

Board of Governors Facilities Workshop

Earth, Ocean and Atmospheric Science Building (EOAS)

STEM Teaching Lab Building

Interdisciplinary Research and Commercialization Building (IRCB)

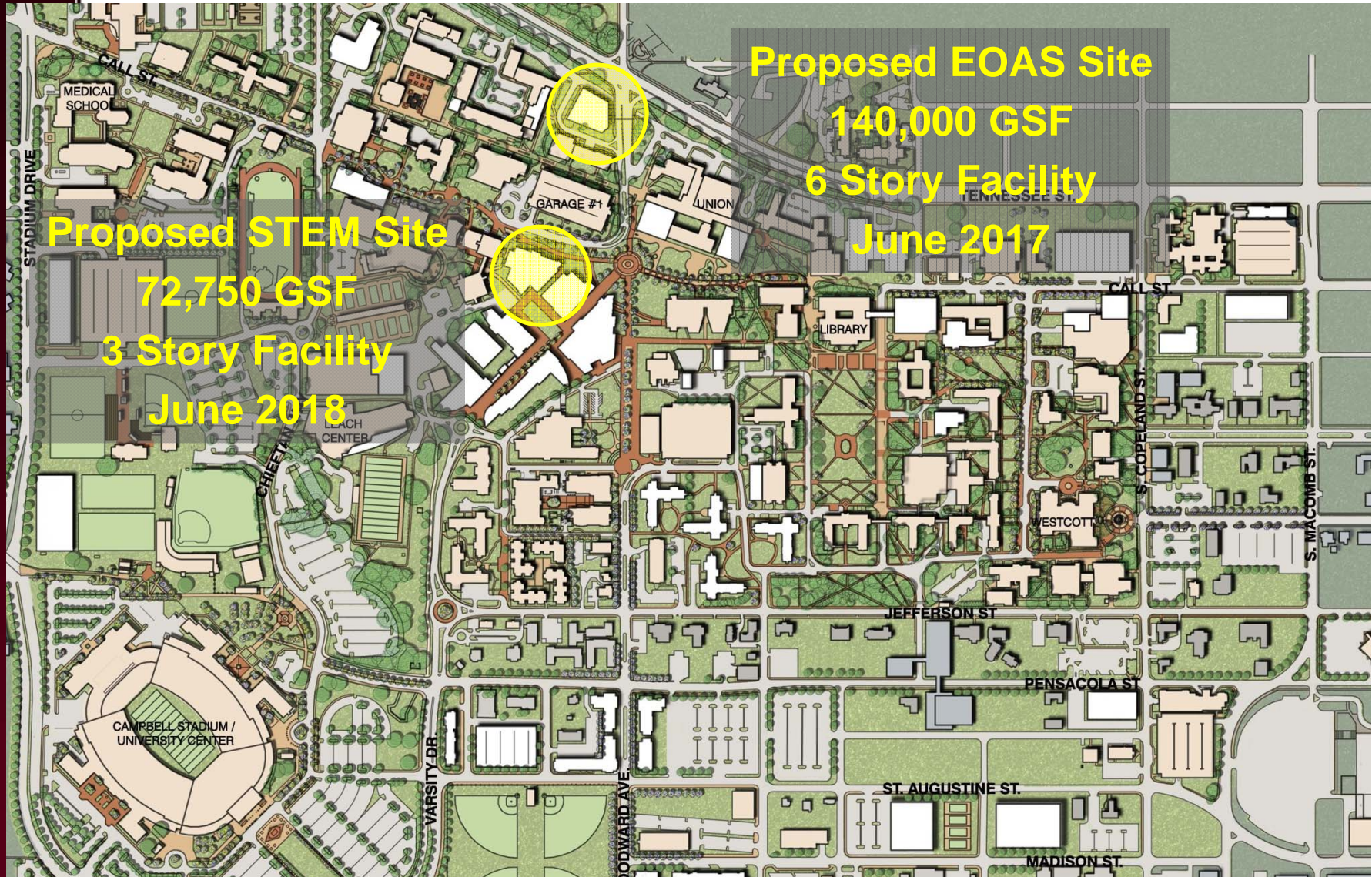
October 2014



THE FLORIDA STATE UNIVERSITY



FSU Campus Master Plan





FSU - EOAS \$36.1 M

Earth, Ocean and Atmospheric Science Building





FSU - EOAS \$36.1 M

DEMAND METRICS

- Increase the # of STEM degrees and increase external funding
- Redevelop and renovate an aging 1.2 million square feet of science and research buildings.
- Merged 3 departments to save money, provide innovation in teaching, and increase research potential by enhancing synergisms
- The # of undergraduate majors in EOAS has increased by 250% since 2010, making it the fastest growing program in Arts and Sciences
- Investing Preeminence funding to attract high quality faculty
 - a) Seven new, junior EOAS faculty hired for the 14-15 academic year
 - b) Three of the above are part of the Coastal & Marine Strategic Faculty Hiring Initiative; up to five additional EOAS faculty will be recruited this year in the initiative
 - c) New hires housed in sub-standard labs or surge space
- Huge research opportunities – Challenging scientific problems which impact the State and Nation (climate variability, extreme weather events, water quality and use, coastal fisheries, hydrocarbon exploration in the Gulf.....)



FSU - EOAS \$36.1 M

ROI

- Significant growth in contract & grant activity
 - a) Over the past five years EOAS with its COAPS and GFDL partners has averaged \$13.5M per year in grant awards (approx. \$390,000 per faculty member)
 - b) Recent and projected hiring of faculty will grow the cadre of researchers leading to projected increase of nearly \$6M in grant awards based on per capita productivity.
 - c) New funding opportunities (BP GOMRI, Restoration Act) and synergisms could potentially lead to a doubling of awards to \$27M in five years
- Graduated 147 students last year
- Bureau of Labor Statistics – job growth in EOAS fields will increase “faster than average” – 14-19% in geosciences and meteorology; 18% geosciences and hydrologists, more than 20% in environmental science
- Considerable demand within Florida (climate and weather forecasting)
- BOG Economic Impact Study – 1,451 jobs
- Raises the stature of a very strong program to the position of an elite program in the nation



FSU - EOAS \$36.1 M

Total Project Budget: \$64.95 Million

Appropriated 2012-13 3.85 M (P)

Appropriated 2014-15 20.00 M (CE)

Requested 2015-16 36.10 M (CE)

Requested 2016-17 5.00 M (E)

Project Size:

Floors: 6

Footprint: 23,000 gsf

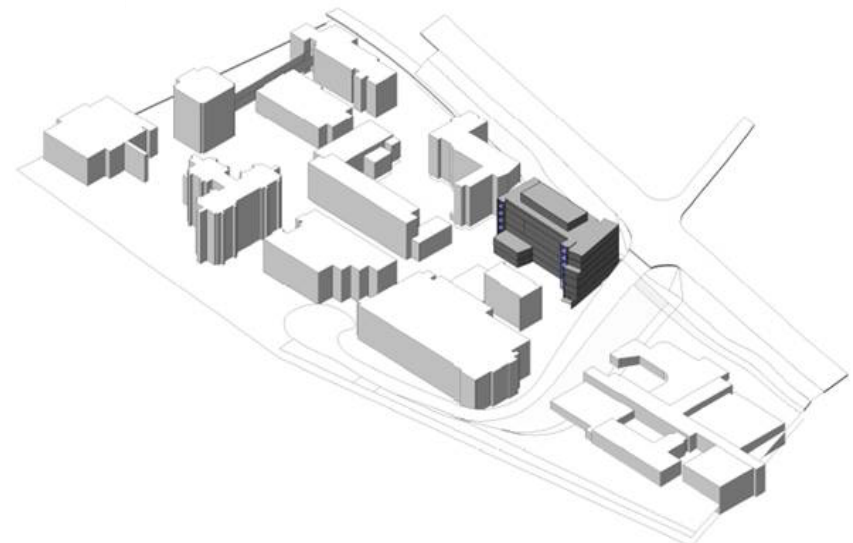
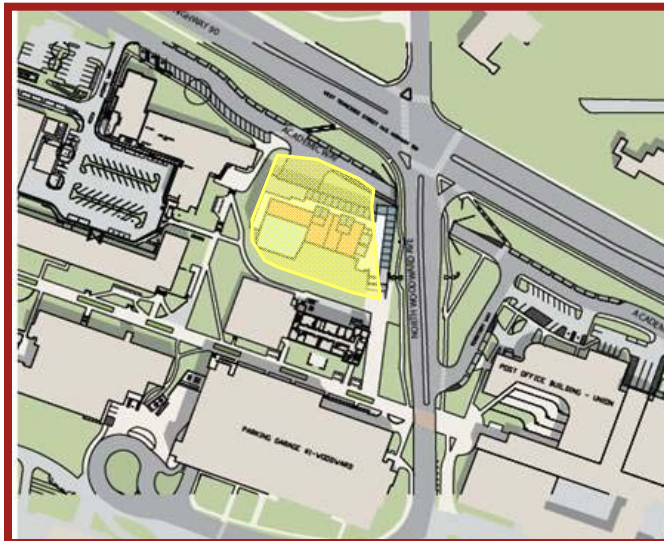
Total Area: 140,000 gsf

Projected PO&M Costs: \$1,400,000

Project Schedule:

Anticipated Construction Start Date: June 2015

Anticipated Completion Date: June 2017





FSU - STEM Teaching Lab \$2.2 M





FSU - STEM Teaching Lab \$2.2 M

DEMAND METRICS

- Increase the # of STEM degrees by producing a significant shift in the fraction of students majoring in STEM disciplines, particularly in high job growth areas
- Goal to be a Top 25 public university is tied to significant investment in STEM fields.
- \$2.5 million in 2014 STEM funding plus \$3 million investment in last year's Preeminence funding focused on the hiring of STEM faculty; this is in addition to significant investments over the last couple of years
- The STEM Teaching Lab Building is designed to pull a large fraction of the teaching activities out of old, deficient science buildings
- Will provide centralized resources for state-of-the-art and shared platforms for laboratory experiences for students with emphasis on Chemistry and Physics (the foundation disciplines for most undergraduate STEM majors)
- Leverages opportunities for using the innovative “studio” lab approaches wherein discussions are integrated with hands-on experiences



FSU - STEM Teaching Lab \$2.2 M

ROI

- BOG Economic Impact study indicates generation of 785 jobs
- Addresses a critical shortage of teaching lab space (underbuilt compared to growth over last 10-15 years)
- Significant amount of instructional space inventory is over 25 years of age – doesn't match up with innovative teaching methods
- Critical to address workforce needs
- Lessens need for teaching labs in every new building



FSU - STEM Teaching Lab \$2.2 M

Total Project Budget: \$36.9 Million

Requested 2015-16 2.20 M (P)

Requested 2016-17 29.70 M (CE)

Requested 2017-18 5.00 M (CE)

Project Size:

Floors: 3

Footprint: 24,250 gsf

Total Area: 72,750 gsf

Projected PO&M Costs: \$875,000

Project Schedule:

Anticipated Construction Start Date: December 2016

Anticipated Construction Completion Date: June 2018

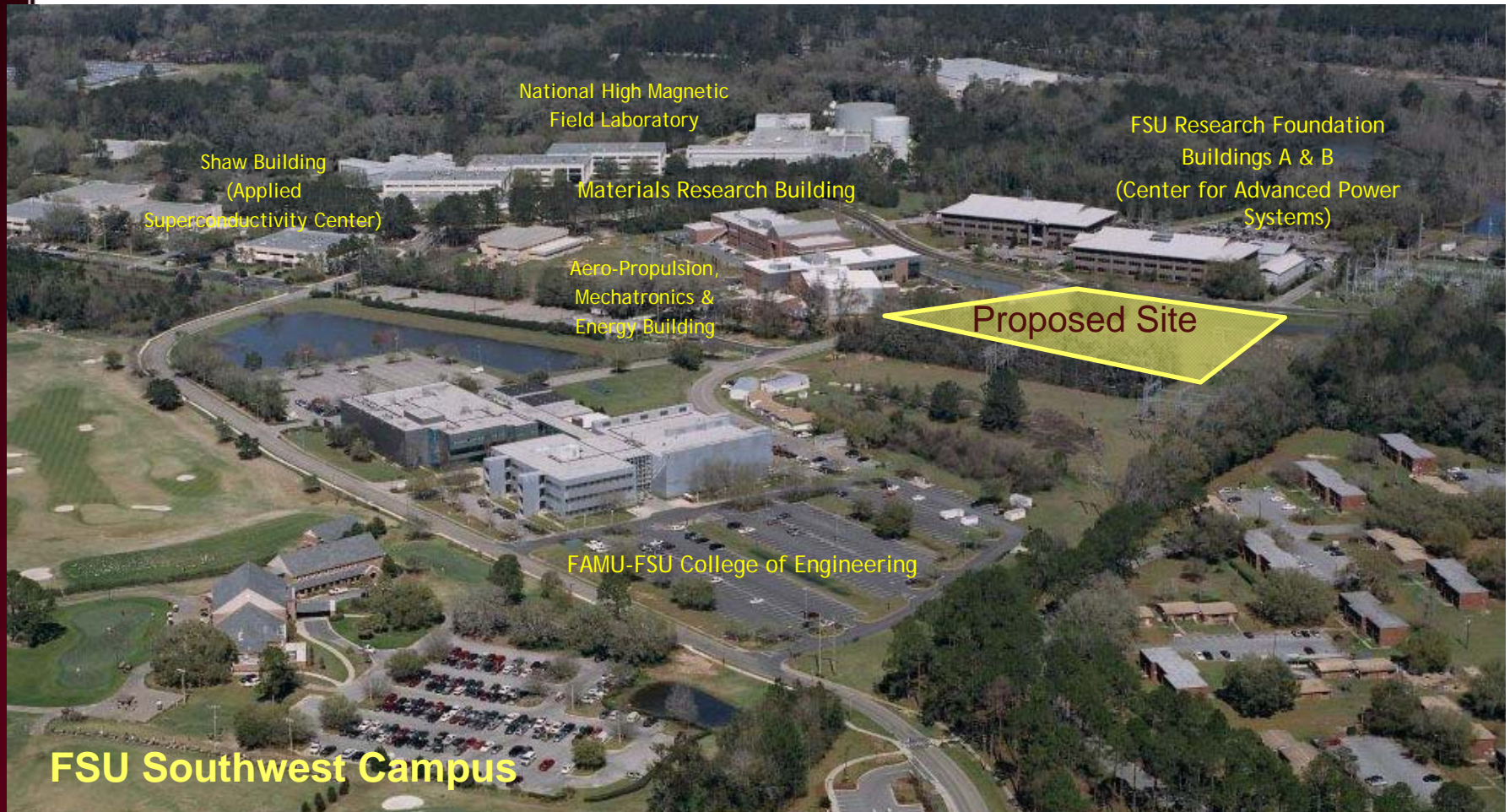


The picture is of one of our studio Physics teaching labs which illustrates a facility that accommodates a research-based pedagogy.



FSU - IRCB \$5 M

Interdisciplinary Research and Commercialization Building





FSU - IRCB \$5 M

DEMAND METRICS

The solutions to complex scientific and technical problems require expertise and tools from a variety of disciplines.

- Disciplinary boundaries are becoming very blurry.
- Interdisciplinary collaborations are very common and, in fact, Federal funding agencies strongly encourage and support such efforts.
- Students are very interested in solving complex, real world problems.
- Most science and engineering buildings are built for academic departments or centers/institutes. These buildings are typically “boutiqued” to meet the immediate needs of these units.
- Interdisciplinary research requires highly flexible space where collaborative groups from different units can coalesce.
- Space must be highly adaptable to accommodate the dynamic nature of the R&D world.



FSU - IRCB \$5 M

ROI

- Supports FSU's Path to the Top 25 Initiative by achieving significant growth in contract & grant activity, IP development and commercialization, and opportunities for research training of students
- Provides needed space for STEM hires in the physical sciences and engineering
 - a) Preeminence funding based Energy & Materials Strategic Faculty Hiring Initiative will be recruiting around 20 new faculty (11 distributed in Chemistry, Physics and Engineering hired thus far)
 - b) Significant new faculty hires in the physical sciences and engineering will take place to accommodate growth of STEM majors
- Provides needed space for shared core facilities (clean room [nanofabrication] and materials characterization and imaging)
- Provides needed space for interdisciplinary research labs (facilitating collaborations across departments and colleges)
- Provides a new model for research lab space that is open, flexible, and has the ability to grow and change over the anticipated lifespan of the building ("research condominium" model)
- Provides incubator space for commercialization of IP and to foster the development of start-up companies based University inventions and discoveries
- Leverages \$45 M investment by the FSU Research Foundation



FSU - IRCB \$5 M



- Provide state-of-the-art research space
- Provide tools and technology to support research
- Serve as a training ground for the next generation of researchers
- Leverages adjacencies of the NHMFL, Applied Superconductivity Center, High Performance Materials Institute and Center for Advanced Power Systems.





FSU - IRCB \$5 M

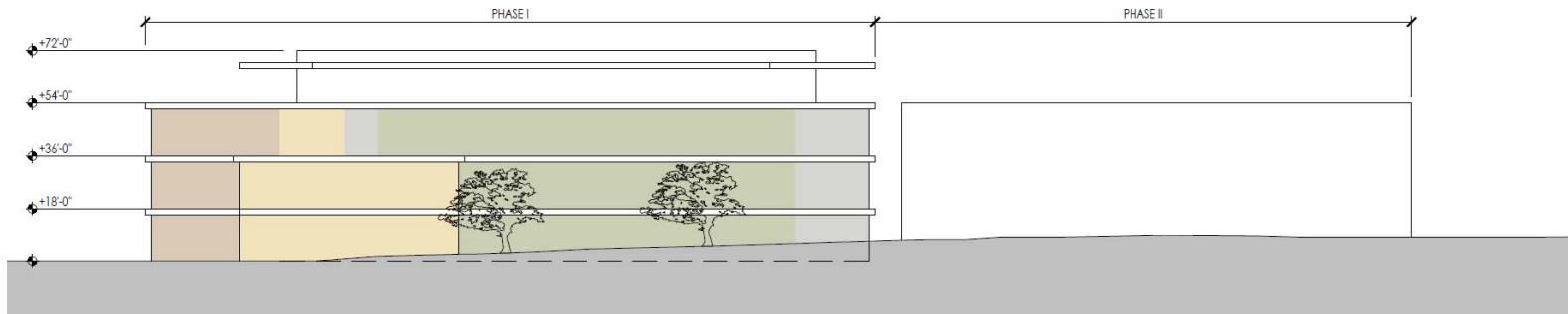


People accommodated:

- 24 groups (PIs)
- 26 post-doctoral fellows
- 120 graduate students
- undergraduate students
- 12 technical staff
- 6-12 support & other staff

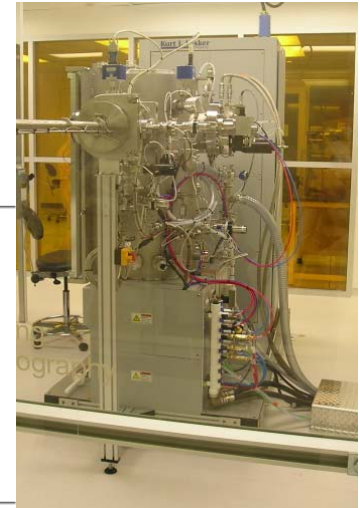
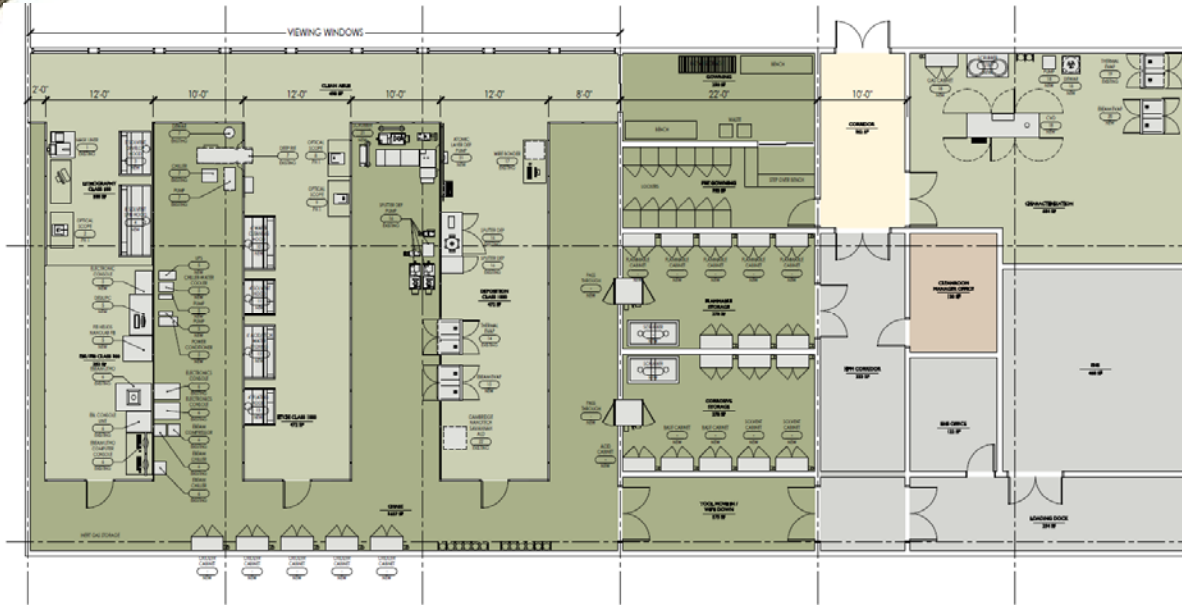
Research space provided:

- 12 wet lab modules
- 24 damp lab modules
- 12 dry lab modules
- 2 computational lab modules





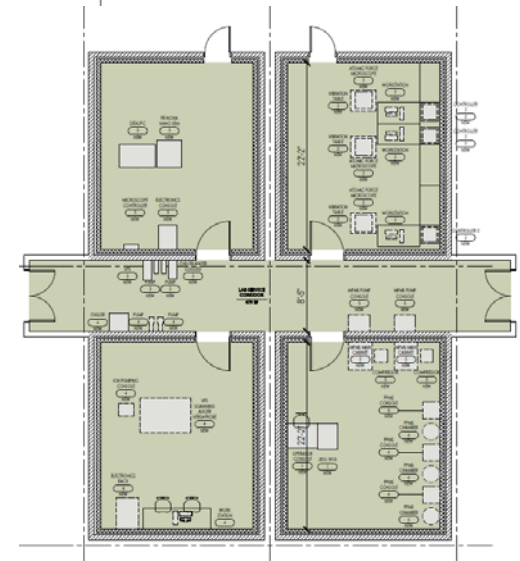
FSU - IRCB \$5 M



Clean room (nano-fabrication facility)

Imaging suite

Characterization suite





FSU - IRCB \$5 M

Total Project Budget:

\$85 M = \$40 M State + \$45 M FSU Research Foundation

Funding Request:

Total Project Request:	\$40 M
Request for 2015-2016	\$ 5 M (P)
Request for 2016-2017	\$30 M (C)
Request for 2017-2018	\$ 5 M (E)

Projected PO&M Costs: \$1,800,000

Projected Schedule:

Anticipated Construction Start Date: May 2016

Anticipated Construction Completion Date: May 2018

