

DRAFT ACTION PLAN

October 13, 2006 Transcript Copy

Center for Excellence in Integrative Fisheries Science

Developed by the Faculty and Graduate Students of
The Department of Fisheries and Aquatic Sciences
University of Florida, Institute for Food and Agricultural Sciences

October 2006

FOR DISCUSSION PURPOSES

Please read the document and then for each section of the Action Plan (starting on page 6) indicate your rating using the 1-5 box below the text. Also write in any specific comments / issues you have. This feedback will be particularly helpful to developing the final version of the document, along with your input during the stakeholder retreat on October 13th. Please bring your marked up version to the retreat and leave it with us so that we can capture all of your written input.

CONSENSUS IS INDICATED AS FOLLOWS:

- 5 MEANS WHOLEHEARTED SUPPORT
- 4 MEANS SUPPORT
- 3 MEANS NEUTRAL
- 2 MEANS YOU STILL HAVE QUESTIONS YOU NEED TO ASK
- 1 MEANS YOU ARE OPPOSED IN TOTAL

If you rate an item "1" or "2", please indicate your questions or opposition in the "Comment" section directly below the ranking table.

I. Vision and Purpose

The Department of Fisheries and Aquatic Sciences will implement a Center for Excellence in Integrative Fisheries Science. The purpose of the center is to provide research, education and outreach in support of Florida's fisheries, which are vital to the state's economy and ecological integrity. Examples of how this Center will support fisheries science and management include:

- producing graduates skilled in cutting-edge stock assessment methodologies and the ability to proceed toward implementing the public policies of complex multi-stock and ecosystem management
- facilitating more direct collaboration with state and federal fisheries science and management programs, working with them to advance the tools available for sustainable fisheries management
- facilitating workshops to identify state-of-the-science and identify research gaps in key areas to support or complement ongoing programs of state and federal fisheries science programs
- providing innovative and effective graduate education opportunities for employees of state and federal agencies
- producing doctoral graduates who can train the next generation of fisheries scientists and managers as they assume faculty positions at major universities, institutes, or research centers

We recognize the great expertise that already exists among state and federal agencies that work with fisheries in Florida, as well as our long history of collaborative research. The Center for Excellence will allow us to build on those existing relationships, will be complementary to ongoing state and federal programs, and will allow us to more effectively address stakeholder needs and provide the basic science needed for future fisheries management.

II. Introduction and Rationale

Among the greatest treasures of the State of Florida are its productive and diverse recreational and commercial fisheries. Florida's coastal marine fisheries are among the most productive in the nation, and are estimated to have a yearly value greater than \$5 billion. Likewise, revenues associated with freshwater fishing are in excess of \$1.5 billion. These valuable fisheries resources and the associated shoreline habitats that support the State's huge tourist industry are increasingly impacted by factors related to rapid human population growth.

At this time, the State of Florida is in dire need for an integrative center focused on fisheries, given the huge economic value of the resource and the continued

impacts on it by boating, fishing, habitat loss, water quality degradation, increasing potable water needs and introduction of exotic species.

The center will work collaboratively with state and federal fisheries scientists and managers to provide objective science to address complex and often politically charged management issues. The center will train future resource managers and scientists, providing them with the knowledge, skills and competencies needed to provide innovative solutions to the problems of today and the future.

A critical and ongoing shortage in fisheries science today is the availability of individuals trained in quantitative methods of fish assessment and modeling. Most management policies for commercial, recreational, and threatened or endangered fish species must answer questions such as how much, how many, where, and when for policy actions that impact different species or ecosystems. A center for excellence must serve these critical needs and aid the State and Federal fisheries management agencies charged with their protection.

The center will help agencies address key issues related to sustainable management of fish, including allocation of harvest, fishing effort in time and space, components of fishing mortality, essential fish habitat, and fish community dynamics. Identifying and enhancing habitat requires identifying the habitat requirements for fish and the factors that impact habitat quality and quantity (e.g., shoreline development, altered water quality). Integrative fisheries management also includes contributions from ancillary research evaluating factors contributing to disease, changes in salinity and toxic algae, and options to protect wild fish stocks by raising food fish through aquaculture and use of aquaculture for wild fish stock enhancement.

The center will also explicitly address human impacts including increasing fishing pressure, development, increased use of public waterways, introduction of non-native species, reduced freshwater flow, and other human dimensions of fisheries science. The center will be a catalyst for inter-disciplinary teams to address complex issues, and will provide innovative solutions for management problems.

The center will advance the field through cutting edge science and technology development, and given Florida's subtropical location, it will provide a model for centers like it throughout the world. The Center will serve resource conservation and management agencies through continuing education workshops, collaborative research, and quantitative consulting and expertise.

Faculty in the center will become actively engaged in regional, national and global planning sessions about fisheries science and management, such as the recent forum that led to the document on 'Charting the Course for Ocean Sciences in the United States: Research Priorities,' and the meeting next year convened by NOAA Fisheries, Fisheries and Oceans Canada and the American Institute of Fishery Research Biologists called 'The Future of Fisheries Science in North America.'

III. Unique Qualifications of the Department

The faculty of the UF/IFAS Department of Fisheries and Aquatic Sciences is uniquely qualified among Florida universities to implement a Center for Excellence to address fisheries research and education needs of the State.

We are the only academic unit in the State of Florida with fisheries scientists spanning the freshwater to marine continuum. This broad expertise is critical for addressing large-scale issues such as minimum flows and levels. For example, management of Lake Okeechobee fisheries has direct implications to the river and estuarine ecosystems downstream. The Center will contain the only comprehensive group of researchers to address all components simultaneously.

We are the only academic program in the State with a substantial extension / outreach program and the ability to reach across the State via the UF/IFAS network of research and education centers and county extension offices. We house one of the nation's largest citizen water-quality monitoring programs – Florida LAKEWATCH and Project COAST, and one of the most active aquatic youth education programs: Fishing for Success.

The Department is housed within one of the nation's largest research Universities where there exists a tremendous expertise of water-related science, law, economics and other disciplines, allowing us to establish inter-disciplinary teams to address complex fisheries management issues. UF has a Water Institute that integrates all of the University water-related disciplines and this further enhances our ability to tap into expertise in hydrology, water quality, hydrologic modeling and other fields as necessary to tackle problems in fisheries management at the ecosystem level, and considering biological and socio-economic aspects. Likewise, faculty in Fisheries have forged a close working relationship with the UF Program for Environmental Statistics, providing another key quantitative component for fisheries research and graduate education. We have long-term collaborative relationships in research and outreach with the Florida Sea Grant, USGS Florida Cooperative Fish and Wildlife Research Unit, the USGS Florida Integrated Science Center, NOAA Fisheries, the Fish and Wildlife Research Institute of the Florida Fish and Wildlife

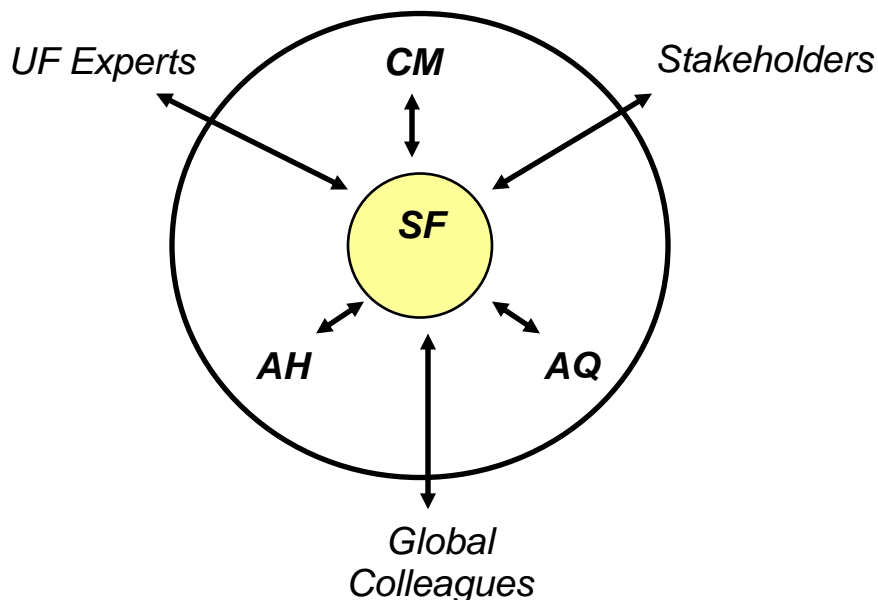
Conservation Commission (FWC), and many other state and federal agencies and water management districts. The FWC has established a core group of staff focused on minimum flows and levels who also are located at our facility and who interact extensively with our faculty and students.

The State has a critical need for graduates who are competent fisheries scientists. We are highly unique in Florida (and the nation, with just two or three other programs in the USA) in providing the necessary training for that competency. With increased human impacts to fisheries resources, this need will grow rapidly. The Department of Fisheries and Aquatic Sciences has a history of providing quality graduates that are currently working in the state and federal fisheries and natural resource management agencies.

IV. Relationship of the Center to the Department and University

The Department of Fisheries and Aquatic Sciences has four main program areas: *Aquaculture (AQ)*, *Aquatic Animal Health (AH)*, *Conservation and Management of Natural Environments (CM)* and *Sustainable Fisheries (SF)*.

Research, education and outreach related to *Sustainable Fisheries* (marine, estuarine and freshwater) form the core of the Center for Excellence. However, the success of the Center and value of its products also depend on the breadth of expertise in collaborative program areas, including those in the Department, the broader University community, and our global colleagues – and perhaps most importantly, on a continual dialogue with our stakeholders, which in the sustainable fisheries arena are mainly comprised of state and federal agencies.



V. Guiding Principles

The faculty of the Department of Fisheries and Aquatic Sciences embrace the following guiding principles as a foundation for the Center for Excellence:

- Working cooperatively with fisheries management agencies
- Conducting research that is innovative, original and objective
- Training students to be highly competent practitioners of fisheries science
- Supporting the Land Grant and Sea Grant missions

VI. Action Plan for a Center for Excellence

This document provides a concise Action Plan that will serve as a roadmap for implementing the Center for Excellence in Integrative Fisheries Science. It is organized into three sections corresponding to three goals – *Providing Practical and Innovative Solutions, Uniquely Qualified Graduates and Globally Significant Research*. Each goal is further developed into objectives and specific activities with timeframes and responsible persons in the Department. We anticipate that this Action Plan will be a living document based on continued feedback from stakeholders, graduates, and colleagues and the need to change with new information and new problems.

GOAL 1: Provide practical and innovative solutions to current problems and emerging challenges of sustainable fisheries.

This goal relates to how the center for excellence can effectively provide information to fisheries resource managers that is innovative, has practical applications, and is highly relevant to their needs. It also relates to the center being pro-active in working with agencies to identify and develop approaches for addressing emerging issues.

GOAL 1 Rating: Mean: 4.93

5	4	3	2	1
14	1	0	0	0

Comments:

1. Goal itself does not talk about the “how” only the “what”; action items does that

Objective 1.1: Implement a process to identify, better define and prioritize the critical issues in sustainable fisheries, in order to facilitate collaboration with state and federal agencies and help provide solutions

Action Item 1.1.1: Identify core faculty to lead this process (by November 2006).

Action Item 1.1.2: Core faculty develop a draft document that identifies duties, roles, and resources necessary to move this objective forward (by March 2007).

Action Item 1.1.3: Core faculty produce a value document of what the center can and will produce (by May 2007).

Action Item 1.1.4: Core faculty meet with stakeholders to define critical issues (June 2007).

Action Item 1.1.5: Core faculty convene first workshop with stakeholders where existing information about a critical issue is carefully examined and information gaps are identified (August 2007).

Action Item 1.1.6: Participants develop a white paper on state of knowledge and research needs, and a process for quickly transferring research results into applications in fisheries management (by November 2007).

This is an iterative process that over time sequentially addresses critical issues in the State and Nation, with specified timeframes and expected outcomes for each iteration of the loop. This process largely drives the research component of the center for excellence, recognizing that certain complex issues will require long-term basic research in order to have the necessary information.

Objective 1.1 Rating: Mean: 3.36

5	4	3	2	1
3	8	2	1	0

Comments:

1. You need to work with stakeholders before the document is drafted as a "value" document- so 1.1.3 needs to follow some of the other action items;
 - a. This is an iterative process
2. We need to add an action item to prioritize the issues

3. Center “could” and “might” produce rather than “can” and “will”
4. What is a “value” document?
 - a. In consultation with stakeholders and clients to make the document
 - b. Part of strategic thinking
5. Will this document be outlining the timeline; is this the product that will become the sales “pitch”
6. Time lines are approximate right now; need to be studied more for feasibility
7. Clarify that part of the process of setting priorities don’t overlook what has already been done and integrate that; make sure management function is part of priority setting
8. Stakeholders need to be defined; is it agencies? Public? We need to resolve how they are defined and how you work with them
9. some action items may need to be changed in what comes first

GOAL 2: Train students with skills and knowledge necessary to be highly competent practitioners of integrated fisheries science.

Our graduates will have a solid foundation in fish biology and ecology and the quantitative statistical and modeling skills that are essential for fisheries science and management. They also will be highly competent in: project planning, implementation and management; application of the scientific process; critical thinking; and both written and oral communication.

GOAL 2 Rating: Mean: 4.79

5	4	3	2	1
11	3	0	0	0

Comments:

1. “Training” vs. “educating”, look carefully at which you are doing
2. imbed agency personnel in academic process
3. Since we already have graduate students, change to “continue” to....
4. Why did you pick the skills you mentioned? If you only list those, itemization can exclude

Objective 2.1: Establish a graduate specialization focused on the knowledge and skills required to manage sustainable fisheries.

Action Item 2.1.1: Identify core faculty who will mentor graduate students in this specialization (by November 2006).

Action Item 2.1.2: Core faculty will consult with sustainable fisheries stakeholders to obtain input about essential skills and knowledge of graduates from the program (by March 2007).

Action Item 2.1.3: Core faculty will develop a curriculum, including required existing courses and proposed new courses, along with other graduate education experiences associated with the specialization, and with focus on the competencies required for graduates to be highly effective and successful in this profession (by May 2007).

These actions are anticipated to require enhanced coursework in ecological processes, quantitative spatial statistics and modeling, and must be done in the context of: what is being taught in other UF programs; input from stakeholders; the ongoing review of the entire FAS curriculum; and outside peer review.

Action Item 2.1.4: FAS Academic Programs Committee and full faculty review, comment, and vote on specialized curriculum (by June 2007).

Action Item 2.1.5: New courses will be developed, as appropriate, in fall 2007 for implementation starting in spring 2008 (initially as special topics courses), where faculty expertise presently exists to teach those courses. Existing courses are adjusted, where applicable, to meet identified needs and in the context of broad program objectives (core competencies).

Objective 2.1 Rating: Mean: 4.38

5	4	3	2	1
8	3	1	1	0

Comments:

1. Setting the goals for establishing specialization program, important to have student interaction with stakeholders; get them intensely involved with issues; key to having a successful program

Objective 2.2: Hire new faculty to fill voids in the program.

Action Item 2.2.1: Core faculty members, with input from stakeholders, will identify critical faculty positions and make recommendations to Chair (by January 2007).

One major gap already identified is in the area of quantitative fisheries / modeling, and this gap is being temporarily filled by hiring Dr. Carl Walters to teach courses in the next two academic years (with collaborative funding from UF, FWRI, and Mote Marine). However, there is a need for a long-term tenure-track faculty member with expertise in this area.

The faculty also has discussed the need for expertise in the areas of spatial statistics and human dimensions of fisheries science.

Action Item 2.2.2: Core faculty members and Chair will evaluate FTE allocations associated with these proposed new positions (by February 2007).

Action Item 2.2.3: Review of position proposals by the full faculty of FAS, followed by the Chair working with IFAS administration to secure additional position(s) in support of the Integrative Fisheries Science specialization (by April 2007).

Action Item 2.2.4: Core faculty will identify distinguished scientists in the field and contact them about coming to UF for upcoming sabbaticals. This action can lead to development of a schedule of visiting scientists and plans to take advantage of their expertise teaching classes and collaborating on research projects. This will be done pro-actively and in a coordinated manner (by May 2007).

Action Item 2.2.5: Core faculty also will identify opportunities for distinguished scientists to come to UF upon their retirement from other universities, to participate in the Center for Excellence.

Objective 2.2 Rating: Mean: 3.86

5	4	3	2	1
3	7	3	1	0

Comments:

1. 2.1 and 2.2 don't let the document read that this is a means of expanding the department
 - a. we will be going after some additional faculty lines to fill the gaps
2. Language needs to show that there needs to be some expansion of faculty; funding outside the legislature too
3. Some of the action items are out of order; look at order again
4. Should consider an additional item of exploring ways to utilize stakeholder personnel; fisheries position added to the co-op unit
5. Think creatively about how to add non-tenured tract but permanent faculty
6. "Obtain" faculty rather than "hire new faculty"; you can obtain new faculty in many other ways; agencies, new co-op units

Objective 2.3: Create diverse opportunities for student learning and support.

Action Item 2.3.1: Form a committee of core faculty to identify learning opportunities and support mechanisms for the specialization, including but not limited to: casual learning opportunities; workshops; student-led meetings; keynote speaker seminars; distance learning; internships with stakeholders; international exchange programs; teaching and research assistantships; travel and publication support. This committee will be formed by February 2007 and will deliver a list of specific action steps and timelines to the Chair by May 2007.

Action Item 2.3.2: Core faculty will work with State and Federal agencies to identify creative solutions for helping agency employees participate in courses and earn advanced degrees in FAS with specialization in integrative fisheries science (by May 2007).

Action Item 2.3.3: Workshops for state and federal agencies will be held annually to disseminate skills in quantitative methods, statistics, mark-recapture methods, and modeling. Faculty will work with agencies to apply for extramural grants to support these activities.

Action Item 2.3.4: The Chair will set aside departmental IDC generated from faculty research projects dealing with integrated fisheries science to support travel costs for distinguished seminar speakers.

Objective 2.3 Rating: Mean: 4.4

5	4	3	2	1
7	7	1	0	0

Comments:

1. What is “casual” learning
 - a. Non-specific informal groups that get together to just talk about a subject; ad hoc
2. Put agency biologists/personnel on student committees
3. Increase internship opportunities as well
4. Need volunteers, students, etc. to help and include that language

Objective 2.4: Create new post-doctoral research positions.

Action Item 2.4.1: Core faculty will identify and pursue funding opportunities for post-doctoral positions to support both the academic and research programs of Integrative Fisheries Science (start immediately)

Action Item 2.4.2: The Chair will set aside departmental IDC generated from faculty research projects dealing with integrated fisheries science to support hiring post-doctoral associates to work on projects related to sustainable fisheries (as funds become available).

Objective 2.4 Rating: Mean: 3.92

5	4	3	2	1
4	4	5	0	0

Comments:

1. Goal is do new science, change the wording
2. Help to articulate what a post-doctoral position; what are the virtues of a post-doctoral; tie it back to the goal of training students
3. Add sabbatical folks, new faculty and a full mix to accomplish the goal

Objective 2.5: Develop the necessary infrastructure to support a world-class graduate education program.

Action Item 2.5.1: Core faculty will work with Chair to clearly identify the infrastructure (student offices, classroom space, teaching labs, location of facilities relative to main campus, etc.) needed to support this program (by January 2007).

Action Item 2.5.2: Chair and faculty will work with UF/IFAS administration to obtain that critical infrastructure through grants, state and/or federal funds, foundations, and private donors (start immediately).

Objective 2.5 Rating: Mean: 4.21

5	4	3	2	1
6	5	3	0	0

Comments:

1. Funding: make sure to stay within budgeting cycle of each agency that you are going to ask for money (WMDs, etc.)
2. State University RFPs, often get zero response, maybe there is an internal communication block; make sure to connect and get the word out
3. WMDs can go directly with the university; do not have to do competitive bids
4. Collaborative identifying needed programs: example of RECOVER, universities not allowed to participate, is that typical and why is it structured that way
 - a. FACA is one reason for this
 - b. Legal obstacle in the universities becoming a part of an effort like this
5. "To support worldclass.... "Add "research"

GOAL 3: Foster integrative approaches to fisheries research in Florida with national and global implications.

Florida is a microcosm of global fisheries management issues, and as such, work that is conducted in this state has world-wide implications. In turn, we can benefit from experiences of our fisheries science and management colleagues overseas and aim to strengthen those connections.

GOAL 3 Rating: Mean: 4.27

5	4	3	2	1
7	5	3	0	0

Objective 3.1: Define state of the science in specific emerging issues in fisheries science that are applicable locally and globally, and set priorities for future research.

Action Item 3.1.1: Core faculty work with scientists at NMFS, FWC and other state and federal scientists to identify distinct areas within Integrative Fisheries Science (e.g., fish stock assessment, ecosystem management, habitat restoration) and key partners in UF (e.g., economics, epidemiology, global dynamics, soil science, chemistry) that will be necessary to address major issues (by February 2007).

Action Item 3.1.2: Workshops with regional, national, and international leaders in the field. Workshops aim to define the state-of-the-science and identify research that will significantly advance the field (2007 - 2010, one critical focus area per year). Workshops will be designed to complement and build on already planned initiatives such as the NOAA Fisheries 2007 Future of Fisheries Science meeting.

Action Item 3.1.3: Core faculty, in collaboration with stakeholders, leads the development of reports / review papers based on these international workshops (2007 - 2010, one critical focus area per year).

Action Item 3.1.4: Core faculty, in collaboration with stakeholders, leads interdisciplinary teams to address the identified global research priorities (ongoing, some projects may be long-term)

Action Item 3.1.5: Core faculty work with regional, national and global fisheries managers to integrate the new discoveries into fisheries management programs (ongoing, timing dependent on duration of research program)

This is an iterative process that will continually advance the state of the science and provide new and highly relevant information, if implemented in close cooperation with state and federal fisheries management agencies.

Objective 3.1 Rating: Mean: 4.38

5	4	3	2	1
5	8	0	0	0

Objective 3.2: Establish and maintain a core faculty that facilitates an integrative scientific approach needed for sustainable fisheries and ecosystem management.

Action Items: These are the same action items as identified under Objective 1.2 above. New faculty positions need to take into consideration research, teaching and extension functions of the center for excellence

Note: The faculty / student group that addressed this objective at the retreat identified the following as high priority areas for new faculty to support integrative fisheries science: quantitative fisheries modeling; fisheries spatial analysis; human dimensions; and epidemiology.

Objective 3.2 Rating: Mean: 4.07

5	4	3	2	1
6	5	1	2	0

Comments:

1. 1.2 is supposed to be 2.2, and if the action item is already mentioned than do you need it

Objective 3.3: Foster effective communication among scientists, managers, and the general public, both locally and globally.

Action Item 3.3.1: Faculty involved in the integrative fisheries science program will take international sabbaticals, working overseas on applied fisheries issues, one per year over next five years (where applicable based on term of service on UF faculty).

Action Item 3.3.2: Faculty also will pursue opportunities for short-term visits to premier fisheries research centers around the world, with the desired outcome being information sharing and establishment of collaborative research programs (start immediately).

Action Item 3.3.3: Faculty will actively participate in national and international conferences dealing with sustainable fisheries and supporting areas of integrative fisheries science, with funding to support this travel provided by the Department, University, and outside sources (ongoing)

Action Item 3.3.4: The program will host visiting scientists for short (days to weeks) and long-term (semesters) periods of time, during which those experts can perform collaborative research and/or write grant proposals

with faculty in the FAS center for excellence (start in 2007 with at least one visiting scientist each year thereafter)

Action Item 3.3.5: Faculty will lead ‘think tanks’ of academicians and managers to address and resolve conflicts within issues (start in 2007 with at least one session each year)

Action Item 3.3.6: Faculty involved in the integrative fisheries science program will hold workshops for state and federal agencies to clearly link new research results with management applications (start in 2007 with at least one session each year)

Action Item 3.3.7: Development of a web portal of information on fisheries management issues, short canned training sessions, ‘who to contact,’ answers to frequently asked questions, etc. This can be done in the context of the UF/IFAS Solutions for Your Life website (by January 2008).

Objective 3.3 Rating: 3.87

5	4	3	2	1
5	4	5	1	0

Comments:

1. Is it the Universities job to help the public and agencies communicate? I think that is a little dangerous
 - a. Utilize the extension programs
2. Don’t want duplication of efforts or a conflict with agency rules; if the agency has adopted a rule and is going out to the public
3. Don’t want a reputation for traveling internationally; want to make sure you develop an international reputation; you can also look at gaining a national reputation
4. International travel to address non-native invasive species
5. What about endangered species as well
6. 3.3.6 is particularly valuable to SJRWMD and SWFWMD agency
7. International travel: marine fisheries have global problems and talking globally brings insight and possible solutions
8. As a Center for Excellence you need the international element
9. Have students go overseas to do their research is another way to do this

V. Infrastructure

Accomplishing the goals outlined in this document will require substantive funding for faculty positions, technical support, visiting scientists, workshops, and other items identified in the preceding sections of this plan.

Action Item: The Chair will work with the UF administration to pursue funds in support of a Center for Excellence. Sources of funding may include the Florida Legislature, US Congress, federal grants, foundations, and individual donors.