University of Florida Water Institute

2024 Annual Report

UF | Water Institute
UNIVERSITY of FLORIDA

Photo by Larry Korhnak

UNIVERSITY OF FLORIDA WATER INSTITUTE
ANNUAL ACCOMPLISHMENT REPORT
July 1, 2023- June 30, 2024

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OUR YEAR IN REVIEW

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 UF through interdisciplinary proposal development, research coordination and collaboration, graduate education, synthetic transdisciplinary expert assistance, stakeholder engagement, seminars, and symposia. Highlights of 2023-2024 activities and accomplishments include:

People

After 17 years, the Water Institute underwent our first leadership transition in 2023 with an Interim Director serving while a national search for a new director is completed. Additionally, a new Communications and Event Specialist and a Research Coordinator joined the Institute. In 2023-2024, 417 UF faculty members from more than 80 departments and centers across 11 colleges were affiliated with the Water Institute. Two new Water Institute Faculty Fellows were recognized for their outstanding contributions to interdisciplinary research, extension, and educational water programs, bringing the total number of Institute's Fellows to 22. Two graduate students were named Water Institute Ambassadors to support the design and implementation of new programming for students.

Knowledge

Research: During 2023-2024, faculty affiliated with the Water Institute led active research projects totaling more than $170 million and received new sponsored research awards totaling approximately $47 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 13 partner Universities, as well as scientists from 4 local agencies.

Education: The Water Institute is not a degree-granting entity; however, its research and education activities foster, support, and synergize innovative interdisciplinary water-related graduate education at UF. This is achieved through the Graduate Fellows Programs, the Hydrologic Sciences Academic Concentration, externally funded grants and contracts, and student awards programs that recognize the best water-related dissertations and provide travel and research funds. The final cohort of the Water Institute Graduate Fellows Program (WIGF) on high latitude hydrology has produced 12 collaborative publications, given 68 presentations, and received 22 awards. Funding to support eight graduate students for the new UF Water Scholars Program has been secured, and seven students have been recruited. This team aims to develop integrative solutions to wastewater reuse challenges across Florida.

Action

A fundamental goal of the UF Water Institute is to move knowledge to action that promotes a sustainable water future. In 2023-2024 this included coordinating four funded scientist-stakeholder partnerships to co-develop knowledge and solutions for emerging water issues; hosting the 9th Water Institute Symposium, with over 500 participants, to facilitate the sharing of cutting-edge science, technology, education, policy, and management advancements; hosting 16 seminars and webinars, including the newly launched student seminar series "Lunch by the Water"; and conducting a comprehensive communications campaign.

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 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.

Vision

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

Mission

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

Values

- Inclusive excellence & Integrity
- Discovery & Innovation
- Interdisciplinarity & Collaboration

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.

ACCOMPLISHMENTS

PEOPLE

This year, the Water Institute underwent significant personnel turnover and, for the first time since its founding in 2006, experienced a leadership change. This transition signals a new era for the Institute, introducing fresh perspectives and innovative strategies.

Meet the New Team!

Matt Cohen, Interim Director

Dr. Matt Cohen was appointed Interim Director in October 2023. He is a professor of forest hydrology in the School of Forest, Fisheries, and Geomatics Sciences, with nearly 20 years of experience addressing water resource and ecosystem science challenges in Florida and globally. Dr. Cohen has been deeply involved in the Water Institute since its inception, serving as Chair of the Faculty Advisory Committee, advising two cohorts of Water Institute Graduate Fellows, and being selected as an inaugural Water Institute Faculty Fellow.

Paloma Carton de Grammont, Assistant Director

Dr. Paloma Carton de Grammont, with twenty years of experience in interdisciplinary natural resource collaboration, serves as Assistant Director. She leads Stakeholder Engagement, Inclusive Excellence, Outreach, and Communications, and she manages Student Involvement. Since 2018, she has fostered partnerships among faculty, staff, external collaborators, and stakeholders, playing a key role in securing and executing funded research projects.

Darlene Velez, Research Coordinator III

Darlene Velez, an Environmental Scientist and Facilitator with over 20 years of experience, joined the Water Institute in November 2023. She specializes in environmental ecology, particularly water chemistry and hydrology of rivers, springs, and estuaries. An alumna of the Natural Resources Leadership Institute, Darlene now focuses on interdisciplinary project coordination, stakeholder engagement, and overseeing the Florida Water and Climate Alliance (FloridaWCA).

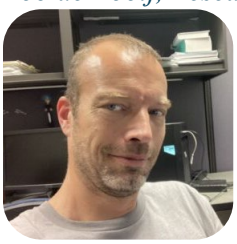
Sarah Marc, Communications and Event Specialist

Sarah Marc joined the Water Institute in September 2023 after graduating from UF with a B.S. in Environmental Science. Her expertise in communication and event planning comes from previously collaborating with UF/IFAS Extension. As Communications and Event Specialist, Sarah takes the lead in crafting and executing communication strategies to advance the Water Institute's mission, while also spearheading the planning of in-person and virtual events.

Max Williams, Research Administration Liaison

Max Williams is the Director of Research Administration. He earned his BA from the University of Virginia and his Masters of Agribusiness from the University of Florida. Max is a Certified Research Administrator and has worked as the lead administrator in the Department of Astronomy in CLAS. Most recently, he served as the fiscal officer for several business units, including Agricultural and Biological Engineering and the Program for Resource Efficient Communities in IFAS, and the Water Institute in the Office of Research.

Rob de Rooij, Research Assistant Scientist



Rob earned his Doctor of Science degree at the Centre of Hydrogeology, University of Neuchatel (Switzerland) in 2007. His research includes the development of a particle-tracking and finite difference scheme for complex flow systems. Currently, his focus is on developing and testing methods to generate random 2-D and 3-D conduit networks to incorporate into watershed scale flow and transport models, and test coupled discrete-continuum flow and transport models for the Silver Springs basin in Florida.

Nathan Reaver, Research Assistant Scientist

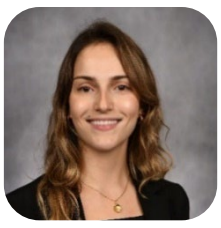
Nathan holds a B.S. and M.S. degree in Bioengineering from the University of Toledo. He earned his Ph.D. and M.E. in Environmental Engineering Sciences from the University of Florida in 2018. Some of his research interests include: the intersection of water, energy, food, and the environment; complex system dynamics; ecosystem dynamics and restoration; and how scientific inferences are obtained from data. At the Water Institute, he focuses on understanding hydrological, ecological, and social dynamics in karst watersheds.

Ambassadors 2023-2024

Water Institute Ambassadors work closely with staff to enrich the graduate student community by organizing events, supporting the Water Institute Symposium, and fostering engagement among students from on and off-campus facilities.

Paul Donsky

Paul is a PhD student in Forest Resources and Conservation, and serves as a Graduate Research Assistant at UF Ecohydrology Lab and is a Board Member of the Ichetucknee Alliance. His research focuses on Florida's springs and their evolving ecological conditions. Paul excels in stakeholder engagement, public education, and event planning, demonstrating a strong dedication to ecological awareness and preservation.



Gabrielle Quadrado

Gabi is a PhD student in Geography, and studies interactions of climate change, urbanization, and human impacts on coastal processes and hazards. In 2021-2022, she served as graduate representative of the DEI Committee in her department, organizing student events. Gabi has expertise in science communication, public outreach, and academic event planning.

Farewell to Dr. Graham

After seventeen years of serving as the director of the Water Institute, Dr. Wendy Graham stepped down to take on the role of Division Director for the Division of Research, Innovation, Synergies, and Education (RISE) in the Directorate for Geosciences (GEO) at the National Science Foundation. As the founding director, Dr. Graham, who was pivotal in launching the Water Institute, created and nurtured an intellectually stimulating, cross-disciplinary environment that fosters collaboration and innovation. Under her leadership, the Water Institute emerged as a leader in facilitating and coordinating convergent, transdisciplinary research, education, and outreach programs critical to understanding and providing solutions to long-standing and emerging water issues of state, national, and global importance. These initiatives enhanced the UF community, influenced statewide water policy, and impacted national and international research initiatives. Examples of her legacy include the Water Institute Biannual Symposium, the Florida Water and Climate Alliance, and the Water Institute Graduate Fellows program. She leaves behind a strong, respected institute primed to meet and overcome future challenges.

Our Affiliated Faculty

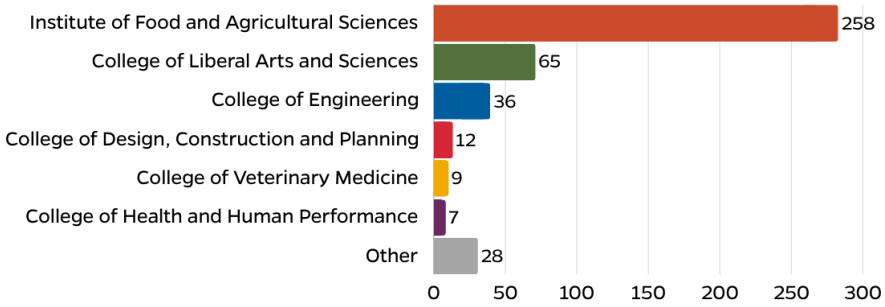
Individual UF faculty affiliation with the Water Institute is through voluntary registration. Affiliate Faculty members retain their positions in their tenure departments where all administrative and performance review functions are carried out. Water Institute Affiliate Faculty can vote on Water Institute governance issues and receive support through our award programs.

The Water Institute supports its Affiliate Faculty in the following ways:

- Facilitates networking opportunities with water-related colleagues, partners, and stakeholders across the state.
- Creates lasting interdisciplinary research, extension, and education teams, which enhance external grant.
- Provides proposal development support and expert coordination and facilitation of projects and teams.
- Identifies opportunities and offers funding through its awards programs.
- Recognizes achievements and contributions, which amplifies faculty visibility and impact.

Summary of Faculty Membership by College and Other Academic Units

417 Affiliated Faculty from more than 80 Departments and Centers across 11 Colleges



The Faculty Advisory Committee

The Water Institute Faculty Advisory Committee (FAC) consists of 15 members from Affiliate Faculty. Ten members are elected by the Water Institute Affiliate Faculty, serving staggered 3-year terms. The remaining five members are appointed by the Water Institute Director to ensure diverse representation across disciplines, demographics, and locations. The FAC provides guidance to the Water Institute Director and staff on the development and implementation of programs, plans, and policies.

2023-2024 Water Institute Faculty Advisory Committee

2021-2024

Christine Angelini	ESSIE, College of Engineering
Mark Brenner	Geological Sciences, CLAS
Dail Laughinghouse	Agronomy, Fort Lauderdale Research and Education Center, IFAS
Mary Lusk	Soil, Water, and Ecosystem Sciences, Gulf Coast Research & Education Center, IFAS

2022-2025

Christa Court	Department of Food and Resources Economics, IFAS
Lisa Krimsky	Florida Sea Grant, IFAS Extension
Katy Serafin	Geography, CLAS
Jason von Meding	M. E. Rinker Sr. School of Construction Management, College of Design, Construction and Planning

2023-2026

Mike Allen	Fisheries and Aquatic Sciences, IFAS
Bridget Baker	Wildlife Ecology and Conservation, IFAS
Johana Engström	Geography, CLAS
David Kaplan (Chair)	ESSIE, College of Engineering
Tara Sabo-Attwood (Past Chair)	Environmental and Global Health, College of Public Health and Health Professions
Matt Whiles	Soil, Water, and Ecosystem Sciences, IFAS

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 award aims 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. The Faculty Fellow awards are for three academic years. Awarded faculty are recognized at an Awards Ceremony, featured in a UF-Water Institute Seminar, active in coordinating interdisciplinary proposals, and serve as ambassadors for the Water Institute.

Active Faculty Fellows

Distinguished Faculty Fellow | **Early Career Faculty Fellow**

2023

Dr. Micheal Allen
Forest, Fisheries, and Geomatics Sciences, UF/IFAS

Dr. Vivek Sharma
Agricultural and Biological Engineering, UF/IFAS

2022

Dr. Christa Court
Food and Resources Economics Department, UF/IFAS

Dr. Samuel Smidt (left UF)
Former Assistant Professor Soil, Water, and Ecosystem Sciences, UF/IFAS

2021

Dr. Lisa Krimsky
Indian River Research and Education Center and Florida Sea Grant, UF/IFAS

Dr. Jiangxiao Qiu
Forest, Fisheries, and Geomatics Sciences, Fort Lauderdale Research and Education Center, UF/IFAS

KNOWLEDGE

Research

During 2023-2024, faculty affiliated with the Water Institute led active research projects totaling more than $170 million and received new sponsored research awards totaling approximately $47 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 13 partner Universities as well as scientists from 4 local agencies.

In 2023-2024 we completed three of our featured projects: the 7-year USDA NIFA-funded Floridan Aquifer Collaborative Engagement for Sustainability (FACETS) Project ($5M); the 5-year NSF-funded Carbonate Critical Zone Research Coordination Network ($500K); and the 3-year U.S. Army Corps of Engineers funded project Coupling Lake, Estuarine and Watershed, Models for the Caloosahatchee Estuary ($2.3M). We completed year 2 of the 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.

2023-2024 Active Water Institute Projects

Water Institute Coordinated Projects					
Principal Investigator	**Dates**	**Title**	**Amount**	**Co-PIs**	**Agency**
Graham, Wendy, WI	1/2023-12/2024	Coordination of Collaborative Stakeholder-scientist Partnership: Florida Water and Climate Alliance (Website)	$25,000	Irani, T., Judge, J, Velez, D., plus faculty from FSU and personnel from Tampa Bay Water, Peace River Manasota Water Supply Authority, SFWMD, and SJRWMD	Tampa Bay Water Authority
Kaplan, David, ESSIE	9/2021-9/2024	Florida Water Resources Center, Ph. D. Student Fellowships	$69,434	Graham, W.	USGS 104(b)
Graham, Wendy, WI	10/2016-9/2023	Department of the Interior Southeast Climate Adaptation Science Center Consortium (Website)	$96,800	Allen, M., plus faculty from NCSU, Duke U, Auburn U, and U Tenn	North Carolina State University/ USGS

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 (Website)	$4,918,926	Adams, D., Aue, K., Bartels, W., Court, C., de Rooij, R, Dukes M, Hundemer, S., Hochmuth, B, Kaplan, D., Lai, J., Monroe, M., Reaver, N., Sidhu, S., plus faculty from Auburn U, ASU & UGA	USDA-NIFA
Martin, Jonathan, GLY	6/2019-5/2024	Carbonate Critical Zone Research Coordination Network (Website)	$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
Graham, Wendy, WI	9/2020-8/2024	Evaluating Potential Risks of Climate Change on Surface Water Quality in the Hillsborough and Alafia River Watersheds (Website)	$176,971	Reisinger, AJ	Tampa Bay Water Authority
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 (Website)	$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
Arias, Mauricio, 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 (Website)	$2,485,935	Carton de Grammont, P., Kaplan, D., Krimsky, L, Graham. W., Morrison, E., Olabarrieta, M., Phlips, E., Velez, D. Plus staff from SFWMD, Faculty from USF, FIU	US Army Corps of Engineers, ERDC
Water Institute Supported Projects					
Allen, Micheal, FFGS	2020-2024	Ecological and Economic Impacts of Land-Use and Climate Change on Coastal Food Webs and Fisheries (Website)	$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
Martin, Jonathan, GLY	2020-2024	Significance of Ice-loss to Landscapes in the Arctic: SILA (Website)	$2,211,570	Barnett, C., Christner, B., Cohen, M., Jawitz, J, Martin, E., McDaniel, S.	National Science Foundation

The FLoW Center Proposal Development

The Water Institute, in partnership with the Center for Coastal Solutions and IFAS Extension, spearheaded development of a groundbreaking proposal in response to the Florida Council of 100's solicitation (February 2024) for a center of excellence focused on the preservation, development, and delivery of Florida's water resources. The proposed Florida Water (FLoW) Center aims to be a holistic solution for comprehensive water data and information management. This proposal represents an unprecedented alliance across 10 institutions within the Florida State University System: University of Florida, Florida International University, Florida State University, University of Central Florida, University of South Florida, Florida Atlantic University, Florida A&M University, Florida Polytechnic University, University of North Florida, and University of West Florida.

Proposal development involved coordinating over 100 thought leaders from these institutions, along with national partners Deloitte, Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI), GeoSpatial Centroid, and the Everglades Foundation. UF participants accounted for half of the participants, with representation from 25 different academic units.

If funded, the FLoW Center will introduce several innovative capacities to enhance water resource management across the state:

- **Data Science and Data Services**: Establishing an integrated catalog for evergreen data access across multiple providers, pipelines for curated data products to maximize machine learning readiness, and tools for data-model fusion, all accessed using a generative hallucination-free AI interface to simplify and expand data discovery.
- **Information Services**: Creating the state's first AI Assistant to enable users to pose their water questions as natural language queries and immediately access librarian and water expert-curated research reports, water studies, funding opportunities, water laws and regulations, and governance documents.
- **Technical Assistance**: Connecting stakeholders and their water questions with Regional Librarians, Regional Liaisons, and relevant experts and empowering them to explore research projects and share actionable information via an online discussion platform.
- **Convocation**: Convening water resource expertise across the state in both issue-focused and cross-cutting events and catalyzing new partnerships across sectors to support actionable science.
- **Education**: Integrating innovative workforce development from across existing university centers of excellence in water resources and data science and promoting public education and outreach programming.
- **Thought Leadership**: Assembling and charging state university and partner experts with synthesis and decision support around key water resource topic areas prioritized by the FLoW Center's Advisory Council and statewide decision makers.

To build and sustain the FLoW Center and its six core functions, we requested $10-18 million per year over the next ten years, totaling $175,491,347. Of this funding, 39% would remain at the University of Florida. If funded, the FLoW Center will create over 80 new full-time positions across the 10 partner universities, with more than 30 new positions at UF. Funding decisions will be made by the Florida Council of 100 in August 2024.

Graduate Education Programs

The Water Institute's 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.

Graduate Fellows Programs

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.

Funding for the program came from 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. 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 integrative activities for the cohort.

The last cohort (from 2019) of the WIGF program "High Latitude Hydrology: Water in a Changing World" is in its fifth year. This cohort 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" which funds the research of 6 WIGF Fellows along with 4 other graduate students, an undergraduate student, and a postdoctoral associate. During Summer 2023, the WIGF cohort completed their second and final deployment to conduct field research in Greenland and received final line funds from the Office of Graduate School to ensure they could analyze results from this field season and complete their dissertations.

WIGF Cohort 2019: High Latitude Hydrology: Water in a Changing World

Student	Degree	Faculty Advisor	Department/College
Megan Black *	PhD	Jon Martin & Ellen Martin	Geological Sciences, CLAS
Tatiana Salinas	PhD		
Madison Flint	Postdoctoral Associate		
*Izuchukwu Ezukanma**	PhD	Stuart McDaniel	Biology, CLAS
Quincy Faber *	PhD	Brent Christner	Microbiology and Cell Sciences, CALS
Justin Ellena	PhD		
*Jaehyeon Lee**	PhD	Jim Jawitz	Soil and Water Sciences, CALS
Yuseung Shin *	PhD	Matt Cohen	Natural Resources and Environment
*Fernanda Gastelu**	PhD (graduated in 2023)	Arnoldo Valle-Levinson	Engineering School of Sustainable Infrastructure & Environment
*Michael Munroe**	Masters		Journalism and Communications

*Denotes funding from WIGF program including the Office of Graduate School

A key aspect of this WIGF cohort is their engagement in environmental civic activities. This year the team participated in the Florida Museum of Natural History - Geology Department Open House: "Can You Dig It?" and the "Science on Tap: Cheers from the Arctic" event co-hosted by the Water Institute Biannual Symposium, UF Thompson Earth Systems Institute and the Florida Museum of Natural History. This year, cohort members presented their work at the Water Institute Biannual Symposium and the Annual Meeting of the American Geophysical Union, published two papers, and received seven awards. Cumulatively, the 2019 WIGF Cohort has produced 12 collaborative publications, given 68 presentations, and received 22 awards.

After five years on hold, we successfully revamped the Graduate Fellows Program in 2024. The new funding strategy involves matching funds from the UF Office of Research, participating department Chairs and Deans, and faculty to support students' fellowships. It continues to provide Water Institute funds for integrative activities. The program has been rebranded as the ***UF Water Scholars Program*** to highlight its university-wide scope.

The inaugural cohort consists of a team of faculty originally selected for WIGF funds in 2021, which were lost due to budgetary issues at the Graduate School level. This team aims to develop integrative solutions to wastewater disposal and reuse challenges, working at the disciplinary interfaces of aquatic ecology, soil science, hydrology, geochemistry, contaminant chemistry, public health, toxicology, resource economics, and STEM learning through their collaborative project, "BREW: Beneficial Reuse of Wastewater: Overcoming

Barriers and Identifying Opportunities". The team has already recruited 7 students that will join the cohort in Fall 2024 and is actively seeking extramural funding to support the research.

The team:

Dr. Mary Lusk, School of Natural Resources and Environment, urban nutrient management and sustainable reuse in sensitive watersheds.
Student: Oluwasegun Olubisi

Dr. Andrew Zimmerman, Geological Sciences, College of Liberal Arts and Sciences, expert in organic geochemistry and use of biochar and reactive media for contaminant removal from environmental media.
Student: Nishika Samarakoon

Dr. Alexander Reisinger, Soil, Water and Ecosystem Sciences, College of Agriculture and Life Sciences, the export and effects of pollutants (including pharmaceuticals and personal care products) to aquatic ecosystems, and how these aquatic ecosystems respond to pollutants.
Student: pending formal acceptance into graduate program for Spring 2025

Dr. Davie Kadyampakeni, Soil, Water and Ecosystem Sciences, College of Agriculture and Life Sciences, integrated nutrient and water management to enhance horticultural and row crop production.
Student: Tunde Samuel Oluwatuyi

Dr. Joseph Bisesi, Department of Environmental and Global Health, College of Public Health and Health Professions, environmental toxicology with a focus on studying the effects of waterborne toxicants in humans and aquatic organisms.
Student: Jeantel Cheramy

Dr. Kent Crippen, School of Teaching and Learning, College of Education, providing an inclusive and robust science, technology, engineering, and mathematics (STEM) workforce.

Dr. Katherine Deliz Quiñones, School of Sustainable Infrastructure and Environment at the College of Engineering, fate & transport of pollutants and pathogens; sustainable remediation technologies; resilience of ecosystem and human communities to anthropogenic activities and extreme weather events.
Students: Fabiola Y. Rodríguez Rodríguez and Amanda Sillsw

Dr. Kotryna Klizentyte, School of Forestry, Fisheries and Geomatics Sciences, College of Agriculture and Life Sciences, economic valuation to inform natural resource policy and management decisions.
Student: Forrest East

Hydrologic Sciences Academic Concentration

The UF Water Institute coordinates the Hydrologic Sciences Academic Concentration (HSAC), an interdisciplinary program aimed at broadening the skills of science and engineering students interested in all aspects of water. Nine departments from four colleges and the School of Natural Resources and Environment participate in this program. Currently, there are 31 active students pursuing this concentration, and as of Summer 2024, 226 students have graduated from it.

Graduate Student Award Programs

In response to the 2022-2027 Strategic Plan, the Water Institute launched four new award programs in 2023. These awards 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.

2023- 2024 Travel Award Recipients		
Name	Department	Conference
Airin Akter	Geography	American Association of Geographers (AAG)
Prakhin Assavapanuvat	Geological Sciences	Organic Geochemistry Gordon Research Conference 2024
Lindsey Cromwell	School of Forest, Fisheries, and Geomatics Sciences	American Geophysical Union
Nicholas Haley	Food and Resource Economics	Agricultural and Applied Economics Association
John Howe	Agricultural and Biological Engineering	Society of Environmental Toxicology and Chemistry
Love Kumar	Soil, Water and Ecosystem Science	SFS 2024 Annual Meeting - Connecting to Enhance Freshwater Science
Meng Lin	Agronomy	12th U.S. Symposium on Harmful Algae
Jenna Reimer	School of Natural Resources and Environment	Coastal and Estuarine Research Federation 27th Biennial Conference
Yasmeen Saleem	Soil, Water, and Ecosystem	2023 ASA, CSSA, SSSA International Annual Meeting
Varshitha Prasanna	Agricultural and Biological Engineering	ASABE 2024- Annual International Meeting
Juan Torres	Civil and Coastal Engineering	Physics of Estuaries and Coastal Seas (PECS) - 2024

The Water Institute Ambassadors program aims to build a graduate student community, foster greater student participation in Water Institute programs, and provide mentoring, networking, and leadership opportunities for UF Water Institute graduate students. Ambassadors, selected through a competitive process, collaborate with Water Institute staff to design and implement activities supporting the graduate student community. They can serve for up to two years (renewable annually), receive an annual stipend supplement, and enjoy complimentary attendance at the Biennial Water Institute Symposium.

Paul Donsky, School of Forest, Fisheries, and Geomatics Sciences (Term:2023-2024)
Gabrielle Quadrado, Geography (Term: 2023-2025)

This year the ambassadors inaugurated the successful "Lunch by the Water" monthly seminars, providing a platform for graduate students to present their ongoing research to a diverse audience of water scientists. They also planned and hosted the pre-symposium student event "Navigating Waters: A Career Panel for Graduates in Water Science".

The Graduate Student Research Awards provide financial support to UF graduate students researching terrestrial water systems. These awards enable students to explore research beyond the confines of their existing funding, fostering new capacity, diversity, and collaborations. In 2023, four awards were granted:

- *Alexis Jackson* (Environmental Engineering): Focuses on the role of hydrology, connectivity, and plant community characteristics on wetland soil carbon storage, aiming to understand how wetland soil carbon responds to climate and land cover changes.
- *Emory Wellman* (Fisheries and Aquatic Sciences): Investigates the ability of mussels to promote marsh stability in nutrient over-enriched salt marshes.
- *Mallory Llewellyn* (Physiological Sciences): Studies contaminants in water affecting human health, specifically PFAS and microplastics, and will test neurobehavioral and developmental outcomes of ingesting these contaminants.
- *Sanneri Santiago Borrés* (Environmental Engineering): Examines the potential use of urea-iron modified quantum carbon dots as photocatalysts to break down PFAS in contaminated waters.

The Dissertation Awards 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 the Universities Council on Water Resources (UCOWR) Ph.D. Dissertation Awards.

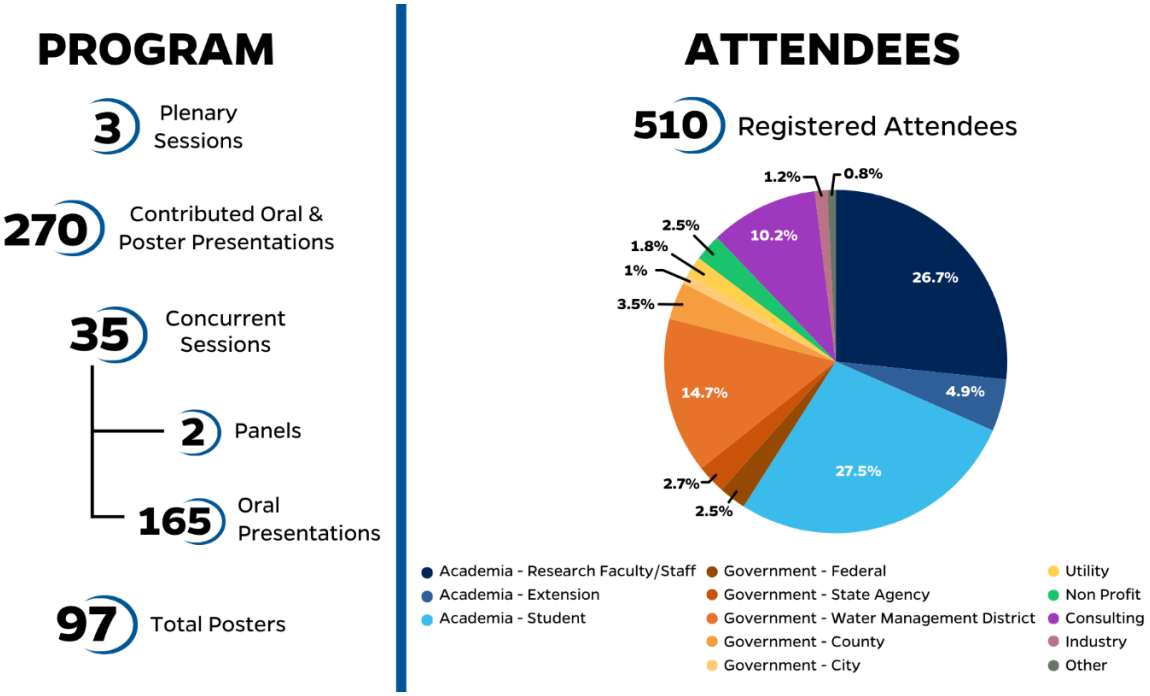
- *Dr. Fei He* was honored in the Water Policy and Socioeconomics category for her dissertation, "*Farm-Scale and Regional Economics Implications of Agricultural Land Management Decisions in the Floridan Aquifer Region*". Dr. He earned her Ph. D. in Food and Resource Economics with Dr. Court and Dr. Borisova.
- *Dr. Fernando Aristizabal* was recognized in the category of Natural Science and Engineering for his dissertation titled "*High Resolution Flood Inundation Mapping from Remote Sensing Observations and Hydrology Models at Continental Scales*". Dr. Aristizabal earned his Ph. D. in Agricultural and Biological Engineering with Dr. Judge.

ACTION

Biennial Symposium

The UF Water Institute partnered with Duke Energy to host the 9th biennial UF Water Institute Symposium on February 20-21, 2024. The Symposium convened scientists, practitioners, policy experts, and others to address complex water issues and explore solutions from diverse perspectives. With over 500 participants, the event facilitated the sharing of cutting-edge science, technology, education, policy, and management advancements.

UF Water Institute Symposium by the numbers



Keynote Presentations were delivered by Dr. Stephen Loheide, Professor at the Department of Civil and Environmental Engineering, University of Wisconsin, and Dr. Catherine L. Kling, Professor at the Charles H. Dyson School of Applied Economics and Management, Cornell University. Over 270 contributed oral and poster presentations provided diverse perspectives and the latest research and technologies on Florida's water issues.

The Symposium's Final Plenary Session, titled "Translating Scientific Insights to Decision Making," provided a forum to explore the pathways through which scientific knowledge informs governance structures at all levels. It also examined the reciprocal pathways of information guiding crucial research questions and the best practices for fostering open discourse among scientists, decision-makers, regulators, and the public.

A key goal of the Symposium is to provide students with professional development and networking opportunities. The 2024 UF Water Institute Symposium Student Scholarships provided financial support for twenty students to attend and present at the symposium. Funding for these scholarships comes from donations received through our Giving Day campaign and our planning fund. We held the pre-symposium event, "Navigating Waters: A Career Panel for Graduates in Water Science," to give travel awardees and an additional 15 students a unique opportunity to learn about diverse career pathways and network with professionals from various backgrounds that currently work in the realm of water science. From academia to public service, conservation advocacy to engineering, the panelists collectively represented a spectrum of experiences and expertise. The Symposium once again included a student poster competition, where students competed for four $1,000 awards to attend a professional conference and present their research. We partnered with the UF Thompson Earth Systems Institute and its Scientist in Every Florida School Environmental Leaders Fellowship to provide undergraduate students from diverse majors and backgrounds an opportunity to attend their first conference, practice their networking skills, and learn about career pathways.

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 the 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 2023-2024, FloridaWCA hosted two webinars, each of which had 150-175 participants from utilities, government, water management districts, private industry, academic or research institutions, and non-governmental organizations around the State.

To date, FloridaWCA has hosted a total of 33 workshops/webinars and has expanded their reach with over 1,180 people that have joined our listserv from a multitude of organizations in Florida. Steering Committee members also actively participated in the 2024 Water Institute Symposium through various avenues including presentations, session moderation, outreach table display, and networking events. In 2023-2024, FloridaWCA collaborated with SFWMD and others to develop and submit a Letter of Intent to submit a proposal to the

NOAA Climate Resilience Regional Challenge. The proposed project, "Empowering Resilience: Advancing Water and Climate Resilience Metrics for Robust Adaptation Planning in South Florida", was not funded but received valuable feedback from reviewers on how to continue to build on this proposal idea to seek funding in the future. To date, FloridaWCA members have published over 38 journal articles that have been cited over 913 times.

Southeast Climate Adaptation Science Center (SECASC): The UF Water Institute is a consortium member of SECASC, a network funded by the USGS, focused on uniting researchers and natural/cultural resource managers to develop information and tools needed for climate change adaptation. The Water Institute has expanded the reach of several multi-institutional working groups by engaging UF faculty members and students in collaborative projects with external partners. With Dr. Graham's departure, two new focal points now support this endeavor: Dr. Mike Allen, Director of the UF/IFAS Nature Coast Biological Station, and Dr. Brett Scheffers, co-Director of the Florida Climate Institute. The Water Institute remains fully engaged to support communication efforts and coordination with the consortium. This year, we co-hosted an open house with these collaborating institutions, featuring Dr. Rebecca Irwin, Director of the consortium, who informed faculty and students about the opportunities provided by the consortium.

The Floridan Aquifer Collaborative Engagement for Sustainability (FACETS) Project: Funded by USDA, a team of interdisciplinary researchers, agricultural producers, foresters, government agency personnel, and non-governmental organizations in Florida and Georgia co-produced regional hydro-agro-economic models and explored the ability of alternative socio-ecological scenarios to sustain local agricultural/silvicultural economies and protect the Floridan aquifer. Over seven years, the project engaged 30 faculty/professional members, 25 postdocs/students, and 4 research coordinators from the 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 25 peer-reviewed publications, 16 graduate student dissertations, and 16 Extension publications. This final year the project has focused on writing publications and creating a new updated website with key achievements and findings: https://floridanwater.research.ufl.edu/.

Algal Bloom Research: The Water Institute is collaborating with scientists and engineers from the UF Center for Coastal Solutions, UF/IFAS, the University of South Florida, and the South Florida Water Management District in the development of a new, state-of-the-art system that allows water management districts to better predict and manage harmful algal blooms. To ensure that the project outcomes and products are trusted and useful, decision support tool end-users, tool developers, and project team members are engaging in a co-development process led by the Water Institute and UF/IFAS. Two facilitated co-development workshops were held: one in November 2023 online with 29 project team members and 12 end-users, and one in May 2024 in-person with 24 project team members

and 8 end-users. Through facilitated dialogue and interaction at working group meetings, the team has collaboratively identified knowledge gaps, assessed end-user needs and interests, and matched those with project team capabilities to iteratively integrate user and scientist perspectives in the co-development process. This research has been funded by the US Corps of Engineers through two projects: "Integrating Modeling Tools and Observations for Prediction and Management of Harmful Algal Blooms in the St. Lucie Estuary and Watershed (SLEW)" led by USF, and "Coupling Lake, Estuarine, and Watershed Models for the Caloosahatchee River and Estuary (CLEW)" led by UF.

The Carbonate Critical Zone Research Coordination Network: Funded by the NSF, this project aimed to advance transdisciplinary and collaborative science to enhance the understanding of carbonate-rich Critical Zones. The network hosted three workshops, nine webinars, two training sessions, and coordinated three working groups. Partners included the Karst Water Institute (KWI), USGS Karst Interest Group, National Cave and Karst Research Institute, and the Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI). In this final year, the working groups have concentrated on completing data synthesis, writing synthesis papers, identifying potential funding opportunities for future collaborations, and presenting results at professional meetings.

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-science expert assistance and synthesis reports addressing urgent water management challenges. This year, the Water Institute was approached to spearhead a synthesis project to provide an updated, independent assessment of the science and economics of Ocklawaha River restoration based on all relevant existing data and reports from federal, state, and regional agencies, universities, and other sources. Negotiations are ongoing for the terms of that agreement.

Water Institute Research Coordinator Darlene Velez serves on the steering committees for the Big Bend Estuary Restoration Team (Big BERT) and the Suwannee River Partnership (SRP). As a member of these steering committees, Mrs. Velez provides subject matter and regional expertise, guidance in the strategic direction of the program, and assistance in meeting facilitation as needed.

- The Big Bend Estuary Restoration Team's mission is to facilitate and implement restoration efforts, bringing together partners to develop a regional habitat initiative. This initiative focuses on maintaining, restoring, and enhancing estuarine and shoreline habitats, including coastal marsh, mangroves, oyster communities, and seagrass, for estuaries from the Ochlockonee to Anclote Rivers along Florida's west coast.
- The Suwannee River Partnership provides research-based solutions for protecting and conserving water resources within the Suwannee River Basin and Coastal Rivers

Basin through voluntary or incentive-based programs. The partnership's strength lies in its diverse members, including federal, state, regional, and local governments, farmers, residents, and agricultural and environmental associations.

Water Institute Seminars

The **UF Water Institute Distinguished Scholar Seminar Series** showcases 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 affiliate faculty and graduate students to discuss partnering opportunities.

2023-2024 Water Institute Seminars
Dr. Mike Allen, Assistant Professor, Fisheries and Aquatic Sciences, University of Florida *Evaluating Fisheries Responses to Changes in Water, Habitat, and Management Actions* (October 5, 2023) *Dr. Ruben Morales*, Research Scientist, Mexican Institute of Water Technology *A Particle Tracking Model to Forecast Sargassum Along the Mexican Caribbean Coast* (November 2, 2023). Co-hosted with Geological Sciences *Dr. Alex Mayer*, Professor of Civil Engineering and Director of the Center of Environmental Resource Management, University of Texas at El Paso *The Future of the Rio Grande Basin: How Will Climate Change, Competition for Water, and Migration Increase the Cost of Water for Urban Residents?* (November 9, 2023). Co-hosted with Geological Sciences *Dr. Andrea Pain*, Assistant Professor, University of Maryland *Biogeochemical Mineral Weathering in the Warming Arctic and Implications for Arctic Carbon Cycling* (November 30, 2023). Co-hosted with Geological Sciences *Dr. Sagy Cohen*, Professor, University of Alabama *Riverine Research Across Scales: From Flood Forecasting to Global Scale Sediment Modeling* (February 29, 2024), Co-hosted with Department of Geography *Dr. Vivek Sharma*, Assistant Professor, Agricultural and Biological Engineering, University of Florida *A Partnership to Advance Water Nutrient Best Management Practices in Florida* (April 4, 2024) *Dr. Jason Taylor*, Research Ecologist, USDA Agricultural Research Service *Identifying, Managing, and Monitoring Limiting Nutrients in Alluvial Plain Freshwater Agroecosystems* (April 11, 2024). Co-hosted with Department of Soil, Water, & Ecosystem Sciences

The **UF Water Institute Lunch by the Water** is a monthly seminar series that allows graduate students to present their ongoing research to a broad and diverse audience of water scientists. Participants can network with Water Institute faculty and other graduate students, which fosters an interdisciplinary exchange of ideas among colleagues with a mutual interest in water-related issues. Each seminar hosts two speakers and has been attended by dozens of students and faculty, quickly making it one of the premier networking spaces for students working on water-related issues on UF's campus.

2023-2024 Water Institute Lunch by the Water Seminar Speakers	
Bibek Acharya	Agricultural and Biological Engineering
Joshua Benjamin	Biology
Nick Chin	Engineering School of Sustainable Infrastructure & Environment
Lindsey Cromwell	School of Forest, Fisheries, and Geomatics Sciences
Copeland Cromwell	Department of Geological Sciences
Audrey Goeckner	Soil, Water, and Ecosystem Sciences
Lauren Hintenlang	Environmental and Global Health
Alexis Jackson	Engineering School of Sustainable Infrastructure & Environment
Abhishek Rajan	Food and Resource Economics
Jenna Reimer	School of Natural Resources and Environment
Sanneri Santiago Borrés	Engineering School of Sustainable Infrastructure & Environment
Sukhveer Singh Bhullar	Agronomy
Josue St Fort	School of Natural Resources and Environment

Public Outreach

The UF Water Institute engages actively in public outreach with statewide, regional, national, and international communities.

This year in partnership with the UF Thompson Earth Systems Institute and the and the Florida Museum of Natural History we hosted the post-symposium event "Science on Tap: Cheers from the Arctic". During this open-to-the-public event, students and faculty from the 2019 Water Institute Graduate Fellows cohort offered insights into conducting water research in Greenland. Approximately 100 attendees learned about the excitement and complexity of scientific exploration in Greenland and the deep connections to ongoing water challenges in Florida.

For the second year in a row, 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 on Greenland Ice Sheet, Sea Level, and Arctic Animal Habitat exhibits.

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 Institute also manages the websites for the USDA NIFA-funded FACETS project (https://floridanwater.research.ufl.edu/), 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://waterinstitute.ufl.edu/hsac/).

This year, we launched a new weekly digest called “The Droplet” to keep the Water Institute community informed about spotlights, events, announcements, new publications by our affiliates, as well as relevant announcements, events, funding, and job opportunities from our partners and the larger water-related community.

Social media is used to communicate the Water Institute’s events, spotlights, and news, as well as to feature water-related research, extension, and outreach conducted by affiliated faculty, staff, students, and colleagues.

UF Water Institute Social Media Followers Count

GOALS (2022-2027)

- Actively include and respect everyone as we strive for excellence 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 UF Water Scholars program by securing durable 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 policymakers.
- 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.

Thank You!

2023-2024 SPONSORS

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