

**Saturday, Sept. 26, 2015**

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- IRL COASTLINE BOAT TOUR** (*Good Natured River Tours*) ..... **9–11 A.M.**  
*15 people minimum. Van departs Center for Aeronautics and Innovation (1050 W. NASA Blvd., Melbourne) at 8:30 a.m.*
- OPEN HOUSE ON FIT CAMPUS** ..... **2–4 P.M.**  
*Local scientists and organizations host tables and share information.*
- AN ESTUARY AFFAIR II: DINNER** ..... **6–9 P.M.**
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The mission of the Indian River Lagoon Research Institute is to develop and implement sustainable solutions for the revitalization and maintenance of the Indian River Lagoon (IRL).

The IRLRI is a collaboration among university scientists, engineers, coastal resource managers and educators focused on the health of the Indian River Lagoon. More than 20 faculty members with hundreds of years of collective scientific research experience studying the lagoon have come together to improve understanding and to develop solutions in the following areas: marine conservation, harmful algal toxins, muck and nutrients, lagoon flow, nutrient reduction, sediment loading, ecosystem recovery, policy and management, and engineering technologies.



**Indian River Lagoon Research Institute**

*Florida Institute of Technology*

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For questions regarding outreach events or community-based projects, please contact the IRLRI outreach coordinator:  
Kelli Hunsucker, [khunsucker@fit.edu](mailto:khunsucker@fit.edu)

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EN-743-915



**Indian River Lagoon Research Institute**

*Florida Institute of Technology*



# Friday, Sept. 25, 2015

# IRLRI TechCon2015

**WELCOME** ..... 8:00 A.M.

*T. Dwayne McCay, Ph.D., Executive Vice President, Florida Institute of Technology; Robert Weaver, Ph.D., IRLRI Director*

## Session 1: Engineering Water Quality

**A 20-YEAR PERSPECTIVE ON MUCK MANAGEMENT IN THE INDIAN RIVER LAGOON** ..... 8:30 A.M.

*Shailesh Patel, Principal & Managing Member of Dredging & Marine Consultants*

**OPPORTUNITIES & CHALLENGES FOR PRIVATE-SECTOR PARTICIPATION IN IRL WATER QUALITY SOLUTIONS** ..... 9:15 A.M.

*Duane De Freese, Ph.D.*

**INNOVATIVE FERRATE(VI) TREATMENT OF DREDGE WATER TO REMOVE NUTRIENTS AND CONTAMINANTS** ..... 10:00 A.M.

*Thomas D. Waite, Ph.D., PE, Florida Institute of Technology*

COFFEE BREAK ..... 10:30 A.M.

## Session 2: Examining Solutions

**SIMULATION OF FLUSHING RESPONSE OF BANANA RIVER TO THE CONSTRUCTION OF A LOW-CRESTED WEIR IN THE VICINITY OF PORT CANAVERAL, FLORIDA** ..... 11:00 A.M.

*Atousa Saberi and Robert J. Weaver, Ph.D., Florida Institute of Technology*

**ASSESSMENT OF MUCK MOVEMENT, DISCHARGE WATER QUALITY AND BIOLOGICAL IMPACTS AT FIND DREDGING SITE IR-1: SEBASTIAN RIVER TO WABASSO BRIDGE** ..... 11:30 A.M.

*Robert J. Weaver, Ph.D., John H. Trefry, Ph.D., Charles R. Bostater Jr., Ph.D., Jonathan Shenker, Ph.D., and Kevin B. Johnson, Ph.D., Florida Institute of Technology; Coraggio Maglio, Shelley Trulock, Jase Ousley, Paul Cotter, Paul DeMarco, U.S. Army Corps of Engineering (USACE)*

**GEOSPATIAL STORMWATER ANALYSIS TO DEVELOP AN EFFICIENT STORMWATER MANAGEMENT PLAN** ..... 12:00 P.M.

*Philip Bellamy and Hyun Jung Cho, Ph.D., Bethune-Cookman University*

**TECH TEASERS** ..... 12:30 P.M.

- **IRLRI Living Dock Program**  
*Kelli Hunsucker, Ph.D.*
- **A Data Mining Approach to Develop Hyperspectral Model for Bathymetry**  
*Forrest Gasdia*
- **Inlet Flushing Feasibility Study**  
*Gary Zarillo, Ph.D.*

# Conference on Coastal Water Quality Solutions

## at Florida Tech's Center for Aeronautics & Innovation

LUNCH ..... 1:00 P.M.

## Session 3: Remote Sensing as a Guide for Restoration and Remediation

**THE INDIAN RIVER LAGOON OBSERVATORY NETWORK OF ENVIRONMENTAL SENSORS** ..... 2:00 P.M.

*M. Dennis Hanisak, Ph.D., and Kristen S. Davis, FAU Harbor Branch*

**THE KEY ROLE OF UNNAMED MULTISENSOR SYSTEMS IN MONITORING THE INDIAN RIVER LAGOON** ..... 2:30 P.M.

*Claudia Listopad, Ph.D., Applied Ecology, Inc.; Brian Ormiston, Ph.D., Brian G. Ormiston, Ecological Consulting; Kevin Cooper, Ph.D., Indian River State College*

**SIMPLIFIED WATER CORRECTION FOR IMPROVED BENTHIC MAPPING USING SATELLITE-BORNE HYPERSPECTRAL DATA** ..... 3:00 P.M.

*Benedict Pineyro, Embry-Riddle Aeronautical University; Hyun Jung Cho, Ph.D., Bethune-Cookman University*

BREAK ..... 3:30 P.M.

## Session 4: Restoration and Remediation

**MANGROVE RECRUITMENT IN INDIAN RIVER LAGOON SHORELINE RESTORATION SITES AND THE ROLE OF SEDIMENT SIZE** ..... 4:00 P.M.

*Kelly Kibler, Ph.D., and Christian Pilato, University of Central Florida*

**SPOIL ISLAND AMBASSADOR PROGRAM** ..... 4:30 P.M.

*James Burke, FLDEP, Indian River Lagoon Aquatic Preserves, FIND*

WRAP-UP ..... 5:00 P.M.

**POSTER RECEPTION** ..... 5:30–7 P.M.

- **Living Dock**  
*Girl Scout Cadettes Troop 156—Avery Bethurum, Anastacia Devlin, Anna Grenevicki, Kaylee Kraver, Kate Longoria, Abby Meyers*
- **Engineered Floating Platforms for Water Remediation**  
*Katherine Beckett*
- **Graphical User Interface for Improved Benthic Mapping using Satellite-Borne Hyperspectral Data**  
*Shizhen Huang*
- **Newly Adjusted Hyperspectral Algorithm for Brown Algal Bloom Mapping in Indian River Lagoon, FL**  
*Kwanza Johnson*