



STATE
UNIVERSITY
SYSTEM
of FLORIDA
Board of Governors

A Brief Overview and Status Report on The 21st Century Enhancement Act Programs

April 2010
[Revised in July 2010]

Introduction

At the outset of the 21st Century, Florida legislators and educators began to focus their attention on the importance of the State University System to the state's economy and on the critical role of state universities in research discovery, business innovation, and job development. This interest resulted in the creation of an Emerging Technologies Commission in 2001 and, in 2002, a legislative appropriation of \$30 million to establish Centers of Excellence as the first of three programs that, by their complete implementation in 2007, would be called the "21st Century Enhancement Act Programs." The last two of the three programs were implemented in 2006. These were the 21st Century Scholars Program, an incentive program to recruit, hire, and retain world-class scholars in science, technology, engineering, and mathematics; and the State University Research Commercialization Assistance Grant Program, a matching program to promote the movement of discoveries from university workbenches and laboratories to the marketplace.

These programs, especially the Centers of Excellence Program, have been reported on multiple times, either in earlier, discrete 21st Century Enhancement Programs annual reports or, more recently, as part of the larger State University System annual reporting structure. This document is designed to provide the briefest of overviews as to the breadth of the programs, as well as indications and examples of their multiple successes in assisting in the development of strong research and commercialization components in the State University System. Related institutional information from the State University System 2009 Annual Report has been included in the appendices.



21st Century Scholars Program

The 21st Century Scholars Program resulted in the recruitment, hiring, or retaining of 17 world-renowned scholars in the areas of science, technology, engineering, and mathematics at five State University System institutions. This one-time funding has not been repeated; it is, therefore, difficult to characterize this activity as an ongoing program except in the sense that these 17 faculty members continue to be employed in the State University System and are actively engaged in cutting-edge research areas which result in the awarding of competitive grants, publications, and prestige accrued to their institutions. The funds for the program, all of which were non-recurring, have been distributed and accounted for by the Board of Governors Office of Budgeting and Fiscal Policy. Future State University System annual reports may update the activities of the individual scholars.



Centers of Excellence Program

In 2002, the Florida Legislature appropriated \$30 million to establish Centers of Excellence, and the Emerging Technology Commission recommended funding three Centers at \$10 million each: 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. In 2006, House Bill 1237 created the 21st Century Technology, Research, and Scholarship Enhancement Act. This legislation built on the 2001 legislation by discontinuing the Emerging Technology Commission in favor of a Florida Technology, Research, and Scholarship Board to assist the Board of Governors in implementing the legislation, and by appropriating \$30 million for new Centers of Excellence. Ultimately, the Board of Governors authorized six Centers, bringing the total to nine. The six new Centers were:

- Florida Center for Excellence in Biomolecular Identification and 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

The 2007 Legislature appropriated \$100 million to establish additional Centers of Excellence. As a part of budget reductions to the state budget, the Legislature, in special session, reduced that appropriation to \$92.5 million, which was subsequently redirected in its entirety by the Legislature. Two of those same recommendations were then funded by the Legislature:

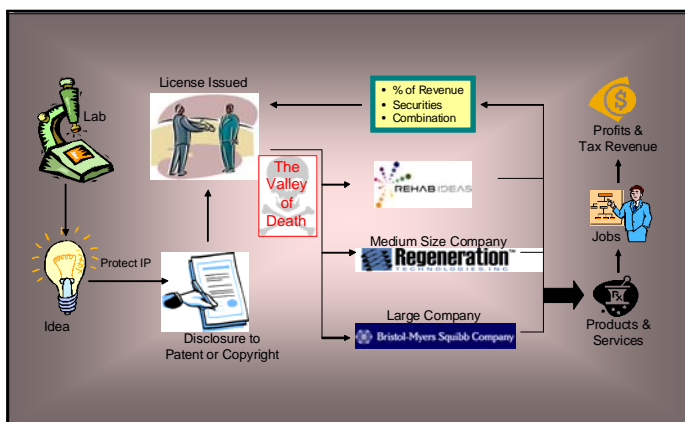
- Center of Excellence for Advanced Aero-Propulsion - Florida State University - \$14,570,225
- Center of Excellence for Hurricane Damage Mitigation and Product Development - Florida International University - \$10,006,955

Both of these Centers were officially authorized as State University System Centers of Excellence by the Board of Governors in 2008, bringing the number of Centers to eleven, where it stands today.

Detailed information on each of the 11 Centers of Excellence has been extracted from the 2009 State University System Annual Report and included in the appendices of this document. However, a brief overview of several of the Center of Excellence accountability measures makes it clear that, as a group, the Centers have produced a strong return on their initial investment.

Status: With one exception, all Centers of Excellence are still strongly moving ahead, and, given the youth of most of the Centers of Excellence, it is expected that their return on investment will increase further over time. Even so, the Centers of Excellence have resulted in the following kinds of production in the aggregate:

- \$265,000,000 in competitive grant dollars
- \$34,000,000 in venture capital secured
- 1,870 publications and presentations given to business, industry, government, and learned bodies
- 139 invention disclosures and 14 technologies licensed
- 963 students supported in some fashion, either by fellowship, stipend, or work-study support of a different form
- 273 students graduated from the disciplines directly specific to the Centers (and not counting graduates of ancillary disciplines)
- 76 graduate job placements prior to or at graduation
- 33 business start-ups in Florida
- More than 800 jobs created or saved in Florida as a result of the Centers' existence



State University Research Commercialization Assistance Grants

The 2007 Legislature amended the 21st Century Technology, Research, and Scholarship Act to establish a Research Commercialization Assistance Grant Program to provide for early-stage capital funding to develop products and services

that result from university research including, but not limited to, securing patents, establishing startup companies, developing license agreements, and attracting private investment. The 2007 Legislature appropriated \$4 million to fund this program, but, as a part of budget reductions to the state budget, the Legislature reduced the appropriation to \$2 million in special session. The Florida Technology,

Research, and Scholarship Board awarded commercialization assistance grants in three phases in early 2008.

The following table indicates State University Research Commercialization Assistant Grant Program awards made in the spring of 2008, and the funding levels:

State University Research Commercialization Assistance Grant Program		
Phase I Awards		
<u>Institution</u>	<u>Proposal</u>	<u>Award</u>
University of West Florida	Tech Transfer	\$50,000
Florida State University	Tech Transfer	\$50,000
Florida International University	Tech Transfer	\$50,000
University of South Florida	Early Stage RAID	\$50,000
Florida A&M University	Tech Transfer	\$41,000
University of Central Florida	Cellulosic Ethanol	\$40,500
	My Case Space	\$25,000
	Microfluidic Chips	\$30,000
University of Florida	Cancer Detection	\$38,000
	Neuromagentix	\$40,000
	Oceanus	\$25,000
	ASEDRA	\$27,000
	Self-Sterilize	\$15,000
University of North Florida	Kairos	\$34,900
University of North Florida	Tech Transfer	\$26,755
Phase II Awards		
<u>Institution</u>	<u>Proposal</u>	<u>Award</u>
Florida State University	Tech Transfer	\$100,000
University of Florida	Fak Inhibitors	\$75,000
University of South Florida	Platinum Compound	\$50,000
University of Central Florida	Sim Vroom	\$25,000
Phase III Awards		
<u>Institution</u>	<u>Proposal</u>	<u>Award</u>
University of Florida	Sharklet Technologies	\$250,000
Florida State University	BuckyPaper Inc.	\$250,000
Florida Atlantic University	CHS Resources	\$184,294
University of Central Florida	LP Photonics	\$184,294
University of Florida	Audigence	\$184,293
Florida Research Consortium (External Consultant fees)		\$ 73,964
Grand Total		\$1,920,000

The Phase I “Tech Transfer” awards made to the University of West Florida, Florida State University, Florida International University, and Florida Agricultural and Mechanical University were understood to be modest investments in the commercialization infrastructure at each university. With the exception of Florida State University, those institutions had few resources that were directly devoted to commercialization activities. And although these grants were non-recurring, in several cases they allowed the universities to perform tasks such as needs assessments with regard to their commercialization operations. Such assessments have resulted in the development of processes such as the creation of technology review committees. In other cases, the grants allowed for annual subscriptions to proprietary databases that cover licensing opportunities, company profiles, royalty rates and contract details, domestic and international patents and applications, drug development pipelines, clinical trial results, and industry news and market intelligence.

Two University of Central Florida Phase I grants cited here were typical in their expenditures. **The Phase I: Cellulosic Ethanol (\$40,500) grant** resulted in the execution of a non-binding Letter of Intent, negotiation of a Sponsored Research Agreement and a License Agreement, and the filing of a provisional patent application. The University’s **Phase I: My Space Case (\$25,000) grant** resulted in securing a national trademark and updated copyright protection, as well as the completion of potential sales market feasibility. The grant also assisted with product presentations in Nevada; North Carolina; Texas; Washington, D.C.; and Florida.

The **Phase III (\$184,294) grant** was made to the University of Central Florida to aid the establishment of a new company developing technology associated with next-generation lithography for mass computer chip fabrication. With the assistance of the grant, and supported by both federal and industrial funding, the University has accumulated a large inventory of intellectual property and know-how in laser-plasma-based light sources. Under preferential licensing terms, this technology is being transferred to a new startup company, LP Photonics, one of only four companies worldwide developing similar light sources. According to University representatives, the Research Commercialization Assistant Grant Phase III funding was particularly effective. Although it provided funding for only a fraction of the equipment needed, the allocation of state funds for a new Florida-based company based on intellectual property generated in the State University System proved to be significant in raising venture capital investment.

The University of Florida’s **Sharklet Technologies Phase III award (\$250,000)** was typical of Phase III grants in that it needed funding to develop its manufacturing process and marketing program. In order to move forward, Sharklet hired a director of business development, a bio-engineer, manufacturing technician, and a regulatory affairs and quality assurance consultant. Part of the grant covered legal

fees to develop a private placement memorandum to raise funds to prepare for Federal Drug Administration processes and clinical trials. Other of the non-recurring funds went to purchasing manufacturing / prototyping software and equipment; and to cover legal fees associated with patent costs, domestic and international filings, trademark protection, and additional IP development. Thanks in part to its Research Commercialization Assistant Grant, Sharklet completed all contract deliverables and was able to expand the protection of its intellectual property, make strides in manufacturing, and advance relationships with key strategic partners and conduct various lab testing.

Conclusion

Florida is clearly beginning to see a return on its investment in these 21st Century Enhancement Act programs. This report concludes with three observations: First, attaining a goal as massive as economic transformation is going to take time; some states have been funding similar programs for twenty to thirty years. Second, the most proactive and dynamic states and nations of today's globally competitive market invest in and support their very best faculty and students. And finally, it has been shown that relatively small sums of money can create substantial impacts in areas such as commercialization. Through a sustained commitment to and investment in its State University System, Florida can transform and diversify its economy based through knowledge and innovation.

The State University System of Florida



Excerpt from 2009 Annual Report

Centers of Excellence

Appendix I

Note concerning data accuracy: The Office of the Board of Governors believes that the accuracy of the data it collects and reports is paramount to ensuring accountability in the State University System. Thus, the Board Office allows university resubmissions of data to correct errors when they are discovered. This policy can lead to changes in historical data. The data in this document are based on university file submissions as of December 18, 2009.

Appendix I

University of Florida Centers of Excellence		
Center for Nano-Bio Sensors, CNBS	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		
Competitive Grants Applied For and Received	Applied: 80 \$96,909,715 Received: 37 \$22,765,435	Applied: 43 \$38,551,851 Received: 23 \$12,980,099
Total Research Expenditures	\$2,926,210	\$1,520,596
Publications in Refereed Journals From Center Research	91	31
Professional Presentations Made on Center Research	114	44
Invention Disclosures Filed and Issued	40	10
Technologies Licensed and Revenues Received	2	1
Collaboration Effectiveness		
Collaborations with Other Postsecondary Institutions	8	8
Collaborations with K-12 Education Systems/Schools	5	2
Collaborations with Private Industry	6	6
Students Supported with Center Funds	51	20
Students Graduated	7	2
Job Placements of Graduates Upon Leaving the Center	6	1
Economic Development Effectiveness		
Business Start-Ups in Florida	2	0
Jobs Created and Jobs Saved in Florida	32	21
Specialized Industry Training and Education	5	4
Dollars Acquired from Venture Capitalists and Other Investments	Estimated: \$11M	Estimated: \$6M

Center of Excellence Narrative Comments [Most Recent Year]
<p>Center for Nano-Bio Sensors, CNBS</p> <p>Since its inception at the University of Florida in Spring of 2007 the Center for Nano-Bio sensors (CNBS) has successfully invested its resources on the development and commercialization of a number of promising nano-bio technologies that focus on applications in medical diagnostics and homeland security. Projects and researchers sponsored by CNBS undergo strict review cycles that makes them accountable for progress and determines funding continuation. In order to accomplish its mission and ultimately benefit the State of Florida and society in general, CNBS is strategically focused on:</p> <ul style="list-style-type: none"> > Multidisciplinary and Interdisciplinary Teams Promoting Enabling Synergy. The CNBS structure facilitates researchers from many different disciplines, including medicine, engineering, chemistry and materials science, to team up to resolve a number of key technical barriers that technologies under development encounter. > Research Effectiveness: From an intellectual property perspective, CNBS researchers have generated 40 patents and invention disclosures, which build upon an existing extensive patent estate to support commercialization of CNBS technologies. > Leverage. Seed funding from CNBS is markedly enhancing the ability of researchers to seek leveraging funding from a number of state, federal and private sources. Thanks to the CNBS sponsorship funding success for CNBS researchers is about 47% (proposals funded vs. solicited). Since its inception CNBS has been instrumental in the acquisition of over \$20M in funding. > Collaboration with other Institutions. CNBS has actively collaborated with postsecondary institutions like Santa Fe College (Gainesville, FL) to develop a nano-bio tailored educational program to create a specialized workforce at the associate degree level. The Florida High Tech Corridor Council (FHTCC) techPATH program supports and will sponsor some of these efforts. In addition, CNBS is actively seeking to capitalize on the strategic alliance between UF and the Moffitt Cancer Center, located in Tampa. > Collaboration with private industry. One of the major strengths of the CNBS is its extensive network of industrial relationships. Beyond their contributions in the Advisory Board of CNBS, several of these companies are currently engaged in licensing, development and joint research relating to CNBS technologies. These collaborations have leveraged CNBS funding by over \$11M in private investment. > Economic Development Effectiveness. CNBS has promoted, facilitated, and enhanced the growth of 2 startup companies in Florida (Banyan Biomarkers, and Xhale Inc.). CNBS has also aided in the creation of 32 new positions in the State of Florida, and has facilitated the acquisition of \$11M in venture capital and other investments. > Focus on Commercialization. Given the level of productive interactions with private industry and entrepreneurs, the CNBS leadership is confident that commercialization of some of its technologies will be successful.

Appendix I

Center of Excellence for Regenerative Health Biotechnology	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		
Competitive Grants Applied For and Received	12	42
Total Research Expenditures	\$7,411,443	\$3,818,618
Publications in Refereed Journals From Center Research	78	24
Professional Presentations Made on Center Research	52	38
Invention Disclosures Filed and Issued	N/A	N/A
Technologies Licensed and Revenues Received	N/A	N/A
Collaboration Effectiveness		
Collaborations with Other Postsecondary Institutions	32	20
Collaborations with K-12 Education Systems/Schools	49	30
Collaborations with Private Industry	101	55
Students Supported with Center Funds	154	56
Students Graduated	131	41
Job Placements of Graduates Upon Leaving the Center	11	5
Economic Development Effectiveness		
Business Start-Ups in Florida	2	1
Jobs Created and Jobs Saved in Florida	195	8
Specialized Industry Training and Education	15	11
Dollars Acquired from Venture Capitalists and Other Investments	N/A	N/A

Center of Excellence Narrative Comments [Most Recent Year]
<p>Center of Excellence for Regenerative Health Biotechnology</p> <p>Established in 2003 with launch of operations in 2006, the University of Florida's Center of Excellence for Regenerative Health Biotechnology (CERHB, http://cerhb.rgp.ufl.edu/) is a biomedical translational research support center with the mission to stimulate promising research and facilitate first-in-man studies leading to commercialization of technologies that will provide treatments for human diseases, as well as create new companies and high-wage jobs. Expertise, training programs, and drug manufacturing services are provided to the biotechnology industry and to biomedical research institutions.</p> <p>A new 23,500ft² GMP Manufacturing facility was designed, built-out, outfitted, commissioned, and validated (called Florida Biologix®, http://www.floridabiologix.ufl.com/) utilizing state and federal funding (funded by US Dept. of Commerce EDA). Drug products made in this facility are suitable for pre-clinical, and Phase I and II human clinical trials. Client sponsors currently include Florida companies, multi-national and foreign companies, domestic private and public companies, and the NIH. The CERHB Education Center (http://cerhb.rgp.ufl.edu/education_index.html) was established as a state resource. Hands-on curricula were developed in Industrial Biotechnology at the College and High School levels including student and teacher training (funded by NSF). In anticipation of these new course offerings, the CERHB submitted a curriculum in industrial biotechnology to the Florida DOE, this curriculum was approved for CTE and Science credit in December 2006 and offered for the first time in the Fall of 2007 and over 600 high school now take the courses, with first graduates expected in 2010. In addition, hands-on curricula in Industrial Biotechnology were developed for entry-level and incumbent workers throughout the state (funded by Workforce Florida, Inc.).</p> <p>An Advisory Council has been assembled comprised of leaders from industry, workforce boards, and economic development agencies from across the state. Industry focus groups, a needs assessment, and surveys have been conducted to determine the current and future needs of companies from around the state. Two curricula were offered for the first time in 2007, and over 175 students have graduated. Combined on-line and wet lab training leads to industry-recognized certificates. The CERHB and three biomedical institutes in France signed a four-year international cooperative agreement on biopharmaceutical research designed to help bring new therapies to clinical trials. The CERHB has established an extensive support and participation network of 85 partners including companies, Research Institutes, Professional Societies, Industry Organizations, Chambers of Commerce, materials and equipment suppliers, Business Development Boards, Community Colleges, school districts, and Regional Workforce Boards. These partners are motivated to work with CERHB to implement the programs and services statewide and nationally.</p> <p>In 2008- 2009, CERHB expanded its marketing efforts for drug development services. New and continuing research grants were awarded from domestic and international sources. CERHB also expanded the reach of the education programs, with higher visibility, increased enrollments, more school districts offering the curriculum, education at all levels (high-school, college, university, and professional), and international collaboration.</p>

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Florida Institute for Sustainable Energy (FISE) Energy Technology Incubator	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		
Competitive Grants Applied For and Received	Applied: \$140.9M Received: \$54.3M	Applied: \$148.9M Received: \$26.2M
Total Research Expenditures	\$25.2M	\$10.8M
Publications in Refereed Journals From Center Research	247	237
Professional Presentations Made on Center Research	93	212
Invention Disclosures Filed and Issued	10	17
Technologies Licensed and Revenues Received	1- \$60K	\$0
Collaboration Effectiveness		
Collaborations with Other Postsecondary Institutions	39	38
Collaborations with K-12 Education Systems/Schools	N/A	N/A
Collaborations with Private Industry	54	37
Students Supported with Center Funds	187	134
Students Graduated	15	15
Job Placements of Graduates Upon Leaving the Center	14	14
Economic Development Effectiveness		
Business Start-Ups in Florida	5	4
Jobs Created and Jobs Saved in Florida	25	65
Specialized Industry Training and Education	10	15
Dollars Acquired from Venture Capitalists and Other Investments	\$890K	0

Center of Excellence Narrative Comments [Most Recent Year]
<p>Florida Institute for Sustainable Energy (FISE) Energy Technology Incubator</p> <p>The FISE Energy Technology Incubator continues to build its capabilities. A mobile thermal biomass gasification unit is the latest addition to the Prototype Development & Demonstration Laboratory and was recently demonstrated at the 2009 Farm to Fuel Summit. The Biofuels Pilot Plant has also completed the development, implementation and operation of a pilot scale system for biogasification of biomass feedstocks.</p> <p>A number of UF faculty have visited the Prototype Lab and written proposals to use the facility in their research. These new possible users include, Dr.'s P. Holloway, C. Batich, T. Brennan, J. Nino, from the Department of Materials Science & Engineering, Dr. J. Lin from the Department of Electrical Engineering, Dr. H. Weaver from the Department of Chemical Engineering, and Dr. J. Chung from the Mechanical and Aerospace Engineering.</p> <p>Several companies have visited the FISE laboratories and are obtaining funding for projects there. These include Prioria, a company developing unmanned space systems; Kisled Inc., a local energy related technology company; Synogen, an investment group; Gardenia Ventures, a venture group; and Precious Metal Filters, which is developing specialized filtering systems. Moreover, the Prototype Lab is already generating significant user fees and is well on its way to becoming self-sufficient.</p> <p>A new company is being formed to fabricate prototypes and market the technologies that have been developed in these laboratories. Six SBIR proposals have been submitted by this company. It has also received funding to conduct a market study for two possible products. In addition, the Integrated Product and Process Development program at UF has assembled a team to develop a product from the research carried out in the FISE laboratories.</p>

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Florida State University Centers of Excellence		
Florida Center of Excellence in Advanced Materials	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		
Competitive Grants Applied For and Received	17/17 (\$16M)	46/11
Total Research Expenditures	\$8,500,000	\$3,311,081
Publications in Refereed Journals From Center Research	30	10
Professional Presentations Made on Center Research	21	5
Invention Disclosures Filed and Issued	Filed 10 / Issued 0	Filed 5 / Issued 1
Technologies Licensed and Revenues Received	0	0
Collaboration Effectiveness		
Collaborations with Other Postsecondary Institutions	3	3
Collaborations with K-12 Education Systems/Schools	5	6
Collaborations with Private Industry	4	4
Students Supported with Center Funds	102	65
Students Graduated	11	13
Job Placements of Graduates Upon Leaving the Center	5 confirmed	5 confirmed
Economic Development Effectiveness		
Business Start-Ups in Florida	1 STTR	1
Jobs Created and Jobs Saved in Florida	None confirmed	None confirmed
Specialized Industry Training and Education	3	3
Dollars Acquired from Venture Capitalists and Other Investments	0	0

Center of Excellence Narrative Comments [Most Recent Year]
<p>The Florida Center of Excellence in Advanced Materials (CEAM) is continuing to grow and develop. In February, CEAM personnel moved into FSU's new Materials Research Building, a 44, 000 sq. ft. \$21M facility.</p> <p>CEAM is continuing its partnership with Tallahassee Community College, Brevard Community College and Manatee Technical Institute. All three institutes appear to be growing. For instance, building on the CEAM initiative, TCC has developed the Advanced Manufacturing Training Center (AMTC). The AMTC will be a 25,000 sq ft. facility that will house a 998 sq. ft. Composite Lab along with Classrooms, a large Manufacturing Lab area, a CNC Lab and incubator space. The AMTC opening is scheduled for Spring 2010.</p> <p>Outreach programs are continuing. For instance, in July CEAM personnel worked with TCC in sponsoring two 1-week Composite Materials Summer Camps for high school students. TCC is also hosting the Fall 2009 Composite Materials Engineering Careers Week, a 5-day program for middle school and high school advanced science students at Cobb & Deerlake Middle Schools and Leon High School, that includes a hands-on composite materials project and provides engineering career information.</p> <p>During the reporting period, a CEAM inventor was issued a patent for "A Method for Continuous Fabrication of Carbon Nanotube Networks or Membrane Materials."</p> <p>Certain numbers in this report are disappointing, yet efforts are continuing. A new Florida startup company, Sunshine Nano, is looking at establishing a facility in Tallahassee. CEAM is also in talks with other organizations looking at licensing arrangements. CEAM is also working closely with Tallahassee/Leon County Economic Development Council and Florida's Great Northwest to encourage businesses to locate in the North Florida area.</p> <p>CEAM will continue to work to seek opportunities and cultivate relationships to impact the economic development in Florida.</p>

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Florida State University Centers of Excellence		
The Florida Center for Advanced Aero-Propulsion	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		
Competitive Grants Applied For and Received	N/A	\$8.4M [53A/40R]
Total Research Expenditures	N/A	\$2,655,198
Publications in Refereed Journals From Center Research	N/A	37
Professional Presentations Made on Center Research	N/A	84
Invention Disclosures Filed and Issued	N/A	11f/7isd
Technologies Licensed and Revenues Received	N/A	N/A
Collaboration Effectiveness		
Collaborations with Other Postsecondary Institutions	N/A	10
Collaborations with K-12 Education Systems/Schools	N/A	9
Collaborations with Private Industry	N/A	25
Students Supported with Center Funds	N/A	65G/49UG
Students Graduated	N/A	15
Job Placements of Graduates Upon Leaving the Center	N/A	In process
Economic Development Effectiveness		
Business Start-Ups in Florida	N/A	4
Jobs Created and Jobs Saved in Florida	N/A	214
Specialized Industry Training and Education	N/A	1
Dollars Acquired from Venture Capitalists and Other Investments	N/A	In process

Center of Excellence Narrative Comments [2008-2009]																								
<p>The Florida Center for Advanced Aero-Propulsion (FCAAP) is a consortium of four universities. Florida State University serves as the lead institution and coordinates the efforts of partners Embry Riddle Aeronautical University, the University of Central Florida, and the University of Florida. The Center has made a significant impact in a variety of areas including; economics, cutting edge technologies, research and development, and education. The Center has only been in existence since July 2008, so no prior year data is available. The data provided represents all FCAAP efforts include those conducted at our partner universities: .</p> <p>The stand-alone totals for FSU are as follows:</p> <p>Research Highlights Grants Applied for and Received: 19 Applied-\$4,338,000; 11 Received-\$2,144,000 Total Research Expenditures: \$863,316 Publications in Refereed Journals: 7 Professional Presentations on Center Research: 16 Invention Disclosures Filed and Patents Awarded: 2</p> <p>Collaboration Collaborations with Other Post-Secondary Institutions: 3 Collaborations with K-12 Education Systems/Schools: 3 Collaborations with Private Industry: 1 Students Supported with Center Funds: 1 Grad/13 UG Students Graduated: 3</p> <p>Economic Impact Jobs Created/Saved: 60 Specialized Industry Training and Education: 1</p> <p>Economic Impact Analysis executed by Dr. Julie Harrington, FSU Economics.</p> <table border="1"> <thead> <tr> <th>University</th> <th>Output</th> <th>Employment</th> <th>Income</th> </tr> </thead> <tbody> <tr> <td>UCF</td> <td>\$5,526,565</td> <td>49</td> <td>\$2,460,526</td> </tr> <tr> <td>UF</td> <td>\$11,125,817</td> <td>94</td> <td>\$5,032,465</td> </tr> <tr> <td>ERAU</td> <td>\$1,015,338</td> <td>11</td> <td>\$430,346</td> </tr> <tr> <td>FSU</td> <td>\$6,769,218</td> <td>60</td> <td>\$2,998,374</td> </tr> <tr> <td>Grand Total</td> <td>\$24,436,938</td> <td>214</td> <td>\$10,921,709</td> </tr> </tbody> </table>	University	Output	Employment	Income	UCF	\$5,526,565	49	\$2,460,526	UF	\$11,125,817	94	\$5,032,465	ERAU	\$1,015,338	11	\$430,346	FSU	\$6,769,218	60	\$2,998,374	Grand Total	\$24,436,938	214	\$10,921,709
University	Output	Employment	Income																					
UCF	\$5,526,565	49	\$2,460,526																					
UF	\$11,125,817	94	\$5,032,465																					
ERAU	\$1,015,338	11	\$430,346																					
FSU	\$6,769,218	60	\$2,998,374																					
Grand Total	\$24,436,938	214	\$10,921,709																					

Appendix I

University of South Florida Centers of Excellence		
Florida Center of Excellence for Biomolecular Identification and Targeted Therapeutics (FCoE-BITT)	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		
Competitive Grants Applied For and Received	Received: \$48,877,702	Received: \$14,982,803
Total Research Expenditures	\$33,610,666	\$16,621,976
Publications in Refereed Journals From Center Research	57	27
Professional Presentations Made on Center Research	80	50
Invention Disclosures Filed and Issued	10	10
Technologies Licensed and Revenues Received		
From First Year Up To Most Recent Year: Center Co-PIs: 2 licensed technologies; Center Co-PIs: \$160,071 in licensed Revenue		
Most Recent Year: 1		
Collaboration Effectiveness		
Collaborations with Other Postsecondary Institutions		
From First Year Up To Most Recent Year: 17-- Community colleges, Univ. PA, UF, UNF, UWF, Western Carolina Univ., Wayne State Univ., Karmonos Cancer Center, Portland State Univ., Univ. of Paris, Univ. of Oviedo (Spain), Univ. of Shiraz (Iran)		
Most Recent Year: 17 -- Community colleges, Univ. PA, UF, UNF, UWF, Western Carolina Univ., Wayne State Univ., Karmonos Cancer Center, Portland State Univ., Univ. of Paris, Univ. of Oviedo (Spain), Univ. of Shiraz (Iran)		
Collaborations with K-12 Education Systems/Schools	4	4
Collaborations with Private Industry	12	10
Students Supported with Center Funds	45	8
Students Graduated	0	3

Job Placements of Graduates Upon Leaving the Center		
From First Year Up To Most Recent Year: 0		
Most Recent Year: 3: Ross University Medical School - Medical Student; UT Southwestern Medical Center - Postdoctoral Studies; USF College of Medicine - Postdoctoral Studies.		
Economic Development Effectiveness	From First	Most Recent
Business Start-Ups in Florida	0	5
Jobs Created and Jobs Saved in Florida		
From First Year Up To Most Recent Year: Center: 7 jobs; Draper Laboratory: 165 jobs (average wage: \$75,000) as its facilities are established; Molecular and Specialty Diagnostics Center (MSDC): 20 jobs as its facilities are established		
Most Recent Year: Center: 7 jobs; Draper Laboratory: Collaborative positions need more time to determine the count.		
Specialized Industry Training and Education		
From First Year Up To Most Recent Year: Florida Advanced Technological Education Center and COE are assessing biotech workforce capability and capacity and establishing partnership relationships among NSF Biotech Centers of Excellence to develop curricula to match industry employee requirements.		
Most Recent Year: Florida Advanced Technological Education Center and COE are assessing biotech workforce capability and capacity and establishing partnership relationships among NSF Biotech Centers of Excellence to develop curricula to match industry employee requirements.		
Dollars Acquired from Venture Capitalists and Other Investments	0	0

Appendix I

Narrative Comments [Most Recent Year]

Move promising biotechnology products to market and commercialization in Florida

To date, FCoE-BITT Members have 19 invention disclosures that have been filed and issued. Two of these technologies have been licensed, generating a total of \$160,071 in licensing revenues. A spin-off company has been created by BITT co-PI Ed Turos, Nanopharma Technologies, Inc. Nanopharma is located in the USF incubator, and focuses its primary efforts on the further development of patented new drugs from university labs in the area of infectious disease treatment. At the Center, FCoE-BITT Members are developing a variety of products that are used to detect, diagnose or treat illness. Some examples include drugs against malaria, E. coli O157:H7, anthrax and cancer; detection devices to monitor our food and water for bacteria; and therapeutic devices that can deliver treatment for melanoma.

Create jobs in the biotechnology industry in the State of Florida and Tampa Bay region

The Center directly employs 14 people, including administrative staff, scientists and laboratory support staff. Additional jobs are created through external funding secured by our membership as a result of FCoE-BITT Programs and Resources such as our Core Facilities. The level of external funding secured by our membership to date totals \$63,860,505. Further study is required to determine what portion of that funding can be attributed to FCoE-BITT activities and how many jobs have been created from the funding. Other collaborations supporting local businesses, such as Draper Laboratories, Nanopharma and Innovative Quality Sciences, Inc, certainly contribute to the generation of jobs in those organizations.

Provide workforce development through universities and colleges to foster and support the biotechnology industry in the State of Florida

Through our partnership with the Florida Advanced Technological Education Center (FLATE), FCoE-BITT has developed and implemented a short screening survey tool to assess the current biotechnology-based workforce strengths and needs. A more detailed follow up is planned to establish a baseline for subsequent determination of skill gaps for the biotechnology workforce within the Tampa Bay region (Hillsborough, Pinellas, Polk, Pasco, Sarasota, Manatee and Hernando counties). A report for the first phase of the study is available through our FCoE-BITT office at Hillsborough Community College. Subsequent phases of these survey studies will focus on biotechnology research and development companies as well as major healthcare facilities that would be candidate users of FCoE-BITT's detection, diagnostic and therapeutic technologies. The results of these surveys will be used to tailor course content or direct training at USF and in the local community colleges.

Florida Atlantic University Centers of Excellence

Name of Center of Excellence: FAU Center for Ocean Energy Technology

Research Effectiveness

Competitive Grants Applied For and Received

From First Year Up To Most Recent Year: U.S. Dept. of Energy - Advanced Water Power Projects Funding Opportunity DE-PS36-08GO98030; 2007 Centers of Excellence - Not selected (House Bill 7135 - legislated Florida Energy Systems Consortium - FAU COET awarded \$8.75M through HB 5001 Aid to Local Governments - Grants and Aids - Education and General Activities)

Most Recent Year: R. Driscoll, U.S. Dept. of Energy (DE-FOA-69 Topic Area 1), Ocean Current Energy Extraction, 9/15/2009, 12/31/2010, \$72,424; H. Hanson, U.S. Dept. of Energy (DE-FOA-69 Topic Area 2), Marine and Hydrokinetic Site-specific Environmental Studies, 9/15/2009, 12/31/2010, \$91,359; R. Driscoll, U.S. Dept. of Energy (DE-FOA-69 Topic 3D), An assessment of global and domestic U.S. ocean thermal energy resources to determine maximum practicably extractable energy, 9/15/2009, 12/31/2010, \$152,910; H. Hanson, U.S. Dept. of Energy (DE-FOA-70 Topic 1), Supporting Research and Testing for Marine and Hydrokinetic Energy, 9/15/2009, 12/31/2010 ---\$149,991; H. Hanson, S. Skemp, U. S. Dept. of Energy (DE-EE0000319, 2009 Congressionally Directed Project (CDP) - Ocean Energy Research and Development, 7/16/2009, 9/30/2009, \$1,189,375

Total Research Expenditures

From First Year Up To Most Recent Year: State Expenditures: \$2,141,495 expended to date (\$1,163,398 FY'07), with additional \$522,281 encumbered.

Most Recent Year: State Expenditures: \$904,342 expended to date, \$7,201 in University Subcontracts

Publications in Refereed Journals From Center Research

From First Year Up To Most Recent Year: None - In development for FY'09.

Most Recent Year: Dr. Howard Hanson "Diversified Renewables" Energybiz 6 (4) p 52 2009; Dr Pierre Beaujean "Ocean Turbines a Reliability Assessment" Intl Journal of Reliability, Quality and Safety Engineering- in press 2009; Dr Pierre Beaujean "Monitoring Ocean Turbines: a Reliability Assessment" ISSAT Intl' Conference August 2009 SF, CA; Nicholas S Asseff "Design and Finite Element Analysis of an Ocean Current Turbine Blade" M.S. Thesis, FAU August 2009; Nicholas S Asseff "Design and Finite Element Analysis of an Ocean Current Turbine Blade" OCEANS/IEEE 2009 accepted for publication

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Professional Presentations Made on Center Research

From First Year Up To Most Recent Year: Dania Beach - Florida Energy Commission; Tallahassee - Florida Department of Environmental Protection; Narragansett, RI - University of Rhode Island, Coastal Resources Center; Miami Beach - Governor Crist's Serve to Preserve Climate Change Summit; UK - SuperGen Consortium; Tallahassee - Sunshine State Renewable Energy Expo and Symposium; New York - Ecology and Environment Renewable Energy Workshop; Washington, DC - Department of Energy, Minerals Management Service, NOAA; HI - Energy Oceans 2007; Dania Beach - Governor Crist; Dania Beach - UK Trade Mission; Palm Beach Gardens - Federal Regulatory Agency Meeting (USACE, NOAA, MMS, USCG, EPA)

Most Recent Year: State Expenditures: ASME Congress & Expo Boston, MA 11/3/08; MMS Ft Lauderdale, FL 11/13/08; Bahamian Counsel General Dania Beach, FL 12/4/08; British Midland Economic Development Boca Raton, FL 12/10/08; Camp Dresser McKee Dania Beach, FL 12/15/08; NREL Dania Beach, FL 1/9/09; ASME Foundation Board Retreat Dania Beach, FL 1/12/09; British Consulate General Dania Beach, FL 1/14/09; Florida Engineering Society Orlando, FL 1/15/09; Museum Of Discovery and Science Ft Lauderdale, FL 1/16/09; Carbon Trust Florida EOG Dania Beach, FL 1/28/09; OSTP Washington DC 2/2/09; President Brogan Visit Washington DC 2/3/09; President Brogan Visit Washington DC 2/4/09; FERC/ NOAA Washington DC 2/5/09; NAM Washington DC 2/6/09; College of the Bahamas 2/24/09; Rich Viens Dania Beach, FL 3/9/09; Green Energy Climate Conference West Palm Beach, FL 3/10/09; Congressman Ron Klein Dania Beach, FL 3/13/09; Vision Energy Dania Beach, FL 3/20/09; CAPS/FSU Dania Beach, FL 3/27/09; Florida DEP Tallahassee, FL 4/2/09; FAU Executive Leadership Forum Boca Raton, FL 4/7/09; Marine Global Energy Washington DC 4/14/09-4/15/09; IFA Ft. Lauderdale, 5/22/09; State Representative Maria Sachs Dania Beach, FL 6/23/09; U.S. Dept of State - Andrew Reynolds, Dep. S&T Dir. to Sec. of State 7/1/09; Governor Crist - Alternative Energy/Fuel Dania Beach, FL 7/23/09; Encompass Innovation Series III Boca Raton, FL 8/27/09; State Representative Evan Jenne Dania Beach, FL 8/28/09; FESC Briefing Dania Beach, FL 9/2/09; Renewable Energy Finance & Investment Summit, Hollywood, FL 9-15-09; NOAA NMFS Boca Raton, FL 9-16-09; Henderson School FAU Boca Raton, FL 3/16/09; FESC Oversight Meeting Orlando, FL 5/29/09; Broward Climate Change Group Dania Beach, FL 7/15/09; Florida Energy Systems Consortium Summit Tampa, FL 9/30/09; Commissioner Jim Silverstone Dania Beach, FL 10/8/09; OE Seminar Series Dania Beach, FL 1/2//09; Greentech Inc Webinar Series online- 5/7/09; UCF Florida Solar Energy Center Seminar Daytona Beach, FL 5/28/09; ERAU Mechanical Engineering Seminar Daytona Beach, FL 5/28/09; Enterprise FL Inc Roadmap Conference West Palm Beach, FL 7/23/09; FAU Dept of Geosciences Colloquium Series Boca Raton, FL 9/11/09.

Invention Disclosures Filed and Issued

From First Year Up To Most Recent Year: 1 - Hydrogen Generation Powered by the Hydrostatic Head of Ocean Water - filed and under review

Most Recent Year: None

Technologies Licensed and Revenues Received

None - too early at this stage.

Collaboration Effectiveness

Collaborations with Other Postsecondary Institutions

From First Year Up To Most Recent Year: Florida Energy Systems Consortium - SUS, Nove Southeastern University, VA Tech - National Program Development, Broward Community College - Renewable Curriculum Development, Tuskegee University, Heriot-Watt University, UK, Univeristy of Edinburg, UK, New Renewable Energy Centre, UK

Most Recent Year: State Expenditures: Dr. Howard Hanson, FAU, Current Resource Modelling/Simul., Dr. Eric Chasswonignet - FSU - COAPS; Dr. Howard Hanson FAU, Sea Water Hydrolysis, Dr. Ali Raisi - UCF - FSEC+E8; Susan Skemp, Caitlin Slezycski, FAU, Power Systems Management, Dr. Steiner Dale, Dr. Rick Meeker - FSU - CAPS; Dr. Howard Hanson, FAU, NSF Proposal - Array Design/Control, Dr. Darris White - Embry Riddle Aeronautical Univ.; Dr. Howard Hanson, FAU, CRADA - , NREL; Dr. Manhar Dhanak & Dr. Rick Driscoll, FAU, Research and Testing, Dr. David Lane - Heriot-Watt University, UK; Susan Skemp, FAU, Research and Testing, Dr. Henry Jeffrey - U. of Edinburgh, UK; Dr. Howard Hanson & Susan Skemp, FAU, Ocean Research and Standards, Dr. Robert Paasch - Oregon State University; Susan Skemp & Dr. Rick Driscoll, FAU, OTEC Research and Standards, Dr. Luis Vega - Univ. of Hawaii, Nat. Marine Renewable Energy Center; Dr. Howard Hanson, Dr. Rick Driscoll, Susan Skemp, FAU, Resource Measurement & Assessment; Dr. John Bane - Univ North Carolina - Wilmington; Susan Skemp, FAU, OTEC Research Requirements, Dr. Nancy Kinner - Univ. of New Hampshire - Coastal Response Research Center

Collaborations with K-12 Education Systems/Schools

Communication plan in development. Numerous tours of the Center and presentations to schools during FY'08 and FY'09.

Collaborations with Private Industry

From First Year Up To Most Recent Year: Oceaneering, Ocean Renewable Power Corp, Aquantis, Lockheed Martin Corporation, Environment and Ecology, Biosonics, Inc., Keys Hydro Power, Florida Power & Light, Suez Energy

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Most Recent Year: State Expenditures: NREL, NaREC, UK, FPL, OBOE, Vision Energy, Dehlsen Associates, Ecology & Environment, Lockheed Martin, OREC, ASME, ASCE, IEC US TC 114 TAG, ISO/TC 108/SC 5

Students Supported with Center Funds

From First Year Up To Most Recent Year: 5 Masters level 1 Ph.D. Partial funding for students has also been provided by the university and FP&L after initial funding from Center. 10 undergraduate students

Most Recent Year: State Expenditures: 16 Master's Students, 3 Ph.Ds and one post doc

Students Graduated

From First Year Up To Most Recent Year: None; however, approximately half of the entering class in Ocean Engineering indicated selecting FAU for their interest in the Center and the opportunity to work on research related to Ocean Energy.

Most Recent Year: 2 master's students.

Job Placements of Graduates Upon Leaving the Center

From First Year Up To Most Recent Year: Justin Sobol, Florida Power and Light, Project Development / Renewable Energy

Most Recent Year: None; but graduates looking for employment in difficult economy

Economic Development Effectiveness

Business Start-Ups in Florida

N/A at this time; however, discussions in progress.

Jobs Created and Jobs Saved in Florida

From First Year Up To Most Recent Year: Justin Sobol, Florida Power and Light, Project Development / Renewable Energy; James Van Zwieten, FAU, Ocean Engineer and Scientist; Caitlin Slezycski, Worcester Polytechnic Institute, Electrical and Computer Engineer; Jason Raveling, FAU, Ocean Engineer; Gabriel Alsenas, FAU, Ocean Engineer and Project Manager; Shirley Ravenna, FAU, Ocean Engineer and Project Manager; Erick Busold, FAU, Ocean Engineer; Laurie Bransdorf, FAU, Coordinator; Susan Skemp, Executive Director, Center for Ocean Energy Technology

Most Recent Year: 4 - scientific director, project manager, project engineer and office manager

Specialized Industry Training and Education

From First Year Up To Most Recent Year: This is a long term endeavor to develop the education and training programs that will produce the skilled workforce needed within the future ocean energy sector. At this point, the center is still developing relationships with colleges and industry and developing plans for curricula.

Most Recent Year: Scientific Diving Program

Dollars Acquired from Venture Capitalists and Other Investments

From First Year Up To Most Recent Year: \$25,000 - Outer Banks Ocean Energy Corporation, \$126,000 - Lockheed Martin Corporation.

Most Recent Year: \$25,000 Vision Energy.

Center of Excellence Narrative Comments [Most Recent Year]

Research and development for an ocean energy industry is being addressed with a system-level, phased approach. Joint research is ongoing at FAU, with FESC partners, and other industrial, government, and academic partners. Initial research in areas such as ocean resource analysis and modeling, prognostics and health monitoring systems, materials and anti-fouling, mooring and anchor systems, and environmental/benthic baseline assessment have been funded.

COET's technology and industry support efforts are underway in three distinct but inter-related tracks. First, the Center is actively engaged in sensor and instrument acquisition, deployment, and analysis to more fully characterize offshore energy resources, as well as the benthic and ecological environment. Second, in support of ongoing research and to further an operational and technical understanding of offshore energy systems and challenges, the Center has designed, partially fabricated, and will begin testing a small-scale hydrokinetic turbine system. Testing will be completed for components, sub-systems, and major systems of the turbine, eventually evolving to full system testing in a phased, risk-reduction process. Finally, the Center is working to begin early development of, and recognition of, a National Open-ocean Energy Laboratory for system-level test operation and data collection infrastructure. This effort is intended to support and promote a phased approach for early-stage testing to minimize risk and further scaled development for the growing industry, as well as to help establish standards criteria and practice for the future sector.

Notable accomplishments during the past year include completed milestones in resource assessment, research, regulatory process activity, partner relationships, infrastructure development, and outreach. Stand-alone instruments have been successfully deployed offshore in conjunction with shore-side systems to develop a baseline understanding of the kinetic and thermal energy resources in the Florida

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Straits. An interim draft application has been submitted and reviewed with the US Mineral Management Service for deployment of an ocean current research turbine, and the system has begun fabrication and testing onshore. More than twenty CDAs and five MOUs have been executed with national and international academic, government, and industrial partners to formalize collaboration with the Center. An in-lab 20kW dynamometer and test system is being finalized and installed, and through many conferences, presentations, and other events, the public continues to be engaged in the development of ocean energy.

Florida Atlantic University Centers of Excellence

Name of Center of Excellence: Center of Excellence in Biomedical & Marine Biology

Center of Excellence Narrative Comments [Most Recent Year]

The FAU Center of Excellence in Biomedical and Marine Biotechnology has been undergoing a re-scoping and rejuvenation process. This process has proceeded more slowly than intended, due to the ongoing uncertainty with respect to the State of Florida budget and its impact on the University. This uncertainty was largely responsible for the departure to a university in Texas of the second tenured professor who was directing the Center (the first left in 2006) as well as the departure of the individual who was the Center's principal offerer. The loss of these two senior scientists has been a significant setback for FAU's plans for the Center's future.

In addition, the Harbor Branch Oceanographic Institute, which merged into FAU recently, was set somewhat off course by the budgetary uncertainty, hampering the planned transition of the Center to that unit. Finally, a major effort to move a core group of Biotechnology scientists from the Boca Raton Campus to the Jupiter Campus, closer to Scripps Florida and Max Planck Institute, is underway, and should provide the support for revitalizing the Center. Given these setbacks and opportunities, it is appropriate to report that this Center has been dormant for the past two years. We anticipate that next year's report will discuss a resolution of this dormancy with a completed revitalization of the Center and a path forward.

Of course, the research of the various individuals who were previously engaged with the Center has continued through leveraged monies from the initial award from the State of Florida.

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University of Central Florida Centers of Excellence		
UCF Florida Photonics Center of Excellence	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		2007-08
Competitive Grants Applied For and Received	\$42.9M	
Total Research Expenditures	\$36.7M	\$2.4M
Publications in Refereed Journals From Center Research	97	15
Professional Presentations Made on Center Research	35	12
Invention Disclosures Filed and Issued	43 filed 14 issued	31 filed 17 issued
Technologies Licensed and Revenues Received	3 and \$181,250	2 and \$0
Collaboration Effectiveness		
Collaborations with Other Postsecondary Institutions	29	0
Collaborations with K-12 Education Systems/Schools	14	1
Collaborations with Private Industry	45	5
Students Supported with Center Funds	0	0
Students Graduated	4 PhD 3 MS	3 PdD 2 MS
Job Placements of Graduates Upon Leaving the Center	2	7
Economic Development Effectiveness		
Business Start-Ups in Florida	5	1
Jobs Created and Jobs Saved in Florida	60	1
Specialized Industry Training and Education	2	1
Dollars Acquired from Venture Capitalists and Other Investments	over \$15M	\$0

Center of Excellence Narrative Comments [Most Recent Year]
<p>UCF Florida Photonics Center of Excellence</p> <p>The center of excellence established an endowment of \$1 million to provide recognition and research funds to outstanding Center of Excellence professors (five named and funded to date). Additionally, the Florida Photonics Cluster was revived after several years of inactivity. A new board was formed and its membership increased to a total of 34 organizations.</p> <p>The center has also constructed and occupied a 21,000 square foot building addition, leveraging Center of Excellence funds with those of U.S. Department of Commerce, Florida High Tech Corridor Council, UCF, private donations, and state matching funds. The new addition includes space for an extension of the UCF Incubator for optics and photonics companies. Another space-related accomplishment was the addition of a unique Nanophotonics Systems Fabrication Facility (housing approximately \$15 million of capital equipment) that serves as a multi-user facility available to UCF faculty, industry, and external organizations.</p>

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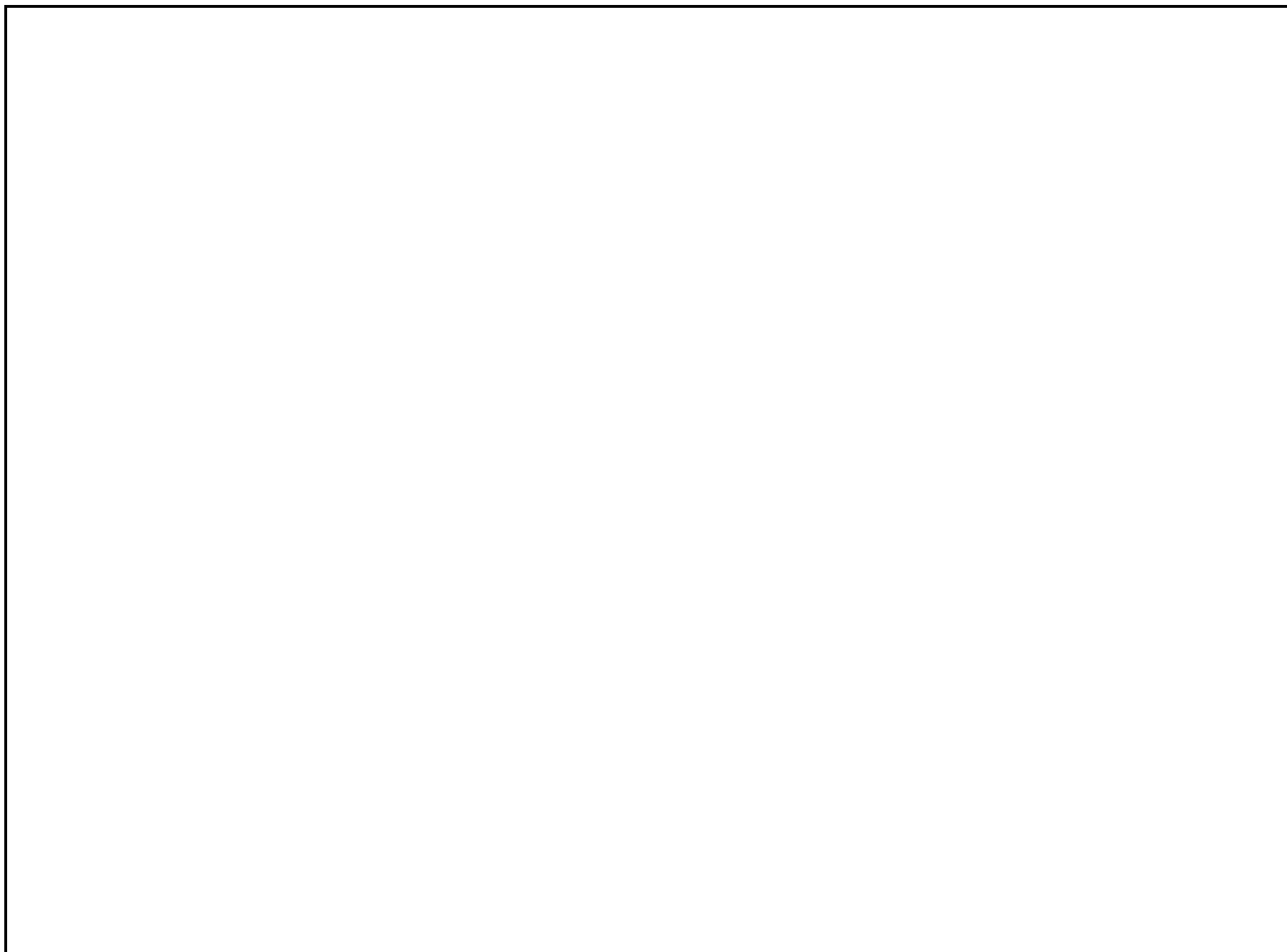
UCF Florida Photonics Center of Excellence - Laser Technology Initiative	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		2007-08
Competitive Grants Applied For and Received	106A/52R \$7,188,594	72A/25R \$4,944,450
Total Research Expenditures		\$2.0M
Publications in Refereed Journals From Center Research		25
Professional Presentations Made on Center Research		10
Invention Disclosures Filed and Issued		7 filed 2 issued
Technologies Licensed and Revenues Received		3, \$0
Collaboration Effectiveness		2007-08
Collaborations with Other Postsecondary Institutions		6
Collaborations with K-12 Education Systems/Schools		0
Collaborations with Private Industry		5
Students Supported with Center Funds		0
Students Graduated		4 PdD 2 MS
Job Placements of Graduates Upon Leaving the Center		3
Economic Development Effectiveness		2007-08
Business Start-Ups in Florida		2
Jobs Created and Jobs Saved in Florida		10
Specialized Industry Training and Education		2
Dollars Acquired from Venture Capitalists and Other Investments		\$0

Center of Excellence Narrative Comments [Most Recent Year]
<p>UCF Florida Photonics Center of Excellence - Laser Technology Initiative</p> <p>The center of excellence developed a major initiative in advanced medical laser technologies in concert with the new UCF medical school, Burnham, Scripps, Torrey Pines, and Max Planck institutes, and the 21st Century Scholar award in Laser Medicine. The center has advertised for the first two faculty positions and plans to appoint a candidate to the first Townes Institute faculty position. A current researcher, Professor J. Rolland, was awarded the \$1 million King Award for medical biophotonics research.</p> <p>Additional plans are underway to establish a world-class optical fiber fabrication facility. The center is currently negotiating to take over the operations of a unique Department of Defense laser ranging and satellite imaging facility at Kennedy Space Center, including the transfer of \$10 million in state-of-the-art tracking and imaging equipment.</p> <p>The center of excellence has created two new laser technology-related companies, a third company started in 2005 continues to grow. All three companies have benefited from UCF incubator and tech-transfer support. A new Atlantis U.S.-European Master of Sciences degree program in laser-materials interaction studies was created with federal funding.</p>

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Florida International University Center of Excellence		
Name of Center of Excellence: Center of Excellence for Hurricane Damage Mitigation and Product Development	From First Year Up To Most Recent Year	Most Recent Year
Research Effectiveness		
Competitive Grants Applied For and Received	18 applied, 11 received for \$2,920,713	6 applied, 1 received for \$28,942
Total Research Expenditures	\$3,248,746	\$2,238,586
Publications in Refereed Journals From Center Research	0	0
Professional Presentations Made on Center Research	1	1
Invention Disclosures Filed and Issued	0	0
Technologies Licensed and Revenues Received	0	0
Collaboration Effectiveness		
Collaborations with Other Postsecondary Institutions	3	3
Collaborations with K-12 Education Systems/Schools	0	0
Collaborations with Private Industry	8	11
Students Supported with Center Funds	11	11
Students Graduated	0	0
Job Placements of Graduates Upon Leaving the Center	0	0
Economic Development Effectiveness		
Business Start-Ups in Florida	0	0
Jobs Created and Jobs Saved in Florida	5	5
Specialized Industry Training and Education	0	0
Dollars Acquired from Venture Capitalists and Other Investments	0	0

Center of Excellence Narrative Comments [Most Recent Year]
<p>The FIU COE award was received in July 2008. Between July and December 2008 the International Hurricane Research underwent an administrative restructuring. Activities in Winter/Spring '09 concentrated on hiring or placement of Center personnel, including business director, and research/technology and outreach directors and developing a work plan for the three main areas of research. Delays with the Wall of Wind testing facility continue to limit research in the areas of hurricane damage mitigation and development of partnerships with industry. The Facility is planned for completion in Spring 2010.</p>



The State University System of Florida



Excerpt from 2009 Annual Report

Commercialization Access Grants

Appendix II

Note concerning data accuracy: The Office of the Board of Governors believes that the accuracy of the data it collects and reports is paramount to ensuring accountability in the State University System. Thus, the Board Office allows university resubmissions of data to correct errors when they are discovered. This policy can lead to changes in historical data. The data in this document are based on university file submissions as of December 18, 2009.

Appendix II

University of Florida Commercialization Assistance Grants

Narrative Comments [Most Recent Year]

Sharklet

Sharklet has developed a surface topography concept that prevents bacteria, algae, etc from growing on medical devices, ship hulls and many other surfaces where such growth is unwelcome. Sharklet needs funding to develop its manufacturing process and marketing program. The potential for sales has an extremely large upside, but as with any biotech investment there is significant risk involved.

Sharklet contracted with the University of Florida to complete the following deliverables:

1. Creation of a high paying job, VP Product Marketing and Product Launch (with FDA experience.) Sharklet hired a Director of business Development, a bio-engineer, manufacturing technician and a regulatory affairs and quality assurance consultant.
2. Legal Fees to Develop a Private Placement Memorandum (to raise funds to prepare for FDA processes and clinical trials.)
3. To purchase manufacturing / prototyping software and equipment.
4. Legal fees associated with patent costs, domestic and international filings, trademark protection an additional IP development.
5. First run manufacturing of our pattern on medical devices.
6. Lab space rent and testing equipment.

Update: Sharklet completed all contract deliverables. During this project development, Sharklet was able to expand the protection of their intellectual property, make incredible strides in manufacturing, advance long standing relationships with key strategic partners and conduct various lab testing. Sharklet has raised a \$1.5 million Series A financing led by Austin-based Limestone Ventures. The company is one of TechJournal South's 2009 Tech 50 firms and has made its first commercial sale.

Narrative Comments [Most Recent Year]

HSW – ASEDRA

SURCAG funds were allocated and completed according to the deliverables of the spend plan as follows:

1. Marketing, develop a marketing plan for ASEDRA software through HSW Technologies LLC.
2. Website Development to improve the usability, marketability, and sales persuasiveness linked to ASEDRA and HSWT.
3. Design of Collateral Materials (design of professional corporate brochures, logos, etc).
4. Market and Customer Research.

Future development activities include product commercialization. It is estimated that the total development time remaining before a product will be commercialized will be sometime in the summer of 2010, given that development is challenging for this technology integration into existing radiation hardware. HSW is confident in the performance of the product, and are pressing forward to promote the product.

Update: HSW has refined the software for ASEDRA and is taking the product into the handheld sensor market on their own.

Oceanus

Oceanus was a university of Florida Startup company developing a real time water monitoring system.

Among the deliverables for Oceanus were to:

1. Conduct market research.
2. Develop a business plan and investor PowerPoint presentation.
3. Develop a website and develop a company brand.

Update: Oceanus completed all the deliverables but was unable to raise investment capital and is dormant.

Appendix II

Narrative Comments [Most Recent Year]

Dr. Roy- Self-Sterilization Device- Surf Plasma

The Self-Sterilize Device (SSD) is a first generation lab prototype to demonstrate the process of Self-sterilization of medical devices and other objects using plasma fields.

Contract deliverables include:

1. Business Plan Development

Status – A business development plan and investor presentation has been developed in conjunction with the UF Integrated Technology Ventures program, the inventors and consultants such as Robrady Design in Sarasota Florida.

2. Company Registration & Formation for SBIR Phase I Grant Application and related activities

Status – We have retained a corporate attorney through the firm Edwards Angell Palmer & Dodge. The company is a now registered as a C-corporation in the state of Florida under the name: SurfPlasma, Inc. The domain name of www.surfplasma.com was also registered.

3. Market Research and SSD Team Support Activities

Status – The product identified through Market Research activities and through the efforts of the University of Florida Integrated Technology Ventures team is called a Mobile Sterilization Unit or MSU. The MSU will use the UF patented self-sterilizing technology to automatically sense contaminated objects such as surgical instruments and subsequently sterilize them in a matter of seconds using plasma. The MSU will be portable and durable enough to be used in a variety of market scenarios including hospitals, military field medics, disaster relief, pharmaceutical labs, ambulance medics, and public health agencies such as the World Health Organization (WHO).

4. Consumer/Medical Shows & Customer Meetings

Status – The SSD team is continuing discussions with potential customers and corporate partners. We have been working closely with UF Office of Technology Licensing to target and market the project to companies and investors interested in developing the MSU product line. We will continue to contact key customers for feedback on the MSU and related concepts. Potential customers we are targeting include: paramedics, medical military personnel, and the World Health Organization. We also plan to attend Consumer/Medical shows and speak with potential customer and corporate partners.

Update: SurfPlasma was optioned by another startup which is currently providing research funding for a one year project within the lab. SurfPlasma will be showing the device at the world's largest medical device conference in the world this November. Drs. Roy and Johnson will continue to work with dental and physician offices in identifying customer needs and how to adapt the device to those needs.

Narrative Comments [Most Recent Year]

Audigence

Audigence Inc. is a Florida-based company that is commercializing a software algorithm to help optimize cochlear implant and digital hearing aid devices. One of the largest problems with hearing devices is the inability to properly optimize patient hearing, often caused by the patients themselves.

Audigence utilized SURCAG funds to:

Hiring a Marketing and Customer Support Engineer. Grant money was used to finance the market analysis of 3 potential markets: (1) cochlear implants, (2) digital hearing aids, (3) cell phones-audio. To accomplish this task, Audigence hired staff to support the marketing and customer support functions.

The Audigence team accomplished:

1. Marketing Road Map for the Cochlear Implants and Digital Hearing Aids marketplace.
2. A report on the current status of the cell phone and ASR domain was developed.
3. Signing of first license agreement with a leading U.S. based digital hearing device manufacturer. Audigence expects to see revenues during the late part of 2009 or early part of year 2010. In addition, Audigence is in a discussion-stage with strategic partners and is nearing a agreement.

Update: Audigence, which now has 12 employees, is licensing the technology to a hearing aid company in Orlando. They are hoping to have the product launched in October at the national meeting of the Academy of Dispensing Audiology in Clearwater.

Appendix II

Narrative Comments [Most Recent Year]

Neuromagnetix

Under the SURCAG grant award, NeuroMagnetix analyzed the business viability of a magnetoencephalography device and system (MEG) based on atomic magnetometer technology. This analysis gave rise to the unanticipated discovery of two additional products based on the same magnetometer technology: magnetic resonance imaging (MRI) and magnetocardiography (MCG). After further analysis the Company believes that the most economically viable product – that requiring the least development cost, the shortest timeline to market, along with a multi-billion dollar market is the MCG.

As a result, NeuroMagnetix intends to focus on developing the world's first handheld stethoscope/electrocardiography device capable of instantly providing both heartbeat sound and an electrocardiography-type rhythm record – without touching the patient. Based on proven electromagnetic sensing technology, and small enough to be held in the hand like a stethoscope, the NeuroMagnetix Rapid Electromagnetic Heartbeat Assessment Device or REHAD™ will allow healthcare providers to listen to a heart beat and record electrocardiography heart rhythm by simply holding it above any patient's chest.

The Company's immediate focus is the tasks associated with the development of the REHAD™. Following that, the Company's focus will become marketing and distribution. Its plan for reaching the market in as short a time as possible involves an adherence to task and timeline project management; in-house development as well as collaborative efforts, where necessary, with both individuals and organizations; and outsourcing manufacturing.

Update: Faculty is still developing the REHAD. A provisional patent was filed.

Narrative Comments [Most Recent Year]

CureFACKtor

Developed from over a decade of work in the labs of Dr. William Cance of the Department of Surgery at University of Florida College of Medicine, FAK Inhibitors could provide powerful cancer therapies, especially for pancreatic cancer and breast cancer, among other forms of cancer.

The UF research program has generated multiple compounds focused on the FAK inhibitors. A written business plan will allow UF to know which of these molecules to focus on for development, particularly due to feasibility analysis of C4 and other production issues, as well as a keen understanding of the regulatory hurdles to overcome. A completed business plan, with these feasibility issues worked out, will best represent the opportunity to attract investors.

The contract Deliverables were as stated:

1. Engage one or more consultants, assumed experts in respective fields, to conduct feasibility assessments of clinical, regulatory and commercial viability of C4 (and other compounds), and assessment of chemistry, manufacturing and controls of C4 (and other compounds).
2. Marry these studies to the proper IP strategy and file patents.
3. Write a full, detailed business plan based on what is learned in the first two uses and accompanying investor presentation. A copy of the completed business plan and investor presentation shall be provided to the University of Florida.
4. Provide written verification of a match of \$75,000 and use of the match funds supported the work described in this contract. Executed License Agreement for the Focal Adhesion Kinase inhibitors by April 30, 2009.

Update: An option agreement is in place and CureFacktor is in the later stages of licensing the technology.

Appendix II

Narrative Comments [Most Recent Year]

WiOptix

WiOptix is a medical technology venture focusing on the production of disposable probes which use MEMS (Microelectromechanical systems) technology integrated with systems in order to provide real-time imaging consisting of high quality depth and resolution at the epithelial level of the skin. The patent-protected probes will be used by physicians to maximize their effectiveness while minimizing tissue penetration during guided surgical procedures, typically related to the very early detection of cancer.

WiOptix plans to further develop its OCT technology in order to adapt to different systems companies. It will seek leading producers that have systems already in place which can be easily integrated with the probes. Potential customers include but are not limited to Imalux Corporation, Lantis Laser Inc., and Carl Zeiss Meditec Inc.

WiOptix plans to operate initially as an independent supplier to multiple buyers in the previously-mentioned medical fields. After gaining market penetration in approximately two to three segments (expected in year four) WiOptix will seek an individual buyer from its established customer base.

Update: The contract between UF and WiOptix was extended as several of the SURCAG contracts were to give the company more time to complete their objectives. The company is currently completing their objectives in the development of their market research and identifying strategic partners in both the OCT Company's space and endoscopy companies space.

Narrative Comments [Most Recent Year]

Kairos

The OCREf technology at the heart of this market study does serve some interesting and valuable markets. This is in spite of the fact that its application has narrowed due to the relaxation of its performance objectives. In particular, pursuit of the reference component opportunity described in the earlier SURCAG report of this study is now less likely due to the technical as well as funding limitations.

Substantial embedded reference and Zigbee network opportunities are available if the OCREf technology can be proven to meet the new relaxed performance goals. Quantifying the exact OCREf market opportunity that does exist will not be possible until the reference is actually fabricated and characterized sometime early next year.

In the last report, the market for a packaged OCREf electronic component was described and quantified. The OCREf component could eventually serve a semiconductor market of over \$2B that will grow dramatically over the next 5 years. Since that report, it was found that the original OCREf performance and IP position are not as strong as original anticipated. So the OCREf architecture has been reworked and is expected to perform well enough to serve some interesting markets. However, it will need further improvement to achieve the more demanding performance requirements needed to compete in the highly competitive component reference market.

An additional concern raised in the last report is the significant capital investment needed to build a component IC company. It is much greater than that needed to establish an embedded IP licensing business and will require major venture capital investment of tens of millions of dollars. The recent economic decline and the likelihood of a lengthy recession are making it difficult to impossible to obtain this level of funding in the foreseeable future, particularly for a semiconductor company. Therefore, the OCREf component business is not an attractive option at this point.

Update: Kairos is now a defunct company.

Appendix II

Florida State University Commercialization Assistance Grants

Narrative Comments [As of 1 November 2009]

FSU Phase I grant of \$50,000

FSU's Phase I commitment was to establish a process for identifying technologies that could support new business formation. Five prospects were identified in the proposal. One, for electrolytic production of hydrogen, has been licensed to a new Florida start-up company. A second, using a library of images as commercial art, progressed to Phase II and has been licensed to a new local start-up company. A third, the hydrogen peroxide generator, is of interest to an existing Florida company. 41 additional disclosures have been evaluated. 6 of these have been granted FSU prototype funding. 3 are likely to become phase II candidates. We are currently employing 3 student interns to conduct evaluations of all incoming disclosures. Remaining funds will allow us to continue this process through April 2010.

FSU's Phase II award of \$100K (state) and \$100K (FSU) match

FSU's phase II commitment was to establish a process to recruit entrepreneurs and develop fundable business plans. Business plans were committed for two previously identified opportunities, and any new business opportunities that emerged from Phase I. At November 1, 2009, we had developed initial plans and worked to recruit entrepreneurs for three opportunities and are working on others.

One business that emerged through phase II funding is local start-up company, BevShots MicroArt, LLC., which is using a library of FSU licensed images as commercial, modern art.. Another opportunity, Master Craftsman Studio, has had a Business Plan written and is being prepared for a further review by external business advisors before being presented to potential Investors/Entrepreneurs.

Another start-up company, Florida Custom Synthesis, Inc., has been formed based on a Phase 1 activity that migrated through Phase II quickly to launch by way of the ChemPreneurs program. FSU created the 'ChemPreneurs' course from January to April 2009. ChemPreneurs is an exciting new project that was launched spring 2009 that paired 4 teams that consisted of a bright doctoral candidates from chemistry and an entrepreneurial-minded undergraduate business school student to come together and offer a commercialization plan on potentially breakthrough technology that arose out of the FSU Chemistry Department. . Chemistry Professor Greg Dudley and his PhD student Doug Engel have created the Florida-based start-up company Florida Custom Synthesis. The ChemPreneur course is being repeated as of fall '09 as a 2 semester course and will become a regular feature at FSU.

In addition, FSU created the Technology, Entrepreneurship and Commercialization course for fall '09. In this Directed Studies Course, students (MBA candidates, as well as scientist and engineering graduate students, are exposed to a number of Phase 1 & II and other projects to undertake an analysis of commercial possibilities. One option is to create a start-up company. Results are beginning to emerge. The course will likely be repeated in fall '10.

Remaining funds will allow us to advance _some known new opportunities from Phase I through Phase II.

FSU's Phase III award of 250K, match of \$250,000 required from non state funds. FSU's phase III commitment is to support the formation of a start-up company to develop products such as "buckypaper", based on technology from the FSU High Performance Materials Institute. Two significant efforts took place in late 2008; but neither resulted in an operational company. A third effort to organize the company, using outside expertise, began in May. The prospect of a start-up success is currently low. The \$250K state SURCAG remains in escrow.

Appendix II

Florida A&M University Commercialization Assistance Grants

Narrative Comments [Most Recent Year]

FAMU received a grant of \$41,000 for Phase I of the Commercialization Assistance Grants. A total of \$40,884.91 was expended and the grant ended in April 2009. The grant assisted with early market research, independent evaluation, consultation, and other initial activities that may be required to develop an initial business model for a university research product that has the potential for commercialization. As a result of the grant a new framework and focus, i.e. a new model, was created for university technology transfer. This new model was applied to three previously disclosed ideas and summarized the cumulative understanding that has come from this activity. The University plans to fully implement the framework, document case studies describing its deployment, institutionalize it as a standard business process in the FAMU Office of Technology Transfer, incorporate it into a graduate course in Technology Commercialization, and facilitate its dissemination through the university community via workshops for interested faculty, staff and business practitioners.

University of South Florida Commercialization Assistance Grants

Narrative Comments [Most Recent Year]

USF Phase I: Early Stage RAID (\$50,000) A no cost extension was received for this project.

Program Setup and Selection: Initial review of the USF portfolio was conducted to develop a short list of technologies to evaluate for inclusion in the program. The list was narrowed to 5 potential technologies. Interviews were conducted with faculty to discuss interest in participation, additional scientific considerations, and the process moving forward if their technology is selected.

Subcontractor Evaluation and Selection: Several potential contractors for training and development of the RAID applications were contacted by phone, email, and in person. The contractors experience and expertise were evaluated. Process, cost, and scope of the project were discussed. At least two applications should be possible based on initial discussions if USF is actively involved in the process and dedicates a graduate student in the faculty lab who worked on the project and internal staff to work closely with external contractors. The contractor was narrowed to SRI. Terms for the engagement were negotiated and agreed to. Two technologies were selected and initial efforts begun to submit one application by the August Deadline for cancer therapeutic compounds. Initial drafting for the next deadline has been started on the second application. Optimistic that there is a possibility of more than two applications as a result of this important grant.

USF Phase II: Platinum Compounds (\$50,000)

Matching Funds and Compound Synthesis: Contract is in place with external university to synthesize the primary compounds and matching funds are being expended. A no cost extension was granted on the research contract. The first and second scientific reports were received under the matching funds grant. Satisfactory quantity and quality of compounds has not yet been achieved for the next level of studies required. Additional interaction with former USF faculty members and contract scientists ongoing. We remain optimistic that there will be a positive result from the synthesis experiments. Upon completion of synthesis, business plan will be initiated.

Additional grant programs with commercialization focus:

USF has provided a number of matching grants to many top high-tech businesses through the Florida High Tech Corridor Council's Matching Grants Research Program. Since FY 04-05, USF has awarded more than \$ 21.3 million in grant funding to assist over 76 Florida-based companies' conduct research by leveraging the expertise of the University in their applied research projects. A number of the successful projects have produced marketed products, in a variety of fields, from personal hygiene to wireless communications.

Appendix II

Florida Atlantic University Commercialization Assistance Grants

Narrative Comments [Most Recent Year]

Award: \$184,294

Intellectual Property (IP) Development

- Patent 7,414,139 issued August 19, 2008
- Divisional Patent Application 12/185,480 filed August 4, 2008
- PCT/US2009/42703 filed May 4, 2009

Licensing of IP

- Currently, the following technology is licensed exclusively to CHS Resources LLC by FAU, per a license agreement completed October 17, 2005 as amended November 6, 2008.
 - FAU Case #2005-07 Enhanced Killing of Cancer Cells in a Topical Application
 - Utility Patent #60/664,383 applied for March 3, 2005
- FAU and CHS completed an Exclusive Option to CHS for the technologies listed below which will complement the currently licensed technologies.
 - FAU #200218 Catalytic Antioxidants and Methods of Use developed by Dr. Weissbach (FAU) and Brot(HSS) protected by the following patents and patent applications: 7,129,374 issued 10/31/06; 7,414,139 issued 8/19/08; CIP 12/115,331 filed 5/5/08; Divisional Patent Application 12/185,480 filed 8/8/08.

Initial Product Development

- CHS Pharma contracted with IGI for initial OTC product formulation 7/31/08; revised formulation is being worked on.
- Outside consultant for OTC sunscreen product engaged

Clinical Work towards product development

- Western IRM clinical protocols filed 8/25/08
- Two (2) proof of concept studies on AK
- Proof of concept study for sulindac protection in humans against UV damage.
- FDA consultant engaged
- Animal studies conducted in Fall 2008 to investigate the ability of sulindac to protect mice against

Company Growth/Development

- CHS has committed over \$141,890 towards matching requirements thru end of FY09
- Fund raising by CHS continued through the year to begin Phase I clinical trials in late FY 10
- Company is still development stage company with one uncompensated employee

University of West Florida Commercialization Assistance Grants

Narrative Comments [Most Recent Year]

The University of West Florida received a Phase I Commercialization Assistance Grant in the amount of \$50,000 from the SURCAG Program in June, 2008, to assist in developing a review of pending intellectual property disclosures and properties for commercialization. This grant allowed the University to contract with an external consultant to review the pending properties and to make recommendations for and assist in commercialization efforts. TreMonti Consulting was contracted to perform this service and to date has made reviews of 12 potential products or product areas. As a result of this project, one patent application has been filed and one is in preparation for filing. Three trademarks have been identified. One start-up company for commercialization of the Next Exit History and TellusPoint is in the early stages of organization.

Appendix II

University of Central Florida Commercialization Assistance Grants

Narrative Comments [Most Recent Year]

Phase I: Cellulosic Ethanol (\$40,500)

As part of the evaluation process, the cellulosic ethanol project met with a number of groups interested in the cellulosic ethanol enzyme technology, identified one lead group and executed a non-binding letter of intent, negotiated a Sponsored Research Agreement and a License Agreement with this group, and established a technology review committee to review and make recommendations concerning intellectual property applications.

The project filed a provisional patent application entitled "Production and Use of Plant Degrading Materials," in February 2008, prior to the award of the commercial assistance grant. Cellulosic ethanol intends to seek both foreign and U.S. patent protection for this technology and will file the appropriate applications in February 2009.

Budgeted expenses to date total \$9,950, including \$1,200 for a Graduate Assistant position assisting with reviewing the technology and preparing technology marketing summaries and \$8,750 on an annual subscription to Knowledge Express, a proprietary database covering licensing opportunities, company profiles, royalty rates and contract details, domestic and international patents and applications, drug development pipeline, clinical trial results, and industry news and market intelligence.

Phase I: My Space Case (\$25,000)

The national trademark and updated copyright protection has been secured. The feasibility of patenting the engine of the product is being assessed. If feasible, then patent documentation will be prepared and submitted. The feasibility of potential sales markets and the impact on those markets has been completed and is being incorporated into the executive business plan. An additional assessment of technology needs and potential licensing opportunities has been initiated and will be completed shortly. Several new team members are assisting with these development plans. Licensing agreements have been finalized for different specialties on copyright, royalties, and business development relationships for potential partners. My Space Case has been presented at conferences in Las Vegas, NV; Raleigh, NC; Orlando and Jacksonville, FL; Nashville, TN; MD; San Antonio, TX; and Washington, DC.

Phase I: Microfluidic Chips (\$30,000)

A lead consultant was engaged and his review of intellectual property for Microfluidic Chips was completed. Operations have been developed and potential applications for the technology have been identified. We are currently engaged in discussions with a potential industry partner.

The project has incurred \$7,500 expenses to date. Anticipated expenses will include \$7,500 in consulting fees, \$5,000 for intellectual property protection and strategy, and \$10,000 in travel to promote sample development and project management.

Phase II: Sim Vroom (\$25,000)

Simiosys has worked with a UCF computer science team since early summer to formulate a "promotype" of the SimVroom Product. The following tasks have been completed. Key subject matter experts were consulted to determine product design requirements and business models for training centers, schools, museums and hospitals. Strategic partners were found to provide the product life cycle from design, fabrication, distribution and operations. An on-line survey was created to investigate a broad spectrum of industries based on the subject matter experts' recommendations. Targeted alpha customers were identified to work as strategic brand partners to assist in the infiltration of the cross markets. Multiple federal grants have been applied for to develop first-articles of the product. Conference attendance has provided critical assessment of the competitive landscape. A growing need and demand has been identified for the product. Face-to-face interviews and site visits to alpha consumers have begun. Market research is on-going with a rough draft of the business model available with the next report.

Budget expenses incurred to date are \$21,000, of which \$6,500 remains to be disbursed. Anticipated expenses include \$4,000 for the completion of the business plan and the licensing of intellectual property from UCF.

The next project step will be to prepare and send the Small Business Technology Transfer application to NSF in February. Simiosys intends to repay the state upon the successful completion of pending tasks.

Appendix II

Phase III - LP Photonics (\$184,294)

This Phase III SURCAG award was made to UCF to establish a new company to develop technology associated with next-generation lithography for mass computer chip fabrication. The Richardson laboratories in the College of Optics and Photonics has for many years been developing high power EUV light sources suitable for the generation of lithography steppers used for memory chip and microprocessor manufacture. Through this effort, supported by both federal and industrial funding, UCF has accumulated a large inventory of intellectual property and expertise in laser-plasma-based EUV light sources.

Under preferential licensing terms, this technology is being transferred to a new startup company, LP Photonics, which will begin operations in 2009. The company is one of only four companies worldwide developing EUV light sources. This is a large new predictable market for a small number of high-value systems (\$5 million to \$8 million per system) to a limited number of customers, three stepper manufacturers, approximately 12 chip manufacturers, and the laboratories of a few chip industry consortia (Sematech and IMEC).

The technological approach being pursued by LP Photonics is based on proprietary UCF source technology and is distinct relative to the other three competitors. Independent experts rate the UCF technology to be one of the two best technologies.

Creating a new company in this arena presents very specific challenges, both in the engineering complexity of these sources and the corporate need for major investment. The SURCAG Phase III funding was particularly effective. Most of the funds are intended for critical technical components. Although these represent only a small fraction of the equipment provided, the allocation of state funds for a new Florida-based company based on IP generated in the SUS has been of significant impact in raising venture capital investment. LP Photonics is expecting major venture capital funding of \$3 to \$5 million in early 2009.

Florida International University Commercialization Assistance Grants

Narrative Comments [Most Recent Year]

Intent of Funds: To help FIU leverage its small staff to improve its technology transfer process for identifying and determining the best biomedical technologies for potential as startups, and to foster and improve joint-collaboration environment for commercialization opportunities.

Activities for 2009: Assessed and identified additional technologies, projects and technology portfolios, developed marketing plans and requested further patent protection. Identified and assessed databases to assist with marketing, showcasing and managing technologies.

Identified, developed marketing materials and conducted initial marketing for the following:

Novel Fabrication of Method of Nanoscale Fibers and Tubes portfolio of technologies (Fields: Molecular profiling, improvement of sensors and systems)

DNA Sensors Using Single-Walled Carbon Nanotubes (Fields: Microbiology, infectious diseases)

Based upon external interest and marketing results, narrowed previously identified technologies to the following with start up potential and potential for facilitation of commercialization between entrepreneurs and investors:

Intravascular Delivery System for a Catheter Deliverable Heart Valve Prosthesis, Catheter Deliverable Artificial Trileaflet Aortic Valve Prosthesis, Collapsible Heart Valve with Polymer Leaflets: Submitted this portfolio of technologies for presentation at investor showcase events. Presentations accepted at the 2009 WBT (World's Best Technologies) Showcase and at the Life Sciences Summit 2009. Worked with Florida Institute for Commercialization of Public Research to have Entrepreneur in Residence review potential of the technology.

Hand-held Optical Probe Based Imaging System, and related Automated Real Time Co-Registration Software: Further enhanced patent portfolio by continuing with patent prosecution and submitting a non-provisional patent application for the Automated Real Time Co-Registration Software (software in the medical imaging space). Worked with Florida Institute for Commercialization of Public Research to have Entrepreneur in Residence review potential of the technology.

The funds from the SURECAG grant used to date for development of business plans and marketing/descriptive materials have greatly assisted in marketing this portfolio of technologies to potential entrepreneurs and investors, and in obtaining feedback.

Appendix II

University of North Florida Commercialization Assistance Grants

Narrative Comments [Most Recent Year]

Technology Transfer Infrastructure Enhancement and the Commercialization of a Research Product at the University of North Florida

Grant funding was provided to support patent costs, pre-marketing activities and the development of marketing materials for existing technologies developed by the UNF Sensor Research Group.

Phase I Grant: \$26,755

Activities and Accomplishments from December 01, 2008 to December 01, 2009

1. Patent Activity :

- Invention disclosure processed and patent application for a sensor technology filed with the USPTO: "Quartz Crystal Microbalance with Nanocrystalline Oxide Semiconductor Thin Films and Method of Detecting Vapors and Odors Including Alcoholic Beverages, Explosive Materials and Volatilized Chemical Compounds," April 01, 2009.

2. Pre-Marketing Activities:

- The Slade Entrepreneur in Residence at UNF, Mr. David Hayes, and two Coggin College of Business students were contracted to prepare a feasibility study for the marketing of UNF sensor technologies. The completed study established a framework for marketing the technologies. The study identified potential markets in agriculture, medical diagnostics, health care, environmental services, defense, homeland security and energy.
- In consultation with Mr. Hayes we are developing marketing brochures for each one of the sensor technologies. A concerted effort is underway to develop partnerships with medical device manufacturers and local healthcare researchers to explore health related applications of the sensors. This includes a symposium on sensor applications, targeting these partners, government agencies and venture groups early in 2010.
- We employed two engineering students to develop marketing modules for a project on Detection and Reporting of Light Sources, with potential applications in energy savings.
- We collaborated with 2 Florida companies to develop and submit SBIR proposals based on UNF sensor technologies, in response to DARPA and Navy RFPs. The projects proposed in these submissions are likely to become Phase II candidates.