

**UNIVERSITY OF FLORIDA WATER INSTITUTE
ANNUAL ACCOMPLISHMENT REPORT
July 1, 2020- June 30, 2021**

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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 interdisciplinary proposal development, research coordination and collaboration, synthetic transdisciplinary studies and projects, stakeholder engagement, seminars and symposia. Highlights of 2020-2021 activities and accomplishments are included below.

Research: During 2020-2021, faculty affiliated with the Water Institute led active research projects totaling approximately \$180 million and received new sponsored research awards totaling approximately \$44 million. During this time the Water Institute coordinated interdisciplinary faculty teams conducting 6 interdisciplinary projects (\$7.4M) including a 5-year [NSF-funded Research Coordination Network](#) (\$500K), a 3-year [NASA funded Earth Science Applications: Water Resources Project](#) (\$1.7M), and a 5-year [USDA NIFA funded Water Challenge for Agriculture project](#) (\$5M). The Water Institute supported 7 additional interdisciplinary projects (\$10.4M) and participated in the submission of 4 new interdisciplinary proposals (\$21M).

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 commit 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. A new WIGF faculty cohort was selected to investigate “[Beneficial reuse of wastewater \(BREW\): Overcoming barriers and identifying opportunities](#)” and the group submitted a \$750K proposal to USDA in June 2021. The 2019 Water Institute Graduate Fellows cohort focused on [High Latitude Hydrology](#) was awarded a \$2.2M grant from NSF Arctic System Science in August 2020.

Outreach and Expert Assistance:

- The Water Institute led [Florida Water and Climate Alliance](#) celebrated its 10th anniversary. During 2020-21 FloridaWCA membership increased from 160 to 530, and the group hosted 4 workshops, bringing the total number of workshops to 25 over the past 10 years.
- A series of [Water Workshops for decision makers](#) were held in conjunction with UF-IFAS Extension. The workshops were supported by water resource experts from 7 organizations and attended by 18 decision-makers and opinion leaders from the Suwanee River Water Management District.
- International outreach included a series of webinars co-hosted through the [UF/CREHO Collaborative agreement](#). Webinars were attended by 412 individuals from 13 Countries.
- Water Institute Director Wendy Graham was appointed to the [National Water Resources Institute](#) Independent Scientific Review Panel for the City of Tampa’s Indirect Potable Reuse Project and continues to serve on the Governor’s Blue Green Algae Task Force.

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.

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 outreach 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, diverse, 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

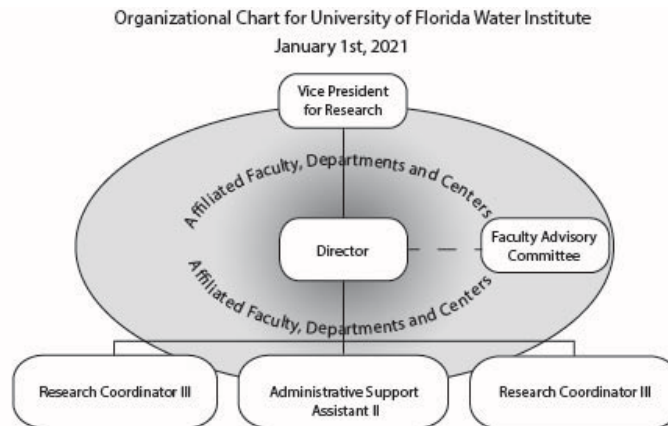
The Water Institute strives to achieve preeminence through successful research, education and outreach programs that:

- 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, Wendy Graham, who reports to the Vice President for Research (Figure 1). Two Research Coordinator IIIs, Paloma Carton de Grammont and Karen Schlatter, assist the Director with the development, execution, evaluation and outreach of Water Institute programs. An Administrative Support Assistant II, Robyn Screws, serves as office accountant and manager, event coordinator, and website manager.

Figure 1:



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 311 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	206
College of Liberal Arts and Sciences	43
College of Engineering	24
College of Veterinary Medicine	9
College of Design, Construction and Planning	5
College of Public Health and Professions	4
College of Health and Human Performance	3
College of Law	3
Center for Latin American Studies	2
Warrington College of Business Administration	2
Water Institute	2
Center for Gender, Sexualities, and Women’s Research	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	311

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 representation and equitable participation among disciplines, demographics, and location. Table 2 shows the 2020-2021 membership of the Water Institute Faculty Advisory Committee.

Table 2. 2020-2021 Water Institute Faculty Advisory Committee

Name	Term	Department	College
Micheal Allen*	2020-2023	Fisheries and Aquatic Sciences	Agricultural and Life Sciences
Christine Angelini	2021-2024	Environmental Engineering Sciences	Engineering
Mary Jane Angelo	2019-2022	Environmental and Land Use Law	Law
Wendy-Lin Bartels	2020-2023	School of Forest Resources and Conservation	Agricultural and Life Sciences
Mark Brenner**	2021-2024	Geology	Liberal Arts and Sciences

Matt Cohen	2021-2024	School of Forest Resources and Conservation	Agricultural and Life Sciences
Nancy Denslow	2020-2023	Environmental and Human Toxicology	Veterinary Medicine
David Kaplan	2019-2022	Environmental Engineering Sciences	Engineering
Dail Laughinghouse	2021-2024	Fort Lauderdale Research and Education Center	Agricultural and Life Sciences
Mary Lusk	2021-2024	UF/IFAS Extension	Agricultural and Life Sciences
Kati Migliaccio	2020-2023	Agricultural and Biological Engineering	Agricultural and Life Sciences
Ramesh Reddy	2019-2022	Soil and Water Sciences	Agricultural and Life Sciences
Tara Sabo-Attwood	2020-2023	Environmental and Global Health	Public Health and Health Professions
Tara Wade	2019-2022	Southwest Florida Research and Education Center Immokalee	Agricultural and Life Sciences
Matt Whiles	2020-2023	Soil and Water Sciences	Agricultural and Life Sciences

* Chair

**Past Chair

The [UF Water Institute Faculty Fellow](#) awards 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 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. Faculty Fellows elected to date are included in Table 3.

Table 3: Water Institute Faculty Fellows

Year	Faculty Fellow
2013	Dr. Matthew Cohen , Forest, Fisheries and Geomatics Sciences, 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. Arnoldo 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
2019	Dr. Christine Angelini , Environmental Engineering Sciences, College of Engineering. Dr. Davie Kadyampakeni , Soil & Water Sciences, Citrus Water and Nutrient Management, UF/IFAS.
2020	Dr. Nancy Denslow , Physiological Sciences, College of Veterinary Medicine. Dr. A.J. Reisinger , Soil and Water Sciences, UF/IFAS.

4 ACCOMPLISHMENTS

4.1 Research

During 2020-2021, faculty affiliated with the Water Institute led active research projects totaling approximately \$180 million and received new sponsored research awards totaling approximately \$44 million. During this time, the Water Institute coordinated interdisciplinary faculty teams conducting 6 interdisciplinary projects (\$7.4M), supported 7 additional interdisciplinary projects (\$10.4M) and participated in the submission of 4 new interdisciplinary proposals (\$21M). See Table 4 below for details.

Highlights in 2020-2021 included completing the 1st year of a 3-year National Academy of Sciences, Engineering and Medicine Gulf of Mexico Program project (\$1.1M), completing the 2nd year of a 5-year NSF-funded Research Coordination Network (\$500K), completing the 2nd year of a 3-year NASA funded Earth Science Applications: Water Resources Project (\$1.7M), and completing the 4th year of a 5-year USDA NIFA funded Water Challenge for Agriculture project (\$5M).

Table 4. 2020-2021 Active Water Institute Projects and Grant Proposals Submitted

Principal Investigator	Dates	Title	Amount	Co-PIs	Agency	Status
Water Institute Coordinated Projects						
Graham, Wendy, WI	6/2015-12/2021	Support Services for Collaborative Stakeholder-scientist Partnership: Florida Water and Climate Alliance	\$75,000	Irani, T., Martinez, C., Schlatter, K., plus faculty from FSU	Tampa Bay Water Authority	Funded

Graham, Wendy, WI	10/2016-9/2022	Department of the Interior Southeast Climate Adaptation Science Center Consortium Membership	\$81,162	Schlatter, K., plus faculty from NCSU, Duke, Auburn U, and U Tenn	North Carolina State University/USGS	Funded
Graham, Wendy, WI	7/2017-6/2022	Agricultural Water Security through Sustainable Use of the Floridan Aquifer: An Integrated Assessment of Economic and Environmental Impacts	\$4,918,926	Adams, D., Barrett, C., Bartels, W., Borisova, T., Dukes, M., Kaplan, D., Monroe, M., plus faculty from Auburn, Albany State U and UGA	USDA-NIFA	Funded
Kaplan, D., EES	3/2016-12/2021	Florida Water Resources Center Ph. D. Student Fellowships	\$85,601	Adams, D., and W. Graham	USGS 104(b)	Funded
Martin, Jonathan, GLY	6/2019-5/2023	Carbonate Critical Zone Research Coordination Network	\$499,121	Graham, W., Carton de Grammont, P., plus faculty from Ohio U, U Arkansas, Temple U, Penn State U and Duke	NSF	Funded
Martinez, Christopher, ABE	7/2019-6/2022	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	9/2020-8/2023	Evaluating Potential Risks of Climate Change on Surface Water Quality in the Hillsborough and Alafia River Watersheds	\$182,718	Reisinger, AJ	Tampa Bay Water Authority	Funded
Water Institute Supported Projects						
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, S., Bohlman, S., Kaplan, D.	National Science Foundation	Funded

Southworth, Jane GEO	8/2016-8/2021	CNH: Emerging Land Transactions in Ethiopia and their Impacts on Food and Energy Security	\$364,164	Agrawal, A., Brown, D.	National Science Foundation (subaward from U Michigan)	Funded
Cohen, Matthew, FFGS	08/2016-7/2021	Collaborative Research: Continuous Metabolism and Nutrient Uptake Across the River Continuum	\$475,565	Hensley, R.	National Science Foundation	Funded
Muneepeerakul, 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	5/2018-4/2021	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, A. (Michigan Technological University), Gulley, J. (University of South Florida)	National Science Foundation	Funded
Allen, Micheal, FFGS	2020-2023	Ecological and Economic Impacts of Land-Use and Climate Change on Coastal Food Webs and Fisheries	\$1.1M	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	\$2.2M	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	\$400K	Fletcher, R. Romagosa, C, Hallet M, and personnel from USGS, FFWC, USFWS.	US Geological Survey	Funded
Interdisciplinary Proposals Submitted for Funding						

Graham, Wendy, WI	2022-2027	Focused CoPE: A Convergent Approach to Just Futures in Coastal Areas: Re-Writing the Tale of Two Floridas (2FL)	\$700K	Irani, T. and K. Serafin	National Science Foundation (Subaward from UCF)	Pending
Loiselle, Bette A., CLATAM	2022-2027	National Center for Open Data Supporting Environmental Synthesis (NCODES)	\$10M	Campbell, L., Deliz, K., Guralnick, R., Lichstein, J., Michailidis, G., Munoz-Carpena, R., Soltis, P., Todd-Brown, K.	National Science Foundation	Letter of Intent - pending
Kadyampakeni, Davie, SWS	2022-2026	Beneficial Reuse of Wastewater (BREW): Overcoming Barriers and Identifying Opportunities	\$750K	Ash, K., Jones, J., Lusk, M., Zimmerman, A.	USDA	pending
Martin, Charles, FFGS	2022-2023	Mapping Submarine Groundwater Discharge as Thermal Refugia for Fishes in the Lower Suwannee River Estuary	\$207K	Allen, M., and personnel from USGS	USGS	Not recommended for funding
Kaplan, David, EES	2022-2023	Modeling the Impacts of Projected Climate Change on Aquatic Ecosystem Hydrology, Vegetation, and Habitat Suitability for Threatened and Endangered Flatwoods Salamanders	\$300K	Personnel from FWC, FWRI	USGS	Not recommended for funding
Dahl, J., Animal Sciences	2022-2027	Enhancing Circularity of Livestock Production to Improve Ecosystem Services, Support Income and Well-being of Rural Communities, and Sustain Access to Nutrient Dense Foods.	\$10M	Adesogan, A., DiLonrenzo, N., Cox, C.; Graham, W, Kiker, G.; Ryals, A., Muneeppeerakul, R.	USDA-NIFA	Letter of Intent-not recommended for funding

4.2 Water Institute Distinguished Scholar Seminar Series

The Water Institute Distinguished Scholar Seminar Series invites high-profile scholars to conduct a Water Institute seminar of interest to a broad audience and, when possible, 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. During 2020-2021, four speakers were hosted online (see Table 5 for details). For a listing of previous speakers see <https://waterinstitute.ufl.edu/past-distinguished-scholar-seminars/>.

Table 5. 2020-2021 Distinguished Scholar Seminar Speakers

Date	Distinguished Scholar Seminar Speaker
September 16, 2020	Dr. Davie Kadyampakeni , Assistant Professor, UF/IFAS Citrus Research and Education Center, University of Florida
November 17, 2020	Dr. Karen McNeal , Associate Professor and COSAM Molette Endowed Professor, Auburn University
February 23, 2021	Dr. Nancy Denslow , Professor, Department of Physiological Sciences, University of Florida
March 31, 2021	Dr. A.J. Reisinger , Assistant Professor, Soil and Water Sciences, University of Florida

4.3 Water Institute Lightning Talk Series

The Water Institute initiated a virtual Faculty Lightning Talk Series in 2020-2021. As in-person events were limited during 2020-2021, the Lightning Talk Series was developed to help the Water Institute faculty and staff learn about ongoing water-related research at UF, engage with new faculty members in the water research community, and promote new relationships and collaborations among researchers and stakeholders. The Water Institute hosted two rounds of lightning talks (see Table 6 for topics and speakers). Lightning Talk webinar recordings are available here: <https://waterinstitute.ufl.edu/lightning-talk-series/>.

Table 6. 2020-2021 Lightning Talk Topics and Speakers

Date	Topic	Speakers
December 2, 2020	Use of Thermal Refuge Habitat to Set Flow Regulations in River Systems: Research and Collaboration Needs	<ul style="list-style-type: none"> • Dr. Mike Allen, Professor, Fisheries & Aquatic Sciences, UF/IFAS • Dr. Gabriel Herrick, Lead Environmental Scientist, Southwest Florida Water Management District • Dr. Charles Martin, Research Assistant Professor, UF/IFAS Nature Coast Biological Station • Taylor Dluzniewski, Fisheries Management Biologist, Florida Fish and Wildlife Conservation Commission

February 3, 2021	Environmental Justice and Water	<ul style="list-style-type: none"> • Dr. Kevin Ash, Assistant Professor, Department of Geography, UF • Dr. Simone Athayde, Associate Professor, Global & Sociocultural Studies, Kimberly Green Latin American & Caribbean Center, FIU • Dr. Joel Correia, Assistant Professor, Center for Latin American Studies, UF • Dr. Jason von Meding, Associate Professor, Rinker School of Construction Management, Florida Institute for Built Environment Resilience, UF
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4.4 Biennial Symposia

The Water Institute has partnered with the UF-IFAS Office of Conferences and Institutes to plan and execute the 2022 Symposium. A survey was sent to past participants to explore participants preferences regarding the format of the upcoming event (in person vs virtual). There was consensus that the event should be held in person and planning is ongoing for a February 2022 Symposium.

4.5 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 the University.

The [Water Institute Graduate Fellows \(WIGF\) Program](#) (1) supports faculty-graduate teams to conduct innovative interdisciplinary research in emerging areas of water science, including the social, natural, and engineering sciences, (2) promotes the establishment of diverse and inclusive research teams and long-lasting research connections and (3) provides students with a comprehensive understanding of the multidimensional challenges to sustaining water resources and equips them with a broad range of interdisciplinary skills. 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 commit funding for biennial cohorts of 5 Ph.D. students in support of this program. In addition, participating faculty bring 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. To date, the WIGF Program has supported 32 Ph.D. students through 5 cohorts (Table 7).

Table 7. Water Institute Graduate Fellows and Advisors

Fellow	Faculty Advisor	Department	Date Graduated
<u>WIGF Cohort 2011:</u>			
Watershed Management in the Face of EPA's New Numeric Nutrient Criteria for Florida Waters			
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>			
Impacts of Sea-Level Change on Coastal Aquifers, Water Resources and Ecosystems			
Branyon, Jaqueline	Valle Levinson, Arnoldo	Civil and Coastal Engineering	Fall 2015
Chutcharavan, Peter	Martin, Ellen*	Geological Sciences	Summer 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	Summer 2019
Vyverberg, Karen	Martin, Jon	Geological Sciences	Fall 2017
<u>WIGF Cohort 2015:</u>			
Hydrologic Transformation in the Amazon Basin: Reconciling Economy, Society, and the Environment in the World's Largest Watershed			
De Carvalho, Roberta	Fik, Timothy	Geography	Summer 2019
Crouch, Trey	Kaplan, David	Environmental Engineering Sciences	ABD 2020
Hyde, Jacy	Bohlmann, Stephanie	Forest Resources and Conservation	Summer 2019
Lehmensiek, May	Lorensen, Kai	Natural Resource and Environment	Anticipated Summer 2021
Sabo, Alexandra	Simmons, Cynthia	Geography	Spring 2020
Swanson, Christine	Valle, Dennis	Forest Resources and Conservation	Anticipated Summer 2021
<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; Martin Ellen and Hatfield, R.	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	Hmielowski, Jay; Barnett Cynthia	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
Fernanda Gastelu	Valle-Levinson, Arnoldo	Engineering School of Sustainable Infrastructure & Environment	Anticipated Summer 2023
<u>WIGF Cohort 2022</u> Beneficial Reuse of Wastewater (Brew): Overcoming Barriers and Identifying Opportunities			
TBD	Lusk, Mary	Soil and Water Sciences	
TBD	Kadyampakeni, David	Soil and Water Sciences	
TBD	Ash, Kevin	Geography	
TBD	Reisinger, Alexander J.	Natural Resources and Environment	
TBD	Zimmerman, Andrew R	Geological Sciences	
TBD	Jones, Jennifer	Family, Youth, and Community Sciences	
TBD	Gao, Bin	Agricultural and Biological Engineering	

* Peter Chutcharavan was originally advised by Dr. Andrea Dutton who left UF in the summer 2019.

Highlights of active cohorts:

The 2017 WIGF cohort, which focuses on understanding the resilience of water subsidized systems, has established a strong working relationship with the Ramsar Regional Center for Training and Research for the Western Hemisphere (CREHO) headquartered in Panama. Last year [a collaborative agreement](#) was signed with CREHO. Four international webinars were co-sponsored between the Water Institute, UF Levin College of Law, UF Center for Latin American Studies, Florida Sea Grant, CREHO, and nine governmental and non-governmental institutions of Costa Rica and Panama. In response to a request from park managers and decision makers, a workshop to present the highlights of the cohort's research and explore future collaborations was held in May 2021.

The 2019 WIGF cohort, which focuses on High Latitude Hydrology: Water in a Changing World, received a \$2.2 million award from the NSF Arctic System Science Program which will allow the cohort to support the research of WIGF students along with additional 4 graduate students and 4 undergrad students. The project “[Significance of Ice-Loss to Landscapes in the Arctic](#)” will have its first deployment to Greenland in summer 2021.

A new WIGF project and faculty team was selected in 2021. This WIGF cohort will provide an interdisciplinary graduate training environment focused on integrating research on reclaimed water use to promote solutions to global water scarcity that incorporate the needs of agriculture, environmental protection, and societal risk perception and preferences. Students will develop disciplinary expertise in horticultural sciences, soil biogeochemistry, bioengineering and human geography, and will also be trained in ethical conduct of research, conflict management, grant writing, and science communication (via traditional and social media). The WIGF faculty team submitted a proposal to USDA in June 2021 to support research expenses for the WIGF students. Due to the lack of graduate student fellowships available for Fall 2021, student recruitment was delayed until Fall 2022.

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, 213 students have graduated with this concentration and there are currently 24 active students registered. [Water Institute Research Projects](#) support many additional graduate students pursuing M.S. and Ph.D. degrees in water-related fields.

4.6 Partnership Building and 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 applied research for water management and policy.

[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 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 and an active [website](#) contribute to the impact of the network. During the coronavirus pandemic, FloridaWCA held four webinars which were extremely successful at engaging new participants, with active membership jumping from 160 to 530 members in just over a year. The group has submitted 12 proposals to state, regional and national organizations (WERF, WRF, NOAA, NASA, EPA, NSF and local utilities and water management districts) ranging in value from \$5000 to \$1.7 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 seasonal climate

forecasts and monitors tools using NASA products to forecast seasonal rainfall for peninsular Florida. Stakeholder utilities will 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) will develop a framework to assess 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 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 to develop collaborative projects with external partners. Two recent projects resulting from such efforts are:

- [An assessment of Invasive Species Range Shifts in the Southeast USA and Actions to Manage Them](#). (Funded by USGS) UF faculty along with collaborators from USGS, Florida Fish and Wildlife Conservation Commission and U.S. Fish and Wildlife Service will predict the spread of invasive species under different scenarios of future climate change to understand where they will spread, how they will get there, and when they are expected to arrive.
- [Ecological and Economic Impacts of Land Use and Climate Change on Coastal Food Webs and Fisheries](#) (Funded by the National Academy of Science, Engineering and Medicine) will comprehensively assess how changes in climate and watershed land/water use influence food webs, fisheries, aquaculture, and nature-linked economic drivers of the Florida Gulf Coast region.

[The Floridan Aquifer Collaborative Engagement for Sustainability \(FACETS\)](#) Project engages a team of interdisciplinary researchers, agricultural producers, foresters, and government agency personnel and non-governmental organization in Florida and Georgia to co-produce and explore the ability of alternative socio-ecological scenarios to sustain local agricultural/silvicultural economies and protect the Floridan aquifer. The project includes 20 faculty members, 12 graduate students, 2 post-docs, 2 research scientists and 2 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.

[The Carbonate Critical Zone Research Coordination Network](#) aims to further transdisciplinary and collaborative science to aid the understanding of carbonate-rich Critical Zones, and strives to foster 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). An inaugural virtual [Workshop](#) was attended by 70 individuals in August 2020. Planning for the organization of four

on-going working groups is underway as well as one special session at the 2021 GSA meeting and a second Workshop in Spring 2022 (in Gainesville, FL).

4.7 Public Outreach and Communication Programs

The UF Water Institute engages actively with statewide, regional, national and international communities. In 2020-2021 these activities included:

Water Workshops for Decision-Makers in the Suwanee River Basin: This extension program was hosted as part of the Water Institute led Floridan Aquifer Collaborative Engagement for Sustainability (FACETS) and in close collaboration with UF/IFAS. *The Water Workshops* aimed to provide information and tools that community leaders can use to make informed decisions about their communities' water resources. Three two-hour sessions were carefully designed to provide an opportunity to discuss water challenges, policies, and local priorities with regional and state agencies, allowing decision makers to network and exchange ideas. The workshop series was supported by water resource experts from seven agencies/organizations and was attended by eighteen local decision-makers and opinion leaders.

CREHO/ UF Wetland Webinars: As part of the UF/CREHO Agreement signed last year, the Water Institute hosted four international webinars in collaboration with the UF Levin College of Law, UF Center for Latin American Studies, Florida Sea Grant, CREHO, and nine governmental and non-governmental institutions of Costa Rica and Panama. The webinars aimed to showcase the interdisciplinary and collaborative research between Water Institute affiliate faculty and students and CREHO. The principal audience of the webinars were decision makers and scientists in Latin America and the official language was Spanish. The Webinars were attended by 412 people from 13 Countries (Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua, Panama, Peru, and the United States) and 1,442 views on the CREHO YouTube and Facebook channels.

Online presence: The Water Institute website (<https://waterinstitute.ufl.edu/>) serves as the major outlet to communicate our research, education and outreach activities. In the last year the page had 19,748 page views (15,179 unique pageviews). The Water Institute also manages the websites for the USDA NIFA funded project FACETS (<http://floridanwater.org/>), The NSF Funded Carbonate Critical Zone Research Coordination Network (<https://carbonatecriticalzone.research.ufl.edu/>), the 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/>).

Twitter is used as means to communicate the Water Institute's events, spotlights and news, and to feature water-related research, extension, and outreach conducted by our affiliated faculty, staff, students and colleagues. To date, the Water Institute twitter account (@ufwater) has 1,567 followers (211 more than last year).

4.8 Water Institute Diversity, Equity, and Inclusivity Initiative

In 2020-2021 the Water Institute developed an Inclusion, Diversity, Equity, and Accessibility (IDEA) Action Plan in support to UF efforts. The plan resulted from six months of discussion among Water Institute staff, discussions with the Water Institute Faculty Advisory Committee,

participation in the Institute of Flood and Agricultural Sciences (IFAS) internal IDEA committee, conversations with Campus Diversity Liaisons, and review of other administrative units' IDEA Action Plans to seek potential synergies. The Plan focuses on ways to increase representation, and equitable and accessible participation, in Water Institute programs, projects, and events (including research, education, extension, and other outreach programming) as well as ways engage in research that benefits underrepresented and/or marginalized groups. We established a DEI liaison (Dr. Paloma Carton de Grammont) who seeks synergies with other academic units and coordinates Water Institute DEI efforts. Some activities that supported our DEI efforts this year include:

- “*Environmental Justice and Water*” Lightning talks
- A communication campaign to highlight the scholarly achievements and contributions of UF Water Institute affiliated faculty, staff and students from underrepresented groups
- Increasing the number of scientists from underrepresented groups and their organizations/movements that the Water Institute follows on social media to amplify their voices.
- Water Institute RFP’s were reviewed to incorporate DEI criteria as well as a more inclusive language.
- A Giving day campaign to support students from underrepresented groups to attend our next Biannual Symposium (received funds for 3 full scholarships)