



FLORIDA STATE UNIVERSITY
BOARD OF TRUSTEES



FLORIDA STATE UNIVERSITY
BOARD OF TRUSTEES

MEETING AGENDA

Monday, July 22, 2024
9:00 AM

Zoom Meeting

The agenda will be followed in subsequent order and items may be heard earlier than the scheduled time.

I. CALL TO ORDER AND WELCOME

Mr. Peter Collins, Chair

II. PUBLIC COMMENT

III. NEW BUSINESS AND UPDATES

Action Item A: Request for Approval: 2025-2026 Legislative Budget Request

IV. OPEN FORUM FOR BOARD OF TRUSTEES

Mr. Peter Collins, Chair

V. ADJOURNMENT



FLORIDA STATE UNIVERSITY
BOARD OF TRUSTEES

ACTION ITEM A

**State University System
Education and General
2025-2026 Legislative Budget Request
Form I**

University(s):	Florida State University
Request Title:	Translation Hub on Healthy Aging and Digital Health
Date Request Approved by University Board of Trustees:	July 22, 2024
Recurring Funds Requested:	\$7.0 M
Non-Recurring Funds Requested:	\$28.5M
Total Funds Requested:	\$35.5M
Please check the request type below:	
Shared Services/System-Wide Request	<input type="checkbox"/>
Unique Request	<input checked="" type="checkbox"/>

I. Purpose –

Florida State University (FSU) is seeking Legislative support to establish a pioneering Translational Aging Research Hub (Hub) that will position Florida to be the national leader in healthy aging research and care delivery. The Hub leverages NIH-funded digital health innovations at FSU and a public health model framework to catalyze statewide research efforts, uniting expertise and facilitating translational interventions, to drive policy and practice advancements in healthy aging.

Aging in Florida

Florida's reputation as a prominent retirement destination has led to a growing older adult population, which plays a vital role in the state's leadership, economy, and family dynamics. Florida faces unique challenges with its aging population, including a high prevalence of Alzheimer's Disease and a substantial number of residents providing care for older adults. As a result, the state's conditions are prime for advancing research in healthy aging and digital health to address these and other challenges facing the aging population where one in three Floridians will be age 60 or older by the year 2030. This has resulted in a pressing need for innovative research and translational care models to inform policy and improve aging-related services.

Despite the challenges associated with a rapidly aging population, only a select number of research centers at Florida universities focus specifically on aging, and none of these focus on aging and digital health. However, we know that tremendous innovations in aging research and digital health can be catalyzed for rapid advancement if addressed comprehensively under a centralized research hub. To date, these innovations have been slow to materialize as the older population has been reluctant to accept new models of care. Furthermore, research has been siloed across institutions and specializations that are limited by fragmented data.

Cultivating Research and Translating it into Effective Public Health and Digital Health Solutions

The proposed Hub aligns the needs of Florida's aging population with a center for cultivating research and translational care models with a centralized data center and expert knowledge base of physician and translational research scientists to inform healthcare policy and interventions. Creating a centralized hub for clinical research at FSU positions the university to build new gerontological expertise, catalyze resources across the state, and develop partnerships with other university research centers, community stakeholders, and healthcare industries.

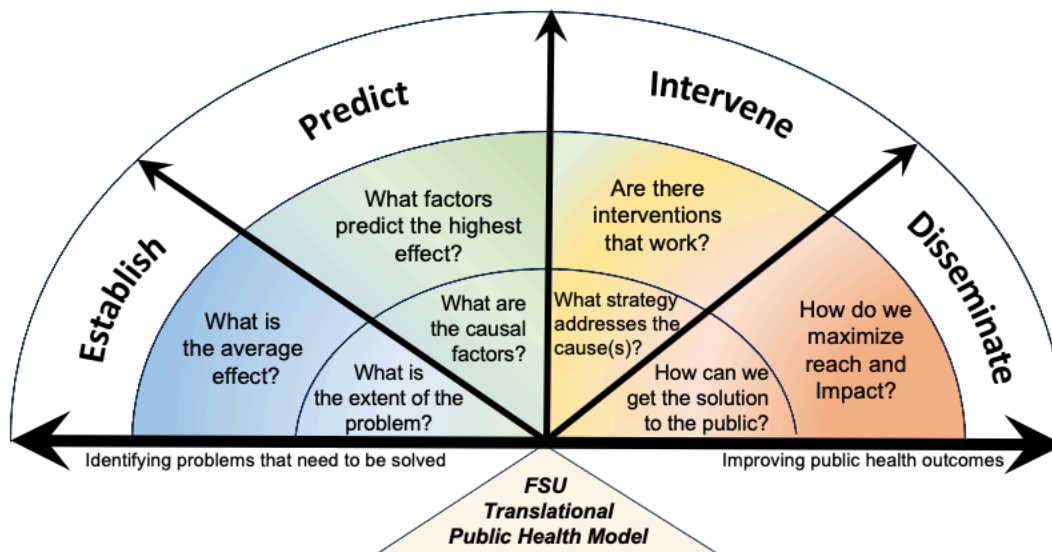
Through the centralization of data and information exchanges, the FSU Hub allows partnering entities to rapidly identify, test, and apply solutions to address everyday problems facing older adults and their families. The largest professional aging research organization (Gerontological Society of America) provided strong endorsement for such an initiative during their recent site visit to FSU. James Appleby, CEO of the Gerontological Society of America, stated, "The FSU initiative to establish an interdisciplinary center for the advancement of aging research will have a meaningful impact on aging research and health outcomes. We think that FSU is well-equipped to establish this initiative and fully support their efforts."

The Hub's public health framework provides a structure for creating partnerships that integrate research, data, practice, and policy from academic researchers, state agencies, non-governmental organizations, and private entities to create data-informed best practices to improve quality of life. This Hub will provide resources for collecting, interpreting, storing, and providing access to aging-related data and results, creating a laboratory for testing, and refining digital health innovations that support healthy aging, and a collaborative scholarly, educational, and training environment facilitating and rewarding rapid translational outcomes through traditional care and via digital health networks.

What is a Translational Hub and Why is it Valuable?

A Translational Hub is an environment in which teams of scientists collaborate to solve well defined problems and disseminate research findings to serve the public, inform the design of effective clinical, programmatic, and policy interventions, and generate private-sector investments in new methods. This approach cultivates a team science environment among diverse experts to develop and test comprehensive public health solutions.

The Translational Hub's design is guided by our Public Health model, ensuring we can catalyze the right kind of expertise and leverage our strengths across the FSU campus and the state. This model guides the creation of essential training and research support, and the hiring of new faculty, researchers, and staff to strategically tackle public health problems and ensure effective translation of results. The Hub will facilitate partnerships with community organizations and groups to identify the most critical problems faced by Floridians. We will leverage FSU's expertise to **establish** the critical components of the problem, **predict** the specific factors that cause the problem, and identify ways to **intervene** to reduce or ameliorate the problems. Finally, we will not only ensure that we identify the best solutions, but that we **disseminate** these solutions so that they can reach the people who need it the most (See figure below).



Leveraging a translational public health research model so Florida can become a national leader in healthy aging and digital health solutions will require the following investments:

1. Create a center for excellence focused on Healthy Aging and Digital Health

We propose to launch a new center that uses public health principles to identify solutions that support healthy aging across the lifespan, leveraging digital health technologies, and catalyzing FSU's collective expertise and resources. This hub will also serve as a state center for clinical and policy translation, focused on evidence-based solutions for healthy aging outcomes at each stage of the lifespan, and provide important statewide leadership in the translation of public health research and digital health innovations.

The mission and vision of this hub will enhance FSU's and Florida's national visibility and reputation and provide important interdisciplinary public health research. This hub will also leverage participation of stakeholders in public health research to expand the reach and involvement of community and business partners to collaboratively identify and address public health goals and outcomes.

This new Hub will help FSU lead the State of Florida by cultivating strategic concentrations of public health expertise in:

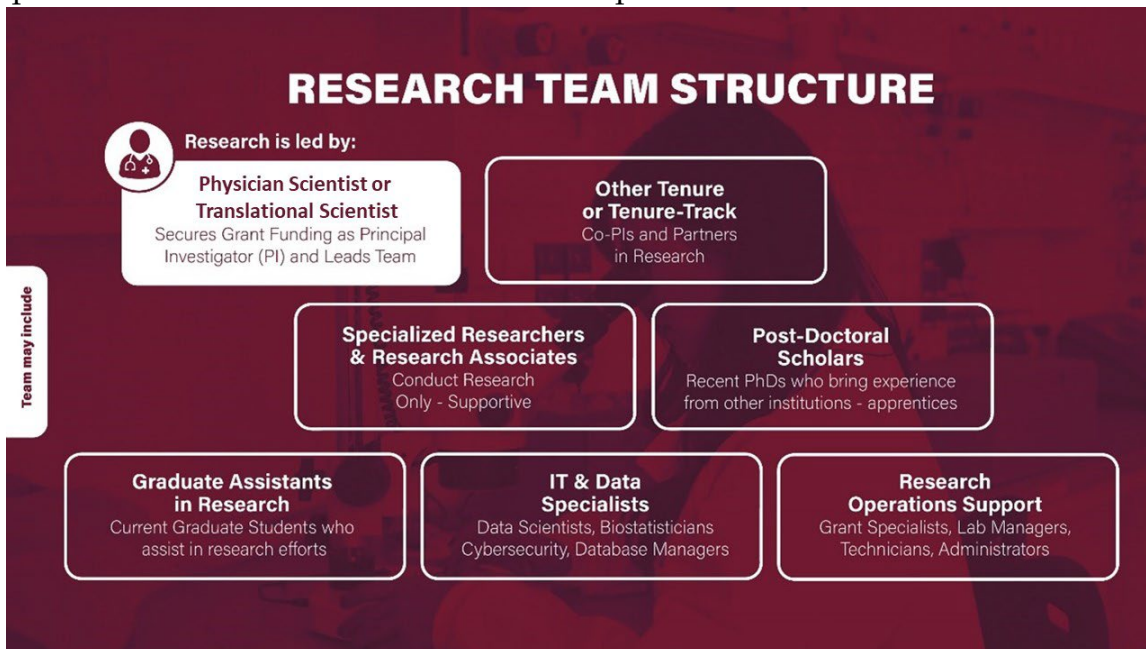
- Digital health clinical interventions for healthy aging
- Home health interventions that support disease management and aging-in-place across the adult lifespan
- Emphasize prevention as part of a healthy lifestyle for citizens of all ages
- Health informatics for early diagnosis and early treatment
- Behavioral health interventions that support successful adherence

To cultivate this expertise and facilitate statewide leadership in clinical and policy translation, this new hub will be rolled out in three overlapping phases:

- **Phase 1** will develop important foundational investments in health data sciences, translational health science infrastructure, and a landscape analysis to identify key partnerships (e.g., agencies, NGOs, universities) in anticipation of becoming an official SUS Statewide Center.
- **Phase 2** will target strategic hiring of new public health faculty in our areas of concentration, develop university-wide public health training programs focused on public health data analysis, visualization, and engagement of community members and partners.
- **Phase 3** will launch a yearly conference that brings together expertise statewide, target additional faculty hires, develop a university-wide interdisciplinary public health doctoral program, a university-wide pre-doctoral and post-doctoral training program, and new summer public health healthy aging internships in coordination with university partnerships (e.g., Mayo Clinic) to enhance the College of Law's elder law clinic and the College of Medicine's geriatrics training program.

2. Create a statewide informatics and data science infrastructure to support interdisciplinary public health research

Health research requires highly secure data environments that meet security and privacy requirements associated with electronic health records. The Northwest Regional Data Center (NWRDC), administered by FSU, manages state agency data and provides a logical point of coordination for a statewide data reporting environment for aging and digital health. This data lake will require expertise in data management to create a resource that will sit between agencies and consume data from Florida and across the nation both from the public and private sectors. The Hub and its statewide partners will need the data science



infrastructure necessary to manage vast amounts of medical and behavioral data to gain meaningful insights into improved care. These resources will position FSU and its partners to earn larger grants, especially from the National Institutes of Health (NIH). Health research increasingly requires access to new data sources, and advanced analytics like biostatistics and data science to uncover meaningful discoveries and successful clinical interventions. The support personnel needed for these projects include individuals who can manage the projects and complexities in computing environments, data architecture, data carpentry, data governance, security, and A.I./Machine Learning/Cognitive Computing algorithms to name a few.

In addition to staffing, FSU is poised to deploy research technology infrastructure enhancements to become a national leader in development of innovative healthy aging interventions. Targeted technology investments will increase our research funding by establishing the capabilities required to attract research talent to FSU, to engage external research partners, and to position FSU as a highly capable, research institution with federal funding agencies.

Increasingly, granting agencies want to invest in institutions who maintain a strong cybersecurity and data security posture. Federal cybersecurity and regulatory requirements required to conduct health data research through grants made available via the NIH, the Food and Drug Administration, and the National Science Foundation are increasing. Without such capabilities, FSU and Florida will be unable to successfully compete with other top institutions.

3. Create training programs and information networks for caregivers and health services providers around healthy aging

Translating research into practice will require multi-disciplinary teams and strategies. These teams will include doctors, nurses, clinical social workers, family therapists, psychologists, social scientists, information managers, digital technologies experts, and instructional designers, to identify new pathways for successful outcomes. FSU will engage researchers, practitioners, and community partners to accelerate the design of high-impact interventions and age-related programs. This effort will engage state and local agency personnel and programs providing healthcare services to Floridians.

These training programs will help to design lifestyle and clinical interventions that reduce reliance on costly acute care. They will also use data to identify critical aging and disease-related inflection points to promote early detection and intervention and to encourage continuity of care.

Why FSU?

FSU is uniquely suited to connect research with effective solutions to address challenges facing Florida's aging population. As a Research-1 institution, FSU is recognized for its strong foundation in social and behavioral sciences and public policy. Additionally, FSU's rapidly expanding College of Medicine operates on a distributed model with a focus on serving rural populations throughout Florida, and the FSU Health initiative serves as a catalyst for health-related advancements. With the Institute on Digital Health and Innovation leading innovations in patient behavioral and public health, FSU has the mission, expertise, and organizational structure to implement the Translational Research Hub.

FSU has a record of translating medical research into practice and boasts three centers addressing gerontological research, successful longevity, and healthy aging. FSU is uniquely positioned to work with the State of Florida and other organizations to develop comprehensive research on healthy aging and care delivery to build upon the Legislature's recent investment in FSU Health by leveraging the resources from various colleges and centers at FSU including (details in Appendix A):

- FSU Health

- College of Medicine
- College of Nursing
- College of Social Science and Public Policy
- College of Education, Health, and Human Sciences
- College of Social Work
- College of Communication and Information
- College of Arts and Sciences
- College of Business
- College of Law
- FSU-Mayo Clinic
- FSU Health Data Sciences Initiative
- Northwest Regional Data Center
- Learning Systems Institute
- Music and Art Therapy

Summary of Investments

The requested funds will be used in the following ways:

Recurring Expenses

Physician Scientists/Clinical Researchers/Research Faculty	\$6.0M
Clinical Research Operations Support Personnel	\$1.0M
<i>Sub Total</i>	<u>\$7.0M</u>

Non-Recurring Expenses

Facilities and Infrastructure for the Hub/Center	\$4.5M
Develop a Shared Public Health Research Data Hub	\$4.0M
Start-up for New Faculty Research Labs	\$7.5M
Landscape Analysis and Training Development	\$4.0M
Laboratory Upgrades, Machinery, and Technology	\$4.5M
Post doctoral Research Scholars/Graduate Researchers	\$4.0M
<i>Sub Total</i>	<u>\$28.5M</u>
 <i>Total</i>	 <u>\$35.5M</u>

II. Return on Investment

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

1. Creating a translational public health research hub will extend an interdisciplinary approach to clinical translation and will provide a foundation for expanded and improved healthcare in North Florida and throughout the State.
2. Coordinating the continuum of care translation using multi-disciplinary public health research teams will create innovation in fundamental care models leveraged by the State of Florida and its medical providers.
3. The identification of current efforts around healthy aging in Florida will create a compendium of available resources and identify gaps in support for aging Floridians.
4. Creating a statewide data and information repository will centralize research activities among university researchers, State Agencies, local public health and healthcare leaders and private health providers.
5. Expanding research support expertise will assure that a greater proportion of grant funding will stay in Florida as opposed to be sub-contracted to other institutions.
6. Retaining top faculty will advance FSU's goal of becoming one of the nation's very top research universities by creating a stable environment where FSU will benefit from growing research portfolios of more senior faculty.
7. Maintaining stability by keeping faculty from being lured to higher-paying institutions improves academic program continuity while providing the stability needed to attract top researchers and research grants.
8. Elevating the university's reputation as a STEM leader in Florida and the nation will enhance FSU's standing and the standing of the state of Florida.
9. Establishing a model data lake environment for curating data from various state, local and national databases.
10. Cultivating expertise in digital health to support healthy aging across the lifespan will make Florida a laboratory for innovation.

Continued state investments in FSU will also enhance virtually every Board of Governors metric including:

- National Rank and Reputation
- Total Research Expenditures
- Federal Research Grants
- Research Citations

- National Academy Members
- Faculty Awards
- Doctoral Degrees Granted
- Postdoctoral Fellows
- Student Retention and Graduation Rates
- Student/Faculty Ratio
- Faculty Resources
- Average SAT
- Student Post Graduation Outcomes

III. Personnel –

Physician Scientists/Clinical Researchers/Research Faculty	\$6.0M
Clinical Research Operations Support Personnel	\$1.0M

IV. Facilities *(If this issue requires an expansion or construction of a facility, please complete the following table.):*

n/a

Appendix A

College of Medicine and FSU Health

- Emphasis on primary care medicine
- A Department of Geriatrics that provides integrated geriatric training into the curriculum for all medical school students
- Increased investment in the Center for Translational and Behavioral Science that translates behavior into public health impact
- Expertise in Alzheimer's Disease and Related Dementias and Neurosciences
- Health Management, Policy, and Information program

College of Nursing

- The Institute on Digital Health and Innovation has secured over \$100M in current federal grants for study of care compliance and digital health with a focus on underserved and rural populations
- Cutting edge research on wearables for continuity of care and health feedback
- Expertise in in-home care for remote and place bound populations
- Experience in development of training programs and best practices for home care, nursing homes, and memory care

College of Social Science and Public Policy

- Home to two aging research centers - the Claude Pepper Center and the Pepper Institute on Aging and Public Policy with expertise in the social, political, and economic impacts on health
- Home to the Center for Demography and Population Health, with expertise in population health science since 1967
- The Center for Economic Forecasting and Analysis with long-term partnerships with the state, predicting economic outcomes for state investments
- Public Health and Public Administration Departments with a long history of partnering with state government in Florida
- Administrative expertise in managing public health initiatives and health policy evaluation and development

College of Education, Health, and Human Sciences

- Expertise on research evaluating wearable technologies
- A commitment to research on the health effects of physical lifestyle, physiology, nutrition, and food sciences
- Expertise on the lifecycle of human development and counseling on the dynamics associated with longevity and trauma in families
- Home to an Instructional Systems program that specializes in delivering learning programs that could promote healthy choices

College of Social Work

- Clinical Social Worker provide expertise in best practices for home health care and identifying social services for at need populations
- Applied research expertise in coordination of resources with community partners
- Development of training programs on continuity of care, particularly among rural and disaffected communities

College of Communication and Information

- Managing and creating information and data networks
- Active leadership in FSU's Health Data Sciences Initiative through its efforts in health informatics and working with Electronic Health Records (EHR)
- Leadership in practical applications of AI and Machine Learning

College of Arts and Sciences

- Multidisciplinary expertise in scientific computing and advanced computational analysis including AI and Machine Learning
- Neurosciences expertise in Biology and Psychology for assessing the cognitive effects of aging on health and behavior

- Created the Institute for Successful Longevity which supports researchers who evaluate factors that influence quality and length of life, and factors that promote active engagement in life

College of Business

- The Business of Healthcare Leadership Academy in the Carl DeSantis Center creates public-private partnerships in healthcare administration
- FSU has one of the nation's leading Risk Management and Insurance programs in the nation, addressing the affordability of long-term care
- Business Analytics and Information Systems expertise necessary to assess ROI on various healthcare models

College of Law

- Home of the multidisciplinary Claude Pepper Elder Law Clinic
- Specialization in Florida Poverty Law for Seniors

FSU - Mayo Clinic Collaboration – Focused on interdisciplinary innovation to target health technology translation from clinical research to bedside care

Music Therapy – Leading program supporting hospice and older adults

Art Therapy – Accredited by The Commission on Accreditation of Allied Health and Education Programs

Learning Systems Institute – International leader in educational systems and development of training programs

Osher Lifelong Learning Institute – Educational programming for seniors

Northwest Regional Data Center (NWRDC) – manages databases for almost all state agencies and a key to creating a secure data environment for institutional and agency data affecting successful aging

Health Data Sciences Initiative (HDSI) – has developed methodologies to manage and join data from many Electronic Health Record systems in a HIPAA compliant environment

The Turnbull (Conference) Center – The center has the capacity to support in-person and high-quality hybrid engagements among stakeholders from across the state and nation, and its proximity to the Capitol will help promote transparency and collaboration

**2024-2025 Legislative Budget Request
Education and General
Position and Fiscal Summary
Operating Budget Form II**

University: Florida State University
Issue Title: Translation Hub on Healthy
Aging and Digital Health

	<u>RECURRING</u>	<u>NON- RECURRING</u>	<u>TOTAL</u>
<u>Positions</u>			
Faculty	23.00	0.00	23.00
Other (A&P/USPS)	8.00	0.00	8.00
	-----	-----	-----
Total	31.00	0.00	31.00
	=====	=====	=====
Salaries and Benefits	\$7,000,000	\$0	\$7,000,000
Other Personal Services	\$0	\$2,500,000	\$2,500,000
Expenses	\$0	\$21,500,000	\$21,500,000
Operating Capital Outlay	\$0	\$3,000,000	\$3,000,000
Electronic Data Processing	\$0	\$0	\$0
Graduate Research Stipends	\$0	\$1,500,000	\$1,500,000
Special Category (Specific)	\$0	\$0	\$0
	\$	\$0	0
	\$0	\$0	\$0
	\$0	\$0	\$0
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Total All Categories	\$7,000,000	\$28,500,000	\$35,500,000
	=====	=====	=====

**State University System
Education and General
2025-2026 Legislative Budget Request
Form I**

University(s):	Florida State University
Request Title:	Modernization of the MagLab
Date Request Approved by University Board of Trustees:	July 22, 2024
Recurring Funds Requested:	\$5.15 M
Non-Recurring Funds Requested:	\$51 M
Total Funds Requested:	\$56.15 M
Please check the request type below:	
Shared Services/System-Wide Request	<input type="checkbox"/>
Unique Request	<input type="checkbox"/>

I. Purpose –

The National High Magnetic Field Lab (MagLab) is the largest and highest-powered magnet lab in the world and Florida’s only national laboratory. Through a critical partnership between the National Science Foundation and State of Florida, Florida State University (FSU), and their partners at the University of Florida and Los Alamos National Laboratory, won the competition to lead the lab in the early 1990s after decades at MIT. Today, it is home to 17 world-record magnet systems and hosts nearly 2,000 users every year conducting ground-breaking research vital to the future economic prosperity and national security of our nation. After more than 30 successful years, reinvestment is needed to launch the lab into its new era and maintain our competitive edge.




Why are High-Field Magnets Important?

High-field magnets are critical for exploring **new materials, energy solutions, and life** itself, making **discoveries today that will yield the technologies of tomorrow**. Key innovations include:

- **New materials development** – the exploration of novel semiconductors, superconductors, crystals, and atomically-thin materials that will create efficiencies in existing operations and contribute to more effective materials for advanced manufacturing.
- **Energy optimization** – advances to energy options from improved petroleum refining, use and applications of biofuels, and the development

- of better and more resilient batteries and fuel cell technologies to fundamentally change how we store and deliver energy more efficiently.
- **High energy outputs** – necessary to advance and support the development of fusion technologies and quantum computing that will revolutionize energy generation protocols and advanced computing protocols that require extreme energy inputs.
 - **Life science and medical advances** – studying molecular structures that create and improve life itself, work that promises earlier detection and advances for treatments of cancer, Alzheimer’s Disease, AIDS, and other diseases.

WE USE MAGNETS TO STUDY

MATERIALS 	<p>Scientists use our magnets to explore semiconductors, superconductors, crystals, and atomically thin materials — research that reveals the secret workings of materials and empowers us to develop new technologies.</p>	<ul style="list-style-type: none"> ■ Graphene ■ Correlated Electrons ■ Topological Matter ■ Kondo/Heavy Fermion Systems ■ Magnetism and Magnetic Materials 	<ul style="list-style-type: none"> ■ Quantum Fluids and Solids ■ Qubits & Quantum Entanglement ■ Semiconductors ■ Superconductivity ■ Molecular Conductors
ENERGY 	<p>Scientists use magnets to study energy and the environment. They work to optimize petroleum refining, advance potential biofuels such as pine needles and algae, and fundamentally change the way we store and deliver energy by developing better batteries.</p>	<ul style="list-style-type: none"> ■ Petroleomics ■ Catalysis ■ Dissolved Organic Matter ■ Lithium Battery Imaging ■ Biofuels 	<ul style="list-style-type: none"> ■ Superconductivity - Applied Research ■ Fuel Cell Membranes ■ Geochemistry ■ Environmental Analysis
LIFE 	<p>Scientists study the foundational science of protein and disease molecules that underlies the cells and creates life itself. This work could improve future treatment of AIDS, cancer, Alzheimer’s and other diseases.</p>	<ul style="list-style-type: none"> ■ Natural Products ■ Quadrupolar NMR ■ Dynamic Nuclear Polarization 	<ul style="list-style-type: none"> ■ Sodium MRI ■ Membrane Proteins ■ Metabolomics ■ Biomarkers

Economic Impact for Florida and the World

The MagLab affects Florida’s economy in the following ways¹:

- **Direct return on investment** - For every \$1 invested, \$6.44 of economic activity is generated in Florida.
- The MagLab serves as an **incubator for high-tech business development**, commercialization, and entrepreneurship, facilitating start-up business and commercial expansion of private-sector partners. One such partner, Danfoss Turbocor, recently added a 167,000 sq ft building to its existing 70,000 sq ft facility next to the MagLab where they will expand their state-of-the-art manufacturing of oil-free high-efficiency compressor manufacturing by three-fold to meet growing demand around the world. They will be housing their R&D activities in the original building to pilot new cooling technologies and services – an example of the commercial impact of the MagLab with private partners.

- Annual MagLab visiting researchers contribute over \$6.8M to Florida's economy.
- Overall, the MagLab generates more than \$325M a year and 2,680 jobs throughout Florida's economy.
- The MagLab employs more than 500 Floridians in high-tech jobs and is a model of federal-state partnership that advances our mutual goals.
- Since being awarded to Florida State University, the MagLab has brought in hundreds of millions of research dollars – from the NSF and other funding agencies who recognize the transformative value of high magnetic field innovation.
- Over the next 20 years, the MagLab is projected to generate \$14 billion in economic output in the United States.
- ¹ Source: 2019 Economic Impact Analysis

Retaining Global Leadership

The lab's ultra-powerful magnets yield important discoveries for the future in quantum computing, fusion energy development, advanced electronics, rare earth materials, health, energy, the environment, and our national security. Headquartered at FSU, the MagLab is a world-leading research facility, however, new competition and investments in Asia and Europe represent a serious and immediate threat to the US leadership position. China has recently invested heavily to tie a world record held by the MagLab since 1999 and has announced hundreds of millions of dollars in new investment toward building stronger pulsed magnets. Loss of leadership is more than just a point of pride for the United States as innovations developed through work in high magnetic fields will likely determine which country holds the keys to the world's quantum-powered future.

State support was critical to the MagLab's successful relocation from MIT to Florida State University in 1990, but aging infrastructure and instrumentation leave the lab at risk of losing its core grant funding from the NSF. MIT lost the NSF funding they had received for decades to Florida State in 1990 because they did not receive state support to provide the infrastructure updates and improvements needed to support the lab's future needs. Florida and the MagLab face the same risk if the facilities are not modernized.

Spurring New Technologies for Industry

Investing in the modernization of the MagLab is critical to generate scientific discoveries that will shape the technologies of tomorrow and grow the trained quantum workforce talent for the State of Florida and beyond. The lab's next era will unlock new partnerships with companies to improve competition in the energy, health, and materials sectors and enable high-field research in the US that cannot be accessed today.

Fusion – A Game Changer for Energy Production

The MagLab's world expertise in high-field magnet technology has the power to expedite the development of key technologies for industry and for the sharing of high-field science with our community partners. The fusion community – including billions of dollars in federally-funded projects and venture-capital backed start-up businesses - are working closely with MagLab researchers to develop the magnet technology needed for their fusion reactors. Fusion researchers are very close to achieving a positive energy fusion process. This achievement will fundamentally change global energy production, but it requires efficient large-scale energy production that will depend on advances in magnet research. With further investment in high-field test facilities at FSU, the MagLab can have an even greater impact on the rapid realization of fusion energy giving Florida a foothold in the energy sector's future.

Rare Earth Materials – A Necessary Resource for National Competitiveness

The lab has proven to be a focal resource for finding materials solutions to industry challenges. The MagLab is home to the *Center for Rare Earths, Critical Minerals, and Industrial Byproducts* which aims to turn Florida into a production site for rare earth materials that have implications for national security and supply-chain reliability. The center was launched by the Florida Legislature in 2022 and is only one example of the role the MagLab can play in developing private-public partnerships that bolster the state's economy. China controls upwards of 90% of the world's rare earth materials that are used in everything from smart phones and computers to automobiles, wind turbines and batteries, and central to defense tools like military electronics, precision-guided missiles and night-vision goggles. The development of methods to isolate these rare earth minerals from sources in the US is foundational to the US economy and national security.

Life Science and Medical Innovation

Magnet research puts Florida at the forefront of emerging and revolutionary advances in life sciences and medicine. The MagLab develops instruments and techniques that reveal the structure and behavior of complex proteins, pathogens and biological processes, findings that will promote human health and illuminate mechanisms underlying cancer, stroke, neurodegenerative diseases, migraines, and emerging threats. With the world's most powerful MRI machine – a 21-tesla instrument far more powerful than a traditional 1.5 tesla hospital MRI – scientists can study live pre-clinical models with exceptional clarity and resolution, generating information central to combatting diseases. The lab's expertise in designing and building this ultra-high field MRI and its corresponding instrumentation is leading to partnerships with the health-sector industry seeking to design more powerful MRI machines, probes and other unique biomedical tools.

Quantum Science and Engineering

Quantum science and engineering is the understanding of materials at the most fundamental levels in nature. Information flowing from these discoveries are needed to leverage different materials' unique behaviors into new and exciting advancements. Quantum phenomena were central to the development of transistors and lasers and will be key to new technologies like quantum computers capable of solving problems with speed, precision, and accuracy unknown to today's conventional machines.

As a key part of Florida State University's research portfolio, the MagLab's high field magnets help researchers answer questions about quantum behaviors, develop unique quantum devices and train the quantum workforce. Leveraged by Florida State's \$20 million investment toward quantum science and engineering over the next three years, the MagLab is one of the world's premiere training grounds to educate students who will build the quantum devices of the future. Continued investment in quantum science will position FSU and Florida as a world-class environment for researchers to create the future of materials. The MagLab's current electrical infrastructure is not sufficient to support the highest field magnets and facilitate the high sensitivity quantum measurements only the MagLab can enable. Without modern, specialized electrical infrastructure, FSU will not be able to nationally and globally compete with other labs in this emerging field, risking the loss of future federal funding and the associated commercialization opportunities.

Homegrown Talent, High Tech Jobs

The MagLab is creating unique programs that will train our next generation of scientists and engineers in magnet technology and its application. Investment is needed to develop this educational programming at the MagLab. The school will grow the incredible students at Florida State and the University of Florida developing leaders of our quantum future while growing local career opportunities in the high-tech sector. From its inception at FSU, the MagLab has been committed to hosting programs to help school-aged students understand magnet research and to encourage students to pursue STEM fields in college. An annual open house event at the MagLab engages about 10,000 visitors every year in addition to thousands more who are reached at other events and tours throughout the year.

A Sense of Place, a Point of Pride

As the state's only national laboratory, the MagLab represents the state of research and innovation in Florida for researchers and industry leaders from around the world. Investments are needed to create an accessible and hospitable space. The lab needs to create collaboration and conferencing space to better engage stakeholders; building updates that will allow the MagLab to better connect the public with the research and make the space physically reflect the extraordinary work happening at the lab. These additions would allow the lab to

host scientific conferences, industry events, visits from funding agencies, promoting it as a tourism destination that would elevate the MagLab's profile and attract future collaborations and investments in Florida while keeping top talent in Florida.

What it will Take to Modernize the MagLab

The requested funds will ensure this unequaled Florida asset remains in Florida and position it to bring in more federal funding with:

Recurring Expenses	
Infrastructure renewal investments to protect world-dominance and attract future federal funding.	\$5.15 M
Recurring Total:	\$5.15 M
Non-Recurring	
Facility upgrades to maintain world-record magnet systems.	\$10.2 M
Instrument updates to Cryogenic Systems to support fusion and MRI. research	\$3 M
Construction of a new Magnet Fabrication building to expand our capacity for new magnet creation and free up space to house new industry initiatives and research faculty. Also included in Section IV below.	\$15 M
Upgrade the electrical systems at the Applied Superconductivity Center to create a safer working environment and to advance energy research.	\$1.8 M
Creation of new public and collaboration spaces to host conferences and engage with stakeholders.	\$1 M
Development of enhanced office and research spaces to make more efficient use of existing space and provide room to grow new fields of study.	\$10 M
Construction of a dedicated outreach & education space that makes the MagLab a collaboration and outreach destination, extending our ability to host large conferences and events. This space would be ripe for bringing foundation money and corporate partnerships to the lab. Also included in Section IV below.	\$10 M
Non-Recurring Total	\$51 M
Grand Total	\$56.15 M

II. Return on Investment

Every dollar invested in the MagLab today generates \$6.44 of economic activity in the state of Florida every year. The requested investment will increase this return to the State of Florida and also:

- Ensure Florida State University remains the world leader in high-magnetic field research at a time when China and other foreign countries are investing heavily to compete with our portfolio of capabilities.
- Provide world-class research facilities to attract top talent from around the country to do their work in Florida. This not only reduces brain-drain by keeping talent in Florida, but also creates a brain-gain as these leading researchers move to Florida and invest in our economy.
- Create a destination befitting the representation of the MagLab and Florida as the “Magnetic Capitol of the World” which will garner increased visibility among industry partners and other stakeholders.
- Train Florida State University’s and Florida’s students to be the architects of our quantum future and create pathways for them to stay and build high-tech careers in the state.
- Retain top faculty scientists by giving them access to world-class facilities and scarce resources like helium, and furthering FSU’s goal of becoming one of the nation’s top research universities.
- Draw more federal funding and public-private partnerships by creating a facility that is positioned for growth in sectors like energy and healthcare. The US Department of Energy, National Institutes of Health, and NASA have projects that would benefit from these MagLab modernization efforts.
- Generate valuable IP and patents from new industrial partnerships.

Continued state investments in the MagLab will also enhance virtually every Board of Governors metric including:

- National Rank and Reputation
- Total Research Expenditures
- Federal Research Grants
- Research Citations
- National Academy Members
- Faculty Awards

- Doctoral Degrees Granted
- Postdoctoral Fellows
- Student Retention and Graduation Rates
- Student/Faculty Ratio
- Faculty Resources
- Average SAT
- Student Post Graduation Outcomes

III. Facilities (If this issue requires an expansion or construction of a facility, please complete the following table.):

	Facility Project Title	Fiscal Year	Amount Requested	Priority Number
1.	Construction of a new Magnet Fabrication building to expand our capacity for new magnet creation and free up space to house new industry initiatives and research faculty.	2026	\$15M	1
2.	Construction of a dedicated outreach & education space that makes the MagLab a collaboration and outreach destination, extending our ability to host large conferences and events. This space would be ripe for bringing foundation money and corporate partnerships to the lab.	2026	\$10M	2

Education and General Position and Fiscal Summary Operating Budget Form II

University:
Issue Title:

Florida State University
Modernization of the MagLab

	<u>RECURRING</u>	<u>NON- RECURRING</u>	<u>TOTAL</u>
Salaries and Benefits	\$0	\$0	\$0
Other Personal Services	\$0	\$0	\$0
Expenses	\$5,150,000	\$0	\$0
Operating Capital Outlay	\$0	\$3,000,000	\$3,000,000
Electronic Data Processing	\$0	\$0	\$0
Scholarships	\$0	\$0	\$0
Special Category (Facilities)	\$0	\$48,000,000	\$48,000,000
	-----	-----	-----
Total All Categories	\$5,150,000	\$51,000,000	\$56,150,000

**State University System
Education and General
2025-2026 Legislative Budget Request
Form I**

University(s):	Florida State University
Request Title:	Growing FSU's National Prominence
Date Request Approved by University Board of Trustees:	July 22, 2024
Recurring Funds Requested:	\$65,000,000
Non-Recurring Funds Requested:	
Total Funds Requested:	\$65,000,000
Please check the request type below:	
Shared Services/System-Wide Request	<input type="checkbox"/>
Unique Request	<input checked="" type="checkbox"/>

I. Purpose -

Florida's public higher education system has led the nation's public university systems for six years in a row. Florida State University has contributed to that success as the fastest improving institution among the Top 50 public institutions. FSU has accomplished this without the springboard of a teaching hospital or the associated clinical academic research that would normally accompany it. This structure goes back decades to the founding of FSU's medical school and the research restrictions put in place by the legislature, a unique position among Florida's research universities.

To continue momentum and grow national standing, FSU will strategically invest in:

- **Hiring prominent research faculty:** Continued growth of FSU's distinctive and productive research base with high-level faculty hiring, particularly in the STEM fields
- **Building on nation-leading student success:** Building upon FSU's award-winning student success program by providing targeted advising, innovative academic programs, and career preparation for Florida's leaders of the future
- **Improving student success for transfers:** Improving FSU's SUS-leading transfer student success, particularly for Florida College System AA transfers

- **Reducing the Student-to-Faculty ratio** from 17:1 to 13:1. Expanding the Student-to-Faculty ratio will allow FSU to advance innovative teaching, enrich faculty/student interactions, and expand its research portfolio
- **Recruiting and retaining top talent**, including undergraduate and graduate students, faculty, and staff in the face of increased labor costs and out-of-state competition.

Investing in New Research Faculty

Recent state investments have elevated the university, but more is needed to be competitive nationally.

Initiatives over the last several years have allowed FSU to invest in hiring some of the nation's most talented faculty members. **But there's more work to be done.** Florida State still has far fewer dollars for faculty resources and research than its national competitors. Specifically, FSU ranked 321st in the nation last year in Student-to-Faculty ratio.

FSU is requesting funding in this LBR to hire an additional 140 faculty members, with specific focus on:

- STEM National Academy members, the most highly regarded faculty members in the nation, moving from 8 to 15, a number closer to top national competitors.
- A Presidential Scholar strategic hiring initiative to attract some of the nation's most productive and impactful faculty members who are on their way to becoming National Academy Members.
- Senior faculty (full professors) of national acclaim, associate professors with extensive research experience, and assistant professors who hold research promise.

By the numbers: Each new faculty member in STEM or Health will generate more than \$250,000 annually in contracts and grants expenditures and be a central player in FSU securing new patents and creating new business spinoffs.

Retaining Top Faculty and Staff

FSU's faculty and staff underpin excellence at the university and empower the university's ability to serve students and our state. But an increasingly competitive marketplace for higher education talent means these top faculty and staff are aggressively recruited by other states and universities. And when these colleagues leave FSU, they often take with them national research funding and expertise and replacing them can be expensive and a lengthy process. FSU needs the legislature's continued support to offer retention increases and counteroffers to keep these outstanding colleagues in Florida and at FSU.

Recruiting the Top Students

FSU is among the nation's leaders in undergraduate applicants, receiving nearly 80,000 applications for around 6,000 spots. In fact, FSU has had the highest number of applications of all the universities in Florida for five years in a row. As FSU has moved up the rankings nationally, it has been harder and harder to entice top students who we admit to enroll at FSU – and stay in Florida. FSU must continue to improve its scholarship and financial aid packages to be more competitive for the best students.

We need your support to offer packages to move closer to our competitors in the enrollment of top students, as well as enroll and support students from our state's Pell-eligible populations.

Exceptional students in doctoral and graduate programs are also essential in supporting FSU's movement in the national rankings and its instruction and research portfolio. These students and scholars are necessary components of a competitive Research I University, and they are a core part of our plan.

Why it matters: Producing more graduate and professional degrees serves Florida's evolving economy and its needs for a highly skilled and trained workforce.

As one of the state's preeminent universities, FSU is uniquely positioned to supply the state and nation with this high level of talent and training. Nearly 70% of FSU's graduate students are from Florida, and we plan to continue to attract and retain the top talent in Florida for graduate education. FSU will expand the number of essential graduate student assistantships, adding over 80 new graduate student assistantships to help teach undergraduates and conduct research in support of faculty members.

Establishing the National Framework for Student Success

FSU is a recognized national leader for undergraduate retention and graduation rates, winning the top students success award in the nation in 2021 from the Association for Public and Land Grant Universities (APLU).

- Since 2005, student retention at FSU has improved from 87.9% to 96%, which is among the top six public universities in the nation.
- The six-year graduation rate at FSU has improved from 69.6% to 85% and rising, second highest in the State University System
- The four-year graduation rate has improved from 46.2% in 2002 to 75% and rising, second highest in the State University System
- FSU continued to lead the State University System in transfer student graduation rates, with 74.4% of transfer students from our state college system graduating from FSU within three years.

FSU is among the best in the country at graduating all of its student populations, regardless of family background or income levels, at the highest rates. FSU will build on this success by investing in new staff and advisors, student support and engagement programs, student career development opportunities, and elevated scholarship and financial aid packages.

Why it matters: Graduating students in four years or less means graduating students with less debt and empowering them to launch their careers earlier and increase their lifetime earnings.

Resource Needs

The requested funds will be used in a variety of ways annually, including:

STEM and Health National Academy Members	\$4.5M
Top Research Faculty Members	\$21.1M
Student Support Staff	<u>\$1.3M</u>
Total \$26.9M + Benefits=\$36.3M	
Retaining Top Faculty and Staff	\$15M
More Competitive Graduate Student Stipends	\$2.7M
Undergraduate Student Success Programming	\$1.0M
Scholarships	\$10.0M
Total \$65M	

II. Return on Investment

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

- Elevate Florida State University in its pursuit of a top tier national standing
- Ensure that Florida State continues to be a model for the State of Florida and nation in student success and career readiness
- 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 science, arts, and business programs
- Provide benefits associated with expanding the university's research enterprise and research discoveries to create jobs and opportunities for start-up companies, and by generating discoveries that may directly affect Floridians.

More importantly, state investments will advance the Florida Board of Governors' metrics. Key metrics impacted include:

- Peer Ratings/National Reputation
- Student Retention and Graduation Rates (especially four-year graduation rates)

- Student/Faculty Ratio
- Faculty Resources
- Total Research Expenditures
- Federal Research Expenditures
- National Academy Members
- Faculty Awards
- Doctorates Granted
- Average SAT
- Postdoctoral Fellows
- National Reputation

III. Personnel

STEM and Health National Academy Member Faculty	\$4.5M
Top Research Faculty Members	\$21.3M
Student Support Staff	<u>\$1.3M</u>
Total \$26.9M + Benefits = \$36.3M	

IV. Facilities:

**2025-2026 Legislative Budget Request
Education and General
Position and Fiscal Summary
Operating Budget Form II**

University: Florida State University
Issue Title: Growing FSU's National Prominence

	<u>RECURRING</u>	<u>NON- RECURRING</u>	<u>TOTAL</u>
<u>Positions</u>			
Faculty	140.00	0.00	140.00
Other (A&P/USPS)	20.00	0.00	20.00
	-----	-----	-----
Total	160.00	0.00	160.00
	=====	=====	=====
Salaries and Benefits	\$51,300,000	\$0	\$51,300,000
Other Personal Services	\$2,700,000	\$0	\$2,700,000
Expenses	\$0	\$0	\$0
Operating Capital Outlay	\$0	\$0	\$0
Electronic Data Processing	\$0	\$0	\$0
Scholarships	\$10,000,000	\$0	\$10,000,000
Special Category (Specific)	\$0	\$0	\$0
<u>Student Success Programming</u>	\$1,000,000	\$0	\$1,000,000
	\$0	\$0	\$0
	\$0	\$0	\$0
	-----	-----	-----
Total All Categories	\$65,000,000	\$0	\$65,000,000

**State University System
Education and General
2025-2026 Legislative Budget Request
Form I**

University(s):	Florida State University
Request Title:	Bolstering FSU Health and Research Operations
Date Request Approved by University Board of Trustees:	July 22, 2024
Recurring Funds Requested:	\$33.5M
Non-Recurring Funds Requested:	\$16.5M
Total Funds Requested:	\$50.0M
Please check the request type below:	
Shared Services/System-Wide Request	<input type="checkbox"/>
Unique Request	<input checked="" type="checkbox"/>

I. Purpose -

FSU plans to advance Florida's economy and workforce, improve health and healthcare through the continued development of FSU Health, and invest in our state's critical ongoing needs.

Investing in FSU Health

The FSU Health initiative will transform the quality of healthcare in Florida's underserved regions and advance research to improve health outcomes for all Floridians. Even as we move through the design and construction process for the academic health center building in Tallahassee and the FSU Health hospital in Panama City Beach, FSU has been developing its Phase II plan to recruit and hire the teams of physician-scientists, researchers, and other specialized staff that will bring this world-class facility to life—and have the most impact on the communities we serve.

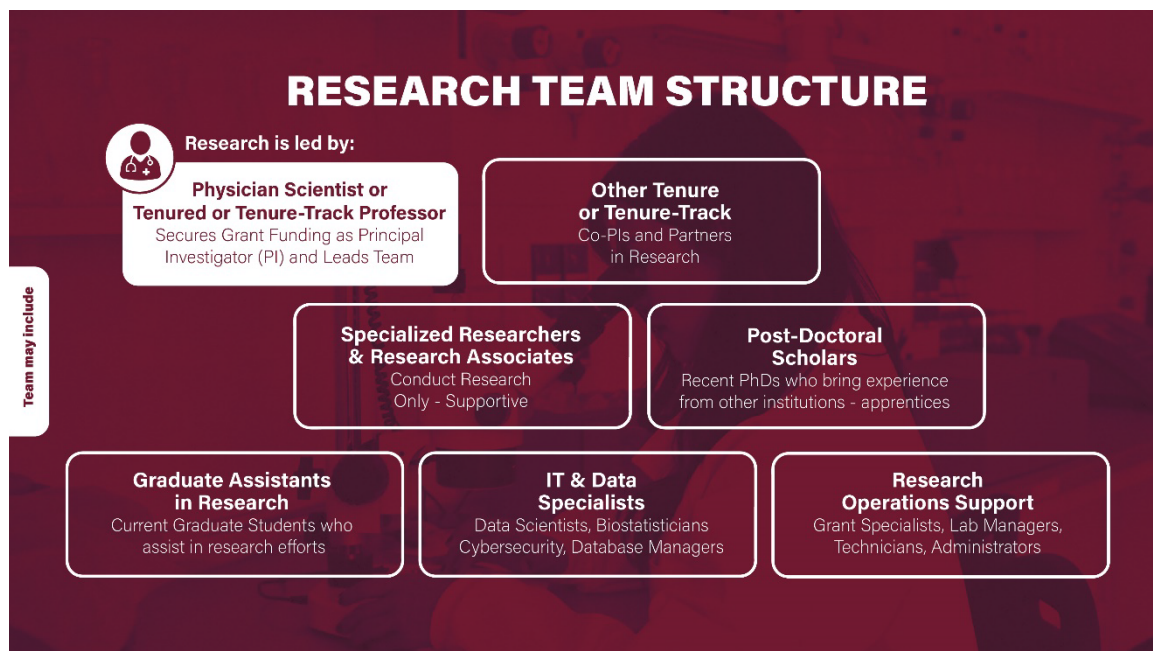
FSU has further expanded its reach and impact through a partnership with the Mayo Clinic focused on developing synergistic research to bring new health innovation to patients as we train the next generation of healthcare talent in Florida.

The FSU College of Medicine has historically focused on primary and rural health. Through the FSU Health investment, we will expand our efforts, reimagine, and grow our medical college to produce graduates with expertise in high-need areas including healthy aging, behavioral health, genomics, and autism. These expansions will increasingly require access to top research talent.

In support of FSU Health, we have also begun building a health data sciences initiative, investing in data sciences infrastructure to improve our ability to compete for more and larger National Institutes of Health (NIH) funded projects. To significantly advance FSU's NIH funding support, we must engage more faculty and partners. Growing the number of researchers and physician-scientists will require extensive central support for secure and effective research and operational infrastructure.

Investing in Operations and Research Infrastructure

FSU will need to invest in specialized laboratory space and equipment and will need to retrofit and update aging laboratories that are decades old. The returns on these initial investments can be immense, as high-quality facilities will attract the kind of high-quality faculty capable of securing large external grants and contracts and attract other high-performing faculty and students. Each new recruit will be expected to build a robust research program that brings in at least \$500,000 annually and trains teams of doctoral students and future clinician scientists.



Health research also requires highly secure data environments associated with electronic health records. FSU Health and the Health Data Science Initiative (HDSI) will need best of class data science infrastructure necessary to earn larger

federal grants. Health research increasingly requires advanced analytics like biostatistics and data science to uncover meaningful discoveries and successful clinical interventions. FSU researchers currently must rely on other institutions to deliver much of the expertise needed to meet these needs which means giving away research expenditures to other institutions. We must build local expertise to improve the competitiveness of our federal and other external research grant proposals and to retain a greater proportion of grant expenditures. The support personnel needed for these projects include individuals who can manage the projects and complexities in computing environments, data architecture, data carpentry, data governance, security, and A.I./Machine Learning/Cognitive Computing algorithms to name a few.

In addition to staffing, there will need to be considerable investments in FSU's research technology infrastructure. These investments will increase research funding by establishing the capabilities required to attract research talent to FSU, to engage external research partners, and to position FSU as a highly capable partner with federal funding agencies. Increasingly, granting agencies want to invest in institutions who maintain a strong cybersecurity and data security posture. Federal cybersecurity and regulatory requirements required to conduct health data research through grants made available via the NIH, the Food and Drug Administration, the National Science Foundation, and the Department of Defense are dramatically increasing. Without such capabilities, FSU will be unable to successfully compete with other top institutions.

Retaining Faculty is a Key Strategic Priority

Whereas new faculty can bring expertise in new research areas, an equally important investment is in retaining excellent faculty, especially with rising costs and an extremely competitive national labor market. It is generally more cost-effective to retain high-quality faculty members than to hire new ones.

As FSU has increased its nation stature, its faculty are getting increasing offers to join other top universities. FSU needs to counter that trend by maintaining competitive wages and providing salary and support funds as a basis for counteroffers. With the significant investments the university makes in establishing new faculty members at the university, it is particularly challenging to have them leave the university.

In addition to investing in wages, FSU is building faculty development and support programs. These programs ensure that faculty have the resources to be successful and that they can join a network of colleagues who can mentor them to be great researchers and educators. One such programs provides faculty with seed money to explore emergent research topics. The seed money allows them to partner with colleagues to demonstrate expertise on emerging topics that are ripe for earning federal grants. These funds are frequently used to encourage interdisciplinary research that leads to new discoveries, products, patents, and

startup companies. FSU provides some seed money for faculty researchers, but we will need more to elevate itself among the top universities.

Another key support for faculty is post-doctoral scholars (post-docs) and graduate student research and teaching assistants. FSU has been able to grow its number of post-docs and graduate assistants in the past few years. Moving graduate assistant stipends to market levels will allow the university to recruit and retain outstanding graduate student assistants. Furthermore, recent PhD graduates covet post-doctoral appointments in top research centers around the world. Top-tier research universities are recognized for providing post-doc experience to train the next generation of top researchers. Additionally, post-docs are an invaluable support structure for grant research as they bring external research experience from other institutions, and they are committed almost exclusively to research for the three years of their appointment. Although post-docs can be paid by grant proceeds, most grants are not large enough to support these researchers without additional institutional support.

The requested funds will be used in the following ways:

Recurring Expenses

Physician Scientists/Clinical Researchers	\$6.5M
Specialized Research Faculty and Associates	\$5.5M
Clinical Research Operations Support Personnel	\$3.0M
Faculty Retention/Market Adjustments	\$2.2M
Post-doctoral Scholars	\$2.5M
Nationally Competitive Graduate Research Stipends	\$1.8M
Secure Shared Research Infrastructure	\$5.0M
Start-up for New Faculty Research Labs	\$1.5M
Develop a Shared Public Health Research Data Hub	\$3.0M
Laboratory Upgrades, Machinery, and Technology	<u>\$2.5M</u>
<i>Sub Total</i>	<i>\$33.5M</i>

Non-Recurring Expenses

Start-up for New Faculty Research Labs	\$6.0M
Develop a Shared Public Health Research Data Hub	\$3.0M
Laboratory Upgrades, Machinery, and Technology	<u>\$7.5M</u>
<i>Sub Total</i>	<i><u>\$16.5M</u></i>
<i>Total</i>	<i>\$50.0M</i>

II. Return on Investment

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

1. Supporting FSU Health will expand both clinical research with Tallahassee Memorial Healthcare and will provide a foundation for expanded and improved healthcare in North Florida and the Panhandle.
2. Will allow further focus on comprehensive bio-behavioral care in underserved communities particularly in North Florida and the Panhandle.
3. Expanding research support expertise will assure that a greater proportion of grant funding will stay in Florida as opposed to be sub-contracted to other institutions.
4. Retaining top faculty will further FSU's goal of becoming one of the nation's very top research universities by creating a stable environment where FSU will benefit from growing research portfolios of more senior faculty.
5. Maintaining stability by keeping faculty from being lured to higher-paying institutions improves academic program continuity while providing the program stability needed to attract top researchers and research grants.
6. Heighten the university's reputation as a STEM leader in Florida and the nation, enhancing Florida State's standing and the standing of the state of Florida.
7. Establish a model for research cybersecurity, research onboarding, and research continuity.

Continued state investments in FSU will also enhance virtually every Board of Governors metric including:

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

III. Personnel

Physician Scientists/ Clinical Researchers	\$6.5M
Specialized Research Faculty/ Associates	\$5.5M
Research Operations Support Personnel	\$3.0M
Post-doctoral Scholars (STEM and Health)	\$2.5M
Graduate Research Stipends	\$1.8M
Faculty Retention/Market Adjustments	\$2.2M

IV. Facilities

n/a

**2024-2025 Legislative Budget Request
Education and General
Position and Fiscal Summary
Operating Budget Form II**

University: Florida State University
Issue Title: Bolstering FSU Health and Research Operations

	<u>RECURRING</u>	<u>NON-RECURRING</u>	<u>TOTAL</u>
<u>Positions</u>			
Faculty	40.00	0.00	40.00
Other (A&P/USPS)	55.00	0.00	55.00
	-----	-----	-----
Total	95.00	0.00	95.00
	=====	=====	=====
Salaries and Benefits	\$15,000,000	\$0	\$15,000,000
Other Personal Services	\$2,500,000	\$0	\$2,500,000
Expenses	\$12,000,000	\$1,500,000	\$13,500,000
Operating Capital Outlay	\$0	\$15,000,000	\$15,000,000
Electronic Data Processing	\$0	\$0	\$0
Graduate Research Stipends	\$1,800,000	\$0	\$1,800,000
Special Category (Specific)	\$0	\$0	\$0
Faculty Retention/Market Adjustments	\$2,200,000	\$0	\$2,200,000
	\$0	\$0	\$0
	\$0	\$0	\$0
	-----	-----	-----
Total All Categories	\$33,500,000	\$16,500,000	\$50,000,000
	=====	=====	=====

**State University System
Education and General
2025-2026 Legislative Budget Request
Form I**

University(s):	Florida A&M University and Florida State University
Request Title:	Accelerating Excellence: Fueling Research and Student Success in the Joint College of Engineering
Date Request Approved by University Board of Trustees:	Previously approved by the Joint College Management Council and FAMU Trustees, FSU Trustees will consider on 07/22/2024
Recurring Funds Requested:	\$13,140,328
Non-Recurring Funds Requested:	
Total Funds Requested:	\$13,140,328
Please check the request type below:	
Shared Services/System-Wide Request	<input checked="" type="checkbox"/>
Unique Request	<input type="checkbox"/>

I. Purpose

The FAMU-FSU Joint College of Engineering, established in 1982, stands as a unique collaboration between Florida State University (FSU) and Florida Agricultural and Mechanical University (FAMU). It is the only engineering college in the United States that unites the nation's leading public Historically Black College and University (HBCU) and a top-25 public research university. Over the last four decades, this unique partnership has fostered shared resources, state-of-the-art research facilities at Innovation Park, and a vibrant academic culture that promotes innovation.

The goal of the FAMU-FSU Joint College of Engineering is to be ranked among the top 50 engineering colleges in the nation within the next five years, aspiring to be the first HBCU engineering college to attain this distinction.

Under the stewardship of the new Dean, who joined in mid-2022, the College has crafted its first strategic plan, "Engineering our Future (2024-2029)." This plan is devised to advance the strategic goals set forth in the 2023 Accountability Plans of both FAMU and FSU:

- FAMU's objective is to rank among the top 75 public universities and to distinguish itself as the first R1 HBCU, aligning with the College's commitment to student success and an intensive research-based education.

- FSU's goal to become a member of the prestigious Association of American Universities (AAU) resonates with the strategic plan's focus on amplifying research and scholastic excellence.
- These goals collectively support Florida's overarching mission to sustain its reputation as the top state for higher education in the nation.

The legislative budget request (LBR) is prepared to procure crucial resources for the Joint College of Engineering, drawing on the mission and vision delineated in the "Engineering our Future" strategic plan. The objective is to elevate the College to new heights of scholarly and research distinction.

The requested resources are aimed at fulfilling two core objectives that align with our vision of transformative impact and integrated excellence:

1. **Accelerate Innovation and Economic Development in North Florida through Multidisciplinary Research and Advanced Graduate Education:** The College plans to harness the multidisciplinary research ecosystem of the Innovation Park to develop pioneering technologies that fuel economic growth, fuel collaborations, and address complex global challenges. By creating a thriving environment that promotes innovation, this initiative will drive significant economic impact in the region through job creation and diversification, industry development, and increased competitiveness.
2. **Foster a New Model of Human-Centric Engineering Education Integrated with HBCU Traditions to Develop a Future-Ready Workforce:** The College's strategy, articulated in the "One College" initiative of its Strategic Plan, aims to seamlessly integrate the foundational values and principles of its parent universities. This approach is designed to pioneer a new model for engineering education that equips students with the essential skills and knowledge necessary to thrive in the modern technical workforce while embedding the human-centric values of the nation's leading public HBCU. Rooted in FAMU's ethos of "Excellence with Caring," the College is committed to instilling technical proficiency, empathy, and ethical responsibility in its students. The funding secured through this budget request will support the development of an educational framework that merges cutting-edge, future-ready engineering training with the nurturing essence of HBCU culture, preparing well-rounded, empathetic, and highly skilled engineers ready to contribute to and lead the future technical workforce.

Key components of the request:

- **Attracting and Retaining Top Faculty:** To enhance the College's research capabilities and educational quality.
- **Hiring Motivated and Skilled Staff:** To support operational efficiency and contribute to institutional success.

- **Providing Adequate Student Financial Support:** To enable both graduate and undergraduate students to pursue their studies unimpeded by financial constraints.

Why it Matters: The investments in the Joint College of Engineering are urgently needed and essential for the sustained prosperity of both Florida and the nation, for the following reasons:

- **Engineering Drives Economic Impact.** According to the Florida Department of Economic Opportunity, engineering jobs pay an average of \$86,000 per year, significantly exceeding the state average of \$57,000 per year¹. Additionally, engineers drive innovation, form the backbone of start-ups, and establish powerful corporate partnerships that foster broader economic ecosystems.
- **Workforce Development.** The college produces a highly skilled engineering workforce critical to Florida's technological advancement and economic growth. With a 97% job placement rate within six months of graduation, the College's graduates are highly sought after by employers.
- **Innovation and Research:** The FAMU-FSU College of Engineering serves as a hub for innovation and research, tackling critical state and national engineering challenges that directly benefit Floridians. With an additional investment, the college would fuel groundbreaking research initiatives that not only enhance sectors like healthcare, aerospace, and defense but also address pressing societal challenges, thereby improving the quality of life across communities.
- **Opportunity for Growth.** The current faculty size at the FAMU-FSU College of Engineering presents a remarkable opportunity for growth. With only 104 tenure-track faculty members—less than half the average at the top 50 engineering institutions²— strategic investment in faculty can dramatically increase our research output and educational capacity. Top engineering schools report research expenditures of over \$800,000 per faculty member, highlighting the substantial returns possible through focused investment.
- **Establishing a National Precedent.** The success of the Joint College can serve as a national model of effective inter-university partnerships. This success will position the College as a prime destination for talented engineering students from Florida, across the nation, and beyond, enhancing its influence in engineering education and research. By supporting the research and student success goals of the College, there is a unique chance to drive economic growth, benefit Florida's citizens, and establish a national benchmark for cooperative higher education, showcasing the strength of successful inter-university partnerships.

¹Source: <https://floridajobs.org/>

² Source: U.S. News & World Report: <https://www.usnews.com/best-colleges/rankings/engineering>

GOAL 1: Accelerating Innovation and Economic Development in North Florida through Multidisciplinary Research and Advanced Graduate Education:

The FAMU-FSU College of Engineering has cultivated a dynamic and distinctive environment for multidisciplinary research and education. Now comprising six diverse departments, including a new one launched this year, the College fosters innovative collaborations that transcend traditional boundaries. Located in Innovation Park, a bustling 208-acre research and development hub governed by the Leon County Research and Development Authority (LCRDA), the College is surrounded by several world-class engineering research centers. These include the High-Performance Materials Institute (HPMI), Florida Center for Advanced Aero-Propulsion (FCAAP), Center for Advanced Power Systems (CAPS), Resilient Infrastructure and Disaster Response Center (RIDER), Applied Superconductivity Center (ASC), and the National High Magnetic Field Laboratory (MagLab) – the world's preeminent and most powerful magnet lab and the only national laboratory in Florida. The MagLab's advanced research capabilities catalyze groundbreaking discoveries across materials, energy, and life sciences, further contributing to our multidisciplinary approach. The synergies created by this multidisciplinary approach and high-performing research centers enable us to undertake complex initiatives, leading to technological advancements, commercialization, and economic value. The success and expansion of our college serve as a vital catalyst for Florida's economic prosperity, solidifying its position as a hub of higher education and technological innovation.

Goal 1.1: Drive real-world impact through pioneering, multidisciplinary research and partnerships.

Strategy 1.1.1: Expand faculty to pursue new research programs addressing emerging societal needs and national priorities: The FAMU-FSU College of Engineering is poised to lead interdisciplinary research and graduate education, leveraging its expertise in high-field magnet technology, superconductivity, cryogenics, aerospace, biomedical engineering, and high-performance materials. With the vision to transform the I-10 corridor into **Florida's Technology Corridor**, the college has identified **seven key research focus areas** aligned with national priorities and the unique needs of Northern Florida. This I-10 corridor, a thriving hub for a diverse range of industries, defense establishments, healthcare centers, and technology hubs, provides a fertile ground for our new cross-disciplinary research initiatives, including:

- **Sustainable Hydrogen Technologies:** We aim to be at the forefront of green hydrogen technology development, addressing the urgent need for sustainable energy solutions and capitalizing on economic opportunities in North Florida. Through collaborations with regional energy leaders (e.g.,

NextEra Energy) and leveraging the expertise of our MagLab, HPMI, and CAPS, we are strategically positioned to innovate in hydrogen production, storage, and utilization. Our vision includes establishing a large-scale hydrogen research facility leveraging our NASA ULI effort for hydrogen-fueled aircraft design and thermal management. We are also conducting research on electric aircraft fueled with hydrogen and working with NASA on AC loss measurements for hydrogen-burning superconducting generators. By building faculty strength, we can lead the sustainable energy revolution, fostering local economic growth and the education of future engineers.

- **Advanced Aero-Propulsion and Hypersonic Flight Technologies:** Building on our established strength in aerospace engineering, we plan to develop cutting-edge research programs in ultra-high-speed flow dynamics and propulsion. This area of study is crucial for national security and the advancement of space travel, which holds great promise for Florida's burgeoning aerospace industry.
- **Disaster Resilience:** To enhance Florida's resilience against natural disasters, we plan to broaden our focus beyond current initiatives such as the Resilient Infrastructure and Disaster Response (RIDER) Center. This expansion will involve developing adaptation technologies and strategies, utilizing predictive modeling and simulations for disaster management, and integrating AI and machine learning in disaster prediction and response. By undertaking these efforts, we aim to create safer and more resilient communities while providing valuable support for policymaking in disaster management.
- **Rare-Earth Extraction Technologies:** Capitalizing on our strength in magnet technologies, we plan to develop novel rare-earth extraction technologies, a crucial area given the importance of rare earth elements in many modern technologies. Our efforts will contribute to creating more sustainable and efficient methods for extracting these essential materials.
- **Cybersecurity Engineering:** We propose a comprehensive cybersecurity engineering program to safeguard critical infrastructures in our digitally interconnected world. Leveraging research capabilities at HPMI and CAPS, the program will focus on hardware and software systems for national security and industrial control. Graduates will be skilled at protecting these infrastructures and responding to cybersecurity threats effectively, enhancing national security.
- **Quantum Science and Engineering:** Leveraging our world-leading expertise in high-field magnet technology and superconductivity, we aim to make significant strides in quantum science and engineering. This rapidly evolving field holds the potential to revolutionize information processing and communication, and we intend to be at the forefront of these advancements.

- **HealthTech:** Aligned with the FAMU Health and FSU Health initiatives, our goal is to address critical healthcare challenges nationwide, including the unique issues of geographical accessibility, socioeconomic disparities, and health risks associated with the Gulf Coast's coastal environment. Through a specialized HealthTech program, in collaboration with renowned institutions along the I10 corridor (e.g., Andrew's Institute in Pensacola, Tallahassee Memorial Hospital, and Mayo Clinic Jacksonville), we aim to develop novel technologies to improve healthcare outcomes. This program will tackle complex issues related to chronic disease management, healthcare equity, optimized care delivery, and the utilization of emerging technologies in the healthcare landscape.

To effectively pursue groundbreaking research and develop new research programs, the FAMU-FSU College of Engineering must significantly expand its faculty size. The average number of tenure-track faculty members at the top 50 engineering schools nationwide is 234, whereas Florida's engineering schools average 152 tenure-track faculty members³. At present, the FAMU-FSU College of Engineering has 104 tenure-track faculty members. **The bottom line:** To align with these benchmarks and effectively support our objectives, we need to add at least 50 faculty members.

Strategy 1.1.2: Enable commercialization of engineering research development by working with entrepreneurship and tech transfer programs at both universities: A pivotal element of our strategic blueprint at the FAMU-FSU College of Engineering involves stimulating the commercialization of research and fostering closer industry ties. To this end, we propose the establishment of a new Office for Technological Innovation (OTI) and an Industrial Affiliates Program (IAP).

Office for Technological Innovation (OTI): The OTI will serve as a dedicated office to foster technological innovation and facilitate the commercialization of our research output. The OTI will provide researchers with comprehensive support, offering essential resources to transform research into marketable products and aid in intellectual property rights acquisition, business plan creation, and market identification. Striving to create a vibrant innovation ecosystem, the OTI will organize innovation challenges, entrepreneurial workshops, and networking sessions within the College. The vision is to amplify the economic impact of research, bolster job creation, stimulate economic development in Florida, and reinforce the College's standing as a leading institution for engineering research and education.

Industrial Affiliates Program (IAP): The Industrial Affiliates Program (IAP) will establish strategic partnerships between academia and industry, offering

³ Source: U.S. News & World Report: <https://www.usnews.com/best-colleges/rankings/engineering>

opportunities for researchers to work on industry-relevant projects and providing students with real-world engineering experience and potential pathways to employment. Through active corporate engagement, the IAP connects with companies interested in sponsoring research, licensing technology, and hiring interns, while affiliates gain early access to cutting-edge research and shape its direction to meet industry needs. Moreover, our industrial partners will have the chance to engage with talented students, creating a valuable talent pipeline for future employees.

Goal 1.2: Enhance the training and graduation of exceptional engineers with advanced degrees: Our commitment is strengthened by a focus on increasing the recruitment of domestic graduate students and integrating advanced AI technologies to streamline and enhance our recruitment and support strategies.

Strategy 1.2.1: Expand fellowship support for doctoral degree completion: Key to our strategy is the enhancement of doctoral completion through robust fellowship programs, including the Doctoral Summer Fellowship and Final Year Fellowship Program. These initiatives are designed to incentivize completion and foster academic excellence among our doctoral candidates.

Strategy 1.2.2: Implement an AI-enabled strategic recruitment and communication plan for graduate students: To significantly enhance our recruitment efforts, we will deploy AI-driven tools to improve the efficiency and effectiveness of our recruitment processes. This strategic plan involves hiring dedicated staff to oversee AI implementations that streamline data analysis and communication. Our recruitment strategy will focus on domestic outreach and building partnerships with top feeder institutions and HBCUs without doctoral programs. AI will also support personalized and timely communication with prospective students, detailing our academic programs, financial aid options, and unique research opportunities. Additionally, a new Graduate Ambassador Program will empower current students to share their experiences and highlight the innovative research conducted here.

Strategy 1.2.3: Foster graduate student welfare and mental health by offering competitive wages, superior work environments, and mentorship opportunities: We aim to enhance graduate student welfare, improve mental health services, and cultivate a supportive academic environment. This concerted effort will bolster our pursuit of academic excellence and reaffirm our commitment to caring for our rapidly growing graduate student population.

Key Performance Metrics for GOAL 1: We will track several metrics, including program rankings, total grant awards, total research expenditures, research

expenditure per faculty, number of invention disclosures, number of licensed patents, IAP membership, graduate enrollment at FAMU and FSU, graduate students per faculty, degrees awarded, and graduation rate.

GOAL 2: Foster a new model of human-centric engineering education integrated with HBCU traditions to develop a future-ready workforce:

We are dedicated to nurturing the next generation of engineering leaders who possess not only technical prowess but also empathy, ethical values, leadership skills, and a global perspective. By synergizing FAMU's ethos of "Excellence with Caring" with the research capabilities of a top-tier university, we will provide a unique and enriching educational experience with access for all. Our goal is to prepare students to make lasting contributions to their communities and the engineering profession and to establish our institution as a model for the nation.

Goal 2.1: Enhance student education through community engagement and partnerships, integrating human-centric values and HBCU traditions.

Consistent with the National Academy of Engineering's (NAE) vision for the engineer of 2020 and beyond, as outlined in "The Engineer of 2020: Visions of Engineering in the New Century" and "The Engineer of 2020: Adapting to the New Century," this goal supports our mission to develop a future-ready workforce equipped with technical proficiency, global awareness, and social consciousness. By blending these skills with our unique HBCU culture, we will nurture engineers who are not only technically adept but also deeply aware of their societal roles. To support this vision, we are seeking funding for the following strategies:

Strategy 2.1.1: Promote a socially conscious engineering education through service-learning projects: This strategy will enable our students to apply their engineering skills in real-world contexts to address societal challenges, enhancing both their technical and social skills. Engaging with local communities allows students to deepen their understanding of societal issues and to convey their enthusiasm for engineering to a broader audience, including K-12 students. This reciprocal learning environment not only enriches their educational experience but also reinforces our human-centric educational model.

Strategy 2.1.2: Foster partnerships with industry to create career opportunities for students: This strategy focuses on building relationships with industry partners to develop internship and employment opportunities, integrating real-world experiences that are essential for a human-centric, future-ready education. These partnerships will help our students transition seamlessly into the workforce, equipped with hands-on experience and industry insights.

Strategy 2.1.3: Support research and innovation among undergraduate and graduate students: This strategy enhances our educational model by providing funding and creating a supportive environment for student-led research. It also connects students with mentors in their fields, further supporting their development as future-ready engineers prepared to tackle global challenges.

Goal 2.2: Enhance student access and success by expanding financial aid and implementing comprehensive success strategies for our students.

Engineering offers a pathway to social mobility through high-paying jobs, but financial constraints and academic challenges often delay or even prevent students from obtaining their degrees. This is especially evident at FAMU, where a large proportion of low-income and first-generation students are enrolled. As per the 2020-2021 Common Data Set, 57% of FAMU undergraduates receive Pell Grants, significantly more than the SUS average of 37%, and the average annual household income stands at \$46,000. Moreover, 70% of undergraduates rely on need-based financial aid. These financial challenges, combined with academic struggles, can impede timely degree completion. We've made strategic changes to mitigate this issue, including recruiting an Assistant Dean for Advancement to raise scholarship-specific philanthropic donations. We're now focusing on securing funds to further student access and success through the following strategies:

Strategy 2.1.1: Expand need-based financial support to engineering students: We seek to expand need-based financial support to both pre-engineering students and students in the engineering program. This support will enable more students to pursue engineering degrees, regardless of their financial situation. By providing financial assistance, we can reduce the financial burden on our students and enable them to focus on their academic success.

Strategy 2.1.2: Enhance Student Success through Integrated Support and AI Tools: This initiative aims to support our students' academic and personal success by providing comprehensive services such as academic advising, peer tutoring, career guidance, and personal support. We will also integrate the latest digital platforms and Artificial Intelligence tools to enhance these services. AI will assist in tailoring academic advice based on data-driven insights, personalizing tutoring sessions to adapt to individual learning styles, and predicting career trends to align students with future opportunities. Additionally, AI will help identify students facing challenges early, allowing for timely interventions. By combining traditional support mechanisms with innovative AI technologies, this strategy addresses both financial and academic barriers, empowering our students to thrive in their engineering careers.

Key Performance Metrics for GOAL 2: We will track key metrics at FAMU and FSU, including the enrollment rate of first-time in college (FTIC) students, four-year and six-year graduation rates for Pell Grant recipients within the College,

second-year retention rate for undergraduate engineering students from both universities, four-year and six-year graduation rates for these students, student-to-faculty ratio within the College, and annual participation rates of undergraduate students in research projects, service learning projects, and industry internships and co-op programs.

II. Return on Investment

The additional investments will result in the following ROI:

- **Jobs in Florida:** The College's research is expected to create jobs in the region in high-tech sectors, including aerospace and aviation, energy, materials, additive manufacturing, biomedical and civil engineering. Direct jobs will be created within FAMU and FSU, while indirect jobs will be created in industries that benefit from the research. The economic impact of the College's research can be measured by the increase in the gross domestic product (GDP) of the region.
- **External funding and grants:** The College's research is expected to attract increased external funding from grants and contracts. The total FAMU-administered grant awards for the College are expected to increase from \$20 million to \$30 million in year 5 and by 15% each year thereafter. The total FSU-administered grant awards for the College are expected to increase from \$35 million to \$55 million in year 5 and by 15% each year thereafter. Additionally, by playing a critical role in the newly established InSPIRE Institute in Panama City, the College is expected to secure an additional \$20 million in external funds credited to the engineering faculty annually in the first five years, increasing by 15% each year thereafter.
- **National ranking:** The College's engineering program is expected to rise in national ranking from 93 to 50 in the next five years. This will attract more top students and faculty to the College and will lead to increased research funding and collaboration with industry.
- **More patents:** The College's research is expected to result in an increased number of patents being issued. The number of patents issued is expected to increase from 35 in 2022 to at least 50 per year in five years. This will generate revenue for FAMU and FSU through licensing and will help to protect the College's intellectual property.
- **Graduate enrollment:** Graduate student enrollment is expected to increase from 533 to 1,000 in 5 years (88% growth). This will allow the College to offer more specialized graduate programs and attract more top graduate students.
- **Undergraduate enrollment:** Undergraduate enrollment is expected to increase from 2,506 students to 5,000 students in five years (99% growth). This will allow the College to offer more undergraduate programs and attract more top undergraduate students.

- **More start-ups and commercialization:** By fostering an entrepreneurial mindset and supporting startup initiatives within the College, there will be an increase in the creation of new ventures and businesses in North Florida.
- **New business partners coming to Florida:** By enticing companies with substantial research interests in strategic areas such as energy and power, materials, space, biomedical, environmental, robotics, and medical devices, we aim to bolster Florida's business landscape.

III. Personnel

1. \$7.67M to hire 50 new faculty: Allocate funds to recruit 40 Assistant Professors and 10 Associate/Full Professors specializing in Sustainable Hydrogen Technologies, Advanced Aero-Propulsion and Hypersonic Flight Technologies, Disaster Resilience, Rare-Earth Extraction Technologies, Cybersecurity Engineering, Quantum Science and Engineering, and HealthTech. These hires will directly support Goal 1.1 (Strategy 1.1.1) and positively impact Goals 1.2 and 2.2.
2. \$3.07M for research lab startup costs: These funds will be used to establish research labs for the 50 new faculty members.
3. \$195K for faculty retention: This budget includes \$150K for salaries and \$45K for fringe benefits, which are intended to retain faculty who excel in research and teaching.
4. \$1.03M to hire seven new staff members (A&P/USPS): These hires will support operational needs under Goal 1.1 (Strategy 1.1.2), Goal 1.2 (Strategies 1.2.2, 1.2.3), Goal 2.1 (Strategies 2.2.1-2.1.3), and Goal 2.2 (Strategy 2.2.2).
5. \$70.35K for staff retention: Allocate \$50K for salaries and \$20.35K for fringe benefits to retain high-performing staff members.

IV. Facilities

n/a



2025-2026 Legislative Budget Request
Education and General
Position and Fiscal Summary
Operating Budget Form II
(to be completed for each issue)

University: FAMU-FSU College of Engineering
Accelerating Excellence: Fueling Research
Issue Title: and Student Success in the Joint College
of Engineering

	<u>RECURRING</u>	<u>NON-RECURRING</u>	<u>TOTAL</u>
<u>Positions</u>			
Faculty	50.00	0.00	50.00
Other (A&P/USPS)	7.00	0.00	7.00
	-----	-----	-----
Total	57.00	0.00	57.00
	=====	=====	=====
Salaries and Benefits	\$8,704,145	\$0	\$8,704,145
Other Personal Services	\$0	\$0	\$0
Expenses	\$0	\$0	\$0
Operating Capital Outlay	\$0	\$0	\$0
Electronic Data Processing	\$0	\$0	\$0
Financial Aid	\$1,000,000	\$0	\$1,000,000
Special Category (Graduate Programs)	\$100,000	\$0	\$100,000
Special Category (Research Equipment/Start Up)	\$3,070,833	\$0	\$3,070,833
Special Category (Faculty & Staff Retention)	\$265,350	\$0	\$265,350
	\$0	\$0	\$0
	-----	-----	-----
Total All Categories	\$13,140,328	\$0	\$13,140,328
	=====	=====	=====