 COMMITTEE ON ACADEMIC AND STUDENT AFFAIRS  
Tuesday, December 15, 2015  

SUBJECT: REPORT ON RESEARCH  

PROPOSED COMMITTEE ACTION  
No action is necessary. This item is only informational.  

BACKGROUND INFORMATION  
Dr. Daniel Flynn, Vice President for Research, will give a general update on the Division of Research.  

IMPLEMENTATION PLAN/DATE  
N/A  

FISCAL IMPLICATIONS  
N/A  

Supporting Documentation: PowerPoint Presentation  

Presented by: Dr. Daniel Flynn, VP for Research  
Phone: 561-297-0268
Division of Research

Presented by Daniel Flynn, Ph.D.
Board of Trustees – Committee on Academic and Student Affairs
December 15, 2015
Pillars/Institutes

Increasing FAU researchers’ capacity to collaborate across disciplines and administrative domains
PILLARS AND PLATFORMS

These areas of focus will guide institutional goals and strategic actions.

Pillars | Platforms

Click individual pillars and platforms for more info
Pillars and Platforms

Pillars

- Sensor Systems
  • Director hired, Programs identified, faculty recruiting
- Healthy Aging
  • Director hired, Programs identified, faculty recruiting
- Neurosciences
  • Director hired, Programs identified, faculty recruiting
- Ocean & Environmental Sciences
  • Programs identified
  • Director search underway, faculty recruiting to follow

Platforms

- Big Data Analytics
  • Director named, steering committee identified
- Community Engagement & Economic Development
  • Director named, steering committee identified
- Leadership/Innovation/Entrepreneurship
  • Under development
- Undergraduate Research
  • Director named, steering committee identified
- Diversity
- Global Perspectives
- Healthy and Environmentally Sustainable campus
- Peace, Justice, Human Rights
- South Florida Culture
I-SENSE (Institute for Sensing and Embedded Network Systems Engineering)

Jason Hallstrom, Ph.D., director — Established January 2015

• Developing network of industrial partners, including Telit and Atmel, both global companies working in the Internet of Things

• Creating a network of FAU collaborators.
  ➢ Led 9 federal proposals, involving about 20 FAU faculty, from some 9 departments/institutes, — and OIT, Scripps, Max Planck and an industry partner (Tyco)

• Hired chief engineer, director research programs and services, and identified four program leaders, including faculty from medicine, engineering and HBOI

• Co-recruiting faculty with civil engineering and medicine
I-HEAL (Institute for Health Aging and Lifespan Studies)

James Galvin, M.D., M.P.H, director — Established June 2015

- Establishing Clinical Trial Research Unit
- Submitting an NIH large center grant (U-54) on Dec. 15 to establish Transdisciplinary Collaborative Centers for health disparities research on chronic disease prevention - called Florida Consortium to Address Disparities Research and Education (CADRE)
- Creating Biostatistical Core and recruiting Core Leader
- Recruiting 8 faculty
I-BRAIN (FAU Neuroscience Institute)

Randy D. Blakely, Ph. D., executive director (Start date: May, 2016)

- Bringing $1.5M in research funding
- 13 patents pending and/or awarded
- Already recruiting faculty – each hold multiple federal grants
Ocean Science and Engineering/Environmental Sciences

- National search underway for director/executive director
Grants Activity
Grants Submitted and Awards

Grant Proposals Submitted

<table>
<thead>
<tr>
<th>Year</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>431</td>
<td>444</td>
<td>385</td>
<td>379</td>
<td>461</td>
<td>484*</td>
</tr>
</tbody>
</table>

FAU Research Awards

<table>
<thead>
<tr>
<th>Year</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>$43,208,722</td>
<td>$47,979,846</td>
<td>$33,285,585</td>
<td>$33,390,470</td>
<td>$35,167,950</td>
<td>$40,000,000*</td>
</tr>
</tbody>
</table>

* Pro-rated based on Q1 activity
## Grants Activity

Top 5 Federal Agencies that provide grant support to FAU

<table>
<thead>
<tr>
<th>Florida Atlantic University (FAU)</th>
<th>Funds Received</th>
<th>Funds Requested</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. DEPARTMENT OF EDUCATION</td>
<td>$ 5,869,713</td>
<td>$ 20,292,621</td>
</tr>
<tr>
<td>NATIONAL SCIENCE FOUNDATION</td>
<td>$ 4,909,797</td>
<td>$ 44,028,955</td>
</tr>
<tr>
<td>U.S. DEPARTMENT OF AGRICULTURE</td>
<td>$ 4,068,890</td>
<td>$ 4,528,912</td>
</tr>
<tr>
<td>HEALTH AND HUMAN SERVICES</td>
<td>$ 4,039,070</td>
<td>$ 57,001,763</td>
</tr>
<tr>
<td>U.S. DEPARTMENT OF COMMERCE</td>
<td>$ 2,033,801</td>
<td>$ 6,444,242</td>
</tr>
</tbody>
</table>
Technology Transfer Activity
Invention Disclosures & Provisionals Filed

**Invention Disclosures**

<table>
<thead>
<tr>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>14</td>
<td>17*</td>
</tr>
</tbody>
</table>

**Provisional Patents Filed**

<table>
<thead>
<tr>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>14</td>
<td>10*</td>
</tr>
</tbody>
</table>

*Pro-rated based on Q1 activity*
Technology Transfer Activity

Patents Filed and Awarded

*Pro-rated based on Q1 activity
Licensing Deals and Royalties

**Licensing Deals**

<table>
<thead>
<tr>
<th></th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>4</td>
<td>3*</td>
</tr>
</tbody>
</table>

**Revenue - Royalties**

<table>
<thead>
<tr>
<th></th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$258,000</td>
<td>$162,000</td>
<td>$82,000</td>
<td>$227,000</td>
<td>$153,000</td>
<td>$116,000*</td>
</tr>
</tbody>
</table>

* Pro-rated based on Q1 activity
Economic Development Activity
Start-Up Companies

- Forseti Biosciences, Inc. (2000)
- CHS Pharma (2005)
- Rose Pearl (2010)
- Interact TEAM Strategies, LLC (2013)
- Eco Neurologics, Inc. (2014)
- Circular Logic, LLC (2014)
- Zebra Pet, LLC (2015)
**Tech Runway**

Capital Investment as of 12/7/15: $4.67 M

<table>
<thead>
<tr>
<th>Media/Programs/Events as of 9/1/15</th>
<th>Economic Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 startup boot camps</td>
<td>14 startups</td>
</tr>
<tr>
<td>15,242 mentor hours</td>
<td>$6.565M in investment dollars</td>
</tr>
<tr>
<td>65 vetted mentors</td>
<td>51 new jobs</td>
</tr>
<tr>
<td>8,500 attendees to events</td>
<td>$75K/per year salary average $$$</td>
</tr>
<tr>
<td>2.5M views</td>
<td></td>
</tr>
<tr>
<td>(Miami Herald, Entrepreneur Mag, Florida Trends)</td>
<td></td>
</tr>
</tbody>
</table>
CAKE (Center for Advanced Knowledge Enablement)

- **Smart Building Optimization Systems And Algorithms** - The Engineering East power, HVAC systems, and the server room are heavily instrumented with hundreds of sensors to investigate the relationships between the outside environmental parameters and the power generated.

- **Distributed Cloud Computing: 3-D Visualization Services For Climate Data On Demand** – CAKE researchers have developed the capability to deliver a decade of 3-D gridded arrays of animated visualizations of spectral IR satellite radiance data from instruments on AQUA.

- **Asset Identification Using Image Descriptors** - A mobile/tablet-based solution is being developed to automate the process of asset identification by capturing the images of assets that can be searched an annotated database.
Research Highlights

Partnerships

• With Max Planck on a research and education program to recruit promising scientists to FAU's John D. MacArthur Campus in Jupiter

• With SK Telecom, South Korea’s largest telecommunications company, on the development of secure communications using quantum physics

• With University MRI to provide FAU neurosciences researchers with access to the newest imaging technologies available today
Research Highlights

New Grants

- $620,000 NSF grant to increase the number of STEM undergraduates with the University of Central Florida and Western Carolina University

- A nearly a $300,000 NSF grant as part of a three-year, $2.2 million collaborative project with Lehigh University on the resilience of critical infrastructure

- A $1.2 million U.S. Department of Education graduate program grant to better prepare teachers to work with Autistic children
New Grants

- A nearly $190,000 grant from the Digital Trust Foundation, formed by Facebook, to collect national data on cyber bullying and teen dating violence

- A one-year Florida Department of Transportation $187,000 grant to research the use of unmanned marine vehicles for on-water bridge inspections

- A two-year $2.1 million contract with Otsuka America Pharmaceutical Inc. to study long-acting antipsychotic medication and 30-day hospital readmission rates