



Sustainable Water Resources

Complex Challenges, Integrated Solutions

Water Supply Planning in a Non-Stationary World



Within the Swamp, Roberts Lake Strand

Photo courtesy of Karen Glaser. All rights reserved.

2014 University of Florida Water Institute Symposium

J. Wayne Reitz Union, University of Florida Campus

February 11-12, 2014, 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

- Damian Adams, Forest Resources and Conservation, University of Florida
- Peter Adams, Geologic Sciences, University of Florida
- Ernie Barnett, South Florida Water Management District
- Drew Bartlett, Florida Department of Environmental Protection
- Treavor Boyer, Environmental Engineering Sciences, University of Florida
- Rich Budell, Florida Department of Agriculture and Consumer Services
- Mike Cullum, St. Johns River Water Management District
- Joe Delfino, Environmental Engineering Sciences, University of Florida
- Kathryn Frank, Urban and Regional Planning, University of Florida
- Bertha Goldenberg, Miami Dade Water and Sewer Authority
- BJ Jarvis, Pasco County Extension, UF-IFAS
- Jim Jawitz, Soil and Water Science, University of Florida
- Amy Mangan, Duke Energy
- Erich Marzolf, Suwannee River Water Management District
- Paul Monaghan, Agricultural Education and Communication, University of Florida
- Rafael Muñoz-Carpena, Agricultural and Biological Engineering, University of Florida
- Bill Pine, UF Wildlife Ecology and Conservation, University of Florida
- Sanjay Shukla, Agricultural and Biological Engineering, Southwest Florida Research and Education Center, University of Florida

Water Institute Staff

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

Symposium Volunteers

Cover Photo - The Harn Museum of Art features Karen Glaser in the exhibit "The Mark of Water: Florida's Springs and Swamps - Photographs by Karen Glaser" from February 11 - July 6, 2014. Artist's Talk: Sunday, February 16, 3:00pm



"For more than two decades Karen Glaser has documented amazing worlds beneath the surface of the water. Her photography for this exhibition was made "inside" Florida's springs, swamps and waterways and it provides a unique interpretation of these distinctive environments. Her images of Florida's wonderlands convey the mystery and primal power of this alien environment in a unique and personal view and one that is unfamiliar, alluring and visceral. Glaser evokes this otherworldly aquatic realm as no other photographer has done before."
- Kevin Miller, Curator, Southeast Museum of Photography, Daytona State College

Welcome

from University of Florida
Vice President for Research

David Norton



Dear Faculty, Students and Special Guests:

I am pleased to welcome you to the University of Florida's fourth Water Institute Symposium.

A little over a year ago UF's Institute of Food and Agricultural Sciences asked nearly 500 Floridians to rank the importance of 16 water-related topics. Clean drinking water was ranked highest by 93 percent of the respondents, followed closely by clean beaches, lakes and rivers. About 40 percent of the people in the survey reported having had a negative water-quality experience, including poor-quality drinking water and restricted access to beaches, spring, rivers and lakes tainted by pollution.

Sometime this year, Florida is expected to pass New York as the third-largest state. As we approach 20 million residents, water choices are only going to become more complicated. As economists at UF's Public Utility Research Center point out, water is not free, it has real costs. The choices Floridians make today will affect generations to come.

Over the last seven years, the Water Institute has served as a central clearinghouse for research and scholarship on water-related issues in Florida. Our faculty and their collaborators at other institutions around the country are uniquely equipped to address the many water challenges facing the state.

This year's Water Institute Symposium focuses on complex challenges and the integrated solutions required to address them in a rapidly changing world. Through research and events such as this symposium, the Water Institute is working to ensure that scientists and policy makers have all the information they need to make well-reasoned decisions.

Thank you for joining us for this timely and meaningful conference.

Sincerely,

David P. Norton
Vice President for Research

Welcome

from University of Florida
Water Institute Director

Wendy Graham



Dear Colleagues,

Thank you for joining us for the 4th UF Water Institute Symposium.

This symposium provides an unparalleled venue that links leading researchers, educators and students with resource managers, policymakers, industry, non-governmental organizations, and citizens interested in water issues. Throughout the symposium participants will explore the science, technology, practices and policies needed to guarantee a secure water future. The symposium theme is especially timely considering the significant challenges Florida is currently facing with regards to setting and achieving minimum flows and levels for our aquifers, springs, rivers and lakes, while at the same time providing sufficient, good quality water for agriculture, industry and the public.

Over the next two days presentations, posters and panels will focus on new research, education, policy, management and technology developments in the following areas:

- Impacts of changing drivers on water resources
- Water quality protection and treatment
- Managing water for people and the environment
- Water security: the water-energy-food nexus
- Science, stakeholders and decision-making

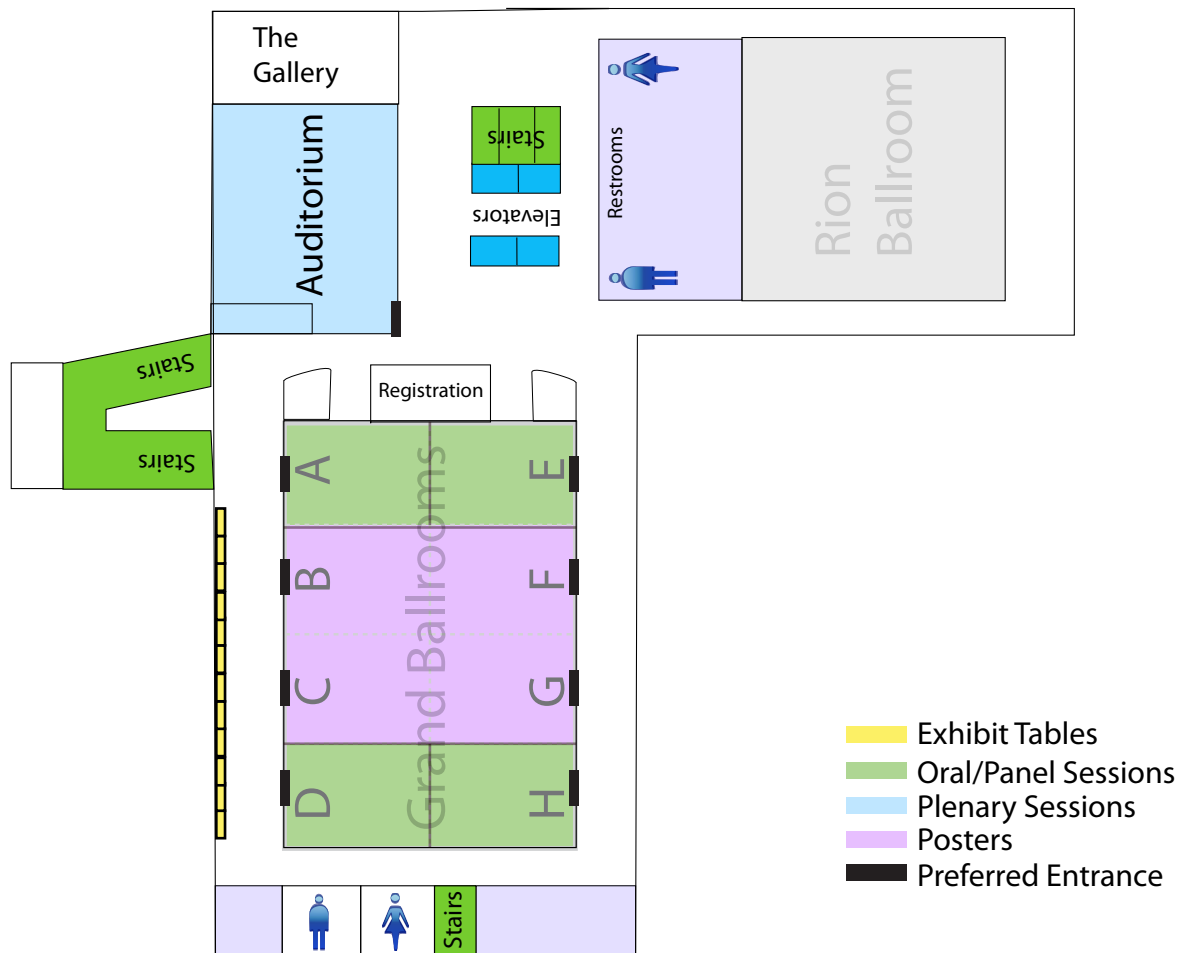
In conjunction with the Symposium, an exhibit "The Mark of Water: Florida's Springs and Swamps - Photographs by Karen Glaser" opens at the Samuel P. Harn Museum in the UF Cultural Plaza today. Our program cover features a photo by the artist. Please stop by the Museum to view the exhibit and plan to attend the Artist's talk on Sunday February 16th at 3pm.

Thanks again for attending the 4th UF Water Institute Symposium. We value your contributions and encourage your active participation.

Wendy Graham
Carl S. Swisher Chair in Water Resources
Director UF Water Institute



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



Agenda

Tuesday, February 11, 2014

7:30 AM-5 PM	Symposium Check-in	Registration Desk
8:30 AM-10 AM	Opening Plenary Session <i>(moderator: Wendy Graham, Water Institute, UF)</i> <ul style="list-style-type: none"> • Dr. Wendy Graham, Director and Professor, University of Florida Water Institute • Dr. Jack Payne, Senior Vice President for Agriculture and Natural Resources, University of Florida • Dr. Jerad D. Bales, Chief Scientist for Hydrology, U.S. Geological Survey <i>The Water Cycle: Monitoring, Understanding, Forecasting, and Communicating</i> 	Auditorium
		Sponsored By: Duke Energy
10 AM-10:30 AM	Break	Grand Ballrooms BCGF
10:30 AM-12 PM	Opening Plenary Session <i>(moderator: Wendy Graham, Water Institute, UF)</i> <ul style="list-style-type: none"> • Dr. Ben Strauss, Vice President for Climate Impacts and Director of the Program on Sea Level Rise, Climate Central <i>Threats from Sea Level Rise: Present, Future, Likely, and Inevitable</i> • Dr. Robert Lempert, Director, Center for Longer Range Global Policy and the Future Human Condition; and Senior Scientist Rand Corporation <i>Making Good Decisions Without Predictions: Robust Decision Making for Planning Under Deep Uncertainty</i> 	Auditorium
		Sponsored By: Duke Energy
12 PM-1:30 PM	Lunch (pick up box lunch in Ballrooms BCGF)	Grand Ballrooms BCGF
1:30 PM-3 PM	Governance and Regulation <i>(moderator: Damian Adams, School of Forest Resources & Conservation, UF)</i> <ul style="list-style-type: none"> • Robert Haskell Abrams, Professor of Law, Florida A & M Univ. College of Law <i>Operating Dams: Triage, Fairness, and Takings of Property</i> • Sanford Berg, Professor Emeritus, Public Utility Research Center, UF <i>Best Practices in Water Regulation</i> • Robert McConnell, Environmental Permit Coordinator, Tampa Bay Water <i>Linking MFLs and TMDLs- Recent Case Studies in Southwest Florida</i> • Eric T. Olsen, Attorney, Hopping Green & Sams, PA <i>Implementation of Minimum Flows and Levels and Associated Prevention and Recovery Strategy</i> • Steven Seibert, Partner, triSect LLC <i>The Intersection of Policy, Science and Politics: Lessons from the Tampa Bay Water Wars</i> 	Ballroom A
		Sponsored by: Carl S. Swisher Foundation
1:30 PM-3 PM	Impact of Changing Drivers 1 <i>(moderator: Rafael Muñoz-Carpena, Agricultural and Biological Engineering, UF)</i> <ul style="list-style-type: none"> • Lisa Cowart, Aquatic Ecology Lead Technician, Joseph W. Jones Ecological Research Center <i>Effects of Reduced Stream Flows on Instream Habitat Conditions in a Tributary of the Lower Flint River</i> • Zachary Siders, Ph.D. Student, University of Florida <i>Considering the Future of Gulf of Mexico Sturgeon Management in the Apalachicola and Suwannee Rivers</i> • Chelsea Smith, Graduate Student, Odum School of Ecology/ JW Jones Ecological Research Center <i>Influence of Stream Intermittency on Aquatic Insect Assemblages in the Lower Flint River Basin</i> 	Ballroom D



Agenda - Tuesday

- Nathalie D. Smith, Aquatic Biologist, Joseph W. Jones Ecological Research Center
Effects of a multi-year drought on stream flows and freshwater mussels in tributary streams of the lower Flint River, Georgia
- Paula Viveros Bedoya, Ph.D. Candidate, University of Florida
Seasonal Dynamics of Phytoplankton Composition and Abundance, River Discharge and Nutrients in Apalachicola Bay, Florida, USA
- Mike Wessel, Vice President, Janicki Environmental, Inc.
Biological Monitoring in Compliance Assessments: Lessons Learned from 12 Years of Tampa Bay Water Hydro-Biological Monitoring in Tidal Rivers

Sponsored by: CH2MHILL

1:30 PM-3 PM

Water Supply Planning

Ballroom E

(moderator: Bertha Goldenberg, Miami-Dade Water and Sewer Authority)

- Cynthia Gefvert, Section Leader, Water Supply Planning, Water Resource Division, South Florida Water Management District
Water Supply Planning Projections – How hard could it be?
- Christopher Pettit, Policy and Legislation Manager, Palm Beach County Water Utilities Department
Addressing Future Water Supply Challenges in SE Florida
- Antonio Yaquian, Graduate Assistant, University of Florida
Current and future water vulnerability in Florida
- Mike Britt, Natural Resources Division Director, City of Winter Haven
Sustainability: A New Operating System for Water Resource Management
- Thomas L. Singleton, President, Thomas L. Singleton Consulting, Inc.
Sustainable water resource management in Winter Haven, Florida: Linking environmental, social, and economic demands

Sponsored by: Plum Creek

1:30 PM -3 PM

Water Quality and Treatment 1

Ballroom H

(moderator: Joseph Delfino, Environmental Engineering Sciences, UF)

- Treavor Boyer, Assistant Professor, UF
Impact of Sea-Level Rise on Saltwater Intrusion and Formation of Brominated Disinfection Byproducts during Chlorination
- Reyna Cristina Colli-Dula, Postdoctoral Associate, University of Florida
Treated Municipal Wastewater Effluents Altered Molecular Signatures and Pathways of Fathead Minnows
- Viet D. Dang, Postdoctoral Associate, University of Florida
Insight into bioaccumulation of persistent organic pollutants (POPs) acquired by trophic transfer
- Sumith Jayasinghe, Postdoctoral Associate, University of Florida, Center for Environmental and Human Toxicology
Application of in vitro bioassays for screening of water quality
- Gary J. ReVoor II, Vice President, Tetra Tech
Potable Reuse: The Next Generation for Use of Reclaimed Water

Sponsored by: St. Johns River Water Management District

1:30 PM-3 PM

Water-Energy Nexus

Auditorium

(moderator: Amy Mangan, Duke Energy)

- Simone Athayde, Research Associate, University of Florida
Amazon Dams Program: Advancing Integrative Research on Social-ecological Dynamics of Hydroelectricity Production in the Brazilian Amazon
- John C. Capece, Engineer, Intelligentsia International, Inc.
Trade-offs between biofuels energy production, land use and water use in Florida
- Ying Ouyang, Research Hydrologist, USDA FS, CBHR
Simulating Water Use and Nitrogen Fate in a Woody Biomass Production Ecosystem

Agenda - Tuesday

3:30 PM-5 PM

- Sanjay Shukla, Associate Professor, ABE/SWFREC, University of Florida
Water Footprint of Bioenergy Crops in Florida
- Doug Yowell, Senior Environmental Specialist, Duke Energy
Alternative Water Supply Opportunities in the Electric Utility Industry

Sponsored by: Duke Energy

Water Demand Management

Ballroom A

(moderator: Jim Jawitz, Soil and Water Science, UF)

- Bernard Cardenas, Research Associate, University of Florida
Can soil moisture sensors improve irrigation efficiency? A review of multi-study results and future implications
- Timothy Desmarais, Water Resources Manager, The Balmoral Group
SJRWMD development of agricultural water use database in Florida, Georgia, South Carolina, and Alabama for estimating water conservation potential and groundwater recharge
- Kenneth Friedman, Graduate Research Assistant, University of Florida
Predicting and Managing Residential Potable Irrigation Using Parcel Level Databases
- Jason Icerman, Project Engineer, Jones Edmunds
SJRWMD spatial distribution of existing water use estimates for the North Florida Southeast Georgia Groundwater modeling process
- Miguel Alfredo Morales, Ph.D. Candidate, University of Florida
Assessment of Non-Residential Water Use Efficiencies through Sale and Employment Business Databases
- William L. Sheftall, Extension Agent IV - Natural Resource Management, University of Florida IFAS
Extension Leon County
Facility Retrofit to Harvest Rainwater for Irrigation Trains County Staff on Design, Installation and Maintenance of Water Conservation Technologies

Sponsored by: Carl S. Swisher Foundation

3:30 PM-5 PM

Impact of Changing Drivers 2

Ballroom D

(moderator: Peter Adams, Geological Sciences Department, UF)

- Karl E. Havens, Director and Professor, Florida Sea Grant, UF
Ecological responses of a large shallow lake (Okeechobee, Florida) to climate change and potential future hydrologic regimes
- David Kaplan, Assistant Professor, University of Florida
Managing Forests for Increased Regional Water Availability
- Glenn Landers, Civil Engineer, U.S. Army Corps of Engineers
Sea Level Change and Long Range Water Resources Planning for Florida
- Steve Leitman, Consultant, Waters Without Borders
An Investigation into the 2012 drought on Apalachicola River
- Daniel McLaughlin, Assistant Research Scientist, SFRC, University of Florida
Evidence for a significant nexus between isolated wetlands and downstream water bodies

Sponsored by: CH2MHILL

3:30 PM-5 PM

Water Supply Management

Ballroom E

(moderator: Bertha Goldenberg, Miami-Dade Water and Sewer Authority)

- Michael Gates, Professional Geologist, Southwest Florida Water Management District
Development of a Groundwater Management Plan to Mitigate Pumping During Freeze Events in West-Central, Florida
- William Kirk Martin, President, Water Science Associates
Disaggregating Demands and Integrating Supplies
- Kevin Morris, Science and Technology Officer, Peace River Manasota Regional Water Supply Authority
Synthesis of Diverse Data in Developing a Decision Tool for Initiating Recovery from an Aquifer Storage and Recovery System



Agenda - Tuesday

- Samuel Ramirez, Engineering Manager, GAI Consultants
Integrated Water Resource Program (IWRP) for the Keystone Heights Surficial Aquifer and Lakes Replenishment Program
- Rama Sivakumar, Research Engineer, Georgia Tech, Center for GIS
Sustainable stormwater management on an urban university campus, a case study from Georgia Tech

Sponsored by: Plum Creek

3:30 PM-5 PM

Water Quality and Treatment 2

Ballroom H

(moderator: Treavor Boyer, Environmental Engineering Sciences Department, UF)

- Jennifer Cherrier, Assoc. Professor, Florida A&M University
An 'Activated' Green Infrastructure Water Management Approach for Mitigating Runoff-Related Contaminant Loading to Inland and Coastal Waters
- Jeremy McBryan, Principal Engineer, South Florida Water Management District
Everglades Restoration Strategies: Optimizing Performance of Water Quality Restoration Projects
- Mary Szafraniec, Environmental Scientist, UF / Southwest Florida Water Management District
Using Constructed Wetlands for Wastewater Treatment to Reduce Nutrient Loading to Groundwater and Springs
- Jeffrey L. Ullman, Asst. Professor, University of Florida
Use of Vegetative Filter Strips on Surface Irrigated Fields and Development of a Decision-Support Tool to Optimize Water Quality Benefits

Sponsored by: St. Johns River Water Management District

5 PM-7:30 PM

Reception with appetizers and cash bar

Grand Ballrooms BCGF

5:10 PM-5:25 PM

Judges Meeting

Grand Ballroom H

5:30 PM-7:30 PM

Poster Sessions including Best Student Poster Competition

Grand Ballrooms BCGF

(moderator: Vibhava Srivastava, Postdoctoral Associate, Water Institute, UF)

Poster Session 1 - 5:30 pm - 6:30 pm (See page 14-15 for presenters)

Poster Session 2 - 6:30 pm - 7:30 pm (See page 18-19 for presenters)

See page 21 for alphabetic listing of posters by author

Poster Sections

- Impact of changing drivers on water resources
- Managing water for people and the environment
- Water Security: the water-energy-food nexus
- Water quality protection and treatment
- Science, stakeholders and decision-making

Poster Session sponsored by:

OUC-The *Reliable One*
Tampa Bay Water

Three student posters will each be awarded a \$1000 prize to be used to reimburse travel expenses to attend a research conference to present their work. Winners will be announced during the Wednesday afternoon Plenary Session.

Graduate Student Poster Awards sponsored by:

AMEC
Carl S. Swisher Foundation
Suwannee River Water Management District

Agenda - Wednesday

Wednesday, February 12, 2014

7:30 AM-3 PM

Symposium Check-in

Registration Desk

8:30 AM-10 AM

Stakeholder Engagement in Water Demand Management

Ballroom A

(moderator: Paul Monaghan, Agricultural Education and Communication, UF)

- Liz Felter, Extension Agent, UF/IFAS Orange Co.
An examination of community based social marketing strategies to increase water conservation practices by homeowners with automated irrigation systems in central Florida
- Stacie Greco, Water Conservation Coordinator, Alachua County Environmental Protection Department
Reducing residential landscape water use in Alachua County
- Kati Migliaccio, Associate Professor, University of Florida
Improving irrigation using real-time information and smart apps
- Kelly T. Morgan, Associate Professor, Soil and Water Science Department, University of Florida
My Florida Farm Weather Program for the Florida Automated Weather Network
- Laura Sanagorski, Assistant Professor, University of Florida Department of Agricultural Education and Communication
Extension Programs for Irrigation Water Conservation: Evaluating for Social Marketing Principles and Program Planning

Sponsored by: UF Water Institute

8:30 AM-10 AM

Environmental Services

Ballroom D

(moderator: Sanjay Shukla, Agricultural and Biological Engineering, SWREC-UF)

- Hilary Swain, Executive Director, Archbold Biological Station
Payments for Ecosystem Services in Florida Ranchlands: overview of hydro-ecological trade-offs
- Sanjay Shukla, Associate Professor, ABE/SWFREC, University of Florida
Quantification of Water Storage and Treatment Services in a Payment-for-environmental-services Program in Florida
- Patrick J. Bohlen, Professor, University of Central Florida
Trade-offs Between Hydrologic Changes and Ecological Taxa in a Payment-for-Environmental-Services Program on Florida Ranchlands
- Angelica Engel, Research Assistant, University of Florida
Hydroecological Modeling for Predicting Ecological Responses to Hydrologic Changes in a Payment-for-environmental-services Program on Florida Ranchlands
- Greg Kiker, Associate Professor, University of Florida
Development of a Decision Support System for Multi-Criteria Analysis of Ecosystem Services

Sponsored by: CH2MHILL

8:30 AM-10 AM

Stakeholder Engagement in Planning and Management

Ballroom E

(moderator: William Pine, Wildlife Ecology and Conservation, UF)

- Kristina Bridger, Environmental Consultant, Florida Dept of Environmental Protection
Bridging the Gap between Scientists, Policymakers, and the Public: Case Study of the TMDL Working Group for Kings Bay
- Kathryn I. Frank, Assistant Professor, Department of Urban and Regional Planning, University of Florida
Adapting to Climate, Sea Level, and Other Changes: A Survey of Florida's Coastal Public Water Supply Utilities
- Melissa Kreye, PhD Candidate, University of Florida
Preferences and attitudes towards water protection programs
- Galen Treuer, doctoral student, Leonard and Jayne Abess Center for Ecosystem Science and Policy - University of Miami
The strategic use of behavioral science in ecosystem models of south Florida water management
- E. Christian Wells, Associate Professor, University of South Florida
Tourism and Water: An Evaluation of Perceptions and Practices of Sustainable Wastewater Management on the Placencia Peninsula, Belize

Sponsored by: Plum Creek



Agenda - Wednesday

8:30 AM-10 AM

Springs Protection and Management 1

Ballroom H

(moderator: Joseph Delfino, Environmental Engineering Sciences, UF)

- Casey Fitzgerald, Director, Springs Protection Initiative, St. Johns River Water Management District
Overview of the Springs Protection Initiative in the St. Johns River Water Management District
- Jim Jawitz, Professor, University of Florida
Why we should monitor flows more and concentrations less: Stationarity and inequality from the Mississippi to the Kissimmee
- Robert L. Knight, Director, Howard T. Odum Florida Springs Institute
The Effect of Groundwater Pumping on Spring Flow Declines in North Florida
- Edgar F. Lowe, Chief Scientist, St. Johns River Water Management District
The Research Component of the Springs Protection Initiative of the St. Johns River Water Management District
- Erich Marzolf, Director, Water Resources, Suwannee River Water Management District
Relationships Between Discharge And Water Quality In Florida Springs

Sponsored by: St . Johns River Water Management District

8:30 AM-10 AM

Stakeholder Engagement in Education and Decision Making

Auditorium

(moderator: BJ Jarvis, Pasco County Extension, UF-IFAS)

- Tracy Irani, Professor, Center for Public Issues Education, UF
Creating Stakeholder Collaborations for Water Use Planning in an Uncertain Future: The Case of the Florida Water and Climate Alliance
- Kyle James, Student at Georgia Tech, Georgia Institute of Technology
Education and Research Overlay for Georgia Institute of Technology Campus Stormwater Management Master Plan
- James Fletcher, Osceola County Extension Director, UF IFAS Extension-Osceola County
Agricultural Water Supply Planning
- John Loper, Principal Hydrologist, Interflow Engineering
Restoring the Rookery Bay Estuary: A Framework for Collaborative Decision-Making
- Courtney Owens, Graduate Research Assistant, UF/IFAS
Changing Water Education: The Role of Extension

Sponsored by: Duke Energy

10 AM-10:30 AM

Break

Grand Ballrooms BCGF

10:30 AM-12 PM

Panel - Water Initiative in Extension

Ballroom A

(moderator: Kati Migliaccio, Agricultural and Biological Engineering, TREC-UF)

Water is among Florida's most valued resources and requires conservation and protection as Florida experiences continued growth in population, tourism and agriculture as well as climatic changes. UF IFAS Extension is providing expertise to address this issue and work with state agencies, municipalities, growers, and other clientele which is organized under the Water Initiative. This panel discussion will highlight some of the water initiative efforts that are on-going in UF IFAS Extension. This panel consists of UF IFAS Extension faculty as well as state agency and water management district representatives. Panel members will discuss major collaborative efforts between UF IFAS and agencies to meet common goals focusing on protecting Florida waters. Discussion topics will include:

- Extension programs that have informed and influenced decision making and policy.
- Extension programs that have helped implement new polices that improved water conservation or quality.
- What metrics have been used to measure impact of the programs/policy decisions?
- David E. Bracciano, Demand Management Coordinator, Tampa Bay Water
UF IFAS Water Initiative Panel: protecting Florida's waters
- Michael Dukes, Professor ABE & Director Center for Landscape Conservation and Ecology, UF-IFAS
Research guiding extension to inform decision makers in landscape water conservation
- Shannon McGee, Extension Agent I, UF/IFAS Extension Polk County
UF IFAS Water Initiative Panel: protecting Florida's waters.

Agenda - Wednesday

- Kelly T. Morgan, Associate Professor, Soil and Water Science Department, University of Florida
UF IFAS Water Initiative Panel: protecting Florida's waters
- Darrell Smith, Assistant Director, FDACS
UF IFAS Water Initiative Panel: protecting Florida's waters

Sponsored by: UF/IFAS

10:30 AM-12 PM

Panel - Beyond Just Water: The Case for Multiple Services in Payment for Environmental Services Programs

Ballroom D

(moderator: Sanjay Shukla, Agricultural and Biological Engineering, SWREC-UF)

Payment for environmental services (PES) programs are increasingly becoming popular for achieving environmental goals and improving the livelihood of the agricultural community. A PES program for paying agricultural landowners for providing water storage and treatment services was designed, tested, and implemented in 2012 in the Northern Everglades which is facing excessive flows and nutrient loads to the Lake Okeechobee, estuarine systems, and the Everglades. The program pays ranchers to modify their water management practices to either store excess water and/or remove nutrients from public water. Increased water storage on ranchlands is obtained through partially flooding pastures and increasing wetland storage. Enhanced storage is likely to affect ecological diversity (plant and animal) and carbon sequestration among others. While enhanced water storage on agricultural lands is likely to result in additional ecosystem services, it may also result in some dis-services such as increased mosquito or invasive species populations, and loss of forage. This panel will discuss the case for adding multiple environmental services beyond the already implemented water related services, including the tradeoffs between the multiple services and dis-services.

- William J. Mitsch, Eminent Scholar/Endowed Chair, Florida Gulf Coast University
- Rich Budell, Director, Office of Agricultural Water Policy, Florida Department of Agriculture and Consumer Services
- Jim Handley, Executive Vice President, Florida Cattlemen's Association
- Charles R. Hinkle, Vice Provost and Dean College of Graduate Studies, University of Central Florida
- Hilary Swain, Executive Director, Archbold Biological Station

Sponsored by: CH2MHILL

10:30 AM-12 PM

Panel - Climate Prediction in Water Supply

Ballroom E

(moderator: Michael Cullum, St. Johns River Water Management District)

This panel will provide current evaluations of predictive climate change tools and the potential impacts associated with climate changes on water supply and wetland systems in peninsular Florida. In addition, an evaluation of the progress made by the Florida Water Climate Alliance (Florida WCA), comprised of water utilities, university researchers and water management districts will be provided.

- Tirusew Asefa, Principal Engineer, Tampa Bay Water
Coping with uncertainties in CMIP5 precipitation projections: A case study from west central Florida
- Stephen Bourne, Senior Project Manager, Atkins North America
StormCaster Tool
- Di Tian, Graduate research assistant, University of Florida
Improving municipal water demand forecast using retrospective forecast of a global numerical weather prediction model
- Jayantha Obeysekera, Chief Modeler, South Florida Water Management District
Scenario-based, Integrated Assessment of the Greater Everglades System to Climate Change
- Jessica Bolson, Postdoctoral Fellow, Wharton Risk Management and Decision Processes Center
Early lessons learned from the Florida Water Climate Alliance on the integration of climate information into water resource decision-making

Sponsored by: Florida Water and Climate Alliance



Agenda - Wednesday

10:30 AM-12 PM

Springs Protection and Management 2

Ballroom H

(moderator: Erich Marzolf, Suwannee River Water Management District)

- Alan W. Hodges, Extension Scientist, University of Florida
Economic Impacts of Springs in the Suwannee/Santa Fe River Basin of Florida
- Brian G. Katz, Environmental Consultant, Florida Dept. Environmental Protection
A Tool to Quantify Nitrogen Sources and Loading to Ground Water in the Silver Springs Basin
- Del Bottcher, President, Soil and Water Engineering Technology, Inc.
Environmental Assessment of Adena Springs Ranch Using WAM
- Matthew J. Cohen, Associate Professor, UF/SFRC
Controls on Metabolism in Florida Streams and Spring Fed Rivers
- Sean A. King, Staff Engineer, Southwest Florida Water Management District
"In-Spring" Ecosystem Restoration

Sponsored by: St. Johns River Water Management District

10:30 AM-12 PM

Panel - Regional Water Supply Planning

Auditorium

(moderator: Kathryn Frank, Urban and Regional Planning, UF)

This panel of agency representatives will discuss two current regional water supply planning initiatives in Florida. The *North Florida Regional Water Supply Partnership* is a collaborative effort among the St. Johns River and Suwannee River water management districts, the Florida Department of Environmental Protection (FDEP), local elected officials, and area stakeholders. The purpose of the North Florida Regional Water Supply Partnership is to enhance communications and improve coordination of programs to protect the shared resources of the Floridan aquifer system. The mission of the *Central Florida Water Initiative* is to help protect, develop, conserve, and restore central Florida's water resources. This collaborative effort involves the St. Johns River, South Florida, and Southwest Florida water management districts, as well as FDEP, Florida Department of Agriculture and Consumer Services, and regional water utilities. Several water management challenges are being addressed through the development of the first multi-district plan for the five-county region, including traditional ground water limits, competing water demands, and overlapping regulatory programs.

- Tom Bartol, Assistant Director, St. Johns River Water Management District
- Tom Beck, Director, DEP Office of Water Policy, Florida Department of Environmental Protection
- Mark Hammond, Resource Management Director, Southwest Florida Wtr Mgmt District
- Carlos Herd, Water Supply Division Director, Suwannee River Water Management District
- Lennart Lindahl, Assistant Executive Director, SFWMD

Sponsored by: Duke Energy

12 PM-1:30 PM

Lunch (pick up box lunch in Ballrooms BCGF)

Grand Ballrooms BCGF

Agenda - Wednesday

1:30 PM-3 PM

Final Plenary Panel

Securing Florida's Water Future: Recent Progress, New Challenges, and Future Needs

Auditorium

(moderator: Wendy Graham, Water Institute, UF)

This panel consists of leaders of Florida's agencies responsible for water planning and management. Panel members will discuss recent successes and new challenges to water supply planning, as well as new research, education, policies and programs that should be developed to ensure successful water supply planning for the coming decades.

- Drew Bartlett, Deputy Secretary for Water Policy and Ecosystem Restoration Florida, Department of Environmental Regulation
- Robert Beltran, Executive Director, Southwest Florida Water Management District
- Rich Budell, Director, Office of Water Policy, Florida Department of Agriculture and Consumer Services
- Len Lindahl, Assistant Executive Director, South Florida Water Management District
- Ann Shortelle, Executive Director, Suwannee River Water Management District
- Hans Tanzler, Executive Director, St. Johns River Water Management District

Sponsored By: Duke Energy

3 PM-3:30 PM

Break

Grand Ballrooms BCGF

3:30 PM-5 PM

Final Plenary Panel

Presentation of Student Poster Awards

The Role of Political Leadership in Fostering a Florida Water Ethic

Auditorium

(moderator: Les Thiele, Political Sciences, UF)

For Florida to have an abundant and sustainable supply of clean water, its citizens have to embrace what Cynthia Barnett calls a "Water Ethic." Residential, commercial, and agricultural conservation depends upon the public's heightened understanding and sense of responsibility for this precious resource. In turn, politicians need widespread public support to deliver the innovative--and often costly--legislation that will be required to meet Florida's future water needs. Establishing a Water Ethic will require both a bottom-up and top-down effort, with grassroots activism complementing initiatives taken by the State of Florida's leaders. This plenary panel addresses the role of political leadership in establishing a Water Ethic in Florida.

- Bob Graham, Former US Senator, Florida Governor and State Legislator
- Cynthia Barnett, Journalist & Author, Mirage & Blue Revolution
- Steve Seibert, Partner, triSect, LLC
- Melissa Meeker, Vice President, CSA Ocean Sciences Inc.

Sponsored by: Duke Energy



Poster Presentations by Session

See Poster Layout Map Pg. 20

Poster Session: 1 5:30 - 6:30 PM

Grand Ballrooms BCGF

Impacts of changing drivers on water resources

- Alonso, Alice #2
UF
Unintended Consequences of Engineered Water Systems: Understanding the spatio-temporal dynamic of hydrological interactions between a human-transformed NW Costa Rican watershed and the downstream degraded Palo Verde Ramsar wetland
- Arnold, Thomas #44
University of Florida
Evaluating shifts and sources of organic matter input to Lake Harris, Florida, USA.
- Arteaga, Marliz #24
University of Florida
Hydroelectricity development in the Amazon: clean energy option in a climate change scenario?
- Chang, Seungwoo #40
University of Florida
Quantifying the relative uncertainties in future rainfall, temperature and evapotranspiration projections across the USA using CMIP5
- Davis, Stacia #41
University of Florida
Improving the model for evaluating the efficacy of weather-based irrigation controllers
- Ezell, John #19
University of Florida
Impacts of lowering aquifer heads on surface water-groundwater interactions: A study of spring reversals and their impact on aquifer water quality
- Flower, Kaitlyn #20
University of Florida
Spatial and temporal variability of bromide-to-chloride ratio in coastal groundwater: Literature review and field data
- Glodzik, Katie #22
UF Wildlife Ecology and Conservation
Saltwater intrusion impacts to coastal wetland topography and soil organic matter

- Gravois, Uriah #45
University of Florida
Analysis of long term tide gauge records in Florida.
- Hensley, Bobby #4
University of Florida
Profile "smearing" and its effect on inferring nutrient removal pathways and kinetics
- Hwang, Syewoon #42
University of Florida
Assessing the future change of precipitation and reference evapotranspiration over Florida using ranked CMIP5 model ensemble
- Johnson, Nathan #27
SJRWMD
SJRWMD development of regional water shortage management responses and recommended phased response methods
- Kalakan, Chanyut #5
Department of Civil and Coastal Engineering
Dimensionless Analysis for Investigation of Saltwater Intrusion and Recirculation of Seawater
- Khadka, Mitra #25
University of Florida, Geological Sciences
Quantifying hyporheic exchange in a karst stream using ^{222}Rn and its implication for carbon and nitrogen fluxes
- Khare, Yogesh #55
Agricultural and Biological Engineering, University of Florida
A multi-criteria trajectory-based parameter sampling strategy for the screening type sensitivity analysis method of elementary effects
- Kiker, Greg #8
University of Florida
Between the Devil and the Deep Blue Sea: Florida's Vulnerability To Sea Level Rise
- Klarenberg, Geraldine #7
UF, Dep of Agricultural and Biological Engineering
A spatial and temporal analysis of the relationship between vegetation and hydrology in an area subject to Inter-Oceanic Highway road paving in the SW Amazon
- Maleski, Jerome #9
University of Florida
Wavelet analysis of hydrological variables and predictors in the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa River Basins.

- Muñoz-Carpena, Rafael #38
UF
A simplified approach for simulating changes in beach habitat due to the combined effects of long-term sea level rise, storm erosion, and nourishment
- Nelson, Natalie #26
University of Florida
Blooms in the Bay: Modeling spatiotemporal chlorophyll-a dynamics exhibiting high inter-annual variability
- Nguyen, Thanh #43
University of Florida/Tropical Research and Education Center
An approach for evaluation and screening of measured data for wetland hydrologic model
- Nifong, Rachel #37
University of Florida
Does the stoichiometry of ecosystem metabolism reflect plant species stoichiometry and composition?
- Normand, Anna #3
University of Florida
Comparison of organic matter composition from shifting vegetation communities due to increased inundation of a subarctic mire in Abisko, Sweden
- Parra, Sabrina #39
University of Florida
Fortnightly variations in turbulent kinetic energy at a buoyant jet submarine groundwater discharge in a fringing reef lagoon
- Sihi, Debjani #6
University of Florida
Inclusion of maintenance respiration alters temperature response in microbial soil organic matter decomposition model for wetlands
- Srifa, Akeapot #1
University of Florida
Time-series analyses of relationships between zooplankton biomass and possible controlling environmental factors in a subtropical, nutrient-rich river
- Timpe, Kelsie #23
University of Florida
Assessing the effects of hydroelectric dam design on watershed hydrology and ecosystem services in the Amazon
- Vyverberg, Karen #21
Department of Geological Sciences
Evaluating the Potential for Rapid Sea Level Oscillations in Response to Sustained Global Warming

Managing water for people and the environment

- Bauer, Mace #58
UF/IFAS
Implementation of Advanced Irrigation Management on North Florida Farms
- Boyer, Mackenzie #59
Agricultural and Biological Engineering University of Florida
Big Data Indicates Big Irrigation Potential of Florida-Friendly Landscapes
- Crones, Charles #56
Amazon Dams Project
Hydroelectric Dams in the Amazon: Direct and Indirect Socio-Cultural Impacts on Local Communities
- Hu, Jing #57
Soil and Water Science Department, University of Florida
Influence of flooding and draining cycles on greenhouse gas emissions from peatlands

Water security: the water-energy-food nexus

- Couch, Annie #61
University of Florida
*Growth, Yield, and Nitrogen Accumulation by Sesame (*Sesamum indicum*L.) grown in North Central Florida.*
- Creamer, Anne Elise #60
University of Florida, Agricultural and Biological Engineering
Biochar as a Low Cost Carbon Dioxide Capture Material
- Holt, Nathan #64
University of Florida, ABE
Developing water and nutrient efficient bed geometries for raised bed, plastic mulch crop production systems using a vadose zone model.
- Landry, Kelly #63
University of Florida, ESSIE
Non-linear isotherm modeling of pharmaceutical removal in synthetic urine by ion-exchange resins
- Sidhu, Harmanpreet #62
University of Florida
Human Health Risks from Dislodged Residues of Endocrine Disruptors from Turf Irrigated with Reclaimed Water.



Agenda - Tuesday, February 11, 2014

8:30 am - 10:00 am					
Opening Plenary Session (Auditorium)					Posters (Ballroom BCGF)
<ul style="list-style-type: none">• Dr. Wendy Graham, Director and Professor, University of Florida Water Institute• Dr. Jack Payne, Senior Vice President for Agriculture and Natural Resources, University of Florida• Dr. Jerad D. Bales, Chief Scientist for Hydrology, U.S. Geological Survey <i>The Water Cycle: Monitoring, Understanding, Forecasting, and Communicating</i>					Poster set up
10:00 am - 10:30 am Break					
10:30 am - 12:00 pm					
Opening Plenary Session (Auditorium)					Posters (Ballroom BCGF)
<ul style="list-style-type: none">• Dr. Ben Strauss, Vice President for Climate Impacts and Director of the Program on Sea Level Rise, Climate Central <i>Threats from Sea Level Rise: Present, Future, Likely, and Inevitable</i>• Dr. Robert Lempert, Director, Center for Longer Range Global Policy and the Future Human Condition; and Senior Scientist Rand Corporation <i>Making Good Decisions Without Predictions: Robust Decision Making for Planning Under Deep Uncertainty</i>					Poster Set up
Noon - 1:30 pm Lunch					
1:30 pm - 3:00 pm Concurrent Sessions					Posters
Ballroom A	Ballroom D	Ballroom E	Ballroom H	Auditorium	Ballroom BCGF
Governance and Regulation	Impact of Changing Drivers 1	Water Supply Planning	Water Quality and Treatment 1	Water-Energy Nexus	Posters displayed
3:00 pm - 3:30 pm Break					
3:30 pm - 5:00 pm Concurrent Sessions					Posters
Ballroom A	Ballroom D	Ballroom E	Ballroom H	Ballroom BCGF	
Water Demand Management	Impact of Changing Drivers 2	Water Supply Management	Water Quality and Treatment 2	Posters displayed	
5:30 pm - 7:30 pm Poster Sessions and Reception - Ballroom BCGF					
Poster Sessions:					
5:30 - 6:30 pm	Impact of changing drivers on water resources		Managing water for people and the environment		Water Security: the water-energy-food nexus
6:30 - 7:30 pm	Water quality protection and treatment			Science, stakeholders and decision-making	

Agenda - Wednesday, February 12, 2014

8:30 am - 10:00 am

Concurrent Sessions

Posters

Ballroom A	Ballroom D	Ballroom E	Ballroom H	Auditorium	Ballroom BCGF
Stakeholder Engagement in Water Demand Management	Environmental Services	Stakeholder Engagement in Planning and Management	Springs Protection and Management 1	Stakeholder Engagement in Education and Decision Making	Posters displayed

10:00 am - 10:30 am Break

10:30 am-12:00 pm Concurrent Sessions

Ballroom A	Ballroom D	Ballroom E	Ballroom H	Auditorium	Ballroom BCGF
Panel - Water Initiative in Extension	Panel - Payment for Environmental Services	Panel - Climate Prediction in Water Supply	Springs Protection and Management 2	Panel - Regional Water Supply Planning	Posters displayed

Noon - 1:30 pm Lunch

1:30 pm - 3:00 pm Final Plenary Panel

Securing Florida's Water Future: Recent Progress, New Challenges, and Future Needs
(moderator: Wendy Graham, Water Institute, UF)

Auditorium

This panel consists of leaders of Florida's agencies responsible for water planning and management. Panel members will discuss recent successes and new challenges to water supply planning, as well as new research, education, policies and programs that should be developed to ensure successful water supply planning for the coming decades.

- Drew Bartlett, Deputy Secretary for Water Policy and Ecosystem Restoration Florida, Department of Environmental Regulation
- Robert Beltran, Executive Director, South West Florida Water Management District
- Rich Budell, Director, Office of Water Policy, Florida Department of Agriculture and Consumer Services
- Len Lindahl, Assistant Executive Director, South Florida Water Management District
- Ann Shortelle, Executive Director, Suwannee River Water Management District
- Hans Tanzler, Executive Director, St Johns River Water Management District

3:00 pm - 3:30 pm Break

3:30 pm - 5:00 pm Final Plenary Panel and Student Poster Awards Presentations

The Role of Political Leadership in Fostering a Florida Water Ethic
(moderator: Les Thiele, Political Sciences, UF)

Auditorium

For Florida to have an abundant and sustainable supply of clean water, its citizens have to embrace what Cynthia Barnett calls a "Water Ethic." Residential, commercial, and agricultural conservation depends upon the public's heightened understanding and sense of responsibility for this precious resource. In turn, politicians need widespread public support to deliver the innovative--and often costly--legislation that will be required to meet Florida's future water needs. Establishing a Water Ethic will require both a bottom-up and top-down effort, with grassroots activism complementing initiatives taken by the State of Florida's leaders. This plenary panel addresses the role of political leadership in establishing a Water Ethic in Florida.

- Bob Graham, Former US Senator, Florida Governor and State Legislator
- Cynthia Barnett, Journalist & Author, Mirage & Blue Revolution
- Steve Seibert, Partner, triSect, LLC
- Melissa Meeker, Vice President, CSA Ocean Sciences Inc.



Poster Session: 2 6:30 - 7:30 PM Grand Ballrooms BCGF

Science, stakeholders and decision-making

Bowden, Chandra #12
UF/IFAS Center for Public Issues Education

The relationship between perceived government influence and water preservation behaviors of Floridian residents

Campoverde, E. Vanessa #14
UF/IFAS Miami-Dade Extension

Educating Environmental Horticulture Producers about Water Quality and Conservation Impacts on Plant Production

Cohen, Jamie #17
UF/IFAS Marion County Extension

Composting and its Benefits: Achieving Practice Change Through Education to Reduce Nutrient Loads and Increase Agriculture BMP Usage.

Contreras Arribas, Eva #16
University of Florida

Process and network complexity: evaluation of land use change and ecological services through an actor-based model in the Southwest Amazon Region

Holtzhower, Darby #13
University of Florida

A decision support system to optimize wastewater treatment in the built environment

Langston, Amy #10
University of Florida

Integrating science into comprehensive planning for sea level rise adaptation in rural coastal communities

Miller, Lara #29
UF/IFAS Extension Pinellas County

Watershed Education for Elected Officials, Resource Managers, and Concerned Citizens

Ott, Emily #15
UF Agricultural Education and Communication

Qualitative Social Research for Communicating Water Conservation

Roper, Caroline #11
University of Florida

Understanding the public: Utilizing perceptions to change water conservation behaviors

Stofer, Katie #28
University of Florida

Visualizing Data for Stakeholders From Varying Backgrounds

Wester, Julia #18
University of Miami

Psychological and Social Factors Associated with Wastewater Reuse Emotional Distress in the United States

Water quality protection and treatment

Amini, Adib #30
University of South Florida

Sustainable Energy and Nutrient Recovery from Swine Waste: A Life Cycle Environmental Impact and Cost Assessment

Barry, Savanna #69
University of Florida

*Morphological characteristics and patterns of biomass allocation of *Thalassia testudinum* in relation to nutrient regimes off Florida's Gulf*

Biscardi, Paul #66
University of Central Florida

Evaluation of Coagulation and Adsorptive Treatment Technologies for Phosphorus Removal from the Middle St. Johns River Basin

Brown, Amy #34
University of Florida

A comparison of the impact of diffuse and point source recharge on surface and groundwater quality

Dari, Biswanath #72
University of Florida

Model Parameters from Soil Test Data for Input into Phosphorus-loss Predictive Models

Henson, Wesley #36
University of Florida/ USGS

Examining Denitrification in the Upper Floridan Aquifer near Point and Non-point Sources

Huang, Laibin #54
Soil and water Science Department

The effects of soil properties on soil seed-spore bank germination in Pearl River Estuary, China

Huq, Mohammad University of Florida	#65
<i>Relationship between the geomorphic features and spatial arsenic distribution patterns in part of Meghna Floodplain, Bangladesh</i>	
Ishii, Stephanie University of Florida	#70
<i>Urine source separation at the University of Florida: Assessing impacts and student support from a life cycle perspective</i>	
Johnson, Alexis University of Florida	#33
<i>The Effect of Variable Hyporheic Exchange on Nitrate Removal in Florida Springs: A Smart Tracer Approach</i>	
Llaneza, Veronica University of Florida	#71
<i>Surface modified nanoparticles as potential solution to the complex problems facing our nation's water resources</i>	
Luo, Jiexuan University of Florida	#53
<i>Nitrogen Loadings from Different Land Uses at University of Florida Determined by High-Resolution in situ Nitrate Sensors</i>	
Morrison, Elise University of Florida	#50
<i>The response of microbial communities to nutrient enrichment in the Florida Everglades</i>	
Oppong-Anane, Akua University of Florida	#31
<i>Towards a Geochemical Approach to Preventing Groundwater Pollution via Landfill Imposed Reductive Dissolution of Vadose Soil Iron Oxide</i>	
Palacio, Darina UF Engineering School of Sustainable Infrastructure & Environment	#49
<i>Stream Restoration in Florida</i>	
Pearson, Brian Mid-Florida Research and Education Center, University of Florida	#46
<i>Influence of mulch type and depth on stormwater runoff and leachate from simulated landscape soil boxes</i>	
Prasad, Rishi University of Florida	#68
<i>Role of nitrogen budgets in evaluating nitrogen leaching from potato production in sandy soil: A model based approach to improve nitrogen management in Suwanee River Basin</i>	

Reijo, Courtney University of Florida	#48
<i>Opening the Benthos Box: Assessing stream response to reduced nitrate concentrations</i>	
Rozin, Alexandra University of Florida	#32
<i>Effects of instrument path length on optical nitrate sensors</i>	
Shukla, Asmita University of Florida	#35
<i>Role of Agricultural Detention Areas in Phosphorous Retention: Sink or Source?</i>	
Valcarce, Christine UF	#47
<i>Regression Modeling of PAC Performance</i>	
Weinkam, Grant University of Florida	#52
<i>Sustainable phosphorus management in land applied reclaimed water scenarios</i>	
White, Erin University of Florida	#51
<i>Bio-partitioning Tracer Technique for the Estimation of Microbial Biomass Effects on the Transport of Partitioning Solutes in Groundwater</i>	
Zantout, Raina University of Florida	#67
<i>Water Systems Management and Diarrheal Incidence during the Monsoon Season in India</i>	



Poster Session Layout



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Session 1 - Impacts of changing drivers on water resources	1-9, 19-27, 37-45, 55
Session 1 - Managing water for people and the environment	56-59
Session 1 - Water security: the water-energy-food nexus	60-64
Session 2 - Science, stakeholders and decision-making	10-18, 28-29
Session 2 - Water quality protection and treatment	30-36, 46-54, 65-72

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Author	Title	Poster #	Session
Alonso, Alice	<i>Unintended Consequences of Engineered Water Systems: Understanding the spatio-temporal dynamic of hydrological interactions between a human-transformed NW Costa Rican watershed and the downstream degraded Palo Verde Ramsar wetland</i>	2	1
Amini, Adib	<i>Sustainable Energy and Nutrient Recovery from Swine Waste: A Life Cycle Environmental Impact and Cost Assessment</i>	30	2
Arnold, Thomas	<i>Evaluating shifts and sources of organic matter input to Lake Harris, Florida, USA.</i>	44	1
Arteaga, Marliz	<i>Hydroelectricity development in the Amazon: clean energy option in a climate change scenario?</i>	24	1
Barry, Savanna	<i>Morphological characteristics and patterns of biomass allocation of <i>Thalassia testudinum</i> in relation to nutrient regimes off Florida's Gulf Coast</i>	69	2
Bauer, Mace	<i>Implementation of Advanced Irrigation Management on North Florida Farms</i>	58	1
Biscardi, Paul	<i>Evaluation of Coagulation and Adsorptive Treatment Technologies for Phosphorus Removal from the Middle St. Johns River Basin</i>	66	2
Bowden, Chandra	<i>The relationship between perceived government influence and water preservation behaviors of Floridian residents</i>	12	2
Boyer, Mackenzie	<i>Big Data Indicates Big Irrigation Potential of Florida-Friendly Landscapes</i>	59	1
Brown, Amy	<i>A comparison of the impact of diffuse and point source recharge on surface and groundwater quality</i>	34	2
Campoverde, E. Vanessa	<i>Educating Environmental Horticulture Producers about Water Quality and Conservation Impacts on Plant Production</i>	14	2
Chang, Seungwoo	<i>Quantifying the relative uncertainties in future rainfall, temperature and evapotranspiration projections across the USA using CMIP5</i>	40	1
Cohen, Jamie	<i>Composting and its Benefits: Achieving Practice Change Through Education to Reduce Nutrient Loads and Increase Agriculture BMP Usage.</i>	17	2
Contreras Arribas, Eva	<i>Process and network complexity: evaluation of land use change and ecological services through an actor-based model in the Southwest Amazon Region</i>	16	2
Couch, Annie	<i>Growth, Yield, and Nitrogen Accumulation by Sesame (<i>Sesamum indicum</i>L.) grown in North Central Florida.</i>	61	1
Creamer, Anne Elise	<i>Biochar as a Low Cost Carbon Dioxide Capture Material</i>	60	1
Crones, Charles	<i>Hydroelectric Dams in the Amazon: Direct and Indirect Socio-Cultural Impacts on Local Communities</i>	56	1
Dari, Biswanath	<i>Model Parameters from Soil Test Data for Input into Phosphorus-loss Predictive Models</i>	72	2
Davis, Stacia	<i>Improving the model for evaluating the efficacy of weather-based irrigation controllers</i>	41	1
Ezell, John	<i>Impacts of lowering aquifer heads on surface water-groundwater interactions: A study of spring reversals and their impact on aquifer water quality</i>	19	1
Flower, Kaitlyn	<i>Spatial and temporal variability of bromide-to-chloride ratio in coastal groundwater: Literature review and field data</i>	20	1
Glodzik, Katie	<i>Saltwater intrusion impacts to coastal wetland topography and soil organic matter</i>	22	1
Gravois, Uriah	<i>Analysis of long term tide gauge records in Florida.</i>	45	1
Hensley, Bobby	<i>Profile "smearing" and its effect on inferring nutrient removal pathways and kinetics</i>	4	1



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Author	Title	Poster #	Session
Henson, Wesley	<i>Examining Denitrification in the Upper Floridan Aquifer near Point and Non-point Sources</i>	36	2
Holt, Nathan	<i>Developing water and nutrient efficient bed geometries for raised bed, plastic mulch crop production systems using a vadose zone model.</i>	64	1
Holtzower, Darby	<i>A decision support system to optimize wastewater treatment in the built environment</i>	13	2
Hu, Jing	<i>Influence of flooding and draining cycles on greenhouse gas emissions from peatlands</i>	57	1
Huang, Laibin	<i>The effects of soil properties on soil seed-spore bank germination in Pearl River Estuary, China</i>	54	2
Huq, Mohammad	<i>Relationship between the geomorphic features and spatial arsenic distribution patterns in part of Meghna Floodplain, Bangladesh</i>	65	2
Hwang, Syewoon	<i>Assessing the future change of precipitation and reference evapotranspiration over Florida using ranked CMIP5 model ensemble</i>	42	1
Ishii, Stephanie	<i>Urine source separation at the University of Florida: Assessing impacts and student support from a life cycle perspective</i>	70	2
Johnson, Alexis	<i>The Effect of Variable Hyporheic Exchange on Nitrate Removal in Florida Springs: A Smart Tracer Approach</i>	33	2
Johnson, Nathan	<i>SJRWMD development of regional water shortage management responses and recommended phased response methods</i>	27	1
Kalakan, Chanyut	<i>Dimensionless Analysis for Investigation of Saltwater Intrusion and Recirculation of Seawater</i>	5	1
Khadka, Mitra	<i>Quantifying hyporheic exchange in a karst stream using ²²²Rn and its implication for carbon and nitrogen fluxes</i>	25	1
Khare, Yogesh	<i>A multi-criteria trajectory-based parameter sampling strategy for the screening type sensitivity analysis method of elementary effects</i>	55	1
Kiker, Greg	<i>Between the Devil and the Deep Blue Sea: Florida's Vulnerability To Sea Level Rise</i>	8	1
Klarenberg, Geraldine	<i>A spatial and temporal analysis of the relationship between vegetation and hydrology in an area subject to Inter-Oceanic Highway road paving in the SW Amazon</i>	7	1
Landry, Kelly	<i>Non-linear isotherm modeling of pharmaceutical removal in synthetic urine by ion-exchange resins</i>	63	1
Langston, Amy	<i>Integrating science into comprehensive planning for sea level rise adaptation in rural coastal communities</i>	10	2
Llaneza, Veronica	<i>Surface modified nanoparticles as potential solution to the complex problems facing our nation's water resources</i>	71	2
Luo, Jiexuan	<i>Nitrogen Loadings from Different Land Uses at University of Florida Determined by High-Resolution in situ Nitrate Sensors</i>	53	2
Maleski, Jerome	<i>Wavelet analysis of hydrological variables and predictors in the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa River Basins.</i>	9	1
Miller, Lara	<i>Watershed Education for Elected Officials, Resource Managers, and Concerned Citizens</i>	29	2
Morrison, Elise	<i>The response of microbial communities to nutrient enrichment in the Florida Everglades</i>	50	2
Muñoz-Carpena, Rafael	<i>A simplified approach for simulating changes in beach habitat due to the combined effects of long-term sea level rise, storm erosion, and nourishment</i>	38	1
Nelson, Natalie	<i>Blooms in the Bay: Modeling spatiotemporal chlorophyll-a dynamics exhibiting high inter-annual variability</i>	26	1

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Author	Title	Poster #	Session
Nguyen, Tanh	<i>An approach for evaluation and screening of measured data for wetland hydrologic model</i>	43	1
Nifong, Rachel	<i>Does the stoichiometry of ecosystem metabolism reflect plant species stoichiometry and composition?</i>	37	1
Normand, Anna	<i>Comparison of organic matter composition from shifting vegetation communities due to increased inundation of a subarctic mire in Abisko, Sweden</i>	3	1
Oppong-Anane, Akua	<i>Towards a Geochemical Approach to Preventing Groundwater Pollution via Landfill Imposed Reductive Dissolution of Vadose Soil Iron Oxide Minerals</i>	31	2
Ott, Emily	<i>Qualitative Social Research for Communicating Water Conservation</i>	15	2
Palacio, Darina	<i>Stream Restoration in Florida</i>	49	2
Parra, Sabrina	<i>Fortnightly variations in turbulent kinetic energy at a buoyant jet submarine groundwater discharge in a fringing reef lagoon</i>	39	1
Pearson, Brian	<i>Influence of mulch type and depth on stormwater runoff and leachate from simulated landscape soil boxes</i>	46	2
Prasad, Rishi	<i>Role of nitrogen budgets in evaluating nitrogen leaching from potato production in sandy soil: A model based approach to improve nitrogen management in Suwanee River Basin</i>	68	2
Reijo, Courtney	<i>Opening the Benthos Box: Assessing stream response to reduced nitrate concentrations</i>	48	2
Roper, Caroline	<i>Understanding the public: Utilizing perceptions to change water conservation behaviors</i>	11	2
Rozin, Alexandra	<i>Effects of instrument path length on optical nitrate sensors</i>	32	2
Shukla, Asmita	<i>Role of Agricultural Detention Areas in Phosphorous Retention: Sink or Source?</i>	35	2
Sidhu, Harmanpreet	<i>Human Health Risks from Dislodged Residues of Endocrine Disruptors from Turf Irrigated with Reclaimed Water.</i>	62	1
Sihi, Debjani	<i>Inclusion of maintenance respiration alters temperature response in microbial soil organic matter decomposition model for wetlands</i>	6	1
Srifa, Akeapot	<i>Time-series analyses of relationships between zooplankton biomass and possible controlling environmental factors in a subtropical, nutrient-rich river</i>	1	1
Stofer, Katie	<i>Visualizing Data for Stakeholders From Varying Backgrounds</i>	28	2
Timpe, Kelsie	<i>Assessing the effects of hydroelectric dam design on watershed hydrology and ecosystem services in the Amazon</i>	23	1
Valcarce, Christine	<i>Regression Modeling of PAC Performance</i>	47	2
Vyverberg, Karen	<i>Evaluating the Potential for Rapid Sea Level Oscillations in Response to Sustained Global Warming</i>	21	1
Weinkam, Grant	<i>Sustainable phosphorus management in land applied reclaimed water scenarios</i>	52	2
Wester, Julia	<i>Psychological and Social Factors Associated with Wastewater Reuse Emotional Distress in the United States</i>	18	2
White, Erin	<i>Bio-partitioning Tracer Technique for the Estimation of Microbial Biomass Effects on the Transport of Partitioning Solutes in Groundwater</i>	51	2
Zantout, Raina	<i>Water Systems Management and Diarrheal Incidence during the Monsoon Season in India</i>	67	2



Alphabetic List of Speakers and Panelists

Last Name, First Name	Title	Day	Time	Location
Abrams, Robert	<i>Professor of Law, Florida A & M Univ. College of Law</i>	2/11/14	1:30 PM	Ballroom A
Asefa, Tirusew	<i>Principal Engineer, Tampa Bay Water</i>	2/12/14	10:30 AM	Ballroom E
Athayde, Simone	<i>Research Associate, University of Florida</i>	2/11/14	1:30 PM	Auditorium
Bales, Jerad	<i>Chief Scientist for Hydrology, U.S. Geological Survey</i>	2/11/14	8:30 AM	Auditorium
Barnett, Cynthia	<i>Journalist & Author, Mirage & Blue Revolution</i>	2/12/14	3:30 PM	Auditorium
Bartlett, Drew	<i>Deputy Secretary for Water Policy and Ecosystem Restoration Florida, Department of Environmental Regulation</i>	2/12/14	1:30 PM	Auditorium
Bartol, Tom	<i>Assistant Director, St. Johns River Water Management District</i>	2/12/14	10:30 AM	Auditorium
Beck, Tom	<i>Director, DEP Office of Water Policy, Florida Department of Environmental Protection</i>	2/12/14	10:30 AM	Auditorium
Beltran, Robert	<i>Executive Director, Southwest Florida Water Management District</i>	2/12/14	1:30 PM	Auditorium
Berg, Sanford	<i>Professor Emeritus, Public Utility Research Center, UF</i>	2/11/14	1:30 PM	Ballroom A
Bohlen, Patrick	<i>Professor, University of Central Florida</i>	2/12/14	8:30 AM	Ballroom D
Bolson, Jessica	<i>Postdoctoral Fellow, Wharton Risk Management and Decision Processes Center</i>	2/12/14	10:30 AM	Ballroom E
Bottcher, Del	<i>President, Soil and Water Engineering Technology, Inc.</i>	2/12/14	10:30 AM	Ballroom H
Bourne, Stephen	<i>Senior Project Manager, Atkins North America</i>	2/12/14	10:30 AM	Ballroom E
Boyer, Treavor	<i>Assistant Professor, UF</i>	2/11/14	1:30 PM	Ballroom H
Bracciano, David	<i>Demand Management Coordinator, Tampa Bay Water</i>	2/12/14	10:30 AM	Ballroom A
Bridger, Kristina	<i>Environmental Consultant, Florida Dept of Environmental Protection</i>	2/12/14	8:30 AM	Ballroom E
Britt, Mike	<i>Natural Resources Division Director, City of Winter Haven</i>	2/11/14	1:30 PM	Ballroom E
Budell, Rich	<i>Director, Office of Agricultural Water Policy, Florida Department of Agriculture and Consumer Services</i>	2/12/14	10:30 AM	Ballroom D
Budell, Rich	<i>Director, Office of Agricultural Water Policy, Florida Department of Agriculture and Consumer Services</i>	2/12/14	1:30 PM	Auditorium
Capece, John	<i>Engineer, Intelligentsia International, Inc.</i>	2/11/14	1:30 PM	Auditorium
Cardenas, Bernard	<i>Research Associate, University of Florida</i>	2/11/14	3:30 PM	Ballroom A
Cherrier, Jennifer	<i>Assoc. Professor, Florida A&M University</i>	2/11/14	3:30 PM	Ballroom H
Cohen, Matthew	<i>Associate Professor, UF/SFRC</i>	2/12/14	10:30 AM	Ballroom H
Colli-Dula, Reyna	<i>Postdoctoral Associate, University of Florida</i>	2/11/14	1:30 PM	Ballroom H
Cowart, Lisa	<i>Aquatic Ecology Lead Technician, Joseph W. Jones Ecological Research Center</i>	2/11/14	1:30 PM	Ballroom D
Dang, Viet	<i>Postdoctoral Associate, University of Florida</i>	2/11/14	1:30 PM	Ballroom H
Desmarais, Timothy	<i>Water Resources Manager, The Balmoral Group</i>	2/11/14	3:30 PM	Ballroom A
Dukes, Michael	<i>Professor ABE & Director Center for Landscape Conservation and Ecology, UF-IFAS</i>	2/12/14	10:30 AM	Ballroom A
Engel, Angelica	<i>Research Assistant, University of Florida</i>	2/12/14	8:30 AM	Ballroom D
Felter, Liz	<i>Extension Agent, UF/IFAS Orange Co.</i>	2/12/14	8:30 AM	Ballroom A
Fitzgerald, Casey	<i>Director, Springs Protection Initiative, St. Johns River Water Management District</i>	2/12/14	8:30 AM	Ballroom H

Alphabetic List of Speakers and Panelists

Last Name, First Name	Title	Day	Time	Location
Fletcher, James	<i>Osceola County Extension Director, UF IFAS Extension-Osceola County</i>	2/12/14	8:30 AM	Auditorium
Frank, Kathryn	<i>Assistant Professor, Department of Urban and Regional Planning, University of Florida</i>	2/12/14	8:30 AM	Ballroom E
Friedman, Kenneth	<i>Graduate Research Assistant, University of Florida</i>	2/11/14	3:30 PM	Ballroom A
Gates, Michael	<i>Professional Geologist, Southwest Florida Water Management District</i>	2/11/14	3:30 PM	Ballroom E
Gefvert, Cynthia	<i>Section Leader, Water Supply Planning, Water Resource Division, South Florida Water Management District</i>	2/11/14	1:30 PM	Ballroom E
Graham, Bob	<i>Former US Senator, Florida Governor and State Legislator</i>	2/12/14	3:30 PM	Auditorium
Graham, Wendy	<i>Director and Professor, University of Florida Water Institute</i>	2/11/14	8:30 AM	Auditorium
Graham, Wendy	<i>Director and Professor, University of Florida Water Institute</i>	2/12/14	1:30 PM	Auditorium
Greco, Stacie	<i>Water Conservation Coordinator, Alachua County Environmental Protection Department</i>	2/12/14	8:30 AM	Ballroom A
Hammond, Mark	<i>Resource Management Director, Southwest Florida Wtr Mgmt District</i>	2/12/14	10:30 AM	Auditorium
Handley, Jim	<i>Executive Vice President, Florida Cattlemen's Association</i>	2/12/14	10:30 AM	Ballroom D
Havens, Karl	<i>Director and Professor, Florida Sea Grant, UF</i>	2/11/14	3:30 PM	Ballroom D
Herd, Carlos	<i>Water Supply Division Director, Suwannee River Water Management District</i>	2/12/14	10:30 AM	Auditorium
Hinkle, Charles	<i>Vice Provost and Dean College of Graduate Studies, University of Central Florida</i>	2/12/14	10:30 AM	Ballroom D
Hodges, Alan	<i>Extension Scientist, University of Florida</i>	2/12/14	10:30 AM	Ballroom H
Iceman, Jason	<i>Project Engineer, Jones Edmunds</i>	2/11/14	3:30 PM	Ballroom A
Irani, Tracy	<i>Professor, Center for Public Issues Education, UF</i>	2/12/14	8:30 AM	Auditorium
James, Kyle	<i>Student at Georgia Tech, Georgia Institute of Technology</i>	2/12/14	8:30 AM	Auditorium
Jawitz, Jim	<i>Professor, University of Florida</i>	2/12/14	8:30 AM	Ballroom H
Jayasinghe, Sumith	<i>Postdoctoral Associate, University of Florida, Center for Environmental and Human Toxicology</i>	2/11/14	1:30 PM	Ballroom H
Kaplan, David	<i>Assistant Professor, University of Florida</i>	2/11/14	3:30 PM	Ballroom D
Katz, Brian	<i>Environmental Consultant, Florida Dept. Environmental Protection</i>	2/12/14	10:30 AM	Ballroom H
Kiker, Greg	<i>Associate Professor, University of Florida</i>	2/12/14	8:30 AM	Ballroom D
King, Sean	<i>Staff Engineer, Southwest Florida Water Management District</i>	2/12/14	10:30 AM	Ballroom H
Knight, Robert	<i>Director, Howard T. Odum Florida Springs Institute</i>	2/12/14	8:30 AM	Ballroom H
Kreye, Melissa	<i>PhD Candidate, University of Florida</i>	2/12/14	8:30 AM	Ballroom E
Landers, Glenn	<i>Civil Engineer, U.S. Army Corps of Engineers</i>	2/11/14	3:30 PM	Ballroom D
Leitman, Steve	<i>Consultant, Waters Without Borders</i>	2/11/14	3:30 PM	Ballroom D
Lempert, Robert	<i>Director, Center for Longer Range Global Policy and the Future Human Condition; and Senior Scientist RAND Corporation</i>	2/11/14	10:30 AM	Auditorium



Alphabetic List of Speakers and Panelists

Last Name, First Name	Title	Day	Time	Location
Lindahl, Lennart	<i>Assistant Executive Director, SFWMD</i>	2/12/14	10:30 AM	Auditorium
Lindahl, Lennart	<i>Assistant Executive Director, SFWMD</i>	2/12/14	1:30 PM	Auditorium
Loper, John	<i>Principal Hydrologist, Interflow Engineering</i>	2/12/14	8:30 AM	Auditorium
Lowe, Edgar	<i>Chief Scientist, St. Johns River Water Management District</i>	2/12/14	8:30 AM	Ballroom H
Martin, William	<i>President, Water Science Associates</i>	2/11/14	3:30 PM	Ballroom E
Marzolf, Erich	<i>Director, Water Resources, Suwannee River Water Management District</i>	2/12/14	8:30 AM	Ballroom H
McBryan, Jeremy	<i>Principal Engineer, South Florida Water Management District</i>	2/11/14	3:30 PM	Ballroom H
McConnell, Robert	<i>Environmental Permit Coordinator, Tampa Bay Water</i>	2/11/14	1:30 PM	Ballroom A
McGee, Shannon	<i>Extension Agent I, UF/IFAS Extension Polk County</i>	2/12/14	10:30 AM	Ballroom A
McLaughlin, Daniel	<i>Assistant Research Scientist, SFRC, University of Florida</i>	2/11/14	3:30 PM	Ballroom D
Meeker, Melissa	<i>Vice President, CSA Ocean Sciences Inc.</i>	2/12/14	3:30 PM	Auditorium
Migliaccio, Kati	<i>Associate Professor, University of Florida</i>	2/12/14	8:30 AM	Ballroom A
Mitsch, William	<i>Eminent Scholar/Endowed Chair, Florida Gulf Coast University</i>	2/12/14	10:30 AM	Ballroom D
Morales, Miguel	<i>Ph.D. Candidate, University of Florida</i>	2/11/14	3:30 PM	Ballroom A
Morgan, Kelly	<i>Associate Professor, Soil and Water Science Department, University of Florida</i>	2/12/14	8:30 AM	Ballroom A
Morgan, Kelly	<i>Associate Professor, Soil and Water Science Department, University of Florida</i>	2/12/14	10:30 AM	Ballroom A
Morris, Kevin	<i>Science and Technology Officer, Peace River Manasota Regional Water Supply Authority</i>	2/11/14	3:30 PM	Ballroom E
Obeysekera, Jayantha	<i>Chief Modeler, South Florida Water Management District</i>	2/12/14	10:30 AM	Ballroom E
Olsen, Eric	<i>Attorney, Hopping Green & Sams, PA</i>	2/11/14	1:30 PM	Ballroom A
Ouyang, Ying	<i>Research Hydrologist, USDA FS, CBHR</i>	2/11/14	1:30 PM	Auditorium
Owens, Courtney	<i>Graduate Research Assistant, UF/IFAS</i>	2/12/14	8:30 AM	Auditorium
Payne, Jack	<i>Senior Vice President for Agriculture and Natural Resources, University of Florida</i>	2/11/14	8:30 AM	Auditorium
Pettit, Christopher	<i>Policy and Legislation Manager, Palm Beach County Water Utilities Department</i>	2/11/14	1:30 PM	Ballroom E
Ramirez, Samuel	<i>Engineering Manager, GAI Consultants</i>	2/11/14	3:30 PM	Ballroom E
ReVoor II, Gary	<i>Vice President, Tetra Tech</i>	2/11/14	1:30 PM	Ballroom H
Sanagorski, Laura	<i>Assistant Professor, University of Florida Department of Agricultural Education and Communication</i>	2/12/14	8:30 AM	Ballroom A
Seibert, Steven	<i>Partner, triSect LLC</i>	2/11/14	1:30 PM	Ballroom A
Seibert, Steven	<i>Partner, triSect LLC</i>	2/12/14	3:30 PM	Auditorium
Sheftall, William	<i>Extension Agent IV - Natural Resource Management, University of Florida IFAS Extension Leon County</i>	2/11/14	3:30 PM	Ballroom A
Shortelle, Anne	<i>Executive Director, Suwannee River Water Management District</i>	2/12/14	1:30 PM	Auditorium
Shukla, Sanjay	<i>Associate Professor, ABE/SWFREC, University of Florida</i>	2/11/14	1:30 PM	Auditorium
Shukla, Sanjay	<i>Associate Professor, ABE/SWFREC, University of Florida</i>	2/12/14	8:30 AM	Ballroom D

Last Name, First Name	Title	Day	Time	Location
Siders, Zachary	<i>Ph.D. Student, University of Florida</i>	2/11/14	1:30 PM	Ballroom D
Singleton, Thomas	<i>President, Thomas L. Singleton Consulting, Inc</i>	2/11/14	1:30 PM	Ballroom E
Sivakumar, Rama	<i>Research Engineer, Georgia Tech, Center for GIS</i>	2/11/14	3:30 PM	Ballroom E
Smith, Darrell	<i>Assistant Director, FDACS</i>	2/12/14	10:30 AM	Ballroom A
Smith, Chelsea	<i>Graduate Student, Odum School of Ecology/ JW Jones Ecological Research Center</i>	2/11/14	1:30 PM	Ballroom D
Smith, Nathalie	<i>Aquatic Biologist, Joseph W. Jones Ecological Research Center</i>	2/11/14	1:30 PM	Ballroom D
Strauss, Ben	<i>Vice President for Climate Impacts and Director of the Program on Sea Level Rise, Climate Central</i>	2/11/14	10:30 AM	Auditorium
Swain, Hilary	<i>Executive Director, Archbold Biological Station</i>	2/12/14	8:30 AM	Ballroom D
Swain, Hilary	<i>Executive Director, Archbold Biological Station</i>	2/12/14	10:30 AM	Ballroom D
Szafraniec, Mary	<i>Environmental Scientist, UF / Southwest Florida Water Management District</i>	2/11/14	3:30 PM	Ballroom H
Tanzler, Hans	<i>Executive Director, St. Johns River Water Management District</i>	2/12/14	1:30 PM	Auditorium
Thiel, Les	<i>Political Sciences, UF</i>	2/12/14	3:30 PM	Auditorium
Tian, Di	<i>Graduate research assistant, University of Florida</i>	2/12/14	10:30 AM	Ballroom E
Treuer, Galen	<i>doctoral student, Leonard and Jayne Abess Center for Ecosystem Science and Policy - University of Miami</i>	2/12/14	8:30 AM	Ballroom E
Ullman, Jeffrey	<i>Asst. Professor, University of Florida</i>	2/11/14	3:30 PM	Ballroom H
Viveros Bedoya, Paula	<i>Ph.D. Candidate, University of Florida</i>	2/11/14	1:30 PM	Ballroom D
Wells, E. Christian	<i>Associate Professor, University of South Florida</i>	2/12/14	8:30 AM	Ballroom E
Wessel, Mike	<i>Vice President, Janicki Environmental, Inc.</i>	2/11/14	1:30 PM	Ballroom D
Yaquian, Antonio	<i>Graduate Assistant, University of Florida</i>	2/11/14	1:30 PM	Ballroom E
Yowell, Doug	<i>Senior Environmental Specialist, Duke Energy</i>	2/11/14	1:30 PM	Auditorium



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