

**UNIVERSITY OF FLORIDA WATER INSTITUTE
ANNUAL ACCOMPLISHMENT REPORT
July 1, 2018- June 30, 2019**

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1 EXECUTIVE SUMMARY

The University of Florida Water Institute coordinates interdisciplinary water-related research, education and outreach programs. Dedicated efforts have forged linkages among diverse groups of faculty and graduate students representing a breadth of water specialties from geophysical to biological to social sciences, engineering, law and humanities. The Water Institute adds value to the University of Florida through research coordination and collaboration, synthetic cross-disciplinary studies and projects, joint proposal development, seminars and symposia. Highlights of 2018-2019 activities and accomplishments are included below.

Research: During 2018-2019, faculty affiliated with the Water Institute led active research projects totaling approximately \$173.5 million, and received new sponsored research awards totaling approximately \$54.2 million. During this time period the Water Institute coordinated interdisciplinary faculty teams conducting 7 interdisciplinary projects (\$7.9M), including the kick-off of a 5-year [NSF-funded Research Coordination Network](#) (\$500K), the kick-off of a 3-year [NASA funded Earth Science Applications: Water Resources Project](#) (\$1.7M), and completion of the second year of a 5-year [USDA NIFA funded Water Challenge for Agriculture project](#) (\$5M). The Water Institute supported 7 additional interdisciplinary projects (\$13.6M) and participated in the submission of 8 new interdisciplinary proposals (potential funding up to ~\$86M).

Education: [The Water Institute Graduate Fellows \(WIGF\) program](#) supports faculty-graduate teams to conduct interdisciplinary research in emerging areas of water science, including the social, natural, and engineering sciences. The Deans of the UF/IFAS College of Agricultural and Life Sciences, UF College of Liberal Arts and Sciences, and the Director of the School of Natural Resources and Environment have committed UF Graduate School Fellowships for biennial cohorts of 5 Ph.D. students to participate in this program. The Water Institute leverages this UF investment using gifts provided by the Carl S. Swisher Foundation and the Sherwood-Stokes Foundation to support integrative research and education activities undertaken by the cohorts. The 2019 Water Institute Graduate Fellows cohort is focused on [High Latitude Hydrology: Water in a Changing World](#) which aligns with the National Science Foundation's Navigating the New Arctic strategic priority. The 2019 WIGF program will foster interdisciplinary research and outreach among researchers, practitioners, and students in geology, hydrology, microbiology, botany, ecosystem science, coastal hydrodynamics, and communications. Six excellent students have accepted offers to participate in this program and will enroll in UF in Fall 2019. In addition to their research, these students will also train in environmental civics, defined as the principles and practice of public engagement, including communication skills, policy discourse, and civic leadership.

Outreach: Highlights of outreach activities in 2018-2019 include:

- Biennial Water Institute Symposia bring together individuals from a broad range of disciplines and organizations to explore complex water challenges from multiple perspectives. Planning for the [7th Water Institute Symposium that will be held at the UF Reitz Union in Gainesville on February 25-26th, 2020](#) is underway.
- Florida Water and Climate Alliance: The Water Institute facilitates the Florida Water and Climate Alliance ([FloridaWCA](#)), a stakeholder-scientist partnership committed to increasing relevance of climate-science data and tools at relevant time and space scales to support decision-making in water resource management, planning and supply operations in Florida.

2 INTRODUCTION

Florida's burgeoning population, and the vulnerability of its water resources to climate and other human-induced environmental change, make the state a unique living laboratory in which 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 an interdisciplinary manner, the University of Florida (UF) established a campus-wide, interdisciplinary Water Institute in May 2006. Since its inception, the Water Institute has emerged as a leader in coordinating interdisciplinary research, education and outreach programs.

Scientific, public and political awareness of water issues is growing, emphasizing the need for interdisciplinary research, education and outreach programs that are relevant across local, national and global scales. Understanding complex water issues in a holistic manner and exploring integrated solutions to managing problems requires sustained high-level effort. It calls for bold action to obtain, integrate and share new data; design and conduct comprehensive experiments to further basic understanding; and develop new simulation tools to allow scientists, managers, citizens and policy makers to explore alternative scenarios of the impacts of climate change, population growth, land-use change, and water management and policy alternatives.

2.1 Mission

The Water Institute brings together talent from throughout the University and builds internal and external partnerships to address urgent water research challenges; implement innovative interdisciplinary academic programs to train excellent students; and provide state-of-the-art expert assistance and educational programs for external stakeholders.

2.2 Vision

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

2.3 Values

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

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 study.

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

Respect: The Water Institute provides services that acknowledge, respect and promote the expertise of all Water Institute Affiliate Faculty, and embrace the personal values, cultures, and

socioeconomic context of its diverse stakeholders, both internal and external to the University of Florida.

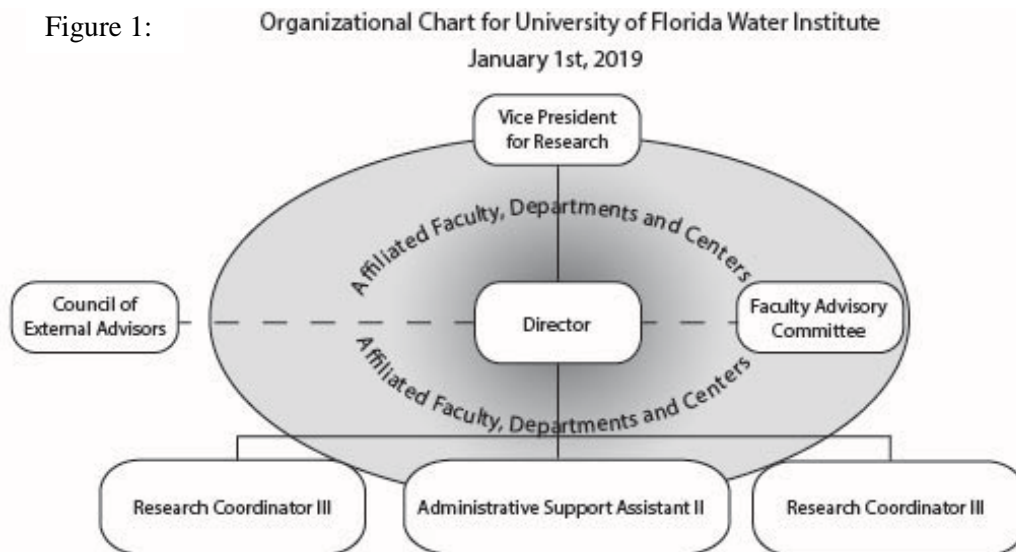
2.4 Goals

The Water Institute strives to achieve preeminence through successful research, education and outreach programs that:

- Improve basic knowledge of physical, chemical, and biological processes in surface and groundwater systems.
- Enhance understanding of interactions and interrelationships among humans (attitudes, behaviors and activities) and aquatic ecosystems.
- Develop improved methodologies for water management and policy - including quantity, quality and ecosystem services - based on a foundation of science, engineering, management and law.

3 ORGANIZATION

The Water Institute is led by a full-time Director who reports to the Vice President for Research (Figure 1). Two Research Coordinator IIIs assist the Director with the development, execution, evaluation and outreach of Water Institute programs. An Administrative Support Assistant II serves as office accountant and manager, event coordinator, and website manager.



Individual UF faculty affiliation with the Water Institute is through voluntary registration in an [on-line database](#). All registered faculty are considered [Water Institute Affiliate Faculty](#) and are eligible to vote on Water Institute governance issues. All Affiliate Faculty members retain their positions in their tenure departments where all administrative and performance review functions are carried out. Currently there are over 300 University of Florida faculty members from more than 65 departments and centers affiliated with the Water Institute. Table 1 provides a summary of Water Institute affiliate faculty membership by College.

Table 1: Summary of Faculty Membership by College

College	Total No
IFAS	222
College of Liberal Arts and Sciences	45
College of Engineering	29
College of Veterinary Medicine	8
College of Design, Construction and Planning	7
Center for Latin American Studies	4
College of Health and Human Performance	4
College of Law	4
College of Public Health and Professions	3
Warrington College of Business Administration	2
Water Institute	2
Center for Women's Studies	1
College of Journalism and Communications	1
College of Pharmacy	1
Florida Center for Solid and Hazardous Waste Management	1
Florida Museum of Natural History	1
International Center	1
Marston Science Library	1
One Health Center of Excellence	1
Grand Total	338

The [UF Water Institute Faculty Fellow](#) awards program recognizes UF faculty who are making outstanding research, extension, or education contributions to interdisciplinary water programs. The purpose of the award is to recognize recent contributions that contribute significantly to UF's interdisciplinary communities of science in water and to provide incentives for Fellows' continued contributions to the goals of the Water Institute. Faculty Fellows receive a salary supplement of \$2,000 per year for a duration of three years. Funds used for the salary supplement are earned from retained indirect costs from external grant awards funded through the Institute. Faculty Fellows elected to date are included in Table 2.

Table 2: Water Institute Faculty Fellows

Year	Faculty Fellow
2013	Dr. Matthew Cohen , Forest Resources and Conservation, UF/IFAS. Dr. Rafael Muñoz-Carpena , Agricultural and Biological Engineering, UF/IFAS.
2014	Dr. Jonathan Martin , Department of Geologic Sciences, CLAS. Dr. James Jawitz , Soil and Water Sciences, UF/IFAS
2015	Dr. Mark Clark , Soil and Water Sciences, UF/IFAS Dr. Michael Dukes , Agricultural and Biological Engineering, UF/IFAS

2016	Dr. Kati Migliaccio , Agricultural and Biological Engineering, UF/IFAS Dr. Arnaldo Valle-Levinson , Civil and Coastal Engineering, College of Engineering
2017	Dr. Sanjay Shukla , Agricultural and Biological Engineering, UF/IFAS Dr. David Kaplan , Environmental Engineering Sciences, College of Engineering
2018	Dr. Mark Brenner , Geological Sciences, CLAS. Dr. Todd Osborne , Soil & Water Sciences, Whitney Laboratory, UF/IFAS.

An internal [Faculty Advisory Committee](#) (FAC) for the Water Institute consists of 15 members of the Water Institute Affiliate Faculty. Ten members of the FAC are elected by the Water Institute Affiliate Faculty on staggered 3-year terms. Five members are appointed by the Water Institute Director to ensure balance among disciplines. Table 3 shows the 2018-2019 membership of the Water Institute Faculty Advisory Committee.

Table 3. 2018-2019 Water Institute Faculty Advisory Committee

Name	Term	Department	College
Christine Angelini	2017-2020	Environmental Engineering Sciences	Engineering
Mary Jane Angelo	2018-2021	Environmental and Land Use Law	Law
Thomas Bianchi	2017-2020	Geology	Liberal Arts and Sciences
Tatiana Borisova	2016-2019	Food and Resource Economics	Agricultural and Life Sciences
Mark Brenner**	2017-2020	Geology	Liberal Arts and Sciences
Nancy Denslow*	2016-2019	Environmental and Human Toxicology	Veterinary Medicine
Michael Dukes	2016-2019	Agricultural and Biological Engineering	Agricultural and Life Sciences
James Gillooly	2016-2019	Biology	Liberal Arts and Sciences
David Kaplan	2018-2021	Environmental Engineering Sciences	Engineering
Kai Lorenzen	2017-2020	Fisheries and Aquatic Sciences	Agricultural and Life Sciences
Jonathan Martin	2016-2019	Geology	Liberal Arts and Sciences
Kati Migliaccio***	2019-2021	Agricultural and Biological Engineering	Agricultural and Life Sciences
Todd Osborne	2017-2020	Soil and Water Science	Agricultural and Life Sciences
Ramesh Reddy	2018-2021	Soil and Water Sciences	Agricultural and Life Sciences
Tara Wade	2018-2021	Southwest Florida Research and Education Center Immokalee	Agricultural and Life Sciences

* Chair

** Chair Elect

***Past Chair

An ad-hoc External Council of Advisors consists of speakers who have participated in the Water Institute Distinguished Scholar Seminar Series. These individuals are representatives of leading academic institutions in a wide range of water-related fields, many of whom are National Academy members and two of whom are Stockholm Water Prize winners.

4 ACCOMPLISHMENTS

4.1 Research

During 2018-2019, faculty affiliated with the Water Institute led active research projects totaling approximately \$173.5 million, and received new sponsored research awards totaling approximately \$54.2 million.

During 2018-2019 the Water Institute coordinated interdisciplinary faculty teams conducting 7 interdisciplinary projects (\$7.9M), supported 7 additional interdisciplinary projects (\$13.6M) and participated in the submission of 8 new interdisciplinary proposals (potential funding up to ~\$86M). See Table 4 below for details.

Highlights in 2018-2019 included the kick-off of a 5-year NSF-funded Research Coordination Network (\$500K), the kick-off of a 3-year NASA funded Earth Science Applications: Water Resources Project (\$1.7M), and successful completion of the second year of a 5-year USDA NIFA funded Water Challenge for Agriculture project (\$5M). In addition, as a result of the well-received independent UF Water Institute technical review commissioned by the Florida Senate in 2015, in 2019 the UF Water Institute was funded to conduct a follow-on independent review to Inform Development of the new Lake Okeechobee Regulation Schedule.

Table 4. 2018-2019 Active Water Institute Projects and Grant Proposals Submitted

Principal Investigator	Dates	Title	Amount	Co-PIs	Agency	Status
Water Institute Coordinated Projects						
Graham, Wendy, WI	8/2010-12/2018	Evaluating the use of Global reanalysis data, GCM retrospective predictions and GCM future projections for Public Water Supply Planning	\$440,200	Syewoon Hwang; Seungwoo Chang	Tampa Bay Water	Funded
Graham, Wendy, WI	10/2016-9/2019	Support services for collaborative stakeholder-scientist partnership: Florida Water and Climate Alliance.	\$37,500	Irani, Tracy Martinez, Chris Staal, Lisette plus faculty from FSU	Tampa Bay Water Authority	Funded
Graham, Wendy, WI	10/2016-9/2020	Department of the Interior Southeast Climate Science Center consortium membership	\$81,162	Staal, Lisette, Plus faculty from NCSU, Duke, Auburn, and UTenn.	North Carolina State University/USGS	Funded
Graham, Wendy, WI	7/2017-6/2020	Agricultural Water Security through Sustainable Use of the Floridan Aquifer: An Integrated Assessment of	\$4,918,926	Adams, Damian Barrett, Charles Bartels, Wendy-Lin, Borisova, Tatiana Dukes, Michael Kaplan, David	USDA-NIFA	Funded

		Economic and Environmental Impacts		Monroe, Martha plus faculty from AU, ASU and UGA		
Graham, Wendy, WI	2/2019-12/2019	Independent Scientific Review to Inform Development of the new Lake Okeechobee Regulation Schedule	\$306,303	Brenner, Mark Staal, Lisette plus faculty from FIU	South Florida Water Management District	Funded
Martin, Jonathan	6/2019-5/2023	Carbonate Critical Zone Research Coordination Network	\$499,121	Graham, Wendy Carton de Grammont, Paloma Plus faculty from University of Kansas, University of Arkansas, Temple University, Pennsylvania State University and Duke University.	NSF	Funded
Martinez, Christopher	7/2019-6/2021	Integrating NASA Earth Systems Data into Decision-Making Tools of Member Utilities of the Florida Water and Climate Alliance	\$1,613,754	Irani, Tracy, Judge, Jasmeet Staal, Lisette plus faculty from FSU, and personnel from Tampa Bay Water and Peace River Manasota Regional Water Supply Authority	NASA	Funded
Water Institute Supported Projects						
Reddy, K. Ramesh, SWS	6/2015-6/2019	Evaluation of soil biogeochemical properties influencing phosphorus flux in the everglades stormwater treatment areas	\$1,771,888	Inglett, Patrick Osborne, Todd Wright, Alan Gerber, Stefan	South Florida Water Management District	Funded
Loiselle, Bette A., CLATAM	8/2016-7/2021	CNH-RCN: Amazon Dams Network: Advancing Integrative Research and Adaptive Management of Social-ecological Systems Transformed by Hydroelectric Dams	\$499,818	Athayde, Simone, Bohlman, Stephanie Kaplan, David	National Science Foundation	Funded
Southworth, Jane GEO	8/2016-8/2020	CNH: Emerging land transactions in Ethiopia and their impacts on food and energy security	\$364,164	Agrawal, Arun Brown, Daniel	National Science Foundation	Funded

Cohen, Matthew, SFRC	08/2016-7/2019	Collaborative Research: Continuous Metabolism and Nutrient Uptake Across the River Continuum	\$475,565	Hensley, Robert	National Science Foundation	Funded
Muneepeerakul, Rachata ABE	2017-2022	Towards a Multi-Scale Theory on Coupled Human Mobility and Environmental Change	\$5,135,704	Munoz-Carpena, Rafael Johnson, Jeffrey	US Dept of Defense Multidisciplinary Research Program of the University Research Initiative	Funded
McLamore, Eric ABE	2017-2022	SmartPath: Grower-directed convergence of nanotechnology and smart decision analytics for irrigation water quality management related to pathogens	\$5,067,725	Broaddus, Brent Danyluk, Michelle Migliaccio, Kati Onel, Gulcan Smith, Plato Useche, Maria	USDA NIFA	Funded
Martin, J., GLY	5/2018-4/2020	Collaborative Research: How does groundwater inundation of carbonate island interiors from sea level rise impact surface water-aquifer interactions and evaporative losses?	\$187,892	Mayer, Alex (Michigan Technological University) Gulley, Jason (University of South Florida)	National Science Foundation	Funded
Interdisciplinary Proposals Submitted						
Rafael Muñoz-Carpena, ABE	9/2019	INFEW/T1: Engineering governance for resiliency in cascading FEWS	\$2,203,375	Christine Angelini, Jeffrey Johnson, Greg Kiker, Rachata Muneepeerakul	National Science Foundation	Declined
Allen, M., Fisheries and Aquatic Sciences	10/2018	Impacts of Water Management and Climate on Coastal Food Webs, Fisheries and Protected Species (Letter of Intent)	\$303,233	Frazer, Graham, Kaplan, Chagaris, Fredrick, Martin.	NOAA Restore Program	Declined

Shukla, Sanjay	12/2018	Compact Bed Geometry for Streamlining Growing Environments to Changing Realities of the Fresh Produce Industry	\$3,998,971	Desaeger, Johan Noling, Joseph Roka, Fritz Hoogenboom, Gerrit Roberts, Pamela Strauss, Sarah	USDA NIFA	Declined
Wendy Graham (collaborator on Virginia Tech led proposal)	1/2019	NSF ERC Smart One Water (SOW) Preproposal	\$25M	Sunil Sinha - PI, plus faculty from Carnegie Mellon University, University of Illinois Urbana-Champaign Harvard University	National Science Foundation (Virginia Tech lead)	Declined
Ramesh Reddy	2/2019-2/2022	Collaborative Research Initiative for the Greater Everglades Ecosystem [CRIGEE]	Task Ordering Contract up to \$3M	Adams, C; Annable, M; Baiser, B; Bhada J; Bianci, T; Calrk, M; Daroub, S; Fujimoto, M; Gerber, S; Her, YG;Inglette, K; Inlgett, P; Judy, J; Martin C; Meyer, J,; Li, Y; Osborne, T; Reisnger, AJ; Reynolds, L; Smyth, A; Whiles, M; Wilson, C; Wright, A.	SFWMD	Funded
Valle, D	11/2018	CNH:Mega infrastructure development in resource frontiers: modeling the impacts of industrialization on Amazonia's natural and human systems. \$1,594,845 (pending)	\$1,594,845	Kaplan, Bohlman, Lorenzen, Simmons	National Science Foundation	Pending
Wendy Graham (collaborator on University of Virginia led proposal)	6/2019	NSF STC Preliminary Proposal	\$25M	Venkat Lakshmi UVA (PI) plus faculty from	National Science Foundation (University of Virginia lead)	Pending

Bruce MacFadden, Florida Museum of Natural History	6/2019	NSF STC Preliminary Proposal	\$25M	Wendy Graham, Water Institute and other Faculty from throughout UF.	National Science Foundation	Pending
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4.2 Water Institute Distinguished Scholar Seminar Series

The Water Institute Distinguished Scholar Seminar Series invites high-profile scholars to UF to conduct a Water Institute seminar 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 and graduate students to discuss specific research and education issues. Eight speakers were hosted during 2018-2019 (see Table 5 for details). For a complete listing of speakers since the Water Institute's inception see <https://waterinstitute.ufl.edu/past-distinguished-scholar-seminars/>.

Table 5. 2018-2019 Distinguished Scholar Seminar Speakers

Date	Distinguished Scholar Seminar Speaker
October 15, 2018	Dr. Johannes Lehmann , Liberty Hyde Bailey Professor, Soil and Crop Sciences, School of Integrative Plant Sciences, College of Agriculture and Life Sciences, Cornell University
November 6, 2018	Dr. Jay Garland , Division Director, National Exposure Research Laboratory, U.S. Environmental Protection Agency
November 27, 2018	Dr. Luc de Meester , Professor, Laboratory of Aquatic Ecology and Evolutionary Biology, KU Leuven
December 4, 2018	Dr. Mark Brenner , Professor, Department of Geological Sciences, University of Florida
February 19, 2019	Dr. David Hyndman , Professor and Chair, Hydrogeology, Environmental Geophysics, Department of Earth and Environmental Sciences, Michigan State University
March 21, 2019	Dr. Emily Bernhardt , Jerry G. and Patricia Hubbard Professor of Biology, Department of Biology, Duke University
April 4, 2019	Dr. William Cooper , Professor Emeritus, Department of Civil and Environmental Engineering University of California, Irvine
May 2, 2019	Dr. Todd Osborne , Assistant Professor, UF Whitney Lab - St. Augustine, Soil and Water Sciences Department, University of Florida

4.3 Symposia and Conferences

Biennial Water Institute Symposium: Six Water Institute Biennial Symposia have brought together researchers, engineers, policy makers, water managers, industry representatives, lawyers, students and citizens to consider the challenges to water resources sustainability; explore solutions for pressing issues; and provide broad-based recommendations for research, education, technology and policies to ensure water resources sustainability for Florida and beyond. See Water Institute [Symposium website](#) for details regarding past programs, presentations and attendees.

A diverse program committee has been convened to plan the upcoming 7th Water Institute Symposium which will be held at the UF Reitz Union in Gainesville on February 25-26, 2020. The Water Institute has partnered with IFAS [Office of Conferences and Institutes](#) to support the

Symposium organization. A new symposia [website](#) details the theme for the upcoming Symposium as well as the programs, presentations and attendees.

Table 7: 2020 UF Water Institute Symposium Planning Committee:

Name	Institution
Wendy-Lin Bartels	Natural Resources Leadership Institute
Tom Bianchi	UF Geological Sciences Department
Mark Brenner	UF Geological Sciences Department
Tatiana Borisova	UF Food and Resource Economics Department
Joe Delfino	UF Environmental Engineering Sciences Department
Mark Diblin	Wood PLC. President, Florida AWRA
Nancy Denslow	UF Environmental Toxicology
Tom Frazer	State of Florida Chief Science Officer
Jasmeet Judge	UF Agricultural and Biological Engineering, Center for Remote Sensing
Dail Laughinghouse	UF Agronomy Department, Ft. Lauderdale Research and Education Center
Mary Lusk	UF Soil and Water Sciences Department, Gulf Coast Research and Education Center
Amy Mangan	Duke Energy
Kevin Morris	Peace River Manasota Regional Water Supply Authority
Bruce McFadden	Thompson Earth Systems Institute
Kati Migliaccio	UF Agricultural and Biological Engineering Department
Nathan Reaver	Water Institute and UF Environmental Engineering Sciences
Les Theile	UF Political Science, Center for Adaptive Innovation, Resilience, Ethics and Science

A graduate student poster competition is sponsored during each of the UF Water Institute Biennial Symposia, during which graduate students compete for \$1,000 awards to attend a professional conference to present their research. Since 2008, over 265 students have competed and a total of 19 students have won \$1,000 each in travel support.

4.4 Graduate Education Programs

A Water Institute priority is to foster, support, and synergize innovative interdisciplinary water education. Although the Water Institute is not a degree granting entity, its research and education activities contribute substantially to graduate education at the University. The [Water Institute Graduate Fellows \(WIGF\) Program](#) was created in 2010 to support faculty-graduate teams to conduct interdisciplinary research in emerging areas of water science, including the social, natural, and engineering sciences. The Deans of the UF/IFAS College of Agricultural and Life Sciences, UF College of Liberal Arts and Sciences, and the Director of the School of Natural Resources and Environment have committed funding for UF Graduate Research Fellowships in support of this program. This funding provides 4 years of support (stipend and tuition) to biennial cohorts of 5 Ph.D. students. In addition, participating faculty involve additional students to the WIGF cohorts using other acquired grant funds.

The Water Institute leverages the UF investment in the WIGF program using gifts provided by the Carl S. Swisher Foundation and the Sherwood L. Stokes Foundation. These funds support field, laboratory and computer analyses by the faculty/student cohort as well as other integrative activities.

A new [2019 WIGF Cohort has been selected to investigate High Latitude Hydrology: Water in a Changing World](#). The cohort will explore the consequences of changing hydrology, ecology, and geochemistry with polar ice retreat. It will offer interdisciplinary collaborative studies in hydrology, hydrogeology, geochemistry, microbial ecology, botany, ecosystem ecology, and coastal hydrodynamics of glaciers, pro-glacial landscapes, and coastal systems in Greenland. Fellows will also benefit from integrative activities to enhance interdisciplinary skills as well as expertise in environmental civics (i.e. leadership, outreach and civic engagement skills). Six excellent students have accepted offers to participate in this program and will enroll in UF in Fall 2019. Table 7 summarizes the students and faculty who have participated in the WIGF program to date.

Table 7. Water Institute Graduate Fellows and Advisors

Fellow	Faculty Advisor	Department	Date Graduated
<u>WIGF Cohort 2011:</u>			
<u>Watershed Management in the face of EPA's New Numeric Nutrient Criteria for Florida Waters</u>			
Arnold, Elliott	Brenner, Mark	Geological Sciences	Spring 2017
Henson, Wesley	Graham, Wendy	Agricultural and Biological Engineering	Fall 2016
Laing, Joelle	Frazer, Tom	Natural Resources and Environment	Fall 2016
Nealis, Charles	Clark, Mark	Soil and Water Science	Fall 2015
Weinkam, Grant	Brown, Mark	Environmental Engineering Sciences	Spring 2016
<u>WIGF Cohort 2013:</u>			
<u>Impacts of Sea-Level Change on Coastal Aquifers, Water Resources and Ecosystems</u>			
Branyon, Jaqueline	Valle Levinson, Arnoldo	Civil and Coastal Engineering	Fall 2015
Chutcharavan, Peter	Dutton, Andrea	Geological Sciences	Anticipated Spring 2020
Deng, Yujun	Peng, Zong-Ren	Urban and Regional Planning	Spring 2018
Glodzik, Katie	Kaplan, David	Natural Resources and Environment	Spring 2018
Huang, Labin	Ogram, Andrew	Soil and Water Sciences	Summer 2017
Pain, Andrea	Martin, Jon	Geological Sciences	Fall 2017
Skrivanek, Alexandra	Dutton, Andrea	Geological Sciences	Anticipated summer 2019
Vyverberg, Karen	Martin, Jon	Geological Sciences	Fall 2017
<u>WIGF Cohort 2015:</u>			
<u>Hydrologic transformation in the Amazon basin: reconciling economy, society, and the environment in the world's largest watershed</u>			
De Carvalho, Roberta	Timothy Fik	Geography	Anticipated Summer 2019
Crouch, Trey	Kaplan, David	Environmental Engineering Sciences	Anticipated Summer 2019
Hyde, Jacy	Bohlmann, Stephanie	Forest Resources and Conservation	Anticipated Summer 2019
Lehmensiek, May	Lorensen, Kai	Natural Resource and Environment	Anticipated Summer 2019

Sabo, Alexandra	Simmons, Cynthia	Geography	Anticipated Summer 2019
Swanson, Christine	Valle, Dennis	Forest Resources and Conservation	Anticipated Summer 2020
<u>WIGF Cohort 2017:</u> Inducing Resilience for Water-Subsidized Systems			
Barchiesi, Stefano	Angelini, Christine	Natural Resources and Environment	Anticipated Summer 2021
Huguenin, Caroline	Waylen, Peter	Geography	Anticipated Summer 2021
Medina Ramirez, Oswaldo	Johnson, Jeffrey	Anthropology	Anticipated Summer 2021
Pazmiño-Hernandez, Marco	Muñoz-Carpena, Rafael	Agricultural and Biological Engineering	Anticipated Summer 2021
Sosnowski, Pierre	Muñoz-Carpena, Rafael	Agricultural and Biological Engineering	Anticipated Summer 2021
Vazquez, Kati	Muneepeerakul, Rachata	Agricultural and Biological Engineering	Anticipated Summer 2021
<u>WIGF Cohort 2019:</u> High Latitude Hydrology: Water in a Changing World			
Black, Megan	Martin, Jon	Geological Sciences	Anticipated Summer 2023
Ezukanma, Izuchukwu	McDaniel, Stuart	Biology	Anticipated Summer 2023
Faber, Quincy	Christner, Brent	Microbiology and Cell Sciences	Anticipated Summer 2023
Munroe, Michael	Waddell, Frank	Journalism and Communications	Anticipated Summer 2023
Lee, Jaehyeon	Jawitz, Jim	Soil and Water Sciences	Anticipated Summer 2023
Shin, Yuseung	Cohen, Matt	Natural Resources and Environment	Anticipated Summer 2023

In addition to the WIGF program the UF Water Institute coordinates [the Hydrologic Sciences Academic Cluster \(HSAC\)](#), an interdisciplinary program designed to broaden the skills of science and engineering students interested in all aspects of water. To date, 207 students have graduated with this concentration and we currently have 23 active students registered. [Water Institute Research Projects](#) support many additional graduate students pursuing M.S. and Ph. D. degrees in water-related fields.

4.5 Public Outreach and Communication Programs

The UF Water Institute engages actively with statewide, regional and national communities. In 2018-2019 these activities included:

[The Florida Water and Climate Alliance](#): The UF Water Institute coordinates the Florida Water and Climate Alliance (FloridaWCA), a stakeholder-scientist partnership committed to increasing relevance of climate-science data and tools at relevant time and space scales to support decision-making in water resource management, planning and supply operations in Florida. FloridaWCA collaborators and funders included NOAA, six major public water supply utilities, three Florida water management districts, local government representatives and several academic institutions. The FloridaWCA facilitates interactions that help to define important questions that result in valuable research and actionable information. Workshops, publications, proposal development and

an active website contribute to the impact of the network. There were 2 workshops held reporting period (20 to date) reaching over 250 people from scores of organizations in Florida. FloridaWCA members have published over 30 journal articles and have been cited 250 times. Adding to the previous 11 proposals submitted to state, regional and national organizations (WERF, WRF, NOAA, EPA, NSF and local utilities and water management districts) ranging from values of \$5000 to \$1.5 million, this year NASA awarded UF a \$1.7 million grant to support several UF Water Institute affiliate faculty, partners at Florida State University (FSU), Tampa Bay Water (TBW) and Peace River Manasota Regional Water Supply (PRMRWSA). The team will customize seasonal climate forecasts and monitoring tools using NASA products to anticipate variations in the forthcoming seasons for peninsular Florida. Stakeholder utilities will integrate the products into their decision making processes about water resource allocations through streamflow forecasts and Aquifer Storage and Recover (ASR) operations respectively. All FloridaWCA related publications, workshop reports and presentations are available on the FloridaWCA website.

Earth Day Event: This year the Water Institute partnered with UF's Thompson Earth Systems Institute to host a free public panel titled "Beyond Dead Fish: How Red Tide Affects All Floridians," to address the economic, public health and environmental impacts of harmful algal blooms. Panel speakers included Lisa Krinsky (UF/IFAS Florida Sea Grant), Dail Laughinghouse (UF/IFAS Assistant Professor), and Andy Reich (scientific advisor to the Chief of the Bureau of Environmental Health at Florida Department of Health) and was moderated by Cynthia Barnett (Environmental journalist in residence, UF College of Journalism and Communications). The event was attended by 60 people in-person and 61 via live stream.

2018 Photo contest: As part of our communications strategy, the Water Institute organized a Photo contest that allowed us to obtain 70 photos representing a wide variety of UF water-related research, education and outreach programs. Five winners received a \$100 prize, and their photos were featured in the Water Institute home page. Photo entries, providing the appropriate credit, are being used on the Water Institute's websites, printed materials and social media accounts.

Online presence: For the first time since its creation, the Water Institute website (<https://waterinstitute.ufl.edu/>) underwent a platform change and major content review. The Water Institute also manages the websites for the USDA NIFA funded project FACETS (<http://floridanwater.org/>), the Florida Water and Climate Alliance (<http://www.floridawca.org/>) and the Hydrologic Sciences Academic Concentration (HSAC) program (<https://hydrology.ufl.edu/>). We use twitter as means to communicate the Water Institute's events, spotlights and news, but also to feature the research in water related topics developed by our affiliated faculty and their colleagues. To date, our twitter account (@ufwater) has 1,120 followers.

4.6 Water Institute Strategic Goals 2019-2020

- Successfully execute the 7th Water Institute Symposium, Feb 25-26th 2020
- Successfully execute ~\$8M in large interdisciplinary Water Institute projects that have been funded by USDA, NSF and NASA
- Coordinate and expand the membership of the Florida Water and Climate Alliance

- Build and strengthen the Water Institute Graduate Fellows Program and the Hydrologic Sciences Academic Concentration, and support the development of the new 2019 WIGF participants into a strong cohort.
- Continue to support submission of proposals for multi-million dollar interdisciplinary grants from national/international funding agencies
- Build collaborative relationships with the new Thompson Institute of Earth Systems as well as the Climate Institute and Biodiversity Institute
- Continue collaboration with UF/IFAS Extension
- Continue to bring in internationally known water experts to a well-attended Distinguished Scholar Seminar Series
- Maintain the Water Institute website and other social media outlets
- Maintain and build network with national funders and academic partners through National activities such as participation on the National Academies Water Science and Technology Board.

Anticipated challenges and needs

- Assistance with Water Institute promotion, marketing and public relations
- Assistance with IT services
- Assistance with pursuit of endowments
- Assistance with pursuit of state legislative budget requests and targeted federal funding
- Operating funds to support Water Institute staff salaries and program expenses.