

**State University System
Education and General
2020-2021 Legislative Budget Request
Form I**

University(s):	Florida State University
Issue Title:	National Rankings Enhancement
Date Issue Approved by University Board of Trustees:	
Recurring Funds Requested:	\$25,000,000
Non-Recurring Funds Requested:	
Total Funds Requested:	\$25,000,000
Please check the issue type below:	
Shared Services/System-Wide Issue for Fiscal Year 2020-2021	<input type="checkbox"/>
Unique Issue for Fiscal Year 2020-2021	<input type="checkbox"/>

I. Description

Introduction

With the support of the Legislature, Board of Governors, and private philanthropy, Florida State has made considerable investments to advance the quality and stature of the university. **These investments have yielded unprecedented results, helping to vault FSU and Florida's higher education system to new levels.**

FSU is rapidly progressing towards becoming a national Top 15 public university and a leader in student career readiness. The university has invested in a comprehensive strategy that builds on past appropriations and the spectrum of high-quality programs offered at Florida State.

The university's strategic investments are achieving higher levels of excellence – and with greater efficiencies – than nearly every other public research university in the country. With the understanding that Florida State's rank and prestige is highly dependent on investment in faculty and graduate researchers, particularly in the STEM fields, the university is now successfully competing for some of the nation's most esteemed faculty. In addition, FSU continues to invest in entrepreneurship and innovation education, which is integral to becoming a state and national leader developing successful students with deep career readiness, including being prepared for the building of great new Florida businesses.

National Rankings Enhancement funding has allowed Florida State to advance its mission by significantly improving its ability to provide students with a challenging academic environment that leads to successful and rewarding careers.

The Opportunity

While recent state investment has, and will continue to, substantially elevate the university, Florida State still has far fewer dollars for faculty resources and research than the institutions that now separate FSU from a Top 15 ranking. Florida State has improved 17 spots in three years, faster than any other university in the top 50 public universities. Our Top 15 plan hinges on the continuation of a bold faculty hiring initiative that is bringing the nation's top talent to FSU. Thus far, our initiatives have resulted in the hiring of 125 outstanding new faculty members, who are teaching, doing research and building the FSU and State of Florida reputation.

Moving the needle on *U.S. News & World Report* rankings is rather straightforward. It is also tied to state investment, as many of the measures are a direct reflection of university resources. For example, 10% of an institution's ranking is determined by its per-student spending, and another 20% is based on faculty resources. Almost one-quarter of the rankings are based on the reputation of FSU among our national colleagues. Thus, Florida State's Top 15 funding request for the coming fiscal year is directed specifically at the investments that will help elevate the performance and national stature of the university and thereby the entire State of Florida.

The Investment

In recent years, Florida State has clearly been able to make a number of strategic investments that address the *USN&WR* metrics, and additional funding directed toward the following will further improve its rank and reputation.

Student Success

Florida State is already recognized as a national leader for improvements to its student retention and graduation rates. Since 2005, student retention at FSU improved from 87.9% to 93%/94%, which is among the Top 15 public universities in the nation. The six-year graduation rate at FSU has risen from 69.6% to 83%. The four-year graduation rate has risen from 46.2% in 2002 to 72% in 2018 – the highest four-year graduation rate in the history of FSU and the State University System. For the next set of *USN&WR* rankings, Florida State is projected to place in the top 10 in the country on these student success metrics.

We have a laser focus on continuing to improve the four-year graduation rate. FSU's commitment to graduating students in four-years includes our "Take 15" initiative, which is designed to decrease the time to degree. The added benefit of graduating students earlier is reduction of their expenses and the significant effect it will have on their lifetime earnings.

As a Florida preeminent university, Florida State's focus also is centered on student success after graduation, helping our students launch into post-graduate education or employment.

National Rankings Enhancement funding will further advance student graduation rates and post-graduation success through increased student support, academic, professional and entrepreneurial engagement, and career preparation.

Increased Student Support

Previous dollars have allowed Florida State to invest in the EAB Student Success Collaborative, a project designed to increase persistence and graduation among at-risk students. This initiative has allowed FSU to identify, through statistical analysis, and then guide students to their best – or a better – course of action. Examples include students who might benefit from switching majors and providing students (and their academic advisors) with information on job prospects and expected earnings.

With the help of previous funding, Florida State's student-to-advisor ratio has advanced to nearly 380:1. Despite progress, this ratio far exceeds the national standard of 300:1. The university would commit funding requested here to hire additional advisors to help bring student support levels to the national average. Increasing the number of student advisors would also give new students a single advisor for the duration of their time at FSU, freeing up faculty to better guide and direct students on properly preparing for their careers.

Florida State also uses College Life Coaches (CLC) to provide "high-touch" academic support to at-risk students who demonstrate the greatest need. While the CLC program has been enormously successful, it lacks a sufficient number of coaches and can thereby not adequately attend to the students who would benefit most from this level of support. Funding would allow FSU to hire additional College Life Coaches to support these at-risk students.

Additional funding will also allow the university to expand its Graduation Specialists initiative. This program brings together a team of specialized staff members who guide and assist 1,200-1,400 students with excessive and/or high credit hours to a clear and timely path to graduation.

Increased Levels of Student Engagement and Career Readiness

Increasing FSU's funding will enhance FSU's new Engage 100 effort, which aims to scale engaged-learning experiences that enrich traditional classroom instruction, bolstering student success, for every first-year student. In addition, in 2019, FSU became the largest and most diverse university in the nation to adopt an experiential learning graduate requirement. Experiential learning includes undergraduate research, internships, community and project-based learning, international study, and other high-impact practices that provide students with the knowledge and skills needed in today's workforce.

In this regard, Florida State has already made considerable advances, as the university was recently recognized by the National Council on Undergraduate Research as one of its top institutions. In Fall 2017, FSU launched its Center for the Advancement of Teaching to promote proven educational practices and assist faculty in their adoption of leading-edge educational technology. An initial effort targeted the number of students who fail gateway courses by redesigning instruction and adding learning assistants – undergraduate students who engage their peers in active/participatory learning in the classroom. Scaling up these practices, however, requires more faculty and staff members, and additional funding will provide the dollars necessary to make that happen.

In line with the Board of Governors' Strategic Plan (and Florida State's Accountability Plan), the university also intends to invest dollars to increase its recruitment and retention of high-achieving undergraduate students including Bright Futures and Benacquisto Scholars.

Increasing the number of faculty members and doctoral students to support undergraduate student success

- A. Targeted Faculty – Florida State will further enhance the quality of its instruction and student learning through the hiring of additional faculty to allow us to continue to improve undergraduate teaching and advising while addressing course availability challenges. These faculty will allow us to offer smaller classes that have been redesigned to improve student engagement and experiential (often hands-on) learning.
- B. Doctoral students – The faculty hired through our national rankings enhancement funding will rely on exceptional students in doctoral programs. These students and scholars are key components of a competitive Research I University, and they are central to our Top 15 plan. To accommodate the needed growth in faculty research, we must increase the number of recurring graduate assistantships by at least 125. The assistantships will help us to attract top graduate assistants to complement our recent and future faculty hires to help elevate FSU to the level of our peers, to strengthen the scholarship of existing faculty members, to promote the research of new hires, to teach key undergraduate courses, and to mentor graduate and undergraduate students.

II. Return on Investment

Increases in funding will provide strategic investments that benefit the State of Florida:

- Elevate Florida State University into the Top 15 among public universities as determined by *U.S. News & World Report* and the Annual Report of *Top American Research Universities*
- Achieve higher national prominence as a leader in the fields of science, technology, engineering and math to ensure that Florida State continues to be a model for the State of Florida and nation in student career readiness and placement

- Realize substantial savings for Florida families through high student retention and increased four-year graduation rates
- Provide affordable excellence across a broad spectrum of academic fields; add significantly to the university's existing centers of excellence, including its nationally ranked arts, science, and business programs
- Provide benefits associated with expanding the university's research enterprise and research discoveries that will create jobs, opportunities for start-up companies, and by generating discoveries that may directly impact Floridians.

More importantly, state investments will allow Florida State to elevate its standing in most of the Florida Board of Governors' metrics, enhance its contributions to the State of Florida, and enable Florida State University to achieve world class distinction.

Key metrics that the *U.S. News & World Report* and *Top American Research Universities* include:

- Student Retention and Graduation Rates (especially four-year graduation rates)
- Freshman Retention
- Student/Faculty Ratio
- Class Size
- Faculty Resources
- Total Research Expenditures
- Federal Research Expenditures
- National Academy Members
- Faculty Awards
- Doctorates Granted
- Average SAT
- Postdoctoral Fellows
- Alumni Giving Rate
- National Reputation

III. Facilities

None

**2020-2021 Legislative Budget Request
Education and General
Position and Fiscal Summary
Operating Budget Form II**

University: Florida State University
Issue Title: National Rankings
Enhancement

	RECURRING	NON- RECURRING	TOTAL
<u>Positions</u>			
Faculty	80.00	0.00	80.00
Other (A&P/USPS)	25.00	0.00	25.00
	-----	-----	-----
Total	105.00	0.00	105.00
	=====	=====	=====
<u>Salary Rate (for all positions noted above)</u>			
Faculty	\$9,600,000	\$0	\$9,600,000
Other (A&P/USPS)	\$1,250,000	\$0	\$1,250,000
	-----	-----	-----
Total	\$10,850,000	\$0	\$10,850,000
	=====	=====	=====
Salaries and Benefits	\$14,105,000	\$0	\$14,105,000
Other Personal Services	\$0	\$0	\$0
Expenses	\$0	\$0	\$0
Operating Capital Outlay	\$0	\$0	\$0
Electronic Data Processing	\$0	\$0	\$0
Special Category (Specific)	\$0	\$0	\$0
Student Success	\$8,395,000	\$0	\$8,395,000
Graduate Student Stipends and Support	\$2,500,000	\$0	\$2,500,000
	\$0	\$0	\$0
	-----	-----	-----
Total All Categories	\$25,000,000	\$0	\$25,000,000
	=====	=====	=====

**State University System
Education and General
2020-2021 Legislative Budget Request
Form I**

University(s):	Florida State University
Issue Title:	Enriching Florida's Talent Pipeline (Preeminence)
Date Issue Approved by University Board of Trustees:	
Recurring Funds Requested:	\$25,000,000
Non-Recurring Funds Requested:	
Total Funds Requested:	\$25,000,000
Please check the issue type below:	
Shared Services/System-Wide Issue for Fiscal Year 2020-2021	<input type="checkbox"/>
Unique Issue for Fiscal Year 2020-2021	<input type="checkbox"/>

I. Description

Preeminence funding is a pillar in FSU's plan to reach the Top 15 and to continue to advance student success to among the highest in the nation. Analyses of our *US News* ranks and other national data indicate that our greatest needs are reducing class size and improving student-to-faculty ratio through expansion and retention of our faculty.

Growing High-Productivity Academic Programs and Increasing the Number of Highly-Recognized Faculty

Preeminence funding will allow FSU to build academic programs and maximize their productivity and impacts. This will include the hiring of both entry level and senior faculty depending on the needs of each program. The strategic alignment of these resources will allow for new research opportunities and new revenues sources. Some programs lack the number of faculty to be national leaders and others will benefit from the addition of key mid-career faculty.

In addition to building the faculty ranks, FSU intends to improve the faculty development resources to improve faculty scholarly and research productivity. These efforts will allow existing and new faculty the opportunity to gain a higher level of prestige within their disciplines which should positively affect faculty career longevity, while increasing faculty awards and research funding. Each of these outcomes will improve FSU's stature as an employment and student destination by elevating the

academic reputation of the university, extending faculty career longevity, and increasing faculty awards and research funding.

Improving the Student-to-Faculty Ratio

Florida State's Top 15 multi-year plan has a student-to-faculty goal of 17:1, which is the level that current Top 50 universities enjoy.

Three years ago, Florida State's student-to-faculty ratio was 25:1, which placed the university third from the last (tied for 178th) among national public universities, according to *U.S. News & World Report*. With recent state investments, FSU has moved to 21:1, but that projects FSU at a ranking of 153. This ranking, relative to peer institutions, negatively affects the university's level of instruction, research, and student success.

With the previous support of the Legislature, Governor, and Board of Governors, FSU hired 125 new faculty members, 20% of the way to our goal of a faculty-student ratio of 17:1. Achieving this 17:1 goal would require an additional 382 faculty members. In total, the dollars requested in FSU's 2020-2021 LBR for National Rankings Enhancement and Preeminence would allow Florida State to hire an additional 200 instructional faculty members. These 200 additional faculty would bring the university's student-to-faculty ratio to 18.6:1.

Achieving this short-term 18.6 ratio would still have FSU behind most public universities in the United States, including:

- Middle Tennessee State University
- North Carolina A&T University
- North Dakota State University
- Portland State University
- University of South Alabama
- University of Akron

It should also be noted that in order to compete with universities already in the Top 15, Florida State would need to bring its student-to-faculty ratio down to 14:1.

Promoting Student Success and Graduate Student Enrollment

Essential to the college experience for undergraduate students at Florida State is the university's ability to offer a residential (residential-hall-based) campus, superior classroom instruction, and faculty-led experiences. These essentials are among the components that not only make FSU a "destination" campus, but also contribute to the university's outstanding student retention and graduation rates.

A national measure of student success called the Gallup-Purdue Index places a high value on student interactions with faculty members. By increasing the number of the faculty members at Florida State, student success rates will be enhanced in the following ways:

- Where possible, class size will be reduced, which will provide faculty members greater opportunities to get to know students and mentor them
- Florida State will be able to attract increased numbers of high-achieving undergraduate applicants, including Bright Futures and Benacquisto Scholars—the very students who largely choose a college based on opportunities to engage with highly regarded faculty members
- FSU will be better able to assist faculty in adopting proven instructional and research-guidance practices that improve student engagement and learning
- A significantly greater number of faculty members will be able to engage in high-impact student-success practices including directed individual study, undergraduate research, community and project-based learning, honors courses, entrepreneurship activities, and internships.

The Council on Undergraduate Research has recognized Florida State for the impressive advances it has already made toward these initiatives and provided FSU with a recent award for being one of the top institutions for undergraduate research in the nation. Scaling up these types of instructional practices, however, requires substantial increases in the number of faculty and staff.

Central to further improvements will be growth in the overall faculty population. This expansion will allow Florida State to increase its graduate student enrollment and programs and bring FSU on par with its public Research I University peers. Currently, FSU is in the bottom third of this peer group on the proportion of the student population that are graduate students. Funding is critical to our expansion of our overall graduate student population, funding expanded faculty and additional graduate assistantships.

Promoting Growth in Key Academic Areas and Supporting Faculty Retention

Enticing new faculty to move to Florida State from their current institutions – in order to achieve the high faculty-growth numbers outlined above – will require the hiring of tenured, tenure-track, and specialized (non-tenure-track) faculty.

National data on student-faculty ratio are based on classroom-based instructors, which includes most tenured and tenure-track faculty, as well as instructional faculty. Naturally, tenure/tenure-track faculty are involved in teaching and research – benefiting both of the university’s missions.

A large-scale hiring initiative will not just enhance key academic areas but also increase faculty diversity, which has been shown to cultivate a more inclusive campus climate. Furthermore, faculty diversity and an inclusive campus have been shown to be critically important for institutional excellence.

Academic departments with diverse teams are apt to produce higher-quality research outcomes and unique solutions to problems, as well as improved learning environments for students of all types. An inclusive climate also helps retain existing faculty and students, ensuring that the university graduates a workforce that meets the state’s workforce needs.

Faculty Retention

The Faculty Retention program is a multi-year Florida State initiative designed to address the challenge of retaining highly regarded faculty through competitive salaries. For purposes of retention and recruitment, as well as the standards and metrics that will move FSU into the Top 15 among public universities, Florida State's faculty salaries must be in line with national norms to dissuade faculty from seeking positions at other institutions. This is critical for fending off attempts by other universities, particularly private institutions with large endowments, from luring our top faculty away. With additional funding we will be able to offer effective counter-offers to productive faculty who have received offers from other institutions.

Improving the compensation of key faculty would reduce faculty turnover and the amount of funding needed to attract new faculty members and cover their startup costs. In addition, when a faculty member leaves, there is still a cost associated with augmenting the salaries of the faculty members in the departed member's department who must take on additional workloads.

Retaining established faculty members, and especially those who have achieved Fellow status in national and international academies, will allow Florida State to attract faculty, postdoctoral fellows, and graduate students of proven accomplishment, and thereby enhance access to an even stronger network of researchers.

As a residential "destination" campus – evidenced by the university's impressive undergraduate retention and graduation rates – classroom instruction and faculty-centric experiences are essential parts of the FSU experience. Additionally, the Gallup-Purdue Index substantiates the high value that student-faculty interactions have as predictors of student success during school and after graduation.

Top graduate students are drawn to highly regarded programs with long-standing, stable, and top-quality faculty. Faculty continuity will further improve the graduate experience by giving these students more research and engagement opportunities that prepare them for future careers.

When faculty members leave an institution, graduate student progress is negatively affected, as the impacted students must search for replacement mentors/advisors/major professors. In some cases, a graduate student or group of graduate students have left with their faculty mentor, which has a negative effect on retention rates.

Promoting Growth in Key Academic Areas

Improving faculty retention will facilitate the development of new programs to meet the changing needs of Florida's workforce. This improvement also will elevate Florida State's national reputation as a destination campus for top faculty.

Florida State has already demonstrated its ability to recruit top talent through its broad and cluster-hiring initiatives. Broad faculty-recruitment efforts will continue to grow and elevate all of the university's academic disciplines, and more competitive counter-offers will retain faculty who might otherwise leave for better pay elsewhere.

II. Return on Investment

Preeminence enhances the vitality of an already vibrant institution like Florida State, and generates a buzz within U.S. higher education that can make FSU an even more desirable destination for both veteran and beginning faculty.

Bringing on new faculty can be an expensive endeavor, however, with competitive startup packages, including laboratory space and equipment, occasionally climbing into the seven-figure realm. Plus, new faculty members are usually more expensive to employ during their first few years until they start attracting external research funding.

But the returns on these initial investments can be immense. Increasing the number of faculty members will not just increase student success outcomes – including reductions in time to degree – but also allow Florida State to develop new interdisciplinary programs that meet the changing needs of the Florida workforce.

Moreover, in the STEM fields alone, each new faculty member can be expected to generate more than \$150,000 in contracts and grants a year and be central players in FSU securing new patents and creating new business spinoffs. Recent return-on-investment studies show that for every dollar Florida invests in its state universities, a return of nearly \$11.00 is produced.

Florida State also continues to raise private funds for new faculty hires and infrastructure needs, and the development of state-of-the-art teaching and laboratory facilities.

This strategic investment will result in significant positives for both Florida State University and the State of Florida:

1. Retaining top faculty will further FSU's goal of being ranked in the Top 15 among public universities as determined by *U.S. News & World Report* and the *Annual Report of Top American Research Universities* by reducing class size and improving the student-to-faculty ratio
2. Maintaining stability by keeping faculty from being lured to higher-paying institutions improves academic program continuity while providing students with greater consistency, relatability and connectedness to the faculty and the institution
3. Retaining top faculty will allow Florida State to attract additional high-achieving undergraduates, including Bright Futures and Benacquisto Scholars, who often choose a college based on opportunities to engage with distinguished faculty

4. Improving faculty retention means more students will be able to engage in high-impact practices like directed individual study, undergraduate research, community and project-based learning, honors courses, entrepreneurial activities, and internships
5. Heighten the university's reputation as a STEM leader in Florida and the nation, enhancing Florida State's standing
6. Further FSU's national stature in research and creative endeavors through the attraction and retention of faculty who are at highly productive and widely regarded points in their careers
7. Establish affordable excellence across a wider array of disciplines and Florida State's centers of excellence, including its top-ranked programs in the arts, STEM, business, and other high performing fields of study

Continued state investments in FSU through Preeminence funding will also raise the university's standing in virtually every Board of Governors metric used in performance awards and preeminence determinations, including:

- Student Retention and Graduation Rates
- Freshman Retention
- Student/Faculty Ratio
- Class Size
- Faculty Resources
- Total Research Expenditures
- Federal Research Grants
- National Academy Members
- Faculty Awards
- Doctoral Degrees Granted
- Average SAT
- Postdoctoral Fellows
- Alumni Giving Rates
- National Rank and Reputation

III. Facilities

None

**2020-2021 Legislative Budget Request
Education and General
Position and Fiscal Summary Operating
Budget Form II**

University: Florida State University
Issue Title: Enriching Florida's Talent Pipeline (Preeminence)

	RECURRING	NON- RECURRING	TOTAL
<u>Positions</u>			
Faculty	120.00	0.00	120.00
Other (A&P/USPS)	0.00	0.00	0.00
	-----	-----	-----
Total	120.00	0.00	120.00
	=====	=====	=====
<u>Salary Rate (for all positions noted above)</u>			
Faculty	\$12,000,000	\$0	\$12,000,000
Other (A&P/USPS)	\$0	\$0	\$0
	-----	-----	-----
Total	\$12,000,000	\$0	\$12,000,000
	=====	=====	=====
Salaries and Benefits	\$15,600,000	\$0	\$15,600,000
Other Personal Services	\$0	\$0	\$0
Expenses	\$0	\$0	\$0
Operating Capital Outlay	\$0	\$0	\$0
Electronic Data Processing	\$0	\$0	\$0
Special Category (Specific)	\$0	\$0	\$0
Faculty Retention	\$6,500,000	\$0	\$6,500,000
Graduate Stipends and Support	\$2,900,000	\$0	\$2,900,000
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Total All Categories	\$25,000,000	\$0	\$25,000,000
	=====	=====	=====

**State University System
Education and General
2020-2021 Legislative Budget Request
Form I**

University(s):	Florida A&M University and Florida State University
Issue Title:	Integrated Advancement for the Joint FAMU-FSU College of Engineering
Date Issue Approved by University Board of Trustees:	
Recurring Funds Requested:	\$6,511,000
Non-Recurring Funds Requested:	
Total Funds Requested:	\$6,511,000
Please check the issue type below:	
Shared Services/System-Wide Issue for Fiscal Year 2020-2021	<input type="checkbox"/>
Unique Issue for Fiscal Year 2020-2021	<input type="checkbox"/>

I. Description

Twenty-seven years ago, the State of Florida boldly created the nation’s most unique shared college of engineering bringing together Florida Agricultural and Mechanical University, the leading public historically Black university with Florida State University, one of the America’s 100 top research universities. Students graduate from either FAMU or FSU, but study engineering together on our shared engineering campus.

The Florida Department of Economic Opportunity recognizes that expanding engineering education is critical to Florida’s future growth. Thanks to our partnership that merges excellence in research and diversity, we are the only engineering school in the US that provides top research educational opportunities to a student population that reflects the diversity of Florida and our nation. We are also far above national averages with 28% females in our undergraduate class. Since engineering is a “team sport,” the diversity of our design teams provides experiences that are highly prized by corporations and these benefits accrue to all of our students, whether majority or minority.

In the four years since the legislature and partner university leadership recommitted to the joint college, we have seen an increase in most areas by 20% – to a faculty of 119, graduating 500 engineers each year and securing \$24M external research funding annually. This growth was fueled by use of carryforward that is now depleted, and the future is jeopardized by the inadequate E&G funding to the college’s joint budget. The State University System Board of Governors has identified our \$6.5M LBR request as a top

system-wide priority in their 2020-21 budget request. If we are to sustain the recent very positive momentum, we must have financial support. Growing national recognition for the power of this grand experiment in the State of Florida will be disrupted if we do not receive an increase this year. The investment will pay off handsomely for FAMU, FSU and the State of Florida. The wonderful thing is that success of the FAMU-FSU College of Engineering helps both our partner universities achieve their strategic goals. Florida State is about to become the second university in Florida to reach the top 25 national public universities, yet the college of engineering is only 1/3 the size of the average in the top 25 and must grow to fuel FSU's longer-term advancement in the rankings. And FAMU is already one of the leading HBCUs in research and doctoral degree production, but it also aims to become the first Historically Black University to reach the elite of top research universities with the help of the joint college of engineering. Together FAMU and FSU can do something that no other university in the U.S. can accomplish by training an inclusive, diverse and excellent workforce to fuel our state's engineering labor needs. Both universities have generously provided financial support to help the college, but the joint LBR is the only sustainable way of ensuring that the partnership endures and flourishes.

We have programs planned that will significantly improve the success of our student's retention rates, graduation rates, degree and employment opportunities. For example, we know how to improve student retention, but do not have the resources for programming and support to make this available to all our students.

We will increase opportunity for our students through hiring new faculty, introducing new courses and degrees in strategic areas for the State, such as Aerospace, Computer, Systems and Biomedical Engineering, and aggressively recruit the best and most diverse cadre of doctoral students. We will attract and retain outstanding faculty in strategic areas of research, and provide them with the facilities and staff support to enable them to compete for, and win, research grants and contracts from government agencies, corporations and foundations. To do this we need to offer competitive salaries and equipment start-up investments that will be rewarded over the years through external grant funding to the institution.

The joint college is uniquely positioned to develop new and larger research centers that support key areas of technological emphasis, including health technology, materials, aerospace, biomedical engineering, computer engineering, and energy sustainability. These research centers will in turn allow the joint college to expand the size and diversity of its student body and will lead to new intellectual property and spin-off companies in the region.

To meaningfully advance goals related to research, academic quality, overall efficiency and effectiveness of the joint FAMU-FSU College of Engineering, several critical investments must be made. In 2017, the Legislature provided \$1M of the \$7.168M LBR that was requested. That \$1M was allocated by the college to deal with market equity adjustments to salaries, and to pay salaries for new faculty and staff in the areas of undergraduate and graduate student success. We are grateful for the legislature's support, but the additional funds requested are absolutely more essential now in order to meet strategic goals for both FAMU and FSU. This new funding will enable the college to grow to the next level and compensate for nearly a decade of underinvestment.

1) **Additional Joint College Faculty Researchers (\$1M Salary + \$300K Fringe)**

The recruitment of eight researchers of the highest quality are essential for the Joint College of Engineering to deliver the education and impact needed by the State of Florida, while increasing its reputation to the benefit of graduates and the region.

- a. Faculty in sensors and biomaterials for healthy aging (“aging in place”) will require technology for medical devices and sensors that would leverage existing strengths at the college, the FSU College of Medicine and the FAMU School of Pharmacy.
- b. Faculty in materials for aerospace: ultra-light and strong materials are critical to the development of a growing commercial aerospace industry, and to entrepreneurial approaches for efficient high-speed transportation. Through the college, both FAMU and FSU are funded for deep-space development, and new faculty will enable us to seek larger funding opportunities.
- c. Faculty in robotics: robotics has growing applications to improve manufacturing efficiency, assist loss of function in people, and expand the capabilities of networked devices, popularly known as the “internet of things.” We will strengthen our industry standing through additional hiring in the area of controls expertise within mechanical and electrical engineering.
- d. Faculty in biomedical engineering: tissue engineering and synthetic biology are areas that address human health and manufacturing technology. Growing numbers of Florida undergraduates are exploring the emerging potential of biomedical engineering.
- e. Faculty in cybersecurity for energy resilience: the development of sustainable energy is vitally important to the state and beyond to the global marketplace. We would expand on our strength in power systems to design a robust renewable energy “microgrid” and enhance the systems side of renewable energy capture, storage, and transportation.
- f. Additional faculty to complement those listed above.

2) **Start-up funds and research equipment for faculty (\$2.5M)**

- a. Universities must provide “start-up” packages to attract outstanding researchers, provide the resources they need to succeed in their research, and add to the capabilities of the college in research and education.
- b. Packages include funds for equipment, laboratory renovation and for technician support. Faculty hires will require an average of \$600K each, numbers based on averages of ACC engineering schools shared by the ACC Deans Council. We hope we will be able to keep these costs down, but the packages in engineering will need to be competitive to hire faculty with the desired credentials.
- c. Faculty hired in the FAMU-FSU College of Engineering embrace the interconnected missions of teaching, research and service. New faculty and capabilities expand the learning and career opportunities for students, and add to entrepreneurial capabilities in the community and the state.
- d. Research activity is essential to the mission of a leading engineering school, and it benefits the students who need access to state-of-the-art tools and ideas. The State benefits from the best trained students, and from the entrepreneurial culture that is fostered. Start-up investments are leveraged many-fold through the external funding attracted by top faculty. Recurring funding is needed to address continuing need for faculty replacement and equipment obsolescence.

3) **Support for (undergraduate) student success (\$1.465M)**

- a. **Salary and Fringe (\$350K Salary + \$105K Fringe)**
 - i. These activities require the hiring of five dedicated staff members for advising and mentoring.
- b. **Non-Salary Expenses Related to Student Success (\$1,010,000)**
 - i. Retention: to improve the retention rate of students we must provide bridge programs and peer-based tutoring to prepare students for pre-engineering science and math needs and ensure their success.
 - ii. Successful transfer into major: almost 50% of incoming undergraduates fail to continue on to the major, and transfer to other majors or drop out. Enriching the pre-engineering experience with major-based projects and activities will increase the motivation of students and the successful transfer rate.
 - iii. Reduce time to degree: after transferring from pre-engineering the graduation rate is over 70% but the time to graduation on average exceeds four years. Flexibility through the provision of more courses in each semester, and online courses, will reduce the average time to degree and improve the four-year graduation rate.
 - iv. Recruiting: additional resources for recruiting will encourage talented and well-prepared students to enroll in the FAMU-FSU College of Engineering. In addition, we aim to connect with talented high-school students in their junior year to secure their interest and guide them to make full use of their senior year for pre-engineering preparation.
 - v. Internships: internships and co-ops are very attractive to students and employers, and the experiential learning helps students find better higher-paid positions and gives employers better calibration of a potential employee's skills. Strengthening experiential learning will increase the graduation rate.

These activities require the hiring of four dedicated staff members for advising and mentoring, along with the renovation and equipping of three new laboratories for design projects, and the expansion of online distance learning capabilities.

4) **Strengthen graduate student programs (\$550K)**

- a. Graduate students provide the highly-skilled labor for engineering firms in Florida, provide a backbone for in-house research efforts, and leverage the opportunities for undergraduates to engage in research activities. In turn, undergraduate research, a best practice at top engineering schools, exposes engineering undergraduates to exciting "beyond the textbook" experiences that will strengthen their abilities and marketability. Funds will support student fellowships to recruit the best talent and support a staff member to assist in coordination and recruiting.

5) **Retention and Vitality (\$590K + 106K Fringe)**

- a. Faculty continuity and retention are essential to the growth of the college. In order to retain the best and brightest faculty, select faculty salaries must be adjusted to assure retention of those individuals. Using the Oklahoma State University Survey of 114 public research universities, the FAMU-FSU College of Engineering salaries are lower than the average for comparable disciplines, making our best faculty targets for poaching by other institutions.
- b. The cost to the State of Florida to replace lost faculty leaders is much higher than retaining existing faculty, since new faculty also require significant start-up investments and their productivity takes a few years to reach full potential because of the disruption in establishing a new research laboratory.
- c. Because of the unique joint nature of the FAMU-FSU College of Engineering there are some inequities between the faculty at the two institutions that must be addressed in order to improve morale. In the 2017-18 additional allocation from the state, we were able to address immediate inequities – in 2018-19 we used the joint college funds to offset the inequities, therefore eating away at our operating budget – these additional funds would permit us to continue this process through the following three years.
- d. Salary adjustments would not be across the board – adjustments would be made based on a review of performance of faculty in teaching and research relative to peers at other institutions.

II. Return on Investment

These additional resources will allow each of the two universities to improve on several key performance metrics: academic progress rates, graduation rates, production of undergraduate and graduate degrees in areas of strategic emphasis, employment and salary outcomes for students, and metrics related to research and grant production. Specifically:

- a. Increase (by 100 students annually) the number of bachelor's and advanced degree graduates in the strategic STEM research areas of energy, biomedical engineering, environmental sustainability, transportation and energy, with graduates better prepared for success in industry due to improvements in advanced training.
- b. Significant increases (by 1000 graduates over five years) in the number of degrees awarded in the core engineering disciplines of civil, chemical, biomedical, electrical, computer, industrial and mechanical engineering – all engineering areas of strategic and critical importance to the state.
- c. Graduates earning higher wages based on their marketability and fit to areas of strategic interest and importance in the engineering profession.
- d. Improve the research focus and outputs in the form of patents, startup companies and commercialization of research products in the identified strategic areas for the faculty positions.
- e. Assist the state in diversifying its energy portfolio and meeting its goals with respect to biomedical research, environmental sustainability, aerospace and robotics.
- f. Enhance the business climate by attracting companies to Florida with significant research interest in the identified strategic areas – especially companies in the energy and power, materials, biomedical, environmental, robotics and medical devices fields.

- g. Retain engineers produced in Florida to stay and work for Florida's growing field of technology-based companies.
- h. Support the state's leading tourism and agricultural industries through additional research and interactions with companies doing business in Florida, by supporting sustainable infrastructure, aging in place, medical devices and aerospace.

III. Facilities

None

**2020-2021 Legislative Budget Request
Education and General
Position and Fiscal
Summary Operating
Budget Form II**

University: Florida State University
Issue Title: Integrated Advancement for the Joint
College of Engineering

<u>Positions</u>	<u>RECURRING</u>	<u>NON- RECURRING</u>	<u>TOTAL</u>
Faculty	8.00		8.00
Other (A&P/USPS)	5.00		5.00
	-----		-----
Total	13.00		13.00
	=====		=====
 <u>Salary Rate (for all positions noted above)</u>			
Faculty	\$1,000,000		\$1,000,000
Other (A&P/USPS)	\$350,000		\$350,000
	-----		-----
Total	\$1,350,000		\$1,350,000
	=====		=====
 Faculty Retention	 \$590,000		 \$590,000
 Salaries and Benefits	 \$2,451,000	 \$0	 \$2,451,000
Other Personal Services	\$0	\$0	\$0
Expenses	\$0	\$0	\$0
Operating Capital Outlay	\$0	\$0	\$0
Electronic Data Processing	\$0	\$0	\$0
Undergraduate Student Success	\$1,010,000	\$0	\$1,010,000
Graduate Programs	\$550,000	\$0	\$550,000
Research Equipment/Start Up	\$2,500,000		\$2,500,000
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Total All Categories	\$6,511,000	\$0	\$6,511,000
	=====	=====	=====