UNIVERSITY OF FLORIDA WATER INSTITUTE
ANNUAL ACCOMPLISHMENT REPORT
July 1, 2022- June 30, 2023

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1 EXECUTIVE SUMMARY

The University of Florida (UF) 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 water specialties from geophysical to biological to social sciences, engineering, law, and humanities. The Water Institute adds value to the UF through interdisciplinary proposal development, research coordination and collaboration, graduate education, synthetic transdisciplinary expert assistance, stakeholder engagement, seminars, and symposia. Highlights of 2022-2023 activities and accomplishments include:

People: In 2022-2023 405 UF faculty members from more than 80 Departments and Centers across 11 Colleges were affiliated with the Water Institute. Two new UF Water Institute Faculty Fellows, Dr. Christa Court and Dr. Sam Smidt, were recognized for making outstanding contributions to interdisciplinary research, extension, and education water programs, bringing the total UF Water Institute Faculty Fellow cohort to 20 members. Four new Water Institute student award programs were launched to provide engagement, mentoring, networking, and professional opportunities for UF graduate students working on water-related subjects.

Knowledge:
Research: During 2022-2023, faculty affiliated with the UF Water Institute led active research projects totaling more than $200 million and received new sponsored research awards totaling approximately $68 million. During this time, the Water Institute coordinated interdisciplinary faculty teams conducting 10 interdisciplinary projects (~$12.2M) and supported 6 additional interdisciplinary projects (~$9.2M). These projects supported faculty, post-docs and graduate students from 4 UF Colleges and 14 partner Universities, as well as scientists from 11 local, state and federal agencies.

Education: Although the Water Institute is not a degree granting entity, its research and education activities foster, support, and synergize innovative interdisciplinary water-related graduate education at UF through the Water Institute Graduate Fellows (WIGF) Program, the Hydrologic Sciences Academic Concentration, externally funded grants and contracts, and the student awards programs described above. Funding of five WIGF cohorts to date has catalyzed innovative research and professional development of 31interdisciplinary water scientists, leading to 54 peer-reviewed publications, 161 presentations at scientific meetings, $9.7 million in sponsored research, and 37 national and international awards.

Action: A fundamental UF Water Institute goal is to move knowledge to action that promotes a sustainable water future. Highlights of efforts to accomplish this goal during 2022-2023 include leading an expert panel to assess the Water-Related Benefits of the Florida Wildlife Corridor established by the Florida legislature in 2021; participating on 5 peer review panels for water issues of local, state and national importance; coordinating 4 funded scientist-stakeholder partnerships to co-develop knowledge and solutions for emerging water issues; initiating planning for the 9th Water Institute Symposium to be held on February 20-21, 2024; hosting 11 seminars and panels; and conducting a comprehensive communications campaign through in person events, print, digital and social media.

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 2006. Since its inception, the Water Institute has emerged as a leader in coordinating interdisciplinary research, education and outreach programs. In 2022 the Water Institute Strategic Plan was updated. The resulting Water Institute, mission, core values, and goals are included below. The complete strategic plan, including a list of internal and external stakeholders who contributed to the strategic plan can be found here.

2.1 Vision

To be a global leader in developing innovative knowledge and solutions for a sustainable and equitable water future.

2.2 Mission

To build a diverse community that conducts interdisciplinary research, education and outreach to understand and solve complex water challenges.

2.3 Values

- Diversity, Equity, & Inclusion
- Excellence & Integrity
- Discovery & Innovation
- Interdisciplinarity & Collaboration

2.4 Goals

- **People:** Increase the number and diversity of faculty, staff, students and stakeholders engaged in Water Institute programs
- **Knowledge:** Bring together teams to produce high-impact interdisciplinary water research and education programs that address state, national and global water issues
- **Action:** Inform water-related decisions, actions and policy development through actionable research, expert assistance, stakeholder engagement and outreach

3 ACCOMPLISHMENTS

3.1 People

Water Institute Staff: The Water Institute is led by a full-time Director (Dr. Wendy Graham), who reports to the Vice President for Research, and is responsible for developing, implementing and evaluating the Institute's Research, Education and Outreach Programs. An Assistant Director (Dr. Paloma Carton de Grammont) has primary responsibility for executing the Institute's Student Engagement, Inclusive Excellence, Outreach and Communications programs. A Research

Coordinator III (replacement currently being recruited) assists with execution of the Institute's Research and Graduate Education programs. A Communication and Events Specialist (new position currently being recruited) serves as digital and print media developer, event coordinator, and office manager. Research administrative support and budget support is provided by Max Williams. Director of Research Administration in the College of Journalism and Communications. Fiscal and human resources support is provided by Ashlie Lambright, Administrative Specialist in the UF Office of Research. Two Assistant Research Scientists support proposal development, conduct research for Water Institute coordinated projects, and advise graduate students.

Water Institute Faculty: 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. Affiliate Faculty members retain their positions in their tenure departments where all administrative and performance review functions are carried out. Currently there are 405 University of Florida faculty members from more than 80 Departments and Centers across 11 Colleges affiliated with the Water Institute. Table 1 provides a summary of Water Institute affiliate faculty membership by Academic Unit.

Table 1: Summary of Faculty Membership by College and other Academic Units

College or Academic Unit	Total No.
IFAS	258
CLAS	61
College of Engineering	33
College of Design, Construction and Planning	10
College of Veterinary Medicine	9
College of Health and Human Performance	7
Center for Latin American Studies	4
College of Law	4
College of Public Health and Professions	4
Water Institute	3
Warrington College of Business Administration	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
College of the Arts	1
Other	1
Grand Total	**405**

Water Institute Faculty Advisory Committee: The 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 representation across disciplines, demographics, and location. Table 2 shows the 2022-2023 membership of the Water Institute Faculty Advisory Committee.

Table 2. 2022-2023 Water Institute Faculty Advisory Committee

Name	Term	Department	College
Micheal Allen**	2020-2023	Forest, Fisheries, and Geomatics Sciences, Nature Coast Biological Station	Agricultural and Life Sciences
Christine Angelini	2021-2024	Environmental Engineering Sciences	Engineering
Wendy-Lin Bartels	2020-2023	Forest, Fisheries, and Geomatics Sciences	Agricultural and Life Sciences
Mark Brenner	2021-2024	Geological Sciences	Liberal Arts and Sciences
Matt Cohen	2021-2024	Forest, Fisheries, and Geomatics Sciences	Agricultural and Life Sciences
Christa Court	2022-2025	Food and Resources Economics	Agricultural and Life Sciences
Nancy Denslow	2020-2023	Center for Environmental and Human Toxicology	Veterinary Medicine
Lisa Krimsky	2022-2025	Florida Sea Grant	Agricultural and Life Sciences
Dail Laughinghouse	2021-2024	Agronomy. Fort Lauderdale Research and Education Center	Agricultural and Life Sciences
Mary Lusk	2021-2024	Soil, Water, and Ecosystem Sciences. Gulf Coast Research & Education Center	Agricultural and Life Sciences
Tara Sabo-Attwood***	2020-2023	Environmental and Global Health	Public Health and Health Professions
Katy Serafin	2022-2025	Geography	Liberal Arts and Sciences
Sam Smidt	2022-2025	Soil, Water, and Ecosystem Sciences	Agricultural and Life Sciences
Jason von Meding	2022-2025	M. E. Rinker Sr. School of Construction Management	Design, Construction and Planning
Matt Whiles*	2020-2023	Soil, Water, and Ecosystem Sciences	Agricultural and Life Sciences

* Chair **Past Chair *** Chair-Elect

Water Institute Faculty Fellows: The UF Water Institute Faculty Fellows Program recognizes UF faculty who are making outstanding contributions to interdisciplinary research, extension, and education water programs. The purpose of the award is to recognize recent contributions that significantly advance UF's interdisciplinary communities of water-related science and provide incentives for Fellows' continued contributions to the goals of the Water Institute. Faculty Fellows receive a salary supplement for a duration of three years. Faculty Fellows selected to date are included in Table 3.

Table 3: Water Institute Faculty Fellows

Year	Faculty Fellow
2022	Dr. Christa Court, Food and Resources Economics Department, UF/IFAS Dr. Sam Smidt, Soil, Water, and Ecosystems Sciences, UF/IFA
2021	Dr. Lisa Krimsky, Indian River Research and Education Center and Florida Sea Grant, UF/IFAS Dr. Jiangxiao Qiu, Forest, Fisheries, and Geomatics Science. Fort Lauderdale Research and Education Center, UF/IFAS.
2020	Dr. Nancy Denslow, Physiological Sciences, College of Veterinary Medicine. Dr. A.J. Reisinger, Soil, Water, and Ecosystem Sciences, UF/IFAS.
2019	Dr. Christine Angelini, Environmental Engineering Sciences, College of Engineering. Dr. Davie Kadyampakeni, Soil, Water and Ecosystem Sciences, Citrus Water and Nutrient Management, UF/IFAS.
2018	Dr. Mark Brenner, Geological Sciences, CLAS. Dr. Todd Osborne, Soil, Water and Ecosystem Sciences, Whitney Laboratory, UF/IFAS.
2017	Dr. Sanjay Shukla, Agricultural and Biological Engineering, UF/IFAS. Dr. David Kaplan, Environmental Engineering Sciences, College of Engineering.
2016	Dr. Kati Migliaccio, Agricultural and Biological Engineering, UF/IFAS. Dr. Arnoldo Valle-Levinson, Civil and Coastal Engineering, College of Engineering.
2015	Dr. Mark Clark, Soil, Water and Ecosystem Sciences, UF/IFAS. Dr. Michael Dukes, Agricultural and Biological Engineering, UF/IFAS.
2014	Dr. Jonathan Martin, Geological Sciences, CLAS. Dr. James Jawitz, Soil, Water and Ecosystem Sciences, UF/IFAS.
2013	Dr. Matthew Cohen, Forest, Fisheries and Geomatics Sciences, UF/IFAS. Dr. Rafael Muñoz-Carpena, Agricultural and Biological Engineering, UF/IFAS.

Inclusive Excellence and Workforce Development: The UF Water Institute practices inclusive excellence, actively including and respecting everyone as we strive for excellence and equitable outcomes in all we do. Calls for proposals, programs and award guidelines have been revised to incorporate inclusive criteria that help promote opportunities, competencies, and connections for all.

In 2022-2023 the Water Institute engaged with the Society for Advancement of Chicanos/ Hispanics and Native Americans in Science (SACNAS) to support the recruitment of students to UF Water Institute programs and activities. The Water Institute Assistant Director attended the October 2023 SACNAS meeting in Puerto Rico and co-led a field trip for the Water Institute-led NSF-funded Carbonate Critical Zone Research Coordination Network (CCZ RCN). She also attended the Linton-Poodry SACNAS Leadership Institute (LPSLI) the country's premier training for underrepresented minority (URM) scientists, which provides training and networking to help realize one of UF's critical core values: Inclusive Excellence. Future efforts will develop similar partnerships with other professional organizations to improve recruitment and help foster inclusive excellence and workforce development for all UF graduate students, post-docs staff and faculty associated with the Water Institute.

3.2 Knowledge

3.2.1 Research

During 2022-2023, faculty affiliated with the Water Institute led active research projects totaling more than $200 million and received new sponsored research awards totaling approximately $68 million. During this time, the Water Institute coordinated interdisciplinary faculty teams conducting 10 interdisciplinary projects (~$12.2M) and supported 6 additional interdisciplinary projects ($9.2M). These projects supported faculty, post-docs and graduate students from 4 UF Colleges and 14 partner Universities, as well as scientists from 11 local, state and federal agencies. See Table 4 below for details.

In 2023 we completed year 6 of the 6-year USDA NIFA-funded Floridan Aquifer Collaborative Engagement for Sustainability Project ($5M); year 4 of the 4-year NASA-funded Integrating NASA Earth Systems Data into Water Resources Decision-Making project ($1.7M); year 4 of the 5-year NSF-funded Carbonate Critical Zone Research Coordination Network ($500K); year 2 of the 3-year U.S. Army Corps of Engineers funded project Coupling Lake, Estuarine and Watershed, Models for the Caloosahatchee Estuary ($2.3M); and began the year 1 of a 3-year U.S. Army Corps of Engineers funded project Integrating Modeling Tools and Observations for Prediction and Management of Harmful Algal Blooms in the St. Lucie Estuary ($2.5 M). Extensions to the Tampa Bay Water funded Florida Water and Climate Alliance, the USGS funded Southeast Climate Adaptation Science Center, and the Florida Water Resources Research Center Ph. D. Student Fellowships funding continue to be awarded on an annual basis.

As two major Water Institute coordinated projects are ending in 2023, we are leading an interdisciplinary team of UF Faculty and partners to develop proposals on the socioeconomic and ecological impacts of compound water hazards to submit to one or more of the following external grant opportunities:

- NSF Convergence Accelerator: Track K Equitable Water Solutions
- NSF and NOAA Call for IUCRC (Industry-University Cooperative Research Center) Proposals for Modeling of Catastrophic Impacts and Risk Assessment Due to Climate Change
- NSF Growing Convergence Research
- NOAA Climate Resilience Regional Challenge

Table 4. 2022-2023 Active Water Institute Projects and Grant Proposals Submitted

Principal Investigator	Dates	Title	Amount	Co-PIs	Agency	Status
Water Institute Coordinated Projects						
Graham, Wendy, WI	1/2022-12/2023	Coordination of Collaborative Stakeholder-scientist Partnership: Florida Water and Climate Alliance	$25,000	Irani, T., Martinez, C., Schlatter, K., plus faculty from FSU and personell from Tampa Bay Water, Peace River Manasota Water Supplly Authority, SFWMD, SJRWMD	Tampa Bay Water Authority	Funded
Kaplan, D., ESSIE	9/2021-9/2024	Florida Water Resources Center Ph. D. Student Fellowships	$69,434	W. Graham	USGS 104(b)	Funded
Graham, Wendy, WI	10/2016-9/2023	Department of the Interior Southeast Climate Adaptation Science Center Consortium	$96,800	Schlatter, K., plus faculty from NCSU, Duke U, Auburn U, and U Tenn	North Carolina State University/ USGS	Funded
Graham, Wendy, WI	7/2017-6/2023	Agricultural Water Security through Sustainable Use of the Floridan Aquifer: An Integrated Assessment of Economic and Environmental Impacts	$4,918,926	Adams, D., Bartels, W., Court, C., Dukes, M., Kaplan, D., Lai, J., Monroe, M., plus faculty from Auburn U, Albany State U and UGA	USDA-NIFA	Funded
Martin, Jonathan, GLY	6/2019-5/2024	Carbonate Critical Zone Research Coordination Network	$499,121	Graham, W., Carton de Grammont, P., plus faculty from Oregon State U, U Arkansas, Temple U, Penn State U and Duke U	NSF	Funded
Martinez, Christopher, ABE	7/2019-6/2023	Integrating NASA Earth Systems Data into Decision-Making Tools of Member Utilities of the Florida Water and Climate Alliance	$1,613,754	Irani, T., Judge, J., Schlatter, K., plus faculty from FSU, and personnel from Tampa Bay Water and Peace River Manasota Regional Water Supply Authority	NASA	Funded
Graham, Wendy, WI	9/2020-3/2024	Evaluating Potential Risks of Climate Change on Surface Water Quality in the Hillsborough and	$176,971	Reisinger, AJ	Tampa Bay Water Authority	Funded

		Alafia River Watersheds				
Graham, Wendy, WI	2/2022-1/2023	Florida Wildlife Corridor Water Resource Benefit Assessment	$104,403	Braswell, A., Brenner, M., Cohen, M., Deitch, M., Schlatter, K., plus faculty from FIU.	Archbold Expeditions	Funded
Kaplan, David ESSIE	9/2021-12/2023	Coupling lake, watershed, and estuarine models to better understand the role of engineered freshwater discharges in driving the severity, location, and timing of harmful algal blooms.	$2,278,153	Olabarieta, M., Morrison, E., Phlips, E., Carton de Grammont, P., Graham, W. plus faculty from FSU and NCSU	US Army Corps of Engineers, ERDC	Funded
Arias, M. USF	1/2023-1/2025	Integrating Modeling Tools and Observations for Prediction and Management of Harmful Algal Blooms in the St. Lucie Estuary and Watershed	$2,485,935	Carton de Grammont, P., Kaplan, D., Krimsky, L, Graham. W., Morrison, E., Olabarrieta, M., Phlips, E. Plus staff from SFWMD, Faculty from USF, FIU	US Army Corps of Engineers, ERDC	Funded
Water Institute Supported Projects						
Muneepeeraku, Rachata ABE	2017-2022	Towards a Multi-Scale Theory on Coupled Human Mobility and Environmental Change	$5,135,704	Muñoz-C., Rafael Johnson, J.	US Dept of Defense Multidisciplinary Research Program of the University Research Initiative	Funded
Martin, Jonathan, GLY	5/2018-4/2023	Collaborative Research: How Does Groundwater Inundation of Carbonate Island Interiors from Sea Level Rise Impact Surface Water-aquifer Interactions and Evaporative Losses?	$192,051	Mayer, A. (Michigan Technological University), Gulley, J. (University of South Florida)	National Science Foundation	Funded
Allen, Micheal, FFGS	2020-2024	Ecological and Economic Impacts of Land-Use and Climate Change on Coastal Food Webs and Fisheries	$1,107,499	Court, C., Chagaris, D., Graham, W., Grogan, K., Kaplan, D, Scheffers, B., Telg, R., Xiang, B.,	National Academy of Sciences, Engineering and Medicine Gulf of Mexico Program	Funded

Martin, Jonathan, GLY	2020-2024	Significance of Ice-loss to Landscapes in the Arctic: SILA	$2,211,570	Barnett, C., Christner, B., Cohen, M., Jawitz, J, Martin, E., McDaniel, S.	National Science Foundation	Funded
Brett Scheffers, WEC	2021-2023	An Assessment of Invasive Species Range Shifts in the Southeast USA and Actions to Manage Them	$382,434	Fletcher, R. Romagosa, C, Hallet M, and personnel from USGS, FFWC, USFWS.	US Geological Survey	Funded
Christine Angelini, ESSIE	1/2022-12/2022	Expert Guidance on FDEP's Septic Vulnerability Assessment Model and Pilot-Testing Recommended Improvements	$153,202	Albertin, A., Carton de Grammont, P., Lusk, M., Zhuang, Y., Graham, W., Reisinger, AJ, Kaplan, D. plus faculty from FSU	Florida Department of Environmental Protection	Funded

3.2.2 Graduate Education Programs

A Water Institute priority is to foster, support, and synergize innovative interdisciplinary water-related graduate education. Although the Water Institute is not a degree granting entity, its research and education activities contribute substantially to graduate education at UF.

Water Institute Graduate Fellows Program: The **Water Institute Graduate Fellows (WIGF) Program** was established in 2011 to support faculty-graduate teams to conduct innovative interdisciplinary research in emerging areas of water science, including the social, natural, and engineering science; provide students with a comprehensive understanding of the multidimensional challenges to sustaining water resources; equip them with a broad range of interdisciplinary skills; and promote the establishment of diverse and inclusive research teams with long-lasting research connections that result in development of externally sponsored research.

Historically, 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 committed funding for biennial cohorts of 5-6 Ph.D. students in support of this program. In addition, participating faculty brought additional students to the WIGF cohorts using other acquired grant funds. The Water Institute leveraged 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.

The current active WIGF cohort "High Latitude Hydrology: Water in a Changing World" received a $2.2M award from the NSF Arctic System Science Program to support their project "Significance of Ice-Loss to Landscapes in the Artic". This grant funds the research of 6 WIGF Fellows along with 4 other graduate students, an undergraduate student and a postdoctoral associate (Table 5). During Summer 2023 the WIGF cohort is completing their second deployment to conduct field research in Greenland. A Story Map for lay audiences "Artic Exposed: What Greenland Can Tell us About Water's future in a Changing World was written by an undergraduate UF Thompson Earth Systems Institute student to highlight the WIGF cohort's research experiences in the Arctic.

Table 5. WIGF Cohort 2019**: High Latitude Hydrology: Water in a Changing World**

Student	Degree	Faculty Advisor	Department/College
Black, Megan*	PhD	Martin, Jon; Martin, Ellen & Hatfield, R.	Geological Sciences, CLAS
Salinas, Tatiana	PhD	Martin, Jon; Martin Ellen	
Ann, Emily	Undergraduate		
Flint, Madison	Postdoctoral associate		
Ezukanma, Izuchukwu*	PhD	McDaniel, Stuart	Biology, CLAS
Faber, Quincy*	PhD	Christner, Brent	Microbiology and Cell Sciences, CALS
Ellena, Justin	PhD		
Bomar, Chelsey	PhD		
Lee, Jaehyeon*	PhD	Jawitz, Jim	Soil and Water Sciences, CALS
Shin, Yuseung*	PhD	Cohen, Matt	Natural Resources and Environment
Gastelu, Fernanda	PhD	Valle-Levinson, Arnoldo	Engineering School of Sustainable Infrastructure & Environment
Munroe, Michael*	PhD	Hmielowski, Jay; Barnett, Cynthia	Journalism and Communications

*Denotes funding from WIGF program

A key aspect of this WIGF cohort is their engagement on environmental civic activities. This year the team participated in the Florida Museum of Natural History - Geology Department Open House: "Can You Dig It?" (April 1, 2023) with the booth "Arctic and Antarctic Adventures". To date, the 2019 WIGF Cohort has produced eleven collaborative publications, given 46 presentations, and received seven awards.

Funding of five WIGF cohorts to date has catalyzed innovative research and professional development of 31 interdisciplinary water scientists, leading to 54 peer-reviewed publications, 161 presentations at scientific meetings, $9.7 million in sponsored research, and 37 national and international awards. Unfortunately, funds for the WIGF Program were suspended in 2020 due to a budgetary shortfall that changed the way the UF Graduate School distributes Graduate School Fellowships to Colleges. Conversations are on-going with Dr. Nicole Stedman, Dean of the Graduate School, to explore the option of funding the interdisciplinary Water Institute Graduate Fellows Program directly from the University level; however, decisions are on hold pending the hiring of a new UF Provost. Nevertheless, Dr. Stedman provided six Finish Line Awards to support the WIGF fellows going back to Greenland in the Summer 2023 to complete research that was delayed because of the COVID pandemic.

Hydrologic Sciences Academic Concentration: The UF Water Institute coordinates the Hydrologic Sciences Academic Concentration (HSAC), an interdisciplinary program designed to broaden the skills of science and engineering students interested in all aspects of water. Eight departments from 4 Colleges and the School of Natural Resources and Environment participate in this program. As

of Spring 2023, 219 students have graduated with this concentration and there are currently 29 active students pursing the concentration.

Graduate Student Award Programs: In response to the 2022-2027 Strategic Plan, the Water Institute launched four new award programs in 2023 which recognize the achievements and contributions of graduate students working to understand and solve complex interdisciplinary water issues; create a platform to enhance the participation of graduate students in Water Institute Programs; and provide graduate students with financial resources as well as engagement, mentoring, networking, and professional opportunities to promote inclusive excellence.

Graduate Student Travel Awards provide financial support to UF Graduate students to present their water-related research at national or international conferences. Applications are accepted at the start of every semester, and it is anticipated that 10-12 students will be supported each year. To date, eight students from seven Departments have received travel awards (Table 6).

Table 6. 2023 Travel Award Recipients

Name	Department	Conference
Spring 2023		
Nicholas Chin	Environmental Engineering Sciences	American Ecological Engineering Society Meeting
Audrey Goeckner	Soil, Water, and Ecosystem Sciences	Freshwater Sciences 2023 Conference
Kelenna Irving	Microbiology and Cell Science	4th International Annual Planetary Caves Conference
Deirdre Love	Environmental and Global Health	Society of Environmental Toxicology and Chemistry Annual Meeting
Abhishek Rajan	Food and Resources Economics	Agricultural & Applied Economics Association Annual Meeting 2023
Summer 2023		
Joshua Benjamin	Biology	International Congress for Conservation Biology
Bibek Acharya	Agricultural and Biological Engineering	American Society of Agriculture and Biological Engineers 2023 Annual International Meeting
Sanneri Santiago Borrés	Environmental Engineering Sciences	Water Quality Technology Conference

The Water Institute Ambassadors program aims to build a graduate student community, establish a platform for greater student participation in Water Institute Programs, and provide mentoring, networking and leadership opportunities for UF Water Institute graduate students. In Spring 2023 two ambassadors were selected, through a competitive process, to work in collaboration with Water Institute staff to design and implement activities in support of the graduate student community (Table 7). Ambassadors serve for two years, receive an annual stipend supplement, and receive complimentary attendance to the Biennial Water Institute Symposium.

Table 7. 2023 Water Institute Ambassadors

Name	Department	Term
Paul Donsky	School of Forest, Fisheries, and Geomatics Sciences	2023-2025
Gabrielle Quadrado	Geography	2023-2024

In Fall 2023 the Water Institute will award its first research awards and dissertation awards. The Graduate Student Research Awards will help graduate students conducting water-related research enhance their research by, for example, adding a field season or field site to their research, collaborating with a new research group, or adding an interdisciplinary dimension to their research. The Dissertation Awards will elevate the national visibility of the water-related research conducted by graduate students at UF by recognizing outstanding water-related Ph.D. dissertations and nominating them for Universities Council on Water Resources (UCOWR) Ph.D. Dissertation Awards.

3.3 Action

3.3.1 Expert Assistance

Since its inception the UF Water Institute has been called upon by regional, state, and national managers and decision makers to provide state-of-the-art expert assistance and synthesis reports addressing urgent water management challenges. During 2022-2023 expert assistance and synthesis efforts included:

- Water Institute leadership of a panel of experts to assess the Water-Related Benefits of the Florida Wildlife Corridor, a statewide network of nearly 18 million acres of connected lands and waters designated by the Florida Legislature in 2021 to prevent fragmentation of wildlife habitats.
- Water Institute Director membership on the National Academies' Committee on Independent Scientific Review of Everglades Restoration Progress.
- Water Institute Director membership on the State of Florida Blue-Green Algae Task Force.
- Water Institute Director membership on the State of Florida FloodHub Future Rainfall Projections Working Group.
- Water Institute Director membership on the South Florida Water Management District East Coast Surficial Model Peer Review Committee.
- Water Institute Director membership on Tampa Bay Water Master Plan Technical Advisory Committee.

3.3.2 Stakeholder Engagement

The Water Institute develops strong inclusive partnerships with diverse external stakeholders and UF faculty to increase dialogue between scientists and stakeholders, identify and develop priorities for interdisciplinary research, and facilitate co-production of actionable research for water management and policy. Four current scientist-stakeholder partnership initiatives include:

The Florida Water and Climate Alliance (FloridaWCA): The UF Water Institute coordinates the FloridaWCA, a stakeholder-scientist partnership committed to increasing the relevance of climate-science data and tools to support decision-making in water resource management,

planning and supply operations in Florida. FloridaWCA collaborators and funders and supporters include NASA, NOAA, the Southeast Climate Adaptation Science Center, six major public water supply utilities, four Florida water management districts, local government representatives and several academic institutions. Workshops and webinars, publications, outreach materials, proposal development, funded project coordination, and an active website contribute to the impact of the network. In 2022-2023 FloridaWCA hosted three webinars, each of which had 100-150 participants from universities, agencies, consulting firms and non-governmental organizations around the State (Table 9).

The FloridaWCA has submitted 13 proposals to state, regional and national organizations (FDEP, WERF, WRF, NOAA, NASA, EPA, NSF and local utilities and water management districts) ranging in value from $5,000 to $2 million. Two active research projects resulting from this partnership include:

- Integrating NASA Earth Systems Data into Decision-Making Tools of Member Utilities of the Florida Water and Climate Alliance (funded by NASA), customizes climate forecasts and monitoring tools using NASA products to forecast seasonal rainfall for peninsular Florida. Stakeholder utilities integrate the forecast products into their decision-making regarding water resource allocations among desalination, groundwater, streamflow, surface reservoir, and aquifer storage and recovery facility sources.
- Evaluating Potential Risks of Climate Change on Surface Water Quality in the Hillsborough and Alafia River Watersheds (Funded by Tampa Bay Water) is assessing potential risks of climate change on surface water quality in the Hillsborough and Alafia River watersheds which constitute Tampa Bay Water's surface water supply.

Southeast Climate Adaptation Science Center (SECASC): The UF Water Institute is a consortium member of SECASC, a network funded by USGS that is focused on bringing together researchers and natural/cultural resource managers to develop information and tools needed for climate change adaptation. The Water Institute participates and expands the reach of several multi-institutional working groups by engaging UF faculty members and students to develop collaborative projects with external partners. A current project resulting from such efforts is the Southeast Regional Invasive Species and Climate Change Management Network (SE RISCC), funded by USGS and led by Drs. Brett Scheffers and Deah Lieurance from UF.

In addition, each year 2 UF students receive awards to participate in the annual SE CASC Field Intensive experience, which provides students from throughout the consortium with an introduction to climate adaptation, stakeholder engagement and communication through hands-on learning experiences. In 2023-2024 UF graduate students will be eligible to participate in the SECASC Global Change Fellows program which will include one year stipend and tuition; provide training in interdisciplinary research, co-production of research with stakeholders, and science communication; and support participation in a one-year SECASC synthesis project.

The Floridan Aquifer Collaborative Engagement for Sustainability (FACETS) Project, funded by USDA, engaged a team of interdisciplinary researchers, agricultural producers, foresters, government agency personnel and non-governmental organizations in Florida and Georgia to co-produce regional hydro-agro-economic models and explore the ability of alternative

socio-ecological scenarios to sustain local agricultural/silvicultural economies and protect the Floridan aquifer. Over six years, the project engaged 31 faculty/professional members, 24 graduate students, 1 undergraduate student, 8 post-docs, and 4 research coordinators from University of Florida, University of Georgia, Albany State University and Auburn University as well as more than 30 individuals from stakeholder organizations. To date, the project has produced 23 peer-review publications, 15 graduate student dissertations and 11 Extension publications.

The Carbonate Critical Zone Research Coordination Network , funded by NSF, furthers transdisciplinary and collaborative science to increase the understanding of carbonate-rich Critical Zones, and fosters a diverse, inclusive, equitable and accessible community of scientists, students, and professionals. The network hosts workshops and webinars, offers data tools and training, and coordinates working groups. Partners include the Karst Water Institute (KWI), USGS Karst Interest Group, National Cave and Research Institute and the Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI). Accomplishments in 2022-2023 include:

- Field trip "Puerto Rican caves: Exploring the intersection between culture, ecology, and geology" at the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) meeting held in Puerto Rico, October 29, 2022. This activity offered an inclusive field experience to 22 students and early career scientists from demographic groups that have traditionally been underrepresented in the Geosciences.
- Three-day long training session on carbonate critical zone field data collection and Python-based data analyses at the University of Arkansas (May 15-17, 2023) for 10 undergraduate and graduate students.
- Third RCN Field Workshop at the University of Arkansas (May17-19, 2023). This workshop, attended by 22 participants from 14 institutions, enhanced networking opportunities among the RCN participants; provided an opportunity for the five working groups to advance their goals of developing review papers and compiling and analyzing legacy datasets.

3.3.3 Biennial Symposia

Eight 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.

The Water Institute is partnering with the IFAS Office of Conferences and Institutes to support the organization of the 9th Water Institute Symposium which will be held at the UF Reitz Union in Gainesville on February 20-21, 2024. A diverse program committee has been convened (Table 8) and two renowned scientists have accepted our invitation to be keynote speakers: National Academy of Sciences Fellow Dr. Catherine Kling (Tisch University Professor in the Dyson School of Applied Economics and Management and Faculty Director at the Atkinson Center for a Sustainable Future) and Dr. Steven Loheide (Professor of Hydroecology in the Department of Civil

and Environmental Engineering at the University of Wisconsin-Madison). The 2024 symposium website provides an overview of the Symposium including the agenda at-a-glance, location, sponsorship opportunities, information about registration costs, and session proposal and abstract submission instructions.

Table 8: 9th Biennial Symposium Planning Committee

Name	Role
Wendy Graham	*Symposium Chair* UF Water Institute
Paloma Carton de Grammont	*Symposium Co-Chair* UF Water Institute
Mike Allen	UF/IFAS Nature Coast Biological Station
Rebecca Burton	UF Thompson Earth Systems Institute
Matt Cohen	UF/IFAS School of Forest, Fisheries and Geomatic Sciences
Christa Court	UF/IFAS Food and Resource Economics
Sandra Guzman	UF/IFAS Agricultural and Biological Engineering, Indian River Research and Education Center
Sadie Hundemer	UF/IFAS Agricultural Education and Communications
Jeffrey King	Geosyntec – ATM
Lisa Krimsky	UF/IFAS Extension Southeast District and Florida Sea Grant Program
Mary Lusk	UF/IFAS Soil, Water, and Ecosystem Sciences, Gulf Coast Research and Education Center
Carolina Maran	South Florida Water Management District
Kati Migliaccio	UF/IFAS Agricultural and Biological Engineering
Tommy O'Neal	Duke Energy Florida
Jiangxiao Qiu	UF/IFAS School of Forest, Fisheries and Geomatics Science, Ft. Lauderdale Research and Education Center
Tara Sabo Attwood	UF Department of Environmental and Global Health
Katy Serafin	UF Geography
Jason von Meding	UF Rinker School of Construction Management
Matt Whiles	UF/IFAS Soil, Water, and Ecosystem Sciences

3.3.4 Water Institute Seminars and Events

Water Institute seminars and events showcase high-profile scholars and practitioners to provide seminars and panel discussions of interest to broad audiences. These events provide opportunities for speakers to meet with the Water Institute Faculty Advisory Committee as well as Water Institute faculty and Water Institute graduate students to discuss strategic planning and partnering opportunities. During 2021-2023, the UF Water Institute hosted 11 seminars and events (see Table 9).

Table 9. 2021-2022 Water Institute Seminars and Events

Date	Event, Speaker
May 23, 2022	Florida Springs Film Series: Shifting Baselines UF Thompson Earth Institute film screening followed by panel discussion moderated by Dr. Wendy Graham, UF Water Institute
October 12, 2022	Department of Environmental and Global Health, Invited Seminar, The UF Water Institute: Existing Programs and Future Opportunities, Dr. Wendy Graham, UF Water Institute
October 19, 2022	UF Water Institute Faculty Fellow Seminar, Advancing Environmental Sustainability in Geo-Eco-and Agro-Systems Dr. Sam Smidt, Soil, Water, and Ecosystems Sciences, UF/IFAS
October 27, 2022	Florida Water and Climate Alliance Webinar, Impacts of Extreme Weather & Climate on Florida Water Agencies, moderated by Dr. Tirusew Asefa Tampa Bay Water and Karen Schlatter UF Water Institute
January 11, 2023	UF Office of Research, Invited Seminar, Sustainable Water Resources: Transdisciplinary Challenges and Opportunities, Dr Wendy Graham, UF Water Institute
February 6, 2023	Soil, Water and Ecosystem Sciences Research Symposium and Water Institute Distinguished Scholar Seminar, Laws, Theories and Patterns in Ecology, Dr. Walter Dodd, Division of Biology, Kansas State University
March 23, 2023	Agricultural & Biological Engineering Centennial Celebration, Invited Seminar, Floridan Aquifer Collaborative Engagement for Sustainability Project, Dr. Wendy Graham, UF Water Institute
March 28, 2023	Florida Water and Climate Alliance Future Rainfall Projections for Florida Water Resources Planning and Management: Stakeholder Needs Assessment moderated by Dr. Tracy Irani, UF/IFAS
April 4, 2023	SNRE Research Symposium and Water Institute Distinguished Scholar Seminar, SARS-Cov-2 Meets the Ecological Niche, Dr. Bob Holt, Biology Department, UF CLAS
April 12, 2023	UF Water Institute Faculty Fellow Seminar, The Role of Economists in Analyzing Water Issues Dr. Christa Court, Food and Resources Economics Department, UF/IFAS
June 13, 2023	UCOWR/NIWR Annual Conference Denver CO, Invited Presentation, Stakeholder Driven Modeling in Support of Groundwater Sustainability, Dr. Wendy Graham, UF Water Institute

3.3.5 Public Outreach

The UF Water Institute engages actively in public outreach with statewide, regional, national and international communities. In 2022-2023 the outreach and communications activities included:

Arctic Exposed: The Water Institute partnered with the UF's Thompson Earth Systems Institute (TESI) to develop a Story Map about the Water Institute Graduate Fellows (WIGF) conducting work in Greenland. Using storytelling and beautiful imagery the story portrays the WIGF cohort's interdisciplinary research and their commitment to environmental civics. For its collaborations over the past several years, the UF's Thompson Earth Systems Institute awarded the Water Institute their Outstanding Partnership Award**.**

Youth Outreach: Students and faculty of the WIGF 2019 cohort participated in the Florida Museum of Natural History - Geology Department Open House: "Can You Dig It?", with presentations of Greenland Ice Sheet, Sea Level and Arctic Animal Habitat exhibits.

Water Related Job Postings webpage: The Water Institute hosts an up-to-date jobs board for water-related positions.

Online presence: The Water Institute website (https://waterinstitute.ufl.edu/) serves as the major outlet to communicate Water Institute research, education, and outreach activities. The Water Institute also manages the websites for the USDA NIFA-funded FACETS project (http://floridanwater.org/), The NSF-funded Carbonate Critical Zone Research Coordination Network (https://carbonatecriticalzone.research.ufl.edu/), the NSF-funded SILA Project (https://sila.research.ufl.edu/), the Florida Water and Climate Alliance (http://www.floridawca.org/) and the Hydrologic Sciences Academic Concentration (HSAC) program (https://hydrology.ufl.edu/).

Social media is used to communicate the Water Institute's events, spotlights, and news, and to feature water-related research, extension, and outreach conducted by affiliated faculty, staff, students and colleagues. The Water Institute Twitter account (@ufwater) now has 1,878 followers. This year the Water Institute launched three new social media accounts: Facebook, Instagram (@ufwaterinstitute) and LinkedIn.

4 GOALS (2022-2027)

- Pursue inclusive excellence, actively including and respecting everyone as we strive for excellence and equitable outcomes in all Water Institute Programs.
- Provide engagement and mentoring opportunities for undergraduate, graduate students and post-doctoral associates.
- Nominate Water Institute affiliate faculty, students and staff who make outstanding contributions to water-related research, extension or education for state, national and international awards.
- Strengthen the Water Institute Graduate Fellows program by securing continued support from the UF Graduate School and increased funding from external sources.
- Host state, national and international events and working groups that promote networking opportunities, coproduction of knowledge, stakeholder engagement and visibility for the Water Institute community.
- Enhance external collaboration by leveraging Fulbright and other visiting scholar programs to bring national and international experts to participate in Water Institute programs.

- Form and nurture interdisciplinary teams to write proposals, conduct research projects, produce synthesis papers, and develop new courses/curricula in emerging, high-priority areas.
- Coordinate and facilitate efforts to disseminate new knowledge and data-driven solutions to water users, water managers and policy makers.
- Increase the visibility and impact of the Water Institute and its affiliate faculty, staff and students by promoting its water-related research, extension and education contributions and related programs via innovative communication strategies.