



# WATER INSTITUTE SYMPOSIUM

**PROGRAM BOOK**

FEBRUARY 20-21, 2024 | GAINESVILLE, FL  
[conference.ifas.ufl.edu/waterinstitute](https://conference.ifas.ufl.edu/waterinstitute)



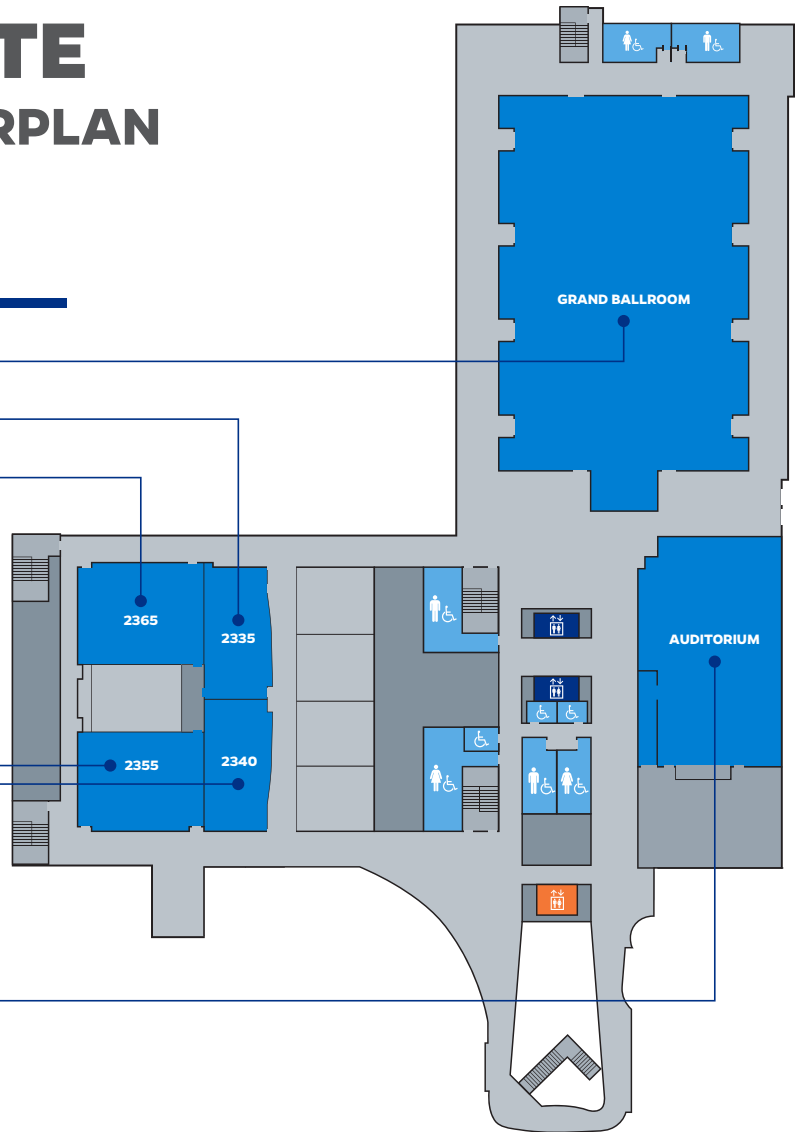
# WATER INSTITUTE

## 2024 SYMPOSIUM FLOORPLAN

### LEVEL 2

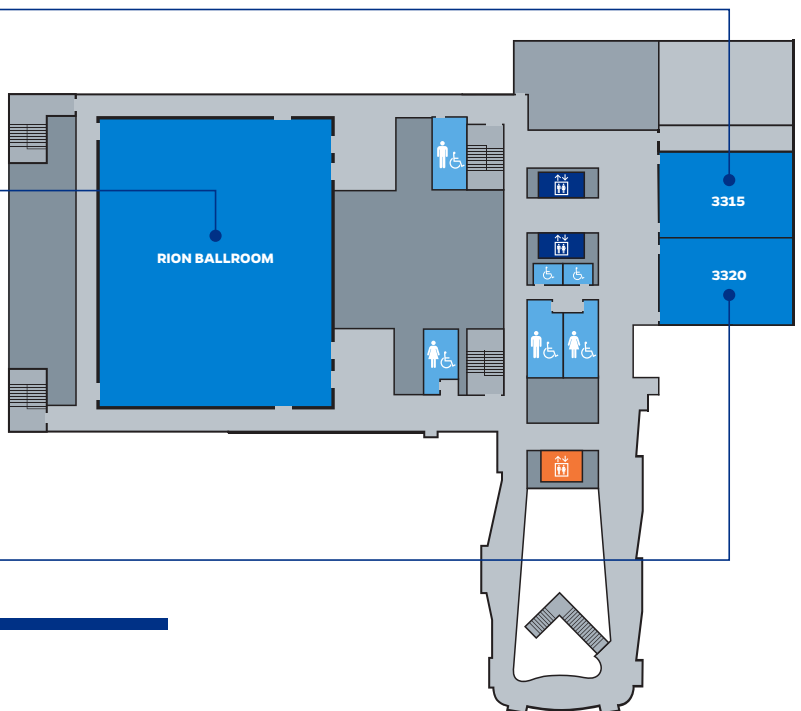
---

- Grand Ballroom
- Meeting Room 2335
- Meeting Room 2365
- Meeting Room 2355
- Meeting Room 2340
- Auditorium



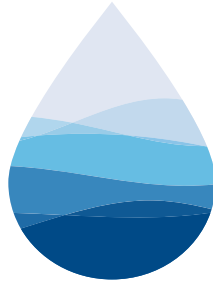
- Orange Elevator
- Blue Elevator
- Meeting Rooms
- Restrooms

- Rion Ballroom
- Meeting Room 3315
- Meeting Room 3320



---

### LEVEL 3



# WATER INSTITUTE SYMPOSIUM

**FEBRUARY 20-21, 2024**

J. Wayne Reitz Union  
University of Florida  
Gainesville, FL



@ufwater #ufwater24



waterinstitute.ufl.edu



WiFi Network: "ufguest"





# TABLE OF CONTENTS

Welcome Letter .....	7
Committee Recognition.....	8
Thank You to Our Sponsors.....	9
Agenda-at-a-Glance .....	10
Detailed Agenda .....	12
Plenary Speakers.....	20
Poster Information .....	22
Poster Room Layout.....	23
Poster Directory .....	24



## ABOUT THE WATER INSTITUTE

The University of Florida Water Institute brings together talent from throughout the University and builds internal and external partnerships to address urgent water research challenges, implement innovative interdisciplinary academic programs to train excellent students, and provide state-of-the-art expert assistance and educational programs for external stakeholders. Water Institute faculty represent a breadth of water specialties from geophysical, chemical, biological and social sciences, engineering, law and humanities.

---

To learn more about the Water Institute, visit [waterinstitute.ufl.edu](http://waterinstitute.ufl.edu).





# WELCOME WATER COLLEAGUES,

*Thank you for joining us for this, the 9<sup>th</sup> UF Water Institute Symposium!*

The next two days will be deep immersion into the science of solutions to our most pressing water challenges. Like years past, we aim to provide a welcoming venue for researchers, managers, educators, decision makers, change agents, artists and water nerds of all kinds to converge, compare notes, challenge their prior beliefs, argue for preferred solutions, and build durable collaborations.

Unlike years past, Dr. Wendy Graham, who's leadership at the Water Institute has been the key ingredient in making this event such a success, will be but a regular participant. The hole she left by her departure to the National Science Foundation is deep and wide. We offer this meeting as evidence that she's left the Water Institute on a solid footing. As we strive to continue meeting the charge she laid out – to convene and collect the best and the brightest across UF and the State of Florida – we hope you'll take a moment to thank her in person for her dedication to our shared mission. In service of that continuing mission, I am deeply grateful to the Water Institute and Office of Conferences and Institutes staff for their extraordinary work bringing this day to fruition, to the planning committees for all their hard work in crafting the meeting and generating buzz, and to all of you for putting your science on the program.

And what a program we have! We are thrilled to welcome two internationally renowned scholars as our keynote speakers (Dr. Steven Loheide and Dr. Cathy Kling), as well as all of you that bring your best ideas and commitment to water stewardship to the discussion. With over 275 presentations, posters, panels, and plenaries, it will hard to choose where to you're your inspiration, but as you learn about the latest breakthroughs, discuss the emerging challenges, ponder the possible solutions, and hone your skills in effective communication, we hope you come away inspired, enlightened, more curious than before, and just a bit overwhelmed.

Conferences are an interim report on the grand enterprise of scientific learning. We will always be forced to make decisions with imperfect information and in the face of competing priorities, but we can, collectively, provide the guidance and skills that help steer towards what works, away from what doesn't, deduce critical thresholds before we pass them, and help enable win-win solutions when we can find them. We welcome you wholeheartedly to UF, and invite you to listen carefully, ask difficult questions, reflect on unexpected answers, engage in constructive dialog, and learn from amazing array of expertise assembled at this meeting so we can envision together a path to a sustainable water future. Florida and the world need us to succeed!

Sincerely,

**MATT COHEN**

Carl S. Swisher Chair in Water Resources  
Interim Director, UF Water Institute

# ACKNOWLEDGMENTS

## PLANNING COMMITTEE

**Matt Cohen**, Symposium Chair, UF Water Institute

**Wendy Graham**, Symposium Co-chair, UF Water Institute

**Paloma Carton de Grammont**, Symposium Co-chair, UF Water Institute

**Mike Allen**, UF/IFAS Nature Coast Biological Station, School of Forest, Fisheries and Geomatic Sciences

**Rebecca Burton**, UF Thompson Earth Systems Institute

**Christa Court**, UF/IFAS Food and Resource Economics

**Sandra Guzman**, UF/IFAS Agricultural and Biological Engineering, Indian River Research and Education Center

**Sadie Hundemer**, UF/IFAS Agricultural Education and Communications

**Jeffrey King**, Geosyntec - ATM

**Lisa Krinsky**, UF/IFAS Extension Southeast District and Florida Sea Grant Program

**Mary Lusk**, UF/IFAS Soil, Water, and Ecosystem Sciences, Gulf Coast Research and Education Center

**Carolina Maran**, South Florida Water Management District

**Kati Migliaccio**, UF/IFAS Agricultural and Biological Engineering

**Tommy O'Neal**, Duke Energy Florida

**Jiangxiao Qiu**, UF/IFAS School of Forest, Fisheries & Geomatics Science, Ft. Lauderdale Research & Edu. Center

**Tara Sabo Attwood**, UF Department of Environmental and Global Health

**Katy Serafin**, UF Geography

**Jason von Meding**, UF Rinker School of Construction Management

**Matt Whiles**, UF/IFAS Soil, Water, and Ecosystem Sciences

---

## PROGRAM ORGANIZERS

**Matt Cohen**, Symposium Chair, UF Water Institute

**Wendy Graham**, Symposium Co-chair, UF Water Institute

**Paloma Carton de Grammont**, Symposium Co-chair, UF Water Institute



# THANK YOU TO OUR SPONSORS

Without their generous support, this Symposium would not be possible.

## FOUNDING SPONSOR



## SILVER SPONSORS



## BRONZE SPONSORS



## STUDENT POSTER AWARDS SPONSOR



## STUDENT SPONSORS

UF/IFAS Agricultural & Biological Engineering · UF/IFAS Center for Land Use Efficiency · UF/IFAS Nature Coast Biological Station  
UF/IFAS School of Natural Resources & Environment · UF/IFAS Soil, Water, and Ecosystem Sciences  
UF/IFAS School of Forest, Fisheries, & Geomatics Sciences · UF Department of Geological Sciences  
UF/IFAS Wildlife Ecology and Conservation · UF ABE Center for Remote Sensing · UF/IFAS Food & Resource Economics

# AGENDA-AT-A-GLANCE

Tuesday, February 20, 2024

7:30am	Check-in for Preregistered Attendees - Pickup Symposium Materials <i>Onsite registration not available</i>						
	Early Morning Refreshments [Grand Ballroom Hallways]						
8:30am	<p align="center"><b>Opening Plenary Session</b> [Grand Ballroom]</p> <p align="center"><b>Introduction and Welcome</b></p> <p align="center"><b>Matt Cohen</b>, <i>Interim Director</i>, University of Florida Water Institute <b>J. Scott Angle</b>, <i>Provost and Senior Vice President for Academic Affairs</i>, University of Florida</p> <p align="center"><b>Keynote Speaker</b></p> <p align="center"><b>Stephen Loheide</b>, <i>Professor</i>, Department of Civil and Environmental Engineering, University of Wisconsin "What Can Ecohydrology Do for You? Developing a Scientific-basis for Decision Making"</p>						
	Morning Refreshment Break   10:00am						
	Concurrent Sessions — 10:30am - 12:00pm						
	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Session 7
Session Title	Adaptation Planning Strategies for Flood Resilience	Legacy Phosphorus in the Upper St. Johns River: Emerging Issues and Solutions	Environmental Justice Approaches in Water Research, Education and Policy	Linkages between Land Use, Climate and Downstream Effects on Coastal Natural Resources	Collective Action to Illuminate the Ecological Effects of Hurricane Ian	Precision Irrigation: Sensors, IoT, Data Analytics, and Machine Learning	Continuously Monitored and Adaptive Control "Smart" Ponds for Multiple Water Resource Benefits in Florida
Lunch Provided (Grand Ballroom)   12:00pm							
Concurrent Sessions — 1:30pm - 3:00pm							
	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 8	Session 9	Session 10	Session 11	Session 12	Session 13	Session 14
Session Title	Data-driven Insights for Resilience Planning	Investigating Hotspots of Soil Legacy Phosphorus and Management for Soil P Remediation	Community Stormwater Ponds: Intersecting Science, Stakeholders & Decision-Making	Advances in Hydroecological Connections	Recovering Our Coastal Waters: Human Interventions to Restore Water Quality and Coastal Ecosystems	Irrigation and Nutrient Management Technology Advancement	Volunteer Power: The Role of Community Science in Water Research Initiatives
Afternoon Refreshment Break   3:00pm							
Concurrent Sessions — 3:30pm - 5:00pm							
	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 15	Session 16	Session 17	Session 18	Session 19	Session 20	Session 21
Session Title	Florida's Water Management Districts: Aligning Resilience and Restoration Efforts	Water Quality Drivers and Impacts on Public Wildlife and Ecosystem Health	Integrating Collaborative and Multi-disciplinary Approaches for Effective Water Resource Management	Hydrologic Modeling to Advance Water Management	Coastal Resilience, Nature-Based Solutions, Ecosystem Conservation and Connectivity	Rethinking Urban Landscapes to Protect Our Water	Great Florida Riverway Restoration: Launching a Vital New Beginning
5:30pm	Poster Session & Reception with Student Poster Competition and Judging [Rion Ballroom]						

Wednesday, February 21, 2024

Early Morning Refreshments [Grand Ballroom Hallways] | 7:30am

**Opening Plenary Session**

[Grand Ballroom]

**Introduction and Welcome**

**Matt Cohen**, *Interim Director*, University of Florida Water Institute  
**Mark Rains**, *Chief Science Officer*, Florida Department of Environmental Protection

**Keynote Speaker**

**Catherine L. Kling**, *Professor*, Charles H. Dyson School of Applied Economics and Management, Cornell University  
"Measuring the Economic and Social Benefits of Water Quality Improvements"

Morning Refreshment Break | 10:00am

Concurrent Sessions — 10:30am - 12:00pm

8:30am	Opening Plenary Session [Grand Ballroom] <b>Introduction and Welcome</b> Matt Cohen, <i>Interim Director</i> , University of Florida Water Institute Mark Rains, <i>Chief Science Officer</i> , Florida Department of Environmental Protection <b>Keynote Speaker</b> Catherine L. Kling, <i>Professor</i> , Charles H. Dyson School of Applied Economics and Management, Cornell University "Measuring the Economic and Social Benefits of Water Quality Improvements"						
	Morning Refreshment Break   10:00am						
Concurrent Sessions — 10:30am - 12:00pm							
	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 22	Session 23	Session 24	Session 25	Session 26	Session 27	Session 28
Session Title	Intersecting Resilience Planning and Decision-Making: Responding to Today's Needs and Future Conditions	Technology and Decision Tools for Improved Water Management	Impacts of Climate Variability and Change on Water Availability and Quality	Application of AI/ Machine Learning Approaches in Water Resources Management	Synthesizing Data and Models to Inform Lake Okeechobee Management in the LOSOM Era	Education Tools, Approaches and Programs for Water Protection	Advancing Water Resources Protection in Response to Environmental and Management Challenges
Lunch Provided (Grand Ballroom)   12:00pm							
Concurrent Sessions — 1:00pm - 2:30pm							
	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 29	Session 30	Session 31	Session 32	Session 33	Session 34	Session 35
Session Title	Building Resilience in Water Resource Management	The Complex Nature of Invasive Species in Aquatic Ecosystems	Climate Changed: How Research, Science, and Reporting Translate to Policy and Practice	Forecasting Impacts of Climate Change, Extreme Events and Sea Level Rise	Understanding and Addressing Nitrogen Contamination in Florida's Groundwater	Development and Assessment of Payment for Water Service Programs on Ranchlands in the Northern Everglades	Strategies for Advancing Water Resources Protection
Afternoon Refreshment Break   2:30pm							
3:00pm	Closing Plenary Session [Grand Ballroom] <b>Tribute to Dr. Wendy Graham's Legacy as Founding Director of the UF Water Institute</b> <b>Presentation of Student Poster Competition Awards</b> <b>Closing Panel: Translating Scientific Insights to Decision Making</b> <b>Panel Description:</b> The scientific process is about answers to questions. This Water Institute symposium was created to share the insights from that process for improving water sustainability in Florida and beyond, with the goal of aiding policy makers in their process of meeting our myriad water challenges. Florida is already a leader in water governance, but as our modern challenges reveal, there is much to be done to protect our aquifer, our aquatic ecosystems, our coastal infrastructure, and our legacy as natural resource stewards. This panel explores the pathways of scientific knowledge reaching our governance structures at all levels, the reciprocal pathways of information that help guide crucial research questions, and the best practices for ensuring open discourse between scientists, decision makers, regulators and the public. <b>Panelists:</b> Virginia Barker, <i>Director</i> , Brevard County Natural Resources Management Department Wesley Brooks, <i>Chief Resilience Officer</i> , State of Florida Rick Hutton, <i>President</i> , FWEA Utility Council and <i>Supervising Engineer</i> , Gainesville Regional Utilities (GRU) Cathy Kling, <i>Professor</i> , Charles H. Dyson School of Applied Economics and Management, Cornell University Steve Loheide, <i>Professor</i> , Department of Civil and Environmental Engineering, University of Wisconsin Michael A. Register, <i>Executive Director</i> , St. Johns River Water Management District Timothy Gysan, <i>Resilience Senior Project Manager</i> , Ecosystem Branch, U.S. Army Corps of Engineers, Jacksonville District Julie Wraithmell, <i>Executive Director</i> , Audubon Florida <b>Moderator:</b> Lisa Krinsky, <i>Regional Water Resources Extension Agent IV</i> , UF/IFAS Southeast District						
	Symposium Concludes   5:00pm						



Concurrent Sessions — 10:30am - 12:00pm

	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Session 7
Session Title	Adaptation Planning Strategies for Flood Resilience	Legacy Phosphorus in the Upper St. Johns River: Emerging Issues and Solutions	Environmental Justice Approaches in Water Research, Education and Policy	Linkages between Land Use, Climate and Downstream Effects on Coastal Natural Resources	Collective Action to Illuminate the Ecological Effects of Hurricane Ian	Precision Irrigation: Sensors, IoT, Data Analytics, and Machine Learning	Continuously Monitored and Adaptive Control “Smart” Ponds for Multiple Water Resource Benefits in Florida
Moderator	Hongying Zhao SFWMD	Todd Osborne University of Florida	Jason von Meding University of Florida	Mike Allen University of Florida	Christine Angelini University of Florida	Haimanote Bayabil University of Florida	Ann Shortelle Bio-Tech Consulting, Inc.

Introduction | 10:30am

10:35am	<b>Akintunde Owosina</b> SFWMD FPLOS: Assessing Vulnerability of SFWMD’s Flood Protection Assets and Proposing Adaptive Solutions	<b>Joshua Papacek</b> SJRWMD Evaluation of Nutrient Sources and Loading to Waterbodies in the Upper St. Johns River Basin	<b>Andrea Galinski</b> University of Florida A New Model for Vulnerability Assessments: Compounding Vulnerabilities + Housing	<b>Kym Rouse Holzgart</b> SFWWMD Landscape-Level Minimum Flows Development Methods in the Southwest Florida Water Management District	<b>Chris Anastasiou</b> SFWWMD Impacts of Hurricane Associated WQ Changes to Ecosystem Health: Implications for Future Coordination	<b>Davie Kadyampakeni</b> University of Florida Optimizing Citrus Irrigation Management with Soil And Plant-Based Sensors	<b>Michael Register</b> SJRWMD Florida Policy and Innovations in Water Quality and Resilience
10:50am	<b>Carol Ballard</b> SFWMD C&SF Section 216 Flood Resiliency Study: Modeling Approach	<b>James Jawitz</b> University of Florida Timescales and Magnitude of Legacy Biosolids Phosphorus Transport	<b>Michael Borbolla</b> Florida International University Against the Current: Experiences and Perceptions of Anglers along the Miami River	<b>Nathan Reaver</b> University of Florida Quantifying Impacts of Climate and Land Use Change on the Waters of the Suwannee River Basin	<b>Miles Medina</b> ECCO Scientific, LLC Water Quality Trend Analysis for the Charlotte Harbor Estuary in Southwest Florida, 2000–2021	<b>Sandra Guzman</b> University of Florida IoT and AI for Sustainable Specialty Crop Irrigation Management	<b>Mark Thomasson</b> National Stormwater Trust, Inc. Innovative Smart Ponds: How Do They Work?
11:05am	<b>Francisco Pena</b> SFWMD Characterizing Compound Flooding Potential and Assessing Adaptation Strategies in Collier County	<b>Jonathan Judy</b> University of Florida Application of Phosphorus Immobilizing Technology on a Legacy Biosolids Site	<b>James Ji</b> University of Florida Water, Water Everywhere, Nor Any Drop to Drink? Ocean Salinity, Early-Life Health, and Adaptation	<b>Mike Allen</b> University of Florida Projecting Future Land Use and Climate Change Impacts on the Suwannee River Estuary	<b>Brandon Moody</b> Charlotte County Board of County Commissioners Hurricane Ian and Water Quality in Charlotte County: Collaborations, Observations, Lessons Learned	<b>Vivek Sharma</b> University of Florida Integration of Sensor, IoT, and Machine Learning in Precision Irrigation and Nutrient Management	<b>Jeff Littlejohn</b> National Stormwater Trust, Inc. Smart Pond Technology for Improved Water Resource Benefits
11:20am	<b>Katharine Mach</b> University of Miami Collaborative Flood Modeling for Inclusive and Time-Efficient Climate Adaptation	<b>Sarah Guzman</b> Black & Veatch Evaluating Phosphorus Recovery from Biosolids to Address Eutrophication in Florida	<b>S.M. Mushfiqul Hoque</b> Florida State University A Justice-Based Decision Support Tool for Integrating Stormwater BMPs In Nutrient Removal in Florida	<b>Roberto Koeneke</b> University of Florida Suwannee River Estuary Non-market Valuation Studies of Recreational Saltwater Fisheries	<b>David Tomasko</b> Sarasota Bay Estuary Program Documenting Ian’s Effects on Sarasota Bay – Impacts and Timeline for Recovery	<b>Judyson Oliveira</b> University of Florida Evaluating Automated Drain Tile System in Subirrigated Vegetable Production Areas	<b>Amy Wicks</b> Wicks Consulting Group Case Study 1: Babcock Ranch and Hurricane Ian
11:35am	<b>David Colangelo</b> SFWMD South Florida Water Management District Sea Level Rise and Flood Resiliency Plan, 2023	<b>Tracey Schafer</b> University of Florida Internal Phosphorus Loading from USJRB Lakes	<b>Katherine Deliz</b> University of Florida A Socio-Environmental Cluster Analysis to Assess Vulnerability to Per- and Polyfluoroalkyl Substances (PFAS) Exposure in Brevard County, Florida	<b>Sydney Honeycutt</b> University of Florida Engaging Stakeholders to Enhance Resilience in the Suwannee River Basin	<b>Maryam Pakdehi</b> Florida State University Hindcasting Flood Depths Across Florida During Hurricane Ian Using Machine Learning Algorithms	<b>Boaz Tulu</b> University of Florida Streamlining Precision Irrigation: Developing A Decision Support Tool for Sensor Data Processing	<b>Jose De Jesus</b> Port Tampa Bay Case Study 2: Port Tampa Bay and Hurricane Ian

Discussion | 11:50am

Lunch Provided (Grand Ballroom) | 12:00pm

Concurrent Sessions — 1:30pm - 3:00pm

	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 8	Session 9	Session 10	Session 11	Session 12	Session 13	Session 14
Session Title	Data-driven Insights for Resilience Planning	Investigating Hotspots of Soil Legacy Phosphorus and Management for Soil P Remediation	Community Stormwater Ponds: Intersecting Science, Stakeholders & Decision-Making	Advances in Hydroecological Connections	Recovering Our Coastal Waters: Human Interventions to Restore Water Quality and Coastal Ecosystems	Irrigation and Nutrient Management Technology Advancement	Volunteer Power: The Role of Community Science in Water Research Initiatives
Moderator	Nicole Cortez SFWM	Jiangxiao Qiu University of Florida	Michelle Atkinson UF/IFAS Extension	Mike Allen University of Florida	Anna Braswell & Ashley Smyth University of Florida	Sandra Guzman University of Florida	Gretchen Lescord University of Florida

Introduction | 1:30pm

1:35pm	<b>Tara Root</b> U.S. Geological Suvery  Data Integration, Analysis, and Forecasting for Coastal Areas: An Overview of USGS Portals And Tools	<b>Daniel Petticord</b> Cornell University  Grass Species Influences Phosphorus Losses in Historically Fertilized Pasture Soil: A Mesocosm Study	<p><u>Panelists:</u> <b>Russell Hoffman</b> <b>Steven Postle</b> <b>Alexander Reisinger</b> <b>Mary Lusk</b> <b>Paul Monaghan</b></p> <p><u>Panel Focus:</u> Stormwater ponds are designed and managed by individual, community, and regulatory levels of society. These ponds are designed to provide primary services (flood control, pollutant removal) but also provide numerous secondary services. Management of these ponds may limit their potential to provide multiple ecosystem services. This panel will explore various management styles and some of their consequences on social, economic, and environmental conditions within the community and beyond.</p>	<b>Philip Stevens</b> Florida Fish and Wildlife Conservation Commission  Including Hydroecologic Connections at the Land-Sea Interface in Conservation of Sportfish Habitat	<b>Nikki Dix</b> Guana Tolomato Matanzas National Estuarine Research Reserve  Water Quality in the Guana Tolomato Matanzas National Estuarine Research Reserve	<b>Laura Almendra Martin</b> University of Florida  Microwave Remote Sensing-Based Machine Learning Method for Irrigation Estimation in Florida	<b>Shelly Krueger</b> University of Florida  Challenges and Successes of Community Science: Perspectives from Multiple Programs in the Southeast
1:50pm	<b>Jason Bellino</b> U.S. Geological Suvery  Daily Estimates of Evapotranspiration for Florida and the Southeastern US, 1985-2022	<b>Haoyu Li</b> Archbold Biological Station  Grass Species Differ in their Effect on P Runoff from Phytoremediation Harvest Strips in a FL Ranch		<b>Steve Leitman</b> Waters Without Borders  Relation Between Science and Current Management in the Apalachicola-Chattahoochee-Flint Basin	<b>Anna Braswell</b> University of Florida  Sources of Water in Salt Marshes: Detangling Drivers of Nutrient Processing, and Plant Productivity	<b>Bernard Cardenas</b> University of Florida  Irrigation Efficiency and Water Conservation: Standard Sprinkler Nozzles Vs. High Efficiency Nozzles	<b>Taylor Nicholls</b> Laurentian University  Quantifying Contaminants in Subsistence Fish from Traditional Territory of Wahnapietae First Nation
2:05pm	<b>Jayantha Obeysekera</b> Florida International Unviersity  Assessment of Trends in South Florida Sub-Daily Rainfall	<b>Benjamin Uveges</b> Cornell University  Tracing Source and Mobility of Legacy Phosphorus in Ranch Soils- Insights from Uranium Isotopes		<b>John Tracy</b> University of Florida  Investigating Hydrologic Alteration as a Main Driver of Forest Composition Shifts in a Florida River	<b>Corianne Tatariw</b> Rowan University  Accidental Intervention: Prescribed Burning Alters Tidal Marsh Nitrogen Processing	<b>Gregory Conde</b> University of Florida  Adaptive And Predictive Decision Support System for Irrigation Scheduling	<b>Rick O'Connor</b> University of Florida  Citizen Science; An Effective Method of Educating the Public About the Health of Their Bay
2:20pm	<b>Michelle Irizarry-Ortiz</b> U.S. Geological Suvery  Characterizing Historical and Projected Future Droughts for South Florida	<b>Jiangxiao Qiu</b> University of Florida  Unravelling Spatial Heterogeneity of Soil Legacy Phosphorus in Subtropical Grasslands		<b>Ying Ouyang</b> USDA Forest Service  Comparison of Evapotranspiration Between Croplands and Forest Lands in a Humid Subtropical Region	<b>Laura Reynolds</b> University of Florida  Seagrasses: Both Indicators and Drivers of Coastal Water Quality	<b>Daniel Palacios-Linares</b> University of Florida  Innovation and Technologies in Agricultural Nutrient Management: Sensing Techniques at Field-Scale	<b>Marina Schwartz</b> University of Florida  Florida Lakewatch: 37 Years of Volunteerism Driving Research of Florida's Aquatic Resources
2:35pm	<b>Anushi Obeysekera</b> SFWM  Water Supply Vulnerability Assessment for Florida's Lower East Coast Planning Region	<b>Ran Zhi</b> University of Florida  Nutrient Distribution Across Deep Soil Profiles Under Different Management Practices		<b>Mark Rains</b> University of South Florida  Spatial and Temporal Variability in Hydrological Connectivity in Stream-Wetland Flow Networks	<b>Ashley Smyth</b> University of Florida  Working Waterfronts for You: Using Shellfish Aquaculture for Water Quality Restoration	<b>Uday Bhanu Prakash Vaddevolu</b> University of Florida  Optimizing Irrigation Practices: The Role of Soil Moisture Sensors in Florida Agriculture	<b>Daniela Maizel</b> University of Miami  Public Health Impacts of Florida Communities Exposed to Cyanobacterial Harmful Algal Blooms

Discussion | 2:50pm

Afternoon Refreshment Break | 3:00pm

Concurrent Sessions — 3:30pm - 5:00pm

	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 15	Session 16	Session 17	Session 18	Session 19	Session 20	Session 21
Session Title	Florida's Water Management Districts: Aligning Resilience and Restoration Efforts	Water Quality Drivers and Impacts on Public Wildlife and Ecosystem Health	Integrating Collaborative and Multi-disciplinary Approaches for Effective Water Resource Management	Hydrologic Modeling to Advance Water Management	Coastal Resilience, Nature-Based Solutions, Ecosystem Conservation and Connectivity	Rethinking Urban Landscapes to Protect Our Water	Great Florida Riverway Restoration: Launching a Vital New Beginning
Moderator	Wesley Brooks State of Florida	Mary Lusk University of Florida	Lisa Krinsky University of Florida	Jeffery King ATM - A Geosytec Company	Afsheen Sadaf University of Florida	Stacie Greco Alachua County EPD	Casey Fitzgerald Florida Springs Council
<b>Introduction   3:30pm</b>							
3:35pm	<b>Ron Brockmeyer</b> SJRWMD Collaborative Restoration of Coastal Wetlands	<b>Paul Donsky</b> University of Florida Flood Disturbances Impact the Autotrophic Communities in the Karst Springs of the Suwannee River, FL	<b>Darlene Saindon Velez</b> University of Florida Healthy Farms-Healthy Bays – Finding Common Ground Within Uncommon Partnerships	<b>Joe Carter</b> SRWMD Data-Driven Analysis of Patterns and Drivers of Flow Change in the Santa Fe River Basin of Florida	<b>Jules Bruck</b> University of Florida Coastal Resilience & Nature Based Solutions- a Deed Project	<b>Nicholas Taylor</b> University of Florida The Thirst of Our Urban Landscapes	<b>Stephen Walsh</b> Florida Museum of Natural History Potential Implications for Fish Populations of a Restored Free-Flowing Ocklawaha River
3:50pm	<b>Cassandra Armstrong</b> SFWMD Strengthening Climate Resilience: Key CERP Projects for Greater Everglades Restoration	<b>Mileisha Velázquez López</b> University of Florida Impacts of PFAs and Microplastics in Aquatic Systems: A Critical Review	<b>Beatriz Inacio</b> University of South Florida Using Community Based Research to Advance Equitable Infrastructure	<b>Rob de Rooij</b> University of Florida Simulating Nitrate Concentrations in the Suwannee River by combining SWAT-MODFLOW with MODPATH	<b>Afsheen Sadaf</b> University of Florida Coastal Resilience Through Nature-Based Solutions—A GIS Model for Living Shorelines at APG, Maryland	<b>Eliana Bardi</b> Alachua County EPD Local Government Tools To Shift Our Landscaping Paradigm	<b>Gian Basili</b> U.S. Fish and Wildlife Service Enhanced Manatee Population Viability Via Ocklawaha River and Springs Restoration
4:05pm	<b>Fred Sklar</b> SFWMD Building Adaptive Foundational Resilience for Coastal Wetlands: An Everglades Experiment	<b>Shin-Ah Lee</b> University of Florida Sources and Seasonal Distributions of Organic Matter in the Caloosahatchee River Estuary	<b>Lisa Krinsky</b> University of Florida Progress & Priorities for Cyanohabs in Florida: Insights From the State of the Science Symposium II	<b>Jeff Geurink</b> Tampa Bay Water Continuous Improvement for the Integrated Hydrologic Model and Integrated Northern Tampa Bay Model	<b>Martha Ryan</b> University of Delaware Improving the Surface Water Quality of Coastal Basins with Resilient Land Cover Scenarios	<b>Basil Iannone</b> University of Florida Alternative Landscaping as a Water Conservation Strategy In Expanding Residential Landscapes	<b>John Hendrickson</b> SJRWMD (Retired) Macronutrient Delivery from a Free-Flowing Ocklawaha: Implications for the Lower St. Johns River
4:20pm	<b>Tom Frick</b> SJRWMD A Collaborative Approach to Resilience	<b>Madison Trowbridge</b> SWFWMD Iron: A Limiting Nutrient for Benthic Macroalgae in Florida Springs?	<b>Yilin Zhuang</b> University of Florida Florida Well Owner Network: Extension Outreach to Improve Private Well Water Quality and Stewardship	<b>Mark Ross</b> University of South Florida Framework to Improve Simulation Processes of the Integrated Hydrologic Model	<b>Mojtaba Tahmasebi</b> University of Florida Anticipating Future Land Use and Land Cover Transformations in Aberdeen Proving Ground, Maryland, via MOLUSCE Plugin Modeling	<b>Emily Lang</b> FDEP Florida Friendly Landscaping™ Beautiful Landscapes Protecting Florida's Water	<b>Thomas Hctor</b> University of Florida Ocklawaha River Restoration: A Critical Florida Wildlife Corridor Connection
4:35pm	<b>Ana Carolina Maran</b> SFWMD South Florida Water Management District' Resiliency Efforts and Coordination	<b>Edgar Marcillo</b> University of Florida How Do Environmental Risks Affect the Profitability of the Aquaculture Industry in Florida?	<b>Keeli Carlton</b> Sustainable Water Communities One Water Master Planning: Achieving the Full Benefits Of Water	<b>Yu Zhang</b> University of Central Florida A Multi-Scale Framework for the Integrated Hydrologic Model	<b>Y. Peter Sheng</b> University of Florida Mangroves Provide Significant Flood Protection Service in a Changing Climate	<b>Discussion</b>	<b>Margaret Spontak</b> Great Florida Riverway Trust The Great Florida Riverway: How Economics, Recreation and Social Marketing Shifted Public Opinion
<b>Discussion   4:50pm</b>							
<b>Poster Session &amp; Reception with Student Poster Competition and Judging Rion Ballroom   5:30pm - 7:30pm</b>							





Concurrent Sessions — 10:30am - 12:00pm

	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 22	Session 23	Session 24	Session 25	Session 26	Session 27	Session 28
Session Title	Intersecting Resilience Planning and Decision-Making: Responding to Today's Needs and Future Conditions	Technology and Decision Tools for Improved Water Management	Impacts of Climate Variability and Change on Water Availability and Quality	Application of AI/ Machine Learning Approaches in Water Resources Management	Synthesizing Data and Models to Inform Lake Okeechobee Management in the LOSOM Era	Education Tools, Approaches and Programs for Water Protection	Advancing Water Resources Protection in Response to Environmental and Management Challenges
Moderator	Ana Carolina Maran SFWMD	Paloma Carton de Grammont University of Florida	Young Gu Her University of Florida	Tirusew Asefa Tampa Bay Water	David Kaplan University of Florida	Sadie Hundemer University of Florida	Shimelis Setegn SFWMD

Introduction | 10:30am

10:35am	<b>Asif Mohamed</b> SFWMD Water Resources Management and Operational Decisions in the Context of Evolving Conditions	<b>Cristian Cardenas-Lailhacar</b> University of Florida Carbon Emissions Reduction and Nutrients Recovery in Wastewater Treatment Plants	<b>Nicole Cortez</b> SFWMD SFWMD's Water and Climate Resilience Metrics: A Status Update	<b>Tirusew Asefa</b> Tampa Bay Water Two Decades of Machine Learning Applications in Water Supply Management	<b>Jessica Mallett</b> U.S. Army Corps of Engineers LOSOM: Bringing Together Data, Models and Water Management Lessons-Learned	<b>Shannon Carnevale</b> UF/IFAS Extension Empowering the Public to Make Change Through Watershed Education and Stewardship	<b>Shimelis Setegn</b> SFWMD Coupled Watershed Water Quality Model as a Decision Support Tool for Water Resources Protection
10:50am	<b>Yanbing Jia</b> SJRWMD Enhancing Flood Resilience: A Real-Time Flood Forecasting Model for the Upper St. Johns River Basin	<b>Ronald Fick</b> Center for Coastal Solutions Optimizing Septic to Sewer Conversion Projects	<b>Megan Black</b> University of Florida Quantifying Yearly High-Latitude Lake CDOM from Ice Sheet to Coast in Southwestern Greenland	<b>Hui Wang</b> Tampa Bay Water Multi-objective Optimization for Monthly Water Resources Allocation from Multiple Supply Sources	<b>Anna Wachnicka</b> SFWMD Learning From the Past to Inform Lake Okeechobee Management in the LOSOM Era	<b>Lisa Sanderson</b> UF/IFAS Extension Wiser Lawns and Landscape Workshops for New Residents Lead to Water Savings	<b>Dan Dai</b> University of Florida Spatial Stability of Water Quality in the Lake Okeechobee Watershed
11:05am	<b>Christine Carlson</b> SFWMD Defining Flood Prone Areas and Estimating Flood Extent Area and Volume	<b>Katie Glodzik</b> University of Florida Enhancing Hydrological Studies Through Precise Wetland Shape Mapping With LIDAR-Derived Dems	<b>Kathleen Coates</b> NFWFMD Factors Driving Persistent Compound Flooding in Northwest Florida: 2018 - 2022	<b>Shubo Fang</b> University of Florida Critical Source Areas Identifying to Enhance Water Quality: A Case Study in Panhandle Florida	<b>Maitane Olabarrieta</b> University of Florida Forecasting the Impacts of Lake Operations on the Estuarine Hydrodynamics and Pollutant Transport	<b>Michael D'Imperio</b> UF/IFAS Extension Educating Through Technology: Influencing Decision Makers and the Public on Water Quality	<b>Seneshaw Tsegaye</b> Florida Gulf Coast University Application of Virtual Reality (VR) for Urban Flood Modeling and Mitigation
11:20am	<b>Timothy Gysan</b> USACE Comprehensive Central and Southern Florida Study – Multipurpose Study for Building Resiliency	<b>Antonio Diaz</b> University of Florida The "Bathy-drone" for Underwater Survey and Mapping	<b>Donghyeon Kim</b> University of Florida Investigation of Historical Changes in Air Temperature and Rainfall Events in Florida	<b>Enrique Orozco Lopez</b> University of Florida Interpretable Transformer Neural Network Prediction of Diverse Environmental Time Series	<b>Jordan Beckler</b> Florida Atlantic University Parameterization of Temporally-Resolved Benthic Nutrient Fluxes in Lake Okeechobee	<b>Laura Warner</b> University of Florida No More Sprinklers in the Rain! – Insights from an Innovative Rainfall Communication Intervention	<b>Jie (Jack) Zeng</b> SFWMD Application Of 2D Hydraulic Model to Kissimmee River Restoration Project
11:35am	<b>Angela Schedel</b> HDR Leveling the Playing Field: Taking Social Equity into Account in Adaptation Alternatives	<b>Sandie Will</b> SWFWMD An Overview of the Southwest Florida Water Management District's Available Monitoring Data and Maps	<b>Kevin Zhu</b> SFWMD ET Trends and the Influencing Factors and Correlations	<b>Katie Pisarello</b> USDA-ARS Hydrologic Impact of Agricultural Management and Climate in the Little River Experimental Watershed	<b>Mauricio Arias</b> University of South Florida Nutrient Management and Optimization for Algae Bloom Reduction in Lake Okeechobee	<b>Steven Noll</b> University of Florida Florida's Springs- A Personal Journey	<b>Kai Rains</b> University of South Florida Tool for Wetland and Water Project Prioritization in the Indian River Lagoon Watershed

Discussion | 11:50am

Lunch Provided (Grand Ballroom) | 12:00pm

Concurrent Sessions — 1:00pm - 2:30pm

	Room 2335	Room 2340	Room 2355	Room 2365	Auditorium	Room 3315	Room 3320
	Session 29	Session 30	Session 31	Session 32	Session 33	Session 34	Session 35
Session Title	Building Resilience in Water Resource Management	The Complex Nature of Invasive Species in Aquatic Ecosystems	Climate Changed: How Research, Science, and Reporting Translate to Policy and Practice	Forecasting Impacts of Climate Change, Extreme Events and Sea Level Rise	Understanding and Addressing Nitrogen Contamination in Florida's Groundwater	Development and Assessment of Payment for Water Service Programs on Ranchlands in the Northern Everglades	Strategies for Advancing Water Resources Protection
Moderator	Cassandra Armstrong SFWMD	Matthew Thomas University of Florida	Pierce Jones University of Florida	Katherine Serafin University of Florida	Hailey Hall AquiferWatch Inc	Elizabeth Boughton Archbold Biological Station	Darlene Saindon Velez University of Florida

Introduction | 1:00pm

1:05pm	<p><b>Ann Shortelle</b> Bio-Tech Consulting, Inc. Rethinking Water Supply Strategies for a Resilient Future</p>	<p><b>Stephen Enloe</b> University of Florida A Long Hard Look at Invasive Aquatic Macrophytes and Water Issues in Florida</p>	<p><u>Panelists:</u> <b>Jason Evans</b> <b>Brenda Defoe-Suprenant</b> <b>Jennison Searcy</b> <b>Gerald Murphy</b></p> <p><u>Panel Focus:</u> Changing climate has altered policy development in Florida. Learn how communities can respond to changing climate dynamics by embracing these policy changes and implementing comprehensive plan policies, land development regulations, and stormwater management criteria. Community leaders, planners, stormwater professionals, and interested citizens can better address increasing stormwater quantities and improving water quality with adopted community adaptations for a changing climate.</p>	<p><b>Fatih Gordu</b> SJRWMD Can We Reliably Forecast the Future Without Knowing the Past? UFA Level Predictions in North Florida</p>	<p><b>Rick Copeland</b> AquiferWatch Inc Results of a Decade of Monitoring Groundwater Nitrogen Concentrations in Florida's Santa Fe Basin</p>	<p><b>Benita Whalen</b> Florida Cattlemen's Association Development of Payment for Water Services in the Northern Everglades</p>	<p><b>Brooke Moffis</b> UF/IFAS Extension Lake County Enhancing Water Conservation and Pollinator-friendly Landscapes through Industry Education</p>
1:20pm	<p><b>Karin Smith</b> SFWMD The Role of MFLs in Conserving and Protecting Water Resources in Southeast Florida</p>	<p><b>Adam Searles</b> University of Florida Shifting Macrophytes: Thalassia and Caulerpa Support Unique Ecological Communities</p>		<p><b>Yogesh Khare</b> SFWMD A Stochastic Framework Implementation to Forecast Stages in the Everglades for Operational Planning</p>	<p><b>Weizhe Weng</b> University of Florida Assessing Health and Economic Impacts of Nitrate Contamination in Florida's Private Wells</p>	<p><b>Amartya Saha</b> Archbold Biological Station Estimating Water/ Nutrient Retention of Payment for Water Services Programs on S. Florida Ranchlands</p>	<p><b>Lorna Bravo</b> UF/IFAS Extension Broward County Rain Barrell Water Quality in South Florida</p>
1:35pm	<p><b>Young Gu Her</b> University of Florida Climate Change Impact on the Water Quality of the Kissimmee River – Lake Okeechobee System</p>	<p><b>Lindsey Reisinger</b> University of Florida Parasite-Mediated Invasion of Freshwater Crayfish</p>		<p><b>Vladimir Paramygin</b> University of Florida Forecasting of Coastal Inundation Risk in Current and Future Climates</p>	<p><b>Hailey Hall</b> AquiferWatch Inc Is Your Water Well? Private Well Test Awareness and Nitrate Monitoring in the Suwannee River Basin</p>	<p><b>Betsey Boughton</b> Archbold Biological Station Development and Assessment of Payment for Water Service Programs on Ranchlands in the Northern Everglades</p>	<p><b>Pamela Dugan</b> EutroPHIX Accelerated Water Restoration Approaches in Florida</p>
1:50pm	<p><b>Tibebe Dessalegne</b> SFWMD Characterizing Water Level Trends at South Florida Coastal Structures</p>	<p><b>Nathan Burkett-Cadena</b> University of Florida Impacts of Invasive Species on Arbovirus Transmission Ecology in The Everglades</p>		<p><b>Sangdon So</b> ATM - A Geosytec Company Island-Wide Flood Hazard Risk Mapping and Assessments in Grand Bahama</p>	<p><b>Stacie Greco</b> Alachua County EPD Nitrogen Load Reduction from Alachua County's Fertilizer Ordinance and Behavior Change Campaign</p>	<p><b>Anthony Betts</b> SFWMD Dispersed Water Management - Programmatic Perspective</p>	<p><b>Tracey Piccone</b> SFWMD Everglades Stormwater Treatment Areas: The World's Largest Constructed Treatment Wetland Project</p>
2:05pm	<p><b>Zoë Strooboscher</b> University of Florida The Past 10 Years of Water Quality Research on the Indian River Lagoon: An Ongoing Review</p>	<p><b>Melissa Miller</b> University of Florida Linking Burmese Python Ecology with Removal Efforts in The Everglades</p>		<p><b>Dat Tran</b> EDR Forecasting Costs of Meeting Future Water Demand Under Climate Variability and Socioeconomic Change</p>	<p><b>Ryan Smart</b> Florida Springs Council Building a Better Basin Management Action Plan for the Santa Fe River</p>	<p><b>Matt Pearce</b> Pearce Cattle Company The Role of Dispersed Water Management in the Northern Everglades - A Rancher Perspective</p>	<p><b>Gabriela Sullivan</b> City of Ocala Reuse, Restore, Recharge, Reduce, &amp; Recreate—The Ocala Wetland Recharge Park</p>

Discussion | 2:20pm

Afternoon Refreshment Break | 2:30pm

**Closing Plenary Session**

[Grand Ballroom]

**Tribute to Dr. Wendy Graham’s legacy as founding Director of the UF Water Institute**

**Presentation of Student Poster Competition Awards**

**Closing Panel: Translating Scientific Insights to Decision Making**

**Panel Description:**

The scientific process is about answers to questions. This Water Institute symposium was created to share the insights from that process for improving water sustainability in Florida and beyond, with the goal of aiding policy makers in their process of meeting our myriad water challenges. Florida is already a leader in water governance, but as our modern challenges reveal, there is much to be done to protect our aquifer, our aquatic ecosystems, our coastal infrastructure, and our legacy as natural resource stewards. This panel explores the pathways of scientific knowledge reaching our governance structures at all levels, the reciprocal pathways of information that help guide crucial research questions, and the best practices for ensuring open discourse between scientists, decision makers, regulators, and the public.

**Panelists:**

**Virginia Barker**, *Director*, Brevard County Natural Resources Management Department

**Wesley Brooks**, *Chief Resilience Officer*, State of Florida

**Rick Hutton**, *President*, FWEA Utility Council and *Supervising Engineer*, Gainesville Regional Utilities (GRU)

**Cathy Kling**, *Professor*, Charles H. Dyson School of Applied Economics and Management, Cornell University

**Steve Loheide**, *Professor*, Department of Civil and Environmental Engineering, University of Wisconsin

**Michael A. Register**, *Executive Director*, St. Johns River Water Management District

**Timothy Gysan**, *Resilience Senior Project Manager*, Ecosystem Branch, U.S. Army Corps of Engineers, Jacksonville District

**Julie Wraithmell**, *Executive Director*, Audubon Florida

**Moderator:**

**Lisa Krinsky**, *Regional Water Resources Extension Agent IV*, UF/IFAS Southeast District

**Symposium Concludes | 5:00pm**

3:00pm

**NOTES**

---

---

---

---

---

---

---

---

---

---

# PLENARY SPEAKERS



## Virginia H. Barker

*Director*

Brevard County Natural Resources Management Department

Virginia H. Barker, Director of Brevard County Natural Resources Management Department, holds undergraduate degrees in Science and Math from Duke University and a Master's in Coastal Environmental Management. With 27 years of service to Brevard County, she has managed beach resources, the stormwater utility program, and mosquito control, among other environmental initiatives. Virginia led the development of the Save Our Indian River Lagoon Project Plan, guiding pollution elimination efforts funded by a voter-approved sales tax. She spearheaded the establishment of a Citizen Oversight Committee for the project. Virginia's commitment to environmental stewardship has been recognized through various awards and accomplishments.



## Wesley Brooks

*Chief Resilience Officer*

State of Florida

A native of Miami, Wes serves as Florida's Chief Resilience Officer, leading the Statewide Office of Resilience on behalf of Governor Ron DeSantis to enhance agency coordination on resilience, and bolster flood protection and mitigation efforts across inland and coastal communities throughout the state.



## Timothy Gysan

*Resilience Senior Project Manager, Ecosystem Branch, U.S. Army Corps of Engineers, Jacksonville District*

Tim Gysan is the Resilience Senior Project Manager for the Ecosystems Projects Branch, Jacksonville District, U.S. Army Corps of Engineers. He leads Jacksonville District efforts on civil works project integration and resiliency coordination. He currently serves as the project manager for the Lake Okeechobee System Operating Manual (LOSOM), C&SF Flood Resiliency (Section 216) Study, the Kissimmee River Restoration, and the Interagency Modeling Center, which supports modeling for the South Florida Ecosystem Restoration program. Mr. Gysan previously spent sixteen years as a hydraulic engineer in the Jacksonville District Engineering Division, Water Resources Engineering Branch supporting projects including the Kissimmee River Restoration and the NRCS Agricultural Conservation Easement Program.



## Rick H. Hutton

*President*

FWEA Utility Council and Supervising Engineer, Gainesville Regional Utilities (GRU)

Rick Hutton is a professional engineer in the Office of Sustainability at Gainesville Regional Utilities. He received his bachelor's and master's degrees in environmental engineering from the University of Florida and has been engaged in water supply planning, water and wastewater treatment, and water quality protection for over 32 years. He is past president of the Florida Water Environment Association Utility Council.



## Cathy Kling

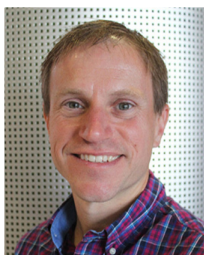
### Keynote Speaker

*Professor*

Charles H. Dyson School of Applied Economics and Management, Cornell University

Catherine L. Kling is a Tisch University Professor in the Charles H. Dyson School of Applied Economics and Management at Cornell University. She serves as Faculty Director and Cornell Atkinson Scholar in the Cornell Atkinson Center for Sustainability, and leads the Social Cost of Water Pollution working group. Kling chairs the Water Science and Technology Board

of the National Academy of Sciences, Medicine and Engineering, has been a member of six National Research Council studies, and served for ten years on EPA's Science Advisory board. Catherine is a Fellow of the Association of Environmental and Resources Economists, a Fellow of the Agricultural & Applied Economics Association, a University Fellow at Resources for the Future, and was elected to the National Academy of Sciences in 2015.



## Steve Loheide

### Keynote Speaker

*Professor*

Department of Civil and Environmental Engineering, University of Wisconsin

Steven P. Loheide is a Professor in the Department of Civil and Environmental Engineering at the University of Wisconsin - Madison where he is the Director of the Hydroecology Lab. His research is focused on interactions between ecological and hydrological processes in natural and built systems, and the competition for water among municipal and industrial users,

agriculture, and natural ecosystems. He and his research group develop methods to quantify and understand the processes controlling the exchange of water between groundwater, vadose water, vegetation, streams, and the atmosphere using a combination of field data, remote sensing, and numerical modeling.



## Michael A. Register

*Executive Director, St. Johns River Water Management District*

Michael A. Register was appointed Executive Director by the District's Governing Board in 2021. He has been with the St. Johns River Water Management District since 1990. During his tenure, Michael has worked in various areas, including environmental resource permitting, consumptive use permitting, water supply planning, engineering, and environmental sciences. As director of the Division of Water Supply Planning and Assessment, he oversaw work groups responsible for surface water and groundwater modeling, developing minimum

flow and levels (MFLs) and prevention/recovery strategies, and conducting water supply planning efforts. Michael holds Bachelor of Science and Master of Engineering degrees in agricultural engineering from the University of Florida. He is a registered professional engineer in Florida.



## Julie Wraithwell

*Executive Director, Audubon Florida*

Julie Wraithwell serves as the Executive Director of Audubon Florida, the state's leading voice in conservation. Julie joined Audubon in 2005 and has successfully led statewide conservation and wildlife policy initiatives, built Audubon Florida's robust coastal conservation program, coordinated Audubon's response to the Deepwater Horizon disaster, and helped secure millions in funding for protecting Florida's land and water resources. In 2018, 2019, and again in 2020, Julie was selected as one of Miami Herald's Top 50 Florida Influencers.

# POSTER INFORMATION

Poster presentations play a key role in the exchange of information at the UF Water Institute Symposium. Considerable time is dedicated viewing them, giving students, scientists, policy makers, planners, practitioners and managers valuable opportunities to interact and share details of their work, successes and lessons learned.

## Student Competition:

Student poster authors will compete for “Best Poster” awards based on the quality of the poster format, content and presentation. Four poster winners will receive prizes of \$1,000 each to be used as funding to support future participation at a national conference. Students must be present during their presentation time to be judged and considered for the award.

Student winners will be notified by email on the evening of Tuesday, February 20. We ask that you are present at the Closing Plenary Session on Wednesday, February 21 at 3:00pm to accept your award.

## Poster Room Schedule:

<b>Poster Set Up:</b>	<b>Monday, February 19, 1:30pm–5:00pm Tuesday, February 20, 7:30am–1:30pm</b>
<b>Formal Poster Session:</b>	<b>Tuesday, February 20, 5:30pm–7:30pm</b>
<b>5:30pm – 6:30pm</b>	<b>Poster Session One</b>
<b>6:30pm – 7:30pm</b>	<b>Poster Session Two</b>
<b>Poster Removal</b>	<b>Wednesday, February 21, before 3:00pm</b>

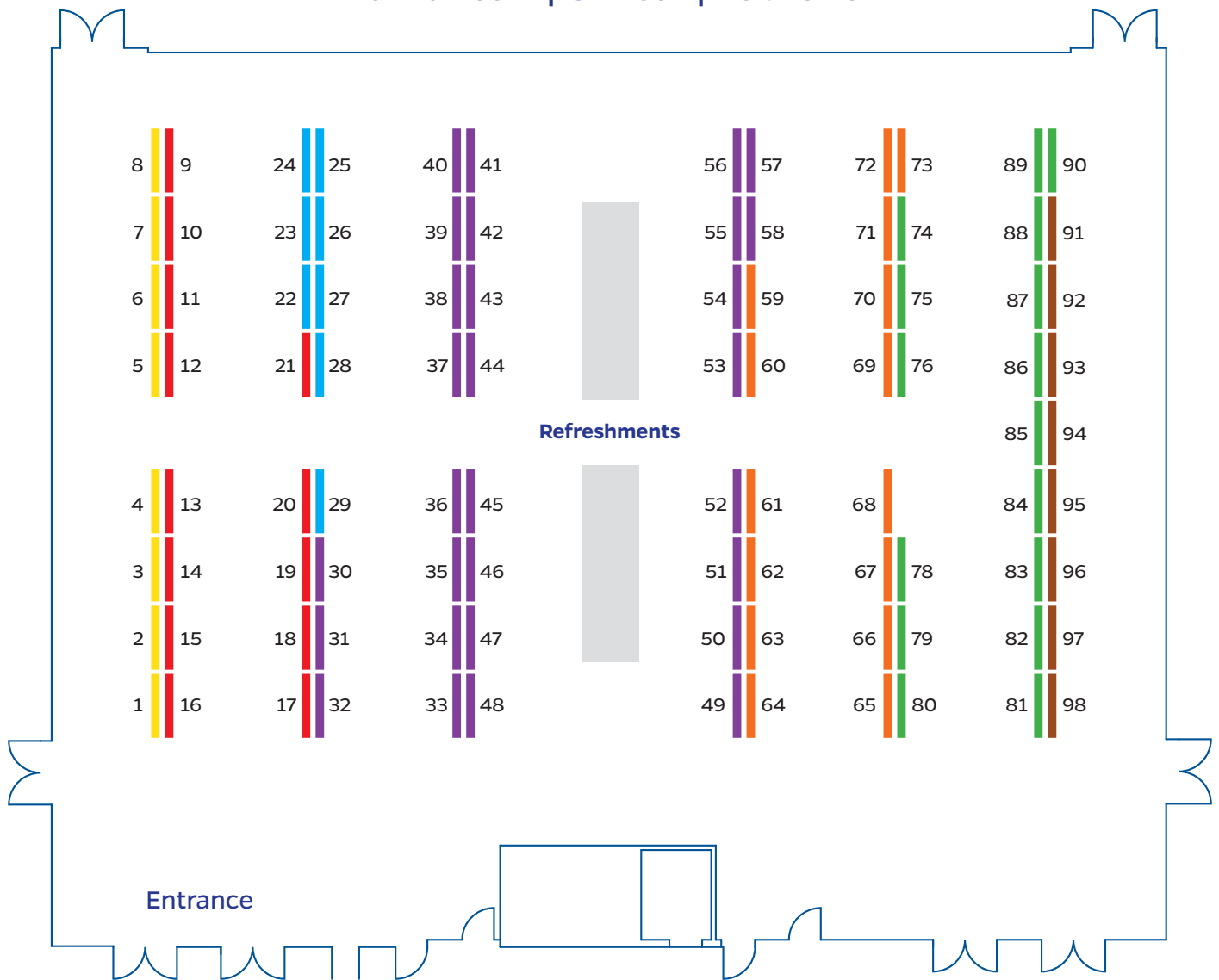
---

\*As a courtesy to the presenter before/after you, please only stand at your poster during your assigned session. Posters are divided into two sessions. Consult the poster directory to confirm your session assignment.

Poster display boards will be dismantled by the vendor during the closing plenary. Please have your poster removed by 3:00pm Wednesday. Organizers are not responsible for lost posters discarded by the board vendor.

# POSTER ROOM LAYOUT

Rion Ballroom | 3<sup>rd</sup> Floor | Reitz Union



## POSTERS BY THEME

- High Latitude Hydrology (Posters 1-8)
- Education Technology and Decision Tools for Improved Water Management (Posters 9-21)
- AI/Machine Learning Big Data and Convergent Science for Water Systems (Posters 22-29)
- Water Quality Drivers and Impacts on Public Wildlife and Ecosystem Health (Posters 30-58)
- Intersecting Science Stakeholders and Decision-Making (Posters 59-73)
- Building Resilience to Extreme Events Climate Change and Sea Level Rise (Posters 74-90)
- Hydroecologic Connections Across the Land-Sea Continuum (Posters 91-98)

# POSTER DIRECTORY

Posters are listed in order by topic, poster session hour, then by presenter last name.

## High Latitude Hydrology

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session One	Jaehyeon	Lee	University of Florida	Effects of Climate Seasonality and Snow Storage on Current and Future Intra-Annual Runoff Patterns	7
Session One	Katelyn	Palmer	University of Florida	Factors Controlling Microbial Distributions in Glacial Ice Surfaces on the Greenland Ice Sheet	3
Session One	Jenifer Tatiana	Salinas	University of Florida	Nd Isotopes in Stream Water and Sediment in Greenland: Incongruent Weathering and Ice Retreat Proxy	5
Session One	Kira	Zautcke	University of Florida	Influence of Redox Conditions on Long-term Carbon Sequestration in Swedish Fjord Sediments	1
Session Two	Izuchukwu	Ezukanma	University of Florida	Vegetation Variation and Elemental Compositions of Watersheds Along a Deglaciated Arctic Landscape	4
Session Two	Quincy	Faber	University of Florida	Connecting Students to Polar Science through Community Outreach	8
Session Two	Megan	Sanford	University of Florida	Microbial Community Composition of Three Swedish Fjords	2
Session Two	Yuseung	Shin	University of Florida	Abiotic Controls of Metabolic Regimes in Greenland Streams	6

## Education Technology and Decision Tools for Improved Water Management

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session One	Akshara	Athelly	University of Florida	Building Farmers Trust in SMS-Based Irrigation Through In-field Demonstration Programs	11
Session One	Josh	Cunningham	University of Alabama	Simplified End-to-end Execution of Next Generation Water Resources Modeling Framework	21
Session One	Michael	D'Imperio	UF/IFAS Extension Sarasota County	Youth Relate Water Quality to Macroinvertebrate Biodiversity in a Hands-On Lab	9
Session One	Edgar	Guerron-Orejuela	University of South Florida	Pilot Scale Septic-to-Sewer Conversion Prioritization Map Using Analytic Hierarchy Process	13
Session One	Sepehr	Karimiziarani	University of Alabama	Efficient Access Patterns for National Water Model Data	15
Session One	Varshitha	Prasanna	University of Florida	Optimizing Irrigation and Nitrogen Fertilization to Maximize Potato Growth, Yield, and N-Efficiency	17
Session One	David	Weiss	University of Alabama	Improvements to Continental-scale Mapping Capability	19
Session Two	Ange	Asanzi	University of Florida	Stormwater Wet Pond Management: A Public Engagement Approach	10



## Education Technology and Decision Tools for Improved Water Management (continued)

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session Two	Qing	Du	University of South Florida	Time-scale of Groundwater Recharge in Coastal Plain Soils	20
Session Two	Michelle	Ezequelle	University of Florida	Development and Demonstration of a Sensor-Based Method for Monitoring Container Substrate Fertility	12
Session Two	S.M. Mushfiqul	Hoque	Florida State University	Iplangreens2: Integrated Planning Tool for Green Infrastructure Siting and Selection in Florida	14
Session Two	Stephanie	Lawlor	University of South Florida	Forensic Wetland and Deepwater Habitat Mapping for Setting Pre-Development Conditions	16
Session Two	Mason	Thackston	Florida Atlantic University	CAROSSEL: Advancing Water Quality Monitoring with a Novel Autonomous Benthic Flux Sensing Platform	18

## AI/Machine Learning Big Data and Convergent Science for Water Systems

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session One	Susanta	Das	University of Florida	IOT Based Sensor System for Estimation of Crop Water Stress Index and Smart Irrigation Scheduling	25
Session One	Sally	Elrashedy	University of Central Florida	Chemical Dosage Prediction for Drinking Water Treatment with Random Forest and Polynomial Regression	27
Session One	Hanyu	Qian	University of Florida	Bayesian Calibration Using Data from Biosensors: Predicting E.coli Concentration in Water	29
Session One	Saman	Rabiei	University of Florida	Mapping Florida Root Zone Soil Moisture in Real-Time with Satellites, Soil Data, Using AI Algorithms	23
Session Two	Nicholas	Chin	University of Florida	Connecting Red Tide (Karenia brevis) Bloom Timing and Severity to Environmental Conditions Across Southwest Florida	26
Session Two	Alireza	Ghaderi Bafti	Univeristy of Florida	Prediction of Root Zone Soil Moisture for Irrigation Using L-band Radiometry and Deep Learning	24
Session Two	Ethan	Lantzy	University of Florida	Identifying Temporal and Spatial Variation in GatorSpec Local Calibration Curve Accuracy	28
Session Two	Glenn	Tootle	The University of Alabama	Streamflow Reconstructions using Tree-ring based Proxies and AI	22

## Water Quality Drivers and Impacts on Public Wildlife and Ecosystem Health

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session One	Noor UI	Basar	University of Florida	Effects of Site-Specific Nutrient management on HLB-Affected Sweet Orange Trees in Florida	57
Session One	Sukhveer Singh	Bhullar	University of Florida	Integrating Precision Ag Techniques and Nitrogen Application Methods to Enhance Nitrogen Use Efficiency through Site-Specific Nitrogen Management and Preharvest Cover Cropping	31
Session One	Jenna	Brooks	Northeastern University	Settling Velocities of Environmentally Weathered Micro- and Macroplastic Fibers	33

## Water Quality Drivers and Impacts on Public Wildlife and Ecosystem Health (continued)

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session One	Taryn	Chaya	University of Florida	Leveraging Historical Mosquito Impoundments to Treat Eutrophic Waters in the Indian River Lagoon, FL	35
Session One	Lindsey	Cromwell	University of Florida	North Florida Springs: An Endmember to Understand Spatial and Temporal Variability in Water Quality	37
Session One	Seyed Abolfazl	Ebrahimi	University of Florida	In-network Storage Effects on the Relative Spatial and Temporal Variability of Water Quality	39
Session One	Samantha	Howley	University of Florida	River Reversals and the Metabolic Regimes of Florida's Springs	41
Session One	Sunhye	Kim	University of South Florida	Identifying Causes of Water Chemistry Changes at Springs in an Eogenetic Karst Aquifer	43
Session One	Mallory	Llewellyn	University of Florida	Formidable Detection and Quantification of PFAS in Environmental and Biological Matrices	45
Session One	Kelenna	Osimiri	University of Florida	Investigating N <sub>2</sub> O Cycling by Mineral-Hosted Microbial Communities in Karstic Aquifer Cave Systems	47
Session One	Jenna	Reimer	University of Florida	Identifying Control Points for Nutrient Management in an Urbanizing Estuary Using Stable Isotopes	49
Session One	Paula	Sanchez Garzon	University of Florida	Nitrogen Forms and Dissolved Organic Matter Optical Properties in a Subtropical Urban Catchment	51
Session One	Zoe	Spielman	University of Florida	Constructed Wetland Performance: Trends of P Removal in the Everglades Stormwater Treatment Areas	53
Session One	Kelsey	Vought	University of Florida	Impacts of Nitrified Anaerobic Digester Effluent on Water Quality and Nutrient Use Efficiency in Controlled Environment Agriculture	55
Session Two	Xavier	Basurto Cedeno	University of South Carolina	Discovering the Perception of Water Quality and Quantity of South Carolina's Residents	30
Session Two	Jessica	Boyer	University of South Florida	Transport and Characteristics of Microplastics in a Large Constructed Wetland in Florida, USA	32
Session Two	Tanya	Charan	University of Florida	US Nitrogen Deposition: Are Urban Areas Underrepresented in the N Deposition Monitoring Network?	34
Session Two	Raelene	Crandall	University of Florida	An Endangered Grass "Falls" for a Complex Hydrologic Regime in Everglades National Park	36
Session Two	JoAnn	Donald	University of Florida	Evaluating Historical Biosolids Applications in Florida Soils: Implications for Water Quality	38
Session Two	Matthew	Gold	University of Florida	Identifying Floridians' Preferences in Response to Regional Aquifer Challenges	40
Session Two	Mahnoor	Kamal	University of South Florida	Aquifer Water Chemistry Variability and Continuous Monitoring Sensor Comparison	42
Session Two	Emily	Kintzele	University of Florida	Emerging Contaminants, Including Microplastics and PFAS, Discovered Across the Florida Everglades	44
Session Two	Justina	Odogwu	University of Florida	Soil Health Responses to Reclaimed Water Irrigation and Nitrate Leaching from Pine Bark Amendments	46

## Water Quality Drivers and Impacts on Public Wildlife and Ecosystem Health (continued)

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session Two	Nathan	O'Neil	University of Florida	Characterization of a Marine Algae for Joint Bioremediation & Bioproduction from a Wastewater Source	56
Session Two	Chamoda	P.D. Dissanayake Mudiyansele	University of Florida	The Rate of Nutrient Change in Stormwater Ponds in Response to Abundance of Varied Vegetation Types	48
Session Two	Duplicate	Sambani	University of Florida	The Physiological Responses of Citrus Tree Roots to Soil Acidification	50
Session Two	Ayush	Sharma	University of Florida	Do We Need Sulfur Application for Potato in Northeast Florida?	58
Session Two	Rakesh	Singh	University of Florida	Optimizing Corn Yield and Water Quality: Ceres-Maize Model Analysis of Controlled-Release Fertilizer	52
Session Two	Praveen	Subedi	University of Florida	Bioavailability of Dissolved Organic P Varies with Vegetation Types in the Everglades STAs	54

## Intersecting Science Stakeholders and Decision-Making

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session One	Luiz	dos Anjos	State University of Londrina	Exploring Effects of Migratory Bird Species on Functional Diversity of Aquatic Habitats in Brazil	69
Session One	Serena	Echols	University of South Florida	Environmental Justice from the Ground(water) Up: Coping with Contamination in Tallevast, Florida	73
Session One	Sydney	Honeycutt	University of Florida	Community Advisory Committees & Communication Toolkits: Creating Solutions for Water-Related Issues	63
Session One	Mina	Kim	University of South Carolina	Understanding Tourists General and Context-Specific Pro-Environmental Behaviors	61
Session One	Seonjin	Lee	University of South Carolina	Value Beyond Money—Health Benefits of Recreational Water Accessibility	59
Session One	Vivienne	Lewis	UF/ IFAS Central Extension Water Matters Project	Water Matters Display Measures Florida Residents' Knowledge of Water Conservation	65
Session One	Laura	Warner	University of Florida	A Human Dimensions-driven View of Irrigation Water Restrictions to Improve Conservation Outcomes	67
Session One	Weizhe	Weng	University of Florida	A Tale of Fish and Water: Housing Market Capitalization Fisheries	71
Session Two	Tyelyn	Brigino	University of South Florida	Groundwater Sustains Salmon Streams: Support to Stream Flow and Temperature in South-Central Alaska	62
Session Two	Madison	Dyment	University of Florida	Flowing Forward: How does Public Water Science Knowledge Affect Water Policy Preferences?	64
Session Two	Jose	Prieto	University of Florida	Impact of Potassium Silicate on Performance of Mature Citrus Trees	70

## Intersecting Science Stakeholders and Decision-Making (continued)

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session Two	Abigail	Reed	University of South Florida	Tampa Bay Groups with Few Financial Resources Lack Benefits from Natural & Artificial Wetlands	72
Session Two	Vivek	Sharma	University of Florida	Florida Agricultural Stakeholder Engagement Program to Enhance Best Management Practices	60
Session Two	Gabriel	Spandau	University of Florida	What Does it Mean to Be a Socially Responsible Water Scientist?	66
Session Two	Rebekah	Warrick	University of Florida	Analysis of Florida Private Well Survey Data: Well Owners, Septic Systems and Water Testing	68

## Building Resilience to Extreme Events Climate Change and Sea Level Rise

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session One	Natalia	Dambe	University of Florida	Is Drought a Driver of Renewable Energy Development?	79
Session One	Casey	Harris	University of Florida	An Updateable Statistical Model for Estimating Future Water Quality Exceedances and Uncertainty	81
Session One	Young Gu	Her	University of Florida	Sea Level Rise and Climate Change Impact on Groundwater and Saltwater Intrusion in Miami-Dade County	89
Session One	Caroline	Huguenin	University of Florida	Climatic Drivers of Extreme Precipitation in a Costa Rican Basin: A Spatiotemporal Analysis	83
Session One	Dogil	Lee	University of Florida	Analyzing Impacts of Climate Change on Water Availability in the Santa Fe River Basin, FL	75
Session One	Abhishek	Rajan	University of Florida	Ripples of Red Tide: Quantifying Recreational Losses from Harmful Algal Blooms in Florida	85
Session One	Yvanna	Serra	University of Florida	Evaluating the Impacts of Future Land Use and Climate Change on Highly Developed Coastal Basin	87
Session Two	Stephanie	Castellano	University of Florida	Barriers to Understanding Sea-Level Rise Impacts on Everglades Restoration	78
Session Two	Copeland	Cromwell	University of Florida	Seasonal Patterns of Alongshore Sediment Transport Revealed in NE Florida Using Satellite Imagery	74
Session Two	Andrea	Galinski	University of Florida	Exploring Opportunities for Climate Adaptation in Cedar Key	80
Session Two	Dat	Tran	EDR	Managed Aquifer Recharge and Irrigation Decisions Under Risk and Climate Variability	82
Session Two	James	Ji	University of Florida	Climate Resilience Initiatives Alleviate Drought Impact on Intimate Partner Violence in Bangladesh	90
Session Two	Yiyang	Kang	University of Florida	Mangrove Freeze Damage and Recovery Across a Tropical-Temperate Transitional Zone	84

## Building Resilience to Extreme Events Climate Change and Sea Level Rise (continued)

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session Two	Gabrielle	Quadrado	University of Florida	Annual Maximum Total Water Levels Vary Across Storm Seasons Along the U.S. Atlantic Coast	76
Session Two	Md. Shamsudduha	Sami	University of Florida	Durational Pattern Analysis of Extreme Water Level Events to Understand Compounding Coastal Risks	86
Session Two	Brianna	Tomko	University of Florida	Identifying Flood Transition Zone Variation Across Multiple Atlantic and Gulf Coast Rivers	88

## Hydroecologic Connections Across the Land-Sea Continuum

Poster Session	First Name	Last Name	Organization	Abstract Title	Poster #
Session One	Justina	Dacey	University of Florida	Benthic and Pelagic Responses to Nitrogen Inputs in an Urbanizing Estuary	93
Session One	Andrew	Oberhelman	University of Florida	Surface Water-Groundwater Interactions and Carbonate Karst Aquifer Development	91
Session One	Seyed Md. Moein	Sadeghi	University of Florida	Partitioning of Rainfall and Flowpath Processes in Two Contrasting Pine Plantations, Northern Florida	97
Session One	Kathleen	Schoenberger	University of Florida	Dynamic Interactions Between Submerged Aquatic Vegetation and Flow in Florida Springs	95
Session Two	Audrey	Goeckner	University of Florida	When Ponds Flow: Testing the Biological Effect of Stormwater Pond Discharge on Receiving Streams	96
Session Two	Alexis	Jackson	University of Florida	Connecting Hydrology and Soil Organic Carbon Storage in Southeastern U.S. Flatwoods Wetlands	94
Session Two	Renee	Price	AtkinsRealis; University of Florida	How Wetland Geomorphic Characteristics Shape Ecohydrologic Metrics In Isolated Reference Wetlands	92
Session Two	Sunita	Shrestha	University of Florida	Water Level Controls on Wetland Net Primary Productivity Across Coastal Plain Wetlandscape	98

## NOTES

---



---



---



---



---



---



---



---

# THANK YOU SPONSORS

## FOUNDING SPONSOR



## SILVER SPONSORS



## BRONZE SPONSORS



## STUDENT POSTER AWARDS SPONSOR



## STUDENT SPONSORS

UF/IFAS Agricultural & Biological Engineering · UF/IFAS Center for Land Use Efficiency · UF/IFAS Nature Coast Biological Station  
UF/IFAS School of Natural Resources & Environment · UF/IFAS Soil, Water, and Ecosystem Sciences  
UF/IFAS School of Forest, Fisheries, & Geomatics Sciences · UF Department of Geological Sciences  
UF/IFAS Wildlife Ecology and Conservation · UF ABE Center for Remote Sensing · UF/IFAS Food & Resource Economics (FRE)