

# **UF WATER INSTITUTE PROGRESS REPORT**

## **OCTOBER 2007**

### **1. STRATEGIC PLANNING**

A Strategic Planning process was begun in August 2006 with an online survey of affiliated faculty to elicit input about developing focus areas for the Water Institute; methods of governance; and preferred forms of collaboration and communication. A planning retreat, led by a professional facilitator and trainer, was held on October 16, 2006 with 34 Water Institute-affiliated faculty attending. This meeting produced a vision of a successful Water Institute, a definition of important thrust areas, and steps for moving forward as an interdisciplinary group. In May 2007 a Draft Strategic Plan was prepared and circulated to Water Institute Affiliate Faculty for review and comment. In August 2007 the Faculty Advisory Committee approved the 2007-2010 UF Water Institute Strategic Plan (see Appendix 1).

### **2. INTERDISCIPLINARY EDUCATION/OUTREACH PROGRAMS**

#### **2.1 Inaugural Progress Energy- UF Water Institute Symposium**

The inaugural Water Institute Symposium will be held at the Gainesville Hilton University of Florida Conference Center on 27-28 February 2008. The theme of the first conference will be Sustainable Water Resources: Florida Challenges, Global Solutions. The purpose of the conference is to: (1) bring academics, policy makers, water managers, industry and agriculture representatives, consultants, lawyers, legislators, and citizens together to define current status of water resources sustainability in Florida; (2) showcase new technologies/policies/incentives available that show promise to promote sustainability; and (3) identify pressing issues, knowledge gaps, research/educational programs needed to ensure sustainability.

A group of respected invited speakers from academia as well as federal agencies have committed to participate in the opening plenary session of the symposium. The symposium will conclude with a panel, comprised of the Executive Directors of each of the Water Management Districts and the Secretary of the Florida Department of Environmental Protection that will focus on current Florida policies and programs and future research and education needs. In addition we received over 180 contributed abstracts for oral and poster presentations from faculty graduate students, consultants and state and federal agency scientists in Florida. A preliminary symposium agenda, including the names of some invited speakers, is included in Appendix 2.

#### **2.2 The Smallwood- UF Water Institute Distinguished Scholar Seminar Series**

This seminar series, which was initiated in Fall 2007, invites high profile scholars to UF on a monthly basis to: conduct a general Water Institute seminar that will be of interest to a broad audience; meet with the Water Institute Faculty Advisory Committee to discuss strategic planning and partnering opportunities; and meet with interested Water Institute faculty to discuss specific research/education issues. Each scholar is also asked to serve on the External Council of Advisors for the Water Institute for a 12 month period following his/her visit. A list of the 2007 Seminar Series Scholars, seven of whom hold Eminent Scholar Chairs at their institutions and five of whom are National Academy members, is included in Appendix 3;

## **2.3 Interdisciplinary Workshops and Focus Group Meetings**

**July 16-20 2007:** The Water Institute hosted a week-long Agricultural Knowledge Initiative Research Planning Workshop to kick off the USDA/ICAR Sustainable Water Resource Management: U.S. Collaborative Research and Education Project. The workshop included facilitated discussions and field trips and provided an opportunity for the detailed planning of the funded research projects which will be conducted in India. Six participants from three Indian Partner institutions, one participant from North Carolina A&T, and eleven participants from UF attended the workshop.

**August 21, 2007:** The Water Institute hosted a one-day Springs Nutrient Workshop with about 70 faculty members, state and local scientists, organizers, managers, regulators and policy experts. The workshop included synthesis presentations on the state of knowledge regarding sources, transformations, sinks and ecological impacts of nutrients in springs, as well as facilitated break out sessions to discuss information gaps and research needed to address these gaps.

**September 12 2007:** The Water Institute hosted a one day Hydrologic Information Systems Workshop to assist the government of Australia in exploring how hydrologic databases and integrated modeling tools can be used to manage water movement and accounting on a large regional scale. Representatives from the three largest Florida Water Management Districts, USGS, the Australian Meteorologic Bureau, the Australia Commonwealth Scientific and Industrial Research Organisation (CSIRO) Land and Water Division, University of Florida, and University of Texas Austin participated in the meeting.

**November 15-16 2007:** The Water Institute will host a free half-day instructional seminar on the use of ArcHydro for water resource management applications. This seminar is open to UF faculty, students, consulting firms, and Water Management District employees. A one-day symposium to present the state of practice for the use of ArcHydro in Florida will follow. The purpose of these meetings is to share information about hydrologic data management and tool development for water research, education, decision-making, visualization and modeling efforts in Florida.

**November 30 2007:** The Water Institute will host a one-day Water Conservation Research Planning Workshop to review the status of Florida water conservation research programs and develop a prioritized Water Conservation Research Agenda to support public water supply utilities and water managers in developing effective and efficient water conservation programs. The workshop is being developed in collaboration with the Conserve Florida Group (a consortium of representatives from FDEP, all 5 Water Management Districts, Florida Water Utilities, and UF) and other interested UF Faculty.

### **3.0 RESEARCH PROGRAMS**

#### **3.1 Externally Funded Water Institute Projects**

*In December 2006 the Water Institute Faculty Advisory established a Project Classification policy for the Water Institute. There are three categories of projects depending on the level of involvement of the Water Institute in project development.*

##### **3.1.1 Water Institute Directed Projects (\$2.97 Million)**

- Cooperative Graduate Research Assistantships in Critical Water Resources Areas for South Florida, South Florida Water Management District/Florida Water Resources Research Center, \$190K, Mar 2006- Mar 2009.
- Demonstration of Water Quality Best Management Practices for Beef Cattle Ranching in the Lake Okeechobee Basin , Florida Department of Environmental Protection, \$1.568 Million, Sep 2002-Jun 2008.
- India Agricultural Knowledge Initiative, U.S. Department of Agriculture, \$150K, Aug 2006- Jul 2009.
- Suwannee River Hydrologic Observatory, National Science Foundation, \$360K, Dec 2006- Nov 2008.
- Use of Seasonal Climate Forecasts to Reduce Risk in Regional Public Water Supply Management in the Tampa Metropolitan Region, Tampa Bay Water, \$175K, Apr 2007 – Mar 2009.
- Water Institute Distinguished Scholar Seminar Series, Smallwood Foundation, \$28K, April 2007-April 2008.
- Water Institute Water Systems Collaboratory, Florida Legislative Budget Request, \$500K, July 2007-June 2008.

##### **3.1.2 Water Institute Assisted Projects (\$1.25 Million)**

- Conserve Florida Clearinghouse. J. Heaney - P.I. (Environmental Engineering Sciences), Florida Department of Environmental Protection, \$620K, Apr 2006- Apr 2008.
- Development of a Dynamic Decision Support System (D2S2) for Water Supply Planning. J. Jawitz - P.I. (Soil and Water Science), American Water Works Association Research Foundation/Palm Beach County Water Utilities Department, \$100K, Jan 2007 to Jan 2010.
- Reducing nonpoint source loss of nitrate with in the Santa Fe Basin. M. Clark - P.I. (Soil and Water Science). Florida Department of Environmental Protection, \$304K, Apr 2007-Oct 2009.
- Summary and Synthesis of the Available Literature on the Effects of Nutrients on Spring Organisms and Systems. M. Brown - P.I. (Environmental Engineering), Florida Department of Environmental Protection, \$227K, Apr 2007 – Apr 2008.

##### **3.1.3 Water Institute Affiliated Projects**

Approximately \$13,000,000 in 155 active externally funded projects has been designated by Water Institute faculty as Water Institute Affiliated projects for 2006-07. These projects are cataloged in a searchable database that will soon be web-accessible and integrated with the web-accessible faculty expertise database.

### **3.1.4 Water Institute Proposals Pending**

- Center for Climate Technology and Preparedness, 2008 Center of Excellence Proposal, being submitted jointly to the Florida Board of Governors through Florida State University, \$15Million total, \$7.5Million to UF, approximately \$1Million to Water Institute.
- Use of Intra-seasonal and Seasonal Forecasts to Reduce Risk in Regional Public Water Supply Management, NOAA Sectoral Applications Research Program (SARP), \$300K
- Climate Prediction Applications Postdoctoral Program, NOAA/Tampa Bay Water, \$110K.
- Hydrologic Modeling Research and Development Services, South Florida Water Management District (MOU, individual contracts to be negotiated).
- Peer Review of the Watershed Assessment Model, Florida Department of Agriculture and Consumer Services, \$100K.
- Predicting Responses of Aquatic Plants and Apple Snails to Global Change and Altered Land Use, USEPA, \$600K.
- Water Institute Core Labs and Post-Doctoral Researcher Program, 2008 US Congressional Budget Earmark, \$5Million.
- Water Institute Water Systems Decision Support Facility, 2009 US Congressional Budget Earmark, \$6Million.

### **3.1.4 Additional Water Institute Proposals Submitted**

- A Critical Zone Observatory for Humid, Warm, Low-Relief Watersheds (Santa Fe River Basin, FL) , NSF, \$4.25Million.
- Collaborative Program in Biological Control of Coral Bacterial Diseases , Smallwood Foundation, \$46K.
- Influence of Hydrologic Variability on Carbon Processing and Fluxes in an Organic Carbon and Carbonate Rich Watershed, Suwannee River Florida , NSF, \$600K.
- Integrated Springshed Management: Improving Water Quality By Linking Land Use, Hydrologic And Socioeconomic Factors USDA/CSREES, \$600K.
- Interdisciplinary Graduate Research Fellowships in Water Resources and Annual Lecture Series, Smallwood Foundation, \$200K.
- Solutions for Water Resources Sustainability, 2008 Florida Legislative Budget Request \$1.5 Million.
- Sustainable Land and Water Management: Comparative Analysis of Benchmark Basins across Economic, Environmental, Hydrologic, and Social Gradients , Pre-proposal to National Science Foundation - Partnerships for International Research and Education (PIRE).
- Water Resources of Carbonate Aquifers: A collaborative exchange between the Universities of Montpellier (France) and UF, The French-American Fund for University Partnerships, \$55K.

### **3.2 2007 Water Institute Program Initiation Fund Awards (Total Awards = \$195K)**

The following awards were made under the first Program Initiation Fund (PIF) Competition in March 2007:

- Protecting Florida's Water Quality: Identifying and Overcoming Barriers to Implementation of Low Impact Development (LID) Practices. Mark W. Clark - PI (Soil and Water Science), Tom R. Ankerson (Conservation Clinic, Levin College of Law), Pierce H. Jones (Agricultural and Biological Engineering), Barbra C. Larson (Environmental Horticulture).
- A Framework for Assessing The Hydrologic Footprint of Large-scale Biofuel Production . Matt Cohen - PI (School of Forest Resources and Conservation), Mark T. Brown (Center for Wetlands, Environmental Engineering Sciences), Angela Lindner (Environmental Engineering Sciences).
- Environmental Consequences of Nutrients and Organic Matter Injection into Carbonate Aquifers; Implications for Water Quality in Aquifer Storage and Recovery (ASR) Technology. Andrew R. Zimmerman - PI (Geological Sciences), Jean-Claude Bonzongo (Department of Environmental Engineering Sciences), Willie Harris (Soil and Water Science).
- Sediment Transport through Tidal Inlets During Extreme Forcing: Erosion or Accretion? Arnolde Valle-Levinson - PI (Civil and Coastal Engineering), John M. Yeager (Geological Sciences), Tian-Jian Hsu (Civil and Coastal Engineering), Alexandru Sheremet (Civil and Coastal Engineering).
- Coupling of Advanced Oxidation and Adsorption Processes onto Silica-Titania Composites for Low Level Capture of Metals from Water Effluents. David W. Mazyck - PI (Environmental Engineering Sciences), Jean-Claude Bonzongo (Environmental Engineering Sciences), Lena Q. Ma (Soil and Water Science).
- Water, Gender and Equity in India. Whitney Sanford - PI (Religion), Anita Anantharam (Women's Studies), Vasudha Narayanan (Center for the Study of Hindu Traditions, Religion).

We are currently redesigning the Program Initiation Fund to experiment with alternative strategies of stimulating productive, externally funded, interdisciplinary research programs.

### **4. OTHER LEADERSHIP/OUTREACH ACTIVITIES**

- Invited Presentation to the National Research Council Water Science and Technology Board on the Water Implications of Biofuels, July 12, 2007.

- Invited Speaker at the National meeting of the Soil and Water Conservation Society, July 22, 2007.
- Invited seminar at the SouthWest Florida Water Management District, July 25, 2007.
- Invited speaker at the Jacksonville Rotary Club, September 10, 2007.
- Invited speaker for the University of Florida “Florida Tomorrow” Campaign Kick-Off, September 28, 2007.
- Invited Panelist on Water Management Implications of Climate Change for Florida Legislature Energy and Environment & Natural Resource Committees, November 6<sup>th</sup>, 2007.
- Member of Board of Directors, Consortium of Universities for the Advancement of Hydrologic Sciences, 2003-2008; Chair 2005-2006, Past-Chair 2007.
- Member of Advisory Committee, Collaborative Large-Scale Engineering Analysis Network for Environmental Research, 2005-2007.
- Member of WATer and Environmental Research Systems Network (WATERS Network) Design Team, 2006-2008.

## **5. BUSINESS PLAN and BUDGET ISSUES**

The following summarizes the business plan for funding Water Institute programs:

- Base funds from UF for Water Institute Director and staff salaries
- Endowment funds for operating expenses
- Grant funding from Research and Outreach Partners for Programs
- IDC returns for re-investment in internal Program Initiation Fund Awards
- Industrial Membership Program to fund focus groups, working groups, etc.
- Fee-based Short-courses and Symposia
- Naming Opportunities for donors, e.g.
  - Endowed Chairs
  - Named Professorships
  - Named Graduate Fellowships
  - Named Undergraduate Research Fellows
  - Named Lectureships or Visiting Fellowships
  - Named Conferences
  - Named Buildings, Labs, Computational Centers

Outstanding Budget Issues:

- Contributions from IFAS, CLAS, and COE for Director’s salary
- Provost’s budget cut & last year’s shortfall
- Long-term base funding expectations

Appendix 1:  
**UF Water Institute: 2007– 2010 Strategic Plan**

## **1. Introduction**

Florida's burgeoning human population and vulnerability to both climatological and anthropogenic changes in the water cycle make the State a unique living laboratory to develop new knowledge and test solutions to global water problems. In recognition of the importance of water issues, and the need to address them in a new interdisciplinary manner, the University of Florida (UF) established a campus-wide interdisciplinary Water Institute in May 2006.

## **2. Mission**

The UF Water Institute brings together talent from throughout the University to address complex water issues through innovative interdisciplinary research, education, and public outreach programs.

## **3. Vision**

Interdisciplinary UF Water Institute Teams, comprised of leading water researchers, educators and students, develop new scientific breakthroughs; creative engineering; policy and legal solutions; and pioneering educational programs that are renowned for addressing state, national, and global water problems.

## **4. Values**

Partnerships: The Water Institute recognizes the importance of developing strong inclusive partnerships among Water Institute Affiliate Faculty, and with external stakeholders, to identify and prioritize critical water issues requiring interdisciplinary expertise.

Expertise: The Water Institute is committed to developing the basic knowledge, practical experience, and infrastructure required to respond to stakeholders' emerging water issues.

Excellence: The Water Institute is committed to provide excellent interdisciplinary water-related research, education and outreach programs that are recognized within the state of Florida, the nation and the world.

Respect: The Water Institute provides services that acknowledge and respect the expertise of all Water Institute Affiliate Faculty; it also recognizes the personal values, cultures, and socioeconomic context of its diverse external stakeholders.

## **5. Goals**

The overarching goals of Water Institute research, education and outreach programs are to:

- Improve basic knowledge of the physical, chemical, and biological processes in aquatic systems (rivers, lakes, oceans, estuaries, wetlands, soil and ground waters).
- Enhance understanding of the interactions and interrelationships between human attitudes and activities, and aquatic systems.
- Develop and promote the adoption of improved methodologies for water management and policy (including quantity, quality and ecosystem services) based on a foundation of science, engineering, management and law.

## 6. Thrust Areas

Research, Education and Outreach thrust areas are thematic cross-cutting initiatives around which the Water Institute Affiliate Faculty joins forces to achieve Water Institute goals. Thrust Areas provide broad outlines of emphasis areas rather than narrow definitions of the Institute, and represent areas in which interdisciplinary collaborations are likely to produce significant progress. Thrust areas are determined through an on-going process which reflects current interests of Water Institute Affiliate Faculty and Stakeholders. Initial Thrust Areas for 2007-2010 are summarized in Table 1, with representative examples.

*Table 1: Water Institute Thrust Areas (2007-2010)*

<ul style="list-style-type: none"><li>▪ <b>Water Resources Sustainability</b><ul style="list-style-type: none"><li>○ Development of alternative water supplies and storage</li><li>○ Water treatment, wastewater treatment, groundwater remediation</li><li>○ Water quality protection, management of groundwater recharge areas</li><li>○ Water conservation, reuse, demand management</li><li>○ Impacts of alternative energy on water resources</li></ul></li></ul>
<ul style="list-style-type: none"><li>▪ <b>Water, Land Use and Ecosystems</b><ul style="list-style-type: none"><li>○ Terrestrial and aquatic system linkages (springsheds, watersheds, wetlands, estuaries and coastal zones)</li><li>○ Land use change impacts</li><li>○ Sustainable ecosystem thresholds (Total Maximum Daily Loads, Minimum Flows and Levels)</li><li>○ Ecosystem restoration</li></ul></li></ul>
<ul style="list-style-type: none"><li>▪ <b>Water and Climate</b><ul style="list-style-type: none"><li>○ Extreme events (floods, flood control, droughts, hurricanes)</li><li>○ Climate variability (El Nino Southern Oscillation, Multidecadal Oscillations)</li><li>○ Climate forecasts</li><li>○ Climate change (global warming, sea level rise, rainfall redistribution)</li></ul></li></ul>
<ul style="list-style-type: none"><li>▪ <b>Water and Society</b><ul style="list-style-type: none"><li>○ Water policy and law</li><li>○ Water marketing and pricing</li><li>○ Social impacts and implications</li><li>○ Public health</li></ul></li></ul>

This strategic plan will be reviewed tri-annually and changed as needed to respond to new challenges and opportunities, and to achieve excellence.

## 7. Strategies, Objectives, Actions and Performance Measures

The Water Institute mission, vision and goals will be achieved through the following strategies, objectives and actions:

**Strategy 1: Develop partnerships with external stakeholders to identify and prioritize critical water issues requiring interdisciplinary expertise; as well as to provide expertise and support for addressing these issues.**



### Objectives:

- Provide a portal for external stakeholders seeking water-related expertise
- Provide a focal point for water-related research and education at UF
- Engage external state, national and international partners in prioritizing and executing Water Institute programs

### Actions:

- Establish and maintain a web-accessible Water Institute Affiliate Faculty expertise and awards database with appropriate links to departmental and center programs
- Invite external stakeholders to participate in monthly Distinguished Scholar Seminar Series (as both speakers and attendees).
- Invite external stakeholders to participate in Water Institute Symposia (as members of the planning committee, speakers, and attendees).
- Host stakeholder scientists for sabbaticals at the Water Institute
- Provide short-term assistance (i.e., peer review services, white/synthesis paper preparation, short courses etc. ) to external stakeholders
- Serve on stakeholder advisory committees
- Coordinate undergraduate and graduate internship programs for external stakeholders
- Increase the pool of well-trained water-related scientists, engineers, planners for employment with stakeholders
- Establish and maintain external financial resources to support basic and applied research programs, and testing of new technologies, management strategies, regulatory strategies and water policies that address stakeholders' interests

### Performance Measures:

- Number of web visits by external stakeholders
- External stakeholder attendance at seminar series
- External stakeholder attendance at Water Institute Symposium
- Number of sabbatical visitors
- Numbers of short-term assistance projects completed
- Numbers of undergraduate and graduate interns placed
- Grants and contracts funded by external stakeholders
- Gifts and endowments to the Water Institute

## **Strategy 2: Build interdisciplinary teams to provide the knowledge base for, and to develop and encourage the implementation of new technology and policy solutions for state, national and international water issues.**

### Objectives:

- Focus faculty energy and intellect on important interdisciplinary water-related science, engineering, policy and law problems of the state of Florida, the nation and the world
- Establish and maintain strong extramural funding for interdisciplinary programs
- Decrease the transaction costs associated with interdisciplinary research

### Activities:

- Define Water Institute Thrust Areas through an on-going process which reflects current interests of internal and external Water Institute stakeholders.
- Form and coordinate Faculty Working Groups along Water Institute Thrust Areas

- Coordinate Faculty Working Groups to develop peer-reviewed white papers and synthesis documents along Water Institute Thrust Areas
- Establish an annual Program Initiation Fund to provide funding for new, faculty-initiated research, extension and outreach programs
- Provide proposal writing support for large interdisciplinary proposals
- Provide matching funds for extramural interdisciplinary proposals
- Provide project management support for large interdisciplinary projects

Performance Measures:

- Faculty participation in Program Initiation Fund
- Faculty participation in thrust area working groups
- Faculty participation on proposal writing teams
- Faculty participation on research project teams
- Faculty participation in short-term assistance projects
- Interdisciplinary grants and contracts funded
- Number of journal articles published by interdisciplinary teams in the Water Institute

**Strategy 3: Integrate and strengthen UF water faculty expertise within existing Departments and Centers.**

Objectives:

- Develop and promote individual Water Institute Affiliate Faculty programs
- Promote department and center water-related research and education programs
- Enhance departments and centers by building water faculty expertise in underrepresented disciplines
- Enhance faculty recruitment and retention within departments and centers

Actions:

- Establish and maintain a web-accessible Water Institute Affiliate Faculty expertise and awards database with appropriate links to departmental and center programs
- Provide campus-wide planning regarding water-related faculty positions required to fill gaps in existing expertise and coursework, and seek funding to fill those positions in departments and centers
- Create and co-host a Visiting Scholar program with departments and centers
- Create and co-host, with departments and centers, a network of interdisciplinary laboratories and field facilities to support water-related research conducted by Water Institute Affiliate faculty
- Host a monthly Distinguished Scholar Seminar Series to provide a venue for interdisciplinary faculty interaction
- Host regular Water Institute Symposia to provide a venue to highlight faculty and departmental programs, and a venue for interdisciplinary interaction with external stakeholders
- Distribute indirect costs in an equitable manner that encourages participation of faculty, Department Chairs, Center Directors and Deans

Performance Measures:

- Use of expertise database by External & Internal Stakeholders
- Number of new water- related faculty positions requested/filled
- New interdisciplinary laboratories and field facilities supported

- Number of Visiting Scholars co-hosted
- Number of Water Institute Affiliate Faculty
- Faculty Attendance at Seminar Series
- Faculty Attendance at Water Institute Symposium
- Number of workshops for strengthening interdisciplinary understanding and cooperation
- Faculty publications in high quality journals
- Faculty publications of widely cited books and journal articles

**Strategy 4: Recruit and train excellent students to pursue careers in water-related science, engineering, policy, planning, and management, bringing with them an interdisciplinary focus**

Objectives:

- Increase number and quality of graduate students studying water-related science, engineering, humanities, policy and law
- Train graduate students to work on interdisciplinary teams
- Increase the number of post-doctoral associates working on interdisciplinary water projects
- Provide access to state of the art tools and technologies for use in graduate and post-doctoral programs

Activities:

- Establish externally funded graduate assistantship/fellowship programs
- Establish externally funded post-doctoral fellowship programs
- Establish externally funded internship programs to provide real-world experience with Water Institute external stakeholders
- Create a network of interdisciplinary laboratories (both existing and new facilities) for use in graduate student and post-doctoral programs
- Encourage and support the development of new courses to expose students to state-of-the art tools and technology
- Involve graduate students and post-doctoral associates in interdisciplinary faculty working groups working on synthesis papers, proposals, and projects

Performance Measures:

- Number graduate students funded by Water Institute Projects
- Number of post-doctoral associates funded by Water Institute Projects
- Number of funded internships
- New interdisciplinary laboratories and field facilities available to students and post-docs
- New courses developed as a result of Water Institute initiatives
- Student/post-doctoral associates participation on proposal writing teams
- Student/post-doctoral associates participation in short-term assistance projects
- Student/post-doctoral associates attendance at Seminar Series and Water Institute Symposium
- Student/post-doctoral publications acknowledging Water Institute support

## **8. Organization**

The Water Institute is led by a full-time director, who reports to the Vice President for Research. A team of research coordinators with advanced degrees assist the director in the development, execution and evaluation of Water Institute Programs. An internal Faculty Advisory Committee for the Water Institute consists of 12 members of the Water Institute

Affiliate Faculty, 8 elected and 4 appointed on staggered 3 year terms. Individual faculty association with the Water Institute is through voluntary registration in the on-line faculty expertise database. All registered faculty are considered Water Institute Affiliate Faculty members and eligible to vote for the Faculty Advisory Committee members, and other governance issues. All Affiliate Faculty members retain their positions in their tenure department homes where all administrative and performance review functions are carried out.

For the first 3 years following the establishment of the Water Institute, participants in the monthly Water Institute Distinguished Scholar Seminar Series will constitute an ad-hoc External Council of Advisors for a 12 month period following their seminar. A Formal External Science Advisory Board will be formed at the conclusion of the third year (May 2009). This board will consist of representatives leading academic institutions in the field of water science, engineering, policy and law; state and federal governmental agencies; industry; non-governmental organizations and other private entities with an interest in water related issues.

## **9. Business Plan**

The following summarizes the business plan for funding Water Institute programs:

- Base funds from UF for Water Institute director and staff salaries
- Endowment funds for operating expenses
- Grant funding for research, education and outreach programs
- Indirect cost (IDC) returns for re-investment in internal Program Initiation Fund Awards
- Industrial Membership Program to fund specific working groups, review panels etc.
- Fee-based short-courses and symposia
- Naming opportunities for donors, e.g.
  - Endowed chairs and named professorships
  - Named graduate fellowships
  - Named undergraduate research fellows
  - Named lectureships or visiting fellowships
  - Named conferences
  - Named buildings, labs, computational centers

**Appendix 2: Water Institute Symposium**  
**Sustainable Water Resources: Florida Challenges, Global Solutions**  
Preliminary Agenda

Wednesday February 27 <sup>th</sup> , 2008			Thursday February 28 <sup>th</sup> , 2008		
8:30-10:00am <b>Plenary Welcome and Keynote</b>			8:30am-10am: <b>Concurrent Panel Sessions: Seeking Solutions to Major Issues</b>		
<ul style="list-style-type: none"> <li>• <i>Dr. W. Graham, Director, UF Water Institute</i></li> <li>• <i>Dr. J. Bernard Machen, President, UF</i></li> <li>• <i>Governor Charlie Crist (invited)</i></li> <li>• <b>Keynote Speaker <a href="#">Dr. Peter Gleick</a>, President and Co-founder, Pacific Institute</b></li> </ul>			Water Availability/ Water Needs	Sources and Impacts of Emerging Contaminants	Water Transfers: Who decides? People, Policy and Politics.
10-10:30am Break			10-10:30am Break		
10:30 – 12:30: <b>Plenary Session: Complex Challenges to Sustainable Water Resources</b>			10:30 – noon: <b>Concurrent Panel Sessions Seeking Solutions to Major Issues</b>		
<ul style="list-style-type: none"> <li>▪ <a href="#">Dr. Robert Hirsch</a> (<i>Associate Director for Water, USGS</i>) <i>Population Growth and Land Use Change</i></li> <li>▪ <a href="#">Dr. Steve Zebiak</a> (<i>Director of International Research Institute for Climate and Society, Columbia University</i>) <i>Climate Variability and Climate Change</i></li> <li>• <a href="#">Dr. Lora Fleming</a> (<i>Co-Director of the National Institute of Environmental Health Sciences, University of Miami</i>) <i>Public Health, Wildlife Health, Ecosystem Health</i></li> </ul>			Water Conservation as an Alternative Water Supply	Nutrient Enrichment of Surface, Ground and Coastal Waters	Public Perceptions, Values and Practices toward Water Issues
12:30-1:30pm Lunch (included)			Noon – 1:30pm Lunch (included)		
1:30-5pm <b>Concurrent Oral Presentations</b>			1:30-5pm <b>Plenary Session: Visioning the Future</b>		
Population Growth & Land Use Change ( <i>invited speakers</i> )	Climate Variability & Climate Change ( <i>invited speakers</i> )	Public, Wildlife & Ecosystem Health ( <i>invited speakers</i> )	1:30-2:00pm Symposium Synthesis: A Bird's Eye View ( <i>Report from Synthesis/Visioning Team: Drs. S. Berg, M. Brown and R. Hamann</i> )		
			2:00-3:30pm Florida Policies and Programs: Challenges and Opportunities: <i>Water Management District Executive Directors: Carol Wehle, David Moore, Kirby Green, David Still (confirmed) and Department of Environmental Protection Secretary Michael Sole (invited)</i>		
3:00-3:15pm Break			3:30-3:45pm Break		
Population Growth & Land Use Change ( <i>contributed presentations</i> )	Climate Variability & Climate Change ( <i>contributed presentations</i> )	Public, Wildlife and Ecosystem Health ( <i>contributed presentations</i> )	3:45-4:45 Town Hall : Implications for Florida's Research and Education Agenda: Information, Technology and Policy Needs for Sustainable Water Resources <i>Graham with Visioning/Policy Teams, Water Management District Executive Directors, and FDEP Secretary</i>		
			4:45-5:00pm Closure: Wrap up and Future Action <i>Graham</i>		
5:00-7:30pm Poster Session and Reception (included)			7:30pm: Opening Reception of the 14th Annual University of Florida Levin College of Law Public Interest Environmental Conference, UF President's House. <i>Reception Speaker: Ms. Shannon Estenoz, Director, Sun Coast Region - National Parks Conservation Association, and South Florida Water Management District Governing Board Member</i> (Optional –requires registration for PIEC Conference		

## Appendix 3

### 2007-2008 Water Institute Distinguished Scholar Seminar Series

#### September 6-7, 2007

Donelson Wright, Chancellor Professor of Marine Science, Virginia Institute of Marine Science, College of William and Mary. [www.vims.edu/physical/faculty/wright\\_ld.html](http://www.vims.edu/physical/faculty/wright_ld.html)

#### October 18-19, 2007

Edward L. Miles, Virginia & Prentice Bloedel Professor of Marine & Public Affairs, and Senior Fellow Joint Institute for the Study of Atmosphere and Oceans, School of Marine Affairs, University of Washington. [www.sma.washington.edu/faculty/e\\_miles.html](http://www.sma.washington.edu/faculty/e_miles.html)

#### November 1-2, 2007

Lonnie Thompson, Distinguished University Professor, Department of Geological Sciences, and Byrd Polar Research Center, Ohio State University. [www-bprc.mps.ohio-state.edu/Icecore/GroupP.html#lonniethompson](http://www-bprc.mps.ohio-state.edu/Icecore/GroupP.html#lonniethompson)

#### December 6-7, 2007

Charlie Vorosmarty, Research Professor Global-Scale Hydrology, Dept. of Earth Sciences & Institute for the Study of Earth, Oceans & Space, University of New Hampshire. [www.unh.edu/esci/vorosmarty.html](http://www.unh.edu/esci/vorosmarty.html)

#### January 10-11, 2008

George Hornberger, Ernest H. Ern Professor, Environmental Hydrology, Department of Environmental Science, University of Virginia. [www.people.Virginia.EDU/~gmh3k/](http://www.people.Virginia.EDU/~gmh3k/)

#### February 7-8 2008

Len Shabman, Natural Resource Economist, Resident Scholar in Energy and Natural Resources, Resources for the Future, Washington DC. [www.rff.org/rff/Shabman.cfm](http://www.rff.org/rff/Shabman.cfm)

#### March 27-28 2008

Sandra Zellmer, Natural Resource and Water Law professor and Havelone Research Chair at the University of Nebraska College of Law [watercenter.unl.edu/FacStaffProfiles/ZelmerSandy.asp](http://watercenter.unl.edu/FacStaffProfiles/ZelmerSandy.asp)

#### April 17-18 2008

Tissa Illangasakare, AMAX Distinguished Chair of Environmental Sciences and Engineering, Colorado School of Mines. [www.mines.edu/Academic/envsci/people/faculty/tillanga01.html](http://www.mines.edu/Academic/envsci/people/faculty/tillanga01.html)