



**February 20, 2025**

**Technical Sessions**

The Indian River Lagoon Symposium (IRLS) is a multi-institutional, multi-agency effort to provide a forum for discussing Indian River Lagoon science and its application to management of the lagoon. The Indian River Lagoon Observatory (IRLO), based at FAU Harbor Branch in Fort Pierce, was established in 2011 to acquire and disseminate data and knowledge on the IRL critical to its ecological function and its sustainable management. The IRLS was launched in 2012 as the centerpiece of IRLO's collaborative efforts as a forum for research on the IRL and its management to narrow the gaps between research and its application.

The theme for the 2025 symposium is *The IRL in a Changing Climate*. The Indian River Lagoon is facing significant challenges due to global change, through alterations to natural and anthropogenic drivers. These changes threaten the delicate balance of its ecosystem, impacting local wildlife and water quality. As conditions continue to evolve, the lagoon's health and resilience are increasingly at risk.

### **IRLS 2025 Steering Committee**

A Steering Committee with representatives from academic, governmental, and non-profit organizations defines the goals, basic outline, and structure for the symposium; identifies potential participants; and provides guidance, logistical support, and planning for the symposium. The Steering Committee is instrumental in making the symposium a truly collaborative effort within the diverse IRL research community. The 2025 Steering Committee members are:

- Irene Arpayoglou – FDEP/Indian River Lagoon Aquatic Preserves
- Rachel Brewton – Florida Atlantic University
- Kristen Davis – Florida Atlantic University
- Kelli Hunsucker – Florida Institute of Technology
- Chuck Jacoby – University of South Florida
- Tim Moore – Florida Atlantic University
- Elizabeth Salewski – South Florida Water Management District
- Loraé Simpson – St. Johns River Water Management District
- Holly Sweat – Smithsonian Marine Station at Fort Pierce
- Linda Walters – University of Central Florida
- Jessy Wayles – Indian River Lagoon National Estuary Program

## Acknowledgments

### Symposium Host

Since its inception, Florida Atlantic University's Harbor Branch Oceanographic Institute has been proud to serve as the host and venue of the Indian River Lagoon Symposium.



**FLORIDA ATLANTIC UNIVERSITY**

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**Harbor Branch  
Oceanographic Institute**

### IRLS 2025 Sponsors

Since 2012, Harbor Branch Oceanographic Institute Foundation has been the primary sponsor for the Indian River Lagoon Symposium. We thank Michael O'Reilly, Chair; Staci Barney Rosalia, Executive Director; and Cyndi Permenter, Director of Operations, for their support. We also thank the Indian River Lagoon National Estuary Program for its continued support. Additionally, we thank the Fish & Wildlife Foundation of Florida and the Treasure Coast Chapter of the Florida Association of Environmental Professionals for their support of this year's symposium.

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**Indian River Lagoon Symposium 2025**  
*The IRL in a Changing Climate*

**Program Schedule**

(Note: The presenting author of talks is the first author, unless indicated by underlining.)

**Thursday, February 20, 2025**

**0715 – 0815 Registration, Set Up Posters, and Coffee**

**0815 – 0825 Welcome**

Rachel Brewton and Kristen Davis, FAU Harbor Branch

**0825 – 0840 Remembrances**

**0840 – 0910 Keynote Address**

**From Science to Action: Meaningfully Addressing Climate Change in Conventional Management Paradigms for Estuaries of National Significance**

Marcus Beck, Senior Scientist

Tampa Bay Estuary Program, St. Petersburg, FL

**0910 – 1010 Oral Session 1 – Climate**

Session Chair: Jessy Wayles, Indian River Lagoon National Estuary Program

**0910 – 0920 Tropicalization Interacts with Other Human Stressors to Mediate the Diets of Expanding and Resident Herbivores (STUDENT PRESENTATION)**

Adam R. Searles<sup>1</sup>, Douglas H. Adams<sup>2</sup>, Lori J. Morris<sup>3</sup>, Lauren M. Hall<sup>4</sup>, Charles W. Martin<sup>5</sup>, and Laura K. Reynolds<sup>1</sup>

<sup>1</sup>University of Florida, Gainesville, FL; <sup>2</sup>Florida Fish and Wildlife Conservation Commission, Melbourne, FL; <sup>3</sup>St. Johns River Water Management District, Palatka, FL; <sup>4</sup>St. Johns River Water Management District, Palm Bay, FL; <sup>5</sup>Dauphin Island Sea Lab, University of South Alabama, Mobile, Alabama

**0920 – 0930 Changing Lands of Martin County: Sea Level Rise Impacts to Habitat**

Amy Eason

Martin County Board of County Commissioners, Stuart, FL

**0930 – 0940 Assessment of Urban Stormwater Systems for Improved Urban Habitat and Estuarine Ecosystems (STUDENT PRESENTATION)**

Imani Ford, Kelly San Antonio, and Hyun Cho

Bethune-Cookman University, Daytona Beach, FL

**0940 – 0950 Improving Shoreline Resiliency through Robust Design of Green Infrastructure**

Melinda Donnelly<sup>1</sup>, Kelly Kibler<sup>1</sup>, Vincent Encomio<sup>2</sup>, Madison Giuntoli<sup>1</sup>, Manisha Thenuwara<sup>1</sup>, Laura Andrade Barron<sup>1</sup>, Brice Bennett<sup>1</sup>, Namritha Ramakrishnan<sup>1</sup>, and Mariam Sonbol<sup>1</sup>,

<sup>1</sup>University of Central Florida, Orlando, FL; <sup>2</sup>UF/IFAS Extension, Martin and St. Lucie Counties, Stuart, FL

**0950 – 1000 Submergence Modeling Indicates the Effects of Accelerating Sea Level Rise on Indian River Lagoon Ecosystem Services Will Be Substantial and Widespread**

Randall W. Parkinson<sup>1</sup>, Levente Juhasz<sup>1</sup>, Shimon Wdowinski<sup>1</sup>, Valerie Seidel<sup>2</sup>

<sup>1</sup>Florida International University, Miami, FL; <sup>2</sup>The Balmoral Group, Winter Park, FL

1000 – 1010 **Escaping the IRL: The First Evidence of a Climate-Driven Range Shift in a Top Predator**

Toby Daly-Engel<sup>1</sup>, Shannon Barry<sup>1</sup>, Douglas Adams<sup>2</sup>, Matthew Ajemian<sup>3</sup>, Charles Bangle<sup>4</sup>, James Gelsleichter<sup>5</sup>, and Neil Hammerschlag<sup>6</sup>

<sup>1</sup>Florida Institute of Technology, Melbourne, FL; <sup>2</sup>Florida Fish and Wildlife Conservation Commission, Melbourne, FL; <sup>3</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>4</sup>Dalhousie University, Halifax, Nova Scotia; <sup>5</sup>University of North Florida, <sup>6</sup>Shark Research Foundation, Tallahassee, FL

**1010 - 1030 Break**

**1030 - 1130 Oral Session 2 – Marine Botany and More**

Session Chair: Loraé Simpson, St. Johns River Water Management District

1030 – 1040 **Investigating the Impacts of Herbivory Exclusion and Hard Clam (*Mercenaria mercenaria*) Presence on Subtropical Seagrass Restoration**

Conor MacDonnell<sup>1,2</sup>, Loraé T. Simpson<sup>3</sup>, Nathaniel Winn<sup>2</sup>, Nicholas Curto<sup>2</sup>, Faith Hill<sup>2</sup>, Connor Ramming<sup>4</sup>, and Todd Osborne<sup>1</sup>

<sup>1</sup>Whitney Laboratory for Marine Biosciences, University of Florida, St. Augustine, FL; <sup>2</sup>Florida Oceanographic Society, Stuart, FL; <sup>3</sup>St. Johns River Water Management District, Palm Bay, FL; <sup>4</sup>Louisiana State University, Baton Rouge, LA

1040 – 1050 **Effects of Herbivory Exclusion Devices on Irradiance, Water Flow, and Sedimentation for Seagrass Restoration**

Faith Hill<sup>1,2</sup>, Nate Winn<sup>1</sup>, and Krista McCoy<sup>1</sup>

<sup>1</sup>Florida Oceanographic Society, Stuart, FL; <sup>2</sup>Rice University, Houston, TX

1050 – 1100 **Mapping the Distribution of Seagrass Seeds in the Indian River Lagoon (STUDENT PRESENTATION)**

Isabel Bennett<sup>1</sup>, Lauren M. Hall<sup>2</sup>, and Austin Fox<sup>1</sup>,

<sup>1</sup>Florida Institute of Technology, Melbourne, FL; <sup>2</sup>St. Johns River Water Management District, Palm Bay, FL

1100 – 1110 **Examining Relationships Between Sediment Nutrients and *Halodule wrightii* in the Southern Indian River Lagoon (STUDENT PRESENTATION)**

Sarah Newton<sup>1</sup>, Rachel Brewton<sup>1</sup>, Elizabeth Salewski<sup>2</sup>, Michael McCoy<sup>1</sup>, Cassandra Armstrong<sup>2</sup>, and Brian Lapointe<sup>1</sup>

<sup>1</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>South Florida Water Management District, West Palm Beach, FL

1110 – 1120 **Using Water Quality to Infer Seagrass Recovery in the North Indian River Lagoon**

Stacy Cecil<sup>1</sup>, Lori Morris<sup>1</sup>, Lauren Hall<sup>2</sup>, and Loraé T. Simpson<sup>1</sup>

<sup>1</sup>St. Johns River Water Management District, Palatka, FL; <sup>2</sup>St. Johns River Water Management District, Palm Bay, FL

1120 – 1130 **Developing a Capacity for High-Frequency Benthic Nutrient Flux Monitoring in the Indian River Lagoon**

Jordon Beckler, Mason Thackston, and Csaba Vaczo  
FAU Harbor Branch, Fort Pierce, FL

**1130 – 1200 Three Minutes, Three Slides 1 – Climate & Water Quality**

Session Chair: Kristen Davis, Florida Atlantic University

**Spatial and Temporal Trends for Chronic, Short-Duration Hypoxia in Indian River Lagoon**

Austin Fox, Mary MacDonald, Rebecca English, and Sean Crowley  
Florida Institute of Technology, Melbourne, FL

**Leveraging IRLON Data and PyCO2SYS to Track Post-Storm Ocean Acidification**

Bryan A. Botson, Kristen Davis, and Timothy Moore  
FAU Harbor Branch, Fort Pierce, FL

**Seagrass on the Brink: Implications of Marine Heatwaves in the Indian River Lagoon (STUDENT PRESENTATION)**

Carla Perscky, Matthew Tye, and Linda Walters  
University of Central Florida, Orlando, FL

**Establishing Methods to Track Short-Term, Diel Hypoxia in Shallow, Well Mixed Estuaries (STUDENT PRESENTATION)**

Mary MacDonald, Rebecca English, and Austin Fox  
Florida Institute of Technology, Melbourne, FL

**Climate-Driven Shifts in Fish Communities Along Florida's East Coast (STUDENT PRESENTATION)**

Meredith Pratt and Geoffrey S. Cook  
University of Central Florida, Orlando, FL

**Oyster Spat Monitoring in the Southern Indian Lagoon and St. Lucie Estuary: 2020-2024 (STUDENT PRESENTATION)**

Nicholas Curto  
Florida Oceanographic Society, Stuart, FL

**Leveraging Mosquito Impoundments to Treat Eutrophic Waters in the Indian River Lagoon, FL (STUDENT PRESENTATION)**

Taryn Chaya<sup>1,2</sup> and Todd Z. Osborne<sup>1</sup>

<sup>1</sup>University of Florida, Gainesville, FL; <sup>2</sup>Whitney Laboratory for Marine Bioscience, St. Augustine, FL

**1200 – 1330 Lunch (provided)**

**1330 – 1430 Oral Session 3 – Fauna**

Session Chair: Holly Sweat, Smithsonian Marine Station at Fort Pierce

**1330 – 1340 An *In Situ* Stereo Imaging System for Zooplankton Behavioral Studies in the Indian River Lagoon (STUDENT PRESENTATION)**

Alexis Base, Sumit Dass, Karuna Agarwal, and Aditya R. Nayak  
FAU Harbor Branch, Fort Pierce, FL

**1340 – 1350 Big Sawfish in the Southern Indian River Lagoon: What Are They Doing?! (STUDENT PRESENTATION)**

Andrew Wooley<sup>1</sup>, Lukas Heath<sup>1</sup>, Dylan Yakich<sup>1</sup>, Sarah Webb<sup>1</sup>, Michael McCallister<sup>2</sup>, and Gregg Poulakis<sup>1</sup>

<sup>1</sup>Charlotte Harbor Field Laboratory, Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL; <sup>2</sup>FAU Harbor Branch, Fort Pierce, FL

- 1350 – 1400 **Exposure of Whitespotted Eagle Rays (*Aetobatus narinari*) to Phycotoxins in Florida’s Coastal Waters: An Untold Story About HABs (STUDENT PRESENTATION)**  
Ariadna Rojas Corzo<sup>1</sup>, Michael W. McCoy<sup>1</sup>, Annie Page<sup>1</sup>, Kim Bassos-Hull<sup>2</sup>, and Matthew J. Ajemian<sup>1</sup>  
<sup>1</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>Mote Marine Laboratory, Sarasota, FL
- 1400 – 1410 **Burrow-Associated Fauna: A “Black Box” of Diversity in the Indian River Lagoon**  
Justin Scioli, L. Holly Sweat, and Valerie Paul  
Smithsonian Marine Station, Fort Pierce, FL
- 1410 – 1420 **Effects of Lake Okeechobee Discharge on Bottlenose Dolphins (*Tursiops truncatus*) in the St. Lucie Estuary and Southern Indian River Lagoon**  
Lauren Clance, Brooke Davis, Nicole Pegg, Kristen Eisele, Lydia Moreland, Steve Burton, and Annie Page  
FAU Harbor Branch, Fort Pierce, FL
- 1420 – 1430 **Re-emergence of the Endangered Smalltooth Sawfish (*Pristis pectinata*) in a Historic Nursery (STUDENT PRESENTATION)**  
Sarah Webb<sup>1</sup>, Matthew Ajemian<sup>1</sup>, Andrew Wooley<sup>2</sup>, Lukas Heath<sup>2</sup>, Dylan Yakich<sup>2</sup>, Michael McCallister<sup>1</sup>, and Gregg Poulakis<sup>2</sup>  
<sup>1</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>Charlotte Harbor Field Laboratory, Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL
- 1430 – 1500 Three Minutes, Three Slides 2 – Fish & Food Webs**  
Session Chair: Rachel Brewton, Florida Atlantic University
- A Regime Shift Is Reflected in the Fish Community Structure of the Indian River Lagoon (IRL) (STUDENT PRESENTATION)**  
Arthur C. Jones<sup>1</sup>, Andrew J. Pyryt<sup>1</sup>, Vincent J. Lovko<sup>2</sup>, M. Toufiq Reza<sup>1</sup>, and Ralph G. Turingan<sup>1</sup>  
<sup>1</sup>Florida Institute of Technology, Melbourne, FL; <sup>2</sup>Mote Marine Laboratory, Sarasota, FL
- A Look at Offshore Snook in Southeast Florida: The “New” Reef Fish in Town**  
Erick Ault<sup>1</sup>, Sarah Webb<sup>2</sup>, and Derek Cox<sup>2</sup>  
<sup>1</sup>Florida Fish and Wildlife Conservation Commission, Tequesta, FL; <sup>2</sup>South Florida Water Management District, West Palm Beach, FL
- Keep Calling Us: the U.S. Sawfish Recovery Hotline is a Key Tool that Promotes Recovery of the Endangered Smalltooth Sawfish in the Indian River Lagoon**  
Gregg Poulakis<sup>1</sup>, Andrew Wooley<sup>1</sup>, Lukas Heath<sup>1</sup>, Dylan Yakich<sup>1</sup>, and Adam Brame<sup>2</sup>  
<sup>1</sup>Charlotte Harbor Field Laboratory, Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL; <sup>2</sup>National Marine Fisheries Service, St. Petersburg, FL
- Impact of Environmental Changes in Bottlenose Dolphin Diets Over a Decade of Change in the Indian River Lagoon**  
Iris Segura-García<sup>1</sup>, Wendy Noke<sup>2</sup>, Teresa Jablonski<sup>2</sup>, Michael McCoy<sup>1</sup>, and Krista McCoy<sup>1</sup>  
<sup>1</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>Hubbs-SeaWorld Research Institute, Melbourne Beach, FL
- Bridging the Genetic Gap: An Analysis of eDNA Markers to Assess the Potential for Metabarcoding to Infer Ecosystem Health in a Subtropical Estuary**  
Jessica Zehnpfennig<sup>1</sup>, Christopher Meyer<sup>2</sup>, Valerie Paul<sup>1</sup>, L. Holly Sweat<sup>1</sup>  
<sup>1</sup>Smithsonian Marine Station, Fort Pierce, FL; <sup>2</sup>National Museum of Natural History, Smithsonian Institution, Washington, District of Columbia, USA

**Movement Patterns of Cubera Snapper (*Lutjanus cyanopterus*) Along the Southeast Coast of Florida**

Jim Whittington and Dayna Hunn

Florida Fish and Wildlife Conservation Commission, Tequesta, FL

**Assessing Trophic Pathways of the Southern Indian River Lagoon: Mapping Trophic Transfer Using Fatty Acid Markers (STUDENT PRESENTATION)**

Joedeelee Rigdon, Malcolm McFarland, Sahar Mejri, and Iris Segura-Garcia

FAU Harbor Branch, Fort Pierce, FL

**Evaluating Survival of Entangled Free-Swimming Common Bottlenose Dolphins (*Tursiops truncatus truncatus*) in the Indian River Lagoon Estuary, Florida, USA (2008-2023)**

Wendy Noke Durden<sup>1</sup>, Teresa Jablonski<sup>1</sup>, Agatha Fabry<sup>1</sup>, Lydia Moreland<sup>1</sup>, Michael Walsh<sup>2</sup>, Craig Pelton<sup>2</sup>, Claire Erlacher-Reid<sup>3</sup>, Stacy DiRocco<sup>3</sup>, Jon Peterson<sup>3</sup>, and Blair Mase<sup>4</sup>

<sup>1</sup>Hubbs-SeaWorld Research Institute, Melbourne Beach, FL; <sup>2</sup>University of Florida, Gainesville, FL; <sup>3</sup>SeaWorld Orlando, Orlando, FL; <sup>4</sup>National Ocean and Atmospheric Administration Fisheries, Miami, FL

**1500 – 1520 Break**

**1520 – 1600 Oral Session 4 – HABs & IRL Restoration**

Session Chair: Chuck Jacoby, University of South Florida

**1520 – 1530 Effects of Bacteria on *Pyrodinium bahamense* Growth and Saxitoxin Production**

Jackie Palau and Malcolm McFarland

FAU Harbor Branch, Fort Pierce, FL

**1530 – 1540 Sediment Transport in Eastern Oyster Reefs of the Indian River Lagoon: The Role of Flow, Turbulence, and Canopy Density (STUDENT PRESENTATION)**

Manisha Thenuwara, Kelly Kibler, Jyotismita Taye, and Peter Vien

University of Central Florida, Orlando, FL

**1540 – 1550 Utilizing 20 Years of Citizen Science to Measure Water Quality in the St. Lucie Estuary and Indian River Lagoon**

Nathaniel Winn and Krista McCoy

Florida Oceanographic Society, Stuart, FL

**1550 – 1600 Enumeration of *Microcystis aeruginosa* Colonies in the Indian River Lagoon Using Digital Holographic Imaging (STUDENT PRESENTATION)**

Olivia Ruchti<sup>1,2</sup>, Madison Bennett<sup>1</sup>, Karuna Agarwal<sup>1</sup>, and Aditya Nayak<sup>1,3</sup>

<sup>1</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>Department of Biological Sciences, Florida Atlantic University, Boca Raton, FL; <sup>3</sup>Department of Mechanical Engineering, Florida Atlantic University, Boca Raton, FL

**1600 – 1640 Three Minutes, Three Slides 3 – Seagrass, Shorelines & Benthic Ecology**

Session Chair: Irene Arpayoglou, FDEP/Indian River Lagoon Aquatic Preserves

**Best Seagrass Planting Success: A Few Large Plots or Many Small Plots?**

Bob Virnstein

Seagrass Ecosystems Analysts, Gainesville, FL

**Parasite Diversity of Crustaceans and Fishes in the Indian River Lagoon, Florida: A Meta-Analysis Across Intertidal Systems and Taxa**

Christopher Moore<sup>1</sup>, Krista McCoy<sup>1,2</sup>, Michael McCoy<sup>1</sup>

<sup>1</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>Florida Oceanographic Society, Stuart, FL

**Evaluation Protective Materials for the Growth of *Mercenaria mercenaria* for Indian River Lagoon Restoration**

Karl Vonn Schneider<sup>1</sup>, Hope Leonard<sup>1</sup>, Olivia Escandell<sup>1</sup>, Aleah Ataman<sup>2</sup>, and Virginia Barker<sup>2</sup>

<sup>1</sup>Brevard Zoo, Melbourne, FL; <sup>2</sup>Brevard County Natural Resources Management, Viera, FL

**Better with Age? Comparing Ecological Function of Aging Artificial vs Natural Oyster Reefs in the Southern IRL and St. Lucie Estuary**

**(STUDENT PRESENTATION)**

Emily Surmont<sup>1,2</sup>, Anna Braswell<sup>1,3</sup>, Loraé T. Simpson<sup>4,5</sup>, Nicholas Curto<sup>4</sup>, and Krista McCoy<sup>4</sup>

<sup>1</sup>University of Florida, Gainesville, FL; <sup>2</sup>Indian River Lagoon Aquatic Preserves (FDEP), Fort Pierce, FL; <sup>3</sup>Florida Sea Grant; <sup>4</sup>Florida Oceanographic Society, Stuart, FL; <sup>5</sup>St. Johns River Water Management District, Palatka, FL

**Caging Seagrass Restoration Projects: A Meta-Analysis and Practitioner Survey to Collate the State of the Science**

Loraé T. Simpson<sup>1</sup>, Lori Morris<sup>1</sup>, Lauren Hall<sup>2</sup>, Annie Roddenberry<sup>3</sup>, and Chelsey Crandell<sup>4</sup>

<sup>1</sup>St. Johns River Water Management District, Palatka, FL, <sup>2</sup>St. Johns River Water Management District, Palm Bay, FL, <sup>3</sup>Florida Fish and Wildlife Conservation Commission, New Smyrna Beach, FL, <sup>4</sup>Fish and Wildlife Research Institute, Gainesville, FL

**Seagrass, Macroalgae, and Phytoplankton...How Do We Regain the Balance Between Them?**

Lori Morris<sup>1</sup>, Lauren Hall<sup>2</sup>, and Loraé T. Simpson<sup>1</sup>

<sup>1</sup>St. Johns River Water Management District, Palatka, FL; <sup>2</sup>St. Johns River Water Management District, Palm Bay, FL

**Benthic Community Response to Shoreline Restoration**

**(STUDENT PRESENTATION)**

Mara Skadden and Emily Ralston

Florida Institute of Technology, Melbourne, FL

**Habitat Associations and Abundances of Bivalves in Mosquito Lagoon**

**(STUDENT PRESENTATION)**

Mariam Sonbol, Melinda Donnelly, and Linda Walters

University of Central Florida, Orlando, FL

**Beyond the Unknown: Revealing Microturbellarian Biodiversity in the Indian River Lagoon**

Yander L. Diez

Smithsonian Marine Station, Fort Pierce, FL

**1640 Day 1 Closing Remarks**

**1700 - 2000 Poster Session & Reception**

**1930 Announcement of Student Awards (Auditorium)**



### **SMS R/V *Sunburst* on Display**

In 2024, the Smithsonian Marine Station unveiled the 36' R/V *Sunburst*, a state-of-the-art research and diving vessel that will play a crucial role in supporting research in the Indian River Lagoon. The *Sunburst* will be docked behind the Education Center and available for tours during breaks, lunch, and the poster session/reception. Be sure to check it out—it's a unique opportunity to explore this vital asset for marine research!

### **How to Vote on People's Choice Student Awards**

This year we will again have three People's Choice Student Awards. Each registrant will be able to vote once in each of the three categories:

Best 10-Minute Oral Presentation

Best 3-Minute Oral Presentation

Best Poster

Scan the QR code to select the presentations that you thought were most deserving of this recognition: [People's Choice Awards](#).

The poll will open at **9:00 a.m.** and close at **7:00 p.m.**



## Posters

Posters will be displayed all day in the Education Annex (Posters #1-31), and the Gallery (Posters #32-41). During the poster session, presenters of odd-numbered posters will minimally be at their posters between 17:30 and 18:15; presenters of even-numbered posters will minimally be at their posters between 18:15 and 19:00. We also encourage students to be at their posters during the second half of the lunch break.

**Please join us in the Auditorium for the presentation of student awards at 19:30!**

- 1. Ecological Indicators of Trace Metal Exposure: Bioaccumulation in Indian River Lagoon Fishes**  
Douglas H. Adams<sup>1</sup>, Luana H. Bauer<sup>2</sup>, Benjamin D. Barst<sup>3</sup>, Marc Amyot<sup>4</sup>, and Maikel Rosabal<sup>2</sup>  
<sup>1</sup>Florida Fish & Wildlife Conservation Commission, Fish & Wildlife Research Institute, Indian River Field Laboratory, Melbourne, FL; <sup>2</sup>University of Québec - Montréal, Environmental Metallomics Laboratory, Biological Sciences Department, Montreal, QC, Canada; <sup>3</sup>University of Calgary, Department of Earth, Energy, & Environment, Calgary, AB, Canada; <sup>4</sup>University of Montreal, Department of Biological Sciences, Montréal, QC, Canada
- 2. Vegetative Survey of a Salt Marsh and Hydric Forest Ahead of Restoration Efforts (STUDENT PRESENTATION)**  
Isabelle Ardizzone<sup>1,4</sup>, Kendal Arnold<sup>2,4</sup>, Sophie Denninger<sup>1,4</sup>, Eliza Dinenberg<sup>1,4</sup>, and Kennedy Wile<sup>3,4</sup>  
<sup>1</sup>Indian River Charter High School, Vero Beach, FL; <sup>2</sup>Sebastian River High School, Sebastian, FL; <sup>3</sup>Vero Beach High School, Vero Beach, FL; <sup>4</sup>Junior Scientist Program 2024-2025
- 3. Weeding Out the Competition for Restoration: Testing Effects of Nearby Macroalgal (*Caulerpa prolifera*) Bed Density on Planted Seagrass (*Halodule wrightii*) (STUDENT PRESENTATION)**  
Luciana Banquero<sup>1</sup>, Jennifer Hansen<sup>2</sup>, Olivia Escandell<sup>2</sup>, Lori Morris<sup>3</sup>, Lauren Hall<sup>4</sup>, and Linda Walters<sup>1</sup>  
<sup>1</sup>University of Central Florida, Orlando, FL; <sup>2</sup>Brevard Zoo, Melbourne, FL; <sup>3</sup>St. Johns River Water Management District, Palatka, FL; <sup>4</sup>St. Johns River Water Management District, Palm Bay, FL
- 4. Using Non-Invasive eDNA and Autonomous Reef Monitoring Structures (ARMS) for Improved Management and Restoration of the Indian River Lagoon**  
Makenna C. Beehler, Paolo A. Soto, and Jeff A. Eble  
Hubbs-SeaWorld Research Institute, Melbourne Beach, FL
- 5. Examining Oyster Reef Fragmentation and Reconnection Methods in the Indian River Lagoon (STUDENT PRESENTATION)**  
Tara Blanchard<sup>1</sup>, Gabriel Benson<sup>1,2</sup>, and Linda Walters<sup>1</sup>  
<sup>1</sup>University of Central Florida, Orlando, FL; <sup>2</sup>Virginia Institute of Marine Science, Gloucester Point, VA
- 6. Modelling Light Attenuation in Lake Worth Lagoon Using Water Quality Parameters**  
Tyler Bouma and Mark Barton  
South Florida Water Management District, West Palm Beach, FL
- 7. Determination of the Contribution of Marine Sediments to the Carbon Storage in the IRL (STUDENT PRESENTATION)**  
Hanna Bridgham<sup>1</sup>, Brooke Estevez<sup>1,2</sup>, Mason Thackston<sup>1</sup>, Owen Silvera<sup>1</sup>, Jason Pindell<sup>2</sup>, Lucas Deese<sup>2</sup>, and Jordon Beckler<sup>1</sup>  
<sup>1</sup>Geochemistry and Geochemical Sensing Lab, FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>FAU High School, Boca Raton, FL

8. **Navigating Toxic Waters: A Preliminary Investigation of Harmful Algal Bloom-Associated Biotoxins in Bottlenose Dolphins (*Tursiops truncatus*) in the Indian River Lagoon, Florida**  
Nicole Pegg<sup>1</sup>, Wendy Marks<sup>1</sup>, Christopher R. Perkins<sup>2</sup>, David Rotstein<sup>3</sup>, Sushan Hahn<sup>4</sup>, Steve Burton<sup>1</sup>, and Annie Page<sup>1</sup>  
<sup>1</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>Center for Environmental Sciences and Engineering, University of Connecticut, Storrs, CT; <sup>3</sup>Marine Mammal Pathology Services, Olney, MD; <sup>4</sup>Colorado State University, Veterinary Diagnostics Lab, Fort Collins, CO
9. **Benthic Infaunal Responses to Mangrove Restoration (STUDENT PRESENTATION)**  
Jessica Cline<sup>1,2</sup>  
<sup>1</sup>Marine Resources Council, Palm Bay, FL; <sup>2</sup>Florida Institute of Technology, Melbourne, FL
10. **Spatially Nested Bayesian Models as a Tool for Understanding Fish Habitat Use and Community Structure (STUDENT PRESENTATION)**  
Christopher Crowder, Geoffrey Cook, and Pedro Quintana-Ascencio  
University of Central Florida, Orlando, FL
11. **Investigating Direct Feeding Competition Between Two Sympatric Pipefish Species Using High-Speed Video (STUDENT PRESENTATION)**  
Nicholas W. Davis and Sarah Krejci  
Bethune-Cookman University, Daytona Beach, FL
12. **Nanoformulation-based Intervention for Mitigating *Pestalotiopsis* spp. in Mangrove Die-off: A Sustainable Approach for Ecosystem Conservation (STUDENT PRESENTATION)**  
Melissa M. Deinys<sup>1,2</sup>, Jorge Pereira<sup>1</sup>, Bradley Demosthene<sup>1</sup>, and Swadeshmukul Santra<sup>1</sup>  
<sup>1</sup>University of Central Florida, Orlando, FL; <sup>2</sup>Fairchild Tropical Botanic Garden, Coral Gables, Florida
13. **Using Photo-identification to Aid in Bottlenose Dolphins (*Tursiops truncatus*) Disentanglements: A Case Study of an Entangled Mother and Calf Pair in the Indian River Lagoon, Florida.**  
Kristen Eisele, Brooke Davis, Lauren Clance, Nicole Pegg, Lydia Moreland, Tracy Kowalczyk, Wendy Marks, Annie Page, and Steve Burton  
FAU Harbor Branch, Fort Pierce, FL
14. **Sediment Iron Concentrations and the Impact on Phosphorus Sorption Capacity (STUDENT PRESENTATION)**  
Rebecca English and Austin Fox  
Florida Institute of Technology, Melbourne, FL
15. **The Center for Coastal and Marine Ecosystems-II: A NOAA EPP/MSI Cooperative Science Center (STUDENT PRESENTATION)**  
Jackson Evans, Samantha Houser, Kelly San Antonio, and Hyun Cho  
Bethune-Cookman University, Daytona Beach, FL
16. **Water Quality and Anatomy of Selected Plants Growing at Tomoka State Park and Riverbend Nature Park (STUDENT PRESENTATION)**  
JDeja Evans, Mackenzi Thompson, Phara Jean Baptiste, Tiye Gallagher, and Anna B. Ponce  
Bethune-Cookman University, Daytona Beach, FL
17. **The Reign of Microplastics: Atmospheric Deposition of Plastics and Anthropogenically-Modified Materials in Mosquito Lagoon, Florida (STUDENT PRESENTATION)**  
Madison Serrate<sup>1</sup>, Stephanie Fletcher<sup>1</sup>, Tanelisse Gonzalez<sup>1</sup>, Paul. Sacks<sup>1</sup>, J. Fnu<sup>1</sup>, S. Kim<sup>1</sup>, L.Zhai<sup>1</sup>, A. Frey<sup>2</sup>, J. Kruger<sup>1</sup>, T. Blanchard<sup>1</sup>, and Linda Walters<sup>1</sup>  
<sup>1</sup>University of Central Florida, Orlando, FL; <sup>2</sup>Marine Discovery Center, New Smyrna Beach, FL

18. **Incorporating Multidisciplinary Approaches to Community Outreach and Education (STUDENT PRESENTATION)**  
Katherine Harris and Linda Walters  
University of Central Florida, Orlando, FL
19. **Plastic for Dinner? Understanding Microplastic Abundances in Oysters Purchased for Consumption (STUDENT PRESENTATION)**  
Jenna Hodgson, Katherine Harris, Madison Serrate, Advanced Marine Biology Undergraduate Students, Paul Sacks, and Linda Walters  
University of Central Florida, Orlando, FL
20. **Investigating the Indian River Lagoon's Response to Storm Events Using the Indian River Lagoon Observatory Network of Environmental Sensors**  
Christopher Hoey, Scott Hurley, Samantha Banakos, Colin Kane, Kristen Davis, and Timothy Moore  
FAU Harbor Branch, Fort Pierce, FL
21. **Physical and Biological Characterization of Indian River Lagoon Sediments Near the Coastal Oaks Preserve (STUDENT PRESENTATION)**  
Joniah Holson<sup>1,2</sup>, Veronica Kostan<sup>1,2</sup>, Matthew Mintel<sup>1,2</sup>, Emma Prescott<sup>1,2</sup>, and Alexa Spalding<sup>1,2</sup>  
<sup>1</sup>Sebastian River High School, Sebastian, FL; <sup>2</sup>Junior Scientist Program 2024-2025
22. **Recruitment Preference of Larval Barnacles at Varying Depths and Substrate Orientations (STUDENT PRESENTATION)**  
Calista Huff<sup>1,4</sup>, Ashley Lara<sup>2,4</sup>, Charlotte Muller<sup>3,4</sup>, Nate Pagan<sup>2,4</sup>, Asela Ripley<sup>3,4</sup>, Kendall Sparks<sup>2,4</sup>, Brenton Sturgis<sup>3,4</sup>, and Jasmyne Williams<sup>3,4</sup>  
<sup>1</sup>Indian River Charter High School, Vero Beach, FL; <sup>2</sup>Sebastian River High School, Sebastian, FL; <sup>3</sup>Vero Beach High School, Vero Beach, FL; <sup>4</sup>Junior Scientist Program 2024-2025
23. **Investigating the Efficacy of Non-Plastic Zip Ties for Living Docks: A IRL Benthic Restoration Program (STUDENT PRESENTATION)**  
Kelli Hunsucker<sup>1</sup>, Michelle Krumholz<sup>1</sup>, Jasmin Pugh<sup>1</sup>, Cameron Berglund<sup>1</sup>, Philip Wince<sup>1</sup>, Morgan Gilligan<sup>2</sup>, Loraé T. Simpson<sup>3</sup>, and Robert Weaver<sup>1</sup>  
<sup>1</sup>Florida Institute of Technology, Melbourne, FL; <sup>2</sup>Pacific Northwest National Laboratory, Richland, WA; <sup>3</sup>St. Johns River Water Management District, Palatka, FL
24. **Zinc or Swim: Investigating Zinc Pollution from Restoration Materials (STUDENT PRESENTATION)**  
Megan Jensik, Lisa Chambers, and Melanie Beazley  
University of Central Florida, Orlando, FL
25. **Tides of Change: Investigating the Role of Mangroves on Oyster Declines in Mosquito Lagoon (STUDENT PRESENTATION)**  
Julia Kruger, Amber Rogerson, Katherine Harris, and Linda Walters  
University of Central Florida, Orlando, FL
26. **Coupled Physical-Biogeochemical Modeling to Understand Cyanobacterial Bloom Dynamics in St. Lucie Estuary (STUDENT PRESENTATION)**  
Mohammad Masudur Rahman  
FAU Harbor Branch, Fort Pierce, FL
27. **Assessment of Bio-Optical Inversion Model Retrievals, Including Benthic Contributions, in a Shallow Coastal Environment (STUDENT PRESENTATION)**  
Ipanema Mora-Carrera, Timothy S. Moore, Malcolm McFarland, Zack Wistort, and Stephanie Schreiber  
FAU Harbor Branch, Fort Pierce, FL

28. **Review of Florida's Mosquito Control Impoundments for Natural Nursery of *Ruppia maritima* (STUDENT PRESENTATION)**  
 Providence Pangira, Hyun J. Cho, Anna Ponce, and Kelly M. San Antonio  
 Bethune-Cookman University, Daytona Beach, FL
29. **Evaluating & Comparing Seagrass Rhizosphere Microbial Communities associated with Indian River Lagoon Seagrass Restoration**  
 Tyler Provoncha<sup>1</sup>, Margaret Vogel<sup>2</sup>, Olivia Escandell<sup>1</sup>, Hope Leonard<sup>1,3</sup>, and Austin Fox<sup>3</sup>  
<sup>1</sup>Brevard Zoo, Melbourne, FL; <sup>2</sup>University of Lausanne, Lausanne, Switzerland; <sup>3</sup>Florida Institute of Technology, Melbourne, FL
30. **Coping with Chaos: Insights into Inshore Movement of *Centropomus undecimalis* During Tropical Weather Events**  
 Bailey Reins, Eli Bradley, and Ashton Lyon  
 Florida Fish and Wildlife Conservation Commission, Tequesta, FL
31. **Environmental DNA: A New Tool for Assessing Fish Diversity in Man Made Canals of the Indian River Lagoon (STUDENT PRESENTATION)**  
 Alyse Reyier<sup>1</sup> and Terry Williamson<sup>2</sup>  
<sup>1</sup>Edgewood Jr/Sr High School, Merritt Island, FL; <sup>2</sup>Brevard County
32. **A Review of the Parasite Communities in the Stingray Genus *Hypanus* (STUDENT PRESENTATION)**  
 Sarah Sargent<sup>1</sup>, David W. Kerstetter<sup>1</sup>, Christopher A. Blonar<sup>1</sup>, and Jessica J. Schieber<sup>2</sup>  
<sup>1</sup>Nova Southeastern University, Dania Beach, FL; <sup>2</sup>Oregon Department of Fish and Wildlife
33. **Mole Crab (*Emerita talpoida*) Spatial and Temporal Abundance Along the Space Coast**  
 Robert Sluka, Tristy Osbon, and Sydney Houck  
 A Rocha USA, Titusville, FL
34. **Use of Shellfish Aquaculture Sites by Mobile Fauna in the Indian River Lagoon (STUDENT PRESENTATION)**  
 Adam Steinfeld, Ariadna Rojas Corzo, and Matthew J. Ajemian  
 FAU Harbor Branch, Fort Pierce, FL
35. **Effects of Off-Season Lake Okeechobee Discharges on Sediment Sulfide and Iron Biogeochemistry (STUDENT PRESENTATION)**  
 Jonathan Terzado<sup>1</sup>, Jordon Beckler<sup>1</sup>, Hanna Bridgham<sup>1</sup>, Mason Thackston<sup>1</sup>, and Christian Walker<sup>2</sup>  
<sup>1</sup>FAU Harbor Branch, Fort Pierce, FL; <sup>2</sup>Indian River State College, Fort Pierce, FL
36. **Optimizing Anatomical Sectioning Protocols for Aquatic Plants: Addressing Challenges of Aerenchyma and Tissue Preservation (STUDENT PRESENTATION)**  
Khanyisile Tshabalala, Tiye Gallagher, Darius Fuell, and Anna B. Ponce  
 Bethune-Cookman University, Daytona Beach, FL
37. **The 10 Year Check-Up: Assessing Syngnathid Populations in the Indian River Lagoon (STUDENT PRESENTATION)**  
Keyaira Waring, Shakira Brown, Senait Bonner, Nicholas Davis, Lakean McGregor, and Sarah Krejci  
 Bethune-Cookman University, Daytona Beach, FL
38. **Evaluating Diverse Shoreline Protection Strategies and Dune Ecosystem Management in Volusia and Flagler County (STUDENT PRESENTATION)**  
Marquala Whitmon, Kelly M. San Antonio, and Anna B. Ponce  
 Bethune-Cookman University, Daytona Beach, FL

39. **Characterizing Contributions to Coastal Darkening in the Indian River Lagoon**  
Zack Wistort, Stephanie Schreiber, Ipanema Mora-Carrera, Joedeelee Rigdon, Malcolm McFarland, and Tim Moore  
FAU Harbor Branch, Fort Pierce, FL
40. **Assessing Unseen Environmental Impacts of Novel Non-Plastic Coastal Restoration Materials (STUDENT PRESENTATION)**  
Cara Womacks, Madison Serrate, Otis Woolfolk, Paul Sacks, Linda Walters  
University of Central Florida, Orlando, FL
41. **Moving the Needle on Living Shorelines – Florida Sea Grant and UF IFAS Extension Programs**  
Vincent Encomio<sup>1,2</sup>, Mandy Baily<sup>2</sup>, and Ken Gioeli<sup>3</sup>  
<sup>1</sup>UF/IFAS Extension, Martin and St. Lucie Counties, Stuart, FL; <sup>2</sup>Florida Sea Grant; <sup>3</sup>UF/IFAS Extension St. Lucie County

## Remembrance

### M. Dennis Hanisak 1950 – 2024



As we gather for this year’s Indian River Lagoon Symposium, we remember Dr. M. Dennis Hanisak, whose vision, dedication, and leadership helped shape not only this symposium but the way we study and protect the Indian River Lagoon. With his passing in May 2024, we lost a pioneering scientist, an inspiring educator, and a cherished friend. Yet his legacy—one of discovery, mentorship, and an enduring passion for the ocean—continues to guide and inspire all of us who had the privilege of working alongside him.

A graduate of Rutgers University and the University of Rhode Island, Dennis began his career studying algae and seaweed, which he often called “the dark side.” In 1977, he joined Harbor Branch Oceanographic Institute (HBOI) as a postdoctoral researcher, marking the beginning of a long and distinguished career that established him as a leading figure in the study of the IRL. His research on marine macrophytes, coupled with decades of monitoring, deepened our understanding of coastal ecosystems and played an important role in shaping conservation and management efforts for the lagoon.

In 2012, Dennis founded the Indian River Lagoon Symposium, recognizing the power of collaboration in advancing research and conservation. By bringing together scientists, policymakers, and stakeholders, the symposium fosters the exchange of knowledge to narrow the gap between research and application in the IRL—reflecting Dennis’s steadfast belief that science should drive meaningful environmental change.

Dennis was equally dedicated to education and mentorship. His work with the Semester By The Sea and Summer Intern programs at FAU Harbor Branch empowered hundreds of students with invaluable hands-on experiences. His passion for learning was matched only by his love for sharing knowledge, always taking the time to encourage and inspire those around him.

Beyond science, Dennis will be remembered for his infectious enthusiasm—not just for research, but for life itself. Whether cheering on his favorite sports teams, enjoying live music, or setting off on another adventure, he embraced every moment with enthusiasm.

For those who had the privilege of working alongside Dennis, he was more than a colleague—he was a generous mentor and a true friend. His enthusiasm for discovery, his collaborative spirit, and his ability to uplift others made him a cornerstone of our scientific community. As we continue to share research and exchange ideas, let us carry forward Dennis’s legacy of curiosity, collaboration, and unwavering commitment to the waters he dedicated his life to studying and protecting. His work lives on in the science presented here, in ongoing conservation efforts, and in the many individuals he inspired along the way.



## Remembrance

**Marty Baum**  
1954 – 2024

### Indian Riverkeeper



On October 31 last year, the Indian River Lagoon lost one of its most passionate defenders and historians. Marty’s roots in the river run six generations deep. Marty was an iconic advocate for clean water and healthy ecosystems. As an historian, pioneer re-enactor, personality, and fearless truth sayer he influenced countless community members young, old, and in between. Marty truly loved the Indian River Lagoon and was uncompromising in its defense from the pollution of greed, ignorance, and the self-interest of industrial agriculture and urban development. He was our Lorax and Marty the Manatee. He reminded us that “The value of everything here we love comes from good clean water”. Marty leaves his wife Robin, son Eric, and many admirers in his wake.

Contributed by Jim Moir

