

Boca Raton Campus

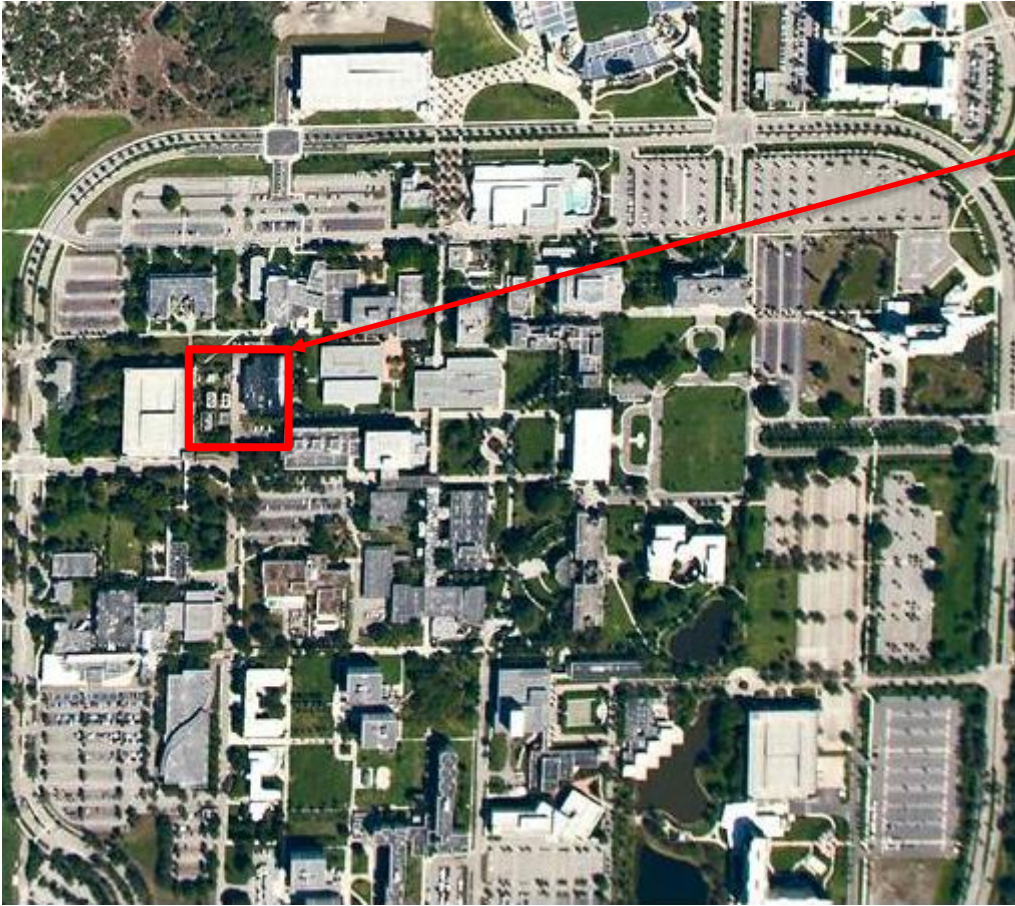
CIP PRIORITY NO. 1: Capital Renewal / Infrastructure
Cooling Tower Replacement



FLORIDA ATLANTIC UNIVERSITY.

Making Waves

CAPITAL RENEWAL/ENVELOPE ENHANCEMENT / INFRASTRUCTURE



Boca Raton Campus

Cooling Tower Replacement



Cooling Towers 1-4
Average Age +40 yrs.



Cooling Towers 5
Constructed in 2007

Making Waves



CAPITAL RENEWAL/ENVELOPE ENHANCEMENT / INFRASTRUCTURE

ROI

- Mission critical project to replace four of five cooling towers servicing 90% of academic building on campus
- End of life replacement of existing towers with critical structural issues
- Replacement of all pumps and fans with energy efficient equipment will result in significant utility savings
- This project will allow for Chiller Plant Optimization
- Reconfiguration of piping infrastructure between existing chillers and new cooling towers to provide redundancy and efficiency
- Job creation: 35 direct construction jobs



DEAMND METRICS

- This project is critical to the operations of all university buildings
- Reliability of a new system is required to maintain continuity of operations
- Anticipated construction start date: **October 2016 (FAU has allocated \$300,000 in 2015/16 for design services to accelerate this project)**
- Estimated completion date: **August 2018**

PECO REQUEST

2016/17 – \$3.3 million of the total \$7.9 million for Capital Renewal is required for this project

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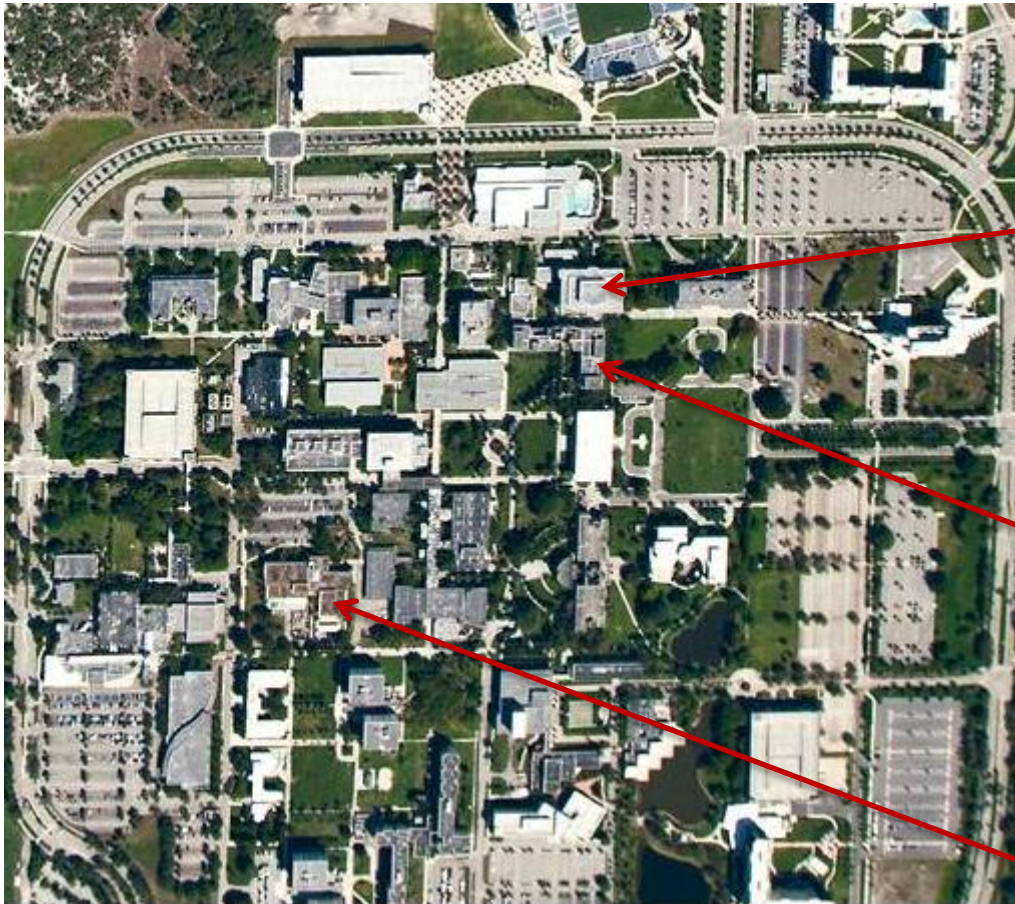
Boca Raton Campus

**CIP PRIORITY NO. 3: Colleges of Science and Engineering
Buildings Renovation (36, 43 & 55)**

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COLLEGES OF SCIENCE AND ENGINEERING BULDINGS RENOVATION - \$10M



Boca Raton Campus



Science – bldg. 43
128,000 GSF



Physical Science – bldg. 55
97,000 GSF



Engineering West – bldg. 36
59,000 GSF

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COLLEGES OF SCIENCE AND ENGINEERING BULDINGS RENOVATION - \$10M

ROI

- Average age of the Science and Engineering buildings exceeds 25 years
- Due to their age, these buildings need major attention by upgrading existing building systems, including: electrical, HVAC, lighting, controls, chilled water system, fire alarm systems, elevators, roofs, and overall building envelopes.
- These buildings house classrooms, teaching labs, research labs and other space critical to supporting STEM programs
- This project is an investment in the University’s and the State’s facilities assets to ensure that these buildings remain open and operational to serve existing programs
- Job creation
 - Same faculty and staff jobs as currently exists
 - 180+ construction jobs

DEMAND METRICS

- The renovated facilities will enhance the quality of academic programs and research in the STEM disciplines
- Upgraded systems and modernized facilities will help attract top rated students and faculty to existing programs
- Anticipated construction start date: **March 2017**
- Estimated completion date: **August 2018**



PECO REQUEST

2016/17 – (Planning, Const. & FF&E) **\$13,000,000**

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Jupiter Research Building Renovation & Addition

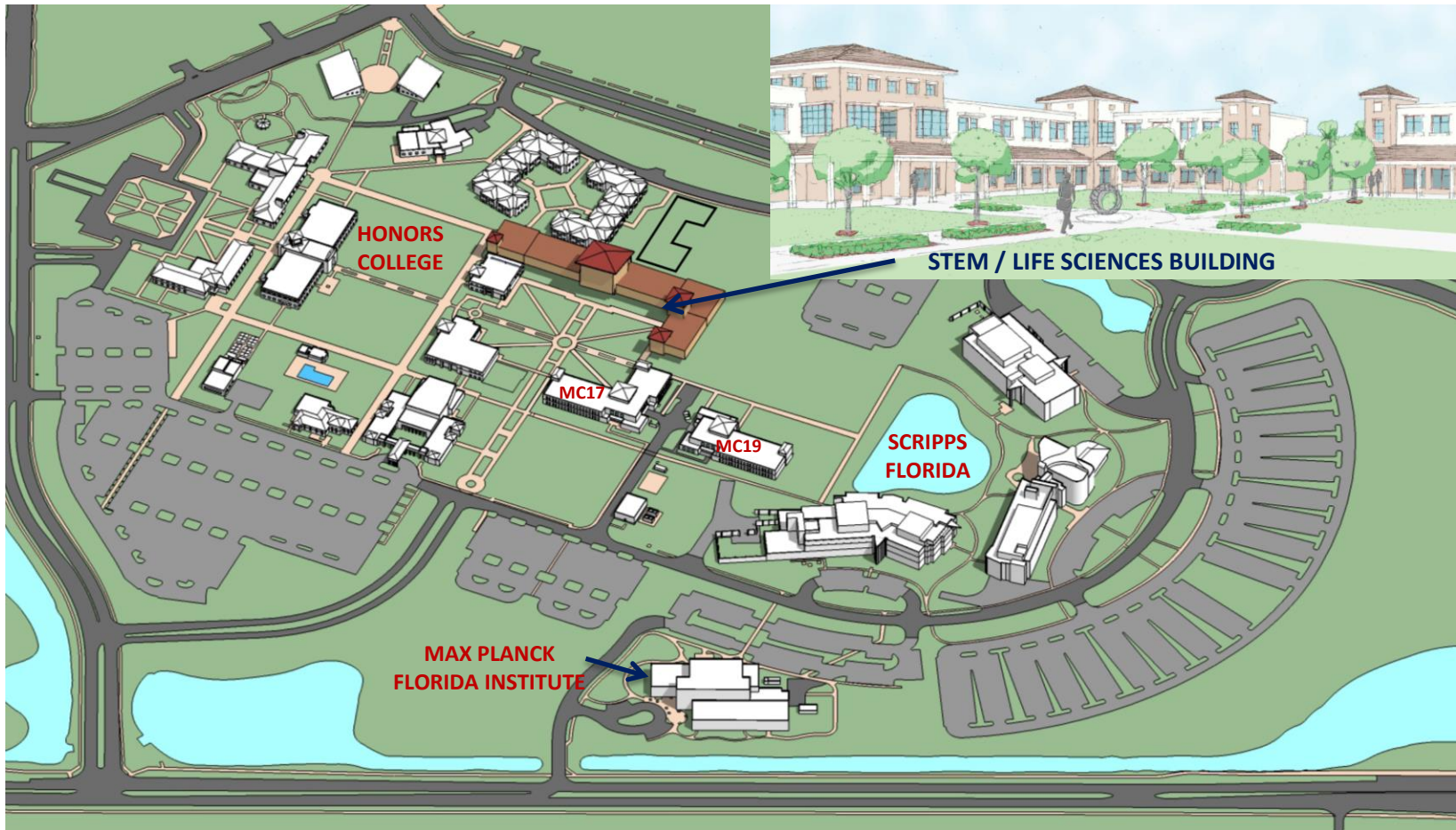
CIP PRIORITY NO. 2: STEM / LIFE SCIENCE BUILDING



FLORIDA ATLANTIC UNIVERSITY.

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FAU STEM / LIFE SCIENCE BUILDING - \$29 M



Making Waves

FAU STEM / LIFE SCIENCE BUILDING - \$29 M

ROI

- Create a Life Science focused STEM campus by “re-purposing” FAU’s MacArthur Campus in Jupiter to leverage the State and County investment (~\$800 million) in Scripps Florida and the Max Planck Florida Institute for Neuroscience located on this campus of FAU.
- Meet BOG Strategic Plan goals to increase undergraduate and graduate degrees awarded in STEM and other strategic emphasis areas.
- FAU’s new Strategic Plan 2025 calls for development of research pillars in neuroscience and healthy aging that will increase graduation of students in areas of strategic emphasis - STEM and Health.
- The STEM/LS Building will provide for increased enrollment of students in the STEM fields of Biology, Bioengineering, Bioinformatics, Chemistry, Computational Biology, Engineering and Neuroscience.
- Meet BOG Strategic Plan goals to increase Federal and other research funding. The STEM/LS building will allow for expansion of collaborative research in the STEM areas, especially in specific targeted areas such neuroscience, biotechnology, bioengineering, bioinformatics/data science, chemistry.
- Increase licensing activity of intellectual property and “spinout” companies based on FAU IP.
- **Economic Impact** ~\$75 million in 5 years

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FAU STEM / LIFE SCIENCE BUILDING - \$29 M**ROI**

- The STEM/Life Science Building will allow FAU to become an equal partner on the Jupiter campus with Scripps and Max Planck. Together we will focus on where biotech and patient care will be 10 years from now - personalized medicine. We will be the 'glue' that brings together outstanding research, student training and patient care, to the region.
- FAU proposes (1) taking the lead in developing a continuum of higher education training programs via undergraduate honors programs/college, and graduate/postdoctoral training programs; (2) creating a research ecosystem where FAU, Scripps and MPFI (others) develop R&D enterprises that complement each other; (3) mutual sharing of equipment of all 3 entities on the campus; and (4) developing a biotech enterprise based on personalized medicine and computational science.
- Student training, research, patient care and economic development at the Jupiter campus will be focused on personalized medicine whereby diagnostics, prognosis, treatment and outcomes are based on the unique signatures associated with an individual's disease. As a point of reference, breast cancer is 6 different diseases, lymphoma 19 different diseases and leukemia 39 different diseases.
- FAU scientists will focus on neuroscience, biotechnology, drug discovery and translating discoveries to better understand how to diagnose and treat diseases, especially those associated with aging such as Alzheimer's Disease, Parkinson's Disease, Stroke and Cancer.

FAU STEM / LIFE SCIENCE BUILDING - \$29 M

ROI continued

- We foresee a future biotech research park being anchored by companies that focus on personalized medicine. Businesses that may sequence all or part of the genome from a person's normal or diseased tissue in as little as 4 hours. Businesses that use computational techniques to identify molecular changes that define risk or cause of disease. Concierge businesses that identify best treatment options for patient populations based on a computational analysis of ones genome. Businesses that develop unique biotherapeutic tools that uniquely treat a difficult disease. These types of companies represent the future of biotech.
- Each of these companies can be supported by the R&D of the current research institutions (FAU, Scripps, MPFI, others) and the small startup companies that spin out from these institutions.
- Once the building(s) are in place, faculty and scientists can be recruited and the ecosystem developed. The remaining piece will be training a workforce. FAU, Scripps and MPFI train students and post-doctoral fellows. In order to prime the pump with trainees and a workforce, FAU will need to develop its Honors College and extend enrollment and graduation in the stem disciplines while offering training opportunities for the research ecosystem. Extension of the education and training continuum may also benefit by a magnet high school in the region, much in the model of the FAU Henderson High School - widely regarded as the best lab school in the state.

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FAU STEM / LIFE SCIENCE BUILDING - \$29 M

ROI continued

- Companies relocate or are spun-out by faculty and students in locations that can provide a specifically trained workforce. In Jupiter, undergraduate students destined to go on to medical school or graduate school, and graduate students and post-doctoral fellows who will join the workforce will have had the benefit of research and training in those technologies associated with personalized medicine, molecular and regenerative medicine and treatment of disease.
- An example of a company co-locating near FAU to be able to recruit a specifically trained workforce to develop a specific product exists in Boca Raton. Modernizing Medicine is located in FAU's research park in Boca and has grown as a company to 400+ employees. It's product, an intelligent Electronic Medical Record technology provides for diagnosis, prognosis, treatment options and billing that operates wirelessly on an iPad. In the company's early development, FAU graduates in computer science, programming and engineering represented the majority of employees and now represent about 30% as other companies have been acquired. Modernizing Medicine's founder and CEO, Dan Cane, extolls the virtues of being close to FAU to be able to hire the best and brightest of our students. We see the same for Jupiter.

Dan Cane sold Blackboard, Inc. in 2011 for \$1.6 billion. Cane was named 2015 Entrepreneur of the Year®, 2014 Sun Sentinel Excalibur Awards Palm Beach Small Business Leader of the Year and honored as Palm Beach County Ultimate CEO by the South Florida Business Journal.

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FAU STEM / LIFE SCIENCE BUILDING - \$29 M

DEMAND METRICS

- 72,000 gross / 45,000 net square feet
- Provides additional teaching and instructional space needed to support projected enrollment of STEM honors students on the Jupiter campus. The Wilkes Honors College will increase enrollment from 332 to 1000 by 2025. Increased enrollment will also come from additional STEM students completing Honors-in-the-Major programs in Biology, Chemistry, Neuroscience, Bioengineering and Computer Science with overall enrollment increasing to ~3000 Honors students. Research will be required for all undergraduates.
- Provides for new classroom/instructional space. Includes distance learning classrooms and computer instructional labs for bioinformatics and computational sciences.
- Provides additional research and office space needed to support new STEM faculty. Anticipated 45 additional regular and research faculty at Jupiter.
- Provides for new faculty research laboratories, research support space and research staff offices. Anticipated ~150 graduate students and ~50 postdoctoral fellows
- Anticipated construction start date: October 2017
Estimated completion date: February 2019



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ROI Summary

Jupiter Facilities Request – ROI (FY16/FY17)

- Job creation
 - 45 regular and research faculty positions
 - 50+ postdocs and 150 graduate students
 - 500+ construction jobs

- Progress to date: FAU has 2 new Research Pillar (Institute) directors; 2 more are being recruited and each pillar will have 8 dedicated regular faculty hires (32 in total) for these STEM fields. Additional hires are pending in Chemistry on the Jupiter campus.

- Translate to 30 to 50 jobs (4 jobs/\$200k research funding)
 - Translates to 8-12 jobs of support in the community (1 job of support/4 grant-supported research jobs)
 - Translates to \$6.5M to \$10.4M of economic impact/yr (\$2.6 of economic impact for every \$1 of research funding)

- Economic Development – Research Ecosystem
 - Research ecosystem in Jupiter supports an R&D enterprise
 - Recruit anchor companies in computational science and personalized medicine (5 over 5 years)

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ROI Summary (cont.)

- Spin out 5 service based companies
 - Development of personalized medicine focused biotech enterprise
- Progress to date: FAU will spin out 3 faculty startups in FY16; while Tech Runway has helped 13 companies spin out with 5 obtaining significant investment.
- Training a Workforce
 - Data scientists
 - Computational Scientists
 - Biotech
 - Health care related jobs
 - Internships for advanced training in Health Care and Personalized medicine
- Progress to date: FAU Colleges of Medicine, Nursing, Science and Engineering are developing new training programs in these areas to develop a workforce for regional industry.

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FAU STEM / LIFE SCIENCE BUILDING - \$29 M

PECO REQUEST

2016/17 – (Planning & Construction*)	\$	15,137,400
2017/18 – (Construction)	\$	14,000,000
2018/19 – (Furnishings & Equipment)	\$	3,029,600
TOTAL PROJECT COST	\$	32,167,000
*\$2.5 M planning		



PO&M - PLANT OPERATIONS & MAINTENANCE

Building Classification – Research/Advanced Technology	Facility Class F
2014-15 PO&M Rate / Sq. Ft. – Class F	\$18.27
Building Gross Square Footage	72,000 GSF
Total Projected Annual PO&M	\$1,315,440

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