

TABLE OF CONTENTS

<u>FLORIDA INTERNATIONAL UNIVERSITY</u>	1
LAND ACQUISITION	1
SATELLITE CHILLER PLANT EXPANSION	2
SCHOOL OF INTERNATIONAL AND PUBLIC AFFAIRS II	6
<u>UNIVERSITY OF SOUTH FLORIDA</u>	13
MORSANI COLLEGE OF MEDICINE	13
FIO REPLACEMENT VESSEL (R/V BELLOWS)	14
SARASOTA/MANATEE BOOKSTORE PARCEL	19
<u>UNIVERSITY OF FLORIDA</u>	21
NUCLEAR SCIENCE BUILDING	21
NORMAN HALL REMODEL	25
IFAS ACADEMIC BUILDING	29
HISTORY MUSEUM CAPITAL COLLECTIONS	32
<u>UNIVERSITY OF NORTH FLORIDA</u>	39
SKINNER JONES HALL SOUTH (STEM)	39
<u>STATE UNIVERSITY SYSTEM</u>	43
FLORIDA ACADEMIC REPOSITORY (FLARE)	43
<u>FLORIDA STATE UNIVERSITY</u>	47
EARTH OCEAN ATMOSPHERIC SCIENCES BUILDING, PHASE I	47
INTERDISCIPLINARY RESEARCH AND COMMERCIALIZATION BLDG.	50
COLLEGE OF BUSINESS	54
<u>FLORIDA A&M UNIVERSITY</u>	59
STUDENT AFFAIRS BUILDING	59
<u>FLORIDA POLYTECHNIC UNIVERSITY</u>	61
APPLIED RESEARCH CENTER	61

UNIVERSITY OF WEST FLORIDA	63
LABORATORY SCIENCES ANNEX, PHASE I	63
UNIVERSITY OF CENTRAL FLORIDA	68
INTERDISCIPLINARY RESEARCH AND INCUBATOR FACILITY	68
ENGINEERING BUILDING I RENOVATION	72
PARTNERSHIP IV	75
UCF DOWNTOWN CAMPUS, BUILDING I	78
FLORIDA GULF COAST UNIVERSITY	85
CENTRAL ENERGY PLANT EXPANSION, PHASE III	85
SCHOOL FOR INTEGRATED WATERSHED AND COASTAL STUDIES	87
NEW COLLEGE	92
HEISER NATURAL SCIENCE ADDITION	92
FLORIDA ATLANTIC UNIVERSITY	96
JUPITER STEM/LIFE SCIENCES BUILDING	96

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida International University

Project: Strategic Land Acquisition

Total Project Cost: \$ 50.0 M

Previous Funding (State): \$ 10.0 M

Current Request: \$ 10.0 M

STEM (Yes or No): YES

Contact Person (Name, Position, Office and Cell Phone No., Email): Sandra Gonzalez-Levy, VP, University & Community Relations, O: 305-348-7235, C: 786-423-5805, e-mail: Sandra.Gonzalez-Levy@fiu.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation: N/A

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)
Explanation:
 - a. FIU's Main Campus is the second smallest in size and has the highest FTE and headcount per acre in the SUS, at 104 headcount/acre, and 59 FTE/acre, as compared to the SUS averages of 37 headcount/acre and 22 FTE/acre.
 - b. Land acquisition would support the enrollment of approximately 11,000 additional students.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation: FIU estimates that within 5-10 years of the land acquisition (i.e. allowing time for construction, etc.), FIU will increase research funding by \$50-60 million annually.

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida International University

Project: Satellite Chiller Plant Expansion

Total Project Cost: \$ 16.425 M

Previous Funding (State): \$ 9.362 M

Current Request: \$ 7.062 M

STEM (Yes or No): YES

Contact Person (Name, Position, Office and Cell Phone No., Email): John M. Cal, AVP, Facilities Management, O: 305-348-4001, C: 305-323-1488, e-mail: John.Cal@fiu.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation: N/A
2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)
Explanation: N/A
3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation: N/A
4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation: N/A
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation: N/A
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation: N/A

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

- a. Provides a capability that does not exist today: 365x24x7 back-up electrical power (via two generators) that can sustain chilled water/air conditioning to critical research facilities in the event of an FP&L power shutdown (such as during a hurricane or during a load control shut-down). Without this back-up capability, critical research remains at risk due to the loss of local utility power.
- b. Three additional chillers and cooling towers also enable the University to produce chilled water more efficiently.
- c. This facility and the additional equipment provide the chilled water/air conditioning for 3 million square feet of space added to the campus since 2007, including research and lab facilities. This satellite chiller plant was specifically designed to support STEM research and instructional facilities at the undergraduate, graduate and research levels in the Academic Health Center (AHC) quadrant of the Modesto Maidique Campus (MMC).

th largest public university campus in the US.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation: N/A

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

High cooling need buildings have been added to the main campus (MMC) from 2009-10 including the College of Nursing (AHC 3), the Science Classroom Building (AHC 4), and the Stempel College of Public Health and Social Work (AHC 5), all focusing on STEM instruction and research labs.

This project is completed; this is an equipment request only. The facility has already been designed to receive this equipment

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation: N/A

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation: *U.S. News & World Report* ranks FIU first among public universities in Florida for graduating students with the lowest debt, and ranks FIU 13th in the entire nation. This strategic land acquisition would enable FIU to further magnify its impact.

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation:

- a. FIU, Miami Dade County and Miami Dade County Fair and Expo have been working together since 2010 to develop FIU expansion and Fair relocation plans. An independent economic impact study indicates that FIU acquisition would contribute \$900M in construction and a recurring economic benefit of \$541M per year to the local economy.
- b. Academic space built on this land would support instruction, research, service, and community engagement. FIU has educated more than 200,000 graduates in its 50 year history, 115,000 of whom continue to live and work in south Florida. Increasing enrollment has a direct impact on the local economy.
- c. Emphasis placed on jobs and ties to the business community, working with local businesses, such as utilities, design/engineering and construction firms in addition to industry and government to promote the development and commercialization of research. The land acquisition would result in an expansion of an estimated 500 permanent new jobs within 5 years.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation: N/A

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation: N/A

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

This initiative was approved in 2014 by Miami-Dade residents in a county-wide referendum by 65% vote.

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida International University
Project: School of International and Public Affairs Phase II
Total Project Cost: \$ 30.0 M
Previous Funding (State): N/A
Current Request:
STEM (Yes or No): NO
Contact Person (Name, Position, Office and Cell Phone No., Email): John Stack,
Associate Dean College of Arts and Sciences, O: 305-348-7266, C: 305-498-5699, e-mail: stackj@fiu.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)

Explanation:

- a. How many degrees is this request currently serving?

The School of International and Public Affairs (SIPA) at FIU offers 13 bachelor's, 12 master's, 2 professional master's and 8 research doctorate degrees. It also offers an additional 20 joint degrees with other schools and colleges.

In the Academic Year 2013-14, SIPA awarded 1,867 degrees (1,549 bachelor's, 295 master's, and 23 research doctorates). SIPA's degree production accounts for 18% of the bachelor's, 9% of the master's and 14% of the research doctorates awarded by FIU during that academic year. Thirty-one percent of the total degrees awarded by SIPA were awarded in an area of strategic emphasis - GLOBAL. SIPA also awarded 194 undergraduate and graduate certificates during the 2013-14 academic year.

2013-14 Degrees Awarded in SIPA Programs

DEGREE CIP DESCRIPTION	DEGREE CIP	BACHELORS DEGREES	MASTERS DEGREES	RESEARCH DOCTORATES
African-American (Black) Studies	050201	0	3	0
Asian Studies	050103	25	11	0
Criminal Justice Studies	430104	466	52	0
Economics	450601	101	8	1
French	160901	7	0	0
Geography	450701	8	0	0
History	540101	82	32	5
International Relations	450901	298	12	7
International/Global Studies	302001	0	26	0
Latin American Studies	050107	0	12	0
Political Science & Government	451001	264	6	2
Portuguese	160904	5	0	0
Public Administration	440401	115	109	0
Religious Studies	380201	21	13	0
Sociology	451101	133	6	6
Spanish	160905	24	5	2
Grand Total		1,549	295	23

SIPA served 6,078 students pursuing one of its degree programs in fall 2014. Furthermore, SIPA provides support and education opportunities for FIU students enrolled in other majors as well as non-degree seeking students. In fall 2014, over 12,000 non-SIPA majors took courses offered by SIPA departments. This contributed to 17.3% of the University's total student credit hours.

b. How are these degrees meeting the needs of the State of Florida?

Students graduating with a BA from SIPA receive entry-level positions with an average salary of approximately \$36,000. Graduate students are entering the workforce with jobs paying over \$50,000, on average. According to the Florida Education & Training Placement Information Program (FETPIP), the median wages of 2011-12 bachelor's graduates for five of the SIPA bachelor's programs were above FIU's average of \$35,100.

Students with SIPA majors entering the job market help to meet local and state needs. Public Administration graduates, for example, assume leadership positions within the public, private, and non-profit sectors. These solution seekers, equipped with managerial skills and a diverse global perspective, contribute to improving the housing, transportation, as

well as social and health services sectors. Criminal Justice graduates are likewise contributing to local- and state-wide needs. In recent years, Miami has seen a rise in drug and human trafficking, money laundering and cyber security breaches. Consequently, students are entering in-demand sectors such as juvenile justice, corrections, law enforcement, and border security and control. Given the recognition and need for graduate level education in disaster assessment, SIPA's new professional master's degree in disaster management strives to develop and improve the skills of disaster mitigation practitioners and first-responders.

Currently, there are over 1,100 multi-nationals in South Florida, over 600 of which are from Latin America. Countries wishing to do business in Latin America or Latin American businesses wishing to do business in the United States or Canada, choose to set up offices in Miami. SIPA's Latin American and Caribbean Center (LACC) with its Title VI grant is a designated U.S. national resource center for this national strategic priority. The students that graduate from the program provide a workforce that is diverse and has linguistic and cultural competence that could potentially give Miami and Florida a competitive edge in areas such as trade and logistics, manufacturing an innovation, tourism and travel, as well as talent and investment. .

c. How many additional degrees are projected as a result of this request, and over what timeframe?

FIU projections for degrees awarded calls for increasing degree production by 7% by academic year 2017-18, from 12,318 degrees in 2013-14 to 13,169 in 2017-18. SIPA is poised to make its contribution to this goal by increasing its degree production by 5%.

Besides the new professional master's degree in disaster management and the new Ph.D. in International Crime and Justice, SIPA will offer additional degrees over the next several years to meet both professional and academic demands. Bachelor's degrees include: Latin American Studies, National Security, Chinese Mandarin, Arabic, and Farsi. Professional master's degrees include: Diplomacy, Global Economics, and Cybersecurity. Research doctorate degrees include: Religious Studies.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc.)

Explanation:

- a. SIPA serves over 16,000 students (including non-SIPA majors) with nearly 200 faculty members. Its eight departments and 17

interdisciplinary centers, institutes, and programs are scattered throughout the FIU campus. SIPA Phase II will allow 6 departments and 15 centers to move into one space. Students will benefit from clustering multidisciplinary programs together. SIPA Phase II will also include flexible facilities for active learning, such as reverse classrooms, which will improve the students learning experience.

- b. SIPA Phase II will also improve the services provided to our students and enhance the multi-cultural experience the School offers. Student services like undergraduate and career placement advisors will move into the SIPA Phase II building, allowing SIPA to provide targeted support to its students and increase the 6-year retention (currently at 75%) and graduation rates (currently at 64%) for its FTICs .
- c. Designed to promote a synergistic international and public affairs “think-tank,” SIPA Phase II will foster collaboration, innovation, and growth enhancing student learning outcomes and provide our faculty more opportunities for research collaboration.
- d. What is the number of students projected as a result of this request, and over what timeframe?

The FIUBeyondPossible2020 Strategy Plan calls for increasing the total number of students enrolled to 65,000, an increase of 20% by year 2019-20. Accordingly, SIPA plans to increase its student base by 20% over the next five years.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded

- a. How many research dollars does this project currently attract and what projection is expected with the completion of this project, and over what timeframe?

The units within SIPA currently attract over \$5 million in research dollars. This amount is expected to grow to \$8 million in the next 2 years. As it is envisioned that SIPA’s faculty will be housed in SIPA Phase II, research collaboration will also increase resulting in new synergies that will translate to funded projects. While patents are not a customary product of a School of International and Public Affairs, publications such as books and articles are. In 2013-2014, SIPA faculty published 275 books and articles and made 484 presentations.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation:

- a. (See attached "SUS_Program_Inventory_Gap Programs")
- b. Identify which Gap Programs this request addresses, and provide specific data.

Currently, this project is not in the Board of Governor's GAP Analysis. However, SIPA offers degrees in another of the BOG areas of strategic emphasis area --Global. In 2013-14, SIPA awarded 437 degrees in global strategic areas. Globalization being one of the themes of the University's Strategic Plan and one of the BOG strategic emphasis areas makes SIPA an integral part of the State's education future.

DEGREE CIP DESCRIPTION	DEGREE CIP	BACHELORS DEGREES	MASTERS DEGREES	RESEARCH DOCTORATES	TOTAL
African-American (Black) Studies	050201	0	3	0	3
Asian Studies	050103	25	11	0	36
French	160901	7	0	0	7
International Relations	450901	298	12	7	317
International/Global Studies	302001	0	26	0	26
Latin American Studies	050107	0	12	0	12
Portuguese	160904	5	0	0	5
Spanish	160905	24	5	2	31
Grand Total		359	69	9	437

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation:

- a. "Preeminent Program" = any academic program that has a recognized national ranking or is recognized by an entity in the industry. If this project improves the ranking of a Preeminent Program, please specify it's rank, and where this project could then realistically rank with the funding of this project.

Currently, SIPA's Model United Nations team has ranked #5 in North America, surpassing teams from West Point, George Washington and Yale Universities. Every year, the Model United Nations team strives to increase its ranking. With dedicated space and support, gaining the top position is very realistic.

This funding would greatly support SIPA's goal to achieve full membership in the Association of Professional Schools of International and Public Affairs (APSIA). APSIA represents the best schools of international and public affairs in the world, combining multi-disciplinary and policy orientated studies with career development. Currently, with membership limited to 34 schools worldwide, acceptance into APSIA would put SIPA among the top 40 schools of international and public affairs globally within the next five years. SIPA would also be the only APSIA school in Florida and can serve its Latin American sister universities where there are currently no APSIA schools.

SIPA would also have the opportunity to enhance its performance funding model metric goals by expanding their programs to serve students that are not able to enroll in critical classes. This, in turn, is expected to have great impact in improving the six-year graduation rate. In alignment with FIU's student success strategies, SIPA will also offer scholarships and support systems to increase its retention rate.

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation:

According to Forbes Magazine, internships may be the easiest way to obtain a job. Consequently, placing students in quality internships is crucial for the reputation and success of SIPA as well as the career placement of graduates. SIPA Phase II will house an internship and career placement team which will help students identify internship prospects, work with students on drafting resumes and cover letters, rehearsing for job interviews, as well as career counseling.

With internship experience as well as valuable academic and professional training, SIPA graduates will be better prepared to not only enter the workforce but obtain mid-level and leadership positions in NGOs, government agencies, non-profit and for profit organizations specializing in international and public affairs such as law enforcement, defense, intelligence, security, economic development, trade and finance, and public administration.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

- a. Currently the SIPA I building, completed in 2011, cannot house the entire complement of departments, centers, institutes, and programs, that encompasses the School of International and Public Affairs. Students and faculty are, therefore, scattered across the university.
- b. Expansion would provide SIPA with the critically needed square footage to unite its students and faculty in an innovative teaching-learning environment.
- c. Research has shown that collaborative spaces result in better learning outcomes and increased graduation and retention rates.
- d. Collaborative space at SIPA will create an environment most conducive to critical investigation of the most serious challenges facing our community and the world and will allow our students to solve local, regional, national, and global problems.
- e. The facility will serve as a think-tank fostering synergies and a cross-pollination of ideas among faculty, students, visiting diplomats, policy makers and world leaders.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

Completion of the SIPA II building would match a private donation secured from a local Miami philanthropist and allow SIPA to launch a fundraising campaign to achieve its aspiration. Commitment and investment from the State of Florida would be a tremendous asset.

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

The FIU School of International and Public Affairs aspires to be a globally recognized, school of international and public affairs, committed to innovative education with professional programs in global governance, human security, disaster preparedness, and risk management and corporate citizenship.

AGENCY **University of South Florida
System- USF Health**

BUDGET ENTITY **State University
System**

AGENCY PRIORITY **5**

PROJECT TITLE **USF Health Morsani College
Of Medicine Facility**

DATE BLDG PROGRAM _____
APPROVED _____

PURPOSE, NEED, SCOPE, RELATIONSHIP OF PROJECT TO AGENCY OBJECTIVES

The USF Health Morsani College of Medicine currently admits 120 medical students to the CORE program and 56 a year to the SELECT program (based in Tampa for Years 1 and 2). Therefore at any given time there could be 592 UME students. Also, plans are to increase enrollment across all of USF Health to better meet the Florida's workforce needs. The current inventory of physical facilities is at its maximum capacity and cannot meet the needs of the projected increased enrollment. The facility was originally built in the 1970's with a projected maximum capacity of 96 medical students per class. The College proposes a two-pronged approach: 1) renovate sections of the existing facilities where economies of scale exist, and 2) add new facilities where required. At this time, it has been determined that approximately 30,000 square feet of existing space can be prudently and economically remodeled, while significant new construction is needed to meet the higher enrollment.

Most of the planned renovations to the existing space are related to medical student support, admissions and student affairs areas, diversity, student study areas, mailboxes, student computer labs, rest rooms, and locker rooms. Some hallways and other common elements are also involved in this portion of the project.

A new combined Clinical Teaching Lab and Teaching Facility is proposed to meet the additional demands of the new entering classes of medical students. The cornerstone of this section of the building will be two large lecture halls that can accommodate the 200 students and up to 25 faculty. These lecture halls are the first priority. A series of smaller classrooms/teaching labs and computer equipped student areas will complement the lecture halls. These teaching facilities will largely accommodate the needs of the Med I and Med II students. The Med III and Med IV students, while requiring some teaching lab/classroom space on a smaller scale, will primarily need additional clinical skills areas, a patient simulation area, and a clinical lab for mock procedures and mock clinical lab studies.

The balance of the facility will be clinical in nature, providing patient care areas to replace the current facility which is severely outdated. State-of-the-art patient examination rooms, small physician-patient meeting rooms and concomitant support services rooms will be constructed in conjunction with the teaching facilities.

The Morsani College of Medicine project is part of the USF Health Capital Improvement Program to meet critical mission goals and objectives and shall be coordinated with other USF Health Enterprise projects as required.

The project is included in the 2010-2020 Tampa Campus Master Plan Update and was adopted in December 2011. Educational Plant Survey Recommendation, Site 38 # 4.3 and 4.6. (formerly known as USF Medical Teaching Facility Phase I and Phase II).

**Higher Educational Facilities
Return on Investment**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida Institute of Oceanography (FIO)/State University System
/Host Institution: University of South Florida (USF)

Project: Research Vessel Replacement for R/V Bellows

Total Project Cost: _____ \$6.0 M

Previous Funding (State): _____ N/A

Current Request: _____ \$ 6.0 M

STEM (Yes or No): _____ YES

Contact Person (Name, Position, Office and Cell Phone No., Email):

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

- a. This request is to build a new research vessel to replace the 45-year-old *R/V Bellows*. While the *R/V Bellows* has been very versatile in her expeditions, a survey performed by Redshaw Marine Survey (Jan, 2012), described her as having structural deterioration of steel, in other words, "dying from the inside out." These structural concerns include non-fire resistant materials used during the original construction that will not sufficiently protect the vessel and its passengers (students, faculty, researchers and crew) during emergencies. These concerns have prompted us to request a replacement vessel as opposed to continuous maintenance of the current vessel, particularly given the age, compliance with the USCG Navigation and Vessel Inspection regulations, and the advancement of technology available in newer vessels. Even with recent steel replacement in the shipyard (Jan., 2014), the remaining life expectancy for the *R/V Bellows* will not exceed early 2016; at that time she will be decommissioned due to safety concerns. Beginning construction of this requested replacement research vessel during FY 15-16 will allow for the smallest gap in service possible between the decommissioning of the existing research vessel and the launch of its replacement. This vessel replacement request is supported and has been identified by the Board of Governors as the No. 1 statewide priority on the PECO funding list for FY 15-16. In support of this request,

other SUS institutions will continue to examine ways to fully leverage shared costs to help supplement this request where possible.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc.)

Explanation:

- a. Engaging and providing certified teachers with marine science teaching techniques that keeps them current in emerging ocean research and technologies.
- b. Providing K-12 certified teachers 40 days at sea and over 1,000 hours of practical skill sets working with various program scientists and graduate students.
- c. A 2012 FIO survey shows over 3,000 SUS undergraduates have moved on to pursue a career in STEM-related degrees, and over 300 undergraduate students stay in Marine Science after graduation.
- d. More than 30 faculty members and researchers are currently working at an SUS institution where they graduated and utilized the *R/V Bellows* in their research.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc.)

Explanation:

- a. Approximately 140 undergraduate courses and 16 graduate courses throughout the SUS institutions has been taught on the *R/V Bellows*.
- b. In 2013, first SUS Multi-Institutional "Field Studies in Marine Biology" Study Abroad in Florida course launched. More than 50 students from across SUS institutions have enrolled since this course was launched.
- c. Exposes undergraduate students to STEM based field experiences representing real world research opportunities.
- d. Since the 1990's, FIO's platforms have provided over 900 rising female freshmen an opportunity to experience hands-on field work through the Oceanography Camp for Girls program. Between 20-25% of the young women have pursued degrees in higher education related to STEM-focused disciplines.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded

Explanation:

- a. FIO is expected to receive up to \$40 million from the BP civil settlement, these funds will provide teaching and research opportunities to SUS Institutions.
- b. Gulf of Mexico Research Initiative (GoMRI) is expected to release approximately \$80 million in competitive grants for consortia in late

2017. Florida universities have competed very successfully for these funds. By replacing this vessel, FIO would maintain its' competitive advantage which has proven critical in the past in securing these major grants. Without this vessel, the SUS faculty and researchers will be faced with hurdles in securing these major grants.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation: N/A

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation: N/A

- a. FIO's State-supported Subsidized ship time program is STEM-focused and offers hundreds of SUS students an opportunity to gain hands-on experience at sea, thus assisting in graduating more students in STEM-focused areas. Since 2007, at least ten (10) SUS universities and over 500 days have been awarded on the *R/V Bellows* for this program. Replacing this vessel is critical for maintaining and improving results in degrees awarded.
- b. Putting *Teacher at Sea* program at risk for continue and future funding opportunities. This program broadcasts from "ship to shore" to public schools across Florida, reaching hundreds of students and teachers in K-12 levels.
- c. Since 2012 *R/V Bellows* transported over 2,600 undergraduate students to study marine oceanography thus furthering their progression and advancement.

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
Explanation: N/A

Explanation:

- a. Replacement for the *R/V Bellows* would continue to provide a unique platform for Preeminent Programs across the SUS system for coastal ocean research and monitoring.
- b. New research vessel will continue to significantly strengthen the SUS' competitive position in securing higher levels of R&D investment from the federal government, foundations and industry.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

- a. FIO will receive over \$4 M resulting from the first phase of the civil settlement under the RESTORE Act to operate the Centers of Excellence Grants Program with funds to be awarded in the upcoming fiscal year – however, RESTORE Act and other grant funds CANNOT be used to purchase a new vessel.
 - b. Over \$110 M in grants have been enabled by FIO.
 - c. Potential loss of large grants released by the Gulf Of Mexico Research Initiative (GOMRI) Consortia and RESTORE Act opportunities.
 - d. Impending research funding opportunities from other areas of the RESTORE Act Gulf Coast Restoration Trust Fund (ie. National Academy of Science, NOAA, Direct Component).
 - e. Foundation funds currently available from The Walton Family Foundation, the Harte Institution and the Guy Harvey Ocean Foundation to conduct and support marine research, conservation and education would diminish if research platforms are not available.
9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation:

- a. Repairing and maintaining the *R/V Bellows* is not a viable option based on extensive reviews of the vessel's condition. The *R/V Bellows*, is a 45 year old vessel, logging 638 total trips since July 2009, of which 315 were SUS cruises.
- b. Without *R/V Bellows*, FIO would stand to lose \$500,000 - \$750,000 (equivalent to 100 to 150 days) in revenue each year.
- c. Project represents a \$150,000 per year investment over the next 40 year life span of a new vessel. Without this investment, FIO and the state's economy will be negatively impacted due to the expenditures associated with the normal operations, loss of jobs, potential loss of ~\$500,000 in revenue to local businesses (i.e. food, fuel).
- d. The ROI includes: 1) continue revenue flow of \$500,000-\$750,000 annually from chartered cruises; 2) allows FIO members to continue to be competitive for multi-million dollar grants from federal, state and private sectors; 3) enhance the recruitment and retention of professors; 4) attract higher qualified Bachelor's, Master's and PhD students – which would result in more degrees awarded across the SUS; 5) increase interaction between public and private marine science employers, leading to new job creation and contributing to Florida's economic growth.

- e. The demand for vessel use has increased. FIO was recently contacted by the U.S. Navy to assist in their naval exercises off of Florida's east coast. Projected revenue from this partnership is estimated at ~\$600,000 over four months.

Other Pertinent Information not included above:

- b. Estimated 800 undergraduate and graduate students yearly would not obtain the hands-on-training to become future marine scientists and join the workforce.
- c. Replacing the *R/V Bellows* will contribute to Florida's ever growing shipbuilding and repairing industry which Florida accounts for 5.4% of the total Direct Employment in the U.S. private sector per the *MARAD economic study in 2012*. Our goal is to have the vessel constructed in Florida, providing continuing employment and revenue to Florida's economy and shipbuilding industry.
- d. Over 475 journal publications have been produced by the faculty members of the SUS institutions, elevating Florida's status as a global hub of world-class oceanographic education and research.
- e. Transporting and assisting Florida's Fish & Wildlife Research Institute researchers in the collection and monitoring of the *Karenia Brevis* (Red Tide) that impacts Florida's tourism industry.
- f. FIO stands to lose two large projects assessing the fish and wildlife habitat along the West Florida Continental Shelf (WFS), with partners from the University of South Florida (USF), State entity, Florida Fish and Wildlife Research Institute (FWRI), federal agencies United States Geological Survey (USGS), and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA/NMFS). These projects starting Fall 2015 would bring over \$500,000 (60 days/year) in revenue for the next 5 years. Millions of dollars could potentially flow into other Gulf Coast States if Florida lacks this important platform.
- g. We hope and anticipate other SUS institutions will contribute up to 10% of the requested amount to assist in the construction of the new vessel.*

**Higher Educational Facilities
Return on Investment**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: University of South Florida

Project: Sarasota/Manatee Bookstore Parcel

Not applicable due to disposition

Total Project Cost: _____ \$ 0.0 M

Previous Funding (State and Local): \$ 0.0 M

Current Request: _____ \$ 0.0 M

STEM (Yes or No): _____

Contact Person (Name, Position, Office and Cell Phone No., Email): _____

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)
Explanation:
3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:
4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation:
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation:

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation:

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation:

Other Pertinent Information not included above:

**Higher Educational Facilities
Return on Investment
August 1, 2015**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: University of Florida
Project: Engineering Innovation Nexus Renovation/Addition
Total Project Cost: \$ 53.0 M(\$45M PECO approved by BOG, \$4M University commitment, \$4M additional PECO request to be submitted to BOG for approval)
Previous Funding (State): 0
Current Request: \$ 25.0 M
STEM (Yes or No): YES
Contact Person

Email: curtrey@ufl.edu
Cammy Abernathy, Dean of Engineering; Office Phone: 352-392-6000
E-mail: caber@eng.ufl.edu
Linda Collins, UF Government Relations; Phone: 850-933-6385; Email:
collinslbem@comcast.net

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
 - a. 5-year projected increase in engineering degrees: 300
 - b. Range of wages for student graduates in engineering fields (BS: \$55K-\$70K; PhD: \$70K-\$120K)
 - c. Projected job openings: state (18,000) and nation (300,000)
 - d. Proposed transformation of the engineering educational process at the University of Florida will result in graduates entering the workforce with enhanced leadership and entrepreneurship skills.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc).
Explanation:

- a. As an integral part of UF's plan for Preeminence, there is a need to re-purpose the 50-year old Nuclear Sciences Building to establish a 21st Century infrastructure to support increased numbers of students earning engineering degrees and to provide for cutting-edge research.
- b. Currently, UF and the nation experience a 45% attrition rate of students leaving engineering programs by their junior year. The new 21st Century facility will support changes in the way students are educated by providing hands-on learning experiences early on in their curriculum, thus improving sustained interest, creativity, retention, and recruitment efforts. The Integrated Classroom design includes movable walls and furniture to facilitate different instructional modalities. Collision spaces will compel collaboration.
- c. Transforming Engineering Education would involve a Global Innovation Network of alumni, experts, and student/faculty teams in pursuing real-world team approaches to innovation.
- d. Currently, 1700 number of undergraduate and graduate students are accommodated in the Nuclear Sciences Building. The newly renovated/expanded Innovation Nexus Building will accommodate a projected additional 1800 students and 25 faculty. Additionally, the prototyping laboratory will be made available to all 8000 engineering students.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:

- a. Currently, the College of Engineering engages in more than \$65M research annually. The newly renovated/expanded facility will support a projected increase of \$4M in industry research funding and \$10M in multidisciplinary research funding. Tech transfer will be increased and annual production of Start-up companies will be doubled from 5 to 10.
- b. COE Preeminence efforts include: Neuroengineering, Cybersecurity, Data Analytics, Autonomous Systems, Renewable Energy, Online Learning Institute, Human Centered Computing, Computer Graphics/Biodiversity, Advanced Manufacturing all of which address statewide and national needs. Emphasis on these areas will result in increased research funding, and additional invention disclosures, executed license and option agreements, and patents. (See 5 b.)

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation: Yes. The need for additional graduates with Engineering degrees, especially in the areas of advanced manufacturing, biotechnology and computer engineering has been recognized by the Access and Attainment Commission and the Department of Economic Opportunity. Additionally, the Department of Economic Opportunity has projected that engineering job openings are included in the top 15 largest-growing occupational groups in the future. As one of the State's premier

universities, UF is perfectly positioned to address the State's workforce and economic development goals in this area.

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
 - a. Explanation: The proposed Innovation Nexus Building will facilitate, support an increase the university's performance on all of the preeminent university metrics specified in s.1001.7065, F.S. related to freshmen qualifications and retention and graduation rates; national academy memberships for faculty; annual research expenditures; numbers of patents awarded; national rankings for programs; annual award of doctoral degrees; number of postdoctoral appointees; and endowment funding. In addition UF continues to emphasize the Board of Governors Performance Funding Model metrics addressing student retention/graduation/employment rates and average earnings, continued emphasis on increasing the number of undergraduate and graduate STEMM degrees, increased research funding and faculty awards.
 - b. College of Engineering R&D Statistics for the past 5 years: 536 invention disclosures submitted; 896 US & Foreign Patent applications submitted/254 Patents issued; 185 executed license & option agreements; 30 start-up companies (5-6 by students), 2x national average per research dollar in patents issued, 4x national average per research dollar in # of start-up companies.
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students.
 - a. The building will be 21st century home of the Engineering Industrial Experiment Station (EIES). EIES will help to support and recruit high-tech companies to Florida in order to increase the state's economic competitiveness and to support collaboration on research and development with industry across the state and nationwide.
 - b. The College of Engineering actively pursues opportunities for students to engage in internship programs by departmental events which host industrial representatives for seminars and meetings with students and through other networking events held in concert with the UF Career Resource Center.
 - c. Engineering Start-up companies, annually, are projected to be doubled from 5 to 10 - a percentage of which will be started by students.
7. Project Improves the Use, either Operationally or Academically, of Existing Space
Explanation:
 - a. The renovation and addition will allow for re-purposing the 50-year old Nuclear Sciences building, to provide approximately 74,000 square feet for a new, 21st Century, state-of-the art educational environment to bring together interdisciplinary faculty, undergraduate and graduate students in collision

- spaces that compel collaboration. The Integrated Classroom design includes movable walls and furniture to facilitate different instructional modalities.
- b. Location is a key feature. Located in the center of campus, facing the Reitz Union with pedestrian walkways and intersections, this building provides a centerpiece for the face of innovation on UF's campus.
 - c. Two floors of the existing building are underground. Funding will be used to retro-commission the existing building in order to identify key infrastructure upgrades which the project will improve and to create a deferred maintenance priority list so the University can plan accordingly
8. Contribution of Local Funds Through Matching Grants, Property Donations, .
Explanation: UF is committing \$4M of non-PECO funding to this project.
9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)
Explanation:
- a. The renovated part of the 50-year old facility will include installation of new utility infrastructure, providing for energy efficient equipment. This will also reduce the load on the existing building infrastructure, which in conjunction with the retro-conditioning, will reduce annual operating costs.
 - b. The new facility will meet V4 LEED standards.

Other Pertinent Information not included above:

UF Goal: *The State's workforce and economic development needs are addressed in the strategic plans of the University of Florida and the Board of Governors, including goals to: 1) increase engineering baccalaureate and graduate degrees awarded annually; 2) increase STEM research; 3) increase spin-off companies due to research and development. These goals are recognized in the Preeminence legislation articulated in s. 1001.7065, F.S. as well as the Board of Governors Performance Funding Model. The proposed Engineering Innovation Nexus Building will catapult UF's efforts in these areas.*

The proposed facility will house the Biotech Lab to capitalize on UF's strengths in health care and engineering, the Engineering Innovation Institute and Engineering Leadership Institute to support innovative thought and leadership, Engineering Industrial Experiment Station to expand collaborative efforts with industry in the state, capstone design labs to facilitate interdisciplinary collaboration, the Global Innovation Network to enhance real-world team approaches to innovation, and innovative labs and teaching environments to foster emphasis on human centered design, which focuses on optimizing technology around how users can, want or need to use technological products rather than forcing users to change their behavior to accommodate the technology.

**Higher Educational Facilities
Return on Investment
August 1, 2015**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: University of Florida
Project: Norman Hall Remodeling/Conference Center (UF College of Education)
Total Project Cost: \$ 24.4 M
Previous Funding (State): N/A
Current Request: \$ 8.0 M
STEM (Yes or No): YES

Curtis Reynolds, VP for Business Affairs; Office Phone- 352-392-1336;

Email: curtrey@ufl.edu

Glenn Good, Dean and Professor for College of Education; Office Phone 352-273-4135;

Email: ggood@ufl.edu

Linda Collins, UF Government Relations; Phone 850-933-6385; Email:

collinslbem@comcast.net

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
 - a. 5-year projected increase in education degrees: 200
 - b. Range of wages for student graduates in education fields:
Range: \$35,000 (entry-level teachers) to \$100,000 (higher education administration) annually
 - c. Projected job openings in the state: more than 3,000
 - d. UF College of Education graduates will enter the workforce with the ability to teach STEM content areas effectively, therefore, improving student academic performance.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc.)
Explanation:

- a. As an integral part of UF's plan for Preeminence, there is a need to *Re-Purpose* the 82-year old Norman Hall (home to UF's College of Education) in order to support development of innovative learning systems and to produce STEM educators and the highly-effective school leaders of tomorrow.
 - b. Currently, 2,800 undergraduate and graduate students are accommodated in the Norman Hall Building. The newly renovated/expanded space will serve an additional 160 students annually, and accommodate an additional 15 researchers and faculty through improved efficiency of space utilization.

- 3. Amount of Additional Research Funding to be Obtained; Patents Awarded
 Explanation:
 - a. The College of Education currently has \$74.4M in active externally-funded contracts and grants. With improved facilities, the college's ability to successfully compete for contracts and grants will increase 25% to \$93M in active externally-funded contracts and grants in the coming 5 years.

 - c. The addition of a one-story Conference Center will provide a much-needed venue for leading speakers for research and training events at the university.

- 4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
 Explanation: Yes. The Board of Governors GAP Analysis, resulting from the Access and Attainment Commission work, identifies a need for additional kindergarten and middle school teachers in 15 different degree program areas. With building renovations, the UF College of Education can help meet that need.

- 5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
 Explanation:
 - a. Renovations and expansion for the infrastructure of the College of Education (Norman Hall) will facilitate, support and increase the university's performance on the preeminent university metrics specified in s.1001.7065, F.S. related to freshmen qualifications and retention and graduation rates; national academy memberships for faculty; annual research expenditures; national rankings for programs; annual award of doctoral degrees; and number of postdoctoral appointees. In addition, UF

continues to emphasize the Board of Governors Performance Funding Model metrics addressing student retention/graduation/employment rates and average earnings, continued emphasis on increasing the number of undergraduate and graduate STEM degrees, increased research funding and faculty awards.

- b. UF College of Education supports 3 preeminence efforts: Online Learning Institute, Center for Excellence in Early Childhood Studies, and Informatics/Data Analytics. It also houses critical centers: Lastinger Center for Learning, STEM Education, and Institute for Higher Education.
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
 - a. The students in the College of Education engage in extensive internships and gain clinical experiences in partnership with public, private, and charter schools across the state.
7. Project Improves the Use, either Operationally or Academically, of Existing Space
 - a. The new 21st Century Norman Hall construction will serve to better integrate library functions, information technology applications, and support for instruction and research.
 - b. Along with re-roofing, the brick structure is in need of restoration, and the HVAC, electrical, and plumbing systems for the building are entirely deficient. The project scope also includes envelope restorations to the Norman Hall addition, renovations to the ground floor Norman library, and due to the lack of having a large multifunctional meeting space, there is a one-story Conferencing Addition included in the construction plan. The Conferencing Center will provide for efficient and configurable meeting spaces, flexible furnishings, and AV equipment to support modern Teleconferencing technologies.
8. Contribution of Local Funds Through Matching Grants, Property Donations.
9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)
 - a. Significant Critical Deferred Maintenance in this facility includes: damaged electrical wiring due to vermin invasion, loose bricks under the roofline, stench due to faulty plumbing, asbestos in ceiling tiles, mold in floor tiles and carpeting, elevators unable to pass inspection, water intrusion, insufficient electrical outlets in classrooms to facilitate technology for student learning.
 - b. This facility must be brought up to fire code and ADA standards.

- c. By virtue of upgrading the building envelope (roof, windows, brick repairs) and mechanical systems, this facility will incur significantly enhanced energy efficiencies, thereby resulting in reduced operational costs.
- d. As one of several buildings listed on the National Historic Registry, Norman Hall is a vital asset to the University of Florida Campus. Restoration and upgrades will further extend the lifecycle of this important historical facility.

Other Pertinent Information not included above:

At the University of Florida, the minimum LEED certification level of all new construction and major/minor renovation is GOLD.

**Higher Educational Facilities
Return on Investment
August 1, 2015**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: University of Florida

IFAS Academic Building

Total Project Cost: \$ 15.8 M

Previous Funding (State): N/A

Current Request: \$ 8.0 M

STEM (Yes or No): YES

Contact Person (Name, Position, Office and Cell Phone No., Email):

Curtis Reynolds, VP for Business Affairs; Office Phone- 352-392-1336;

Email: curtrey@ufl.edu

Jeanna Mastrodicasa , Assoc. VP for Ag & Natural Resources; Office Phone 352-392-1971;

Email: jmastro@ufl.edu

Linda Collins, UF Government Relations; Phone 850-933-6385; Email:

collinslbem@comcast.net

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
 - a. The proposed project will lead to 5-year projected increase of 200 degrees

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc.)
Explanation:
 - a. As an integral part of UF's plan for Preeminence, there is a need to create quality and efficient research space which will greatly enhance competitive recruitment of preeminence faculty.
 - b. New construction and renovations will lead to the recovery of more than 3,200 credit hours lost each year due to teaching lab and classroom deficiencies

- c. Projected 5-year increase of 200 degrees through increased credit hours, faculty retention, and recruiting
- 3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:
 - a.
- 4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation:
- 5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation:
 - a.
- 6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
a.
- 7. Project Improves the Use, either Operationally or Academically, of Existing Space
 - a. Space quality issues include the need for upgraded classrooms and new modern teaching laboratories. These deficiencies limit the type and number of classes now offered
 - b. UF departments of horticulture, plant pathology, and environmental horticulture have outgrown space, restricting class selection options, reducing class curriculums, and limiting available class times. The proposed project will alleviate these conditions, provide greater degree access, and enhance the quality and functionality of the educational spaces
 - c. Repurposing of existing teaching lab into research space will providing for cutting-edge education and research opportunities, increasing the number of successful degree-earning students
- 8. Contribution of Local Funds through Matching Grants, Property Donations.
- 9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)
 - a. The proposed project will maximize the potential for repurposing of existing spaces in Fifield Hall, and Microbiology and Cell Science Building. Various utility infrastructure systems have already been upgraded by the university in these buildings and will accommodate conversion of teaching labs into wet research lab space. This is a cost effective approach towards creating quality research labs through renovations, and thereby appropriate new construction

dollars towards maximizing square footage of less expensive teaching lab spaces in the new facility.

- b. The long term benefit of this approach is that considerable deferred maintenance backlog has been reduced in the existing buildings through university funded renovations and upgrades to the mechanical systems, thereby extending the useful life of the facility, and simultaneously providing expansion capabilities for repurposing of teaching lab to research lab space. Spaces in the new facility will require less complex easier maintainable utility infrastructure systems, less energy/operational costs, and less intensive preventative maintenance manpower over the life cycle of the facility.

Other Pertinent Information not included above:

**Higher Educational Facilities
Return on Investment
August 1, 2015**

Institution: University of Florida

Project: UF-373: Florida Museum of Natural History Special Collections and Research Facility

Total Funding: \$32.8 M

Previous Funding (State and Local): \$0

STEM (Yes or No): YES

Contact Person:

Curtis Reynolds, VP for Business Affairs; Office Phone: (352) 392-1336;

Email: curtrey@ufl.edu

Doug Jones, Director, Florida Museum of Natural History; Office Phone: (352) 273-1902;

Email: dsjones@flmnh.ufl.edu

collinslbem@comcast.net

Introduction:

The Florida Museum of Natural History (FLMNH) at the University of Florida (UF) is the State museum and, at over 100 years old, possesses some of the most significant biological, paleontological and anthropological collections in the world. These collections form the basis of the museum's scientific research and educational activities, and allow it to fulfill its mission of understanding, preserving and interpreting biological diversity and cultural heritage. The collections are utilized extensively by local, state and federal agencies within and beyond Florida for the purpose of identifying plants and animals, and for understanding which organisms have occupied ecosystems over time.

Of specific concern are select museum collections and activities that require storage in specialized conditions. These include Ichthyology (fish), Herpetology (amphibians and reptiles) and Marine Invertebrate specimens stored in ethyl alcohol as well as tissues for DNA and RNA samples that are stored at liquid nitrogen temperatures. These collections are continuously utilized for research and teaching by UF faculty and students, and are loaned to research institutions throughout Florida and worldwide, making them a valuable global scientific resource. The museum's grant-funded scientific research and collecting programs are thriving and these collections are expected to continue to grow into the future in support of the university's research and teaching mission.

However, as noted in communication over many years between the State Fire Marshal and UF, due to the nature of its design Dickinson Hall is a facility that cannot be renovated in order to meet current state codes for the storage of ethyl alcohol and

other flammable materials. This concern was also noted in the American Alliance of Museum's notification of accreditation letter dated August 13, 2008, which specifically cited the alcohol collections and Dickinson Hall's non-compliance with State Fire Marshal regulations as a cause for concern that required remedy. James A. Welu, Chair of the Accreditation Commission, noted..."At the time of the next review, we will give particular attention to collections and progress in dealing with the curation and storage of the wet collection." Therefore, the UF and FLMNH seek to construct state-of-the-art storage and research facility to: preserve these irreplaceable special collections and ensure their availability for future research; remedy a serious threat to the health and safety of university faculty, staff and students; and secure the State and university museum's continued national accreditation.

This Special Collections Facility will also enhance both the Biodiversity Preeminence Program at UF and the iDigBio initiative, discussed below, by providing facilities to support cutting-edge biological and molecular genetics research and adequate collections growth for preeminence faculty with active research programs. This new facility will house the Director and preeminence faculty of the university's Biodiversity Initiative, including shared lab space, meeting areas, offices and videoconferencing facilities to enhance data collaboration and to promote inter-disciplinary investigations. State-of-the-art laboratories will improve FLMNH's ability to attract top graduate students and the additional space gained by moving wet collections from Dickinson Hall will allow FLMNH scientists' to expand collecting and research programs that have been limited by space constraints.

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)

Explanation:

The FLMNH has hired three new Preeminence faculty (Rob Guralnick -Big Data/Informatics; David Blackburn - Biodiversity: Molecular Genetics/Herpetology; Larry Page - Biodiversity: Digitization/Ichthyology) who will join colleagues Pam and Doug Soltis, Akito Kawahara, Gustav Paulay, David Reed and others to collectively increase the number of masters and doctoral students studying molecular genetics and bioinformatics. Blackburn, Page, and Paulay labs and collections will be located within the Special Collections and Research Facility, as will Soltis lab cryogenic tissue collections. The museum expects to graduate approximately 30 - 40 masters and Ph.D. students in the next five years. These graduates will secure positions in academia or in government agencies such as the U.S. Fish and Wildlife Service (USFWS), Florida Fish

and Wildlife Conservation Commission (FWC), National Oceanic and Atmospheric Administration (NOAA), and the U.S. Geological Survey (USGS). In addition to working in academia and government service, graduating students will also find employment in a wide variety of research institutions such as the Scripps Research Institute in Florida, the Sanford/Burnham Medical Research Institute, the Max Planck Florida Institute, the Harbor Branch Oceanographic Institution and similar organizations studying molecular genetics and bioinformatics. Finally, graduates in bioinformatics and molecular genetics will secure positions in biotechnology and bioinformatics industries. Median starting salaries for assistant professors in biology are approximately \$70,000 and for full professors can range from \$120,000 to \$190,000.

2. X Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)

Explanation:

With new preeminence faculty in areas noted above who will have laboratories, collections and offices within the Special Collections and Research Facility, the museum will significantly increase the number of graduate students served. Drs. Blackburn, Guralnick, Page and Soltis hold multiple, large, multi-year NSF grants and support masters and doctoral students from these and other sources. The museum expects faculty housed in the Special Collections and Research Facility to attract at least 20 new graduate students in the next five years, in addition to the 100+ museum faculty direct each year. With expanded facilities for collections and research, the museum expects to see a related increase in successful competition for extramural funding to support graduate students, post docs and staff.

Museum faculty train hundreds of undergraduate students per year; these students learn to identify Florida's plants and animals by observing the museum's specimen collections, preparing them for graduate programs or employment in government agencies, research institutions or industry. A new Special Collections and Research Facility will provide greater access for increased numbers of undergraduate and graduate students and will allow museum faculty to offer more high level courses in related disciplines.

3. X Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:

FLMNH currently manages an average of \$30 million in (primarily) federal research grants per year and through the efforts of new Preeminence faculty in Big

Data, Biodiversity, Informatics and Molecular Genetics would expect to increase that amount by at least \$5-10 million, or up to a 30% increase, per year. The Biodiversity Preeminence node will also enable the university to be more competitive when applying for comprehensive grants for large biotic surveys, such as the Moorea Biocode project funded by the Gordon and Betty Moore Foundation, among others.

The new Special Collections and Research Facility will house groups of organisms that are of critical importance to the study of biodiversity, water quality and environmental health; are under significant threat of population collapse and/or extinction, and are bellwether species for the study and understanding of agricultural and natural systems, and climate and ecosystem change. Specifically, museum researchers utilize collections of fish, marine invertebrates, amphibians, and other organisms to conduct research addressing issues of water and reef quality, ocean health, and the sustainability of marine and freshwater systems: all of which inform important Florida industries including recreational and commercial fishing, oyster and clam harvesting, tourism, ecotourism, and other activities tied to aquatic systems.

The museum has extensive collaborations with the Department of Agriculture and Division of Plant Industry and proposes to house specimens of the Florida Collection of Arthropods that are stored in alcohol in the Special Collections and Research Facility. These collections form the basis of research programs that seek early identification of new crop pests in Florida and other potential vectors of disease; analyze crop sustainability; and identify pollinators for natural and agricultural systems. Fresh water insects in these collections are studied as indicators of water quality or environmental health and provide early warning for environmental pollutants or system degradation. The museum and DPI will seek grant monies for collaborative research through the US Farm Bill and other funding sources.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation:

Faculty curators of the museum teach over 50 classes per year for the university and direct or serve on over 200 graduate student committees annually. Areas of museum faculty expertise address STEM Programs of Strategic Emphasis identified by the State University System of Florida including Environmental Studies; Natural Resources, Water, Wetlands and Marine Resources Management; Fisheries Sciences and Management; Wildlife, Fish and Wildlands Science and Management; Science Teacher Education; General Science Teacher Education; Biology and Biological Sciences; Molecular Biology; Botany; Plant Molecular Biology; Zoology; Entomology; Genetics;

Bioinformatics; Ecology; Marine Biology; Conservation Biology; Ecology, Evolution, Systematics and Population Biology; Biological and Physical Sciences; Geology; Geographic and Information Sciences; and Environmental Health, among others.

5. X Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation:

The Special Collections and Research Facility will support the Biodiversity and Informatics Preeminence nodes created by the university, as well as the world-class research collection of the museum. The FLMNH is already preeminent among university-based natural history museums in the country, ranking in the top three alongside Harvard and Yale based on its research programs, faculty productivity and collections size. Collections size also places FLMNH ahead of prestigious stand-alone national museums such as the Field Museum, the American Museum of Natural History and the California Academy of Sciences.

UF has identified Big Data, Biodiversity and Informatics as Preeminence nodes and has accordingly hired new faculty members in multiple colleges and units, including the museum, the College of Liberal Arts and Sciences, and Institute for Food and Agricultural Sciences, among others. As one example of institutional investment in the Biodiversity Preeminence node, the museum has hired a Curator of Herpetology and Molecular Genetics (David Blackburn) from the California Academy of Sciences; the museum and university together have committed \$1.712 million in start-up funds for Dr. Blackburn which includes the purchase of a micro CT Scanner to be housed in the nanoscale research facility MAIC; this new equipment will be utilized by faculty across campus.

The museum is the preeminent institution in the nation in Informatics as it relates to biological data. The museum is leading the National Science Foundation's *Advancing Digitization of Biodiversity Collections* initiative, iDigBio (Integrated Digitized Biocollections). The vision for iDigBio is to create "...a permanent repository of digitized information from all U.S. biological collections that leads to new discoveries through research and a better understanding and appreciation of biodiversity through improved outreach, which then leads to improved environmental and economic policies." 32 million records have been imported thus far from a network of hundreds of participating institutions. The museum currently manages this program via a five-year, \$14 million grant and has applied this year for another five-year, \$16 million renewal.

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation:

FLMNH is engaged in a new partnership with Disney to address long-range conservation of butterfly species. This effort, led by Dr. Jaret Daniels, Director the of the museum's McGuire Center for Lepidoptera and Biodiversity, seeks to forge additional new partnerships and to jump-start large, collaborative projects. Disney is seeking to motivate other donors in the conservation community to perpetuate long-term projects for select high profile groups of organisms of global conservation concern. This partnership has already led to the hiring of a postdoc for UF, a number of national meetings with scientists and conservation advocates, and research opportunities for graduate and undergraduate students. Dr. Daniels notes that the project will create internship and employment opportunities for UF undergraduate and graduate students.

The museum and university will use the Disney partnership as a model to create additional collaborations focused on other charismatic organisms that will provide internships and jobs for students studying the biology and conservation of endangered species and ecosystem health and sustainability.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

FLMNH houses approximately 40 million specimens and objects and outgrew Dickinson Hall, its primary collections facility, years ago. The museum currently leases multiple storage units off campus to house overflow collections at a cost of over \$100,000 per year. Building a new Special Collections and Research Facility will immediately provide room to move critical offsite collections back onto the UF campus, making them more readily accessible to faculty and students conducting research and thereby freeing valuable operating funds. It will also provide much-needed space for growth for active research and collecting programs, as well as allow the museum to consolidate research functions housed in other buildings on campus. The museum would be able to move its largest, multi-year NSF-funded project, *iDigBio*, from the 105 Building and allow its PIs and staff to be in proximity with museum and College of Engineering collaborators, administrators and support staff. The space in 105 Building could be returned to UF for alternative uses. Finally, the Special Collections and Research Facility will allow the Division of Plant Industry to move portions of the Florida Collection of Arthropods out of its facility, thereby benefitting the Department of Agriculture in addition to the university.

8. X Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

The site for the Special Collections and Research Facility is on university property and has been made available to the museum for this building purpose. The Division of Plant Industry of the Department of Agriculture has indicated its approval to allow additional driveways and access routes through its property adjacent to the university and museum, thereby providing improved access to Powell and McGuire Halls and the UF Cultural Plaza as well as to the Special Collections and Research Facility.

In addition to the land and access made available for the project, the museum has solicited and received \$4 million in matching funds from private donors for the Special Collections and Research Facility.

9. X Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation:

Dickinson Hall has been renovated extensively over the years at the request of the State Fire Marshal; however, it cannot be renovated further, to fully comply with the current fire code. Therefore, the university must move the collections stored in alcohol to a new facility that is compliant with existing fire codes.

Other Pertinent Information not included above:

**Higher Educational Facilities
Return on Investment**

Institution: University of North Florida
Project: Skinner Jones Hall Renovations (North and South)
Renovation/Expansion
Total Project Cost: \$ 30.0 M
Previous Funding (State): \$ 18.75 M
Current Request: \$ 11.25 M
STEM (Yes or No): YES
Contact Person (Name, Position, Office and Cell Phone No., Email):
Ms. Shari Shuman, Vice President for Administration & Finance
Office: (904) 620-4727; Cell: (904) 338-6075; Email: sshuman@unf.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
 - a. Producing 380 STEM degrees per year
 - b. Average starting salary for graduates:

Physics	\$ 60,000
Computing Sciences	\$ 55,400
Engineering	\$ 62,000

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)

The additional academic space will allow for a 6% increase in enrollment per year in Civil, Mechanical and Electrical Engineering, and will accommodate the UNF Materials Science and Engineering Research Facility, a partnership with TESCAN USA to establish a training demonstration and development center for advanced electron microscopy. The result of this collaboration will establish an innovation laboratory that explores unique applications and establishes a highly effective outreach program to both industry and academia.
Increasing academic support: The facility will accommodate academic advising and career services for the college, which will be co-located to better align academic progress to employment.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded

Increase of \$2 - \$3 million per year in additional research funding to result from the activities in the facility.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Increased STEM Degree Production, which in turn increases employability and salaries of graduates.
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
Partnership with TESCAN USA to house a training demonstration and development center for advanced electron microscopy. Industry partnerships include: Boeing, Vistakon, Crowley, US Army Corps of Engineers, Mayo Clinic, Embraer, Haskell, Stellar, Saft American, Inc., and Goodrich, among many other environmental and engineering firms.
7. Project Improves the Use, either Operationally or Academically, of Existing Space
Explanation:
 - a. Renovations and the addition will provide for 66,000-100,000 NASF
8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.
Explanation:
 - a. Leverage possibilities for NSF, NIH and ACS grants
9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

This project is a substantial renovation of an original 1970's building in need of modernization. This project extends the life of current facilities and through updating, will result in efficiencies in per square foot operating and maintenance costs due to LEED-standard construction. A cost-benefit analysis was performed which supported the decision to renovate rather than build a new building. Not only less expensive, but the renovation would result in increased square footage. Deferred Maintenance Costs are \$6.2 million in projects identified consisting of HVAC, electrical, plumbing, building envelope, fire / life-safety, and interiors.

Other Pertinent Information not included above:

Private Investment

Within the Memorandum of Understanding currently being negotiated between TESCAN USA and the University of North Florida, in the first 4 years, TESCAN USA would provide:

- | | |
|---|------------------|
| 1. Scholarships (\$15,000/year for 4 years): | \$ 60,000.00 |
| 2. Warranties (parts & labor service contract): | \$ 480,000.00 |
| 3. Outreach events: | \$ 60,000.00 |
| 4. TESCAN USA fulltime personnel: | \$ 80,000.00 |
| 5. School Demonstrations (see below): | \$ 850,000.00 |
| 6. Technical personnel training: | <u>\$ 90,000</u> |
| | \$1,620,000 |

TESCAN USA would dedicate two of their roving instruments to the five county area (First Coast) predominantly for public school demonstrations, but a minor fraction for industry as well. This enhances outreach, builds the STEM pipeline, and increases workforce development in this important technical area with high-paying jobs.

Outreach: This doesn't include any of the instruments at UNF, nor does it detract/compete with benefits in the MOU. Over the initial four-year term, and between instrument use time and support, we estimate an \$850,000 benefit to the state.

Quantifiable Secondary Benefits in first 4-years

It is anticipated that the TESCAN Center and Associated Advanced Manufacturing and Materials Innovation Programs will produce approximately 100 additional Bachelor of Science graduates in Materials Engineering and 20 additional masters degree graduates over the first five years.

In addition, we anticipate partnering with Florida State College at Jacksonville (FSCJ) to develop a two-year or less SEM Technician training program (which TESCAN USA is contributing to) that would produce about 50 graduates. The Jax Chamber has identified these types of engineers as in short-supply in the Northeast Florida Area, and estimates the shortage in these areas will increase over the next few years, and may result in an inability to attract companies if this workforce gap is not met. These positions form the basis of aeronautical, automotive and advanced manufacturing companies. According to information from the Florida Department of Economic Opportunity, Starting Materials Engineers (BS level) earn an average of \$60,650, and experienced engineers (MS level) earn an average of \$103,764. In addition, according to Simply Hired, Inc., Microscopy Technicians earn an average of \$43,000/year.

The total estimated additional benefit to the State from a wage perspective would be:

50 technicians averaging \$43,000/year: \$ 2.15 million/year

20 advanced engineers averaging 103,764/year: \$ 2.08 million/year
\$10.3 million/year

Higher Educational Facilities
Return on Investment
August 1, 2015

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: State University System

Project: Joint Use Library Facility Expansion (FLARE), Managed by the University of Florida

Total Project Cost: \$ 26.6 M

Previous Funding (State): \$ 2.0 M

Current Request: \$ 17.9 M

STEM (Yes or No): NO

Contact Person (Name, Position, Office and Cell Phone No., Email):

Judy Russell, Dean of University Libraries, UF, Office (352)273-2505, Mobile (202) 262-6501, jcrussell@ufl.edu; Linda Collins, UF Government Relations, Cell 850-933-6385, Email: collinslbem@comcast.net

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation: N/A
2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)
 - a. *The Joint-Use Library Storage Facility provides a shared research collection with archival storage for 5.2 M volumes of library materials for benefit of all current and future students at state universities (12) and state colleges (28).* The facility provides a central location to retain and preserve the FLorida Academic REpository (FLARE), a very large shared collection with an accessible and accurate inventory, improving access to students and other users throughout the State University System (SUS) and Florida College System (FCS).
3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation: N/A

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation: N/A
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation: N/A
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
Explanation: N/A
7. Project Improves the Use, either Operationally or Academically, of Existing Space
- The Joint-Use Library Storage Facility, consists of two parts: 42,000 GSF of renovated space and 40,000 GSF of new space. It will be located in Gainesville and managed by the University of Florida (UF) on behalf of the SUS. A thirty-five foot high storage tower will be constructed on land adjacent to an existing building, already owned and managed by UF, thus saving the state millions in construction costs. Additionally, there is ample space on the existing property for construction of additional storage towers in the future.
 - Materials are stored by book size, substantially increasing the capacity and density of the storage facility, Operational Efficiency is realized by moving volumes from open stacks in on-campus libraries to the Joint-Use Library Storage Facility (an 80% cost reduction from a national average of \$4.26 per volume, per year on campus to \$0.86 per volume, per year in off campus storage).
 - Savings are realized because retaining a single hard copy of an item in FLARE ensures availability to users throughout the SUS and FCS. Books are identified through MANGO, the online catalog of library materials operated by FLVC on behalf of the state universities and colleges and delivered by the already-established Florida Library Network Statewide Ground Delivery Program (DLLI). Electronic delivery is an alternative means of rapid delivery and is used whenever possible and acceptable to the user.
 - Library directors will be able to receive real-time information regarding the current holdings, which will be helpful in determining future purchases of library materials across the state university and state college systems, allowing for a reduction in redundant library purchases.
 - Once the Library Storage Facility is operational, over 5.8 M books in SUS campus libraries could be relocated to storage, or discarded based on volumes already in storage, allowing an estimated 230,000 square feet to be

repurposed for other high-demand library services with a focus on student learning support activities.

- f. Investment by the State, in a centralized library storage facility will save millions because universities across the state will not have to build as many additional library buildings at a cost per square foot that dramatically exceeds the FLARE cost per cubic foot.
- g. Managing relatively low-use, but valuable, centralized print collections is consistent with national best practices. Major university systems across the country have already invested in similar centralized print collection facilities.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation: N/A

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

The State University System Joint-Use Library Facility, FLARE, is a great example addressing the Board of Governor's Goals of implementing best practices, collaboration, and sharing of resources, thus saving the state millions. The concept was originally approved by the BOG in 2007. In 2010, the legislature appropriated \$2M for planning and design. The design phase is complete; this project is shovel-ready and it is anticipated to take 18-24 months to complete.

Lost Opportunities, if the legislature does not appropriate the construction funds for the 2015-16 fiscal year:

- a. Universities will have to curtail the current process of "weeding out" low-circulation materials for submission to the current storage facilities leased by UF, or individual Universities will have to expand the use of off-campus, leased, storage facility space, thus incurring additional storage costs.
- b. Duplicative storage facilities across the state means duplicative staff to maintain those facilities, thus decreasing operational efficiency.
- c. Digitization of library materials from FLARE is a capability that will be housed in the Joint-Use Library Storage Facility. This process will be severely curtailed if the new facility is not constructed. Student access to electronic library materials created from FLARE will be limited.
- d. Construction of the FLARE facility, provides opportunities for universities to store low-use library materials offsite, thus freeing up valuable space on campus, that can be re-purposed for student learning commons and related

services frequently requested by students. If the FLARE facility is not constructed, opportunities to re-purpose existing space in SUS library buildings will be limited.

Example at UF: 26,000 square feet of the Marston Science Library were cleared by moving approximately 800,000 volumes of low-use library materials into FLARE. The university allocated private funds toward the re-purposing of that space for a Student Learning Commons, that serves over 700 students, with a focus on student collaboration and technology needs. That space was re-opened for student use last August. Since that time there has been a 37% increase in the number of students using the Marston Science Library, and it is now the most heavily used library on the campus. UF is planning for other similar projects, but they cannot be implemented until the Joint-Use Library Storage Facility is operational allowing additional volumes to be moved off campus.

Example at FSU: The First floor of Strozier Library has been re-purposed to create a student learning "food court" whereby space that once was used to store library materials is dedicated to student support services including: tutoring, technology support, advising support, research paper guidance, etc. Expansion of these services requires additional offsite library storage, which the Joint-Use Library Storage Facility will provide.

- e. Construction of a centralized storage facility is much more cost-effective than building new library space. This efficiency measure will be lost if the FLARE facility is not constructed.

**Higher Educational Facilities
Return on Investment**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida State University

Project: Earth Ocean Atmospheric Sciences Building Replacement/Expansion

Total Project Cost: \$ 69.85 M

\$ 28.85 M

Current Request: \$ 41.00 M

STEM (Yes or No): YES

Contact Person (Name, Position, Office and Cell Phone No., Email):

Kathleen Daly, Associate Vice President, 850-644-4453, 850-591-3920, kdaly@fsu.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
 - a. The current annual average of degrees awarded by the programs, taken over the past five years, is 106 degrees per year.
 - b. After the new building is in place we project an increase of this degree rate over the subsequent five-year timeframe, resulting in an annual degree output of 156 degrees per year.
 - c. All of these degrees are and will be in STEM fields.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)
Explanation: N/A

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:
 - a. FY 2014 research funding exceeded \$11 million.
 - b. After the new building is in place, the projection is an increase to at least \$15 million per year, with potential to go higher.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
- a. Degrees awarded by this program include Environmental Science (CIP 03.0104), Biological, Chemical and Physical Oceanography (CIP 40.0607), Geology (CIP 40.0601), Geophysical Fluid Dynamics (CIP 40.9999), and Meteorology (CIP 40.0401). All of these degree programs qualify for the category identified by the BOG titled Programs of Strategic Emphasis.
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
- Explanation:
- a. This new facility will help FSU compete for high performing, nationally competitive faculty that will increase opportunities for new grants raising the University's reputation and productivity. One measure used to measure universities is research productivity. Between 2008 and 2013, the EOAS faculty generated \$64 M in external research funds to support university research activities, primarily through federal grants. With the addition of space for additional faculty, more efficient labs and space to collaborate, research productivity should increase.
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
- Explanation: N/A
7. Project Improves the Use, either Operationally or Academically, of Existing Space
- Explanation:
- a. Currently EOAS operates in 7 separate buildings, two of which are off the Main Campus; creation of the new facility will allow other existing disciplines to move into some of the previously occupied space by EOAS.
- b. The new facility will enhance multidisciplinary research involving MagLab personnel and the Center for Ocean-Atmospheric Prediction Studies (COAPS) by providing a seamless co-location of laboratory activities.
8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.
- Explanation: N/A

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

- a. Deferred maintenance needs will be eliminated by the demolition of two 1950's buildings, and will allow room for construction of EOAS.

Other Pertinent Information not included above:

This project has received previous funding, and this will complete the request for construction funding.

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida State University

Project: Interdisciplinary Research and Commercialization Building (IRCB)

Total Project Cost: \$ 85.0 M

Previous Funding (State): N/A

Current Request: \$ 36.0 M

STEM (Yes or No): YES

Contact Person (Name, Position, Office and Cell Phone No., Email):

Kathleen Daly, Associate Vice President, 850-644-4453, 850-591-3920, kdaly@fsu.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
 - a. Project will house 24 tenure-track or tenured faculty in the physical sciences and engineering. The bulk of these faculty members will be recent and forthcoming hires associated with strategic hiring initiatives in nanoscience, energy and materials.
 - b. The research context will be interdisciplinary. The facilities will accommodate approximately 72 undergraduate, 136 graduate and 26 postdoctoral researchers. The first two groups will be matriculating in degree programs ranging from Physics and Chemistry to Materials Science & Engineering to the traditional Engineering disciplines.
 - c. At full capacity it is anticipated that the facility will contribute to the graduation of 30-40 additional degrees in STEM disciplines per year (degree programs- Physics, Chemistry & Biochemistry, Materials Science & Engineering, Chemical & Biomedical Engineering, Electrical & Computer Engineering, Industrial & Manufacturing Engineering and Mechanical Engineering).

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)

Explanation:

- a. At capacity close to 200 students will be exposed to a unique interdisciplinary environment wherein teams of physical science and engineering faculty will be working on real world problems, often in partnership with private sector entities.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded

Explanation:

- a. On average, it is conservatively anticipated that each faculty member will have an external C&G portfolio on the order of \$250K per year which in aggregate yields a net increase in research funding of \$6M. However, it is fully anticipated that great synergies in this interdisciplinary environment will be achieved, thus the number of multi-principal investigator projects and resultant external funding could potentially yield an additional \$2-3M per year for a total of \$8-9M per year.
- b. The IRCB will have core facilities (nanofabrication facility, imaging and characterization facility, crystal growth facility) which will be used by the entire FSU STEM community and will therefore contribute indirectly to the C&G enterprise.
- c. All IRCB faculty members will be working on projects carrying significant intellectual property value. It is anticipated that on average two discovery/invention disclosures per faculty member per year will be achieved thereby yielding 48 per year in aggregate. This would produce an additional 12-13 patents per year if, on average, 25% of disclosures are patented.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation:

- a. Undergraduate and graduate students in key STEM areas will receive research training and mentoring in the IRCB.

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation:

- a. The IRCB will contribute significantly to seven of the twelve Preeminent University metrics: public university national ranking, total annual research expenditures, total annual research expenditures in diversified non-medical sciences, national ranking in STEM research expenditures, patents awarded, doctoral degrees awarded and number of postdoctoral appointees. Furthermore, these world-class facilities

will help us to attract and retain National Academy members, yet another Preeminent University metric.

- b. In terms of Performance Funding metrics, the IRCB will positively impact the percentage of bachelor's graduates employed or continuing their education, median wage of bachelor's graduates, academic progress rates, degrees awarded within areas of strategic emphasis and number of faculty awards.

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation:

- a. It is anticipated that there will be a number of start-up companies in incubator space in this building. Furthermore, there will be a large number of private sector entities using the unique core facilities in the building. Students will be interacting in both contexts affording the opportunity to create internships and potential employment options.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

- a. While the bulk of the faculty to be housed in the IRCB will be recent or forthcoming hires, a subset of STEM faculty will be relocated from crowded, low quality space that is unsuitable for bringing their research programs to their full potential.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

- a. Leverages \$44 M private investment by the Florida State University Research Foundation (FSURF). This investment exceeds the amount being requested by the State.

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

This project will attract additional research and development dollars through interdisciplinary collaborations for physical sciences and engineering in unique fields. It leverages nearby strengths in centers and institutes such as the National High Magnetic Field Laboratory, Applied Superconductivity Center, High Performance

Materials Institute, Center for Advanced Power Systems and the Aero-Propulsion,
Mechatronics & Energy Center.

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida State University

Project: College of Business Building (Legacy Hall)

Total Project Cost: \$80M (\$40M PECO and \$40M from private donations)

Previous Funding (State): N/A

Current Request: \$2.5

STEM (Yes or No): No

Contact Person (Name, Position, Office and Cell Phone No., Email):

Kathleen Daly, Associate Vice President, 850-644-4453, 850-591-3920, kdaly@fsu.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc.)

Explanation: Most of the academic programs in the College of Business are limited in size by the inadequate and antiquated educational spaces in Rovetta A & B. The College's highest demand programs are Entrepreneurship, Professional Sales, Master's in Finance, and Master's in Accounting. All are constrained by available classroom space. In balancing the needs of growing programs such as risk management and insurance and real estate, it is sometimes difficult to secure appropriate classroom space. Further given the nature of the training needed outside of traditional classrooms, our highly ranked specialty programs are often constrained by space. This is true for entrepreneurship, sales, and finance (trading room). Legacy Hall provides a 77% increase in instructional, collaborative, and entrepreneurial space, in addition to larger spaces to accommodate growth in our internship and professional development programs. It is anticipated that the number of degrees produced in these high demand areas will significantly increase to better meet employer demands in the gap areas.

The current job placement rate for College of Business graduates is 50% at graduation and 75% after 6 months. Within three years of building Legacy Hall, these numbers are expected to increase to 70% placement at graduation and 85% after six months. The College is currently unable to create enough networking and career development opportunities for our students due to the small size of the antiquated facility. The College cannot expand to meet student needs because there is no more space for faculty and staff. Legacy Hall will create a robust professional development program, add networking and collaboration space, and expose students to enhanced technology. The numbers of students who participate in career planning and job placement activities will more than double with the construction of Legacy Hall.

The current average starting salary of the college's graduates is \$42,000. Within three years of building Legacy Hall, it is expected that number will increase to \$50,000. Better-trained graduates command higher starting salaries. Expansion of space such as larger trading rooms, sales labs, and incubator space will allow more students to build tangible, marketable skills that will command higher starting salaries. In addition to better formal training, students will have better career training and more opportunities to participate in internships, as the College expands space devoted to recruitment and networking. As the college's reputation grows, larger, higher-paying companies will increase their recruiting efforts at FSU and the College of Business.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc.)

Explanation: The simple truth is the College has outgrown its current space. Dating from the 1950s and 1980s, the Rovetta Building was completed when the college enrolled 3,000 students. Today, that number is 6,000 students and growing. In addition, Rovetta lacks sufficient space for faculty, staff, labs and entrepreneurial space; as well as the collaborative and technology-enabled spaces needed for today and tomorrow. There is a lack of meeting and event space to host the networking and educational events that help students move beyond the classroom. Legacy Hall will provide:

- A significant increase in the number of students served in the Professional Development Program (career advancement workshops, mentoring, job shadowing, etc.)
- A significant increase in the number of student internships
- A significant increase in student access to resources related to the College's centers and institutes that provide a direct link to the business community

3. Amount of Additional Research Funding to be Obtained; Patents Awarded

Explanation: Legacy Hall will give each of the college's institutes and centers the needed space to create more programs and research activities that will draw in the business community. This includes a greatly expanded executive education program that will attract business executives and association members from the downtown area. Likewise, the synergy created with a new conference center and hotel in the Arena District will allow both the college and the district to draw significant conferences and conventions to the area.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation: As stated above, the increase in educational, collaborative and entrepreneurial space in Legacy Hall will allow the College of Business to increase enrollments and degree production in a number of high demand areas. The college will be able to produce more graduates to help fill critical workforce needs in the following areas from the Board of Governors' Gap Analysis:

- 52.0301 Accounting
- 52.0801 Finance, General

- 52.0803 Banking and Financial Support Services
- 52.1001 Human Resources Management/Personnel Administration, General
- 52.1701 Insurance
- 52.0304 Accounting and Finance
- 52.0305 Accounting and Business/Management

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation: Legacy Hall is dedicated to student success, defined as quality employment upon graduation. Having all of the College's students under one roof allows them to feel a sense of place and belonging (statistically related to retention and graduation), and provides greater ability to track student progress. Modern facilities in the heart of the business/government district and within blocks of new student housing will provide a recruiting advantage to high ability high school seniors and quality faculty. It will also provide high school counselors with reasons to keep high ability students in the state of Florida and preferably at Florida State. Dedicated career development space and better-trained students will improve recruiters' perceptions.

<i>U.S. World and News Report Business School Rankings and Performance Metrics</i>	Performance Fall 2014	Performance Goals 2015-2017	Performance Goals in Legacy Hall
FSU College of Business Score	47	40	30
High school counselor score (out of 5)	3.6	4.0	4.5
Average freshman retention rate	92%	Maintain/Increase	Maintain/Increase
Classes with fewer than 20 students	33.6%	35%	35%
Classes with 50 or more students	15%	15%	15%
Student-faculty ratio	41:1	41:1	30:1
# International Academics Visiting	79	80	100

In the *BusinessWeek*/Bloomberg system, 60% of the score is tied to student and recruiter perceptions. A new facility built for student engagement and career placement and development will significantly improve these numbers. Recruiters will have access to all business students under one roof and will have the ability to meet with students formally and informally. Students will be better prepared for interviews occurring in person as well as interviews occurring virtually. Students will also be exposed to a variety of businesses as well as prominent alumni and business executives.

<i>BusinessWeek/Bloomberg Rankings/Performance Metrics</i>	Performance Fall 2014	Performance Goals 2015-2017	Performance Goals in Legacy Hall
Student assessment rank	36	35	25
Average SAT	1220	Maintain/Increase	Maintain/Increase
Student faculty ratio	41:1	41:1	30:1
Average class size in major courses	46	46	35

Recruiter/Employer opinion	48	45	30
MBA feeder school rank	115	115	100
Academic quality rank	120	100	80

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation: The focus of Legacy Hall is student success through increased job placement upon graduation. One of the key strategies to achieve that goal is dramatically increased collaboration and connectivity to alumni and the business community. Legacy Hall will lead to the following partnership enhancements:

- A significant increase in student/executive mentorships
- A significant increase in the number of business executives interacting with business students, both in and out of the classroom
- A significant increase in the number of companies that recruit students both on campus and via distance technology
- A significant increase in the number of students obtaining full time employment upon graduation and 3 months after graduation
- A significant increase in starting salaries

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation: The construction of Legacy Hall allows the College of Business to vacate Rovetta A & B. This creates an opportunity for other academic or operating units to collocate under one roof. For example, the College of Communication and Information is currently scattered across campus in over ten separate buildings. Another example might be to move the FSU Foundation from Innovation Park to Rovetta. In either example, consolidation and relocation should lead to significant cost savings, especially if older buildings can be demolished.

The creation of two large classrooms in the Arena District also creates needed capacity in HCB (Classroom Building). Legacy Hall also will serve as an anchor as the campus expands in that direction providing critical academic infrastructure not only for the College of Business, but also for other colleges and units that might move to the area. As a gateway to the community on that portion of campus, Legacy Hall also will provide the opportunity for the college and university to host events that bring the community to campus. Many of these events could produce significant revenue streams for the university.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation: Legacy Hall represents a unique partnership between the state, the university, and private donors. The College of Business plans to raise \$40M through private donations to the FSU Foundation and then use a state/university match to reach the \$80M project target. In addition, Legacy Hall's location in the Arena District represents a unique opportunity to partner with businesses to offer retail and food service operations both inside the building and along its perimeter - especially to create an active edge along the revitalized Gaines Street corridor and the burgeoning Madison Mile.

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.**

Institution: FLORIDA A&M UNIVERSITY

Project: STUDENT AFFAIRS BUILDING

Total Project Cost: _____ \$36,292,845

Previous Funding (State): _____ \$ 0.0

Current Request: _____ \$6,155,000

STEM (Yes or No): No

Contact Person (Name, Position, Office and Cell Phone No., Email):

Dr. William Hudson Jr., V.P. Student Affairs, 850-599-3183, William.hudson@fam.u.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation: **TBD**

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)
Explanation: **TBD**

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation:

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation:

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
Explanation:
7. Project Improves the Use, either Operationally or Academically, of Existing Space
Explanation:
8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.
Explanation:
9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)
Explanation:

Other Pertinent Information not included above:

***An addendum will be provided following the approval of the University's 2015-2016 Work Plan.*

Higher Educational Facilities Return on Investment – Florida Polytechnic University

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida Polytechnic University

Project: Applied Research Center

Total Project Cost: \$ 33.0 M

Previous Funding (State): \$ 0.0 M

Current Request: \$ 10.0 M

STEM (Yes or No): Yes

Contact Person (Name, Position, Office and Cell Phone No., Email):

Mark Mroczkowski, CFO 836.874.8408 407.580.5317 MMroczkowski@FL Poly.org

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)

Explanation:

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc.)

Explanation:

In 2020, the IST Building will be full requiring new Teaching Lab and Office Computer space, 1100 additional students beyond capacity.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded

Explanation:

Moving from \$ 1.15MM in 2015 to \$20MM in 2021 in grant funding for research.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation:

100% STEM University with "applied research" as a major focus.

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation:

Programs designed to reach accreditation will be enhanced, and new programs added, with new research space, when the building is "on line".

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation: Investment in the University by 89 business partnerships has led to “applied research” by students, making them more attractive to the marketplace.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation: Frees up existing space for the relocated research spaces, approximately 13,400 NASF in the Innovation, Science and Technology Building.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation: Approximately \$8 MM \matching funds raised locally for FL Poly.

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation:

Other Pertinent Information not included above:

The State of Florida has invested heavily in creating an economic future as a leader of high-tech. Florida Polytechnic University's focus is applied research of real-world issues of high importance to its citizens. This research will serve as an economic catalyst in Florida and the nation. The University is at the forefront of an emerging trend among STEM institutions to supply the expertise and collaborative research opportunities that are vital to high-tech companies. Florida Polytechnic research will be less curiosity driven and more focused on solving real-world problems.

Based on current enrollment projections and very modest projections for faculty and industry partnered research, the expectation is that we must begin developing new research capacity now. As of June 2015, 89 companies have signed on to partner with the University. The partners are expecting to work with our faculty and students on research problems that can help them grow Florida's economy. These partners and more to come, along with our faculty and students must have sufficient research space and access to technology that high-tech industries demand of their research partners.

In addition to laboratories, the facility will accommodate an entrepreneurship center to assist with the commercialization of the products and systems created from the university's research. Faculty, students and private sector researchers will get the support they need to start companies, patent their innovations and create high-paying, high-tech jobs. Space is also needed to meet the demand for hosting industry research groups as well as national and international meetings that bring money from around the world to Florida. This intellectual talent will be available to researchers in Florida, leading to an increased likelihood that solutions with commercial appeal will be generated.

A significant amount of the interest shown by students in attending Florida Polytechnic University is the fact that they will get hands-on experience working with the latest technology on real-world problems. Our students will work side-by-side with industry researchers and University faculty as they seek to answer some of the pressing problems of society. Industry has made it clear that one of their biggest concerns with talent is that students graduate and are not prepared for the complexity of real-world problems, are not prepared to work as a part of a team and have little experience working with the latest technologies. Some of our industry partners have already identified issues on which they want to work on with our faculty and students. Having the facility to conduct this research is crucial to the university's mission and is a significant part of the foundation for creating Florida Polytechnic University.

**Higher Educational Facilities
Return on Investment**

Institution: _____ University of West Florida _____
Project: _____ Laboratory Sciences Annex, Phase I and II _____
Total Project Cost: _____ \$ 24.4 M _____
Previous Funding (State): _____ \$ 11 M (Re-Appropriation) _____
Current Request: _____ \$ 8.6 71M _____
STEM (Yes or No): _____ Yes _____
Contact Person (Name, Position, Office and Cell Phone No., Email):
Janice Gilley, Assistant Vice President, Government Relations
jgilley@uwf.edu
850-384-2135

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
 - a. How many degrees is this request currently serving?
 - i. 1,753 students enrolled in degree programs (Biology, Chemistry, Marine Biology, Health Sciences, and Clinical Sciences) that utilize this building 58. NOTE: Refer to page 5, Item 10.
 - ii. UWF has seen an 77% increase in the past five years in number of students taking courses requiring academic laboratory work
 - iii. 8% of all UWF Degrees, in 2011-2012, awarded in fields housed in this building
 - iv. Average Salaries (from Bureau of Labor Statistics):
Biologist - \$77,900
Chemist - \$79,140
Clinical Laboratory Technician - \$40,750
Epidemiologist (Public Health) - \$65,270
 - b. How many additional degrees are projected as a result of this request, and over what timeframe?
 - i. In 2010, UWF opened its newest science building which houses the physics, computer science, engineering and mathematics programs. The programs in this building experienced a substantial growth at both the graduate and undergraduate level. In the 2009-10 academic year, UWF awarded 116 bachelor's degrees and 26 masters degrees in the four programs. In the 2013-14 academic

year, we awarded 179 bachelor's degrees and 67 master's degrees in the same programs. The data shows an average of 9% growth per year in bachelor's degrees and 27% increase per year in master's degrees awarded. Using this as a model, we estimate that UWF could award as many as 120 additional bachelor's degrees and 40 additional master's degrees in the programs associated with building 58. The programs in the new science and engineering building needed about 4 years to achieve this level of increased degree production.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)

Explanation:

- a. What is the number of students currently served by this program?
 - i. More than 4,500 Undergraduate and Graduate Students enrolled in Classes Utilizing Labs in this Building.
 - ii. As of Fall 2014, there were over 1750 students majoring in the programs involved in the project (biology - 887, chemistry - 138, clinical laboratory sciences - 90, public health - 120, and health sciences - 553)
- b. What is the number of students projected as a result of this request, and over what timeframe?
 - i. Using the same model as mentioned in 1.b.i, we expect at least 9% increase in the number students in these BS programs and a 27% growth in the MS programs. Thus, we project an additional 147 students at the bachelors level and 42 students at the masters level.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:

- a. How many research dollars does this project currently attract and what projection is expected with the completion of this project, and over what timeframe?
 - i. \$6.8 Million in Research Grant Funding in Recent Years for Programs Housed in the Building.
 - ii.
 - iii. For research activity, the College of Science, Engineering and Health has established four metrics to measure our research productivity - faculty/student publications, number of students participating research, grant and contract award dollars, and student presentations at research conferences. For the programs involved in the building project, we have an established goal of a 25% growth in four years for the metrics.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
- Explanation:
- a. (See attached "SUS Program Inventory Gap Programs")
Identify which Gap Programs this request addresses, and provide specific data.
- i. Not Applicable
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
- Explanation:
- a. "Preeminent Program" = any academic program that has a recognized national ranking or is recognized by an entity in the industry.
- b. If this project improves the ranking of a Preeminent Program, please specify its rank, and where this project could then realistically rank with the funding of this project.
- c. If this project improves on a Performance Funding Model Metric, please specify which one and give supporting data.
- i. Bachelor's Degrees awarded in Areas of Strategic Emphasis
1. Biology - 26.0101
 2. Chemistry 40.0501
 3. Health Science - 51.0000
 4. Clinical Laboratory Technician - 51.1005
- ii. Graduate Degrees awarded in Areas of Strategic Emphasis
1. Biology - 26.0101
 2. Public Health - 51.2201
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
- Explanation:
- a. List partnerships only if you can support with data for the number of internships granted, or number of jobs granted; please provide the timeframe of this count.
1. Gulf Islands Research and Educational Center (GIREC): partnership provides 3-4 student internships per year, primarily for biology students, to work at the GIREC performing field studies on the National Seashore. This is a new partnership and is in its first year.

2. Pall Corporation: hires 3-4 chemistry student interns per year to help with R&D efforts at their Pensacola facility; many students are offered permanent employment at the end of the internship. This has been a consistent effort for many years.
3. Ascend Performance Materials: recently initiated program to hire 1-2 chemistry interns per year to assist with R&D efforts at their Pensacola facility. This partnership has been off and on for many years, depending on the needs of Ascend.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

- a. As shown above, this building houses programs that require laboratories as part of the curriculum where hands on, real-world experiential learning opportunities are provided to the students. In the STEM disciplines, students must have the hands-on experiences in a lab, field or clinical setting to be competitive in today's job market. These experiences must be provided in a face to face environment.

With a new mechanical engineering program starting in Fall 2016, we expect an additional 100+ students per year needing to take freshman chemistry courses which are required common prerequisites in the mechanical engineering curriculum. This annex will provide the needed growth space to accommodate the additional students.

If this project involves renovation/remodel space, please state current CSF and NASF and how that will change with renovation/remodel. Are you adding/taking away classrooms/offices/labs? Please explain the space type.

This project is not a renovation or remodeling project.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

- a. Probably not applicable for most SUS projects, however, if you are able to check this box, please state contribution amount and source of funds.

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation:

- a. Construction of this building will save \$ 19.0 M (\$ 24.4 M for one new building compared to \$ 45.3 M renovate and expand the existing facility)

10. Other Pertinent Information not included above:

The proposed 2017/2018 \$ "Laboratory Sciences Renovation" project provides for rehabilitation for Building 58 a 1972 facility. Comprehensive master planning of the "Wet Sciences" will be required as part of "programming."

**Higher Educational Facilities
Return on Investment**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: University of Central Florida
Project: Interdisciplinary Research and Incubator Facility (IRIF)
Total Project Cost: \$ 46.6 M
Previous Funding (State): N/A
Current Request: \$ 6.0 M
STEM (Yes or No): YES

Dr. Daniel Holsenbeck, Senior Vice President of University Relations
Office: (407) 823-2387; Cell: (407) 247-9421; daniel.holsenbeck@ucf.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc.)
Explanation:
 - a. In 2013-14, UCF awarded 2,722 STEM degrees.
 - b. The new facility will support programs in nanoscience technology, advanced materials processing and analysis, optics and lasers, and energy research.
 - c. It will enable the departments to accommodate 600 additional STEM students per year.
 - d. The facility will support an expansion of the University's incubator program, creating new companies and jobs with salaries averaging \$67,000. UCF currently supports over 150 incubator clients. One hundred companies have already graduated and become self-sufficient, accounting for 3,698 jobs (direct, indirect, and induced) in Central Florida.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc.)
Explanation: N/A

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:
a. UCF is ranked as a “very high research activity” university by the Carnegie Foundation.
b. Existing programs generate \$26M in external funding. While grant funding typically takes one year to secure, a significant increase in proposals will be submitted in anticipation of acquiring the new space. A moderate influx of new funding is expected in the first year the building is operational. Within three to five years of its completion, UCF will realize \$20M in new external Research and Development (R&D) funding. UCF’s ability to compete for and procure prestigious research grants will be dramatically increased with the physical availability of new space where research can be performed. UCF will then be in a position to compete successfully against international institutions that currently have state-of-the-art research facilities.
4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors’ Gap Analysis or the Department of Economic Opportunity’s National Occupational Forecast
Explanation:
Nanotechnology MS, Optics MS, and Optics PhD programs are designated as STEM.
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation:
a. The programs slated for this facility typically produce a significant number of patents, enabling UCF to remain in the top 20 universities nationally in patent production. Based on historical data, \$20M in new funding equates to approximately 20 new patents.
b. Past experience has shown that quality research facilities generate \$400 to \$500 per square foot per year in external funding.
6. Increases Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
Explanation:
Business partnerships will include incubator use, businesses requiring an International Traffic in Arms Regulation (ITAR) facility, and industry

support for research (estimated at 25% of the funds expended in the facility each year).

7. Project Improves the Use, either Operationally or Academically, of Existing Space
Explanation: N/A
8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.
Explanation:
Within three to five years, research funding will be increased by \$20M.
9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)
Explanation: N/A

Other Pertinent Information not included above:

- UCF has a critical need for research space to accelerate scientific discovery in a collaborative environment, support STEM, help drive Florida's economy, and assist our state in producing high-paying jobs. UCF is competing for the best and brightest faculty, and recruitment is challenging, at best, without facilities. Our programs and research activities are limited by space as top researchers have their pick of world-class facilities at other institutions. Top recruits desire two things: state-of-the-art facilities where they can thrive and succeed, and the opportunity to participate in a nationally-ranked program.
- Because of UCF's lack of high-tech research space, leading-edge research in critical areas, such as engineering, nanoscience, and mechanical sciences, has been postponed or cannot be performed at all. Faculty lines cannot be filled because of the lack of space to house their research. In many instances, recruited faculty have not been provided laboratories upon their arrival, further weakening our ability to compete for grants and recruit new top-notch researchers.
- Space comprising 57 research and incubator labs; 23 material characterization labs; and lecture halls, conference rooms, offices, and ancillary spaces are planned within the building. The new facility will create a place where collaborations occur between faculty, researchers, entrepreneurs, investors, and industry. Labs will be configured for accelerated scientific discovery in a collaborative environment, with ease of reconfiguration based on projects and

evolving research requirements. The facility will also house startup incubator companies and promote other industry collaborations.

- The Interdisciplinary Research and Incubator Facility will leverage talents from different disciplines; dramatically increase research efficiency; create a core environment to serve faculty and industry partners; and optimize capital equipment investments through shared use.
- The construction will provide short-term impact to local economy, as follows:
 - Year 1: \$10,800,274 46 construction jobs, 35 other sectors
 - Year 2: \$61,715,839 262 construction jobs, 202 other sectors
 - Year 3: \$10,800,274 46 construction jobs, 35 other sectors
- The UCF business incubator program's impact to the Central Florida region has been more than \$2.5 billion in its first 15 years.

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: University of Central Florida

Project: Engineering Building I Renovation

Total Project Cost: \$ 18.5 M

Previous Funding (State): \$ 3.6 M

Current Request: \$ 13.9 M

STEM (Yes or No): YES

Contact Person (Name, Position, Office and Cell Phone No., Email):

Dr. Daniel Holsenbeck, Senior Vice President of University Relations

Office: (407) 823-2387; Cell: (407) 247-9421; daniel.holsenbeck@ucf.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)

Explanation:

The College of Engineering and Computer Science (CECS) awarded 1,535 engineering and computer science degrees in 2013-14. Florida Education & Training Placement Information Program (FETPIP) data indicates that 56% of bachelor's recipients were employed in Florida, with an average salary of \$48,850; and 45% of master's recipients were employed in Florida, with an average salary of \$65,400.

Explanation:

This building houses the preeminent College of Engineering and Computer Science, the largest in Florida and 9th largest in the nation, with 7,500 undergraduate students and 1,300 graduate students.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded

Explanation:

The renovation will allow annual research expenditures to increase by \$700,000 within two years of project completion.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation:
All programs in the CECS are designated as STEM programs.
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation:
 - a. Graduates of the CECS programs contribute to Metrics 6 (bachelor's degrees awarded in areas of strategic emphasis) and 8A (graduate degrees awarded in areas of strategic emphasis (includes STEM)) of the Performance Funding Model.
 - b. The UCF CECS is ranked 85th in the nation according to US News and World Report's Best Graduate Schools 2016, and ranked 43rd among public institutions (2nd in Florida).
 - c. The completion of overdue renovations will likely have a modest impact on rankings. The views of visiting dean and distinguished faculty from other institutions, as well as officers of corporate partners and employers, are important in determining our overall ranking. When visitors see a modern, well-maintained facility, their views of the CECS can only be enhanced. Conversely, further delays in carrying out the renovations will only impact the views of visitors negatively.
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
Explanation:
A newly renovated facility will allow UCF to solicit philanthropic donations, giving donors the opportunity for naming rights to the Engineering Building I. Additional philanthropic funds will be used to enhance the lab infrastructure, resulting in expanded funding opportunities from corporations and other funding agencies. Corporations that fund our research are eager to support internship opportunities for our students and potentially offer them employment upon graduation.
7. Project Improves the Use, either Operationally or Academically, of Existing Space
Explanation:
 - a. The Engineering Building I is currently, and will remain, 130,885 GSF and 77,924 NASF.

- b. This renovation creates and upgrades classrooms, instructional and research labs, clean rooms, and ancillary spaces. It provides long-term energy efficiency and extends the life of a 30-year-old building.
8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.
Explanation: N/A
9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)
Explanation:
- a. A cost-benefit analysis revealed that construction of a new facility would cost \$65.7M, while a renovation of the existing facility would cost \$18.5M.
 - b. The renovation prevents costly, stop-gap repair measures to antiquated building systems. An independent study identified that all mechanical systems are past their lifespan, and that the building needs to be upgraded to meet current building and life-safety codes.
 - c. Inevitable increases in enrollment will further stress antiquated building systems and will lead to still more costly, stop-gap repairs. An extensive renovation will substantially curtail repeated repair and deferred maintenance expenses that are due to the age and extensive use of the building.

Other Pertinent Information not included above:

- In 2013-14, UCF produced the second-largest number of STEM graduates in the State University System of Florida.
- UCF is ranked in the top 20 among the world's 100 patent-producing universities; and the Industrial Engineering and Electrical Engineering program (IEEE) ranks UCF in the top 20 for patent strength.
- The renovation will provide short-term impact to the local economy, as follows:
 - Year 1: \$24,940,976 106 construction jobs, 82 other sectors
 - Year 2: \$1,653,285 7 construction jobs, 5 other sectors

Hispanic Business Magazine (2013).

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: University of Central Florida

Project: Partnership IV

Total Project Cost: \$ 61.0 M

Previous Funding (State): \$ 28.0 M

Current Request: \$ 26.9 M

STEM (Yes or No): YES

Contact Person (Name, Position, Office and Cell Phone No., Email):

Dr. Daniel Holsenbeck, Senior Vice President of University Relations

Office: (407) 823-2387; Cell: (407) 247-9421; daniel.holsenbeck@ucf.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc.)
Explanation:
 - a. The Modeling and Simulation MS and PhD programs benefit from partnerships with the military commands and other federal government organizations that share the UCF Partnership buildings located in Central Florida Research Park. There were 44 graduates in 2012-13. Florida Education and Training Placement Information Program (FETPIP) data indicates 20 employed in Florida, with an average annual wage of \$89,168. Twenty-two of the 2012-13 graduates are pursuing further education.
 - b. Partnership IV has direct employment implications for more than 27,000 Floridians in the Modeling, Simulation & Training (MS&T) sector, with an approximate average salary of \$69,797.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc.)
Explanation:
 - a. Partnership IV will support the MS&T cluster, which, on average, contributes nearly \$4.8B annually to Florida's Gross State Product.
 - b. Enhancing Central Florida Research Park with Partnership IV potentially avoids loss to the region and to the state of strategic national programs

and dollars that could result from Department of Defense (DoD) budget cuts, sequestration, and any future rounds of Base Realignment & Closure (BRAC).

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation: N/A
4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation:
The Modeling and Simulation MS and PhD programs are designated as STEM programs. A large footprint of industry companies in Florida recruit heavily from these advanced degree programs to fill their high-tech workforce needs.
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
Explanation:
Graduates of the Modeling and Simulation MS and PhD programs contribute to Metric 8A of the Performance Funding Model (graduate degrees awarded in areas of strategic emphasis (includes STEM)).
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
Explanation:
 - a. Partnership IV enhances UCF/DoD partnerships in MS&T and lessens the likelihood of BRAC actions, which would have an alarming negative effect on the current \$4.8B annual economic benefit to Florida. Education in MS&T also develops a workforce to meet future academic, military, and industrial requirements.
 - b. More than 1,000 companies and organizations are involved in the MS&T industry in Florida, creating more than 60,700 jobs (direct, indirect and induced) across the state.
7. Project Improves the Use, either Operationally or Academically, of Existing Space
Explanation:
Partnership IV creates classified lab space for both the Military and UCF. This space will not only satisfy a long-standing unfunded requirement for the University and military commands, but will support advanced research and development (R&D) and the R&D work to meet emerging missions (e.g., cyber defense training, etc.). In the long run, this will set

the conditions for additional budget authority for our military commands, which, in turn, could translate into more jobs in the Central Florida Research Park.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

Partnership IV avoids loss to the region and to the state of strategic national programs and dollars that could result from DoD budget cuts, sequestration, and any future rounds of BRAC.

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

- Partnership IV supports UCF's state charter as the Center of Excellence in Simulation and Training.
- The Central Florida region's Modeling, Simulation and Training (MS&T), including UCF's contributions, result in the following economic impact:
 - On average, more than \$4.8B annually to Florida's Gross State Product
 - Nearly \$8.0B in state sales (economic output) activity
 - 1,000+ Florida companies and organizations involved in MS&T
 - Direct employment of more than 27,000 Floridians in the sector, with an approximate average annual salary of \$69,797
- Specifically in the Central Florida Research Park, the economic impact is as follows:
 - Average salaries reported at more than \$82,000
 - Federal government employment of 2,800 military and civilian personnel involved in advanced R&D
 - Heavy military reliance on MS&T training devices and other technologies provided by UCF to meet their training and future high-tech workforce requirements, as well as cooperative R&D programs to advance the state-of-the-art in MS&T
- Partnership IV's short-term impact to the local economy is:
 - Year 2: \$10,938,494 46 construction jobs, 36 other sectors

**Higher Educational Facilities
Return on Investment**

UCF Updated June 1, 2015

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: University of Central Florida

Project: UCF Downtown Presence

Total Project Cost: \$ 57.7 M

Previous Funding (State): \$ 0.0 M

Current Request: \$ 2.7 M

YES

Contact Person (Name, Position, Office and Cell Phone No., Email):

Daniel Holsenbeck, Senior Vice President of University Relations, UCF, Office (407) 823-2387, Cell (407) 247-9421, daniel.holsenbeck@ucf.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc.)

Explanation:

- a. UCF will build upon its existing presence in downtown Orlando, which includes a nationally ranked program in Interactive Entertainment and programs within the field of Emerging Media. During the initial phase of implementation, UCF will expand or relocate academic programs in the following areas: Digital Media, Film, Communication, Journalism, Radio and Television, Advertising and Public Relations, Health Informatics and Information Management, Health Services Administration, Social Work, Exceptional Education, and Legal Studies.
- i. In 2013-14, these programs awarded 1,515 bachelor's degrees (126 STEM, 454 Gap Analysis, 290 Health) and 434 master's degrees (59 STEM, 27 Gap Analysis, 133 Health).
 - ii. Based upon enrollment projections and expected growth of these programs at UCF Downtown, UCF anticipates awarding an additional 853 bachelor's degrees in these programs by 2021.
 - iii. UCF anticipates adding additional academic programs to the downtown campus in subsequent phases through 2021, following further analysis of potential student, university, and

community benefits. Such programs could include Public Administration, Public Affairs, Communication Sciences and Disorders, and Criminal Justice because of the strong synergies between these programs and the downtown environment. Strong internship and experiential learning opportunities downtown will aid in student career placement upon graduation.

- b. Six occupations linked to UCF Downtown’s academic programs listed in 1a are included on the 2014-15 Regional Demand Occupations List (Workforce Region 12) for the local counties and designated “High Skill/High Wage.” This list includes:
 - i. Medical and Health Services Managers with an entry hourly wage of \$34.04 and an average hourly wage of \$49.71.
 - ii. Public Relations Specialists with an entry hourly wage of \$18.04 and average hourly wage of \$27.93.
 - iii. Paralegals and Legal Assistants with an entry hourly wage of \$16.94 and average hourly wage of \$24.69.
 - iv. Graphic Designers with an entry level wage of \$14.35 and average hourly wage of \$22.36.
- c. Average wages for positions in related fields:
 - i. \$113,490 - Medical and Health Services Managers
 - ii. \$61,320 - Social Workers
 - iii. \$57,090 - Public Relations Specialists
 - iv. \$56,170 - Radio and TV Announcers
 - v. \$51,280 - Reporters and Correspondents
 - vi. \$49,480 - Multimedia Artists & Animators
 - vii. \$48,470 - Paralegals and Legal Assistants
 - viii. \$32,390 - Film and Video Editors

(Source: May 2013 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates: Orlando-Kissimmee-Sanford, FL program, U.S. Department of Labor, U.S. Bureau of Labor Statistics)
- d. The U.S. Department of Labor’s Bureau of Labor Statistics projects increases in employment demand for several occupations related to UCF Downtown programs listed in 1a through 2022, which include:
 - i. 27% increase in demand for Healthcare Social Workers
 - iii. 17% increase in demand for Paralegals and Legal Assistants
 - iv. 12% increase in demand for Public Relations Specialists
 - v. 7% increase in demand for the major occupation field of Arts, Design, Entertainment, Sports, and Media.

- e. The annual gross economic impact associated with UCF Downtown is more than 4,040 jobs and \$180 million in wages (direct, indirect, and induced) (GAI Consultants, 2015).
 - f. In the first five years of the downtown project, taxpayers will realize a return of nearly \$5 for every dollar of state investment (GAI Consultants, 2015).
2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)
- Explanation:
- a. Fall 2014 enrollment for the programs first proposed to relocate to UCF Downtown when the campus opens (see 1a) was 6,554. Based upon the university-wide planned annual growth of 2%, UCF expects to open the downtown campus in Fall 2017 with approximately 6,955 students and an additional 2,925 students from Valencia College.
 - i. Although the university projects its overall growth rate at 2% each year, UCF anticipates several strategic programs will grow at rates exceeding 2% to meet student and workforce demand, particularly programs slated to relocate downtown. From Fall 2013 to Fall 2014, the following programs planned for UCF Downtown grew at accelerated rates:
 - a. Communication increased enrollment by 9%.
 - b. Digital Media increased enrollment by 11%.
 - c. Health Service Administration increased enrollment by 5%.
 - ii. By 2021, upwards of 11,500 UCF students and 3,300 Valencia College students will be enrolled at the downtown campus. Later phases (buildings and additional relocated academic programs) would support this growth.
 - iii. Growth at UCF Downtown also will be supported by Valencia's decision to move several of its two-year complementary academic programs, such as Digital Media, Graphic Design, and Health Information Technology, as well as in-demand workforce training and vocational opportunities for the surrounding community, which includes a large, traditionally underserved population.
 - iv. UCF's 2+2 partnership with Valencia College, known as DirectConnect to UCF, is the most successful university-state college partnership in the country, providing higher education access with a majority of UCF's 28,000 DirectConnect transfer students graduating from Valencia.
 - b. UCF's downtown campus will host several new initiatives designed to make college fully accessible for students with intellectual disabilities.

- i. This inclusive education program will begin in Fall 2015 on UCF's main campus but will relocate to the downtown campus once it opens.
 - ii. In addition, the Florida Center for Students with Unique Abilities will be located at UCF Downtown; pending the final decision by the Florida Legislature and passage of the 2015-2016 Appropriations Bill.
 - iii. UCF also plans to relocate its PhD track in Exceptional Education (an area of strategic emphasis) to UCF Downtown to provide experiential learning opportunities for our doctoral students.

- 3. Amount of Additional Research Funding to be Obtained; Patents Awarded
 Explanation:
 - a. The programs initially proposed to relocate to UCF Downtown have traditionally received about \$1.2 million annually in research funding. This funding is expected to substantially increase based upon increased partnerships with industry and research at the downtown campus.
 - b. Additionally, UCF anticipates it will create new opportunities for entrepreneurial activities at its downtown campus through venture labs, start-up training programs, and innovative spaces. As example, UCF was recently awarded two grants totaling \$750,000 from the U.S. Department of Commerce to expand technology transfer and grow Central Florida's entrepreneurship ecosystem.

- 4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
 Explanation:
 - a. When UCF Downtown opens in Fall 2017, it projects to offer 10 degree programs within an Area of Strategic Emphasis, including:
 - a. Critical Workforce - Health; 4 degree programs focused on health service administration and informatics.

 - c. Critical Workforce - Education: 1 doctoral degree program track focused on exceptional education.
 - d. Economic Development - STEM: 2 degree programs focused on Digital Media and Interactive Entertainment.
 - b. In addition, there will be 1 Graduate Certificate program within the Critical Workforce - Gap Analysis category. This certificate program focuses on corporate communication.

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation:

- a. Within the first five years of being located downtown, these UCF academic programs will meet several Performance Funding Model Metric goals (*Note: several of these goals will differ from UCF's overall 2015-16 work plan, as they are specifically projected for programs relocating downtown*):
 - i. 5 - 7% increase in the percentage of bachelor's graduates employed and/or continuing their education one year after graduation (Metric 1).
 - ii. Median, average, full-time wages of undergraduates employed in Florida one year after graduation increasing at least \$5,000 (Metric 2).
 - iii. 3 - 5% increase in UCF's six-year graduation rate for students enrolled in downtown programs (Metric 4)
 - iv. 60 - 62% of bachelor's degrees awarded within the proposed downtown program mix will be in areas of strategic emphasis (Metric 6) and 54-56% of master's degrees awarded within the proposed downtown program mix will be in areas of strategic emphasis (includes STEM) (Metric 8A).
 - v. An increase of 853 bachelor's degrees awarded by 2021. (Metric 10).
- b. UCF's Florida Interactive Entertainment Academy (FIEA) is ranked the No. 2 graduate video game and design school in North America by *The Princeton Review*, for the second year in a row.
 - i. In partnership with Electronic Arts (EA), and supported by the City of Orlando and State of Florida, this program graduates designers, programmers and digital artists, with an 85% job placement rate and average salary of more than \$60,000.
 - ii. Since 2005, FIEA has graduated 359 students, who are now working at 124 companies around the world, including Google, Disney, Sony Entertainment, and Microsoft.
 - iii. Electronic Arts (EA) Sports, a leading global interactive entertainment software company, hired 71% of its new employees from UCF's FIEA just last year in its Orlando office.
 - iv. This downtown project aspires to make FIEA No. 1 in North America and is home to one of the top 10 digital media clusters in the nation.

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation:

- a. UCF Downtown is part of the City of Orlando's largest public-private partnership, the Creative Village - a \$1 billion development that is expected to generate more than 8,000 permanent and related jobs, and produce \$296 million annually in post-construction, local economic earnings.
 - i. UCF Downtown will provide a student experience comparable to the main campus experience but complemented by the urban environment. Parking, housing, student services, and recreation will all be included in the campus development.
 - ii. In addition, private development within the Creative Village will provide additional student housing and complementary retail and parking to support the overall campus experience.
- b. Students attending UCF Downtown will be within walking distance of Orlando's central business district, industry centers, and non-profit or government agencies, which will provide experiential learning and employment opportunities. In addition, students studying health services administration will be centrally located between Orlando Regional Medical Center and Florida Hospital Orlando.
- c. Over 30 letters from industry leaders in the downtown area in technology, digital media, law, healthcare, and public service have offered employment and internship opportunities for UCF students.
- d. In the past two years, about 100 industry representatives have visited UCF's downtown Center for Emerging Media to recruit and collaborate with digital media students. UCF expects to see similar numbers and interest from industry affiliated with the other academic programs that will relocate to UCF Downtown.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

- a. UCF and Valencia College will occupy shared spaces for many of the student services at the downtown campus, which produces cost savings in addition to streamlined experiences for students. The two institutions also will share classroom spaces, which will reduce the number of classrooms required to accommodate the two institutions. Overall, there will be increased space efficiencies throughout UCF Downtown.
- b. In addition to new construction, UCF Downtown will renovate the existing Center for Emerging Media with already allocated funding. These renovations would make an additional 11,000 square feet usable for multi-media and multi-purpose classrooms. This renovation would

more than double the number of students accommodated within this building.

- c. The space that UCF will gain on the main campus by constructing buildings at UCF Downtown will be used for the University's expected 200 new faculty hires over the next two years and for multi-purpose classroom space. As example, UCF's College of Engineering and Computer Science is already poised to hire 30 new faculty members as part of our university-wide faculty hiring campaign within the next two years to help meet student demand.
 - i. UCF awarded nearly 2,000 baccalaureate degrees in STEM fields in 2013-14, the second-highest number in the State University System. Of those, more than half were awarded from our College of Engineering and Computer Science.
 - ii. Establishing a campus in downtown Orlando with the programs proposed above will allow for growth in strategic areas, particularly in STEM, on UCF's main campus in east Orlando.
 - iii. The number of engineering degrees awarded at UCF over the past five years has increased by about 50% (from 1,070 to 1,535). 56% of bachelor's recipients are employed in Florida earning an average starting salary of \$48,850, and 45 percent of master's recipients are employed in Florida earning an average starting salary of \$65,400, according to the Florida Education & Training Placement Information Program.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

- a. Financial commitments to UCF Downtown:

- i. \$20 million - City of Orlando (land gift)
- ii. \$22.5 million - City of Orlando (Center for Emerging Media facility donation, as previously committed to UCF)
- iii. \$22.5 million - City of Orlando and Creative Village (infrastructure in-kind investment)
- iv. \$45 million - Philanthropic support commitment (anticipated)
- v. Total financial support = \$110 million

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

**Higher Educational Facilities
Return on Investment**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida Gulf Coast University (FGCU)

Project: Central Energy Plant Expansion

Total Project Cost: \$ 9.0 M

Previous Funding (State): \$ 0.0 M

Current Request: \$ 9.0 M

STEM (Yes or No): NO

Contact Person (Name, Position, Office and Cell Phone No., Email):

Jennifer Goen, Director of Government Relations

239-590-1020 Office 239-823-5718 Cell

jgoen@fgcu.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation: N/A
2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)
Explanation: N/A
3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation: N/A
4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast
Explanation: N/A

Explanation: N/A

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation: N/A

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

a. If this project involves renovation/remodel space, please state current GSF and NASF and how that will change with renovation/remodel. Are you adding/taking away classrooms/offices/labs? Please explain the space type.

- i. Utilizes a chilled water system for efficient cooling and reduced energy costs
- ii. Save energy costs by taking advantage of off-peak energy usage rates with ice storage tanks
- iii. Provides HVAC redundancy for improved campus operation

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation: N/A

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

- Current plant facility is at capacity for off-peak energy load shed
- New dual-function Chiller – chilled water (2,000 tons) / ice making (1,100 tons)
- Increases ice storage capacity by 21 tanks and 4,200 ton-hours
- Includes installation of chilled water lines from existing plant to School of Integrated Watershed and Coastal Studies (AB9) site.

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida Gulf Coast University (FGCU)

Project: School for Integrated Watershed and Coastal Studies (AB9)

Total Project Cost: _____ \$ 44.0 M

Previous Funding (State): _____ \$.0 M

Current Request: _____ \$ 3.8 M

STEM (Yes or No): _____ Yes

Contact Person (Name, Position, Office and Cell Phone No., Email):

Jennifer Goen, Director of Government Relations

239-590-1020 Office 239-823-5718 Cell

jgoen@fgcu.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

Explanation:

- a. How many degrees is this request currently serving?

800 per year

- b. How many additional degrees are projected as a result of this request, and over what timeframe?

An estimated 200 per year.

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)

Explanation:

- a. What is the number of students currently served by this program?

13,000 students

- b. What is the number of students projected as a result of this request, and over what timeframe?

An estimated 15,100 students as of 2020

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:

a. How many research dollars does this project currently attract and what projection is expected with the completion of this project, and over what timeframe?

The existing center currently generates about \$2m annually in sponsored research. With the addition of the facility to house the SIWCS it is anticipated the annual generation would be approximately 50% higher within five years or roughly \$3m in 2020.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation:

- a. (See attached "SUS_Program_Inventory_Gap Programs")
b. Identify which Gap Programs this request addresses, and provide specific data.

The program covers the disciplines requiring laboratory hours and the degree information entered under question number 1 are the projected additional annual science and engineering degrees we intend to produce.

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation:

- a. "Preeminent Program" = any academic program that has a recognized national ranking or is recognized by an entity in the industry.

N/A

- b. If this project improves the ranking of a Preeminent Program, please specify its rank, and where this project could then realistically rank with the funding of this project.

N/A

c. If this project improves on a Performance Funding Model Metric, please specify which one and give supporting data.

Graduation rate currently at 49% and academic progress rate currently at 72% should both improve since students will have access to state of the art instructional facilities, be able to get courses needed for degree completion more timely, and will have more lab time as a result. Further improvement to degrees awarded in areas of strategic emphasis will increase as noted in the response to question number 1. Another anticipated outcome is an expected improvement in job placement (currently 74%) and salary earned (currently at \$35,300) metrics as these are graduates in fields of high national demand.

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation:

a. List partnerships only if you can support with data for the number of internships granted, or number of jobs granted; please provide the timeframe of this count.

From fall 2010 through spring 2015, 318 students in the Environmental Studies and Marine Science undergraduate programs have completed internships, primarily in Florida. Over 40 local and regional businesses, non-profit organizations, natural resource management organizations, parks, and government agencies (see below) have partnered with FGCU as intern hosts. Seven of these internship host organizations have hired students from the programs listed below as well as from our graduate programs in Environmental Science and Environmental Studies. Over the next five years, we intend to expand our list of internship partners by 25% and to work more closely with our existing partners to improve job placement of students who have gone through the internship programs.

Partial List of Internship Partners (2010-2015)

Archbold Biological Station (Venus, FL)
American Water Resources Association
Bailey Matthews Shell Museum (Sanibel, FL)
Big Cypress National Preserve

Cayo Costa State Park
Charlotte Harbor Environmental Center
Collier Seminole State Park
Conservancy of Southwest Florida

CREW Land and Water Trust
Dreamlander Tours
Florida Department of Environmental Protection
East County Water Control District
ECHO (originally Educational Concerns for Haiti Organization,
North Ft. Myers, FL. Now fights world hunger.)
Estero Bay Aquatic Preserve
Florida Fish and Wildlife Conservation Commission
Green Gallon Solutions
Imaginarium (Fort Myers, FL)
Lee County Hyacinth Control
Lee County Mosquito Control
Lee County Parks and Recreation
Lee County Conservation 20/20
Lovers Key State Park
Mote Marine Laboratory (Sarasota, FL)
Naples Botanical Garden
Ostego Bay Marine Science Center
Rookery Bay National Estuarine Research Reserve
Sanibel Captiva Conservation Foundation
Sarasota County
Selovita - Florida Urban Organics
Six Mile Cypress Slough Preserve
The Gasparilla Island Administration
The Naples Zoo
Turell, Hall and Associates, Inc.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

a. If this project involves renovation/remodel space, please state current GSF and NASF and how that will change with renovation/remodel. Are you adding/taking away classrooms/offices/labs? Please explain the space type.

The School of Integrated Watershed and Coastal Studies will ease the current deficit of labs and classroom space on campus. Contained in the FGCU 2012-2013 Educational Plant Survey, dated March 2013, and the Educational Plant Survey approved by the State University System on January 2014, are recommendations that detail the need for laboratories.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

a. Probably not applicable for most SUS projects, however, if you are able to check this box, please state contribution amount and source of funds.

Note: The reinstatement of the Courtelis Matching Grant Program would greatly assist this effort.

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation:

a. Identify the amount of projected deferred maintenance cost eliminated or identify the reduced amount of ongoing maintenance/operation cost saved on an annual basis.

N/A

10. Other Pertinent Information not included above:

Higher Educational Facilities Return on Investment

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: New College of Florida
Project: Heiser Natural Science Addition
Total Project Cost: \$ 8.9 M
Previous Funding (State): \$ 655,000
Current Request: \$ 5.3 M
STEM (Yes or No): YES

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)

Explanation:

2013-14 Enrollment in majors in the Biology, Chemistry, Computer Science, Data Science, Mathematics, and Physics was 208 students. We expect enrollments in these majors to increase by 10% by 2018 (20 students) and 20% by 2020 (40 students).

The percentage of New College of Florida bachelor's degrees awarded in STEM majors in 2014 was 34% (49 STEM degrees). By 2020, we expect the percentage of New College of Florida bachelor's degrees awarded in STEM majors to increase to 41% (74 STEM degrees)

New College of Florida graduates the largest percentage in the SUS of undergraduates who go on to earn PhD's: 14.5% for NCF compared to next highest (UF 1.7%) and the SUS average of 1.5%.¹ Thus a critical payoff of the Heiser Addition will be the undergraduate training of a significant number of Florida's future Ph.D. scientists.

¹ Source: National Opinion Research Center (NORC) at the University of Chicago, Survey of Earned Doctorate (SED)

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)

Explanation:

The Heiser Natural Sciences Addition will provide additional space for student learning and research and faculty teaching and research in these disciplines: Biology, Chemistry, Computer Science, Data Science, Mathematics, and Physics. In Fall 2014, 472 students (57% of the student body) took at least one course in Natural Sciences.

At New College, professors work directly with undergraduate students, unmediated by graduate teaching assistants and postdocs.

Research laboratories in the Heiser Addition will be the loci of high quality advanced teaching, where students work collaboratively on open research problems, learning while doing actual science, and working collaboratively with the professor, and more advanced students will mentor less advanced students. This research lab set-up is the reason that New College and similar high-quality, very selective, primarily undergraduate, residential colleges out-perform research intensive institutions and produce such a disproportionately large share of the nation's scientists.

With the addition, we will be able to teach more students in laboratory courses. Our current science laboratories only hold 14-24 students, requiring multiple sections of laboratory classes staffed by adjuncts and other instructors. The new addition will allow the College to accommodate 360 more students per semester in biology, chemistry, and physics laboratories in the three new 24 station teaching laboratories. A larger number of slots in laboratory classes each semester will help students complete their graduation requirements in a shorter time. New science laboratories are likely to improve retention of first year students taking introductory laboratory classes in the sciences.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded

Explanation:

The Heiser Addition will allow NCF to at least double externally funded faculty research. Currently, some professors do not have the research space needed to successfully compete for extramural funding. At New College, all research money directly benefits undergraduates, who get advanced training in science and go on to contribute to Florida's research efforts. Between 2010 and 2014, 85 undergraduate New College students were directly involved in externally funded research projects.

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation: N/A

5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric

Explanation:

We expect to improve two Performance Funding Model metrics once the new building is completed. First, the new teaching and research laboratories will provide more space for students to complete their science degree requirements. New College has the second highest SUS percentage of bachelor's degrees awarded in STEM disciplines; NCF Work Plan sets the goal to increase undergraduate degrees in STEM to 32% by 2016-17 and has already surpassed this goal at 34% in 2013-14. With the new space, we can set our STEM goals even higher.

Second, the six new research laboratories will provide space for new science faculty to do their research and supervise undergraduate student research projects, which are a required part of the New College curriculum. The new science equipment that will be purchased for the new building will help students complete their degrees in a shorter time frame, improving our six year graduation rate. Each research lab will be able to accommodate 4 to 6 research students, leading to 24 to 36 more STEM graduates per year.

6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students

Explanation:

The new Data Science masters program (which will be housed in the Heiser Addition) has business partners that will provide guaranteed internships for the students during their second year in the program, and these internships are expected to lead to lucrative jobs that will benefit the state. When the new building is completed, the masters program will be completely developed, and there will be 15 students each year in internships, and these students will graduate at the end of each year to enter the workforce.

These Florida businesses have expressed interest in a partnership with the Data Science MS program:

- i. Star2star
- ii. Voalte
- iii. Mobilebits
- iv. HSN
- v. NextEra
- vi. Catalina Marketing
- vii. Beals
- viii. Roskamp
- ix. Riskwatch

b) These U.S. businesses have expressed interest in a partnership with the Data Science MS program:

- i. Akamai
- ii. Ancestry.com
- iii. Annalect
- iv. Colchis Capital
- v. Lovelace Respiratory Research Institute
- vi. Mind Research Network
- vii. Allen Brain Institute
- viii. Protege Partner

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

At the moment, space is extremely tight in the existing Heiser Natural Sciences building, which works against the spontaneous, serendipitous interactions so valuable to science. The Heiser Addition will increase the utility of the existing building through space reassignments to the benefit of the various science disciplines. Interaction among faculty and students in these different disciplines will be enhanced, leading to better science.

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation: N/A

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

This request will allow New College of Florida to break ground and complete this STEM expansion project.

**Higher Educational Facilities
Return on Investment**

This is a tool developed by a collaborative group of stakeholders designed to facilitate the identification of return on investment metrics for higher education facilities. Check any box(es) that apply, provide a quantitative explanation, and identify the term or years in which ROI information is provided.

Institution: Florida Atlantic University, Jupiter Campus
Project: Jupiter STEM / Life Sciences Building
Total Project Cost: \$ 32.2 M
Previous Funding (State): \$ 0.0 M
Current Request: \$ 15.1 M
STEM (Yes or No): YES
Contact Person (Name, Position, Office and Cell Phone No., Email):

Ryan Britton
Director of State Relations
Florida Atlantic University
561.297.2583 o

Rbritto2@fau.edu

Check any box(es) that apply and provide a quantitative explanation. Identify the term or years in which ROI information is projected.

1. Number of Additional Degrees and Certificates Produced and How Those Degrees are Meeting the Needs of our State (Job Openings, Average Wages of those Job Openings, etc)
Explanation:
 - a. **This project will positively impact degree productivity in the fast-growing industry of Professional, Scientific, and Technical Services (Letters "c" and "d" below)**
 - i. Adding 1,425 STEM undergraduates at FAU in Jupiter by 2025
 - ii. Adding 80 STEM graduate students at FAU in Jupiter by 2025
 - b. **Department of Economic Opportunity (DEO) ranks Professional, Scientific, and Technical Services industry (DEO Data, 2014)**
 - i. 2nd most new jobs in the state by 2022
 - 90,714 new jobs, which is a 19% increase over 8 years
 - ii. 3rd most new jobs in Palm Beach County by 2022

- 7,270 new jobs, which is a 17% increase over 8 years

c. **High average annual wage for all occupations in the Professional, Scientific, and Technical Services industry**

- i. \$75,570 annually (Source: US Department of Labor, Bureau of Labor Statistics, 2014).

2. Number of Additional Students Served and the Benefits/Efficiencies Created (increase graduation rate, alleviate waitlist, increase academic support, etc)

Explanation:

a. **Increases FAU's overall production of STEM degrees**

- Jupiter will increase FAU's STEM and health undergraduate degrees awarded from 31% in 2015 to more than 40% by 2025
- Plan increases STEM graduate degrees from 18% to 30% by 2025

b. **More honors STEM students will increase 4-year completion rates**

- Jupiter plan calls for recruitment of high-achieving students with aspirations to pursue medical/graduate school in the life sciences.
- Faculty from Scripps and Max Planck will participate in these STEM programs, supporting students with world-class mentors.

c. **Expands Biotechnology and Business programming**

- Professional Science Masters (PSM) in Biotechnology, which requires 2 internships in biotechnology companies.

3. Amount of Additional Research Funding to be Obtained; Patents Awarded
Explanation:

a. **Research infrastructure will encourage collaboration and cooperative grants between FAU faculty and Scripps and Max Planck faculty**

- Current annual funding levels for STEM faculty in Jupiter is \$60,000 per faculty member (total of \$750,000 annually)
- By 2025, annual funding levels for STEM faculty in Jupiter will increase to \$100,000 per faculty member (total of \$7.5M annually)

4. Project is in an Area of Strategic Emphasis as Determined by the Board of Governors' Gap Analysis or the Department of Economic Opportunity's National Occupational Forecast

Explanation:

- a. **Project is in an Area of Strategic Emphasis as Determined by Department of Economic Opportunity**
- Florida's Targeted Industry Clusters includes *Life Sciences* and *Infotech* (Source: DEO Workforce Estimating Conference 2013)
 - DEO's Strategic Areas of Emphasis includes *Emerging Technologies* (Source: Bureau of Labor Market Statistics 2013)
- b. **In addition to job production of STEM graduates, project will directly provide new research labs and office/support space for additional hires:**
- Creates 45 regular/research faculty members
 - Creates 35 postdoctoral fellowship positions
5. Improves the Ranking of a Preeminent Program or Improves on a Performance Funding Model Metric
- Explanation:
- a. **Improves on two Performance Funding Model Metrics by providing instructional research space needed to support enrollment**
- Bachelor's degrees in areas of strategic emphasis (STEM)
 - Graduate degrees in areas of strategic emphasis (STEM)
- b. **Improves on two Performance Funding Model Metrics by positively impacting degree productivity in the fast-growing industry of Professional, Scientific, and Technical Services (See 1 a., b. and c.)**
- Percent of bachelor's graduates employed and/or continuing their education further
 - Average wages of employed baccalaureate graduates
6. Increase Business Partnerships Which Will Lead to Guaranteed Internships and Jobs for Students
- Explanation:
- a. **Increases business partnerships with both Scripps Florida and the Max Planck Florida Institute (MPFI) for Neuroscience**
- Scripps Florida offers opportunities for graduate research, postdoctoral training, and fellowships.
 - MPFI offers post-doctorate positions, post-baccalaureate research experiences, undergraduate research scholars program, as well as partnerships throughout FAU's Integrative Biology and Neuroscience (IBAN) Ph.D. program.

7. Project Improves the Use, either Operationally or Academically, of Existing Space

Explanation:

- a. **Renovates existing labs in Building MC17 to maximize the number of labs for additional research activities**

8. Contribution of Local Funds Through Matching Grants, Property Donations, etc.

Explanation:

- a. The STEM Life Science Initiative will create a shared facilities environment, which will allow faculty and students access to state-of-the-art scientific equipment at both Scripps Florida and MPFI.

9. Reduces Future Deferred Maintenance Cost and Extends the Life of the Facility by Bringing the Project up to Existing Standards (cost-benefit analysis of renovation or new facility vs. maintenance)

Explanation: N/A

Other Pertinent Information not included above:

- **The Jupiter Research Building is part of FAU's STEM Life Sciences Initiative**, which will capitalize on the nearly one billion dollars that taxpayers have invested to attract world class biomedical research institutions to our region. FAU, Max Planck Florida Institute, and Scripps Research Institute have recently entered into a formalized agreement that will build on their existing relationships to create collaborative, one-of-a-kind STEM focused education programs that will attract the best and brightest students and transform Florida Atlantic University's John D. MacArthur Campus in Jupiter into a hub of scientific inquiry, innovation, and economic development. The initiative will allow students to work, study, and conduct research alongside some of the world's leading scientists, while a shared facilities environment will provide faculty and students access to state-of-the-art scientific equipment. Together, FAU, Max Planck, and Scripps will train the scientific leaders of tomorrow.
- **Request is for new project and renovation of an existing STEM lab building**, which will allow for expansion of collaborative research in these targeted areas:
 - Neuroscience
 - Biotechnology
 - Bioengineering
 - Bioinformatics/data science

- Chemistry
- **Proposal will increase licensing activity of intellectual property and “spinout” companies based on FAU intellectual property**
 - 4 patents already awarded to STEM faculty in Jupiter
 - Patents have been licensed by 2 local Biotech startups