

# SENATE STAFF ANALYSIS AND ECONOMIC IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

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Prepared By: Education Committee

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BILL: SB 1444

SPONSOR: Senators Klein and Bullard

SUBJECT: Centers of Excellence

DATE: April 19, 2005

REVISED: \_\_\_\_\_

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	<u>Matthews</u>	<u>O'Farrell</u>	<u>ED</u>	<b>Favorable</b>
2.	<u>Gordon</u>	<u>Cooper</u>	<u>CM</u>	<b>Favorable</b>
3.	_____	_____	<u>GO</u>	_____
4.	_____	_____	<u>EA</u>	_____
5.	_____	_____	<u>WM</u>	_____
6.	_____	_____	_____	_____

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## I. Summary:

This bill provides authority, procedures, and funding for the establishment of additional centers of excellence or the expansion of existing centers designated through a similar process completed in 2003.

In particular, the bill calls for the Florida Research Consortium, Inc., to review and revise, if necessary, the factors it previously identified as contributing to the success of a center of excellence. In turn, the Emerging Technology Commission is required to approve evaluation criteria, review university proposals, and submit a recommended plan to the Board of Governors for establishing or expanding one or more centers of excellence. The Board of Governors must develop and approve a final plan along with authorizing expenditures for implementing the plan. Each new or expansion of an existing center of excellence that is approved must receive at least \$10 million. The final plan must be submitted to the Governor and the Legislature and must contain performance and accountability measures to assess plan implementation and each center's progress.

The bill appropriates \$50 million from the General Revenue Fund to the Department of Education for fiscal year 2005-2006 for the establishment or expansion of centers of excellence.

The bill appropriates \$50,000 from the General Revenue Fund to the Executive Officer of the Governor to provide staff and administrative support to the Emerging Technology Commission and to compensate commission members and staff for per diem and travel expenses.

The bill provides for nine appointed members and three ex officio members for the Emerging Technology Commission. In addition, the appointed members may only serve for 4 years.

This bill creates s. 1004.226, F.S.

## II. Present Situation:

### *Florida Technology Development Act*

In 2002, the Legislature enacted the Florida Technology Development Act (act), s. 1004.225, F.S., which was designed to help foster technology transfer, a complex commercialization process through which an entity that develops a new technology, but does not have the means or desire to bring it to market, transfers the new technology to another entity that does. The act facilitated the technology transfer process by establishing authority and procedures for the designation and creation of centers of excellence, for which the Legislature appropriated \$30 million for fiscal year 2002-2003. In March 2003, three centers of excellence were designated: Florida Atlantic University's proposal for a Center of Excellence for Biomedical and Marine Biotechnology at \$10 million; the University of Central Florida's proposal for a Photonics Center of Excellence at \$10 million; and the University of Florida's proposal for a Center of Excellence in Regenerative Health Biotechnology at \$10 million.

### *Centers of Excellence*

As defined in the Florida Technology Development Act (act), a center of excellence is an organization of personnel, facilities, and equipment established at or in collaboration with one or more universities in the state which:

- Facilitates the identification of collaborative research opportunities between universities and businesses;
- Facilitates the acquisition of public and private funding for collaborative research opportunities and maximizes the leveraging of such funds;
- Creates partnerships between industrial and governmental entities to advance knowledge and research and to move technologies from academic laboratories and research centers to commercial sectors;
- Stimulates and supports new venture creation through partnerships with venture capital firms and other business, governmental, and educational entities;
- Assists in the enhancement of advanced academic curricula through improved communication between academia and businesses;
- Increases the number of graduates and faculty researchers in advanced technology programs while ensuring that a larger percentage of these graduates pursue careers in Florida industries;
- Recruits and retains eminent scholars in advanced technology disciplines; and
- Provides capital facilities necessary to support research and development.<sup>1</sup>

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<sup>1</sup> Section 1004.225(2), F.S.

*Emerging Technology Commission*

Under the act, the Emerging Technology Commission (commission) was created within the Executive Office of the Governor and given principal responsibility for the designation of the centers of excellence. The commission consists of:

- Nine regular members who must be recognized business leaders, industrial researchers, academic researchers, scientists, or engineers. The regular members include four members and the chair appointed by the Governor; two members appointed by the President of the Senate; and two members appointed by the Speaker of the House of Representatives;
- The Commissioner of Education as an ex officio nonvoting member; and
- The state senator and state representative who serve as members of the Florida Research Consortium, Inc.,<sup>2</sup> as ex officio nonvoting members.

Commission members serve without compensation but are entitled to receive certain per diem and travel expenses while performing their duties. The statute does not prescribe terms for the members of the commission or provide for the filling of vacancies on the commission. The Executive Office of the Governor provides staff support for the commission and per diem and travel expenses for commission members.

*Evaluation Criteria*

The act directed the Florida Research Consortium, Inc., to provide a report to the Emerging Technology Commission, which described and prioritized factors that contribute to the success of the creation of centers of excellence. At a minimum, the factors had to include:

- The maturity of existing university programs relating to a proposed center of excellence;
- The existing amount of university resources dedicated to activities relating to a proposed center of excellence;
- The comprehensiveness and effectiveness of site plans relating to a proposed center of excellence;
- The regional economic structure and climate;
- The degree to which a university that proposes to house a center of excellence identifies and seizes opportunities to collaborate with other public or private entities for research purposes;
- The presence of a comprehensive performance and accountability measurement system;
- The use of an integrated research and development strategy using multiple levels of the educational system;
- The ability of a university that proposes to house a center of excellence to raise research funds and leverage public and private investment dollars to support advanced and emerging technological research and development projects;

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<sup>2</sup> The Florida Research Consortium, Inc., is a private, not-for-profit advisory board to ITFlorida.com, Inc. It is composed of volunteer university heads and industry leaders whose goal is to establish progressive research programs at Florida's universities. (See [http://www.itflorida.com/tech/consort\\_about.asp](http://www.itflorida.com/tech/consort_about.asp).)

- The degree to which a university that proposes to house a center of excellence transfers advanced and emerging technologies from its laboratories to the commercial sector;
- The degree to which a university that proposes to house a center of excellence stimulates and supports new venture creation;
- The existence of a plan to enhance academic curricula by improving communication between academia and industry;
- The existence of a plan to increase the number, quality, and retention rate of faculty, graduate students, and eminent scholars in advanced and emerging technology-based disciplines;
- The existence of a plan to increase the likelihood of faculty, graduate students, and eminent scholars pursuing private-sector careers in the state; and
- The ability to provide capital facilities necessary to support research and development.<sup>3</sup>

The Florida Research Consortium, Inc., issued a report to the Emerging Technology Commission outlining the following factors contributing to the success of a center of excellence (in order of priority):

- Clear and integrated vision to develop commercially promising, advanced, and innovative technologies and to transfer those technologies to the commercial sector;
- National and prominent technology-centric research focus;
- Positive economic impact on the state and the nation;
- Ability to acquire and leverage public and private-sector resources to support the operations and research of the center, including funding, personnel, facilities, and equipment;
- Promotes collaboration among university scholars, research center scientists, and engineers, public schools, and private businesses; and
- Fosters the development of a highly skilled, high-wage workforce.

Following public hearings and consideration of the report of Florida Research Consortium, Inc., the Emerging Technology Commission developed criteria for evaluating university-submitted proposals for creating centers of excellence. The commission forwarded the criteria to the universities in the state and to the State Technology Office for publishing on the Internet. The commission directed the universities to submit their proposals in a specific format addressing each of the adopted criteria. The adopted criteria along with the weight of the criteria as part of a proposal were as follows:

- Vision for technology transfer – The proposal must demonstrate a clear and integrated vision to develop commercially promising, advanced, and innovative technologies and to transfer those technologies to the commercial sector (25 percent).
- Research Focus – The proposal must demonstrate national and prominent technology-centric research focus (25 percent).
- Economic Impact Potential – The proposal must demonstrate the potential for positive economic impact on the state and the nation (20 percent).

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<sup>3</sup> Section 1004.225(4), F.S.

- Leadership and Management – The proposal must clearly outline its leadership and management plan to assure success if the center is funded. The plan must show lines of authority and responsibility of the proposed center’s organization. The plan must also clearly identify a Program Manager who is the single point of contact for information regarding program management, execution, and reporting for the proposed center (10 percent).
- Leveraging Resources – The proposal must demonstrate the ability and plans to acquire and leverage public and private-sector resources to support the operations and research of the center, including funding, personnel, facilities, and equipment (10 percent).
- Center Collaboration with Other Entities – The proposal must demonstrate how the center promotes collaboration among university scholars, research center scientists and engineers, public schools, and private businesses (5 percent).
- Workforce Development – The proposal must clearly describe how the center of excellence will foster the development of a highly skilled, high-wage workforce (5 percent).

#### *Review of Proposals and Designation of Centers*

The Emerging Technology Commission received 16 proposals for a center of excellence from the following universities:

- Florida Atlantic University’s Proposal for a Center for Intermodal Transportation, Safety and Security.
- Florida Gulf Coast University’s Proposal for a Florida Gulf Coast University Triad.
- Florida International University’s Proposal for a Florida Information Security Center.
- The University of Central Florida’s Proposal for a Modeling and Simulation Center of Excellence.
- The University of North Florida’s Proposal for a Center for Innovation in Information Technology.
- Florida Agricultural and Mechanical University’s Proposal for a Center of Excellence for Atomic, Molecular, and Plasma Physics.
- The Florida Space Research Institute’s Proposal for a Center for Spaceport Technology, Biotechnology, Remote Sensing, and Telecommunications.
- The Florida Solar Energy Center’s Proposal for a Center of Excellence for Hydrogen Research.
- Florida State University’s Proposal for Securing Florida and the Nation’s Electrical Energy Systems.
- The University of Central Florida’s Proposal for a Florida Photonics Center of Excellence.
- Florida Atlantic University’s Proposal for a Center for Biomedical and Marine Biotechnology.
- Florida State University’s Proposal for the Bio-Nanotechnology Nexus.
- The University of Florida’s Proposal for a Center of Excellence in Regenerative Health and Biotechnology.
- The University of Florida’s Proposal for a NanoBio Science and Engineering Center of Excellence.

- The University of Miami's Proposal for a Center for Biotechnology Development in Cellular Therapies, Tissue Engineering, and Reparative Medicine.
- The University of South Florida's Proposal for a Center of Excellence in Bioengineering and Life Science.

Following three public hearings with access to public policy and technology experts, the Emerging Technology Commission recommended the following centers of excellence to the State Board of Education along with its rationale:

- *Florida Atlantic University's proposal for a Center of Excellence for Biomedical and Marine Biotechnology* at \$10 million. This center would focus on the discovery and development of compounds and medicines capable of treating various diseases including cancer, cardiovascular disease, and arthritis. Collaborative efforts with industry and other universities would be used in a long-term commercialization strategy, and the center would house faculty capable of attracting research funds at levels necessary for continued research.
- *The University of Central Florida's proposal for a Photonics Center of Excellence* at \$10 million. This center would build upon efforts already under way at the university to make Florida the world leader in optics, lasers, and photonics research and education. The center would also expand its research into the areas of nanophotonics and biophotonics. The center would work closely with existing industry, the High Tech Corridor Council, and the University of Central Florida Technology Incubator to commercialize new applications.
- *The University of Florida's proposal for a Center of Excellence in Regenerative Health Biotechnology* at \$10 million. The center would house two facilities for microbial fermentation and vector production. Both facilities would be used for developing probiotics and gene therapies for treating cancer and genetic diseases. It would also provide technological advances in gene therapy and adult stem cell transplantation. The very nature of the research and production being performed at the center would have immediate and long-term economic impact and would serve as a magnet for future state and federal funds.

On March 18, 2003, the State Board of Education accepted the recommendations of the Emerging Technology Commission for the creation of the centers of excellence.<sup>4</sup>

#### *Performance and Accountability Measures*

As part of its approval of a plan for the centers of excellence, the State Board of Education adopted the Emerging Technology Commission's recommendations with respect to performance and accountability measures. The commission's recommendations are based on general measurement standards and site specific assessments to measure progress and success. The accountability measures are as follows:

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<sup>4</sup> In the fiscal year 2002-2003 General Appropriations Act, the Legislature made release of the funds contingent upon approval of an expenditure plan by the Legislative Budget Commission. See proviso accompanying line item 173A, s. 2, ch. 2002-394, L.O.F.

### General Measurement Standards

- Full financial disclosure of expenditures related to the cost proposal of the center.
- Report on the effectiveness and success of the research being performed within the center.
- Report on the state of research collaboration with other universities or research entities as well as private industry.
- Report generally on the state of personnel additions relative to the center and the core research being performed therein.
- Report on the integration of the mission of the center with all levels of the K-20 education system.
- Report on the number of industry internships granted to graduate and post-doctorate students as a result of interaction with the center.
- Report on the overall economic impact of the center's existence, including number of inventions, number of patents, number of licensed technologies, and amount of revenue generated from royalties and licenses.
- Report on the development of start-up businesses as a result of technology research being performed in the center.
- Report on the impact of the center's relationship with out-of-state businesses.
- Report on the leveraging of financial resources, including the obtaining of public and private matching funds as well as direct federal grants or contracts.
- Report on any interest of direct collaboration with Venture Capital entities.

### Florida Atlantic University Center of Excellence Specific Standards

- Report on the status of the construction of a core facility for research.
- Report on the establishment of an analytical lab at Harbor Branch.
- Report on the status and effectiveness of the graduate student and post-doctorate workforce training programs.
- Report on the status and effectiveness of the seminar programs.
- Report on the use of submersibles and other ocean exploration equipment.
- Report on the status of the Marine Biotechnology Executive Education program.

### University of Central Florida Specific Standards

- Report on the development of a state of the art nano-fabrication facility for greater photonics and optics research.
- Report on improvements in a more high quality graduate education in optical science and engineering.
- Report on the enhancement of optics education at all levels including the 2+2 Community College partnership.
- Report on making the center's research topics part of existing courses in photonics and optics.
- Report on the status of the effort to win a National Science Foundation Engineering Research Center in association with the center.

- Report on the number of publications of scientific research results.

#### University of Florida Specific Standards

- Report on the status of the purchase of the buildings to house the center.
- Report on the status of the construction of the Vector Production facility, the microbial fermentation facility, and the cell culture facility.
- Report on the status of the joint program with Santa Fe Community College related to the Biotech training program, the High-Tech training program, and the Regulatory Affairs training program.
- Report on the status of the joint program with the Florida Community College in Jacksonville in a course study in bioinformatics.
- Report on the status of the development of an IDP track in biotechnology in the university's College of Medicine.
- Report on whether new companies have begun to initiate plans to move into the new center.

The Emerging Technology Commission is directed to report quarterly to the Commissioner of Education on the progress of the implementation of the final plan and the success of the centers of excellence established under that plan.

#### *Expiration of the Act*

The Florida Technology Development Act, under s. 1004.225(10), F.S., expired on July 1, 2004. Senate Bill 1338 (2005), a reviser's bill, repeals s. 1004.225, F.S., and has passed both chambers of the Legislature.

### **III. Effect of Proposed Changes:**

#### *Centers of Excellence*

The bill defines a center of excellence as an organization of personnel, facilities, and equipment established at or in collaboration with one or more universities in the state that:

- Identifies and pursues opportunities for university scholars, research center scientists and engineers, and private businesses to form collaborative partnerships to foster and promote the research required to develop commercially promising, advanced, and innovative technologies and to transfer those technologies to commercial sectors;
- Acquires and leverages public and private sector funding to provide the totality of funds, personnel, facilities, equipment, and other resources needed to support the research required to develop commercially promising, advanced, and innovative technologies and to transfer those technologies to commercial sectors;
- Recruits and retains world class scholars, high-performing students, and leading scientists and engineers in technology disciplines to engage in research in this state to develop commercially promising, advanced, and innovative technologies;



- Enhances and expands technology curricula and laboratory resources at universities and research centers in this state;
- Increases the number of high-performing students in technology disciplines who graduate from universities in this state and pursue careers in this state; and
- Stimulates and supports the inception, growth, and diversification of technology-based businesses and ventures in Florida and increases employment opportunities for the workforce needed to support such businesses.

#### *Emerging Technology Commission*

The bill establishes the Emerging Technology Commission within the Executive Office of the Governor. The commission consists of:

- Nine regular members who must be recognized as leaders in the state's emerging and advanced technology sectors and who are business leaders, industrial researchers, academic researchers, scientists, or engineers. The regular members include five members appointed by the Governor, one of whom shall serve as chair of the commission; two members appointed by the President of the Senate; and two members appointed by the Speaker of the House of Representatives;
- The Chancellor of the Division of Colleges and Universities as an ex officio nonvoting member; and
- The state senator and state representative who serve as members of the Florida Research Consortium, Inc.,<sup>5</sup> as ex officio nonvoting members.

A regular member of the commission may not serve for more than 4 years. Any vacancy that occurs during the term of a regular member of the commission shall be filled in the same manner as the original appointment.

Commission members serve without compensation but are entitled to receive certain per diem and travel expenses while performing their duties. The Executive Office of the Governor provides staff support for the commission and per diem and travel expenses for commission members.

#### *Florida Research Consortium, Inc.*

The bill directs the Florida Research Consortium, Inc., to review and revise, as necessary, the factors contributing to the success of a center for excellence. By August 1, 2005, the consortium must submit a revised report to the Emerging Technology Commission.

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<sup>5</sup> The Florida Research Consortium, Inc., is a private, not-for-profit advisory board to ITFlorida.com, Inc. It is composed of volunteer university heads and industry leaders whose goal is to establish progressive research programs at Florida's universities. (See [http://www.itflorida.com/tech/consort\\_about.asp](http://www.itflorida.com/tech/consort_about.asp).)

*Timetable for submission of new or expansion of centers of excellence*

Emerging Technology Commission

The Emerging Technology Commission is required to do the following:

- By September 1, 2005, develop and approve criteria for evaluating proposals for centers of excellence including new or expanding existing centers. The commission must consider the criteria developed under former s. 1004.225, F.S., and the revised report submitted by the Florida Research Consortium, Inc. The commission must hold at least one public hearing.
- By September 15, 2005, provide a list of the approved criteria to each university in the state and to the State Technology Office for publishing on the Internet within 24 hours after the office's receipt of the list. Concurrently, the commission must notify each university in the state, in writing, of the opportunity to submit to the commission a written proposal for a new or expansion of an existing center. A university that is the site of a center may submit a proposal for a new or an expansion of an existing center.
- By January 1, 2006, submit to the Board of Governors a recommended plan for establishing or expanding one or more centers of excellence. The recommended plan must address the commission's criteria and the manner in which the funds would be used. The commission must hold at least two public hearings at which they must consider timely university proposals for centers of excellence.
- Beginning July 1, 2006, report semiannually, in writing, to the Commissioner of Education on the progress in implementing the final plan adopted by the Board of Governors and the success of each center of excellence.

Universities

Universities are required to do the following:

- By November 1, 2005, submit a proposal to the commission that specifically addresses the commission's criteria and indicates the manner in which the funds would be used to establish or expand a center of excellence.

Board of Governors

The Board of Governors is required to do the following:

- By February 15, 2006, develop and approve a final plan for establishing or expanding one or more centers of excellence, and authorize expenditures for implementing the plan. The final plan must allocate at least \$10 million to each center of excellence established or expanded under the plan. The final plan must include performance and accountability measures to measure center performance.
- By March 1, 2006, provide a copy of the final plan to the Governor, the President of the Senate, and the Speaker of the House of Representatives.

*Effective date*

The bill takes effect July 1, 2005.

**IV. Constitutional Issues:****A. Municipality/County Mandates Restrictions:**

None.

**B. Public Records/Open Meetings Issues:**

None.

**C. Trust Funds Restrictions:**

None.

**V. Economic Impact and Fiscal Note:****A. Tax/Fee Issues:**

None.

**B. Private Sector Impact:**

If the centers of excellence approved under this bill increase the amount of technology transfer occurring in the state, businesses and individuals could benefit in an indeterminate amount. As the current three centers of excellence were approved in March 2003, and research is a methodical endeavor, it is too early to determine what impact the centers are having on technology transfer.

**C. Government Sector Impact:**

The bill appropriates \$50 million from the General Revenue Fund to the Department of Education for fiscal year 2005-2006 for the establishment or expansion of centers of excellence.

The bill appropriates \$50,000 from the General Revenue Fund to the Executive Officer of the Governor to provide staff and administrative support to the Emerging Technology Commission and to compensate commission members and staff for per diem and travel expenses.

Technology transfer and licensing may provide a source of revenue for universities.

**VI. Technical Deficiencies:**

None.

**VII. Related Issues:**

The bill requires the Emerging Technology Commission to report to the Commissioner of Education on the progress in implementing the final plan approved by the Board of Governors. Although the Commissioner of Education serves on the Board of Governors, the Commissioner is the executive officer of the State Board of Education and not the Board of Governors. Accordingly, it may be more appropriate to require the Commission to report to the Board of Governors on the implementation of the final plan.

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This Senate staff analysis does not reflect the intent or official position of the bill's sponsor or the Florida Senate.

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## **VIII. Summary of Amendments:**

None.

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