



Sustainable Water Resources

Complex Challenges, Integrated Solutions

Trends, Cycles and Extreme Events

J. Wayne Reitz Union, University of Florida Campus
February 16-17, 2016, Gainesville, FL

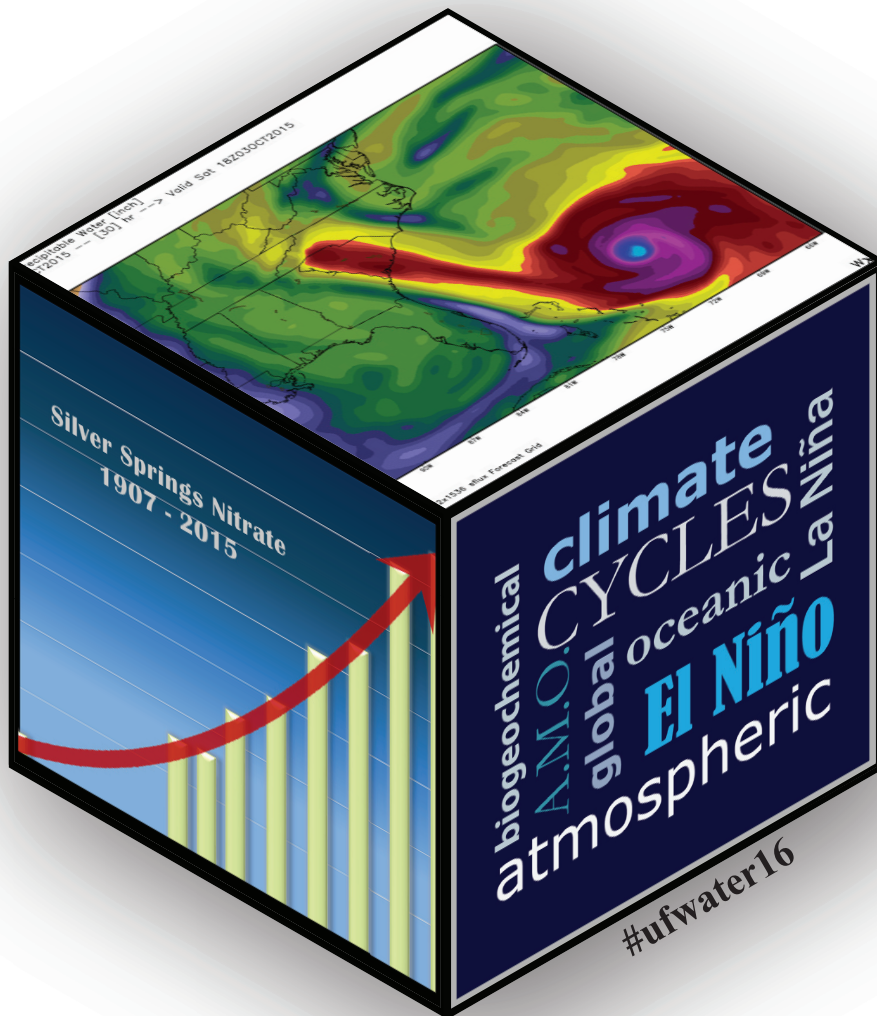


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Acknowledgements

We gratefully acknowledge the contribution of the following people who helped make this Symposium a success.

Symposium Program Committee

- Drew Bartlett, Florida Department of Environmental Protection
- Rich Budell, Florida Department of Agriculture and Consumer Services
- Eric Draper, Audubon Florida
- Jim Fletcher, IFAS Extension, University of Florida
- Tom Frazer, School of Natural Resources and Environment, University of Florida
- Susan Gray, South Florida Water Management District
- Karl Havens, Florida Sea Grant, University of Florida
- Richard Hutton, Gainesville Regional Utilities
- Tracy Irani, Family Youth and Community Sciences Department, University of Florida
- Chuck Jacoby, St. Johns River Water Management District
- Jim Jones, Agricultural and Biological Engineering, University of Florida
- Jon Martin, Department of Geological Sciences, University of Florida

Water Institute Staff

- Mary Garvin, Administrative Assistant, Water Institute, University of Florida
- Carol Lippincott, Research Coordinator, Water Institute, University of Florida
- Lisette Staal, Research Coordinator, Water Institute, University of Florida

Volunteers

Volunteers include graduate and undergraduate students from UF/IFAS College of Agricultural Sciences, the College of Liberal Arts and Sciences, the School of Natural Resources and Environment, the Engineering School of Sustainable Infrastructure & Environment, the Masters Sustainable Development Practice program, and County Agents from UF/IFAS Extension.

Cover Images

LEFT SIDE OF CUBE - TRENDS:

Annual average nitrate-nitrite nitrogen (NO_x) in Silver Springs main vent for period-of-record (1907-2015). Data sources: FL Department of Environmental Protection, St. Johns River Water Management District, Wetland Solutions Inc.

RIGHT SIDE OF CUBE - CYCLES:

Terminology of global climatological and meteorological cycles.

TOP OF CUBE - EXTREMES:

“Fire hose” or “atmospheric river” extreme rainfall event on October 3, 2015 in South Carolina caused by Hurricane Joaquin. Image source: WxBell

Welcome

from the University of Florida

President W. Kent Fuchs



Dear faculty, students and special guests,

On behalf of the University of Florida, it is my great pleasure to welcome you to the 5th UF Water Institute Symposium.

This symposium has a valued tradition of bringing together scientists, industry representatives and public policy makers to discuss critical current issues surrounding water. That tradition is strengthened this year, with this conference's very timely focus on trends, cycles and extreme events. This focus captures a broad array of issues including, for example, sea level rise, changes in rainfall patterns due to climate change, and emerging diseases and contaminants in Florida's waters.

The Water Institute celebrates its tenth anniversary this year. Since it was founded, the institute has done much to further science and education surrounding the broad array of water issues, from the conservation of water resources to exploration of land-water connections to water and society. I am proud of those contributions and look forward to the Water Institute continuing to serve as a leading resource on water in Florida and around the globe far into the future.

I thank you for joining us, and I wish you the best for a thought-provoking and inspiring symposium – one with a positive and lasting influence on an issue that is critical to all of us.

Sincerely,

W. Kent Fuchs

Senior Vice President for Agriculture and Natural Resources Jack Payne



Dear symposium guests,

We are pleased that you chose to be here today. This year's UF Water Institute Symposium occurs at a pivotal time for Florida water, and as UF/IFAS amplifies its efforts to ensure a clean and sufficient water supply for natural resources, homes, farms, and industry. We are proud that the UF Water Institute has been and will continue to be a major player in advancing our ability to solve big water dilemmas.

The UF Water Institute is helping UF/IFAS Extension's efforts to implement its decade-long plan aimed at educating the public to use less water, to grow crops or turf without harming water quality, and to improve Floridians' knowledge about a vital resource. We look forward to continuing our productive partnership with the Water Institute as our three new regional specialized Extension agents in water resources begin their work addressing key regional water issues, and as many of our 40 new faculty work to make sure water science doesn't sit on the shelf.

Thank you for attending and contributing to the stewardship of Florida's most precious natural resource.

Sincerely,

Jack Payne
Senior Vice President for Agriculture and Natural Resources
UF Institute of Food and Agricultural Sciences

Acting Director UF Water Institute Tom Frazer



Welcome to the 5th UF Water Institute Symposium!

For more than a decade now, the UF Water Institute has distinguished itself as a leader in innovative interdisciplinary research, education, and outreach to the public. We have led the way in producing scientific research on emerging water issues and in educating the public on what they can do to make a constructive difference.

This year's symposium will feature presentations from talented scientists and water-resource professionals at the forefront of critical water issues: session topics range from springs protection to emerging pathogens to projections of sea-level rise. We are honored to host influential thinkers who hail from a range of professional backgrounds - from hydrologists and ecologists to journalists, policy makers and water-resource managers – an impressive group.

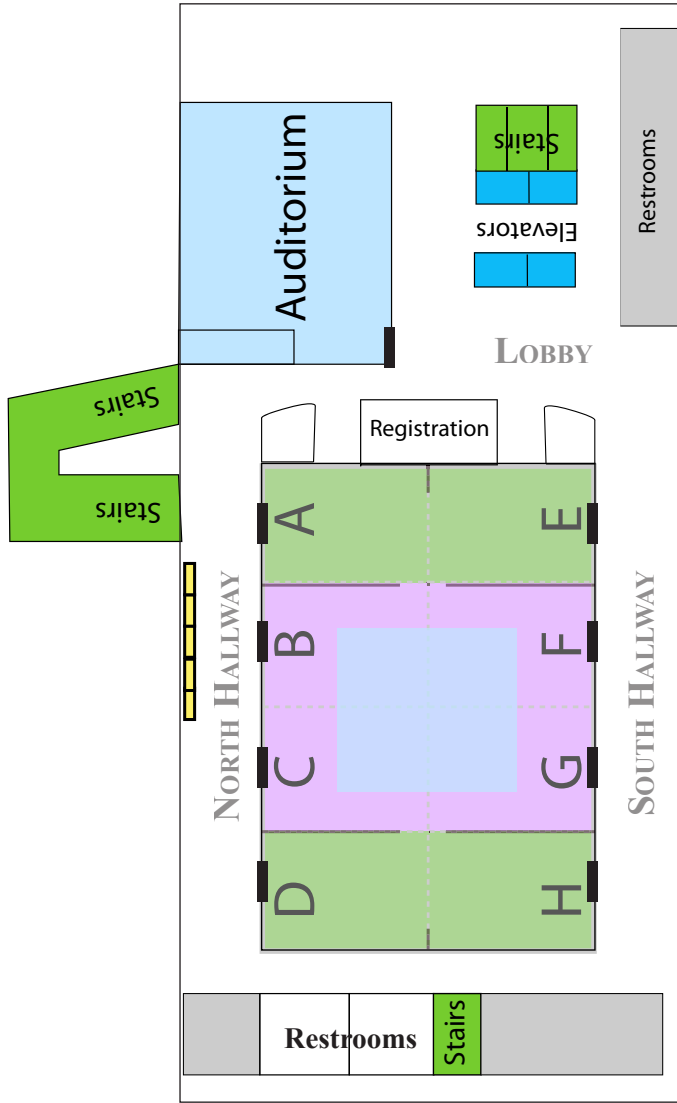
With ten years behind us, we are proud of what we've accomplished and we look forward to fostering more partnerships between the University, key stakeholders and the broader public. Such partnerships are vital to progress in addressing complex water issues across the state, the nation and the globe. I thank you for joining us today, and look forward to your inputs and discussions throughout the symposium.

Cheers,

Dr. Tom Frazer
Acting Director
UF Water Institute



Event Floor Plan - 2nd Floor - J. Wayne Reitz Union



- Exhibit Tables
- Oral/Panel Sessions
- Plenary Sessions
- Posters
- Preferred Entrance

Agenda

Tuesday, February 16, 2016

9 AM - 10:30 AM

Registration and Check-In

Registration Desk

10:30 AM - 12 PM

Opening Plenary Session

Auditorium

- Dr. Thomas Frazer, Acting Director, UF Water Institute
- Dr. Jack Payne, Senior Vice President for Agriculture and Natural Resources, University of Florida

Keynote:

- Dr. James S. Famiglietti, Professor, Earth System Science and Civil and Environmental Engineering, University of California - Irvine and Senior Water Scientist, NASA Jet Propulsion Laboratory
21st Century Global Freshwater Security: Can It Exist and Can Scientists Communicate the Challenges?

Sponsored by: Duke Energy

12 PM - 1:30 PM

Lunch

Ballrooms BCFG

1:30 PM - 3 PM

Panel: Implementing Successful Water Policy through Public/Private Partnerships

Auditorium

(moderator : David Kaplan, University of Florida, Environmental Engineering Sciences)

Increasing awareness of water scarcity and growing concerns about water quality degradation have motivated an ongoing social, economic, and political battle over the development and implementation of water policy. Solutions to these complex problems are often framed in terms of strong, science-backed policy, implemented by a motivated cadre of committed public servants, with the assistance of highly-skilled professional consultants. In the worst cases, however, policymakers and agency representatives are accused of ignoring science, academics are characterized as disconnected from the “real world” problems, and consultants are perceived to be opportunistically cashing in on the conflict and confusion. In this session, we explore the opportunities for improved collaboration between academia, agencies, and private consulting firms to improve the development and implementation of water quantity and quality policies and regulation. Presenters will share examples of successful collaborative projects with a focus on what made the collaboration/partnership successful and will be followed by a panel Q&A session.

- Casey Fitzgerald, Director, Springs Protection Initiative, St. Johns River Water Management District
Collaborative Research Initiative on Sustainability and Protection of Springs
- Pierce Jones, Professor, University of Florida
Land Development and Water: Quantifying and Communicating Impacts
- Treavor Boyer, Associate Professor, University of Florida
Life cycle assessment framework applied to drinking water treatment and wastewater management
- Evan Shane Williams, Project Manager III, Marion County Office of the County Engineer
Alternative Dry Retention Pond Design for Enhanced Nitrogen Removal

Sponsored by: OUC - The Reliable One



Agenda - Tuesday

1:30 PM - 3 PM

Restoration and Connectivity

Ballroom A

(moderator : Susan Gray, South Florida Water Management District)

- Paul Julian, Graduate Student, University of Florida
Hydrologic restoration of the Taylor Slough Region of Everglades National Park. Changes in water quality and implications for ecosystem management.
- Joelle Laing, Water Institute Graduate Fellow, University of Florida
Restoration strategies for Vallisneria americana on sites high in sediment organic matter
- Beth A. Middleton, research ecologist, Wetlands & Aquatic Research Center
Hydrologic remediation revives stressed tree species in tidal swamps
- Robert V. Sobczak, Hydrologist, Big Cypress National Preserve
Restoration Rally Cry for the Big Cypress Swamp
- Josefin Thorslund, PhD student, Stockholm University
Using combined water and solute balances to explore wetland connectivity across space and time

Sponsored by: Consulate General of Canada in Miami

1:30 PM - 3 PM

Springs I - Groundwater and Surface Water Interactions

Ballroom D

(moderator : K. Reddy, University of Florida, Soil and Water Science Department)

- Edgar F. Lowe, Consulting Ecologist, Private Consultant
Florida's Springs: The Tip Of The Iceberg
- Dean Dobberfuhl, Environmental Scientist, St. Johns River Water Management District
Predicting elevated groundwater nitrate concentrations using a decision tree-based geospatial model in the Silver Springshed, FL
- Wendy Graham, Professor and Director, University of Florida Water Institute
Effect of conduit/fracture geometry and porous matrix properties on predicting the sources, fluxes, travel paths and travel times of water and solutes to Silver Springs
- James Jawitz, Professor, University of Florida
Why is the flow in Silver Springs decreasing?

Sponsored by: UF Water Institute

1:30 PM - 3 PM

Collaborations and Partnerships

Ballroom E

(moderator : Sandra Russo, University of Florida, International Center)

- Simone F. Athayde, TCD Core Faculty, University of Florida
Indigenous Peoples, Social-environmental Governance and Hydroelectric Dam Development in the Amazon
- Jonathan Dain, Director, FNRLI, Florida Natural Resources Leadership Institute, UF/IFAS
Building Capacity in Collaboration and Conflict Management for a State Facing Accelerating Change: The Florida Natural Resources Leadership Institute
- Angela Lindsey, Assistant Professor, UF/IFAS Center for Public Issues Education in Agriculture and Natural Resources
The Gestalt of the group: Water resource management and the self directed working group
- Chris Pettit, Policy and Legislation Manager, Palm Beach County Water Utilities Department
Comparative Climate Change Adaptation In the US and Philippines

Sponsored by: Tampa Bay Water

Agenda - Tuesday

1:30 PM - 3 PM

Emerging Diseases and Contaminants in Florida Waters - I

Ballroom H

(moderator : Thomas Waltzek, University of Florida, College of Veterinary Medicine)

- Jan Landsberg, Research Scientist, Fish and Wildlife Research Institute, Florida Fish and Wildlife Conservation Commission
A Brief Overview of Factors Affecting the Health of Florida's Aquatic Organisms
- Mark Cunningham, Wildlife Veterinarian, Florida Fish and Wildlife Conservation Commission
Emerging Diseases Of Aquatic Birds In Florida
- Nelmarie Landrau Giovannetti, Graduate Student, University of Florida – College of Veterinary Medicine
Phylogenomic diversity of cetacean morbilliviruses
- Natalie Steckler, PhD student, University of Florida College of Veterinary Medicine
Ranaviruses: an Emerging Threat to Florida Fish, Amphibians, and Reptiles
- Abigail Clark, PhD Candidate, University of Florida
An introduction and overview of the lobster virus PaV1

Sponsored by: UF/IFAS

3 PM - 3:30 PM

Break

Ballrooms BCFG

3:30 PM - 5 PM

Let's Talk About Water - Focusing on Florida's Future: preparing the next in line to manage our freshwater

Auditorium

(moderator : Matthew Cohen, University of Florida, School of Forest Resources and Conservation)

Panel: Let's Talk About Water: Florida's water: issues and opportunities awaiting future change-makers.

In partnership with the University of Florida Water Institute (WI), the **UF student chapter of the American Water Resources Association (AWRA)** is a recipient of the Let's Talk About Water (LTAW) challenge grant by CUAHSI (the Consortium of Universities for the Advancement of Hydrologic Science). Under this framework, the UF student chapter of AWRA is screening "The Last Call at the Oasis", a documentary about water supply featuring Dr. Jay Famiglietti, on Monday 02/15 at 5:30 pm in Ustler Hall, followed by an Art Show and a reception. This session is a key part of the student organized LTAW program and features a panel discussion and Q&A focused on Florida's water resources, and the issues and opportunities awaiting future change-makers. Panelists include:

- James S. Famiglietti, Professor, Earth System Science and Civil and Environmental Engineering, University of California - Irvine and Senior Water Scientist, NASA Jet Propulsion Laboratory
- Wendy Graham, Carl S. Swisher Chair in Water Resources, Director UF Water Institute (on assignment to National Science Foundation 2015-2016)
- Buddy MacKay, 42nd Governor of Florida
- Ann Shortelle, Executive Director, St. Johns River Water Management District

Sponsored by:



Agenda - Tuesday

3:30 PM - 5 PM

Groundwater Resource Evaluation

Ballroom A

(moderator : Rafael Muñoz-Carpena, University of Florida, Department of Agricultural and Biological Engineering)

- Subodh Acharya, Postdoctoral Researcher, University of Florida
Estimating water yield from pine forests with different understory management strategies
- Rick E. Copeland, Director, AquiferWatch, Inc.
Development of a Basin-wide Groundwater Quantity Index for Long-term Sustainability
- Todd Kincaid, President, GeoHydros, LLC
Modeling methods for the karstic Floridan aquifer: Consequences of inappropriate groundwater models and assumptions
- Richard L. Marella, Geographer, U.S. Geological Survey
Uncertainty associated with estimating domestic self-supplied and private landscape irrigation water use
- Nicasio Sepulveda, Research Hydrologist, USGS-CFWSC
Analyzing Flows Through Structures Using MODFLOW-NWT Packages

Sponsored by: UF Water Institute

3:30 PM - 5 PM

Springs II - Hydrography and Ecology

Ballroom D

(moderator : James Jawitz, University of Florida, Soil and Water Science Department)

- David Kaplan, Assistant Professor, University of Florida
Collaborative Research Initiative on Sustainability and Protection of Springs: Quantifying Silver River Hydraulics and Hydrodynamics
- James C. Nifong, Postdoctoral Research Associate, University of Florida
Florida's spring ecosystems: rethinking trophic structure
- Mary Lucy Szafraniec, Senior Scientist, Amec Foster Wheeler
Evaluating Ecological Drivers and Interactions in Florida Springs

Sponsored by: Amec Foster Wheeler

3:30 PM - 5 PM

Panel: Actionable Science for Water Resources Management Planning and Decision Making

Ballroom E

(moderator : Tirusew Asefa, Tampa Bay Water)

Producing and translating data, analysis, and forecasts that are *sufficiently* predictive, applicable, and understandable to *support* decision-making, including *capital investment* decision-making, requires a close collaboration between scientists, practitioners, and policy makers. This session shares the challenges and opportunities of using actionable science to inform decision making and improve planning and policy development. Presenters will share insights on what has been done and what should be done including initiating, sustaining and communicating such activities.

- Kristopher Esterson, Utility Specialist, South Florida Water Management District
Declining per capita water use rates in the Lower East Coast, Florida: Implications for future water use projections.
- Laurens Van der Tak, Vice President, CH2M
Climate Risk and Resilience Planning for Wastewater Infrastructure: Miami-Dade's Facility Hardening Planning Process and Design Guidelines
- Vasu Misra, Associate Professor of Meteorology, Florida State University
The changing wet season of Florida
- Kevin Morris, Science and Technology Officer, Peace River Manasota Regional Water Supply Authority
Climate Variability and Water Supply Sustainability Modeling on the Peace River

Sponsored by: Florida Water and Climate Alliance

Agenda - Tuesday

3:30 PM - 5 PM

Emerging Diseases and Contaminants in Florida Waters - II

Ballroom H

(moderator : Chris Martyniuk, University of Florida, Department of Physiological Sciences)

- Ruth Francis-Floyd, Professor, University of Florida
Health Assessment of Florida's Long-Spined Sea Urchin, Diadema antillarum: A Keystone Species on Florida's Coral Reefs
- Andrew Kane, Associate Professor of Environmental and Global Health, University of Florida
Emerging Perspectives Post-Deepwater Horizon Oil Spill: Gulf Seafood, and Environmental and Human Health
- Chris Martyniuk, Associate Professor, University of Florida
Understanding the biological impacts of legacy and emerging contaminants in Florida water systems using the largemouth bass as a model species
- Michael Berry, OMC Manager, Florida Department of Health
Florida's Well Surveillance Program
- Is Rodea-Palomares, Postdoctoral, University of Florida
GSUA-EBS as a way forward to understand combined effects of chemical mixtures and environmental factors?
- Yun-Ya Yang, Postdoctoral Researcher, University of Florida
Fate and Transport of Micropollutants in the Drainfields of Onsite Wastewater Treatment Systems

Sponsored by: UF/IFAS

5:15 PM - 5:30 PM

Poster Judges Meeting

Ballroom H

5:00 PM - 7:30 PM

Reception with appetizers and cash bar

Ballrooms BCFG

5:30 PM - 7:30 PM

Poster Session

Ballrooms BCFG

(moderator : Carol Lippincott, University of Florida, Water Institute)

Poster Themes (see page 23 for list of poster presenters)

- Climate Change & Variability
- Coastal Waters
- Policy & Behavior Change
- Springs & Rivers
- Water & Nutrients in Managed Landscapes
- Watershed & Wetland Management

Poster Session Sponsored by:

Carl S. Swisher Foundation, Inc.
Consulate General of Canada in Miami
OUC - The Reliable One
Tampa Bay Water
UF/IFAS

Three student poster presenters will be awarded a \$1,000 prize for travel to attend a research conference to present their research. Winners will be announced during the afternoon Plenary Session at 1:15 PM on Wednesday, February 17, 2016.

Graduate Student Poster Awards sponsored by:

- Carl S. Swisher Foundation, Inc.
- Water & Air Research, Inc.



Agenda - Wednesday

Wednesday, February 17, 2016

7:30 AM - 3 PM

Symposium Check-in

Registration Desk

8:30 AM - 10 AM

Planning and Governance

Auditorium

(moderator : Rick Hutton, Gainesville Regional Utilities)

- Sanford V. Berg, Director of Water Studies, University of Florida, Public Utility Research Center
Seven Elements Affecting Governance and Performance in the Water Sector
- Steve Leitman, Environmental Consultant, Waters Without Borders
Selecting Performance Metrics to Evaluate Output from a Watershed Model of the Apalachicola-Chattahoochee-Flint watershed
- Elizabeth Perez, President, Collective Water Resources, LLC
The City of West Palm Beach: Pioneering a New Future for Florida's Water Resources
- Dan Zhu, PhD Candidate, University of Florida
Developing Recovery Anti-Pollution Policies: An Analysis of China's Huai River Pollution Reduction

Sponsored by: Carl S. Swisher Foundation, Inc.

8:30 AM - 10 AM

Sensors and Technologies

Ballroom A

(moderator : Joseph Delfino, University of Florida, Environmental Engineering Sciences)

- Matthew J. Cohen, Associate Professor, University of Florida, School of Forest Resources and Conservation
The National Nutrient Sensor Challenge: Stimulating Technology to Accelerate the High Frequency Wave of the Future
- Paul Decker, MS Student, University of Florida
Monitoring BMP Effectiveness with Emerging Sensors in Two Fertilized Forested Watersheds
- Robert Hensley, Postdoctoral Associate, University of Florida
Variation in stream solute dynamics across temporal scales
- Gurpal Toor, Associate Professor, University of Florida
Identification of Nitrate-Nitrogen Sources in Residential Stormwater Runoff Using $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$

Sponsored by: Consulate General of Canada in Miami

8:30 AM - 10 AM

Springs III - Chemical Processes and Nutrient Fluxes

Ballroom D

(moderator : Jonathan Martin, University of Florida, Department of Geological Sciences)

- John Ezell, Graduate Student, University of Florida
Dissolution patterns shaping landscapes: potential links to climatic cycles
- Mitra Bahadur Khadka, Graduate Student, University of Florida
Benthic fluxes of nutrients and trace metals in a spring-fed Silver River
- Shannon McMorrow, Environmental Scientist, Amec Foster Wheeler
Characterizing Spatial Variability and Ecological Interactions of Benthic Macroinvertebrate Communities in their Associated Habitats and Across Salinity Gradients in Florida Springs
- Todd Z. Osborne, Assistant Professor, Whitney Laboratory, University of Florida
Nitrate Inhibition of Submerged Aquatic Vegetation: Investigation of the Nitrogen Overload Hypothesis

Sponsored by: Carl S. Swisher Foundation, Inc.

Agenda - Wednesday

8:30 AM - 10 AM

Achieving Behavior Change: Public perceptions and awareness of water conservation issues - I

Ballroom E

(moderator : Ricky Telg, University of Florida, Department of Agricultural Education and Communication)

- Liz Felter, Extension Agent, University of Florida
Perceptions of Homeowner Association (HOA) Board Members in Orange County, Florida about Water Conservation and the Use of Florida Friendly Landscaping (FFL) Principles
- Emily S. Ott, Project Coordinator, University of Florida AEC/CLCE
Community-Based Social Marketing to Increase Stormwater Pond Best Management Practices
- Melissa R. Taylor, Research Coordinator, University of Florida
Identifying Water Issues Opinion Leader Needs to Encourage Widespread Adoption of Best Management Practices
- Laura A. Warner, Assistant Professor, UF/IFAS Department of Agricultural Education and Communication; Center for Landscape Conservation and Ecology
Defining Residents who use Landscape Irrigation: Implications for Impactful Water Conservation Programming for an Important Audience

Sponsored by: OUC - The Reliable One

8:30 AM - 10 AM

Coastal Water Resources

Ballroom H

(moderator : Charles Jacoby, St. Johns River Water Management District)

- Kamaljit Banger, Postdoctoral Research Associate, University of Illinois
Interaction between land-use and climatic extremes in controlling nitrogen transport from watersheds
- David Kaplan, Assistant Professor, University of Florida
Oyster Reefs Impact Estuarine Salinity Over Large Spatial Scales
- Panagiotis D. Scarlatos, Professor, Florida Atlantic University
Comparison of Lagrangian and Eulerian simulation of contaminant transport in Thermaikos Gulf, Greece and Lake Okeechobee
- Zexuan Xu, PhD Candidate, Florida State University
Numerical modeling of seawater intrusion in a heterogeneous coastal karst aquifer with conduits

Sponsored by: UF Water Institute

10 AM - 10:30 AM

Break

North Hallway



Agenda - Wednesday

10:30 AM - 12 PM

Water Use in Agriculture

Auditorium

(moderator : James Fletcher, University of Florida, IFAS Extension Service)

- Michelle Atkinson, Environmental Horticulture and Water Conservation Agent, UF/IFAS Manatee County Extension
Using Smart Irrigation Apps to Show the Value of Extension to Local Government
- Nathan Holt, Engineer, UF/IFAS Southwest Florida Research
Designing Bed Geometries for Sustainable Vegetable Production
- Emmett T. Martin, Research Assistant, UF/IFAS Center for Public Issues Education
Barriers and Motivators Associated with Adopting Water Conservation Technologies in Crop Production Operations
- Asmita Shukla, Sr. Hydrologic Data Analyst, Southwest Florida Water Management District
Enhancing the Phosphorus Retention Efficiency of Agricultural Stormwater Detention Areas
- Emmanuel Amable Torres-Quezada, Student, University of Florida
Application of kaolin clay during strawberry establishment as a water conservation practice in Florida

Sponsored by: Potash Corp

10:30 AM - 12 PM

Impacts of Climate Variability and Change on Water Availability and Quality

Ballroom A

(moderator : James Jones, University of Florida, Department of Agricultural and Biological Engineering)

- Mace G. Bauer, Agronomy & Commercial Horticulture Agent III, UF/IFAS Extension Columbia County
Exploring Changes in Rainfall Intensity and Seasonal Variability
- Randall Kenneth Bushey, Senior Water Resource Engineer, CH2M
Sustainability in Water Resources – Offstream Reservoirs to Manage Extreme Rainfall Events
- Jose J. Hernandez Ayala, PhD Candidate and Teaching Assistant, University of Florida
Spatial climatology of rainfall associated with tropical cyclones and their contribution to overall precipitation in Puerto Rico
- Mark V. Hoyer, Director, Florida LAKEWATCH, University of Florida
Long-term Changes in Water Quality at an Outstanding Florida Water System: Importance of Stochastic Events and Climate Change due to the Atlantic Multidecadal Oscillation
- Akhilesh Kumar Mishra, Assistant in Research, COAPS, Florida State University
The influence of the neighboring oceans on Florida's climate
- Chelsea Smith, Aquatic Biology Lead Technician, J.W. Jones Ecological Research Center
Water Quality Changes in the Face of Increased Variability: How Floods and Droughts Affect Not Only the Quantity but Quality of Water

Sponsored by: UF/IFAS

10:30 AM - 12 PM

Springs IV - Temporal Dynamics

Ballroom D

(moderator : Mark Clark, University of Florida, Soil and Water Science Department)

- Del Brace Bottcher, President, Soil and Water Engineering Technology, Inc.
Crop Coefficients and Rainfall Distributions Influence on Silver Springs Flow
- Sean A. King, Staff Engineer, Southwest Florida Water Management District
Coastal Springs Restoration in a Changing Environment
- Jonathan B. Martin, Colonel Allan R. and Margaret G. Crow Professor, Department of Geological Sciences, University of Florida
Controls and effects of time-varying apparent ages in karst spring water
- Sky Notestein, Senior Environmental Scientist, Southwest Florida Water Management District
Changing submerged aquatic vegetation in the coastal spring systems of Citrus and Hernando Counties

Sponsored by: UF/IFAS

Agenda - Wednesday

10:30 AM - 12 PM

Achieving Behavior Change: Public perceptions and awareness of water conservation issues - II

Ballroom E

(moderator : Christopher Martinez, University of Florida, Department of Agricultural and Biological Engineering)

- Oren Ehrlich, Graduate student assistant, University of Florida
A Latent Class Analysis on Public Attitudes Towards Water Resources in Florida: Implications for Recreational Demand
- William Lester, Residential/Commercial Horticulture Agent II, UF/IFAS Extension Hernando County
Utilization Of Science In Crafting And Evaluating A Fertilizer Ordinance
- Angela Lindsey, Assistant Professor, UF/IFAS Center for Public Issues Education in Agriculture and Natural Resources
The role of social capital, risk perceptions and adaptive capacity five years after the DWH oil spill.
- Victoria Machado, PhD Student, Religion & Nature, University of Florida
Entering a Watershed Moment: Community Voices a bridge for Florida's Water Issues
- Jeffrey Mullen, Associate Professor, University of Georgia
Effects of Uncertainty on Support for Water Quality Improvement Programs
- Linda Seals, County Extension Director, UF IFAS Extension Brevard County
Water School Extension Program to Educate Public Officials and Decision-Makers

Sponsored by: UF Water Institute

10:30 AM - 12 PM

Sea Level Rise: Projections and impacts

Ballroom H

(moderator : Karl Havens, Florida Sea Grant, University of Florida)

- Andrea Dutton, Assistant Professor, University of Florida
The multi-billion dollar boundary condition: How fast will sea level rise along the Florida coastline?
- Peter M. Chutcharavan, PhD Student, University of Florida - Department of Geological Sciences
Uranium Isotopic Variability in Seawater and its Implications for Coral-based Sea Level Reconstructions
- Alexandra Liane Skrivanek, Graduate Assistant, University of Florida
Assessing the occurrence of rapid sea-level oscillations during the Last Interglacial period in the Falmouth Formation of Jamaica
- Karen Vyverberg, PhD Student, University of Florida
Coral reef response to global sea-level change during the previous interglacial period

Sponsored by: Tampa Bay Water

12 PM - 1:15 PM

Lunch

North Hallway



Agenda

1:15 PM - 3 PM

Plenary Session

Ballrooms BCFG

- **Presentation of Student Poster Awards**
- **Dr. W. Kent Fuchs, President, University of Florida – Brief Remarks on Water, Science and Art**
- **Plenary Panel: “Imagining Climate Change”** a roundtable in collaboration with the 2016 Colloquium Imagining Climate Change: Science & Fiction in Dialogue
(*moderator : Terry Harpold, Associate Professor of English, University of Florida*)

Introduced by Cynthia Barnett, Hearst Visiting Professional, College of Journalism and Communications, University of Florida, this roundtable, bridging art and science, will open the ICC Colloquium. It includes authors, scholars, and scientists committed to the work of imagining our collective climate futures. Guest Speakers include:

- Tobias Buckell, Grenadian science fiction author and futurist.
- James S. Famiglietti, Professor, Earth System Science and Civil and Environmental Engineering, University of California - Irvine and Senior Water Scientist, NASA Jet Propulsion Laboratory
- Ellen E. Martin, Professor, Department of Geological Sciences, University of Florida.
- Yann Quero, French journalist, science fiction novelist and anthologist.
- Jeff VanderMeer, American speculative fiction writer with an interest in weird biology and the environment.

Sponsor: “Imagining Climate Change” is co-sponsored by the France-Florida Research Institute, the Center for African Studies, the Center for the Humanities and the Public Sphere, the Department of English, the Florida Climate Institute at the University of Florida, the George A. Smathers Libraries, the Science Fiction Working Group, and the UF Water Institute. Colloquium events are made possible with the support of the Cultural Services of the French Embassy in the United States.

3 PM - 3:30 PM

Break

North Hallway

3:30 PM - 5 PM

Final Plenary Panel

Ballrooms BCFG

Florida’s Water Future

(*moderator: Tom Frazer, Acting Director, UF Water Institute*)

Water security threatens Florida’s prosperity. Our ability to secure clean, sustainable water resources via policy, regulation, management and conservation becomes enormously complex due to a burgeoning human population, increased demand for water and uncertainties surrounding climate change. Solutions to such pressing challenges require a solid scientific understanding that informs what will be difficult, and sometimes costly, tradeoffs. Panel members will draw on a variety of personal and institutional perspectives to characterize both major threats to secure and sustainable water resources and mechanisms to overcome these threats. The panel will conclude with questions and dialogue with the audience.

Panelists

- Steve Dwinell, Director of the Office of Agricultural Water Policy, Florida Department of Agriculture and Consumer Services
- Drew Bartlett, Deputy Secretary for Ecosystem Restoration, Florida Department of Environmental Protection
- Wendy Graham, Carl S. Swisher Chair in Water Resources, Director UF Water Institute (on assignment to National Science Foundation 2015-2016)
- Eric Draper, Executive Director, Audubon Florida

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UF/IFAS School of Forest Resources & Conservation
UF/IFAS Soil and Water Science Department
UF Department of Geological Sciences
UF School of Natural Resources and Environment

Symposium At A Glance

Agenda - Tuesday, February 16, 2016

9 am - 10:30 am Registration and Check-in					
10:30 am - 12:00 pm					
Opening Plenary Session (Auditorium)					Posters (Ballroom BCFG)
<ul style="list-style-type: none"> Dr. Thomas Frazer, Acting Director and Professor, UF Water Institute Dr. Jack Payne, Senior Vice President for Agriculture and Natural Resources, University of Florida <p>Keynote:</p> <ul style="list-style-type: none"> Dr. James S. Famiglietti, Professor, Earth System Science and Civil and Environmental Engineering, University of California - Irvine and Senior Water Scientist, NASA Jet Propulsion <p style="text-align: center;"><i>21st Century Global Freshwater Security: Can it Exist and Can Scientists Communicate the Challenges?</i></p>					Poster set up 9 AM - 11 AM
Noon - 1:30 pm Lunch					
					Ballrooms BCFG
1:30 pm - 3 pm Concurrent Sessions					Posters
Ballroom A	Ballroom D	Ballroom E	Ballroom H	Auditorium	Ballroom BCFG
Restoration and Connectivity	Springs I - Groundwater and Surface Water Interactions	Collaborations and Partnerships	Emerging Diseases and Contaminants in Florida Waters - I	Panel: Implementing Successful Water Policy through Public/Private Partnerships	Posters displayed
3:00 pm - 3:30 pm Break					
					Ballrooms BCFG
3:30 pm - 5 pm Concurrent Sessions					Posters
Ballroom A	Ballroom D	Ballroom E	Ballroom H	Auditorium	Ballroom BCFG
Groundwater Resource Evaluation	Springs II - Hydrography and Ecology	Panel: Actionable Science for Water Resources Management Planning and Decision Making	Emerging Diseases and Contaminants in Florida Waters - II	Let's Talk About Water - Focusing on Florida's Future: preparing the next in line to manage our freshwater	Posters displayed
5:15 pm - 5:30 pm Poster Judges Meeting					Ballroom H
5:00 pm - 7:30 pm Poster Presentations and Reception					Ballrooms BCFG
Climate Change & Variability	Coastal Waters	Policy & Behavior Change	Springs & Rivers	Water & Nutrients in Managed Landscapes	Watershed & Wetland Management

Agenda - Wednesday, February 17, 2016

8:30 am - 10 am

Concurrent Sessions

Ballroom A	Ballroom D	Ballroom E	Ballroom H	Auditorium
Sensors and Technologies	Springs III - Chemical Processes and Nutrient Fluxes	Achieving Behavior Change: Public perceptions and awareness of water conservation issues - I	Coastal Water Resources	Planning and Governance

10 am - 10:30 am Break North Hallway

10:30 am-12 pm Concurrent Sessions

Ballroom A	Ballroom D	Ballroom E	Ballroom H	Auditorium
Impacts of Climate Variability and Change on Water Availability and Quality	Springs IV - Temporal Dynamics	Achieving Behavior Change: Public perceptions and awareness of water conservation issues II	Sea Level Rise: Projections and impacts	Water Use in Agriculture

Noon - 1:15 pm Lunch North Hallway

1:15 pm - 3 pm Plenary Session Ballrooms BCFG

- **Presentation of Student Poster Awards**
 - **Dr. W. Kent Fuchs, President, University of Florida - Brief Remarks on Water, Science and Art**
 - **Plenary Panel: “Imagining Climate Change”** in collaboration with the 2016 Colloquium Imagining Climate Change: Science & Fiction in Dialogue (moderator: Terry Harpold, Associate Professor of English, University of Florida)
- Introduced by Cynthia Barnett, Hearst Visiting Professional, College of Journalism and Communications, University of Florida, this roundtable, bridging art and science, will open the ICC Colloquium. It includes authors, scholars, and scientists committed to the work of *imagining* our collective climate futures: Guest Speakers include:
- Tobias Buckell, Grenadian science fiction author and futurist.
 - James S. Famiglietti, Professor, Earth System Science and Civil and Environmental Engineering, University of California - Irvine and Senior Water Scientist, NASA Jet Propulsion Laboratory.
 - Ellen E. Martin, Professor, Department of Geological Sciences, University of Florida.
 - Yann Quero, French journalist, science fiction novelist and anthologist.
 - Jeff VanderMeer, American speculative fiction writer with an interest in weird biology and the environment.

3 pm - 3:30 pm Break North Hallway

3:30 pm - 5 pm Final Plenary Panel Ballrooms BCFG

Florida’s Water Future (moderator: Tom Frazer, Acting Director, UF Water Institute)

Water security threatens Florida’s prosperity. Our ability to secure clean, sustainable water resources via policy, regulation, management and conservation becomes enormously complex due to a burgeoning human population, increased demand for water and uncertainties surrounding climate change. Solutions to such pressing challenges require a solid scientific understanding that informs what will be difficult, and sometimes costly, tradeoffs. Panel members will draw on a variety of personal and institutional perspectives to characterize both major threats to secure and sustainable water resources and mechanisms to overcome these threats. The panel will conclude with questions and dialogue with the audience.

Panelists

- Steve Dwinell, Director of the Office of Agricultural Water Policy, Florida Department of Agriculture and Consumer Services
- Drew Bartlett, Deputy Secretary for Ecosystem Restoration, Florida Department of Environmental Protection
- Wendy Graham, Carl S. Swisher Chair in Water Resources, Director UF Water Institute (on assignment to National Science Foundation 2015-2016)
- Eric Draper, Executive Director, Audubon Florida



Poster Presentations by Theme

See Poster Layout Map Pg. 22

Climate Change & Variability

Andreoli, Joseph Poster No. 1
University of Florida, Department of Geography

Predicting the Geographic Ranges of Non-Native Cichlids in Florida with Climate Change

Benjamin, Joshua Poster No. 2
University of Florida

Development of a Fine-Scale Laser-Based Water Level Sensor

Chang, Seungwoo Poster No. 3
University of Florida, Agricultural and Biological Engineering

Comparison of joint variable bias correction to uni-variate bias correction for use of Global Climate Model

Engstrom, Johanna Poster No. 4
University of Florida, Department of Geography

Variations of, and changes in the hydroclimatology of the southeast United States

Gillum, Amanda Poster No. 5
University of South Florida, Water Institute

Florida Water-CAT: Making it easier to share metadata about chemical, physical and biological water monitoring activities

Hanson, David Poster No. 6
University of Florida, Department of Geography

Livelihoods at risk? Applying a Gendered Livelihood Vulnerability Index in Grenada

Coastal Waters

Alonso, Alice Poster No. 8
University of Florida

Can Upstream Anthropogenic Activities Reshape the Tidal Influence on a Downstream Wetland? A case study in NW Costa Rica.

Barry, Savanna Poster No. 9
University of Florida

Seagrass resilience to shading driven by biomass allocation ratio

Glodzic, Katie Poster No. 10
University of Florida

Road impacts to salt marsh salinity and vegetation via interrupted surface flow: observations from four Big Bend sites

Huang, Laibin Poster No. 11
University of Florida, Soil and Water Science Department

The responses of key nitrogen cycling genes to seasonal and tidal variations in a tropical estuary

Langston, Amy Poster No. 12
University of Florida

Sea Level Rise and the Future of Florida's Forested Freshwater Islands

Lohr, Kathryn Poster No. 13
University of Florida

*Genotype-based differences in extension, calcification, and bleaching resistance among aquacultured staghorn coral *Acropora cervicornis**

Papacek, Joshua Poster No. 14
University of Florida

An investigation of nitrogen fixation in the northern Indian River Lagoon, Florida

Schuman, Carrie Poster No. 15
University of Florida, School of Natural Resources and Environment/Fisheries and Aquatic Sciences

The Secret Life of Filter Feeders: Estimating Oyster Filtration Rates in the Guana Tolomato Matanzas National Estuarine Research Reserve (GTM NERR) in St. Augustine Region of Florida

Tison, Katherine Poster No. 16
University of Florida

Improving accuracy of past sea level chronologies: Testing assumptions about seawater uranium isotope composition

White Jr., Elliott Poster No. 17
University of Florida

*Investigating the Impacts of Chronic Low-level Salinity on the Productivity and Resilience of Coastal Bald Cypress (*Taxodium distichum*) Swamps*

Zick, Stephanie Poster No. 18
University of Florida

Evolving Geometries in the Water Budgets and Precipitation Patterns of US Gulf Coast Landfalling Hurricanes

Policy & Behavior Change

Amini, Adib Poster No. 19
University of South Florida

A Tool for Optimization of the Environmental and Economic Sustainability of Ion Exchange Drinking Water Systems

De Paula, Henrique Poster No. 20
Utah State University

Optimizing dam siting in hydropower systems using a multi-objective optimization approach

Poster Presentations by Theme

See Poster Layout Map Pg. 22

Engel, Angelica Poster No. 21
University of Florida

Biodiversity-related Services, Dis-services, and Tradeoffs in a Payment for Water Storage Program in the Everglades

Epstein, Joshua Poster No. 22
University of Florida

Agricultural Water Use in Florida: Applying a Visual Semiotics-Framing Approach to Understand Perceptions

Fang, Yu Poster No. 23
University of Florida, School of Natural Resources and Environment

Is There a Universal Fractal Human Population Distribution in River Basins

Hopkins, Morgan Poster No. 25
University of Florida, Institute of Food & Agricultural Sciences - Cooperative Extension Service

Evolution of a water conservation program: How Miami-Dade County is saving water

Huang, Pei-wen Poster No. 26
University of Florida

Should Water Conservation Program Targeting High Water Users Be Provided Similarly Statewide? Hints from Three Regions of Florida

Kane, Andrew Poster No. 29
University of Florida, Aquatic Pathobiology Lab

SMARRT: A community-based collaborative initiative to address issues in Apalachicola Bay, FL

Kopiyawattage, Kumudu Poster No. 27
University of Florida

Public Perception and Willingness to Pay for Agricultural Best Management Practices

Kumar Chaudhary, Anil Poster No. 28
University of Florida

Conducting Economic Analysis of State Extension Programs Using a Standard Evaluation Tool

Morie, Amy Poster No. 30
University of Florida, Institute of Food & Agricultural Sciences - Cooperative Extension Service

Ops For Drops: Promoting Responsible Water Use Through Florida Friendly Landscaping

Rankin, Laura Poster No. 31
University of South Florida

State of Low Impact Development Practices for Control of Urban Stormwater Runoff in Florida

Singleton, Lloyd Poster No. 32
University of Florida, Institute of Food & Agricultural Sciences - Cooperative Extension Service

Sharing Water Wisdom in The Villages

Sudol, Taryn Poster No. 33
University of Florida, Institute of Food & Agricultural Sciences - Cooperative Extension Service

Comparing Aquascape Education Methods

Taylor, Melissa Poster No. 34
University of Florida, Institute of Food & Agricultural Sciences, Public Issues and Education Center

Minimizing Disparities and Developing Support by Identifying Differences in Water Confidence and Knowledge

Treuer, Galen Poster No. 35
University of Miami

Narrative analysis of urban water transitions: A transdisciplinary synthesis of Miami-Dade County water supply

Springs & Rivers

Adler, Jennifer Poster No. 36
University of Florida

Unprecedented aggregation of turtles in a Florida spring yields new insights into dietary preference and grazing rates

Anderson, Nelson Poster No. 37
University of Florida

High Resolution Lotic Limitation Assessment Through the Use of In-Situ Mesocosms

Foster, Dorah Poster No. 38
University of Florida

Tracing Nitrate from the Source? A study on the influence of stable isotope fractionation on NO₃- source end members from surface to

Guan, Jing Poster No. 39
University of Florida

Light Attenuation by Epiphytes on Vallisneria americana

Henson, Wes Poster No. 40
University of Florida & US Geological Survey

Combining Push Pull Tracer tests and Microbial DNA and mRNA analysis to assess In-Situ Nitrate Transformations



Poster Presentations by Theme

See Poster Layout Map Pg. 22

Kirk, Lily Poster No. 41
University of Florida

Can simultaneous O₂ and CO₂ measurement illuminate respiration dynamics in rivers?

McBride, Jennifer Poster No. 42
University of Florida, School of Forest Resources & Conservation

Controls on morphology and productivity of submerged aquatic vegetation in two spring-fed rivers

Nelson, Natalie Poster No. 43
University of Florida

Why does tidal creek dissolved oxygen peak at night? Abiotic vs. biotic forcing of oxygen dynamics

Power, Sarah Poster No. 44
University of Florida

A Nutrient Enrichment Experiment at Silver River: Using the benthos box to determine effects of added nutrients (N, P, Fe) on stream metabolism

Reaver, Nathan Poster No. 45
University of Florida

How do spring run physical and transport properties vary under different flow conditions?

Reijo, Courtney Poster No. 46
University of Florida

Grazer Effects on Rates of Stream Metabolism and Nitrate Uptake: Estimating Feedbacks across Different Vegetative Regimes and under Reduced Nitrate Levels

Water & Nutrients in Managed Landscapes

Barrett, Charles Poster No. 47
University of Florida

Converting from seepage to plasticulture for Florida grown cabbage

Biscaia R. da Silva, Andre Luiz Poster No. 48
University of Florida

Response of Potato Yield to Irrigation Systems and Nitrogen Management in Flatwood Soils

Boyer, Mackenzie Poster No. 49
University of Florida

A tale of two regions: How residential irrigation differs between Tampa Bay and Orange County and what that means for conservation

Breder, Eliza Poster No. 50
University of Florida

Landscape Irrigation Patterns as Influenced by Smart Irrigation Controllers

De Leon, Conrado Poster No. 51
University of Florida

Comparison of Irrigation Allocation Models for Estimating Agricultural Water Requirements in Florida Considering the Influence of Precipitation Data Type

Henson, Kevin Poster No. 52
University of Florida

Management of Evapotranspiration and Water Yield in Florida Pine Systems

Whann, Alexandria Poster No. 53
University of Florida, School of Forest Resources and Conservation

Fate of Applied Nitrogen from Urea and Polymer Coated Urea in Silvicultural Fertilization

Yarney, Eunice Poster No. 54
University of Florida, Soil and Water Science Department

Soil Salinity differences between Conventional Seepage Irrigation and Irrigation Tile Drainage (ITD)

Zamora Re, Maria I. Poster No. 55
University of Florida

Evaluation of irrigation and nutrient Best Management Practices (BMPs) in the springsheds of Suwannee River Water Management District

Watershed & Wetland Management

Abdel-Mottaleb, Noha Poster No. 56
University of Florida

Potential use of Japanese Sweetflag for Remediation of Contaminated Surface Water

Crouch, Trey Poster No. 57
University of Florida

Examining the effects of dam-induced agriculture land use change on the hydrologic cycle

Hahus, Ian Poster No. 58
University of Florida, Department of Agricultural and Biological Engineering

Statistics-based Hydrologic Model Compartmentalization for a Water Conservation Area

Poster Presentations by Theme

Klarenberg, Geraldine Poster No. 59
Suwannee River Water Management District & University
of Florida

*Determining Stochasticity and Causality of Vegetation
Dynamics in the Southwestern Amazon*

Mohd Jani, Siti Jariani Poster No. 61
University of Florida

*Bioavailability Of Organic Nitrogen in Residential
Stormwater Runoff*

Nowicki, ReNae Poster No. 62
University of South Florida

*Ecohydrogeology of Isolated Wetlands & Waters in
West-Central Florida*

Quintero, Carlos Poster No. 63
University of Florida

Extremely High Soil PCO₂ in Big Cypress Wetlands

Rundel, Tyler Poster No. 64
University of Florida

*A Spatial-Temporal Analysis of Mauritia Palm Swamp
Degradation*

Sishodia, Rajendra Poster No. 65
University of Florida

*Trends and sustainable management options for
groundwater in semi-arid hard rock region of India*

Timpe, Kelsie Poster No. 66
University of Florida

*Quantifying the Hydrological Impacts of Damming the
Amazon*

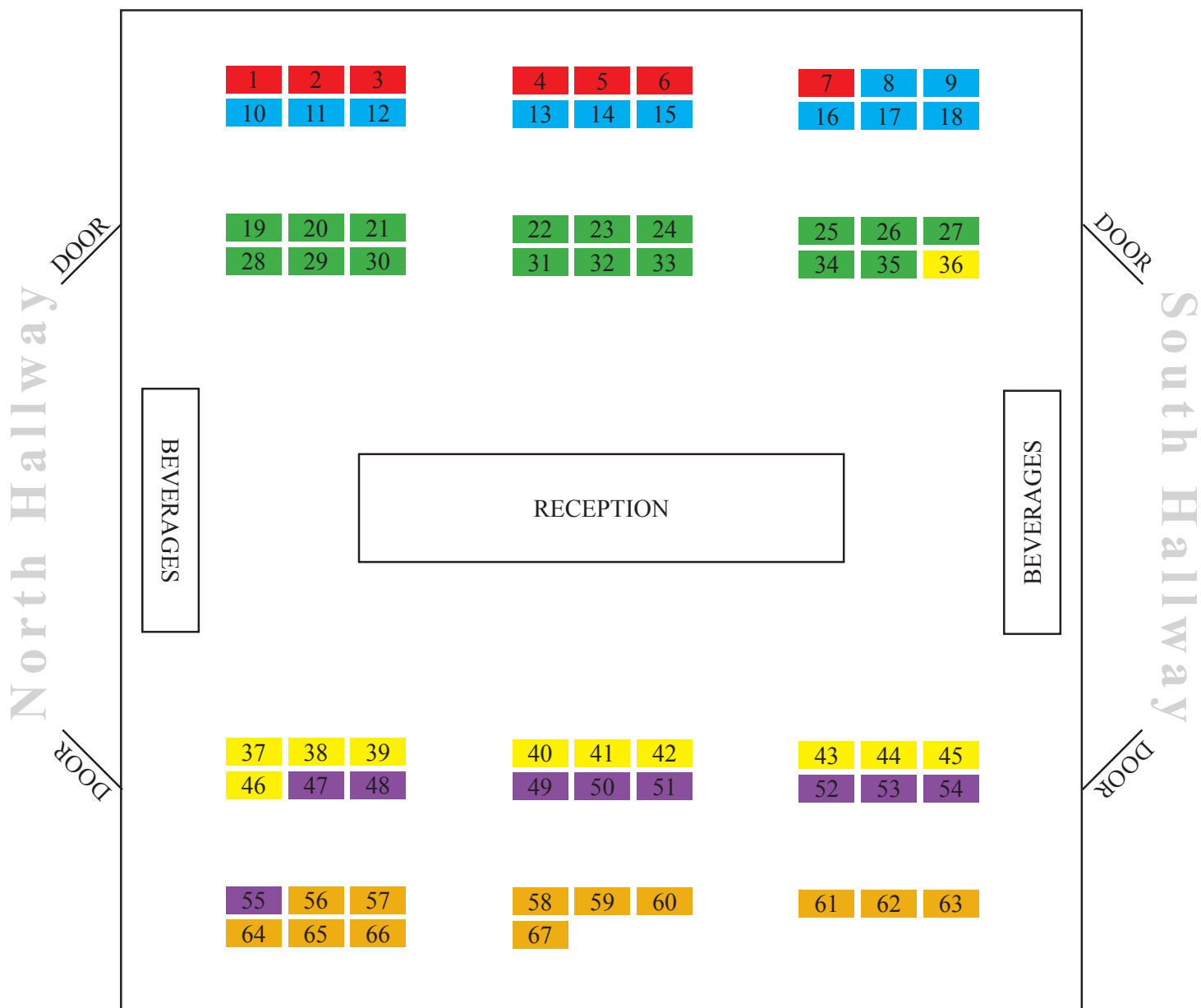
Wallace, Max Poster No. 67
University of Florida , Department of Agricultural and
Biological Engineering

*Where is your watershed? Lessons from a watershed
delineation in Florida with low topographic gradients
and complex drainage network*

Notes:



Poster Session Layout - Ballrooms BCFG



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Water & Nutrients in Managed Landscapes	47 - 55
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Adler, Jennifer	<i>Unprecedented aggregation of turtles in a Florida spring yields new insights into dietary preference and grazing rates</i>	36
Alonso, Alice	<i>Can Upstream Anthropogenic Activities Reshape the Tidal Influence on a Downstream Wetland? A case study in NW Costa Rica.</i>	8
Amini, Adib	<i>A Tool for Optimization of the Environmental and Economic Sustainability of Ion Exchange Drinking Water Systems</i>	19
Anderson, Nelson	<i>High Resolution Lotic Limitation Assessment Through the Use of In-Situ Mesocosms</i>	37
Andreoli, Joseph	<i>Predicting the Geographic Ranges of Non-Native Cichlids in Florida with Climate Change</i>	1
Barrett, Charles	<i>Converting from seepage to plasticulture for Florida grown cabbage</i>	47
Barry, Savanna	<i>Seagrass resilience to shading driven by biomass allocation ratio</i>	9
Benjamin, Joshua	<i>Development of a Fine-Scale Laser-Based Water Level Sensor</i>	2
Biscaia R. da Silva, Andre Luiz	<i>Response of Potato Yield to Irrigation Systems and Nitrogen Management in Flatwood Soils</i>	48
Boyer, Mackenzie	<i>A tale of two regions: How residential irrigation differs between Tampa Bay and Orange County and what that means for conservation</i>	49
Breder, Eliza	<i>Landscape Irrigation Patterns as Influenced by Smart Irrigation Controllers</i>	50
Chang, Seungwoo	<i>Comparison of joint variable bias correction to uni-variate bias correction for use of Global Climate Model</i>	3
Crouch, Trey	<i>Examining the effects of dam-induced agriculture land use change on the hydrologic cycle</i>	57
De Leon, Conrado	<i>Comparison of Irrigation Allocation Models for Estimating Agricultural Water Requirements in Florida Considering the Influence of Precipitation Data Type</i>	51
De Paula, Henrique	<i>Optimizing dam siting in hydropower systems using a multi-objective optimization approach</i>	20
Engel, Angelica	<i>Biodiversity-related Services, Dis-services, and Tradeoffs in a Payment for Water Storage Program in the Everglades</i>	21
Engstrom, Johanna	<i>Variations of, and changes in the hydroclimatology of the southeast United States</i>	4
Epstein, Joshua	<i>Agricultural Water Use in Florida: Applying a Visual Semiotics-Framing Approach to Understand Perceptions</i>	22
Fang, Yu	<i>Is There a Universal Fractal Human Population Distribution in River Basins?</i>	23
Foster, Dorah	<i>Tracing Nitrate from the Source? A study on the influence of stable isotope fractionation on NO₃-source end members from surface to ground water.</i>	38
Gillum, Amanda	<i>Florida Water-CAT: Making it easier to share metadata about chemical, physical and biological water monitoring activities</i>	5
Glodzik, Katie	<i>Road impacts to salt marsh salinity and vegetation via interrupted surface flow: observations from four Big Bend sites</i>	10
Guan, Jing	<i>Light Attenuation by Epiphytes on Vallisneria americana</i>	39
Hahus, Ian	<i>Statistics-based Hydrologic Model Compartmentalization for a Water Conservation Area</i>	58
Hanson, David	<i>Livelihoods at risk? Applying a Gendered Livelihood Vulnerability Index in Grenada</i>	6
Henson, Wes	<i>Combining Push Pull Tracer tests and Microbial DNA and mRNA analysis to assess In-Situ Nitrate Transformations</i>	40



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Hopkins, Morgan	<i>Evolution of a water conservation program: How Miami-Dade County is saving water</i>	25
Huang, Laibin	<i>The responses of key nitrogen cycling genes to seasonal and tidal variations in a tropical estuary</i>	11
Huang, Pei-wen	<i>Should Water Conservation Program Targeting High Water Users Be Provided Similarly Statewide? Hints from Three Regions of Florida</i>	26
Kane, Andrew	<i>SMARRT: A community-based collaborative initiative to address issues in Apalachicola Bay, FL</i>	29
Kirk, Lily	<i>Can simultaneous O₂ and CO₂ measurement illuminate respiration dynamics in rivers?</i>	41
Klarenberg, Geraldine	<i>Determining Stochasticity and Causality of Vegetation Dynamics in the Southwestern Amazon</i>	59
Kopiyawattage, Kumudu	<i>Public Perception and Willingness to Pay for Agricultural Best Management Practices</i>	27
Kumar Chaudhary, Anil	<i>Conducting Economic Analysis of State Extension Programs Using a Standard Evaluation Tool</i>	28
Langston, Amy	<i>Sea Level Rise and the Future of Florida's Forested Freshwater Islands</i>	12
Lohr, Kathryn	<i>Genotype-based differences in extension, calcification, and bleaching resistance among aquacultured staghorn coral <i>Acropora cervicornis</i></i>	13
McBride, Jennifer	<i>Controls on morphology and productivity of submerged aquatic vegetation in two spring-fed rivers</i>	42
Mohd Jani, Siti Jariani	<i>Bioavailability Of Organic Nitrogen in Residential Stormwater Runoff</i>	61
Morie, Amy	<i>Ops For Drops: Promoting Responsible Water Use Through Florida Friendly Landscaping</i>	30
Nelson, Natalie	<i>Why does tidal creek dissolved oxygen peak at night? Abiotic vs. biotic forcing of oxygen dynamics</i>	43
Nowicki, ReNae	<i>Ecohydrogeology of Isolated Wetlands & Waters in West-Central Florida</i>	62
Papacek, Joshua	<i>An investigation of nitrogen fixation in the northern Indian River Lagoon, Florida</i>	14
Power, Sarah	<i>A Nutrient Enrichment Experiment at Silver River: Using the benthos box to determine effects of added nutrients (N, P, Fe) on stream metabolism</i>	44
Quintero, Carlos	<i>Extremely High Soil PCO₂ in Big Cypress Wetlands</i>	63
Rankin, Laura	<i>State of Low Impact Development Practices for Control of Urban Stormwater Runoff in Florida</i>	31
Reaver, Nathan	<i>How do spring run physical and transport properties vary under different flow conditions?</i>	45
Reijo, Courtney	<i>Grazer Effects on Rates of Stream Metabolism and Nitrate Uptake: Estimating Feedbacks across Different Vegetative Regimes and under Reduced Nitrate Levels</i>	46
Rundel, Tyler	<i>A Spatial-Temporal Analysis of <i>Mauritia</i> Palm Swamp Degradation</i>	64
Schuman, Carrie	<i>The Secret Life of Filter Feeders: Estimating Oyster Filtration Rates in the Guana Tolomato Matanzas National Estuarine Research Reserve (GTM NERR) in St. Augustine Region of Florida</i>	15
Singleton, Lloyd	<i>Sharing Water Wisdom in The Villages</i>	32
Sishodia, Rajendra	<i>Trends and sustainable management options for groundwater in semi-arid hard rock region of India</i>	65
Sudol, Taryn	<i>Comparing Aquascape Education Methods</i>	33
Taylor, Melissa	<i>Minimizing Disparities and Developing Support by Identifying Differences in Water Confidence and Knowledge</i>	34
Timpe, Kelsie	<i>Quantifying the Hydrological Impacts of Damming the Amazon</i>	66
Tison, Katherine	<i>Improving accuracy of past sea level chronologies: Testing assumptions about seawater uranium isotope composition</i>	16

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Whann, Alexandria	<i>Fate of Applied Nitrogen from Urea and Polymer Coated Urea in Silvicultural Fertilization</i>	53
White Jr., Elliott	<i>Investigating the Impacts of Chronic Low-level Salinity on the Productivity and Resilience of Coastal Bald Cypress (<i>Taxodium distichum</i>) Swamps</i>	17
Yarney, Eunice	<i>Soil Salinity differences between Conventional Seepage Irrigation and Irrigation Tile Drainage (ITD)</i>	54
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Zick, Stephanie	<i>Evolving Geometries in the Water Budgets and Precipitation Patterns of US Gulf Coast Landfalling Hurricanes</i>	18

Notes:



Speakers, Panelists and Moderators

Last Name, First Name	Title and Affiliation	Day	Time	Location
Acharya, Subodh	<i>Postdoctoral Researcher, University of Florida</i>	16-Feb-16	3:30 PM	Ballroom A
Asefa, Tirusew	<i>Modeling and Decision Support Manager, Tampa Bay Water</i>	17-Feb-16	3:30 PM	Ballroom E
Athayde, Simone	<i>TCD Core Faculty, University of Florida</i>	16-Feb-16	1:30 PM	Ballroom E
Atkinson, Michelle	<i>Environmental Horticulture and Water Conservation Agent, UF/IFAS Manatee County Extension</i>	17-Feb-16	10:30 AM	Auditorium
Banger, Kamaljit	<i>Postdoctoral Research Associate, University of Illinois</i>	17-Feb-16	8:30 AM	Ballroom H
Barnett, Cynthia	<i>Author, Journalist and Hearst Visiting Professional, College of Journalism and Communications, University of Florida</i>	17-Feb-16	1:15 PM	Ballroom BCFG
Bartlett, Drew	<i>Deputy Secretary for Ecosystem Restoration, Florida Department of Environmental Protection</i>	17-Feb-16	3:30 PM	Ballroom BCFG
Bauer, Mace	<i>Agronomy & Commercial Horticulture Agent III, UF/IFAS Extension Columbia County</i>	17-Feb-16	10:30 AM	Ballroom A
Berg, Sanford	<i>Director of Water Studies, University of Florida, Public Utility Research Center</i>	17-Feb-16	8:30 AM	Auditorium
Berry, Michael	<i>OMC Manager, Florida Department of Health</i>	16-Feb-16	3:30 PM	Ballroom H
Bottcher, Del	<i>President, Soil and Water Engineering Technology, Inc.</i>	17-Feb-16	10:30 AM	Ballroom D
Boyer, Treavor	<i>Associate Professor, University of Florida</i>	16-Feb-16	1:30 PM	Auditorium
Buckell, Tobias	<i>Grenadian science fiction author</i>	17-Feb-16	1:15 PM	Ballroom BCFG
Bushey, Randall	<i>Senior Water Resource Engineer, CH2M</i>	17-Feb-16	10:30 AM	Ballroom A
Chutcharavan, Peter	<i>PhD Student, University of Florida - Department of Geological Sciences</i>	17-Feb-16	10:30 AM	Ballroom H
Clark, Abigail	<i>PhD Candidate, University of Florida</i>	16-Feb-16	1:30 PM	Ballroom H
Clark, Mark	<i>Associate Professor, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom D
Cohen, Matthew	<i>Associate Professor, University of Florida, School of Forest Resources and Conservation</i>	16-Feb-16	3:30 PM	Auditorium
Cohen, Matthew	<i>Associate Professor, University of Florida, School of Forest Resources and Conservation</i>	17-Feb-16	8:30 AM	Ballroom A
Copeland, Rick	<i>Director, AquiferWatch, Inc.</i>	16-Feb-16	3:30 PM	Ballroom A
Cunningham, Mark	<i>Wildlife Veterinarian, Florida Fish and Wildlife Conservation Commission</i>	16-Feb-16	1:30 PM	Ballroom H
Dain, Jonathan	<i>Director, FNRLI, Florida Natural Resources Leadership Institute, UF/IFAS</i>	16-Feb-16	1:30 PM	Ballroom E
Decker, Paul	<i>MS Student, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom A
Delfino, Joe	<i>Professor Emeritus, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom A
Dobberfuhr, Dean	<i>Environmental Scientist, St. Johns River Water Management District</i>	16-Feb-16	1:30 PM	Ballroom D
Draper, Eric	<i>Executive Director, Audubon Florida</i>	17-Feb-16	3:30 PM	Ballroom BCFG
Dutton, Andrea	<i>Assistant Professor, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom H
Dwinell, Steve	<i>Director of the Office of Agricultural Water Policy, Florida Department of Agriculture and Consumer Services</i>	17-Feb-16	3:30 PM	Ballroom BCFG
Ehrlich, Oren	<i>Graduate student assistant, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom E
Esterson, Kristopher	<i>Utility Specialist, South Florida Water Management District</i>	16-Feb-16	3:30 PM	Ballroom E
Ezell, John	<i>Graduate Student, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom D

Speakers, Panelists and Moderators

Last Name, First Name	Title and Affiliation	Day	Time	Location
Famiglietti, Jay	<i>Professor, Earth System Science and Civil and Environmental Engineering, University of California - Irvine and Senior Water Scientist, NASA Jet Propulsion Laboratory</i>	16-Feb-16	10:30 AM	Auditorium
Famiglietti, Jay	<i>Professor, Earth System Science and Civil and Environmental Engineering, University of California - Irvine and Senior Water Scientist, NASA Jet Propulsion Laboratory</i>	16-Feb-16	3:30 PM	Auditorium
Famiglietti, Jay	<i>Professor, Earth System Science and Civil and Environmental Engineering, University of California - Irvine and Senior Water Scientist, NASA Jet Propulsion Laboratory</i>	17-Feb-16	1:15 PM	Ballroom BCFG
Felter, Liz	<i>Extension Agent, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom E
Fitzgerald, Casey	<i>Director, Springs Protection Initiative, St. Johns River Water Management District</i>	16-Feb-16	1:30 PM	Auditorium
Fletcher, James	<i>County Extension Director and Extension Agent IV, University of Florida</i>	17-Feb-16	10:30 AM	Auditorium
Francis-Floyd, Ruth	<i>Professor, University of Florida</i>	16-Feb-16	3:30 PM	Ballroom H
Frazer, Tom	<i>Director, School of Natural Resources and Environment and Acting Director, University of Florida Water Institute, University of Florida</i>	17-Feb-16	3:30 PM	Ballroom BCFG
Fuchs, W. Kent	<i>President, University of Florida</i>	17-Feb-16	1:15 PM	Ballroom BCFG
Graham, Wendy	<i>Professor and Director, University of Florida Water Institute</i>	16-Feb-16	1:30 PM	Ballroom D
Graham, Wendy	<i>Carl S. Swisher Chair in Water Resources, Director, UF Water Institute (on assignment to National Science Foundation 2015-2016)</i>	16-Feb-16	3:30 PM	Auditorium
Graham, Wendy	<i>Carl S. Swisher Chair in Water Resources, Director, UF Water Institute (on assignment to National Science Foundation 2015-2016)</i>	17-Feb-16	3:30 PM	Ballroom BCFG
Gray, Susan	<i>Bureau Chief, Applied Sciences, South Florida Water Management District</i>	16-Feb-16	1:30 PM	Ballroom A
Harpold, Terry	<i>Associate Professor of English, University of Florida</i>	17-Feb-16	1:15 PM	Ballroom BCFG
Havens, Karl	<i>Director of Florida Sea Grant and Professor, Florida Sea Grant, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom H
Hensley, Robert	<i>Postdoctoral Associate, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom A
Hernandez Ayala, Jose	<i>PhD Candidate and Teaching Assistant, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom A
Holt, Nathan	<i>Engineer, UF/IFAS Southwest Florida Research</i>	17-Feb-16	10:30 AM	Auditorium
Hoyer, Mark	<i>Director, Florida LAKEWATCH, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom A
Hutton, Rick	<i>Supervising Engineer, Gainesville Regional Utilities</i>	17-Feb-16	8:30 AM	Auditorium
Jacoby, Charles	<i>Supervising Environmental Scientist, St. Johns River Water Management District</i>	17-Feb-16	8:30 AM	Ballroom H
Jawitz, James	<i>Professor, University of Florida</i>	16-Feb-16	1:30 PM	Ballroom D
Jawitz, James	<i>Professor, University of Florida</i>	16-Feb-16	3:30 PM	Ballroom D



Speakers, Panelists and Moderators

Last Name, First Name	Title and Affiliation	Day	Time	Location
Jones, James	<i>Florida Climate Institute Director and Distinguished Professor, Agricultural and Biological Engineering Department, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom A
Jones, Pierce	<i>Professor, University of Florida</i>	16-Feb-16	1:30 PM	Auditorium
Julian, Paul	<i>Graduate Student, University of Florida</i>	16-Feb-16	1:30 PM	Ballroom A
Kane, Andrew	<i>Associate Professor of Environmental and Global Health, UF Environmental & Global Health</i>	16-Feb-16	3:30 PM	Ballroom H
Kaplan, David	<i>Assistant Professor, University of Florida</i>	16-Feb-16	3:30 PM	Ballroom D
Kaplan, David	<i>Assistant Professor, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom H
Khadka, Mitra	<i>Graduate Student, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom D
Kincaid, Todd	<i>President, GeoHydros, LLC</i>	16-Feb-16	3:30 PM	Ballroom A
King, Sean	<i>Staff Engineer, Southwest Florida Water Management District</i>	17-Feb-16	10:30 AM	Ballroom D
Laing, Joelle	<i>Water Institute Graduate Fellow, University of Florida</i>	16-Feb-16	1:30 PM	Ballroom A
Landrau Giovannetti, Nelmarie	<i>Graduate Student, University of Florida – College of Veterinary Medicine</i>	16-Feb-16	1:30 PM	Ballroom H
Landsberg, Jan	<i>Research Scientist, Fish and Wildlife Research Institute, Florida Fish and Wildlife Conservation Commission</i>	16-Feb-16	1:30 PM	Ballroom H
Leitman, Steve	<i>Environmental Consultant, Waters Without Borders</i>	17-Feb-16	8:30 AM	Auditorium
Lester, William	<i>Residential/Commercial Horticulture Agent II, UF/IFAS Extension Hernando County</i>	17-Feb-16	10:30 AM	Ballroom E
Lindsey, Angela	<i>Assistant Professor, UF/IFAS Center for Public Issues Education in Agriculture and Natural Resources</i>	17-Feb-16	10:30 AM	Ballroom E
Lindsey, Angela	<i>Assistant Professor, UF/IFAS Center for Public Issues Education in Agriculture and Natural Resources</i>	16-Feb-16	1:30 PM	Ballroom E
Lowe, Edgar	<i>Consulting Ecologist, Private Consultant</i>	16-Feb-16	1:30 PM	Ballroom D
Machado, Victoria	<i>PhD Student Religion & Nature, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom E
Marella, Richard	<i>Geographer, U.S. Geological Survey</i>	16-Feb-16	3:30 PM	Ballroom A
Martin, Ellen	<i>Professor, Department of Geological Sciences, University of Florida</i>	17-Feb-16	1:15 PM	Ballroom BCFG
Martin, Emmett	<i>Research Assistant, UF/IFAS Center for Public Issues Education</i>	17-Feb-16	10:30 AM	Auditorium
Martin, Jonathan	<i>Colonel Allan R. and Margaret G. Crow Professor, Department of Geological Sciences, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom D
Martin, Jonathan	<i>Colonel Allan R. and Margaret G. Crow Professor, Department of Geological Sciences, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom D
Martinez, Christopher	<i>Associate Professor, Department of Agricultural and Biological Engineering, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom E
Martyniuk, Chris	<i>Associate Professor, University of Florida College of Veterinary Medicine</i>	16-Feb-16	3:30 PM	Ballroom H
MacKay, Buddy	<i>42nd Governor of Florida</i>	16-Feb-16	3:30 PM	Auditorium
McMorrow, Shannon	<i>Environmental Scientist, Amec Foster Wheeler</i>	17-Feb-16	8:30 AM	Ballroom D
Middleton, Beth	<i>research ecologist, Wetlands & Aquatic Research Center</i>	16-Feb-16	1:30 PM	Ballroom A
Mishra, Akhilesh	<i>Assistant in Research, COAPS, Florida State University</i>	17-Feb-16	10:30 AM	Ballroom A
Misra, Vasu	<i>Associate Professor of Meteorology, Florida State University</i>	16-Feb-16	3:30 PM	Ballroom E
Morris, Kevin	<i>Science and Technology Officer, Peace River Manasota Regional Water Supply Authority</i>	16-Feb-16	3:30 PM	Ballroom E

Speakers, Panelists and Moderators

Last Name, First Name	Title and Affiliation	Day	Time	Location
Mullen, Jeffrey	<i>Associate Professor, University of Georgia</i>	17-Feb-16	10:30 AM	Ballroom E
Muñoz-Carpena, Rafael	<i>Department of Agricultural and Biological Engineering, University of Florida</i>	16-Feb-16	3:30 PM	Ballroom A
Nifong, James	<i>Postdoctoral Research Associate, University of Florida</i>	16-Feb-16	3:30 PM	Ballroom D
Notestein, Sky	<i>Senior Environmental Scientist, Southwest Florida Water Management District</i>	17-Feb-16	10:30 AM	Ballroom D
Osborne, Todd	<i>Assistant Professor, Whitney Laboratory University of Florida</i>	17-Feb-16	8:30 AM	Ballroom D
Ott, Emily	<i>Project Coordinator, University of Florida AEC/CLCE</i>	17-Feb-16	8:30 AM	Ballroom E
Payne, Jack	<i>Senior Vice President for Agriculture and Natural Resources, University of Florida</i>	16-Feb-16	10:30 AM	Auditorium
Perez, Elizabeth	<i>President, Collective Water Resources, LLC</i>	17-Feb-16	8:30 AM	Auditorium
Pettit, Chris	<i>Policy and Legislation Manager, Palm Beach County Water Utilities Department</i>	16-Feb-16	1:30 PM	Ballroom E
Quero, Yann	<i>French journalist, science fiction novelist and anthologist</i>	17-Feb-16	1:15 PM	Ballroom BCFG
Reddy, K.	<i>Graduate Research Professor and Chair, Soil and Water Science-IFAS</i>	16-Feb-16	1:30 PM	Ballroom D
Rodea-Palomares, Is	<i>Postdoctoral, University of Florida</i>	16-Feb-16	3:30 PM	Ballroom H
Russo, Sandra	<i>Director, Office for Global Research Engagement , International Center, University of Florida</i>	16-Feb-16	1:30 PM	Ballroom E
Scarlatos, Panagiotis	<i>Professor, Florida Atlantic University</i>	17-Feb-16	8:30 AM	Ballroom H
Seals, Linda	<i>County Extension Director, UF IFAS Extension Brevard County</i>	17-Feb-16	10:30 AM	Ballroom E
Sepulveda, Nicasio	<i>Research Hydrologist, USGS-CFWSC</i>	16-Feb-16	3:30 PM	Ballroom A
Shortelle, Ann	<i>Executive Director, St. Johns River Water Management District</i>	16-Feb-16	3:30 PM	Auditorium
Shukla, Asmita	<i>Sr. Hydrologic Data Analyst, Southwest Florida Water Management District</i>	17-Feb-16	10:30 AM	Auditorium
Skrivanek, Alexandra	<i>Graduate Assistant, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom H
Smith, Chelsea	<i>Aquatic Biology Lead Technician, J.W. Jones Ecological Research Center</i>	17-Feb-16	10:30 AM	Ballroom A
Sobczak, Robert	<i>Hydrologist, Big Cypress National Preserve</i>	16-Feb-16	1:30 PM	Ballroom A
Steckler, Natalie	<i>PhD student, University of Florida College of Veterinary Medicine</i>	16-Feb-16	1:30 PM	Ballroom H
Szafraniec, Mary	<i>Senior Scientist, Amec Foster Wheeler</i>	16-Feb-16	3:30 PM	Ballroom D
Taylor, Melissa	<i>Research Coordinator, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom E
Telg, Ricky	<i>Department of Agricultural Education and Communication and Director, Center for Public Issues Education, IFAS, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom E
Thorslund, Josefin	<i>PhD student, Stockholm University</i>	16-Feb-16	1:30 PM	Ballroom A
Toor, Gурpal	<i>Associate Professor, University of Florida</i>	17-Feb-16	8:30 AM	Ballroom A
Torres-Quezada, Emmanuel	<i>Student, University of Florida</i>	17-Feb-16	10:30 AM	Auditorium



Speakers, Panelists and Moderators

Last Name, First Name	Title and Affiliation	Day	Time	Location
Van der Tak, Laurens	<i>Vice President, CH2M</i>	16-Feb-16	3:30 PM	Ballroom E
VanderMeer, Jeff	<i>American speculative fiction writer</i>	17-Feb-16	1:15 PM	Ballroom BCFG
Vyverberg, Karen	<i>PhD Student, University of Florida</i>	17-Feb-16	10:30 AM	Ballroom H
Waltzek, Thomas	<i>Assistant Professor, College of Veterinary Medicine, University of Florida</i>	16-Feb-16	1:30 PM	Ballroom H
Warner, Laura	<i>Assistant Professor, UF/IFAS Department of Agricultural Education and Communication; Center for Landscape Conservation an</i>	17-Feb-16	8:30 AM	Ballroom E
Williams, Evan	<i>Project Manager III, Marion County Office of the County Engineer</i>	16-Feb-16	1:30 PM	Auditorium
Xu, Zexuan	<i>PhD candidate, Florida State University</i>	17-Feb-16	8:30 AM	Ballroom H
Yang, Yun-Ya	<i>Postdoctoral Researcher, University of Florida</i>	16-Feb-16	3:30 PM	Ballroom H
Zhu, Dan	<i>PhD Candidate, University of Florida</i>	17-Feb-16	8:30 AM	Auditorium



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Let's Talk About Water

A campus-wide discussion, featuring:

- Documentary screening "The Last Call at the Oasis"
2/15 at 5:30 pm. Ustler Hall.
- Art show and reception - meet and greet with Dr. Jay Famiglietti
2/15 at 7:30 pm. Ustler Hall. Refreshments Served.
- 2nd screening of the documentary "The Last Call at the Oasis"
2/16 at 1:00 pm. Frazier-Rogers Hall.
- Discussion with an outstanding **panel of experts** in water resources
2/16 at 3:30 pm. Reitz Union Auditorium. Refreshments Served.
- UF Water Institute Symposium: **Poster presentation** and reception*
2/16 at 5:30 pm. Reitz Union Auditorium. Refreshments Served.



Panelists

Dr. Jay Famiglietti - UC Irvine Professor, JPL Senior Water Scientist.
Dr. Wendy Graham - Carl S. Swisher Eminent Scholar, Director of UF Water Institute.
Gov. Buddy MacKay - 42nd Governor of Florida.
Dr. Ann Shortelle - Executive Director at St. Johns River Water Management District.
Moderator: Dr. Matthew J. Cohen - UF Associate Professor

Documentary screening and panel discussion open to the public.
Please RSVP on www.eventbrite.com, search for "Let's Talk About Water" or via the QR code below.
For more info, contact alice.alonso@ufl.edu or visit facebook.com/AWRAUFChapter/
***Free registration for first 50 ticket holders to the panel discussion.**



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