



# Sustainable Water Resources

Complex Challenges, Integrated Solutions

# WATER INSTITUTE 2022 SYMPOSIUM

## PROGRAM BOOK

**February 22-23, 2022**

University of Florida  
Gainesville, FL

**UF** | Water Institute  
UNIVERSITY of FLORIDA

[conference.ifas.ufl.edu/waterinstitute](https://conference.ifas.ufl.edu/waterinstitute)



# WATER INSTITUTE

## 2022 SYMPOSIUM FLOORPLAN

### LEVEL 2

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Grand Ballroom

Meeting Room 2335

Meeting Room 2365

Meeting Room 2355

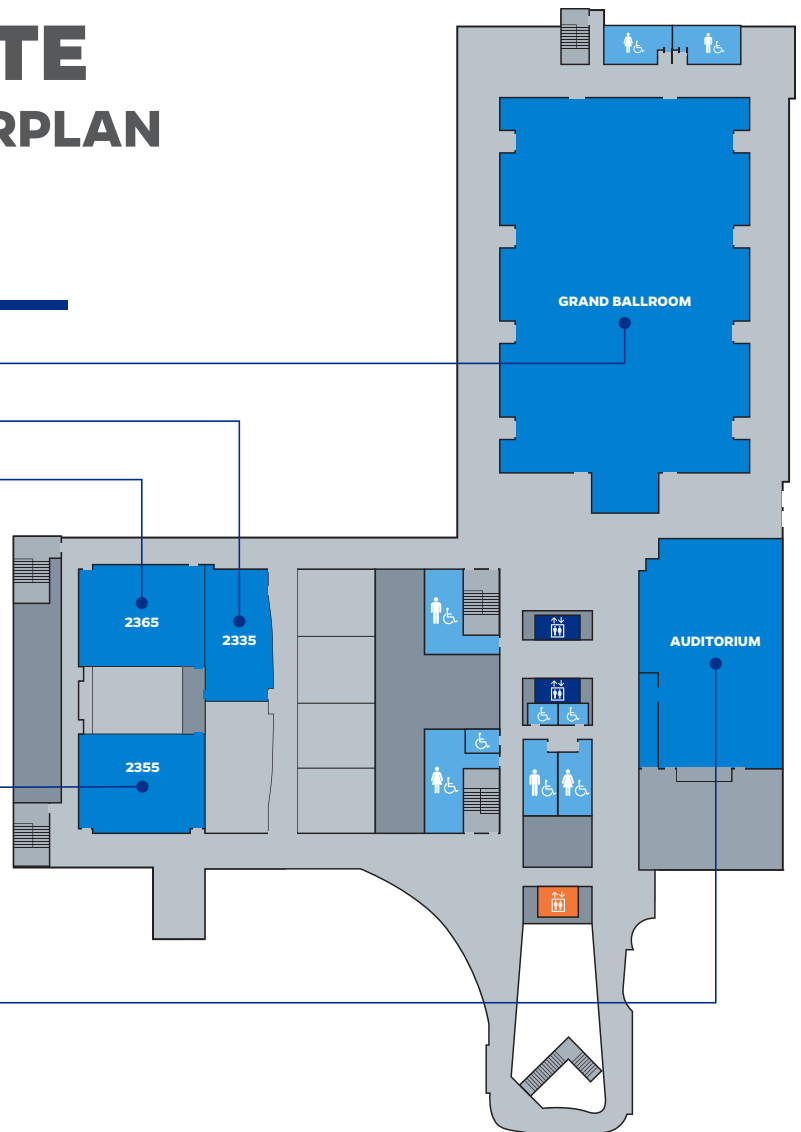
Auditorium

 Orange Elevator

 Blue Elevator

 Meeting Rooms

 Restrooms



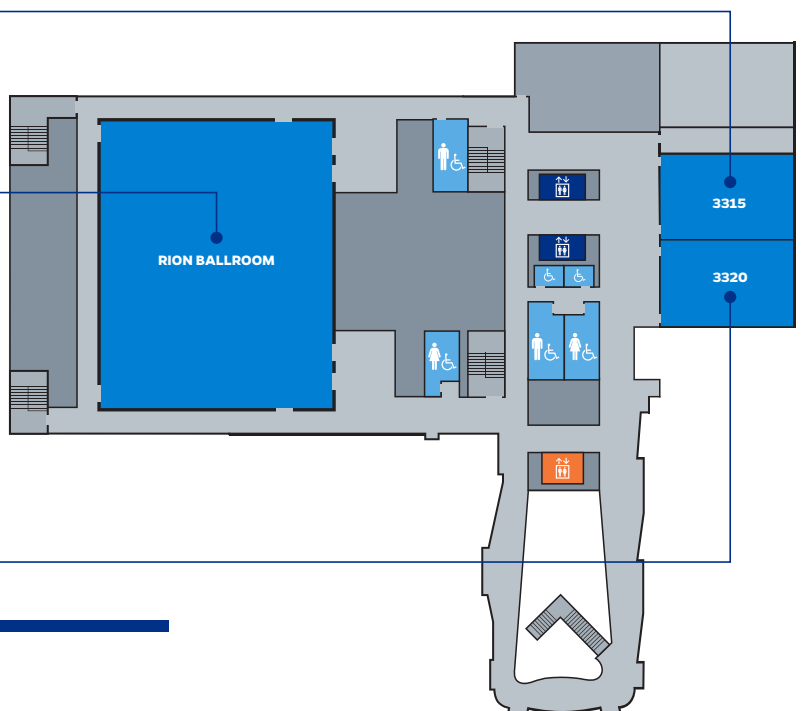
Rion Ballroom

Meeting Room 3315

Meeting Room 3320

### LEVEL 3

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**Sustainable  
Water Resources**  
Complex Challenges, Integrated Solutions

# **WATER INSTITUTE**

## **2022 SYMPOSIUM**

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**FEBRUARY 22-23, 2022**

J. Wayne Reitz Union  
University of Florida  
Gainesville, FL



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## 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.

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





# WELCOME COLLEAGUES,

***Thank you for joining us for the 8<sup>th</sup> UF Water Institute Symposium!***

This symposium provides an intellectually stimulating venue that links leading researchers, educators and students with resource managers, policymakers, non-governmental organizations, authors and artists interested in exploring interdisciplinary solutions to current water challenges.

Over the course of the next two days over 240 contributed oral, poster and panel presentations will draw from diverse perspectives and knowledge. We will learn about new scientific breakthroughs; traditional land and water stewardship practices; and emerging education, policy, management and technological solutions to pressing water issues.

The topics of the presentations make it clear that developing socially-acceptable, scientifically-sound solutions remains a complex process because our scientific understanding is incomplete, our goals contradictory, and complex interdependencies result in unexpected outcomes. We welcome you to join with us to ask difficult questions, listen to unexpected answers, engage in constructive dialog, and learn from those outside your area of expertise so that together we can envision and chart a path to a sustainable water future.

This year's Symposium received a record number of abstract submissions and is registered at full capacity. We are encouraged that COVID cases are on the decline and pleased that we are able to meet in person. Nevertheless, positivity rates remain high. Therefore we request that you follow UF Health guidance which includes staying home and self-quarantining if you feel sick, wearing a mask when inside UF facilities, and observing social distancing guidelines.

Thanks again for attending the 8<sup>th</sup> UF Water Institute Symposium. We value your contributions and encourage your active participation.

Sincerely,

A handwritten signature in black ink that reads 'Wendy D. Graham'. The signature is written in a cursive, flowing style.

**WENDY GRAHAM**

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

# ACKNOWLEDGMENTS

## PLANNING COMMITTEE

**Wendy Graham**, Symposium Chair, UF Water Institute

**Andrea Albertin**, UF/IFAS Regional Specialized Water Resources Extension Agent

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

**Christine Angelini**, UF College of Engineering, Environmental Engineering Sciences Department

**Mark Brenner**, UF College of Liberal Arts and Sciences, Geological Sciences Department

**Nancy Denslow**, UF College of Veterinary Medicine, Center for Environmental and Human Toxicology

**Mark Diblin**, Wood Environment & Infrastructure Solutions, Inc.

**Holly Henderson**, Duke Energy

**Young Gu Her**, UF/IFAS Tropical Research & Education Center, Agricultural & Biological Engineering Department

**Antar Jutla**, UF College of Engineering, Environmental Engineering Sciences Department

**Davie Kadyampakeni**, UF/IFAS Citrus Research and Education Center, Soil and Water Sciences Department

**Jeffrey King**, Applied Technology & Management

**Dail Laughinghouse**, UF/IFAS Fort Lauderdale Research and Education Center, Agronomy Department

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

**AJ Reisinger**, UF/IFAS Soil and Water Sciences Department

**Catherine Tucker**, UF College of Liberal Arts and Sciences, Center for Latin American Studies

**Laura Warner Sanagorski**, UF/IFAS Agricultural Education and Communication Department

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

**Yilin Zhuang**, UF/IFAS Regional Specialized Water Resources Extension Agent

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## PROGRAM ORGANIZERS

**Paloma Carton de Grammont**, UF Water Institute

**Karen Schlatter**, UF Water Institute



# THANK YOU TO OUR SPONSORS

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

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## STUDENT SPONSORS

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UF/IFAS Wildlife Ecology and Conservation • UF Center for Coastal Solutions • UF/IFAS School of Forest, Fisheries, & Geomatics Sciences  
UF Department of Geological Sciences • St. Johns River Water Management District  
UF/IFAS School of Natural Resources & Environment • UF ABE Center for Remote Sensing

# AGENDA-AT-A-GLANCE

	Tuesday, February 22, 2022					
7:30am-8:30am	Check-in for Preregistered Attendees - Pickup Symposium Materials Early Morning Refreshments [Grand Ballroom Hallways]					
8:30am-10:00am	<u>Opening Plenary Session</u> [Grand Ballroom] <u>Introduction and Welcome</u> Wendy Graham, Director, University of Florida Water Institute David Norton, Vice President for Research, University of Florida <u>Keynote Speaker:</u> Margaret Palmer Distinguished University Professor, University of Maryland, College of Park and Director, National Socio-Environmental Synthesis Center (SESYNC) <b>“Restoration of Aquatic Ecosystems: the Search for a Process-based Understanding”</b>					
10:00am-10:30am	Morning Refreshment Break					
10:30am-12:00pm	Concurrent Sessions					
Room Number & Session Title	Room 2365	Room 3320	Room 3315	Room 2335	Room 2355	Auditorium
	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
	Historical Perspectives on Climate Change	Analysis of Environmental Flows, and Relationship Between Flow and Ecosystem Vitality	Climate Change and Sea Level Rise Impact on Water Resources	Stakeholder Engagement in Water Solutions	Water Policies and Programs for Water Quality	CCS1: The Role of Data Fusion and Artificial Intelligence in Transforming Coastal Hazard Detection and Monitoring
12:00pm-1:00pm	Lunch					
1:00pm-2:30pm	Concurrent Sessions					
Room Number & Session Title	Room 2365	Room 3320	Room 3315	Room 2335	Room 2355	Auditorium
	Session 7	Session 8	Session 9	Session 10	Session 11	Session 12
	FLWCA1: Water and Climate Resiliency Metrics: Long Term Data Trends	Water Availability and Allocation	Water Quality Drivers and Impacts	Education & Outreach Programs	The Floridan Aquifer Collaborative Engagement for Sustainability Project	CCS2: Unlocking Benthic-Pelagic Coupling Controls of Coastal Eutrophication
2:30pm-3:00pm	Afternoon Refreshment Break					
3:00pm-5:00pm	<u>Poster Session</u> with Student Poster Competition and Judging [Rion Ballroom]					

## NOTES

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	Wednesday, February 23, 2022					
7:30am-8:30am	Early Morning Refreshments [Grand Ballroom Hallways]					
8:30am-10:00am	Concurrent Sessions					
Room Number & Session Title	Room 2365	Room 3320	Room 3315	Room 2335	Room 2355	Auditorium
	Session 13	Session 14	Session 15	Session 16	Session 17	Session 18
	FLWCA2: Future Trends in Climate and Sea Level Rise	Harmful Algal Blooms	BMP Adoption in Agricultural and Urban Systems	Technology and Decision Tools for Water Management	Water and Wetlands Challenges in the Tropics	CCS3: Improving the Condition of Coastal Ecosystems through Collaboration: A Panel Discussion of Lessons from Decades of Estuarine Nutrient Assessment and Management
10:00am-10:30am	Morning Refreshment Break					
10:30am-12:00pm	Concurrent Sessions					
Room Number & Session Title	Room 2365	Room 3320	Room 3315	Room 2335	Room 2355	Auditorium
	Session 19	Session 20	Session 21	Session 22	Session 23	Session 24
	FLWCA3: Assessing Flood and Sea Level Rise Vulnerability and Best Adaptation Solutions	Lake Okeechobee Water Quality Issues	Stormwater and Wastewater Treatment	Smart-irrigation and Sensor-based Irrigation for Water Savings	Tribal Communities and Water Issues	CCS4: The Frontier of Earth Systems Modeling for Hazard Prediction & Management
12:00pm-1:00pm	Lunch					
1:00pm-2:30pm	Concurrent Sessions					
Room Number & Session Title	Room 2365	Room 3320	Room 3315	Room 2335	Room 2355	Auditorium
	Session 25	Session 26	Session 27	Session 28	Session 29	Session 30
	FLWCA4: Using Rainfall and Wet Season Conditions to Analyze Compound Flooding Risks	Watershed Provisioning in Estuarine Food Webs	Urban Water Quality and Quantity	Artificial Intelligence in Water Systems	Navigating a Professional Job in Water	CCS5: Accelerating the Infusion of Science in Coastal Policy - A Panel
2:30pm-3:00pm	Afternoon Refreshment Break					
3:00pm-5:00pm	<p><u>Closing Plenary Session</u> [Grand Ballroom]</p> <p><u>Introductory Remarks</u> Scott Angle, Vice President for Agriculture and Natural Resources, University of Florida</p> <p><u>Presentation of Student Poster Competition Awards</u></p> <p><u>Closing Panel</u> <b>"Climate Resilience in a Ground Zero State"</b> Moderator Wendy Graham, Director, University of Florida Water Institute</p> <p>Panel Description Resilience generally refers to the ability to persist or adapt in the wake of disruption. In Florida, climate change is already disrupting local economies, infrastructure, ecosystems and human health. Indeed, Florida has been described as America's "ground zero" for climate change. What does climate resilience mean for Florida's water sector? This panel consists of a group of leading scientists, engineers, water managers and policy makers representing agriculture, the environment, water management, and academic interests. Panel members will discuss initiatives, opportunities, and timeframes for developing water-related resilience in the face of climate impacts. The panel will conclude with open questions and dialogue with the audience.</p> <p>Panelists: <b>Beth Lewis</b>, Director of Water Resources, The Nature Conservancy Florida Chapter <b>Carolina Maran</b>, Chief Resiliency Officer, South Florida Water Management District <b>Chris Pettit</b>, Director of Agricultural Water Policy, Florida Dept. of Agriculture &amp; Consumer Services <b>Mark Rains</b>, Chief Science Officer, Florida Department of Environmental Protection <b>Jason von Meding</b>, Florida Institute for Built Environment Resilience, University of Florida</p>					
	Symposium Concludes					

# PLENARY SPEAKERS



## Margaret Palmer

### *Keynote Speaker*

*Distinguished University Professor, University of Maryland, College Park and Director, National Socio-Environmental Synthesis Center*

Margaret A. Palmer is a Distinguished University Professor in the Department of Entomology at the University of Maryland and director of the National Socio-Environmental Synthesis Center (SESYNC). Palmer works on the restoration of streams and rivers, and is co-author of the book *Foundations of Restoration Ecology*. Palmer has been an invited speaker in numerous and diverse settings including regional and international forums, science-diplomacy venues and popular outlets.



## Beth Lewis

*Director of Water Resources  
The Nature Conservancy  
Florida Chapter*

Beth Lewis is the Resilient Lands and Waters Strategy Director for the Nature Conservancy's Florida Chapter. In this role, Beth is responsible for overseeing implementation of the Chapter's terrestrial, freshwater and marine conservation efforts involving resource protection and land management. She also served as the Freshwater Program Manager where she led the Chapter's water resource conservation activities through policy initiatives and project implementation.



## Carolina Maran

*Chief Resiliency Officer  
South Florida Water Management  
District (SFWMD)*

Carolina Maran is a Water Resources Engineer with over 19 years of experience in: integrated water resources planning, management and regulation; climate change and resilience; hydrologic and hydraulics analysis/modeling, decision support systems and GIS; water conservation, water allocation and conflict resolution; urban and regional planning, and public policies. Maran has been responsible for several interdisciplinary projects and research, including collaboration with local, state and federal agencies and International Organizations.



## Chris Pettit

*Director of Agricultural Water Policy,  
Florida Department of Agriculture &  
Consumer Services*

Christopher Pettit is the Director of the Office of Agricultural Water Policy for the Department of Agriculture and Consumer Services. The Office is responsible for the development and implementation of best management practices on agricultural properties related to water quality and conservation, as well as additional policy and regulatory responsibilities. Chris previously served in the offices of counsel for both SFWMD and SWFWMD, as well as a Policy and Legislation Manager handling water and environmental issues for Palm Beach County.



## Mark Rains

*Chief Science Officer  
Florida Department of Environmental  
Protection (FDEP)*

Dr. Mark Rains was announced as chief science officer on March 30, 2021. Rains is the second state CSO in Florida's history. Dr. Rains currently serves as a professor and was past chair and director of the School of Geosciences at the University of South Florida. He earned his bachelor's degree in ecology, behavior and evolution from the University of California at San Diego, his master's degree in forest resources from the University of Washington and his Ph.D. in hydrologic sciences from the University of California at Davis. Dr. Rains is also a certified professional wetland scientist with years of experience in both the public and private sectors in Florida, Alaska and California.



## Jason von Meding

*Associate Professor, Florida Institute  
for Built Environment Resilience,  
University of Florida*

Jason von Meding's research centers the experiences, knowledges and strengths of affected communities and focuses on how injustice and inequality underpin the creation of risk in society, profoundly shaping disaster impacts. As part of his public facing science communication, he is co-host of the Disasters: Deconstructed Podcast and tweets @vonmeding.

## DETAILED AGENDA

Tuesday, February 22, 2022	
7:30am-8:30am	<b>Check-in for Preregistered Attendees</b> - Pickup Symposium Materials <i>Onsite registration not available</i>
	<b>Early Morning Refreshments</b> [Grand Ballroom Hallways]
8:30am-10:00am	<b>Opening Plenary Session</b> [Grand Ballroom]  <b>Introduction and Welcome</b> <b>Wendy Graham</b> , Director, University of Florida Water Institute <b>David Norton</b> , Vice President for Research, University of Florida
	<u><b>Keynote Speaker</b></u>  <b>Margaret Palmer</b> Distinguished University Professor, University of Maryland, College of Park and Director, National Socio-Environmental Synthesis Center (SESYNC) <b>“Restoration of Aquatic Ecosystems: the Search for a Process-based Understanding”</b>
10:00am-10:30am	<b>Morning Refreshment Break</b>

## NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Tuesday, February 22, 2022 (continued)						
Concurrent Sessions — 10:30am - 12:00pm						
	2365	3320	3315	2335	2355	Auditorium
	1	2	3	4	5	6
Session Title	Historical Perspectives on Climate Change	Analysis of Environmental Flows, and Relationship Between Flow and Ecosystem Vitality	Climate Change and Sea Level rise Impact on Water Resources	Stakeholder Engagement in Water Solutions	Water Policies and Programs for Water Quality	CCS1: The Role of Data Fusion and Artificial Intelligence in Transforming Coastal Hazard Detection and Monitoring
Moderator	Mark Brenner University of Florida	Jeffrey King ATM, A GeoSyntec Company	Young Gu Her University of Florida	Yilin Zhuang UF/IFAS	Karen Schlatter University of Florida	Zhe Jiang University of Florida
10:30am	Introduction	Introduction	Introduction	Introduction	Introduction	Introduction
10:35am	<b>Bruce MacFadden</b> University of Florida  Geological History of Florida's Water Over the Past 40 Million Years	<b>Andrew Sutherland</b> St. Johns River Water Management District  Environmental Flows and Levels: Determining Impact Thresholds and Allowable Change	<b>Jung-Hun Song</b> University of Florida  Performance of Climate Models in Reproducing the Hydrological Characteristics of Rainfall Events in Florida	<b>Mark Hoyer</b> Florida LAKEWATCH  A Limnological Yardstick Based on Phosphorus Limitation	<b>Robert Knight</b> Florida Springs Institute  A Prescription for Cost Effective Restoration of Florida's Springs	<b>Barbara Kirkpatrick</b> Gulf Coast Ocean Observing System (GCOOS)  Data Aggregation, Citizen Science, and AI - Oh My!
10:50am	<b>Jason Bellino</b> U.S. Geological Survey  Reference and Potential Evapotranspiration, Solar Radiation, and Albedo Over Florida, USA, 1985-2020	<b>Gabriel Herrick</b> Southwest Florida Water Management  Instream Habitat Quantification Using System for Environmental Flow Analysis	<b>Ziwen Yu</b> University of Florida  Stochastic Downscaling of Hourly Precipitation Series from Climate Change Projections	<b>Ernie Cox</b> Family Lands Remembered  Innovative Water Resources Projects Through Alternative Delivery Methods	<b>Christopher Pettit</b> Florida Department of Agriculture and Consumer Services  Agricultural Water Governance and Management	
11:05am	<b>Rick Copeland</b> AquiferWatch, Inc.  Regional, Passive Saline Encroachment in the Springs of Florida (1991 – 2020)	<b>Sean King</b> Suwannee River Water Management District  Development of Environmental Flow Analyses for Spring Systems in the Suwannee River Basin	<b>Young Gu Her</b> University of Florida  Impacts of Climate Change and Sea Level Rise on Southeast Florida's Groundwater Resources	<b>Steve Leitman</b> Apalachicola Bay Science Initiative, Florida State University  The Development of Performance Metrics for the ACF Watershed	<b>Del Bottcher</b> Soil and Water Engineering Technology, Inc.  Agricultural Best Management Practices Assessment Tool (BMPAT)	<b>Zhe Jiang</b> UF Department of Computer & Information Science & Engineering  Spatiotemporal Machine Learning for Hydrology: A Couple of Examples
11:20am	<b>Ying Ouyang</b> USDA Forest Service  Contribution of Streams to Groundwater Resource in the Mississippi Embayment Over the Past 100 Years	<b>Paul Thurman</b> Northwest Florida Water Management District  Minimum Flows Development in a Spring System Displaying Increased Flows	<b>Yogesh Khare</b> Everglades Foundation  Phosphorus Source Contributions Under Current and Future Climate in a Lake Okeechobee Subwatershed	<b>Shannon Monahan</b> Lake Cane Restoration Society  Lake-in-a-Box: How Citizens are Taking Responsibility for Domestic Water Quality	<b>M. Jennison Kipp</b> UF/IFAS Extension  Lightening the Water Footprint of Florida's New Residential Developments	<b>Ronald Fick</b> University of Florida  Fusing Remote Sensing Data with Spatiotemporal in Situ Samples for Red Tide Detection
11:35am	<b>Gerald Murphy and Thomas Ruppert</b> UF Program for Resource Efficient Communities  Navigating the Waters of Future Climate: Law & Policy	<b>Tracey Piccone</b> South Florida Water Management District  Everglades Stormwater Treatment Areas: Managing Flows to Achieve Performance Goals	<b>Peter Sheng</b> University of Florida  Adaptation of Coastal Communities and Natural Ecosystems in a Changing Climate	<b>Olesya Savchenko</b> University of Florida  Public Preferences for Management of Aquatic Invasive Species in Florida Waters	<b>Matthew DePaolis</b> University of Florida  A Restoration Aquaculture Approach to Water Quality	<b>Guangming Zheng</b> UMD, NOAA/NESDIS/ Center for Satellite Applications and Research  Hypoxia Forecast in the Chesapeake Bay using CNN and LSTM
11:50am	Discussion	Discussion	Discussion	Discussion	Discussion	Discussion
12:00pm-1:00pm	Lunch					

	Tuesday, February 22, 2022 (continued)					
	Concurrent Sessions — 1:00pm - 2:30pm					
	2365	3320	3315	2335	2355	Auditorium
	7	8	9	10	11	12
Session Title	FLWCA1: Water and Climate Resiliency Metrics: Long Term Data Trends	Water Availability and Allocation	Water Quality Drivers and Impacts	Education & Outreach Programs	The Floridan Aquifer Collaborative Engagement for Sustainability Project	CCS2: Unlocking Benthic-Pelagic Coupling Controls of Coastal Eutrophication
Moderator	Nicole Cortez WSP USA	Samuel Smidt University of Florida	Matt Whiles UF/IFAS	Yilin Zhuang UF/IFAS	Paloma Carton de Grammont University of Florida	Ashley Smyth & Betty Staugler UF/IFAS
1:00pm	Introduction	Introduction	Introduction	Introduction	Introduction	Introduction
1:05pm	<b>Karin Smith</b> South Florida Water Management District  Sea Level Rise and Saltwater Intrusion into Aquifers along the Southeast Florida Coast	<b>Samuel Smidt</b> University of Florida  Estimating Historical Irrigated Production of Major US Row Crops	<b>Andy Canion</b> St. Johns River Water Management District  Biosolids Applications and Nutrient Export in Tributary Watersheds of the Upper St. Johns River	<b>Yilin Zhuang</b> University of Florida  Challenges and Opportunities Facing the Florida Well Owner Network	<b>Nathan Reaver</b> University of Florida  Environmental and Economic Tradeoffs of Land Use and Management in the Floridan Aquifer Region	<b>Jim Fourqurean</b> Florida International University  Decomposition and Lability of Soil Organic Matter and Carbon Stocks across a Seagrass Landscape
1:20pm	<b>Yibing Zhu</b> South Florida Water Management District  Evapotranspiration Trend in South Florida	<b>Katie McCurley Pisarello</b> USDA  Long Term Water Yield Impacts from Pine Plantation Management Strategies in the Southeast	<b>Shourish Chakravarty</b> UF/IFAS SWFREC  Assessing Impacts of Deforestation on Water Quality in Agricultural Landscape in Indiana	<b>Tina McIntyre</b> UF/IFAS Extension Seminole County  Quantifying Fertilizer Impacts: A Case Study Investigating Years of Educational Workshops	<b>Rob De Rooij</b> University of Florida  Simulating Nitrate Transport to the Devil's Springs Complex Using Swat-Modflow and Modpath	
1:35pm	<b>Tibebe Dessalegne</b> South Florida Water Management District  Water Level Trends at South Florida Coastal Structures and Implications to Water Management	<b>Louis Mantini</b> Suwannee River Water Management District  Biological Metrics for Development of Minimum Flows and Levels in the Suwannee River Basin	<b>Kai Rains</b> University of South Florida  Forensic Mapping of the Stunning Transformation of Florida's Coastal Watersheds over 150+ Years	<b>Morgan Pinkerton</b> UF/IFAS  Pesticide CEUs as a Platform for Water Resource Education	<b>Wendy-Lin Bartels</b> University of Florida  The Room Where It Happens: Co-Producing Scenarios for the FACETS Project	<b>Chris Anastasiou</b> Southwest Florida Water Management District  The Hangover Effect: Coupling Seagrass Loss, Macroalgal Growth, & Water Quality in Charlotte Harbor
1:50pm	<b>Tara Root</b> U.S. Geological Survey  Identifying Hydrologic Changes and Trends using Automated Statistical Analyses	<b>Marco Pazmiño-Hernandez</b> USGS Caribbean-Florida Water Science Center  A New Method for Estimating Water Withdrawn from Private Domestic Wells in Florida	<b>Tracey Schaefer</b> University of Florida  Spatial Distribution of Sediment and Porewater Biogeochemical Characteristics in Lake Okeechobee	<b>Tiare Silvasy</b> UF/IFAS  Water Wednesday Program Educates Urban Residents About Actionable Water Conservation Practices	<b>Damian Adams</b> University of Florida  Payments for Forest Ecosystem Services: an Integrated Approach to Value Forest Water Benefits	<b>Annie Murphy</b> INSPIRE Environmental  Human-Facilitated Bivalve Populations Effects on Energy and Nitrogen Flow Through Marine Ecosystems
2:05pm	<b>Nenad Iricanin</b> South Florida Water Management District  Water Quality Trends in Lake Okeechobee: Climate Change or Other Influence?	<b>Dat Tran</b> Florida Legislature-EDR  Water Demand and Supply in Florida: Past, Current, and Future Trends	<b>Mary Szafraniec</b> Wood  Testing Performance Efficiency of Innovative Nutrient Reduction Technologies With In-Situ Mesocosms	<b>Carrie Stevenson</b> UF/IFAS Extension  Resilience to Future Flooding in the Gulf of Mexico	<b>Sadie Hundemer</b> University of Florida  The Water Science Communication Problem: Water Knowledge and Acceptance/Rejection of Water Science	<b>Ashley Smyth</b> University of Florida  The Role of Sponges in Modulating Nitrogen Cycling in the Florida Keys
2:20pm	Discussion	Discussion	Discussion	Discussion	Discussion	Discussion
2:30pm-3:00pm	Afternoon Refreshment Break					
3:00pm - 5:00pm	Poster Session with Student Poster Competition and Judging [Rion Ballroom]					



	Wednesday, February 23, 2022					
7:30am-8:30am	Early Morning Refreshments [Grand Ballroom Hallways]					
	Concurrent Sessions — 8:30am - 10:00am					
	2365	3320	3315	2335	2355	Auditorium
	13	14	15	16	17	18
Session Title	FLWCA2: Future Trends in Climate and Sea Level Rise	Harmful Algal Blooms	BMP Adoption in Agricultural and Urban Systems	Technology and decision tools for Water Management	Water and Wetlands Challenges in the Tropics	CCS3: Improving the Condition of Coastal Ecosystems through Collaboration: A Panel Discussion of Lessons from Decades of Estuarine Nutrient Assessment and Management
Moderator	Tom Frazer University of South Florida	Dail Laughinghouse UF/IFAS	Andrea Albertin UF/IFAS	Davie Kadyampakeni UF/IFAS	Catherine Tucker University of Florida	Elise Morrison University of Florida
8:30am	Introduction	Introduction	Introduction	Introduction	Introduction	Introduction
8:35am	Michelle Irizarry-Ortiz U.S. Geological Survey  Development of Projected (2050–2089) Precipitation Depth-Duration-Frequency Curves for South Florida	Katherine Hubbard Florida Fish and Wildlife Conservation Commission  Integrating Observations to Investigate Harmful Algal Bloom Dynamics in Florida's Marine Waters	Sawssan Boufous University of Florida  Florida Farmers' Multi-BMPs Adoption: A Survey Analysis	Bernardo Cardenas University of Florida  Irrigation Savings from Smart Irrigation Technologies and a Smartphone App on Turfgrass	Catherine Tucker University of Florida  Coffee Production, Water Use, and Watershed Protection in Honduras: A Community Case Study	Panel: Ed Sherwood Director, Tampa Bay Estuary Program  David Tomasko, Director, Sarasota Bay Estuary Program  Duane De Freese, Director, Indian River Lagoon Council
8:50am	Carolina Maran South Florida Water Management District  Regional Climate Projections – Future Rainfall Estimates for Florida	Christa Court University of Florida  Measuring the Impact of Florida Red Tide Events on Recreational Fishing Effort and Expenditures	Sanjay Shukla University of Florida  Integrating Stakeholder Relevant Economic, Risk, and Health Factors Improves Water Sustainability	Paul Gray Audubon Florida  GIS Tool for Distributed Water Management Projects in the Central Florida Water Initiative Region	Oswaldo Medina-Ramirez University of Florida  "We Are Exhausted": Navigating Interagency Coordination for Water Management in the Tropics	Matt Posner Director, Pensacola and Perdido Bays Estuary Program  Panel Focus: 1) the monitoring collaborations necessary to initially develop goals and document coastal habitat recovery in Florida estuaries; 2) contemporary triggers and conditions that have led to additional coastal eutrophication concerns for maintaining coastal habitats and natural resources within Florida's urbanizing coast; and 3) a vision for ecosystem monitoring collaborations and needs within Florida's estuaries of national significance that will help ascertain whether recovery and positive restoration trajectories are maintained into the future. Specific case studies from Florida's estuaries, such as Tampa Bay, Sarasota Bay, and the Indian River Lagoon, will be discussed.
9:05am	John Stamm U.S. Geological Survey  The Weather Research and Forecasting Model (WRF) Development for the United States and Florida	Elizabeth Staugler University of Florida  Key Elements of Red Tide Messaging and Modes of Communication Gleaned from Multiple Focus Groups	Md Azhar Uddin University of Florida  The US Consumers' Willingness to Pay for Best Management Practice Labels	Abbey Tyrna UF/IFAS Extension Sarasota County  Bay-Friendly Fertilizing Tools for Reclaimed Water Users	Percy Peralta Ramsar Regional Center for the Western Hemisphere  Effects of Water Availability on Coffee Production, Farmer Livelihoods and Adaptive Strategies	
9:20am	Gary Mitchum University of South Florida  Projections of Sea Level Rise and High Tide Flooding for the Southeast and for Florida in Particular	Forrest Lefler University of Florida  Cyanobacterial Diversity Within the Eutrophic Lake Okeechobee and the St. Lucie Estuary, Florida	Stacie Greco Alachua County  Nitrogen Load Reduction from Alachua County's Fertilizer Ordinance and Behavior Change Campaign	Hossein Ghozeisi CREC - UF/IFAS  Water Use in Young Citrus Trees on Metalized UV Reflective Mulch Compared to Bare Ground	Conrado De Leon Ramsar Regional Center for the Western Hemisphere  Evapotranspiration and Water Demand Analysis for Coffee Farms in the Upper Santa Maria River	
9:35am	Jayantha Obeysekera Florida International University  Development of Future Climate Scenarios for Regional Hydrologic Simulations in South Florida	Yi Guo University of Florida  Exploring the Relationship between Cyanobacterial Toxins and Human Diseases in Florida	Laura Warner University of Florida  Human Dimensions of Water Conservation: What Drives Residents to Eliminate Irrigation in Landscapes?	Stephen Curless CCI Engineering Services  Microwatershed Analysis and Management: Florida Residential Lake Case Studies	David Kaplan University of Florida  Drivers of Water Balance Variability in the "Ciénega De Las Macanas" Wetland, Panama	
9:50am	Discussion	Discussion	Discussion	Discussion	Discussion	Discussion



10:00 am-10:30am	Morning Refreshment Break					
	Wednesday, February 23, 2022 (continued)					
	Concurrent Sessions — 10:30am - 12:00pm					
	2365	3320	3315	2335	2355	Auditorium
	19	20	21	22	23	24
Session Title	FLWCA3: Assessing Flood and Sea Level Rise Vulnerability and Best Adaptation Solutions	Lake Okeechobee Water Quality Issues	Stormwater and Wastewater treatment	Smart-irrigation and Sensor-based Irrigation for Water Savings	Tribal Communities and Water Issues	CCS4: The Frontier of Earth Systems Modeling for Hazard Prediction & Management
Moderator	Drew Bartlett South Florida Water Management District	Nancy Denslow University of Florida	Andrea Albertin UF/IFAS	Davie Kadyampakeni UF/IFAS	Paloma Carton de Grammont University of Florida	Olabarrieta Maitane & David Kaplan University of Florida
10:30am	Introduction	Introduction	Introduction	Introduction	<div><div>This session contains three 30 minute separate presentations that begin immediately.</div><div>Steven Chischilly &amp; Abhishek RoyChowdhury Navajo Technical University</div><div>Water Quality on the Navajo Nation and How it has Contributed to the Spread of Covid-19 (30 mins)</div></div>	Introduction
10:35am	Alberto Pisani Miami-Dade County  Update of the Stormwater Master Plan of Miami-Dade County for Current and Future Conditions	Joseph Gilio Limnological Science for Lake Okeechobee  Lake Okechobee’s Trophic “Temperature”	Christopher Keller Wetland Solutions, Inc  Mcintosh Preserve Wetlands Project – Integrated Water Resources Management for Multiple Benefits	Vivek Sharma University of Florida  Florida Agricultural Soil Moisture Sensor Network		Ben Kirtman University of Miami  Global High-Resolution Earth System Models Representation of Regional Climate Change and Variability
10:50am	Christine Carlson South Florida Water Management District  Documenting Flood Occurrence and Exposure	Sangdon So Applied Technology and Management  Tidal and Subtidal Nutrient Flux Forced by Lake Okeechobee Drawdown	Scott Knight Wetland Solutions, Inc.  Quantifying the Ancillary Benefits of Constructed Treatment Wetlands	Haimanote Bayabil University of Florida  Potentials of Variable Rate Irrigation for Vegetable Production in South Florida		Xingyuan Chen Pacific Northwest National Laboratory  Integrated Modeling of Carbon and Nitrogen Cycling in River Corridors and Watersheds
11:05am	Tom Frick St. Johns River Water Management District  Resilience – A Water Management District Perspective	Viviana Mazzei U.S. Geological Survey  Effects of Experimental Nutrient Enrichment on Phytoplankton Assemblage Structure and Cyanotoxins	Jinsheng Huang University of Florida  Ball Milled Biochar Effectively Removes Sulfamethoxazole and Sulfapyridine Antibiotics From Water and Wastewater	Sandra Guzman University of Florida  Tools to Address Current Irrigation Management Challenges in Citrus Production		Maitane Olabarrieta University of Florida  John Warner US Geological Survey  Advancements of a Coupled Ocean Nearshore Forecasting System
11:20am	Kevin Hart South Broward Drainage District  South Broward Drainage District Green Infrastructure Projects and Climate Change Impacts	Miles Medina University of Florida  Nitrogen Enriched Discharges from a Vast Watershed Intensify Red Tide	Tricia Kyzar Wildwood Consulting Inc  Assess Vulnerability of OSTDS to SLR and Storm Surge to Develop Adaptation Plans	Lincoln Zotarelli University of Florida  Rethinking Seepage Irrigation Management for Horticultural Production in Florida	Stacy Myers Heritage and Environment Resources Office, Seminole Tribe of Florida & Joe Frank Resident of Big Cypress Reservation, Seminole Tribe of Florida  Water Issues Affecting Big Cypress Reservation and the Seminole Tribe of Florida (30 mins)	
11:35am	Akintunde Owosina South Florida Water Management District  Assessing and Mitigating the Impacts of Sea Level Rise on Flooding in South Florida	Mohsen Tootoonchi University of Florida  Decadal Changes in Nitrogen and Phosphorus Species along the Lake Worth Lagoon in South Florida	Lisa Krinsky UF/IFAS  Informing Septic to Sewer Conversion Outreach in Florida through Community-Based Social Marketing	Davie Kadyampakeni University of Florida  Implementing Full and Deficit Irrigation Practices using Soil Moisture and Sapflow Sensors for Water Savings in Citrus Production Systems	Houston R. Cypress Love the Everglades Movement & Amelia Winger-Bearskin UF Digital Worlds Institute  Water Protection from Artists and Activists Perspective: a Conversation with Houston Cypress and Amelia Winger-Bearskin (30 mins)	
11:50am	Discussion	Discussion	Discussion	Discussion		Discussion
12:00pm-1:00pm	Lunch					

	Wednesday, February 23, 2022 (continued)					
	Concurrent Sessions — 1:00pm - 2:30pm					
	2365	3320	3315	2335	2355	Auditorium
	25	26	27	28	29	30
Session Title	<b>FLWCA4: Using Rainfall and Wet Season Conditions to Analyze Compound Flooding Risks</b>	<b>Watershed Provisioning in Estuarine Food Webs</b>	<b>Urban Water Quality and Quantity</b>	<b>Artificial Intelligence in Water Systems</b>	<b>Navigating a Professional Job in Water</b>	<b>CCS5: Accelerating the Infusion of Science in Coastal Policy - A Panel</b>
Moderator	<b>Carolina Maran</b> South Florida Water Management District	<b>Mike Allen</b> UF/IFAS	<b>Eban Bean</b> UF/IFAS	<b>Rafael Muñoz-Carpena</b> UF/IFAS	<b>Kati Migliaccio</b> UF/IFAS	<b>Tom Ankersen</b> University of Florida
1:00pm	Introduction	Introduction	Introduction	Introduction	Introduction	Introduction
1:05pm	<b>Al Ali</b> South Florida Water Management District  Regional Trend Analysis for Rainfall of South Florida	<b>Eric Nagid</b> FL Fish & Wildlife Conservation Com  Evaluating Changes and Predicting Impacts to Freshwater Fish Communities in Florida	<b>Eban Bean</b> UF/IFAS  Moving Florida Forward on Low Impact Development + Green Stormwater Infrastructure	<b>Ray Huffaker</b> University of Florida  AI Modeling of Complex Real-World Ecosystem Dynamics	<b>Panel Focus:</b>  The goal of this session is to introduce students to different professional water careers, to provide them information on the skills and experience employers prefer, and to give them the opportunity to network with leading water professionals. The session will consist of a panel discussion of water professionals and follow with a networking period between students and water professionals.	<b>Panel:</b> <b>Annie Brett</b> University of Florida Levin College of Law  <b>Rachel Silverstein</b> Miami Waterkeeper
1:20pm	<b>Francisco Peña Guerra</b> Florida International University  Compounding Effects of Surface-Subsurface Water Interactions and Sea Level Rise in North Miami	<b>Jordan Miller</b> Southwest Florida Water Management District  Establishment and Use of Nature Coast Springs Systems by Common Snook ( <i>Centropomus undecimalis</i> )	<b>Cristian Cardenas-Lailhacar</b> University of Florida  Energy Efficiency Assessments of Wastewater Treatment Plants in Florida	<b>Berry Wen</b> University of Florida  Using Explainable AI Models for Precipitation Retrievals to Bridge NASA and NOAA Observation Systems		<b>Adam Blalock</b> Florida Department of Environmental Protection  <b>Christine Angelini</b> University of Florida College of Engineering  <b>Panel Focus:</b> Driven by rapid developments in sensor design and deployment, robotics, big data acquisition, storage and analytics, artificial intelligence and Earth Systems modeling, the pace of coastal science has accelerated. At the same time, the scale and gravity of the hazards confronting coastal waters, shorelines and communities has also been accelerating. Many of these coastal hazards are systemic - warmer water, rising seas, tropicalization - the result of the changing climate. Others are more localized – legacy pollution, altered hydrologic regimes, ecosystem disturbance. Synergies between these global and local impacts, coupled with multidecadal time horizons, present a profound policymaking challenge.
1:35pm	<b>Vasu Misra</b> Florida State University  Monitoring the Wet Season over the Five Water Management Districts of Florida	<b>Kym Rouse Holzwart</b> Southwest Florida Water Management District  Use of Snook Thermal Refuge Criteria for Minimum Flows Development in Coastal Springs	<b>Mary Lusk</b> University of Florida  Beneficial Reuse of Wastewater: An Update on Trends in Florida and Interdisciplinary Research Opportunities	<b>Alina Zare</b> University of Florida  Underwater Intensity-to-Height Domain Translation for Synthetic Aperture Sonar		
1:50pm	<b>Angela Schedel</b> Taylor Engineering  Combined Probability of Coastal and Riverine Flooding	<b>Charles Martin</b> University of Florida  Snook Use of Thermal Refugia along the Nature Coast: Implications for Minimum Flows and Levels	<b>Kathleen Sealey</b> University of Miami  Florida Keys Residential Canal Development Impacts on Nearshore Water Quality and Benthic Diversity	<b>Robert Currier</b> Texas A&M University  STAMPing out HABs: Materials and Methods for Training an AI Classifier for HAB Detection		
2:05pm	<b>Kevin Reed</b> Stony Brook University  Improving Modeling of Earth System and Intersectoral Dynamics at Local Scales: Hurricane Storylines	<b>Philip Stevens</b> Florida Fish and Wildlife Conservation Commission  Identifying Freshwater Inflow Needs for Estuarine Fishes: A Statewide Perspective	<b>Kristen Sealey</b> Gainesville Regional Utilities  GRU Groundwater Recharge Wetlands – Past, Present and Future	<b>Nikolay Bliznyuk</b> University of Florida  Spatio-Temporal Forecasting of Urban Household-Level Water Demand with Statistical Machine Learning		
2:20pm	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>	<b>Discussion</b>
2:30pm-3:00pm	<b>Afternoon Refreshment Break</b>					



# 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 22. We ask that you are present at the Closing Plenary Session on Wednesday, February 23 at 3:00pm to accept your award.

## Poster Room Schedule:

<b>Poster Set Up:</b>	<b>Monday, February 21, 1:30pm–5:00pm</b> <b>Tuesday, February 22, 7:30am–1:30pm</b>
<b>Formal Poster Session:</b>	<b>Tuesday, February 22, 3:00pm–5:00pm</b>
<b>3:00pm – 4:00pm</b>	<b>Poster Session One</b>
<b>4:00pm – 5:00pm</b>	<b>Poster Session Two</b>
<b>Poster Removal</b>	<b>Wednesday, February 23, before 3:00pm</b>

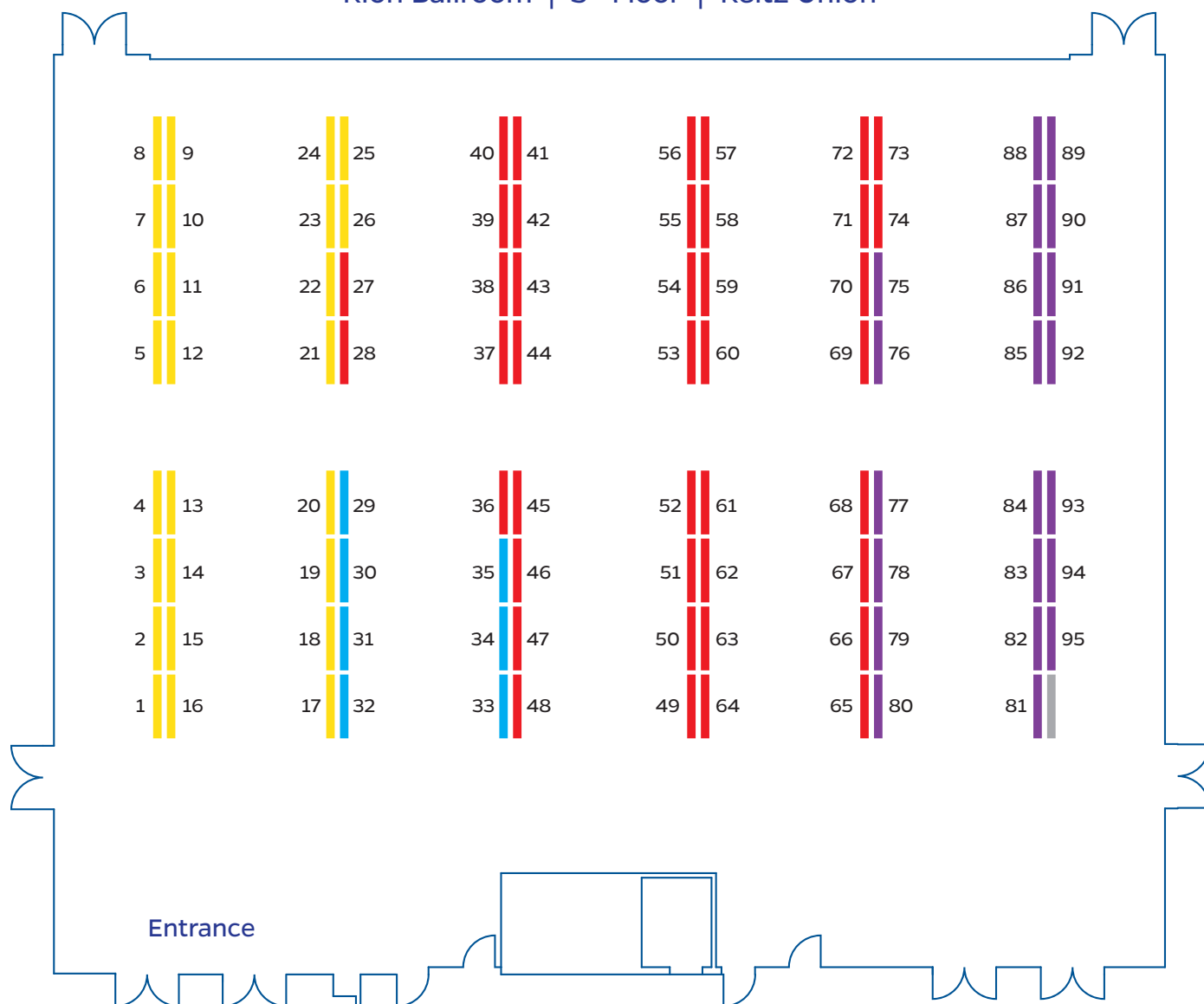
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\*As a courtesy to the presenter before/after you, please only stand at your poster during your assigned session. Posters are divided into two sessions. Consult the poster directory to confirm your session assignment.

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

- Climate Change and Sea Level Rise Impacts on Ecosystems and Communities
- Water Quality Drivers and Impacts on Public Wildlife and Ecosystem Health
- Water Governance and Environmental Justice
- Water Availability Valuation Allocation and Reuse

# POSTER DIRECTORY

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

## Climate Change and Sea Level Rise Impacts on Ecosystems and Communities

Poster #	First Name	Last Name	Organization	Abstract Title	Poster Session
1	Anna	Beard	Whitney Lab, University of Florida	Evaluation of Climate Induced Changes to Porewater Biogeochemistry in Mangrove/Saltmarsh Ecotone	Session One
5	Megan	Black	University of Florida	Watershed Topography as a Predictor of Stream Chemistry Across Non-Glacial Streams in Greenland	Session One
7	Quincy	Faber	University of Florida	Metagenomic Analysis of Algal Communities Inhabiting the Near Surface Aquifer of an Alaskan Glacier	Session One
9	Hallie	Fischman	University of Florida	Invasive Hogs Alter Salt Marsh Functioning, Ecosystem Service Provisioning, and Resilience	Session One
13	Madison	Flint	University of Florida	Surface-Groundwater Mixing Stimulates Nitrous Oxide Production in Carbonate Aquatic Systems	Session One
11	Bethany	Gaffey	FCFWRU / UF SFFGS	Cold Blood in Warming Waters: Conserving Gulf Sturgeon Using Precipitation and Groundwater Models	Session One
15	Zoey	Hendrickson	University of Florida	Invasive Species Pathways: Using the NAS Database to Identify Case Studies for Gap Analysis	Session One
3	Walker	Marechal	FAMU	Investigation of Mechanisms for Methylmercury Bioremediation by Indigenous Bacterial Strain in Comparison with Non-indigenous Metal Resistant Strain of Bacillus Through Proteomics Studies	Session One
18	Collin	Ortals	University of Florida	Crab Consumers Transform Vegetation-Sediment-Flow-Morphology Feedbacks in Southeastern US Salt Marsh	Session One
21	Daniele	Pinton	University of Florida	Morphodynamics of Oyster Reefs in Tidal Flats under Various Sea-Level Rise and Wave Scenarios	Session One
20	Edwin	Rajeev	University of Florida	Impact of Sea Level Rise on Flooding and Wave Load: The Case of the Glass Window Bridge, Bahamas	Session One
23	Justin	Tagle	Florida Atlantic University	Flood Protection Level of Service for Miami-Dade County Current and Future Sea Level Rise Conditions	Session One
25	Songzi	Wu	University of Florida	Interpreting the Trends of Extreme Precipitation in Florida through Pressure Change	Session One
16	Scott	Alford	UF/IFAS Nature Coast Biological Station	Watershed Modification Effects on Coastal Ecosystems: A Synthesis from Key Gulf of Mexico Estuaries	Session Two
2	Prakhin	Assavapanuvat	University of Florida	Organic Carbon Burial in Mangrove-Salt Marsh Ecotones of Apalachicola Bay: The Role of Reactive Iron	Session Two
4	Alexandra	Bijak	University of Florida	Seagrass Species Identity and Historical Cover Influence Sediment Organic Carbon Stocks	Session Two
6	Megan	Donovan	University of Florida	Social and Agricultural Vulnerability to Climate Change Hazards in the Southern Region	Session Two
8	Brady	Evans	University of Florida	Hydrogeology of Local Water Balances Impacted by a Dynamic Saltwater Interface	Session Two
12	Maria Fernanda	Gastelu-Barcena	University of Florida	Transverse Structure of Tidal and Exchange Flows in a Magellan Glacial Fjord	Session Two
10	Fikadu	Getachew	University of Florida	Trends and Variability of Agricultural Drought under Climate Change in Ethiopia	Session Two
14	Megan	Kramer	University of South Florida	Evaluation of Hydrodynamic Effects of Waterway Restoration on an Estuarine Ecosystem	Session Two
17	Madison	Mullen	Florida Gulf Coast University	Surface and Subsurface Hydrology and Flood Mitigation in Estero River Headwaters, Southwest Florida	Session Two

## Climate Change and Sea Level Rise Impacts on Ecosystems and Communities *(continued)*

Poster #	First Name	Last Name	Organization	Abstract Title	Poster Session
19	Jamila	Roth	University of Florida	Does More Variety Mean Higher Stability? Exploring How Seagrass Species Diversity Impacts Resilience	Session Two
22	Satbyeol Joy	Shin	University of Florida	Climate Change Impacts on Streamflow and Nutrient Loading in the Northern Lake Okeechobee Basin	Session Two
24	Emily	Watts	University of Florida	Oxygenation of Long Term Anoxic By Fjord, Sweden: Implications for Organic Carbon Sources and Decay	Session Two
26	Chi	Zhang	University of Florida	How to Develop a Multi-facet QC Procedure for a Ground-based Weather Monitoring Network	Session Two

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

Poster #	First Name	Last Name	Organization	Abstract Title	Poster Session
27	Maximiliano	Barbosa	University of Florida	Drivers of Protistan Diversity in the Oligotrophic Lake Tohopekaliga	Session One
39	Jenna	Brooks	University of South Florida	Settling Behaviors of Stormwater Microplastics	Session One
37	Trista	Brophy	UF School of Natural Resources	Relating Land Cover Change to Flood Runoff Distribution Using Nasa Earth Observations in Kansas	Session One
43	Joe	Carter	University of Florida	The Effect of Training Methodology on Machine Learning Models for Estimating Nutrient Concentrations	Session One
41	Jade	Chery	Florida A & M University	Responses of Microbial Communities of Heavy Metal Contaminations in Lake Talquin	Session One
45	Daniela	Daniele	Florida International University	Urban Rivers as Social-Ecological Systems: An Examination of History & Ecology in the Miami River	Session One
47	Antonio	Diaz	University of Florida	The “Bathysdrone” for Underwater Survey and Mapping	Session One
49	Taylor	Dluzniewski	Florida Fish and Wildlife Conservation Commission	Investigating Drivers of Seasonal Shifts in Fish Habitat Use in The Homosassa River System	Session One
51	Wenchong	He	University of Florida	Challenges and Opportunities for AI in Geodomains: Case Studies of Geoi in Hydrological Application	Session One
53	Samantha	Howley	University of Florida	Tracing Frequency and Magnitude of Flow Reversals in Florida Springs	Session One
73	Navdeep	Kaur	University of Florida	Assessment of Hemp Variety and Measuring Leaching Losses in Response to Different Nitrogen Rates	Session One
55	Deirdre	Love	University of Florida	Examining the Practice of Pre-Washing Pyrethroid Treated Nets to Mitigate Toxicity in Invertebrates	Session One
57	Leslie	Munroe	University of Florida IFAS Extension	Highlighting Florida Natives in a Commercial Landscape	Session One
59	Gregory	Owen	Alachua County	Evaluating Restoration Activities to Better Prioritize a Hierarchy of Needs in Florida’s Springs	Session One
61	Patrick	Saldaña	University of Florida	Macroalgae Decay Rates and Diversity Effects on Sediment Biogeochemistry in a Florida Estuary	Session One
63	Adam	Siders	University of Florida	Assessing the Effects of Florida Manatees and Humans on Nutrient Uptake Rates in Kings Bay, FL	Session One
65	Leanne	Stepchinski	University of South Florida	Influence of Hydrologic Connectivity on the Natural Flow Regime of Archetypal Wetland Complexes	Session One



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

Poster #	First Name	Last Name	Organization	Abstract Title	Poster Session
67	Gretchen	Stokes	University of Florida	Assessing Anthropogenic Stressors to Global Freshwater Habitats and Inland Fisheries	Session One
69	Osama	Tarabih	University of South Florida Tampa	Effects of Lake Okeechobee Operation Schemes on Phosphorous Exports	Session One
71	Henry	Tingle	University of Florida	The “Sipper” Drone-based Water Sampling System	Session One
28	Piyush	Agade	University of Florida	Gatorbyte – A Low-Cost Mobile Real-Time Water Resource Monitoring Platform	Session Two
60	Mandy	Baily	University of Florida	Youth Education and Skill Development for a Generational Impact on Water Quality of the Indian River	Session Two
36	Ronell	Bridgemohan	Watershed Management Laboratory, UF WFREC	Microbial Risk Assessment to Determine the Level & Sources of Fecal in NW Florida Urban Streams	Session Two
40	Juma	Bukomba	University of Florida	Nitrogen Dynamics & its Fate in Inorganic Forms in Sandy Soils Under a Cover Crop System in Florida	Session Two
38	Alvaro	Carmona-Cabrero	University of Florida	Improving the Prediction of Sediment Particle Size for Engineering Vegetative Filter Strips	Session Two
42	Nicholas	Chin	UF Watershed Ecology Lab	Quantifying the Effects of National Water Model Prediction Error on Nearshore Hydrodynamic Forecasts	Session Two
46	Alexandra	Feldman	University of Florida	Impact of Hydrologic Regime on Soil Organic Matter Accumulation in a Stormwater Treatment Wetland	Session Two
48	Audrey	Goeckner	University of Florida	Water Column Saturation Profiles of N <sub>2</sub> , CO <sub>2</sub> , and CH <sub>4</sub> in Natural and Constructed Subtropical Ponds	Session Two
44	Sergio	Gonzalez	University of Florida	Wetland Pulse Amplitude Better Predicts Aquatic Species Richness than Static Wetland Size	Session Two
50	Casey	Harris	University of Florida	Long-Term Surface Water Quality Trends Relevant to Drinking Water Supply in Tampa, Florida	Session Two
52	Andrew	James	Soil and Water Engineering Technology, Inc.	Watershed Assessment Model Used to Evaluate Restoration Options for the Bob Jones Preserve	Session Two
54	Dogil	Lee	University of Florida	Modeling the Impacts of Agricultural Management Practices on Groundwater in the Santa Fe River Basin	Session Two
58	Brooke	Moffis	UF/IFAS	Multispecies Lawns: An Alternative Strategy for Lawn Resiliency and Ecosystem Functions	Session Two
56	Amanda	Muni-Morgan	University of Florida	Karenia Brevis Utilization of Dissolved Organic Nitrogen in Wastewater and Stormwater Pond Effluent	Session Two
62	John	Roberts	UF/IFAS Orange County Extension	Soil Denitrification Dynamics in Urban Impacted Riparian Zones throughout Tampa, FL	Session Two
74	Ayush	Sharma	University of Florida	Sulfur as Leaching Prone Nutrient	Session Two
64	Yuseung	Shin	University of Florida	Abiotic Causality of Metabolic Processes in Rivers	Session Two
66	Cody	Stewart	University of South Florida	Stormwater Baffle Box Performance: A Case Study of Baffle Boxes in the City of Tampa	Session Two
68	Praveen	Subedi	University of Florida	Enzymatic Hydrolysis of Dissolved Organic Phosphorus in the Everglades STA Source Waters	Session Two
70	Emily	Taylor	University of Florida	Alterations of Dissolved Organic Material Composition and Its Influence on Ecosystem Respiration	Session Two
72	Rob	Taylor	UF Watershed Ecology Lab	Measuring Submerged Aquatic Vegetation Motion Using Digital Video Analysis	Session Two



## Water Governance and Environmental Justice

Poster #	First Name	Last Name	Organization	Abstract Title	Poster Session
29	Farah	Aryan	University of Florida	The Effects of Colonization on Water Distribution in Indigenous Lands: Case Studies in the Navajo Nation and Palestine	Session One
31	L. Donald	Duke	Florida Gulf Coast University	Wind, Water, and Public Safety: Socioeconomic Disparities in Hurricane Safety, South Florida Housing	Session One
33	Tania	Romero Bautista	Florida International University	Systematic Review and Stakeholder Roadmap for Freshwater Policies in the Peruvian Amazon	Session One
35	Jobel	Villafane-Pagan	University of Puerto Rico - Mayaguez	The Mother Map: Río Grande de Manatí Watershed and the Human Impact on Natural Resources	Session One
30	Natalie	Cooper	University of Florida	A Comparison of Relationships with Nature among Water Stakeholders in North Florida	Session Two
32	Fei	He	University of Florida	Profitability of Alternative Nutrient and Irrigation Management Systems in Corn, Peanut, and Carrot	Session Two
34	Abby	Vidmar	University of South Florida	Water, Sanitation, and Health in Urban Disadvantaged Unincorporated Communities	Session Two

## Water Availability Valuation Allocation and Reuse

Poster #	First Name	Last Name	Organization	Abstract Title	Poster Session
75	Dylan	Barr	University of Florida	Researching the Efficacy of Reclaimed Water BMPS for Nutrient Load Reductions in Residential Areas	Session One
77	Tyelyn	Brigino	University of South Florida	Influence of Groundwater on Streamflow in Salmon-Bearing Streams	Session One
83	Katie	Glodzik	University of Florida	Scenario Planning Tool for Forest Water Yield in North Florida	Session One
81	Caleb	Gravesen	University of Florida	Wastewater Treatment Residuals and Native Per- and Polyfluoroalkyl Substances	Session One
85	Yi	Han	University of Florida	Machine Learning-Based Probabilistic Ensemble for Urban Water Demand Forecasting	Session One
79	Esther	Lee	University of Florida	Understanding the Hydrologic Connectivity between Upland Forests and Wetlands	Session One
87	Jia-Yi	Ling	University of Florida	Streamflow Forecasting in West-Central Florida Using Climate Drivers	Session One
91	Hanyu	Qian	University of Florida	Improved Sensor-Analytical Point Solutions (Snaps) For E. Coli in Irrigation Water by Integration of Statistical Machine Learning	Session One
89	Amir	Rezazadeh	University of Florida	Pongamia: An Environmentally Friendly Alternative Crop for Citrus Growers	Session One
93	Patricia	Spellman	University of South Florida	Quantifying Vadose Storage and Release in a Young, Uplifted Karst Aquifer Using Spectral Analysis	Session One
95	Sarah	Strohming	University of Florida	A Household Cost-Benefit Analysis of Impacts from Fog Water Access in Southwest Morocco	Session One
76	Lorna	Bravo	Broward County Ext. Ed. Urban Horticulture and Natural Resources	Development of Advanced Water Extension Programs for MGVs	Session Two
78	Judyson	de Matos Oliveira	University of Florida	Least Limiting Water Range in Irrigated Sandy Soils of Northeast Florida	Session Two

### Water Availability Valuation Allocation and Reuse (continued)

Poster #	First Name	Last Name	Organization	Abstract Title	Poster Session
86	Alexandra	Dixon	University of Florida	Historical Use of Irrigation in Response to Regional Drought	Session Two
80	Ronald	Fox	University of Florida	Assessment of Soil Amendment Types and Rates for Reduced Turfgrass Irrigation	Session Two
84	Edgar	Guerron Orejuela	University of South Florida	Groundwater Risk and Resilience in Social-Hydrological Systems	Session Two
82	Samuel	Kwakye	University of Florida	Assessing Citrus Water Use with Lysimetry Using Evapotranspiration-Based Irrigation in Florida	Session Two
88	Eduart	Murcia Botache	University of Florida	Improving Water-Use Efficiency of Irrigation Systems with ML, and Soil Moisture and Weather Data	Session Two
90	Renee	Price	Atkins North America/UF	Turning Down the Pumps: Variable Hydrologic Response to Passive Restoration among Wetland Types	Session Two
92	Sharmin	Siddiqui	University of Florida	Effects of Wildfires on Annual Streamflow Response in the Southeastern Amazon	Session Two
94	Eric	Whiteside	The University of Florida and Applied Technology & Management	Tidally-forced Index-velocity Relationships in the Waccasassa River	Session Two

## NOTES

[illegible]



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UF Department of Geological Sciences • St. Johns River Water Management District  
UF/IFAS School of Natural Resources & Environment • UF ABE Center for Remote Sensing