



# Water Institute

2007-2010 Strategic Plan





**Water Institute**  
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## **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