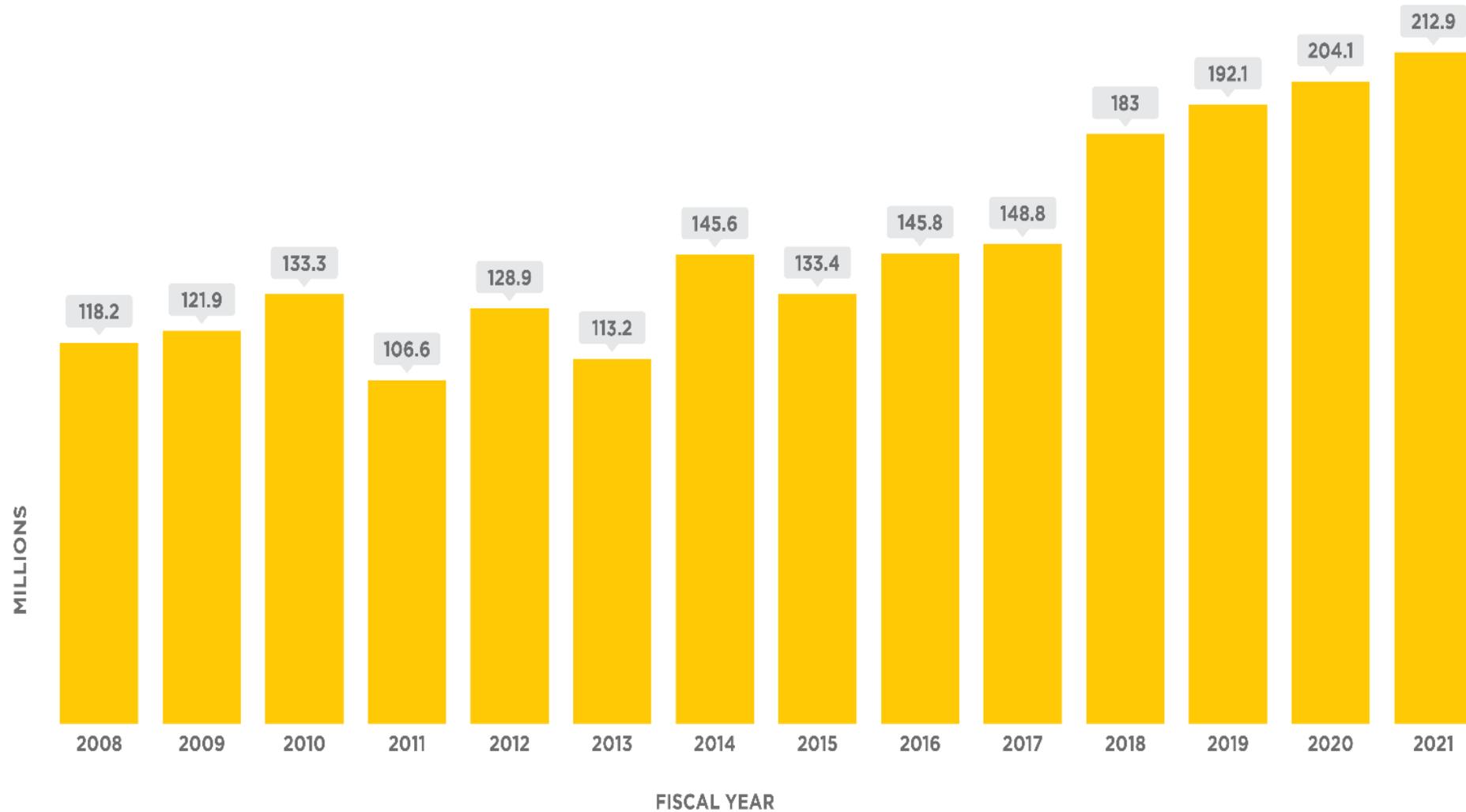
SEED funding

Equipment Funds

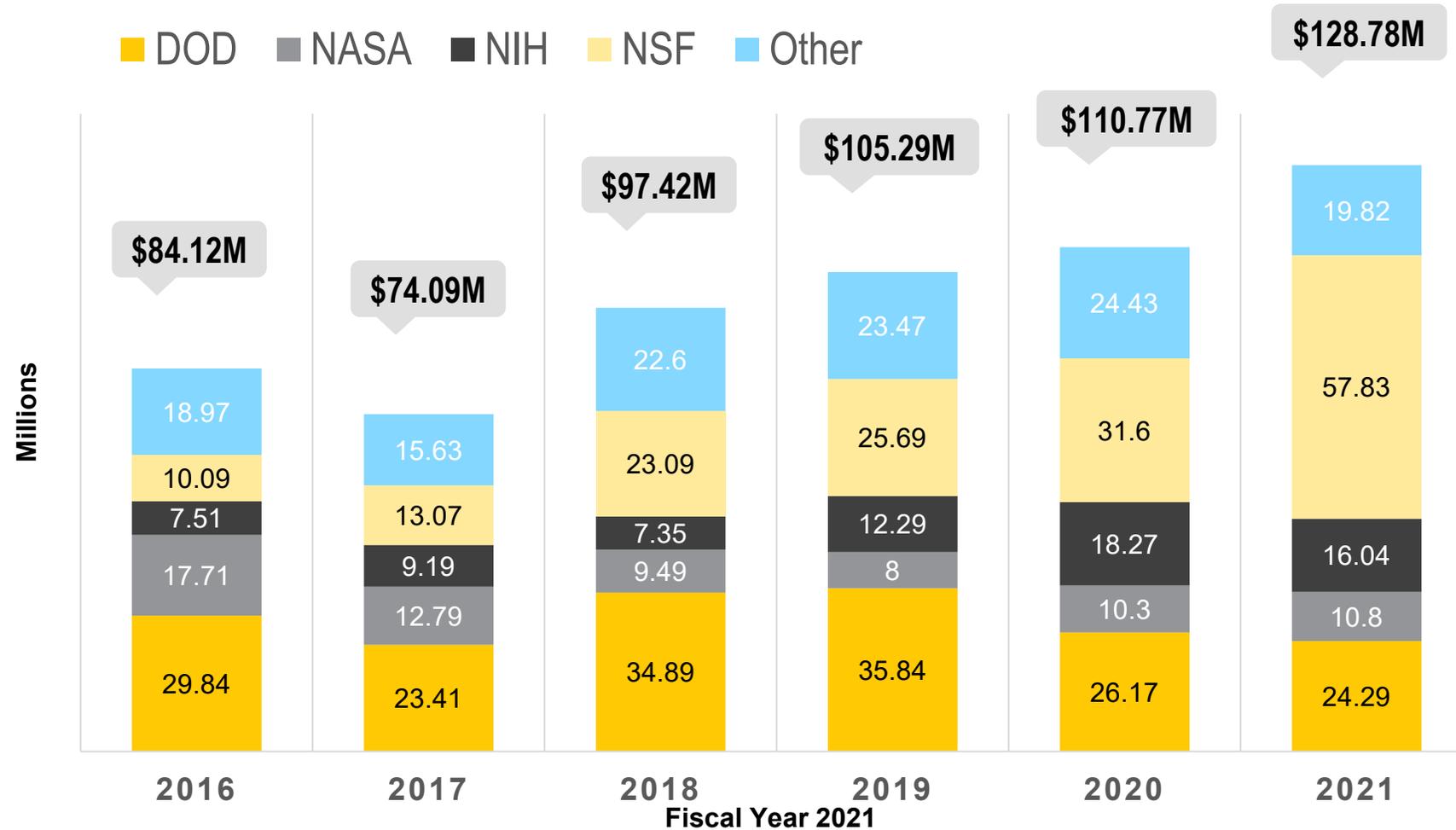
Strategic Initiative Funding



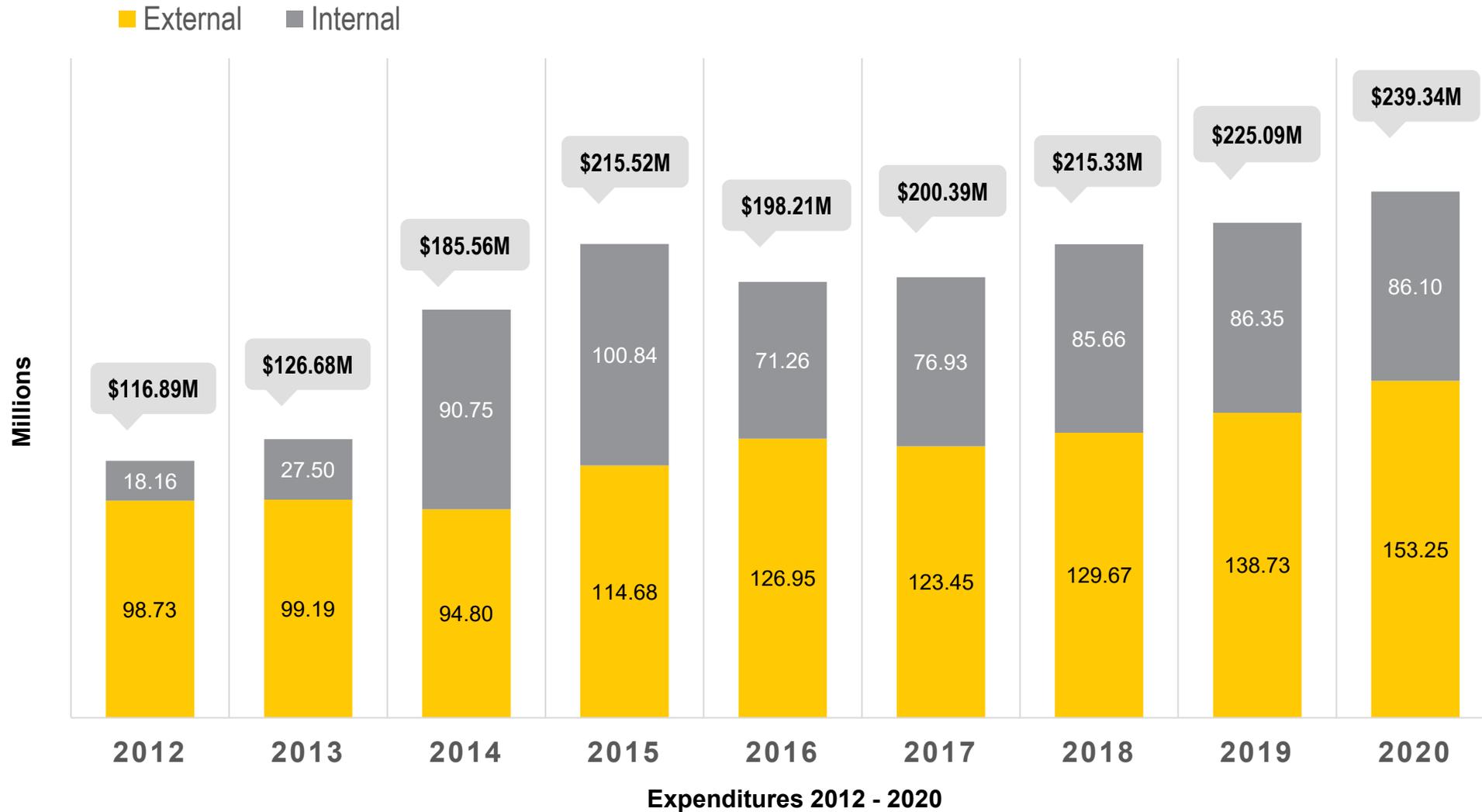
Research Funding Over Time



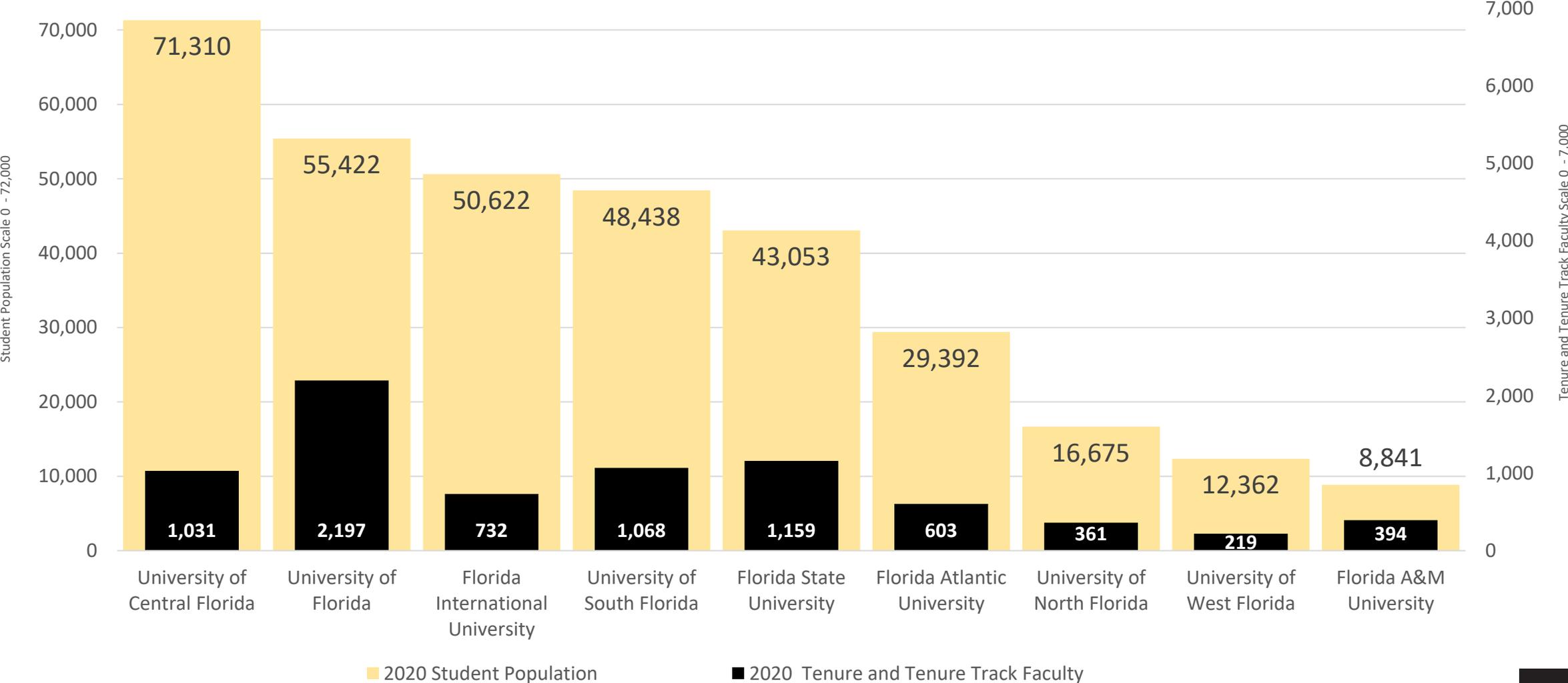
Key Federal Research Awards



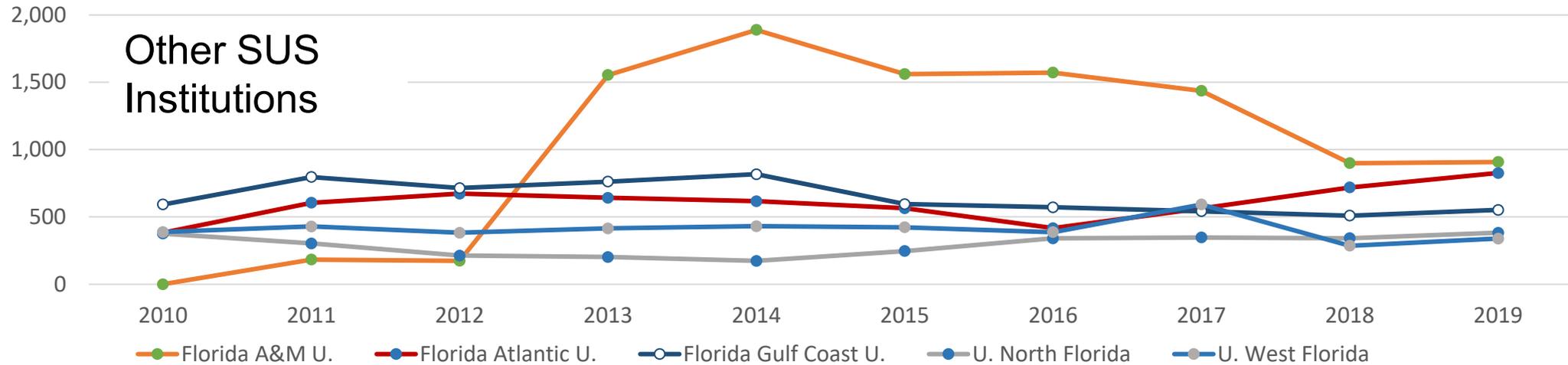
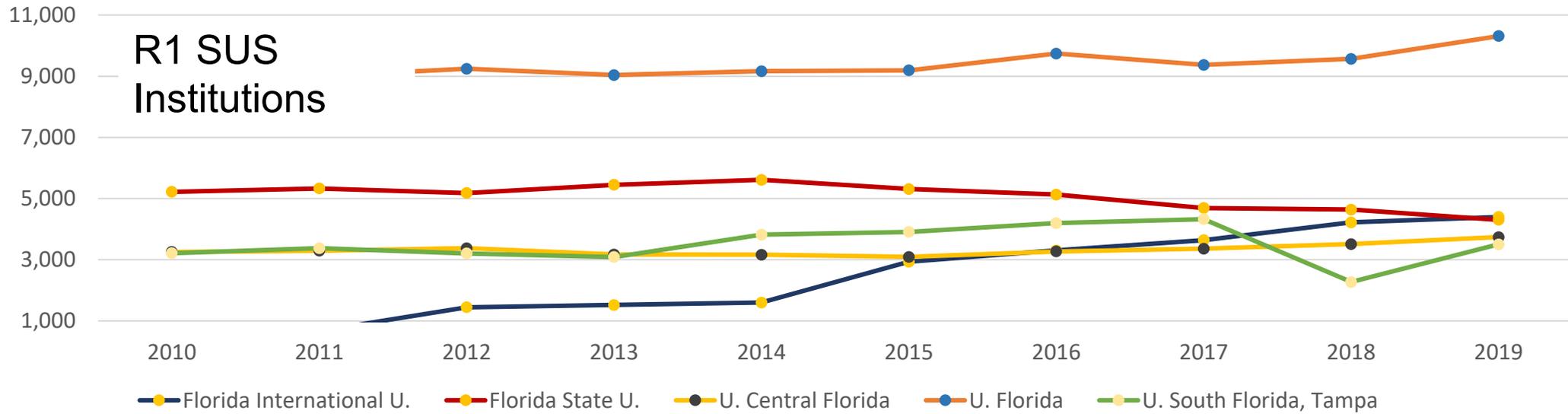
HERD Survey – External and Internal



Tenured Faculty and Student Population 2020

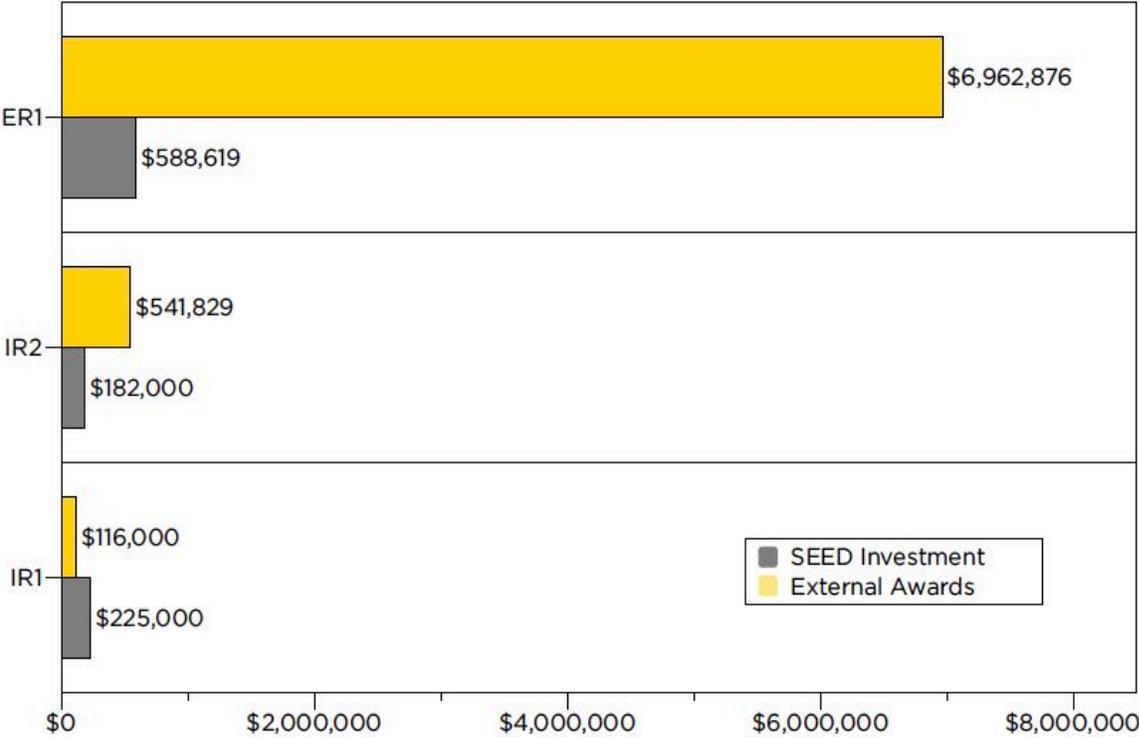


R&D Personnel

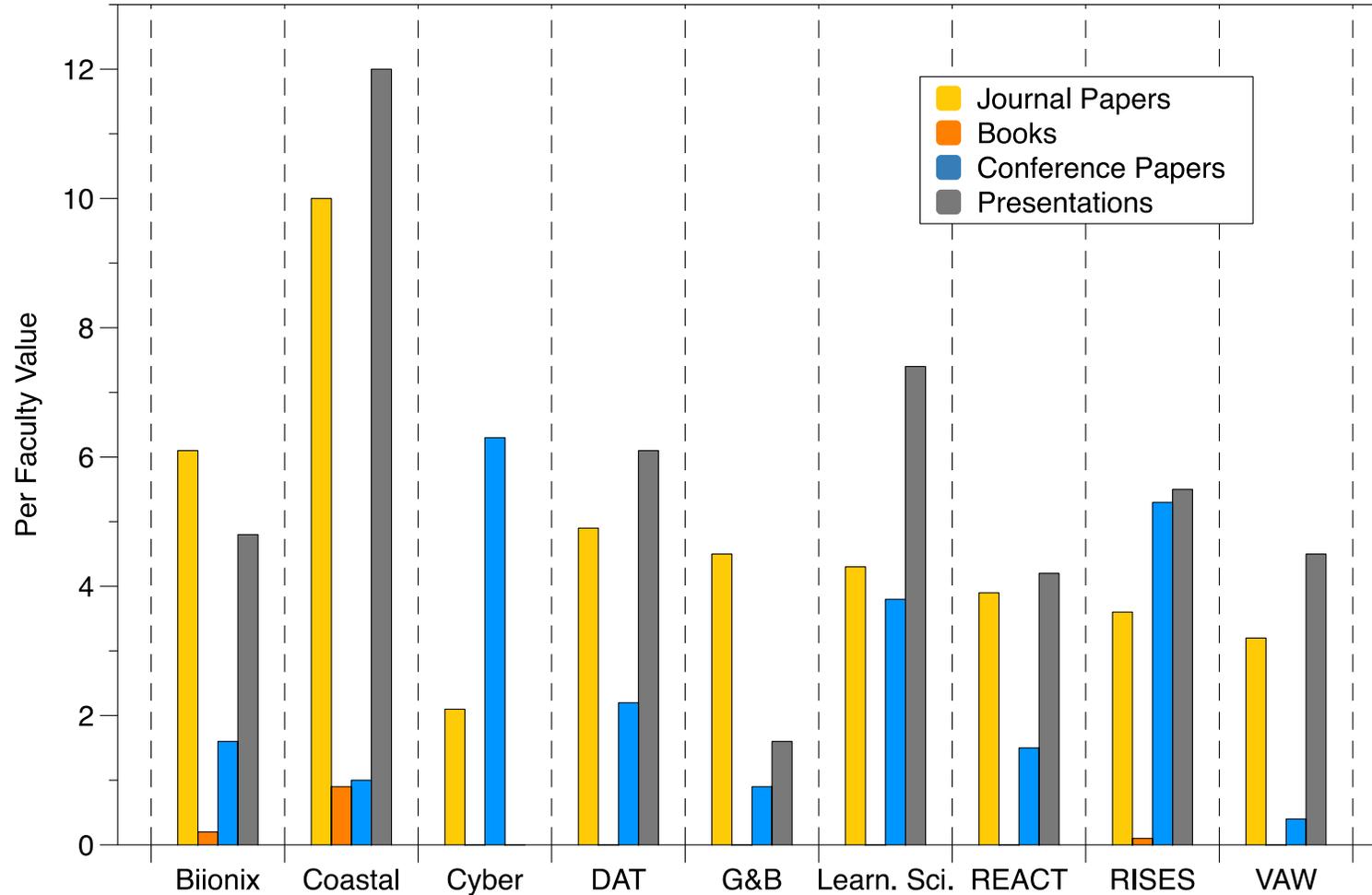


Example of Investing in Research

Summary of Investment vs. External Awards



Faculty Cluster Initiative Per Faculty Activity – FY 2020



FCI Averaged

4.7 Journal Articles

2.6 Conf. Papers

5.1 Presentations

Total External Funding

\$18.3M

Impact on Undergraduate and Underrepresented Student Education and Success

Research and Student Success

Impact on graduation success

- UCF students who take HIP courses have a large increase in four-year graduation over other UCF students
 - For example, for FTIC students in cohort year 2016-17, the four-year graduation rate was 47.4% but students who took at least one HIP designated course graduated at 66.0%.

Workforce ready (academic and soft skills industry needs)

- Teamwork, problem solving on the fly, communication, budgeting

Students often spin out companies and carry ideas to the marketplace

- Google, two grad students at Stanford
- Disinfectant, graduate launched Kismet Technologies

Opportunities for Diverse Students

Undergraduate

- Participating in research teaches critical thinking and problem-solving skills
- McNair program named after a laser physicist and Challenger Astronaut Research and Mentoring Program (RAMP)
- Program run through Graduate Studies provides mentoring and instruction to facilitate undergraduates seeking graduate degrees to receive NSF Graduate Research Fellowship Program (GRFP) awards

Graduate Level

- Students are recruited through various paths, FAMU Feeder, Graduate Education for Minorities, Florida Education Fund, National Name Exchange, Diverse Academic Opportunities Programs
- Fellowships supporting URM master's and doctoral students, e.g., McNair, McKnight, Delores A. Auzenne, GEM, RAMP
- Also provide the Summer Mentoring Fellowship to help kick off underrepresented students graduate research careers

The Value of Research

Student Engaged in Undergraduate Research

- Are more satisfied with their college experience
- Are retained and persist at a higher rate, both at university and within their major
- Are more likely to be accepted to graduate and professional school and graduate.
- Are more competitive when searching for jobs

Study found students engaged in research saw the probability of graduating increase by up to 34 percent.

- White students from 78 to 96 percent
- Hispanic students from 65 to 93 percent
- Black students from 65 to 94 percent
- Native American from 78 to 96 percent
- Asian students from 79 to 96 percent
- The benefits are even more pronounced at Hispanic Serving Institutions.

DEI, Student Opportunities = Better Jobs, Better Workforce

Academic institutions at a minimum strive to match the ethnic demographics of their student population to those of their geographic community while providing a global perspective that connects their students to the broader world. This is done not just because it is the “right” thing to do, but because it is the “better” thing to do.

Mathematically, it has been demonstrated that solving complex problems requires input from diverse perspectives. Thus, for our students to be equipped to solve societal problems, they need to know how to work inclusively and collaboratively within diverse groups.

- National organizations (NSF, NASA, DOD) provide multiple funded programs to diversify disciplines
- National organizations provide certain research proposals for Hispanic Serving Institutions, etc.

By the Numbers

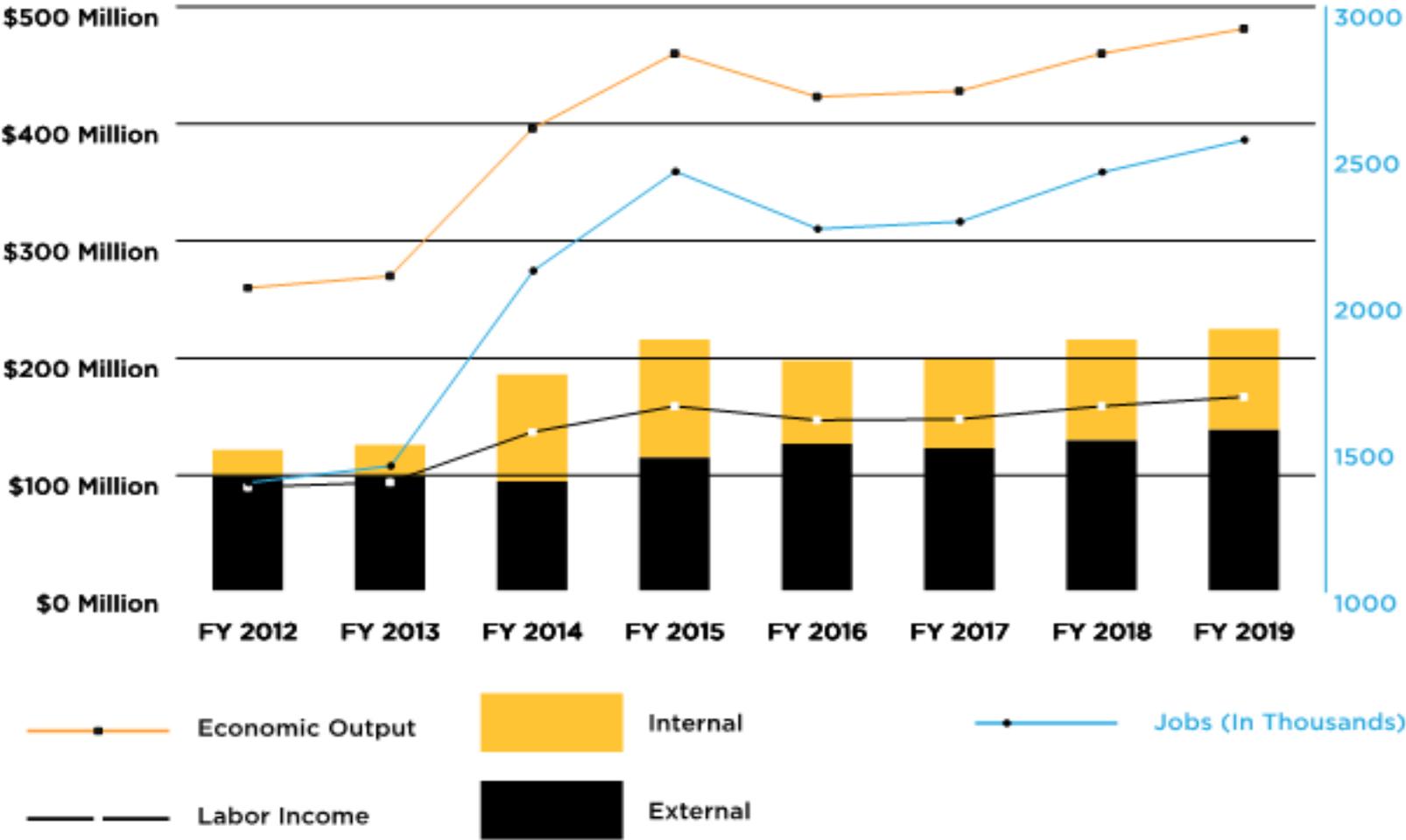
- 214 total graduate (122 STEM) students receiving College of Graduate Studies (CGS) university fellowships in Fall 2021
- **28** doctoral students in STEM fields were awarded Doctoral Research support funding from CGS in 2020-2021 to assist with their dissertation research expenses
- 14 UCF Summer Mentoring Fellowship in 2021 to incoming underrepresented graduate students who have been accepted to a graduate degree program for the Summer or following Fall semester.
- CGS awarded **504** graduate students Graduate Presentation Fellowships in In 2019-2020, 83 in 2021 for virtual conferences (pandemic)

Direct and Indirect Stimulus to the Economy

Stimulus to the Economy

- Many niche research entities in the area
 - Lockheed Martin; Siemens; Northrup Grumman; the military
- No other single entity has the breadth and scope of UCF
 - Provides opportunities and interdisciplinary focus that other more narrowly defined groups do not have

Catalyst for the Economy



*No information available for 2020 and 2021, at the time of presenting.

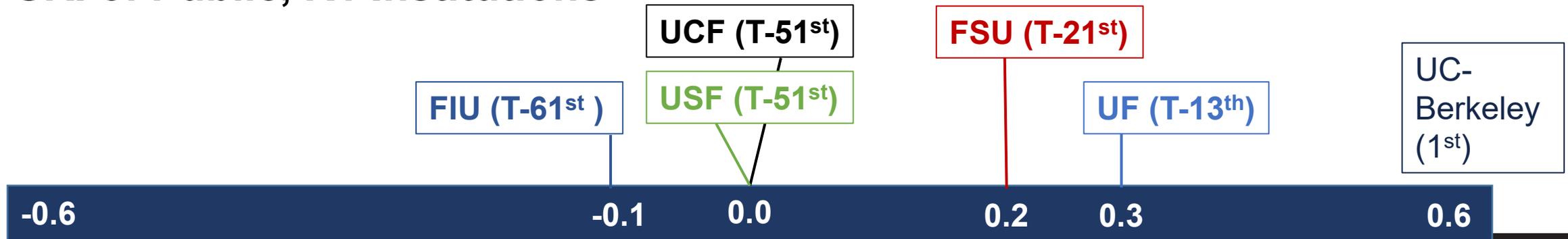
Enhancing UCF's Reputation

Academic Analytics

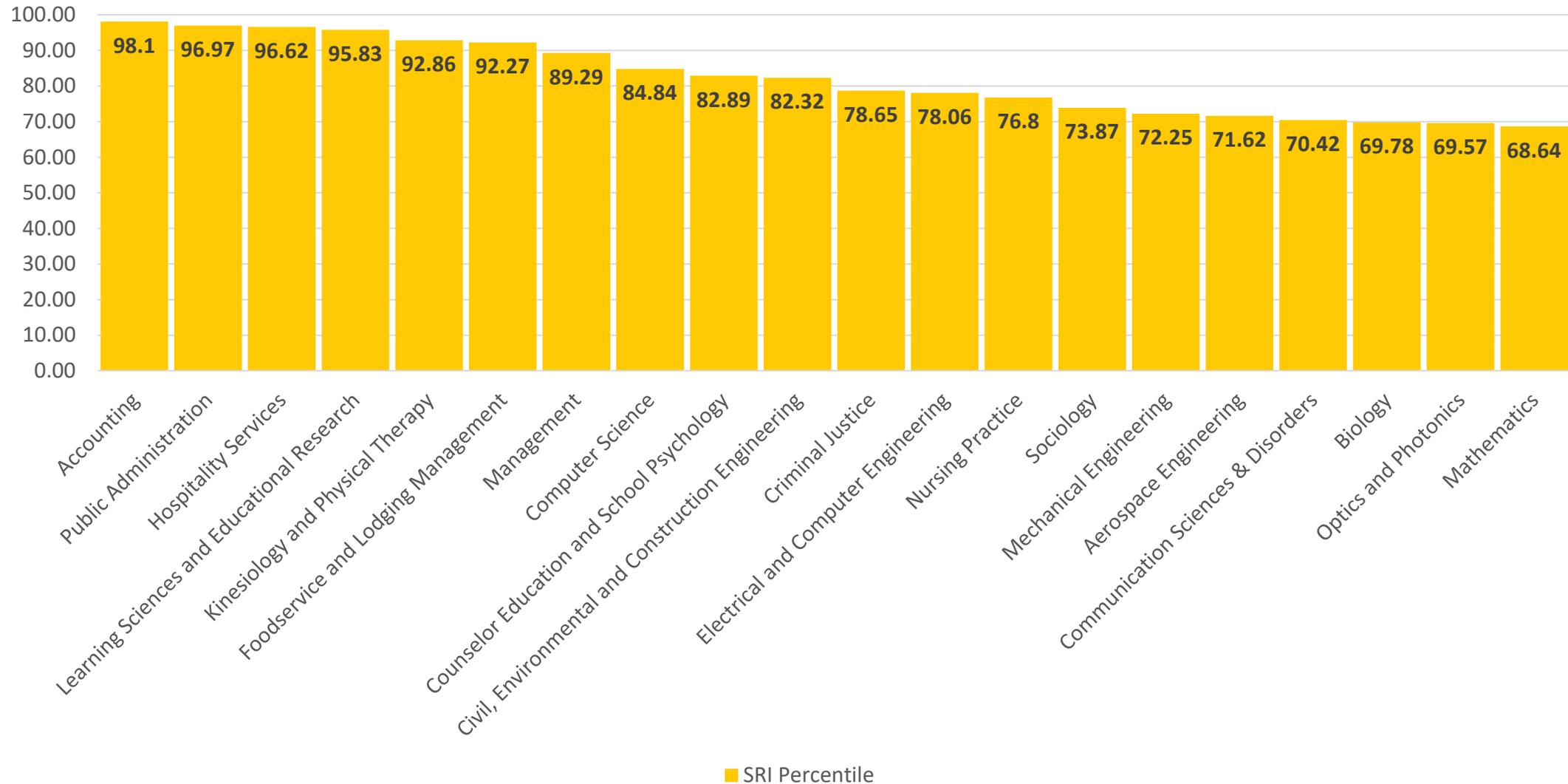
- External vendor detailing scholarly research activity, analysis, and benchmarking for the institution, unit, and program
- Includes Journal articles, Faculty awards, Books, Citations, Conference Proceedings, and Grants
- Scholarly Research Index (SRI) and SRI Percentile based on the average activity of the faculty within the unit



SRI of Public, R1 Institutions



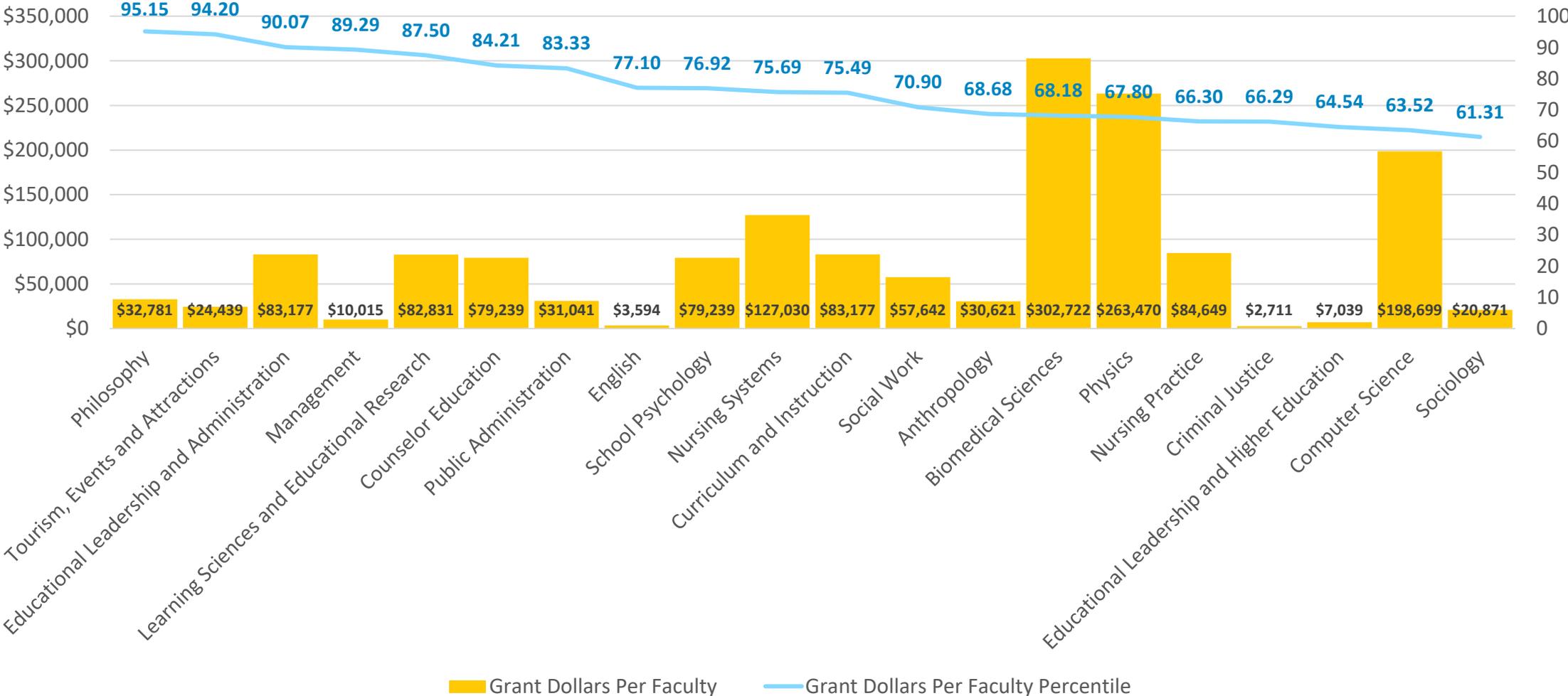
Top 20 Units by Scholarly Research Index Percentile



Source: Academic Analytics, AAD2020.00.01895.

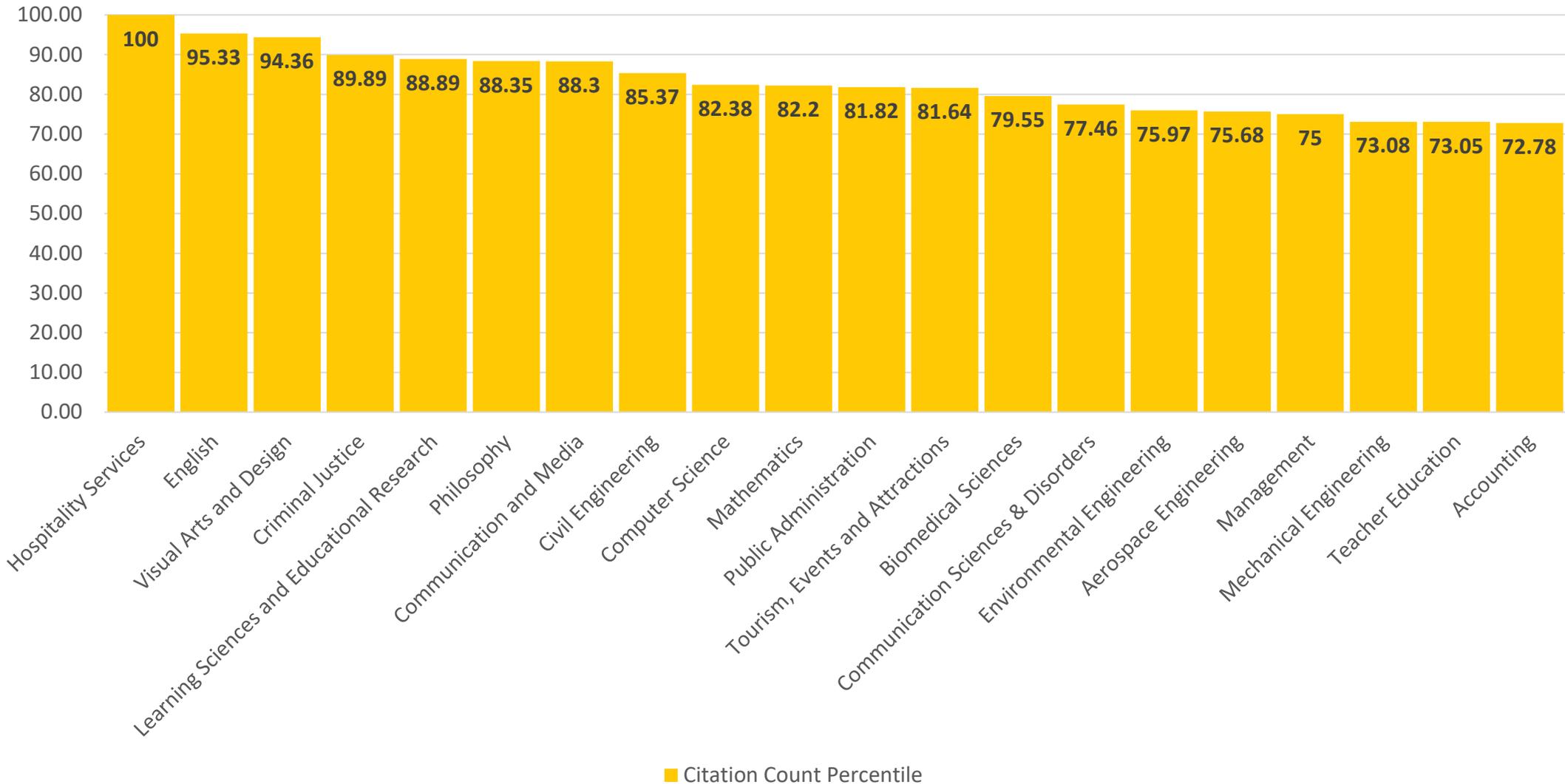
Source: Academic Analytics

Top 20 Departments by Grant Dollars Per Faculty



Source: Academic Analytics, AAD2020.00.01895.

Top 20 Departments by Citation Number Percentile



Source: Academic Analytics, AAD2020.00.01895.

Source: Academic Analytics

Enhancing UCF's National Reputation

We can be curing cancer, but if we don't tell our story, no one will know.

We've grown the number of UCF research stories in local, national and international media from about 400 in 2018 to 3,674 in 2020.

Stories have appeared in the New York Times, Washington Post, BBC, The Guardian, Wired Magazine and Popular Science among many national and international media outlets.



POPULAR SCIENCE

Forbes

SPACE.com

LIVESCIENCE

IEEE Spectrum FOR THE TECHNOLOGY INSIDER

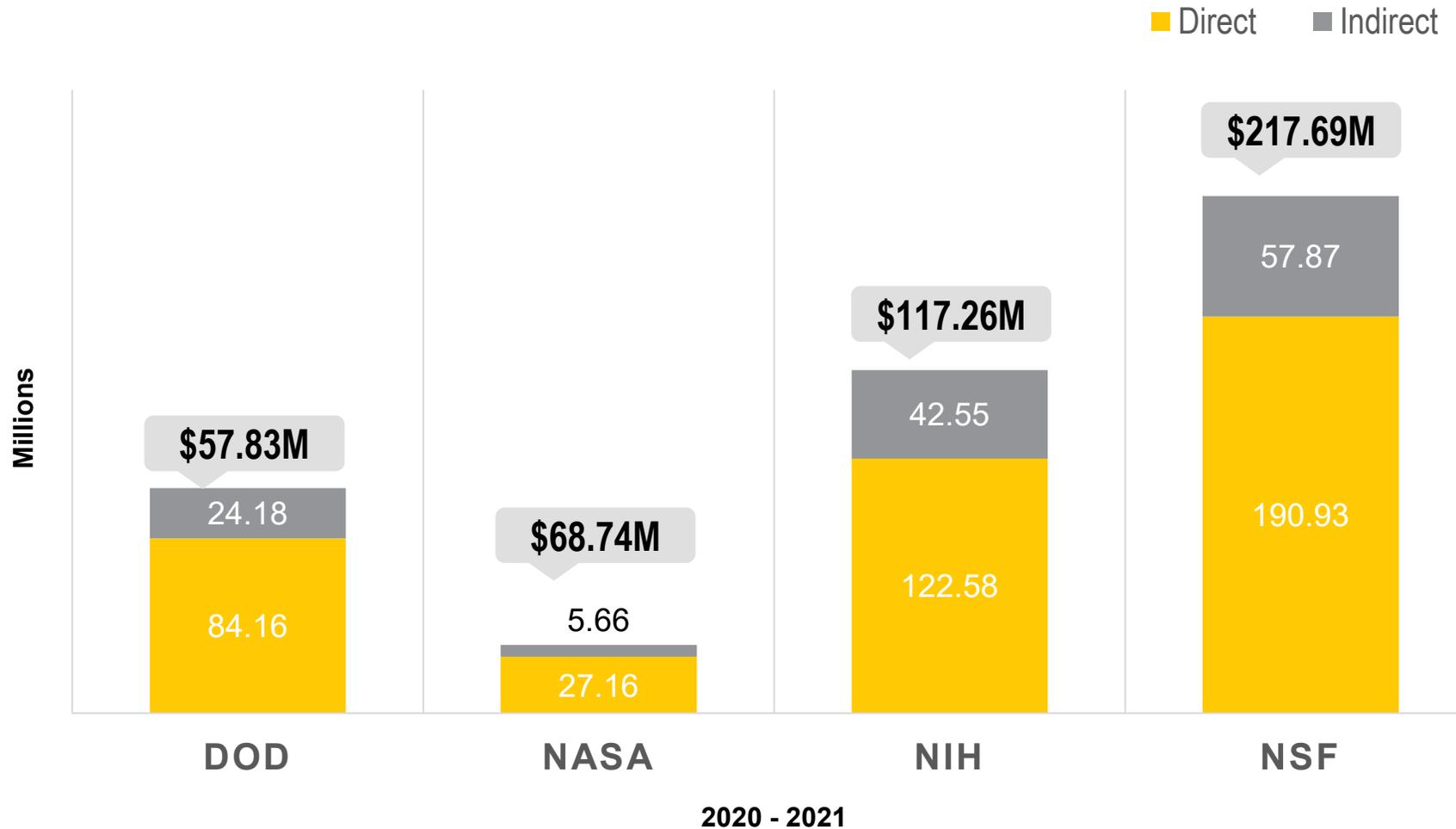
Moving Forward

UCF has spent the last five years modernizing its research administration and has for the past decade invested in some key areas such as: optics, hospitality, modeling and simulation, and space.

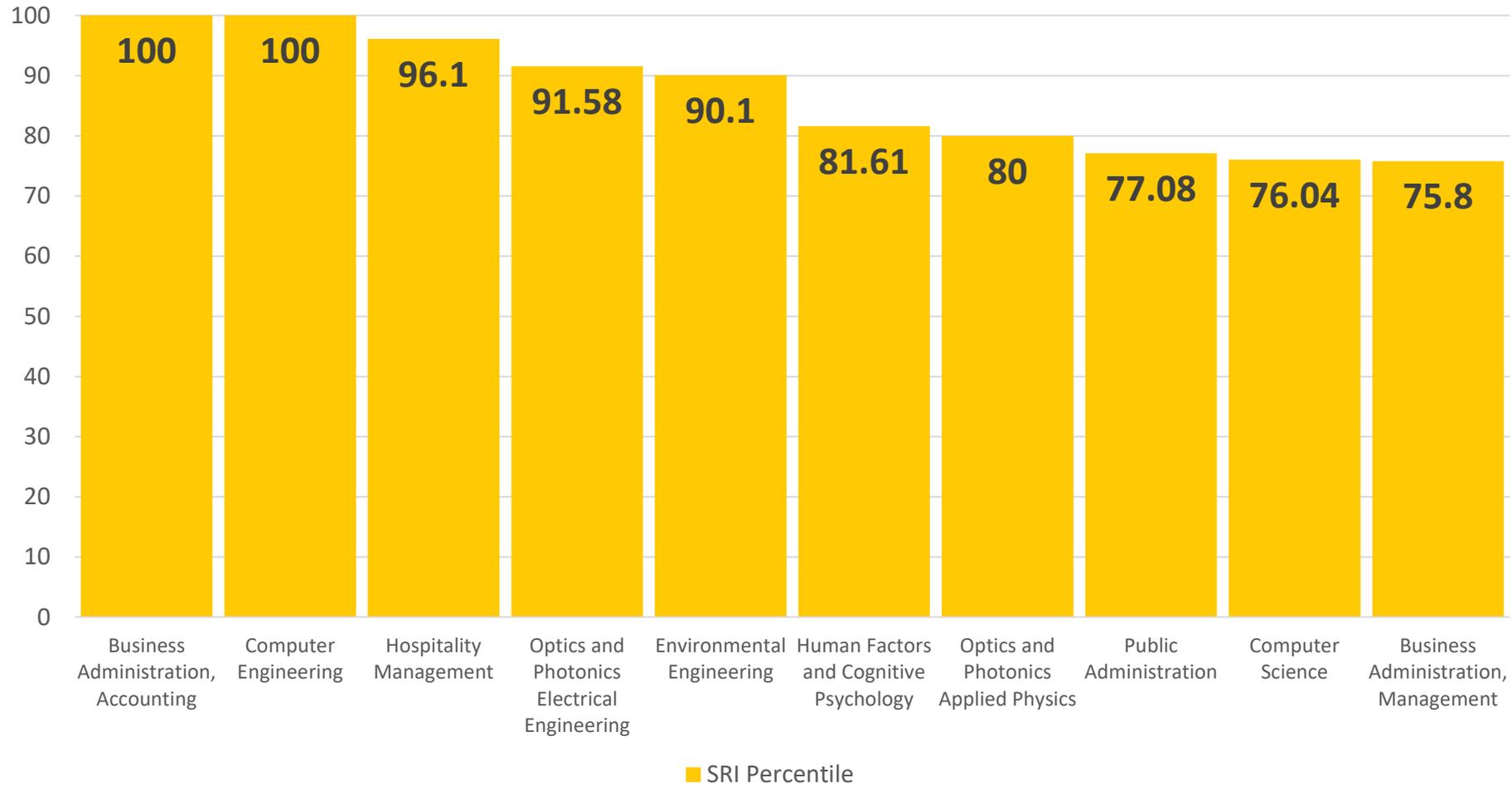
Strategic research investments are being discussed now to identify the next areas of opportunity

Resources will be needed to support faculty, students and staff that conduct research. UCF also will need support to tell UCF's research story of impact. But consider the money needed a long-term investment where the dividends are new knowledge that changes the world and a well-equipped workforce that will keep America as a world leader in innovation.

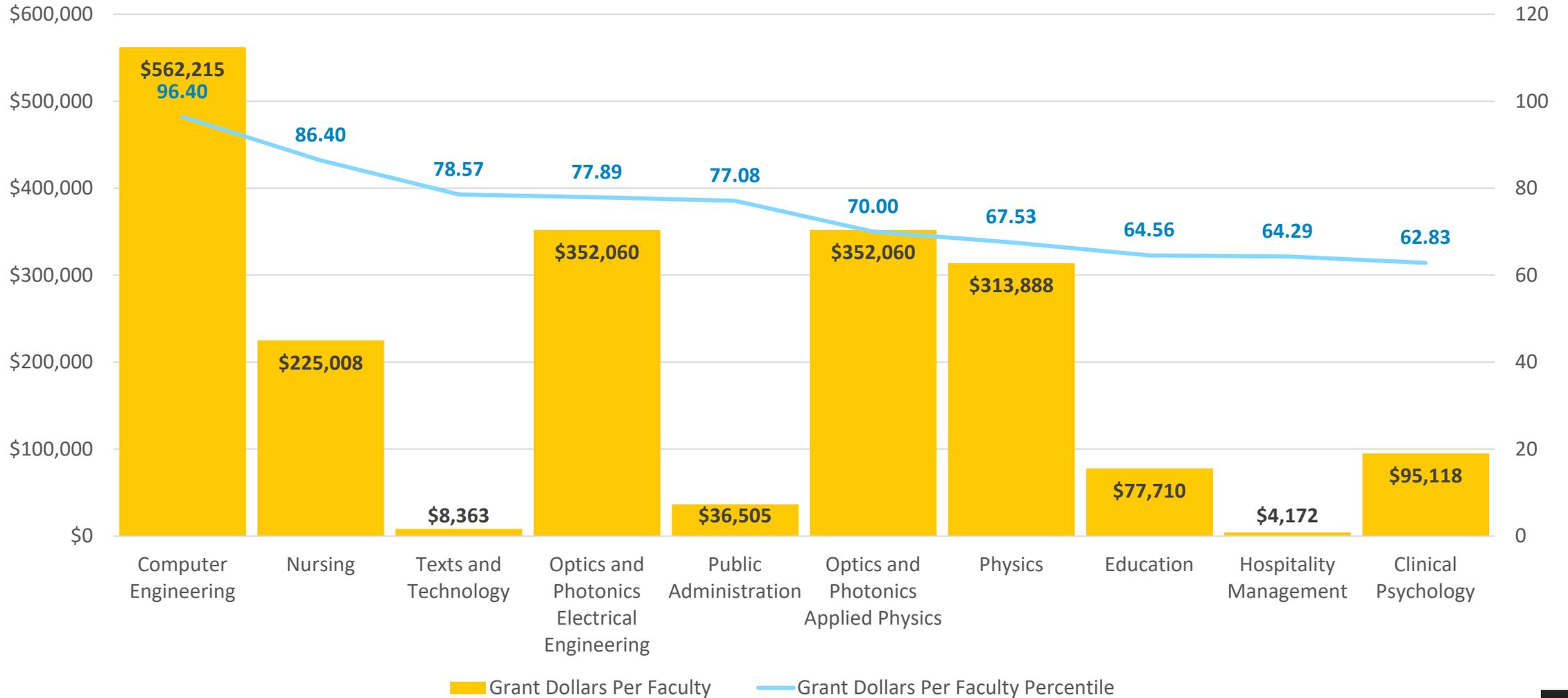
Direct and Indirect Funding



Top 10 PhD Programs by SRI Percentile

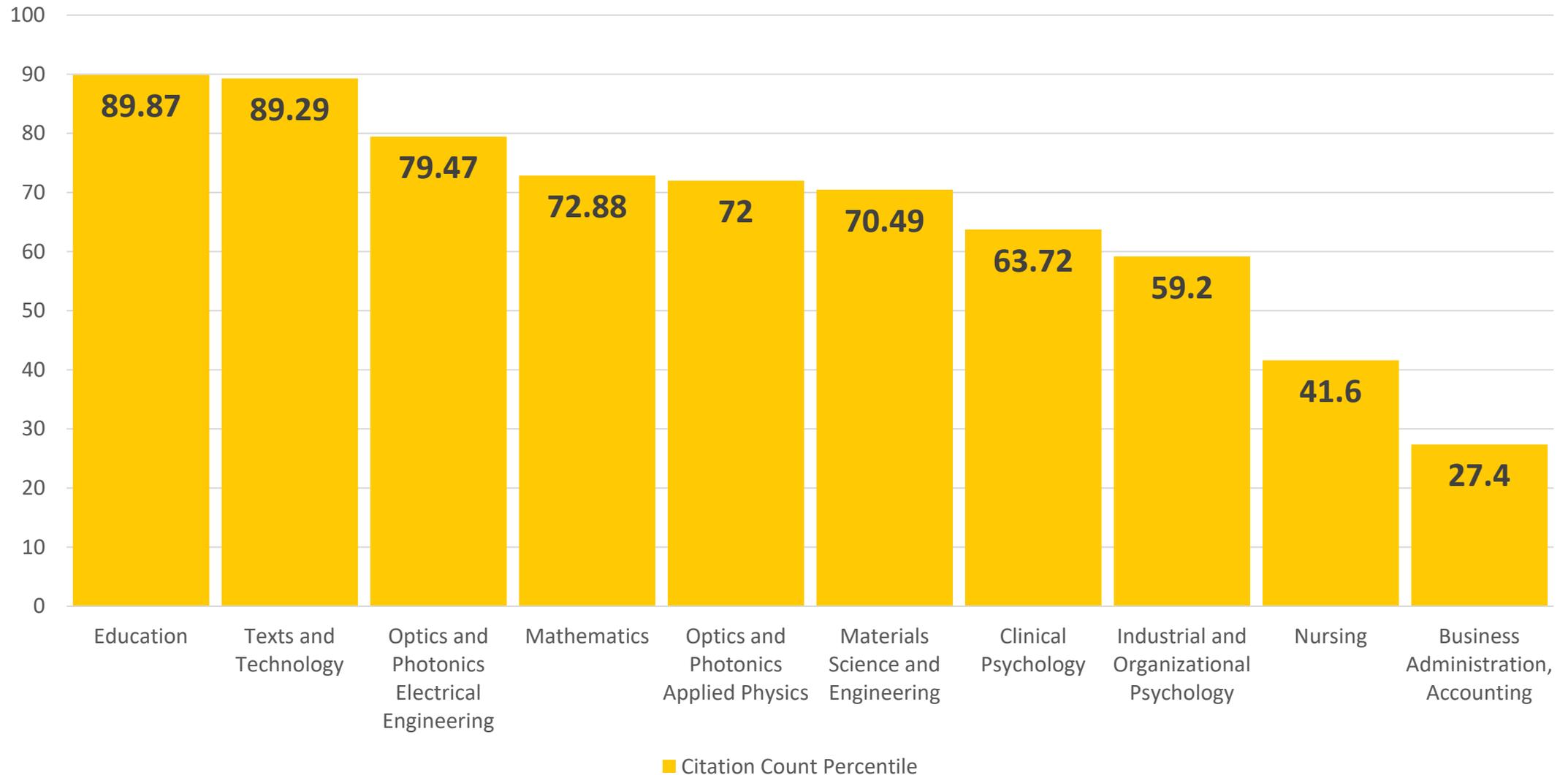


Top 10 PhD Program Grant Dollars Per Faculty



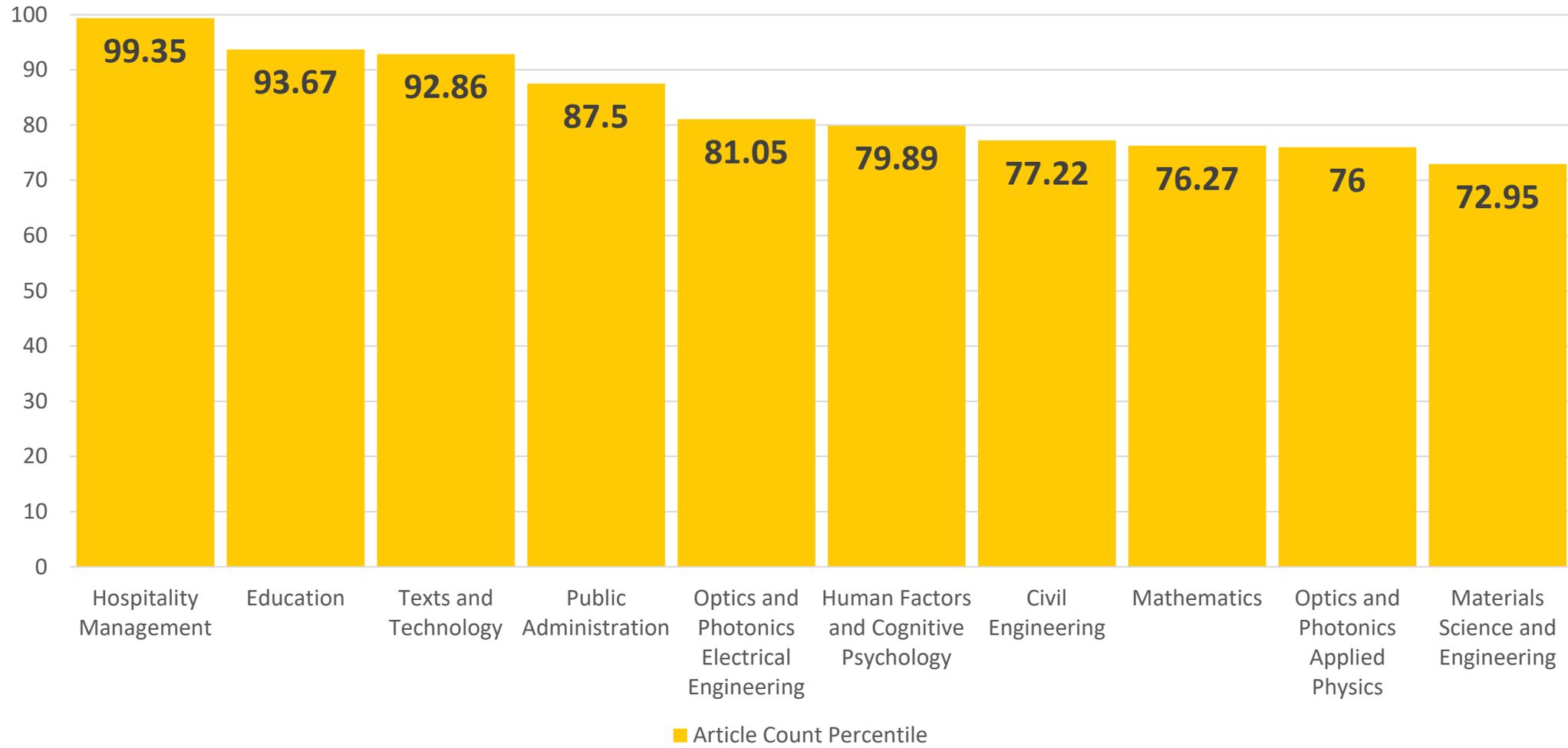
Source: Academic Analytics, AAD2020.00.01895.

Top 10 PhD Programs by Citation Percentile



Source: Academic Analytics, AAD2020.00.01895.

Top 10 PhD Program by Article Percentile





**Board of Trustees
Academic Excellence and Student Success Committee
November 16, 2021**

DISC-3: Accountability Plan Review

Information Discussion Action

Meeting Date for Upcoming Action: N/A

Purpose and Issues to be Considered:

Provide an update and/or additional depth on various Accountability Plan metrics.

Background Information:

The Accountability Plan is only considered for approval once a year (in late April). To facilitate deeper discussion on the content and implications, various segments will be highlighted during each Academic Excellence and Student Success committee meeting.

This second-round discussion will highlight metrics related to graduate students, research, and technology transfer.

Recommended Action:

N/A

Alternatives to Decision:

N/A

Fiscal Impact and Source of Funding:

N/A

Authority for Board of Trustees Action:

No action. BOG 2.002 (3): Each board of trustees shall prepare an accountability plan and submit updates on an annual basis for consideration by the Board of Governors.

Contract Reviewed/Approved by General Counsel N/A

Committee Chair or Chair of the Board has approved adding this item to the agenda

Submitted by:

Michael D. Johnson, Interim Provost and Vice President for Academic Affairs

Supporting Documentation:

Attachment A: Graduate and Research Accountability Plan Highlights-Nov2021

Attachment B: Scoresheet of Selected Accountability Plan Metrics-Nov2021



Board of Trustees

Agenda Memo

Facilitator:

M. Paige Borden, Associate Provost and Chief Analytics Officer



2021 Accountability Plan Review

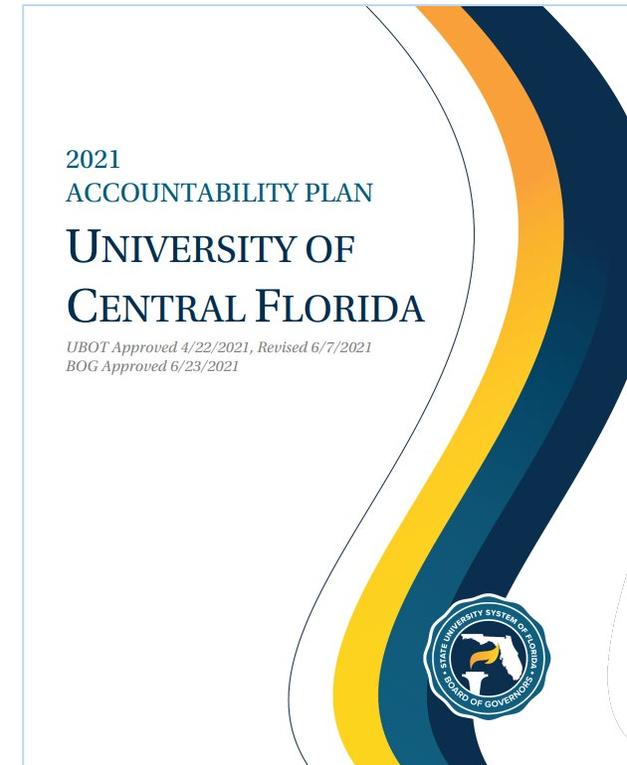
Dr. Paige Borden

Associate Provost and Chief Analytics
Officer

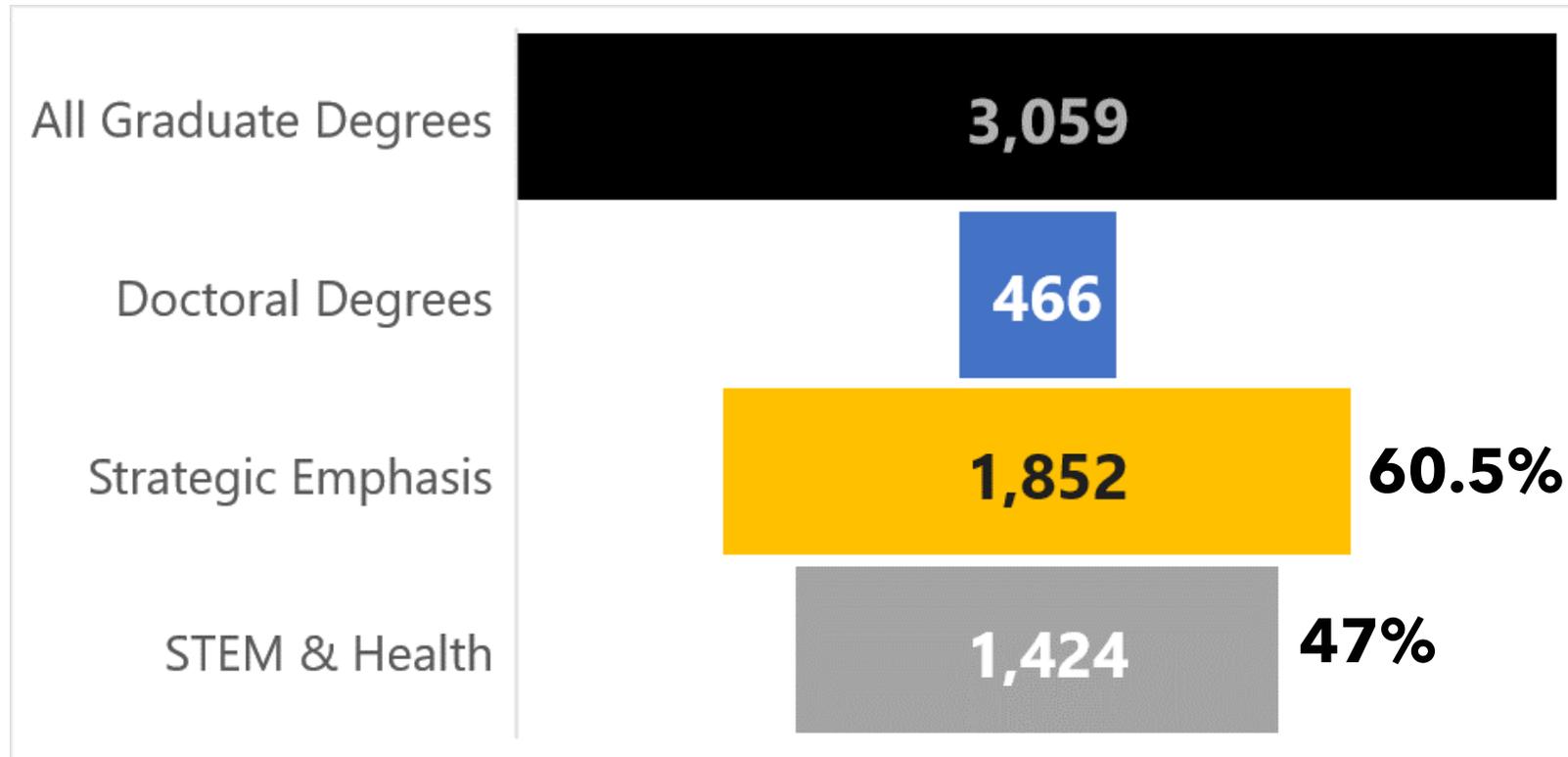
November 16, 2021

Accountability Plan Metrics

- Graduate, Scholarship, Research, and Innovation Metrics
 - 1 of 11 Performance Based Funding (PBF) metrics
 - 7 of 12 Preeminent (PRE) metrics
 - 10 of 22 Key Performance Indicators (KPI) metrics
 - 3 of 15 Teaching and Learning metrics
 - 7 of 7 Scholarship, Research and Innovation metrics

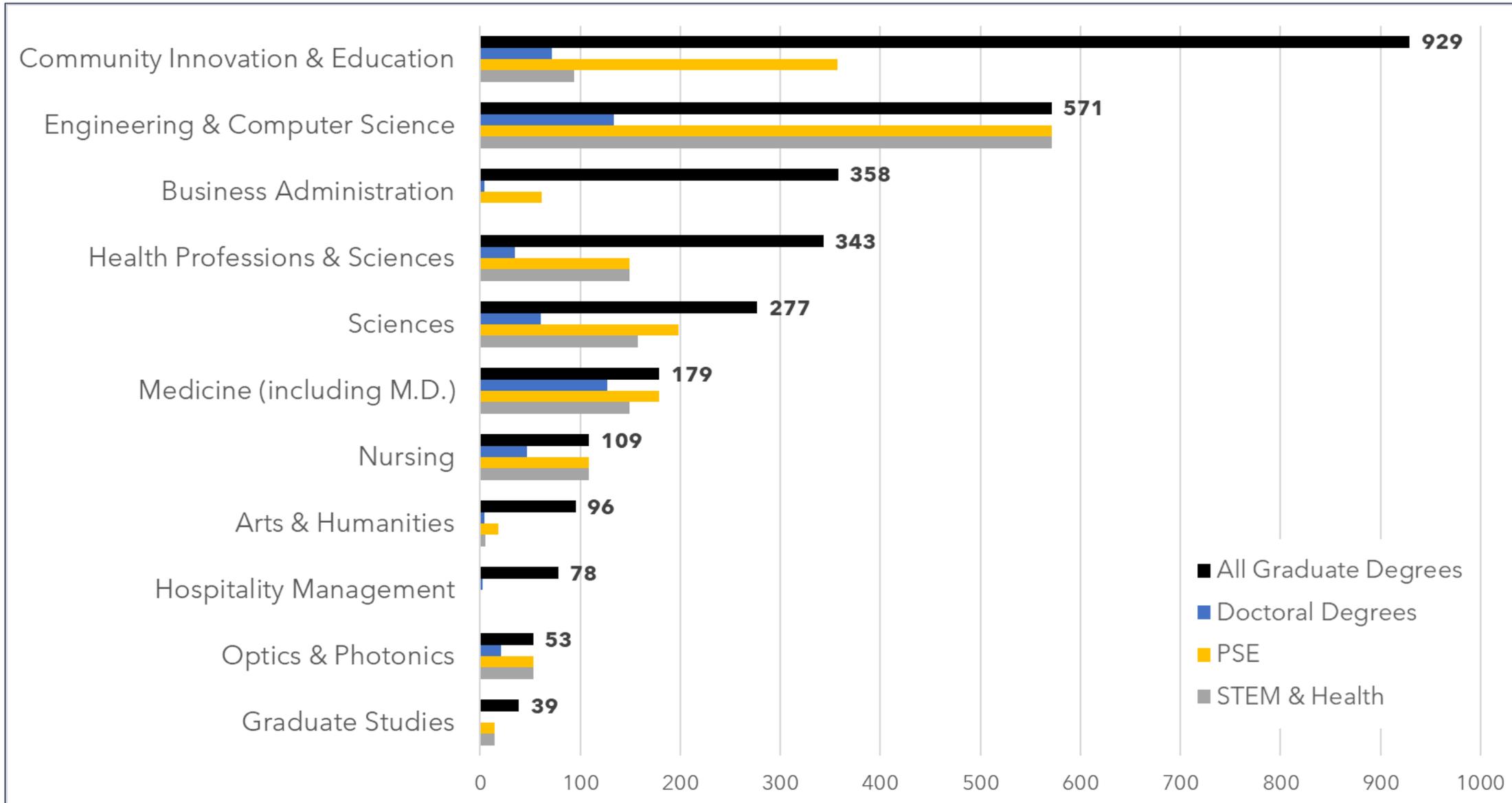


Graduate Degrees



Graduate Degrees

KPI-9, PRE-J,
PBF 8, & KPI-14



Faculty Recognition

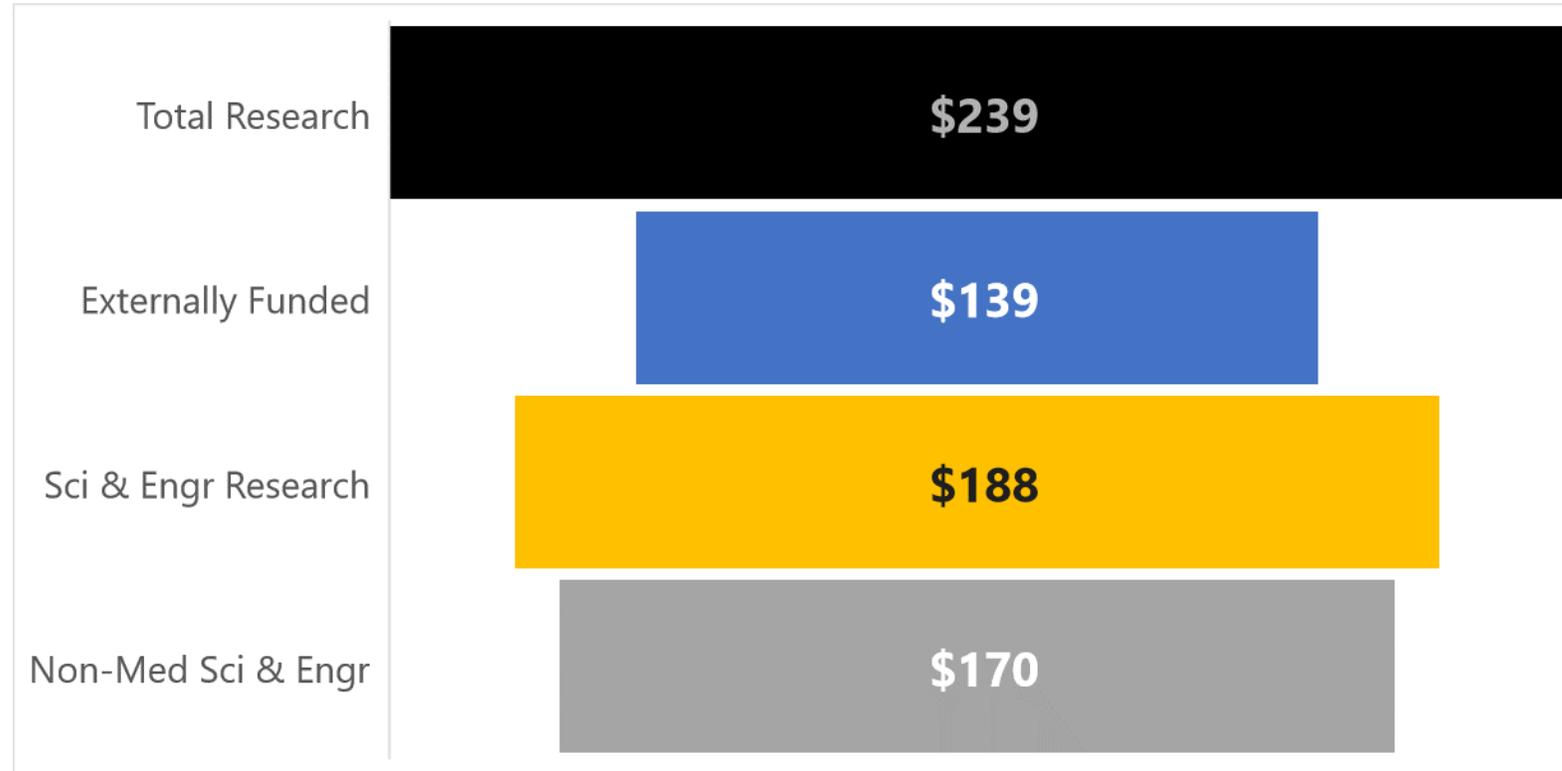
- National Academy Members
- Faculty Awards (as reported by the Center for Measuring University Performance) from 24 different organizations - 3-year data lag

	NSF Career Award	Fulbright Scholar	Sloan Fellow
2018	2	4	
2019	7	2	1
2020	12		
2021	5	1	

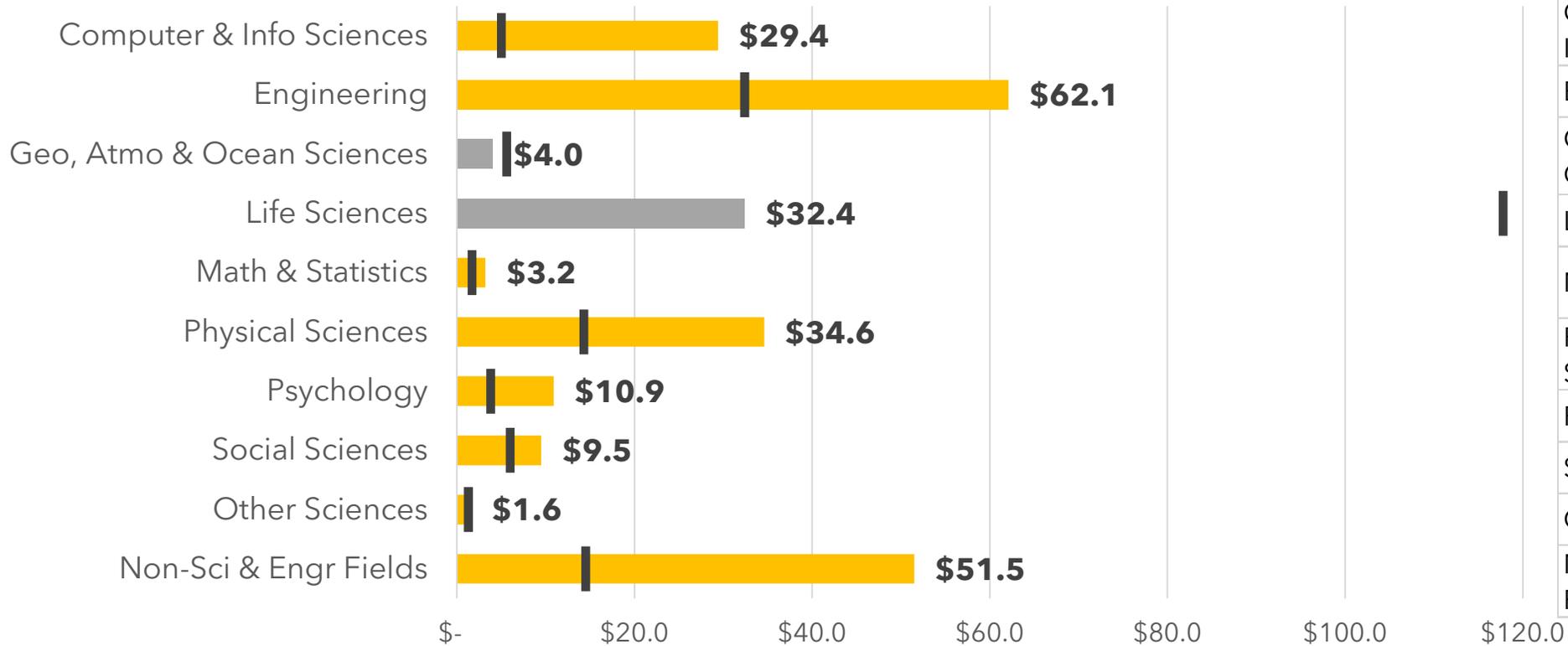
Research Expenditures (\$ millions)

KPI-18 & 19

PRE-F & G



UCF Research with Top 100 Threshold (\$ m)



FY 2019	UCF Rank (Overall)	UCF Rank (Public)
Overall	108th	72nd
Computer & Info Sciences	13th	9th
Engineering	56th	36th
Geo, Atmo & Ocean Sciences	113th	84th
Life Sciences	157th	111th
Math & Statistics	61st	43rd
Physical Sciences	48th	32nd
Psychology	77th	56th
Social Sciences	57th	34th
Other Sciences	65th	48th
Non-Sci & Engr Fields	36th	27th

Source: National Science Foundation Higher Education Research & Development Survey (NSF HERD): FY 2020 and 2019

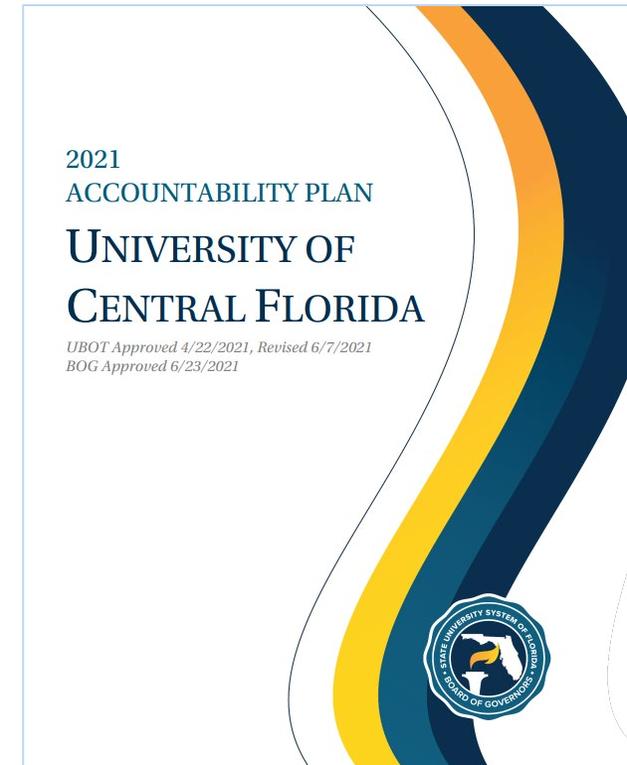
Innovation

- Utility Patents Awarded
- Licenses/Options Executed Annually
- Start-up Companies Created

- Managed by the Office of Technology Transfer
 - Intellectual Property Protection (patents, trademarks or copyrights)
 - Commercialization

Summary and Next Steps

- November Review
 - Scholarship, Research and Innovation metrics
 - Graduate metrics
- February Review
 - Student Success metrics



Metric Details

Graduate Scholarship, Research, and
Innovation

Graduate Degrees

8. Percentage of Graduate Degrees Awarded within Programs of Strategic Emphasis

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ACTUAL	63.4	62	62.6	61.2	60.5	.	.	.	.	.
APPROVED GOALS	62	63.6	62.5	63	63.4	63.8	64	64	64	.
PROPOSED GOALS	.	.	.	.	.	60.0	60.1	60.2	60.3	60.4

J. Doctoral Degrees Awarded Annually

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ACTUAL	440	429	438	415	466	.	.	.	.	.
APPROVED GOALS	445	455	440	455	470	480	490	490	490	.
PROPOSED GOALS	.	.	.	.	.	480	490	490	490	500

Graduate Degrees

9. Graduate Degrees Awarded [First Majors Only]										
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ACTUAL	2,681	2,647	2,752	2,884	3,059	.	.	.	.	.
APPROVED GOALS	2,770	2,700	2,670	2,793	2,900	2,950	3,000	3,050	3,100	.
PROPOSED GOALS	.	.	.	.	.	3,050	3,100	3,150	3,200	3,250

14. Percent of Graduate Degrees in STEM & Health										
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ACTUAL	47	45	47	46	47	.	.	.	.	.
APPROVED GOALS	45	47	48	48	49	50	50	50	50	.
PROPOSED GOALS	.	.	.	.	.	47	47	48	48	48

Pass Rates

15. Professional Licensure & Certification Exam First-time Pass Rates										
CALENDAR YEAR	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
NURSING	92	96	95	97	96	97	97	97	97	97
<i>US Average</i>	88	90	92	91	90	.	.	.	.	.
MEDICINE (2YR)	100	97	97	98	98	98	98	98	98	98
<i>US Average</i>	96	96	96	97	97	.	.	.	.	.
CROSS-YEAR	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
MEDICINE (4Y-CK)	100	98	99	98	98	98	98	98	98	98
<i>US Average</i>	96	96	97	98	98	.	.	.	.	.
MULTI-YEAR	2014-16	2015-17	2016-18	2017-19	2018-20	2019-21	2020-22	2021-23	2022-24	2023-25
PHYSICAL THERAPY	98	100	99	99	99	95	95	95	95	95
<i>US Average</i>	92	92	92	92	91	.	.	.	.	.
Exam Scores Relative to Benchmarks										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
ABOVE OR TIED	4	4	4	4	4	4	4	4	4	4
TOTAL	4	4	4	4	4	4	4	4	4	4

Faculty Recognition

E. National Academy Memberships

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
ACTUAL	6	6	6	7	8	.	.	.	.	.
APPROVED GOALS	2	7	6	7	7	8	8	8	8	.
PROPOSED GOALS	.	.	.	.	.	8	8	8	8	8

17. Faculty Awards

	FALL 2014	FALL 2015	FALL 2016	FALL 2017	FALL 2018	FALL 2019	FALL 2020	FALL 2021	FALL 2022	FALL 2023
ACTUAL	7	7	8	7	5	.	.	.	.	.
APPROVED GOALS	12	8	8	10	11	12	12	12	12	.
PROPOSED GOALS	.	.	.	.	.	12	12	12	12	12

Research Expenditures

F. Science & Engineering Research Expenditures (\$M)										
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ACTUAL	166	169	176	186	188	.	.	.	.	.
APPROVED GOALS	174	194	194	201	206	210	210	210	210	.
PROPOSED GOALS	.	.	.	.	.	195	201	207	213	219

G. Non-Medical Science & Engineering Research Expenditures (\$M)										
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ACTUAL	158	161	165	169	170	.	.	.	.	.
APPROVED GOALS	171	186	186	192	198	201	201	201	201	.
PROPOSED GOALS	.	.	.	.	.	174	177	180	183	187

Research Expenditures

18. Total Research Expenditures (\$M)										
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ACTUAL	198	200	215	225	239	.	.	.	.	.
APPROVED GOALS	218	271	248	269	290	315	315	315	315	.
PROPOSED GOALS	.	.	.	.	.	247	258	268	279	290

19. Research Expenditures from External Sources (\$M)										
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ACTUAL	118	114	119	127	139	.	.	.	.	.
APPROVED GOALS	.	.	.	.	133	140	140	140	140	.
PROPOSED GOALS	.	.	.	.	.	142	145	151	156	162

Research Expenditures

H. Number of Broad Disciplines Ranked in Top 100 for Research Expenditures

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
ACTUAL	7 of 8	7 of 8	7 of 8	6 of 8	6 of 8
APPROVED GOALS	7 of 8	.								
PROPOSED GOALS	7 of 8				

K. Number of Post-Doctoral Appointees

	FALL 2015	FALL 2016	FALL 2017	FALL 2018	FALL 2019	FALL 2020	FALL 2021	FALL 2022	FALL 2023	FALL 2024
ACTUAL	51	67	94	146	171	.	.	.	.	.
APPROVED GOALS	68	72	96	112	160	170	180	190	200	.
PROPOSED GOALS	.	.	.	.	.	170	180	190	200	200

Innovation Metrics

I. Utility Patents Awarded [over three calendar years]

	2014-16	2015-17	2016-18	2017-19	2018-20	2019-21	2020-22	2021-23	2022-24	2023-25
ACTUAL	184	165	147	138	145	.	.	.	.	.
APPROVED GOALS	208	192	152	138	135	140	135	136	138	.
PROPOSED GOALS	.	.	.	.	.	150	145	136	138	141

21. Number of Licenses/Options Executed Annually

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
ACTUAL	38	34	40	28	28	.	.	.	.	.
APPROVED GOALS	31	34	34	34	36	36	36	36	36	.
PROPOSED GOALS	.	.	.	.	.	36	36	36	36	36

22. Number of Start-up Companies Created

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
ACTUAL	14	9	1	0	5	.	.	.	.	.
APPROVED GOALS	10	15	10	12	14	15	15	15	15	.
PROPOSED GOALS	.	.	.	.	.	15	15	15	15	15

Discussion





Accountability Plan 2021 Update: November 2021

Full [Accountability Plan 2021](#)

Metrics related to Graduate Students, Scholarship, Research and Innovation

	Performance-Based Funding Metrics	10-Point Excellence	SUS 2021 Comparison	2021 Points Result	2021	Trend
8	Graduate Degrees Awarded Within Programs of Strategic Emphasis	60%	6th (max pts)	10	60.5% (10 points)	

	Preeminent University Metrics	Benchmark	SUS* 2021 Comparison	2021 Result	2021	TREND
E	National Academy Memberships	>= 6	3rd	✓	8	
F	Total Annual Research Expenditures (Science & Engineering only)	>= \$200M	5th		\$188	
G	Total Annual Research Expenditures in Non-Medical Sciences (S&E only)	\$150M	5th	✓	\$170	
H	National Ranking in Research Expenditures	5 in Top 100	T-4th	✓	6	
I	Patents Awarded (over 3-year period)	100	5th	✓	145	
J	Doctoral Degrees Awarded Annually	400	4th	✓	466	
K	Number of Post-Doctoral Appointees	200	5th		171	

	KPI	2021 Actual	2021 SUS Comparison
9	Graduate Degrees Awarded	3,059	5th
14	Percent of Graduate Degrees in STEM & Health	47%	5th
15	Licensure: Nursing	96%	T-2nd
	Licensure: Physical Therapy	99%	2nd
	Licensure: Medicine (2YR)	98%	4th
	Licensure: Medicine (4Y-CK)	98%	5th
	Licensure: Exams Above Benchmarks	4	T-1st

	KPI	2021 Actual	2021 SUS Comparison
16	National Academy Memberships	8	3rd
17	Faculty Awards	5	4th
18	Total Research Expenditures (\$M)	\$239	5th
19	Research Expenditures from External Sources	\$139	4th
20	Utility Patents Awarded	55	4th
21	Number of Licenses/Options Executed Annually	28	3rd
22	Number of Start-up Companies Created	5	3rd