FLORIDA 21st CENTURY TECHNOLOGY, RESEARCH AND SCHOLARSHIP ENHANCEMENT ACT

CENTERS OF EXCELLENCE

ANNUAL REPORT

December 2007

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I. Introduction

The Florida Legislature, in 2001, established the Florida Emerging Technologies Commission and began to focus its attention on the value of the State University System to the state's economy and on the critical role of the state universities in research discovery, business innovation, and job development. The 2002 Legislature appropriated $30 million to establish centers of excellence in the State and the Emerging Technology Commission recommended funding at $10 million each for three centers: the Center of Excellence in Biomedical and Marine Biotechnology at Florida Atlantic University, the Florida Photonics Center of Excellence at the University of Central Florida, and the Center of Excellence in Regenerative Health Biotechnology at the University of Florida.

II. 2006 Legislation and Awards

The 2006 Florida Legislature passed House Bill 1237 which created the 21st Century Technology, Research, and Scholarship Enhancement Act. This legislation was designed to provide Florida with a clear position of leadership in key emerging technology areas through the development of centers of excellence. The Legislature established the Florida Technology, Research, and Scholarship Board, and appropriated funds to the Board of Governors for the creation of new centers of excellence in the State.

The Act created three primary programs: the 21st Century Centers of Excellence Program, the 21st Century World Class Scholars Program, and the State University System Research and Economic Development Investment Program. The legislation identified the following stated purposes of these programs:

- Investing in programs that attract world class scholars and building centers of excellence as an important means of increasing technology-based business in this state;
- Requiring co-investment as a means of leveraging state dollars;
- Aligning research and development efforts with established, statewide economic-development strategies, including an emphasis on identified economic clusters;
- Facilitating value-added job creation through continuous improvement in university research, as well as entrepreneurship and capital-development programs; and
- Establishing Florida as a leading state for entrepreneurship and innovation, with continued commitment to university centers of excellence and an expanding base of research and development.

To direct the implementation of the legislation, the Florida Technology, Research,

and Scholarship Board was established. The board consists of 11 members: five members appointed by the Governor, three members by the President of the Senate, and three members by the Speaker of the House of Representatives. The Board was charged with recommending criteria to the Board of Governors for the 21st Century World Class Scholars Program and with providing guidance to the Board of Governors regarding the selection, implementation, and administration of the Centers of Excellence Program.

The 21st Century World Class Scholars program, which provided matching funds to state universities, was created in order to attract nationally-recognized faculty in the areas of science, technology, engineering, and mathematics (STEM). For the 2006-07 fiscal year, the Legislature appropriated $20 million for this program. The Board of Governors approved the awarding of the $20 million appropriation to five state universities to recruit and employ 16 world class scholars for the State University System.

For the 2006-07 fiscal year, the Legislature appropriated $30 million for the establishment of centers of excellence The Florida Technology, Research, and Scholarship Board recommended to the Board of Governors the establishment of six centers of excellence in the state and the distribution of the $30 million appropriation as follows.

- Florida Center for Excellence in Biomolecular Identification & Targeted Therapeutics – University of South Florida - $ 8,000,000
- Center of Excellence in Ocean Energy Technology – Florida Atlantic University - $ 5,000,000
- Florida Institute for Sustainable Energy, Energy Technology Incubator – University of Florida - $ 4,500,000
- Florida Photonics Center of Excellence, Laser Technology Initiative – University of Central Florida - $ 4,500,000
- Center for Nano-Bio Sensors - University of Florida - $ 4,000,000
- Center of Excellence in Advanced Materials – Florida State University – $ 4,000,000

For a State University System Research and Economic Development Investment Program, $45 million in matching funds was provided to construct and acquire cutting-edge, state-of-the-art, science and engineering research facilities and specialized equipment to support research programs, foster economic development, and accelerate Florida's innovation economy. Under this program, the Board of Governors approved the distribution of $23.25 million of the level I funding to the University of Florida and $13.25 million to Florida State University, and $8.5 million of level II funding was approved for the University of South Florida.

III. 2007 Legislation and Appropriations

The 2007 Legislature appropriated $100 million for the continuation of the centers of excellence program and the establishment of new centers in the State. As a part of budget reductions to the state budget, the Legislature, in special session, reduced the appropriation to $92.5 million. The Board of Governors and the Florida Technology, Research, and Scholarship Board have made revisions to the competitive process and will make awards for new centers of excellence during Spring 2008.

The 2007 Legislature amended Section 1004.226, the 21st Century Technology, Research, and Scholarship Act and established a Research Commercialization Assistance Grant Program to provide for early stage capital funding for the purpose of developing products and services that result from university research. The grants will be used by state universities for a variety of pre-marketing activities including, but not limited to, securing patents, establishing startup companies, developing license agreements, attracting private investment, and supporting other activities that are necessary to establish commercially viable ventures for the marketing and sale of products resulting from university research.

The 2007 Legislature appropriated $4 million to fund new commercialization assistance grants in the State University System. As a part of budget reductions to the state budget, the Legislature, in special session, reduced the appropriation to $2 million. The Florida Technology, Research, and Scholarship Board will be awarding commercialization assistance grants in three phases during early 2008.

The World Class Scholars Program and the SUS Research and Economic Development Investment Program were not funded by the 2007 Legislature.

IV. Accountability Measures Reporting

The 2006 legislation makes the following charge with respect to an annual report of 21st Century Technology, Research, and Scholarship Enhancement Act:

> *"The board, in cooperation with the Board of Governors of the State University System and the state universities or research centers receiving investments under this act, shall issue an annual report by December 31 each year of the activities conducted, including the accomplishments and overall economic benefits to the state, the number of 21st Century World Class Scholars attracted, the number of*

Centers of Excellence created or expanded, the success of collaborations with related industries, and the success of these programs. The annual report shall be presented to the Governor, the President of the Senate, and the Speaker of the House of Representatives…… "

During 2006, the Board of Governors requested and received an update of progress in the establishment of the three 2002 centers: the Center of Excellence in Biomedical and Marine Biotechnology at Florida Atlantic University, the Florida Photonics Center of Excellence at the University of Central Florida, and the Center of Excellence in Regenerative Health Biotechnology at the University of Florida. Data was compiled and updated during early 2007 for the three centers and a 2006 Annual Report was approved by the Board of Governors at its March 29, 2007 meeting.

The State University System Vice Presidents for Research participated in the revision of the set of accountability measures for the 2007 annual report during Spring 2007. The current data request for the 2007 report identified measures for the current year, which is the initial or "start-up" year for the six centers that were established in 2006. Accordingly, as these centers have been in operation for a short period, they are not able to report significant progress at this point on a number of the measures.

A compilation of the reports from the nine existing centers of excellence appears below.

CENTERS OF EXCELLENCE
2007 Accountability Measures
Summary Chart *

Research Effectiveness	**TOTALS**
1. Competitive Grants Applied For and Received	Received: 222 ($80,687,669)
2. Total Research Expenditures	$43,835,770

3. Publications in Refereed Journals From Center Research		246
4. Professional Presentations Made on Center Research		173
5. Invention Disclosures Filed and Issued	36 filed	1 Issued
6. Technologies Licensed and Revenues Received		3
Collaboration Effectiveness		
7. Collaborations with Other Postsecondary Institutions		85
8. Collaborations with K-12 Education Systems/Schools		47
9. Collaborations with Private Industry		186
10. Students Supported with Center Funds		341
11. Students Graduated		18 PhD. 13 MS.
12. Job Placements of Graduates Upon Leaving the Center		23+
Economic Development Effectiveness		
13. Business Start-Ups in Florida		13
14. Jobs Created and Jobs Saved in Florida		194
15. Specialized Industry Training and Education		16
16.Dollars Acquired from Venture Capitalists and Other Investments		$21,890,000

* Due to the short "start-up" period following the establishment of the 2006 Centers, these Centers reported data on a number of measures (grants, expenditures, etc) that represent research activity by all faculty associated with the Center, and not solely Center activity.

Individual responses from each of the centers on the accountability measures are displayed in the chart on the next two pages. Each center's annual report appears individually in the appendices of this report. The reports submitted by the Centers provide specific responses and expansive details for most measures.

CENTERS OF EXCELLENCE 2007 Accountability Measures Individual Responses *									
Accountability Measure	**FAU-BMB**	**UCF-FPCE**	**UF-RHB**	**FAU-OET**	**FSU-AM**	**UCF-LTI**	**UF-ETI**	**UF NBS**	**USF-BITT**
Competitive Grants Applied for and Received *	Received: 2: Amer. Cancer Society & SCORE	Received 34: ($4,225,903)	Received 7: ($4,419,554)	n/a	Received 13: ($2,512,756)	Received 24: ($3,106,202)	Received 54: ($40.3 mill.)	Received 7: ($3.4 mill.)	Received: 81 ($22,723,254)
Total Research Expenditures*	Leveraged funding	$9,019,486	$3,749,948	$1,163,398	$1,905,924	$4,070,060	$9,600,000	$842,200	$13,484,754
Publications in Refereed Journals	15 (FAU) 10 (HBOI)	18	42	n/a	15	18	105	11	12
Professional Presentations	0	9	23	8	15	26	31	23	38
Invention Disclosures Filed and Issued	1: Psuedopterosin	3 filed	n/a	1 filed [hydrogen generation]	1 filed [fabrication]	10 filed	6	8	7
Technologies Licensed & Revenues Received	1: Nautilus Biosciences	0	n/a	n/a	0	0	1: Verenium $60,000	1: HEMT Technologies	0
Collaborations with Other Postsecondary Institutions	4: initial partners, FIU, NSU	29	15	4: UCF, NSU, Va. Tech., Broward CC	3: Brevard CC, Manatee Tech. Tallahassee CC	17	9	4: Santa Fe CC, Fl. High Tech C. Sandia Natl Labs. NIMET	0
Collaborations with K-12 Education Systems/Schools	0	15	22	n/a	3: Challenger LC, LSI, NHMFL Outreach.	3 - local HSs	n/a	4: local HSs	0
Collaborations with Private Industry	1: AkronBiotech	50 +	48	3: Oceaneering, Ocean Renewable Power Co., Aquantis	45 companies and agencies.	11	21	3: Nitronex, VaxDesign, others	4: Nanopharma Technologies, RMR Tech., Biovest Intl., Romark Labs.
Students Supported with Center Funds	0	0	92	3 BS, 3 MS, 1 PhD	45.7 hdct. 22.83 FTE	39	12 - BS, 101-Graduate, 17- Postdoc.	6 - BS, 7-Graduate, 5- Postdoc.	9 - Graduate

Accountability Measure	FAU-BMB	UCF-FPCE	UF-RHB	FAU-OET	FSU-AM	UCF-LTI	UF-ETI	UF NBS	USF-BITT
Students Graduated	2 PhD	4 PhD; 3 MS	n/a	n/a	1 PhD; 4 MS	3 PhD; 6 MS	4 PhD	4 PhD	0
Job Placements of Graduates upon Leaving the Center	Adjunct faculty	7: Raydiance, Coastal Optical, Siemens;others	3: Exatech, Florida Biologix, FDA	1: FP & L	2 - Harris Co., 1-Industry Tech. & Research Inst.	2: IBM, Siemens	3: USDE, Postdocs.	4: UF (3), DHS	0
Business Start-ups in Florida	1 - Gamut, LLC	5: FemtOptics, Optigrate, CoSci Tech., Light Processing Tech, Raydiance	1 - AGTC	n/a	0	2: Optigrate, LP Photonics, LLC.	2: Verenium, BioEnergy.	2: Banyan Biomarkers, Inc. Xhale Diagnostics, Inc	0
Jobs Created and Saved in Florida	0	60+	101: CERHB(40), DCMT(28) AGTC(19), Vector Co.(10) ICBR(4)	6: ocean engineering (4), project dev. (2)	0	5 - Optigrate	16 - at Verenium, BioEnergy	6: UF(3), Banyan Biomarkers.(2) NanoMedex, Inc.	0
Specialized Industry Training and Education	2 core facilities: nucleic acid core, proteomic core	2: Northrop Grumman Laser Systems, Valencia CC	7: CERHB, Santa Fe CC, high schools	n/a	Contracts with Brevard CC & Manatee Tech.	in preparation	n/a	3 - active collaboration	0
Dollars from Venture Capitalists and other Investments	0	$15 million - Raydiance	n/a	n/a	0	n/a	$890,000 - Emissions & Power Solutions	$6,000,000 - Xhale Diagnostics	0

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