

KEYNOTE SPEAKERS



Andrea Wesser-Brawner
Chief Innovation & Emerging
Technology Officer
Orange County Government



Angela Chelette
Environmental Administrator,
Florida Department of
Agriculture and Consumer
Services



Steve Davis
The Everglades Foundation
Chief Science Officer

Florida Research Development Alliance (FloRDA)

COLLABORATE FloRDA: WATER

FEBRUARY 24, 2022 10AM - 12:30PM

This virtual intercollegiate collaboration event features keynote speakers from local governments and a foundation, along with interdisciplinary discussions among researchers. We aim to facilitate interactions between researchers and professionals from across the state of Florida to find new ways to solve local societal issues that revolve around an essential resource in our state: water.



Speakers, Presenters, & Attendees

Thank you for the participation of our keynote speakers, 31 Presenters, and over 100 Attendees from across the state of Florida.



Presenter Slides

(in the order presented at the event)



Tricia Kyzar

Spatial Analyst, Researcher, Project Manager
University of Florida
Engineering School of Sustainable Infrastructure &
Environment
tkyzar@ufl.edu
<https://ufl.maps.arcgis.com/apps/MapJournal/index.html?appid=fed5ecf22cbc40f0b004da0e68615091>

My Interest in Florida and Water

- Septic system vulnerability due to climate change related impacts
- Spatial analysis of environmental impacts from anthropogenic drivers
- Water quality/water pollution
- Coastal vulnerabilities and adaptation
- Preservation of environmental quality

Current Research and Projects

- Update of state septic vulnerability analysis
- Water quality vulnerability assessment method literature review
- Multi-criteria weighted vulnerability assessment of septic systems to climate change related impacts in St. Augustine, FL
- SE U.S. spatial analysis of land use and population change to understand challenges and opportunities for sustaining coastal wetlands and oyster reefs in the Southeastern United States
- Spatial analysis of water quality parameters across various scales of development

Expertise/Interests

- GIS/Spatial Analysis
- Water Quality
- Anthropogenic Impacts
- Septic Systems
- Climate Change

How I Can Help *You*

- GIS specialist
- Have worked mostly in NE Florida
- Water quality parameters
- Project management
- Highly collaborative

How You Can Help *Me*

- Collaborate on projects needing GIS support
- Connect me with others who could use GIS support
- Collaborate to develop new research teams
- Assist with responding to funding opportunities
- Ask me about my projects



Woo Hyung Lee, Ph.D., P.E.

Associate Professor

University of Central Florida

Civil, Environmental, and Construction Eng.

woohyung.lee@ucf.edu

<https://cece.ucf.edu/MBRL/>

My Interest in Florida and Water

- Harmful Algal Blooms (HABs) monitoring sensors – MC-LR algal toxin detection sensor applications
- Electrochemical Poly- and perfluoroalkyl substances (PFASs) destruction in water
- Bioenergy production from wastes (e.g., green algae-based)
- Heavy metal detection and monitoring sensors applications (e.g., Lead, Arsenic, Mercury, Cadmium)
- Greywater and blackwater reuse
- Oil-water separation and oil spill removal using a novel super hydrophobic MoS₂ sponge

Current Research and Projects

- Water toxicity monitoring biosensor development
- Electrochemical PFAS removal technology
- Development of heavy metal sensors and analytical systems for methanogens in anaerobic digestion
- Photo-algal hydrogen production system development
- Sun-based desalination using MoS₂ sponge
- A Biopolymer-based simple lead check-in tap water

Expertise/Interests

- Smart Water and Wastewater Treatment and Management
- Electrochemical Sensors for Water Quality Monitoring
- Green Microalgae-based Energy Production
- Microbial Fuel Cells (MFC) Technology
- Nitrification and Corrosion in Drinking Water Distribution Systems

How I Can Help *You*

- Develop research idea and plan/proposal
- Consulting on water and wastewater quality issues - algal blooms control, and drinking distribution systems nitrification, biofilm, and corrosion control
- General water quality analysis (Both lab and field)

How You Can Help *Me*

- Research collaboration
- Identify potential funding
- Develop outreach program
- Student support



All Research Profiles Available at:
florida.org/events/water

Up Next: Abuzar Kabir



Abuzar Kabir

Research Associate Professor
Florida International University
Chemistry and Biochemistry
akabir@fiu.edu

<https://www.linkedin.com/in/abuzar-kabir-0161027/>

My Interest in Florida and Water

- Develop new advanced materials for water quality monitoring
- Develop new filtration membrane to provide low cost drinking water for all
- Develop new technology for water treatment plant to generate improved reclaimed water for safe release to the environment
- Improve molecularly imprinted polymer technology to efficiently capture majority of the EPA priority pollutants
- Creating colorimetric sensor array to rapidly detect the presence of the carcinogenic pollutants in water

Current Research and Projects

- Green sample preparation technologies
- Green chromatographic separation technologies
- Molecular imprinting technologies
- Materials for environmental pollution remediation
- Colorimetric sensor development

Expertise/Interests

- Water Pollution Monitoring
- Water Pollution Remediation
- Materials Synthesis
- Molecular Imprinting Technology
- Colorimetric Sensors for rapid field monitoring of water quality

How I Can Help *You*

- Numerous patented technologies that may substantially improve Florida water quality both in indoor and outdoor.
- A strong collaboration between the State of Florida and academic researchers may lead to robust and low cost technologies to improve water quality.

How You Can Help *Me*

- Close interaction and collaboration with water treatment facilities to understand and assess their need so that I can make a meaningful contribution to improve Florida water quality



Ali Ebrahimian

Assistant Professor

Florida International University

Civil and Environmental Engineering

alebrahi@fiu.edu

<https://cee.fiu.edu/2020/11/ali-ebrahimian>

My Interest in Florida and Water

- Green stormwater infrastructure (GSI) technologies in FL
- GSI and climate change adaptation in FL
- GSI and coastal resilience in FL
- GSI and land-based pollution control in water bodies of FL
- GSI and social equity in FL

Current Research and Projects

- Green stormwater infrastructure research needs in FL
- Process-based modeling of urban green stormwater infrastructure
- Socio-environmental and flood risk analysis
- Social equity and environmental justice through urban infrastructure planning

Expertise/Interests

- Urban Hydrology
- Stormwater management
- Green infrastructure
- Socio-technical risk analysis
- Multi-criteria decision analysis

How I Can Help *You*

Research collaboration and grant writing related to:

- Holistic ideas for green infrastructure systems
- Urban hydrologic processes
- Sensor-based field monitoring of green infrastructure systems
- Multi-criteria decision support models
- Equitable water infrastructure

How You Can Help *Me*

- Community-engaged research
- Outreach program development
- Food security research
- Ecosystem aspects of urban green infrastructure
- Public health aspects of urban green infrastructure



Amir Khoddamzadeh

Associate Teaching Professor & Undergraduate
Program Director
Institute of Environment
Department of Earth and Environment
akhoddam@gmail.com
<https://myweb.fiu.edu/akhoddam/about/>

My Interest in Florida and Water

- Endangered plants
- Adaptation
- Saltwater intrusion
- Algal bloom
- Acclimatization

Current Research and Projects

- In-vitro propagation (tissue culture) and gene-banking (cryopreservation) of the endangered plants
- Seed technology and biotechnology assessments
- Optical non-destructive handheld sensor technology for sustainable water and fertilizer management of horticultural crops

Expertise/Interests

- Horticulture
- Fertilizer and water managements
- Optical sensors
- Seed

How I Can Help *You*

- Conservation and sustainable horticulture practices
- Propagation
- Acclimatization
- Adaptation

How You Can Help *Me*

- Remote sensing
- Hydrology
- Proposals
- Student training



Bryan H. Nichols

Asst Prof Science & Environmental Education

Florida Atlantic University

Curriculum & Instruction

nicholsb@fau.edu

<https://www.researchgate.net/profile/Bryan-Nichols>

My Interest in Florida and Water

- Designing, implementing, and assessing effective outreach & education programs.
- Kayaking, diving.
- Improving attitudes and relationships with marine wildlife.

Current Research and Projects

- Socioscientific issues education.
- Moral and emotional implications of science education.
- Enhancing & assessing participant connections to nature and wildlife.

Expertise/Interests

- Science pedagogy
- Curriculum design
- Marine science
- Science journalism
- Education research

How I Can Help *You*

- Effective education and outreach components.
- Integrating with informal educators (e.g., nature centers) and K-12 classrooms.
- Curriculum design.
- Education related research.

How You Can Help *Me*

- Collaborate with partners across the state.
- If you have a great program, let's research educational impacts.

Claire Lewis

Florida-Friendly Communities Coordinator

University of Florida

Center for Land Use Efficiency

clairelewis@ufl.edu

<https://ffl.ifas.ufl.edu/ffl-and-you/community-landscapes/>

My Interest in Florida and Water

- The mission of the statewide Florida-Friendly Communities Program is to preserve and protect Florida's water and natural resources.

Current Research and Projects

- We have a number of new resources related to water savings and green stormwater infrastructure that I would like to share with people.

Expertise/Interests

- Water savings
- Green Stormwater Infrastructure
- Florida-Friendly Landscaping

How I Can Help *You*

- Educational materials
- Updating codes
- Encouraging green stormwater infrastructure

How You Can Help *Me*

- Connect with local governments, builders and developers, and communities interested in water conservation and green stormwater infrastructure



Ebrahim Ahmadisharaf

Senior Research Associate
FAMU-FSU College of Engineering
Civil and Environmental Engineering
eahmadisharaf@eng.famu.fsu.edu
<https://eahmadis.weebly.com/>

My Interest in Florida and Water

- Developing computational models to support decisions on mitigation of inland/compounding flood risk in human-dominated systems
- Developing computational models to predict surface water pollution and support decisions on mitigation of water pollution in human-dominated systems
- Quantifying floods and surface water pollution under a changing climate and land cover and sea-level rise
- Advancing the understanding of the short- long-term and indirect impact of these hazards on the communities and aquatic habitats

Current Research and Projects

- Hurricane Ida impacts on the respiratory health of people (funded by NSF)
- Machine Learning tools for water quality analyses in St. Lucie Estuary and River Basin (funded by EPA)
- Projecting air temperature and precipitation in Everglades area under the future climate (funded by Everglades Foundation)

Expertise/Interests

- Floods

How I Can Help *You*

- Predict inland/compounding floods and associated losses
- Predict surface water pollution
- Risk-based decision making to mitigate flood risk and surface water pollution
- Quantify the impact of climate and land cover change on flood risk and and surface water pollution

How You Can Help *Me*

- Collaborate on economic, sociology and political aspects of floods and surface water pollution
- Field and lab work on emerging contaminants (e.g., PFAS and 1,4 dioxane)



Jason Evans

Executive Director
Stetson University

Institute for Water and Environmental Resilience

jevans1@stetson.edu

<https://www.linkedin.com/in/jason-evans-51138a12/>

My Interest in Florida and Water

- Identifying opportunities for green infrastructure-based flood mitigation
- Technical assistance to local governments on resilience-based planning
- Directing high-achieving undergraduates into early career opportunities and graduate programs

Current Research and Projects

- Principal investigator on three projects through Florida Sea Grant that assist local partners with green infrastructure planning and concept design
- Water quality monitoring of green infrastructure projects at the Sandra Stetson Aquatic Center field laboratory
- Assisting local governments with prioritization of green space targets for resilience-based conservation

Expertise/Interests

- Coastal Resilience
- Green Infrastructure
- Floodplain Management
- Wetland Creation
- Geographic Decision Support

How I Can Help *You*

- Knowledge of vulnerability assessment methodologies for coastal resilience planning
- Outreach assistance and experience communicating technical information to local governments
- Large network of connections throughout Florida and the southern Atlantic coast states
- Experienced grant-writer with a track record of success with local, state, federal, and non-profit funding entities

How You Can Help *Me*

- Incorporation of future precipitation forecasts into floodplain management and project conceptualization

Jayantha Obeysekera

Director and Research Professor
Florida International University

Sea Level Solutions Center, Institute of Environment

jobeysek@fiu.edu

<https://environment.fiu.edu/>

My Interest in Florida and Water

- Sustainability and adaptation to climate change

Current Research and Projects

- Sea Level Rise Projections
- Rainfall Extremes
- Machine Learning

Expertise/Interests

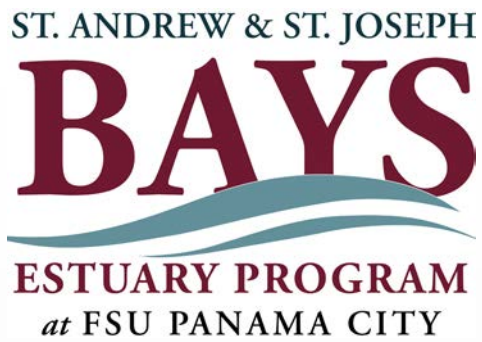
- Flood Management
- Climate Change
- Sea Level Rise
- Machine Learning

How I Can Help *You*

- Climate Change
- Water Management
- Dynamic Adaptive Pathways

How You Can Help *Me*

- Stakeholder engagement
- Co-production



Jessica Graham

Executive Director

St. Andrew and St. Joseph Bays Estuary Program

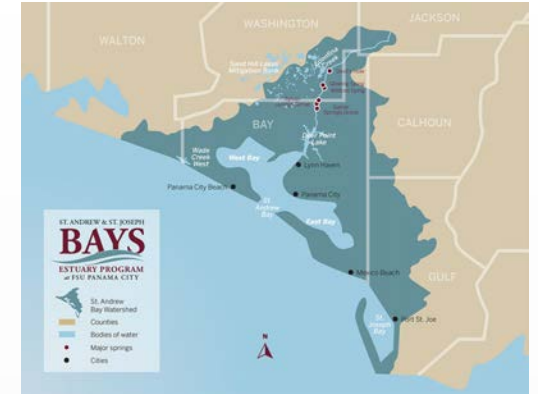
Florida State University Panama City

Jgraham6@fsu.edu

My Interest in Florida and Water

- Determining ways to foster collaboration with multiple municipalities to work across political jurisdictions to solve larger water issues.
- Raising awareness to impacts of land management on the local waterways
- Assisting municipalities to incorporate nature-based solutions.
- Combining science with social context to ensure goals are realistic and achievable.

Current Research and Projects



I am working across multiple communities that comprise the St. Andrew and St. Joseph Bays Estuary Program to ensure we have a healthy, resiliency estuary that supports native species, natural systems, recreation, fisheries, and the economy together with a resilient and sustainable community.

We are currently working to determine our focus areas, priority issues, goals and objectives to create our Comprehensive Conservation and Management Plan (CCMP) by July 2023.

Expertise/Interests

- Watershed management
- Aquatic resource management
- Actionable science
- Stakeholder driven efforts

How I Can Help *You*

- Grant proposal advice and editing
- Experienced in various aquatic resources across 14 southeast states to provide perspectives
- Research design to assist in ensuring outcomes can be applied to management and decisions

How You Can Help *Me*

- Techniques to engage local leaders and communities in watershed stewardship
- Large scale collaborations and learning forums
- Design and engineering support
- Communication techniques to reach a broad audience



Lei Zhai

Professor

University of Central Florida

Chemistry and NanoScience Technology Center

lzhai@ucf.edu

My Interest in Florida and Water

- Removal of pollutants, microplastics

Current Research and Projects

- Detecting and removing heavy metal ions, microplastics

Expertise/Interests

- Polymers
- Electrospun fibers
- Nanoparticles
- Catalysis

How I Can Help *You*

Expertise in:

- Chemical synthesis
- Materials fabrication
- Surface engineering

How You Can Help *Me*

- Simulation
- Engineering
- Scaling up

Nasrin Alamdari

Assistant Professor
Florida State University
Civil and Environmental Engineering
nalamdari@fsu.edu
<https://www.nasrinalamdari.com/>

My Interest in Florida and Water

- Collaboration opportunities
- Working with various range of people
- Learn about the issues and the research of various range of people

Current Research and Projects

- Development of a statewide decision support tools for BMP planning to control nutrients in urban Communities 2
- Prediction and mitigation of harmful algal blooms in Biscayne Bay using advanced numerical methods
- Evaluating the impact of climate change and extreme events on functionality of stormwater management systems
- The role of nature-based features in mitigating short and long term impacts of sea level rise
- Towards sustainable and resilient green infrastructure planning for environmental health disparities and environmental justice under climate change

Expertise/Interests

- Algae Bloom Prediction and Mitigation
- Stormwater Management
- Urban Hydrology
- Natural and Nature Based Solutions
- Climate Change Impacts on Resilience of Stormwater Systems

How I Can Help *You*

- Development of decision support and planning tools for stormwater BMP siting and selection
- Climate change and land use change impact analysis
- Harmful algal bloom prediction using advance numerical methods
- Sea level rise impacts and analysis of natural and nature based solutions benefits
- Life cycle cost analysis

How You Can Help *Me*

- Stakeholder engagement and outreach activities
- Social science
- Economic analysis
- Environmental justice
- Public health

Ni-Bin Chang

Professor and Director

University of Central Florida

Civil, Environmental, and Construction Engineering

nchang@ucf.edu

<https://www.cece.ucf.edu/chang/>

My Interest in Florida and Water

- Translate research to societal impact

Current Research and Projects

- Stormwater BMPs

Expertise/Interests

- Stormwater BMPs
- Nutrient removal

How I Can Help *You*

- Collaborate to develop new research programs

How You Can Help *Me*

- Connecting to local non-profit and government organization



Noelle Boucquey

Associate Professor

Eckerd College

Environmental Studies

boucqun@eckerd.edu

<https://boucqueylab.eckerd.edu/home>

My Interest in Florida and Water

- Researching historic and contemporary water access, particularly for urban fishing practices.
- Mapping shore fishing locations.
- Assessing demographics, interests, and concerns of shore fishers.
- Connecting with interdisciplinary colleagues studying water quality and impacts on fish around Tampa Bay.

Current Research and Projects

- My current research, conducted with collaborator Jessie Fly, employs anthropology and human geography to address questions about the social and ecological dimensions of urban fishing practices in Tampa Bay.
- We analyze how the spaces of urban fishing are simultaneously framed as sites of ecological and political vulnerability, while also being sites of empowerment and resilience for fishers via contributions to food security and social capital.
- We are particularly interested in the character and magnitude of subsistence fishing (fishing primarily for food) across Tampa Bay.

Expertise/Interests

- Human geography
- Political ecology
- Urban fishing
- Ocean governance
- Commons

How I Can Help *You*

- Social science partner on interdisciplinary projects.
- Expertise in survey, interview, historical, and field research methods.
- Happy to collaborate on grant-writing.

How You Can Help *Me*

- Interest in collaborating with government agency and community partners.
- Interest in collaborating with fisheries and water quality scientists.
- Interest in collaborations in the Tampa Bay area and west coast of FL.



Paloma Carton de Grammont

Research Coordinator
University of Florida
Water Institute
palomacgl@ufl.edu
<https://waterinstitute.ufl.edu/>

My Interest in Florida and Water

- Increase the number and diversity of faculty, staff, students and stakeholders engaged in Water Institute programs
- Bring together teams to produce high-impact interdisciplinary water research and education programs that address state, national and global water issues
- Inform water-related decisions, actions and policy development through actionable research, expert assistance, stakeholder engagement and outreach

Current Research and Projects

- I coordinate and facilitate several interdisciplinary projects, including:
Floridan Aquifer Collaborative Engagement for Sustainability (FACTES)
- Carbonate Critical Zone Research Coordination Network
- Expert Guidance on DEP Septic Vulnerability Assessment Model
- Significance of Ice-Loss to Landscapes in the Arctic (SILA)

Expertise/Interests

- Facilitation
- Stakeholder engagement
- Collaborative & interdisciplinary research

How I Can Help *You*

- Facilitation
- Project coordination
- Connection to UF water experts
- Interdisciplinary partnerships

How You Can Help *Me*

- Identify funding and networking opportunities

Patrick (Chris) Wilson

Professor
University of Florida/IFAS
Soil and Water Sciences
pcwilson@ufl.edu

My Interest in Florida and Water

- Characterization of water body contamination with organic contaminants
- Risk assessments for aquatic resources
- Identification of methods to mitigate risks to aquatic resources due to organic contaminants
- Remediation of contaminated water
- Influence of multiple simultaneous stressors on aquatic resources

Current Research and Projects

- Screening for pesticide exposures in local waterways
- Impact of pesticide management practices on contamination of floral resources (i.e. nectar, pollen) in ornamental plants
- Influence of low herbicide concentrations on selection of microcystin-producing algal (*Planktothris* sp.) strains
- Exposure assessments for emerging contaminants in waste water dominated streams
- Bioremediation of organic contaminants in water

Expertise/Interests

- Pesticides
- Pharmaceuticals
- Toxins
- Emerging contaminants
- Ecotoxicology

How I Can Help *You*

- Development of cooperative research proposals/projects
- Analysis of organic contaminants by GC-MS/MS, LC-MS/MS, and other technologies
- Toxicity testing
- Ecological risk assessment
- Project management

How You Can Help *Me*

- Co-develop research proposals
- Help identify research opportunities
- Facilitate introductions to managers interested in organic contaminants



Patrick Musgrave

Assistant Professor
University of Florida

Mechanical & Aerospace Engineering
pmusgrave@ufl.edu

<https://fast.mae.ufl.edu/>

<https://www.linkedin.com/in/patrick-musgrave-0734a645/>

My Interest in Florida and Water

- Interested in learning about Water related challenges in Florida
- Connecting with Florida companies, nonprofits, and researchers to identify challenge areas where my research can help
- Presenting our ongoing research efforts and sparking potential collaborations
- Better understanding the Florida ecosystem (environmental, business, and funding)

Current Research and Projects

- The FAST Lab (Fluids & Adaptive Structures) investigates and designs flexible structures that interact with the surrounding fluid (water or air)
- Much of our current research relates to bio-inspired underwater propulsion (i.e. robotic fish)
- Developing a soft robotic fish powered by muscle-like actuators
- Understanding the physics of fish flapping and propulsion through computation and experiments
- Using the soft, physical body of a robotic fish for computation to create a mechanical neural network

Expertise/Interests

- Underwater robotics
- Bio-inspired underwater propulsion
- Soft Robotics
- Maritime Sensing
- Fluid-structure interactions

How I Can Help *You*

- Develop novel bio-inspired robotic platforms for underwater sensing
- Design systems to better understand complex underwater environments
- Create flexible and rigid structures that operate in and interact with the surrounding water
- Understand how flexible objects move in water (fish, cables, nets, sea grass, etc.)

How You Can Help *Me*

- Identify underwater environments where there are novel sensing challenges
- Present areas where underwater robotics could enable your work
- Explain the major challenges inhibiting your field
- Identify areas where flexible or soft structures could enable your work

Pieter Hazenberg

Senior Research Scientist
Florida International University
Applied Research Center
phazenbe@fiu.edu

<https://www.linkedin.com/in/pieter-hazenberg-536593197/>

My Interest in Florida and Water

- Extreme precipitation and flooding
- Climate change and impact of sea level rise on inland water systems
- Nutrifcation of water system
- Groundwater-surface water interactions

Current Research and Projects

- Coupled hydrological-heavy metal transport modeling
- Hydrological modeling in the public cloud
- Potential of remote sensing by drones
- Hyperresolution modeling

Expertise/Interests

- Hydrological response during extreme events
- Impact of climatic change on flood and drought
- Coupled hydrological and biogeochemical transport modeling
- Impact of green infrastructure on flood mitigation
- Remote sensing of extreme precipitation

How I Can Help *You*

- Good in conceptualizing and solving complex problems
- Good understanding of hydrological complexity and societal impact
- Research and practical experience in various hydrological topics
- Enjoy leading project teams

How You Can Help *Me*

- Build a network with water professionals in Florida
- Develop new research topic in Florida



Remy Dou

Assistant Professor
Florida International University
STEM Transformation Institute
redou@fiu.edu
www.remydou.com

My Interest in Florida and Water

- South Florida is situated at the crossroads of socioscientific issues that compromise the water quality of our own communities.
- Sea level rise, sensitive underground aquifers, and leaky septic systems are the canon of research for local water scientists like Dr. Henry Briceno at Florida International University (FIU) who regularly communicates his work on public media and with local government to highlight the dangers facing South Floridians.
- Several communities in Miami, including my own, are largely populated by Spanish speakers who cannot equally access scientific information in the way English speakers can.
- By working with attendees and my graduate student, Brenda Guerrero, we have the opportunity to amplify the work of water scientists for the benefit of our community.

Current Research and Projects

- Research scientists' participation in science communication is critical given their roles in developing solutions to societal challenges.
- Water scientists' engagement in science communication is critical to foster socially just, scientifically literate communities, but scientist's motivations for and engagement in science communication practices is not well understood from the scientists' perspectives.
- Our research focus on understanding the drivers and barriers that water scientists face when engaging in science communication in order to contribute to systems and structures that better support their communication activities.

Expertise/Interests

- Science Communication
- Education Outreach
- Informal STEM Learning
- Family Science Talk

How I Can Help *You*

- Science Communication
- Education Outreach
- Information STEM Learning
- Community Collaborations
- Social Science Research

How You Can Help *Me*

- Collaboration around research on the drivers and barriers that motivate water scientists to engage in science communication.
- Supporting increased science communication about water issues facing South Floridians.



Rene Price

Professor
Florida International University
Earth and Environment
Pricer@fiu.edu
<https://myweb.fiu.edu/pricer/>

My Interest in Florida and Water

- Natural tracers of water flow

Current Research and Projects

- Ecohydrology

Expertise/Interests

- Chemical Hydrogeology

How I Can Help *You*

- Saltwater intrusion

How You Can Help *Me*

- Everglades Restoration



Rovshan Abbasov

Florida State University
(from Khazar University)

Geography and Environment
rabbasov@khazar.org

<https://www.linkedin.com/in/rovshan-abbasov-17aba819/?originalSubdomain=az>

My Interest in Florida and Water

- My country, Azerbaijan, is a downstream country experiencing water stress, and water resources are formed mainly outside the country's borders.
- Therefore, by participating in this event, I want to learn about the search for solutions to existing problems and new management mechanisms.

Current Research and Projects

- Water governance project
- National Climate Change Adaptation Program
- National Ecosystem Assessment
- Heal and Pollution Action

Expertise/Interests

- Water management
- Hydrology
- Environmental pollution
- Values of freshwater ecosystems
- Climate change adaptation in a water sector

How I Can Help *You*

- I can give you a brief information about one of the projects in which I participated. This project aims to improve water management in Azerbaijan's agricultural sector.

How You Can Help *Me*

- I will gladly listen to the speeches of various experts, researchers and professionals and learn about scientific-policy mix in a given topic



Steven Lenhert

Associate Professor
Florida State University
Biological Science
lenhert@bio.fsu.edu

<https://www.linkedin.com/in/steven-lenhert-72170511/>

My Interest in Florida and Water

- Portable sensors for water quality testing, for instance for detection of specific solute concentrations.

Current Research and Projects

- Biosensing
- Drug discovery
- Nanofabrication
- Model biological systems

Expertise/Interests

- Sensors
- Biosensors
- Lipids
- Pharmaceuticals and personal care products
- Portable water measurements quality

How I Can Help *You*

- Biosensors
- Microscopy (optical, electron, atomic force)
- Analytical equipment
- Toxicology
- Microbiology

How You Can Help *Me*

- What problems might be solved by new sensor technologies?
- What is the state of the art in water quality testing?
- Water samples.



Sunny Narayanan

Research Professor
Florida State University
Department of Nutrition and Integrative
Physiology
anarayan09@gmail.com
<https://www.linkedin.com/in/sunny-narayanan-69684136/>

My Interest in Florida and Water

Improve:

- Water conditions
- Accessibility to water (in particular for poor socioeconomic communities)
- Water filtration and purification structure and processes
- Short- and long-term planning (in the context of climate sciences)

Current Research and Projects

- Global Brigades
- FSU-FAMU Global Health Collaboration Program

Expertise/Interests

- Healthcare
- Biomedical research
- Engineering
- Water filtration
- Water analysis

How I Can Help *You*

- Engineering
- Analysis
- Healthcare equity
- Remote and extreme environment operations

How You Can Help *Me*

- Expertise of water sciences and engineering, specifically in global context

Todd Crowl

Director and Professor
Florida International University
Institute of Ecology
tcrowl@fiu.edu
<https://environment.fiu.edu/>

My Interest in Florida and Water

- Everglades, Biscayne and Florida Bays

Current Research and Projects

- Everglades restoration
- Coastal ecology

Expertise/Interests

- Coastal ecology
- Wetland ecology
- Restoration
- Climate change

How I Can Help *You*

- Contaminant and pollutant analyses

How You Can Help *Me*

- Artificial intelligence

Tom Greenhalgh

Director of Karst Center
Florida State University
Geophysical Fluid Dynamics Institute
tgreenhalgh@fsu.edu
<https://gfdi.fsu.edu/>

My Interest in Florida and Water

- Reversing our accelerating decline of Florida's water resources and associated environs through public awareness and science-based education.

Current Research and Projects

- Building a Karst Center at FSU from scratch.
- Researching and trying to develop an understanding of flow within the Floridan aquifer system.
- Current project is sampling for emerging contaminants in groundwater from the injection of wastewater.

Expertise/Interests

- Floridan groundwater and springs' water quality, quantity, and restoration.
- 3-D flow within the Floridan aquifer system.
- Nutrient contamination links between ground/surface/marine waters.
- Groundwater dye tracing.

How I Can Help *You*

- Knowledge of springs issues with a focus on the Suwannee basin.
- Dye tracing in karst environments.
- Utilizing remote sensing to locate springs.
- Karst field trips.

How You Can Help *Me*

- Need to learn how to acquire funding for Center and research.
- Collaboration with other researchers.



Toufiq Reza

Assistant Professor

Florida Institute of Technology
Biomedical and Chemical Engineering and
Sciences

treza@fit.edu

<https://research.fit.edu/reza/>

My Interest in Florida and Water

- Adsorption of harmful algal blooms on biochar
- Nutrient Recovery from septic tank waste
- Identify critical waste-energy-water nexus
- Upcycling ocean plastics to value-added chemicals and materials

Current Research and Projects

- Mild hydrothermal preprocessing of agricultural wastes to advanced biorefinery feedstock
- Control and mitigation of eutrophication
- Engineered biochar from sargassum and adsorption of pyrocinium and microcystin

Expertise/Interests

- Waste-to-energy-and-materials
- Hydrothermal carbonization
- Adsorption of emerging contaminants from water
- Nutrient recovery
- Technoeconomic assessment

How I Can Help *You*

- Finding worth in wastes
- Technology development and testing
- Process Simulation
- Technoeconomic assessment

How You Can Help *Me*

- Life cycle assessment
- Advanced chemical characterization
- Process scale-up and pilot demonstration
- Social and behavioral analysis
- Foster industrial collaboration



Uzi Baram

Professor of Anthropology/Director of the New
College Public Archaeology Lab
New College of Florida
Social Sciences
Baram@ncf.edu
<https://sites.google.com/ncf.edu/baram/rising-sea-levels-and-heritage>

My Interest in Florida and Water

- Coastal archaeological and historic sites
- Heritage for community resilience
- Disseminating archaeological insights into climate change
- Social uses of the sea over decades, centuries, millennia

Current Research and Projects

- Strategies for identifying and preserving historic and archaeological sites
- Assessment tools for social uses of coastal heritage locales
- Transforming recreational tourism into educational experiences
- Communicating the integration of environment/ecology and history/heritage

Expertise/Interests

- Heritage interpretation
- Archaeological research
- Ethnography
- Community engagement
- Program development

How I Can Help *You*

- Synthesizing and disseminating archaeological findings
- Historical depth for study areas, especially on the Gulf Coast
- Anthropological perspectives
- Intercultural communications
- Planning community engagement

How You Can Help *Me*

- Creative mapping of significant locales
- Crafting policy recommendations
- Identifying ecological correlates for threatened heritage locales



Valerie J. Harwood

Professor

University of South Florida

Integrative Biology

vharwood@usf.edu

<https://theharwoodlab.wixsite.com/usf-tampa>

My Interest in Florida and Water

- Determination of contamination sources in recreational water
- Water quality
- Quantitative microbial risk assessment

Current Research and Projects

- Many microbial source tracking projects funded by NSF, NIH, EPA, local government
- Standard methods for assessing antibiotic resistance in aquatic environments

Expertise/Interests

- Water quality
- Microbial source tracking
- Pathogens
- *Vibrio vulnificus*
- Antibiotic resistant bacteria

How I Can Help *You*

- Culturing bacteria
- Quantitative PCR
- Identification of fecal pollution sources
- Assessing prevalence of antibiotic resistant bacteria in the environment

How You Can Help *Me*

- Metagenomic analysis of water and sand

Walter Z. Tang

Associate Professor
Florida International University
Civil and Environmental Engineering
tangz@fiu.edu
tang.eng.fiu.edu

My Interest in Florida and Water

- Water treatment

Current Research and Projects

- Water resource recovery facility

Expertise/Interests

- Water chemistry

How I Can Help *You*

- UV disinfection

How You Can Help *Me*

- Advanced oxidation process



Jane Shin

Assistant Professor
University of Florida

Mechanical and Aerospace Engineering

jshin2@ufl.edu

<https://aprilab.mae.ufl.edu>

My Interest in Florida and Water

- Collaborative research
- Interested in finding useful applications for autonomous robotics sensing systems

Current Research and Projects

- Underwater bathymetric mapping using drone-sonar system
- Navigation without GPS using magnetic field
- Thermal image perception

Expertise/Interests

- Robot path planning,
- Mobile sensing
- Sonar image perception
- Underwater robotics

How I Can Help *You*

- I can provide software solution for automate information gathering from surrounding environments.

How You Can Help *Me*

- Please share your ideas on potential collaborations (R&D/ research collaboration)



Questions?

Email info@FloRDA.org

**Resources and recordings from
this event are available at
<https://florda.org/events/water/>**