



April 21-22, 2022

IRLS 2022 Steering Committee

Irene Arpayoglou, FDEP/Indian River Lagoon Aquatic Preserves; Vincent Encomio, Florida Sea Grant & UF/IFAS Extension; Dennis Hanisak, Harbor Branch Oceanographic Institute at Florida Atlantic University; Kelli Hunsucker, Florida Institute of Technology; Chuck Jacoby, St. Johns River Water Management District; Phyllis Klarmann, South Florida Water Management District; Holly Sweat, Smithsonian Marine Station at Fort Pierce; Linda Walters, University of Central Florida

IRLS 2022 Sponsors

Love Your Lagoon Since 2012, Harbor Branch Oceanographic Institute Foundation has been the Lead Sponsor for the Indian River Lagoon Symposium, providing support through proceeds of the Foundation's *Love Your Lagoon Gala* event. We thank all of this year's donors:

Mangrove Sponsors: Mr. Joseph Z. Duke, III and Mrs. Jennifer Johnson Duke; Mr. Michael O'Reilly and Mrs. Marie O'Reilly

Oyster Sponsors: Ms. Marjorie Raines and Mr. Harold Baker; William J. Stewart, Esq. and Mrs. Laurie Kaneb Stewart and the Law Firm of Rossway Swan Tierney Barry & Oliver, P.L.; Mr. Michael Toner and Mrs. Carol Toner

Dolphin Sponsors: Mr. Michael Brown, Sr. and Mrs. Mimi Brown

Manatee Sponsors: Mr. George Frazza and Mrs. Marie Frazza; Mr. Ed Michelson and the Atlanta Consulting Group; RedSteel Properties

Seahorse Sponsors: Dr. Joseph Ferro and Mrs. Olivia Ferro; Flare Media; Kmetz, Elwell, Graham & Associates, PLLC; Mr. John Papa and Mrs. Barbara Papa; Sea-Bird Scientific; Mr. James Seitz and Mrs. Bonnie Seitz

Donor: Mrs. Cathy Ferrell and Mr. Tuck Ferrell

We thank Barbra Kavanaugh, Interim Executive Director, Cyndi Permenter, SLP Marketing, and Staci Barney Rosalia, Grants Coordinator, of the Harbor Branch Oceanographic Institute Foundation, for all of their support and the Indian River Lagoon National Estuary Program for its continued support.

HARBOR BRANCH OCEANOGRAPHIC INSTITUTE
 ————— FOUNDATION —————



Indian River Lagoon Symposium 2022
IRL Connectivity

Program Schedule – Technical Sessions

Thursday, April 21, 2022

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

- 0715 - 0815 Registration, Set Up Posters, and Coffee & Tea**
- 0815 - 0830 Welcome**
M. Dennis Hanisak, FAU Harbor Branch
- 0830 - 0900 Keynote Address**
A Decade of Florida Manatee (*Trichechus manatus latirostris*) Mortality Events in the Indian River Lagoon: How Manatee- and Estuary Health Connect
Martine deWit, Florida Fish & Wildlife Conservation Commission, St. Petersburg, FL
- 0900 - 1000 Oral Session 1 – IRL Connectivity**
Session Chair: Linda Walters, University of Central Florida
- 0900 – 0910 **Manatee Habitat Restoration Funding Update**
Julie Mitchell, Annie Roddenberry, Erin McDevitt, Maria Merrill, Ed Hayes, and Taylor Kroll
Florida Fish & Wildlife Conservation Commission, Stuart, FL
- 0910 – 0920 **Status and Future of the FACT Network in the Northern Indian River Lagoon**
Bonnie Ahr¹, Eric Reyier¹, Joy Young², Doug Scheidt¹, Jane Provancha¹, Russ Lowers¹, and Brenton Back¹
¹Herndon Solutions Group, LLC, Kennedy Space Center, FL; ²Florida Fish & Wildlife Conservation Commission, Tequesta, FL
- 0920 - 0930 **Tracking Young Bull Shark Activity in a Coastal Lagoon with Frequent Harmful Algal Blooms**
Lauran R. Brewster, Matthew J. Ajemian, Michelle L. Edwards, and Michael P. McCallister
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 0930 - 0940 **Connecting the Dots: Using DNA Barcoding to Explore the Biodiversity and Distribution of Infauna in the Indian River Lagoon System**
L. Holly Sweat¹ and Iris Segura-García^{1,2}
¹Smithsonian Marine Station, Fort Pierce, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 0940 - 0950 **Influence of Coastal Ocean Water Levels on Currents in the Banana River Estuary (STUDENT PRESENTATION)**
Marc Di Ciccio, Gary Zarillo, and Robert Weaver
Florida Institute of Technology, Melbourne, FL
- 0950 - 1000 ***Caulerpa prolifera* Specific Food Webs Reveal a Lack of Connectivity in the Northern Indian River Lagoon and Banana River**
Rachel A. Brewton, Kevin N. Tyre, and Brian E. Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

- 1000 - 1030 Break**
- 1030 - 1130 Oral Session 2 – IRL Restoration**
Session Chair: Irene Arpayoglou, FDEP/Indian River Lagoon Aquatic Preserves
- 1030 - 1040 **The RECOVER Northern Estuaries Salinity Performance Measure Update: Connecting CERP Science, Restoration, and Management**
Phyllis A. Klarmann, Amanda Kahn, and Detong Sun
South Florida Water Management District, West Palm Beach, FL
- 1040 - 1050 **Implications for Co-restoration: Assessing Health of *Halodule wrightii* Grown in Conjunction with *Mercenaria mercenaria* Clams**
Vivienne Main¹, Ashley Smyth², Todd Z. Osborne³, and Loraé T. Simpson¹
¹Florida Oceanographic Society, FL; ²University of Florida, Homestead, FL; ³University of Florida-Whitney Laboratory, St. Augustine, FL
- 1050 - 1100 **Oyster Reef Restoration Facilitates the Recovery of Macroinvertebrate Abundance, Diversity, and Composition in Estuarine Communities (STUDENT PRESENTATION)**
Adam R. Searles^{1,2}, Emily E. Gipson^{2,3}, Linda J. Walters², and Geoffrey S. Cook²
¹University of Florida, Gainesville, FL; ²University of Central Florida, Orlando, FL; ³Skidaway Institute of Oceanography, University of Georgia, Savannah, GA
- 1100 - 1110 **Assessing the Trophic Dynamics of Juvenile Sportfish to Oyster Reef Restoration (STUDENT PRESENTATION)**
Jennifer M. Loch and Geoffrey S. Cook
University of Central Florida, Orlando, FL
- 1110 – 1120 **Assessing the Biological Performance of Living Docks – A Citizen Science Initiative to Improve Coastal Water Quality through Benthic Recruitment within the Indian River Lagoon, Florida**
Morgan Gilligan, Kelli Hunsucker, Sandra Rech, Alyssa Sharma, Rebecca Beltran, Ryan White, and Robert Weaver
Florida Institute of Technology, Melbourne, FL
- 1120 – 1130 **Leveraging Natural Processes and Community Engagement for Removal of Nitrogen and Phosphorus (STUDENT PRESENTATION)**
Abigail Gering and Austin Fox
Florida Institute of Technology, Melbourne, FL
- 1130 - 1200 Three Minutes, Three Slides**
Session Chair: M. Dennis Hanisak, FAU Harbor Branch
- Winds and Topographic Controls on the Connectivity in the Northern Indian River Lagoon**
Mingshun Jiang
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Connecting the Dots: Young Whitespotted Eagle Ray Movement and Habitat Connectivity in the Indian River Lagoon (STUDENT PRESENTATION)**
Ariadna Rojas Corzo, Breanna DeGroot, Michael McCallister, and Matthew J. Ajemian
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

**Survival and Growth of Sponge Recruits in a Land-Based Nursery
(STUDENT PRESENTATION)**

Barbara Crouch¹, Shirley A. Pomponi¹, Paul Wills¹, and Andia Chaves-Fonnegra^{1,2}

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;

²Florida Atlantic University, Jupiter, FL

Baseline Monitoring of Benthic Communities to Verify the Efficacy of Restoration Efforts (STUDENT PRESENTATION)

Sean Crowley and Kevin B. Johnson

Florida Institute of Technology, Melbourne, FL

Using Continuous Monitoring of Bottom Water Oxygen to Help Guide Restoration Efforts in the Indian River Lagoon

Tyler Provoncha¹, Olivia Escandell¹, and Austin Fox²

¹Brevard Zoo, Melbourne, FL; ²Florida Institute of Technology, Melbourne, FL

Monitoring Phytoplankton Communities to Document the Impacts of Estuarine Restoration Efforts (STUDENT PRESENTATION)

Connor J. Wong and Kevin B. Johnson

Florida Institute of Technology, Melbourne, FL

Samsons Island Submerged Lands Restoration (SISLR): Creating a “Habitat Mosaic Pilot Project” to Determine the Feasibility of Habitat Restoration Techniques in the Indian River Lagoon

Nicholas Sanzone

City of Satellite Beach, Satellite Beach, FL

Changes in Light Availability and Benthic Macrophyte Cover in the Indian River Lagoon

Kevin N. Tyre, Rachel A. Brewton, and Brian E. Lapointe

Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1200 - 1330 Lunch (provided)

1330 - 1440 Oral Session 3 – IRL Water Quality & Human Impacts

Session Chair: Chuck Jacoby, St. Johns River Water Management District

1330 - 1340 Prevalence of the Indicator Bacteria, *Enterococcus* species, and Their Antibiotic Resistance in Indian River Lagoon Fish

Maki Tabuchi^{1,2}, Valerie J. Harwood², Richard Paperno³, Kyle Luba¹, and Theresa T. Cody¹

¹Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; ²University of South Florida, Tampa, FL; ³Florida Fish and Wildlife Conservation Commission, Melbourne, FL

1340 - 1350 Dissolved Oxygen and the Influence of Hypoxia on Nutrient Cycling in the Indian River Lagoon

Austin Fox¹, Abbey Gering¹, and Tyler Provoncha²

¹Florida Institute of Technology, Melbourne, FL; ²Brevard Zoo, Melbourne FL

- 1350 - 1400 **Remote Sensing of Harmful Algal Blooms in the Indian River Lagoon and Connected Waterways in Brevard County**
Andrew Kamerosky¹, Claudia Listopad¹, and Virginia Barker²
¹Applied Ecology, Inc., Melbourne, FL; ²Brevard County Natural Resources Management Department, Viera, FL
- 1400 - 1410 ***Pseudo-nitzschia* in the Indian River Lagoon: An Emerging Threat for Florida**
Stephanie Schreiber, Malcolm McFarland, James Sullivan, M. Dennis Hanisak, Andia Chaves Fonnegra, and Carlie Perricone
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 1410 - 1420 **Assessing Mesopredator Residency around Clam Leases in Eastern Florida (STUDENT PRESENTATION)**
Brianna V. Cahill¹, Charles W. Bangley^{2,3}, Matthew B. Ogburn²; Michael McCallister¹, and Matthew J. Ajemian¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Smithsonian Environmental Research Center, Edgewater, MD; ³Dalhousie University, Halifax, NS, Canada
- 1420 - 1430 **Impact of Mangrove-Driven Acidification on Intertidal Oyster Reefs (STUDENT PRESENTATION)**
Katherine Harris, Meghan Bradburn, and Linda Walters
University of Central Florida, Orlando, FL
- 1430 - 1500 Three Minutes, Three Slides**
Session Chair: Zack Jud, Florida Oceanographic Society, Stuart, FL
- Detecting Coastal Acidification in the Indian River Lagoon**
M. Dennis Hanisak and Kristen S. Davis
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Real-time Estimation of Aragonite Saturation in the Indian River Lagoon**
Kristen S. Davis and M. Dennis Hanisak
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Coastal Acidification and Carbonate Chemistry: Pilot Data from St. Lucie Reef (STUDENT PRESENTATION)**
Haley McQueen and M. Dennis Hanisak
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Water Quality Modeling, a Simple Box Model Theory, and Its Applications in a Shallow Subtropical Estuary in Florida**
Detong Sun, Jessica Frost, and Melanie Parker
South Florida Water Management District, West Palm Beach, FL
- Effect of Associated Bacteria on the Physiology of IRL *Pyrodinium bahamense* (STUDENT PRESENTATION)**
Jackie Metz, Tracy Mincer, and Malcom McFarland
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Exposure to Algal Biotoxins: Exploring Health Effects in Green Sea Turtles (*Chelonia mydas*) (STUDENT PRESENTATION)**
Hunter Brown and Annie Page-Karjian
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Monitoring the Impact of Seasonal Freshwater Inflows to St. Lucie River Estuary for CERP: Habitat and Resource Connectivity to Health Physiology of Fish

Mark Barton, Phyllis A. Klarmann, and Christopher Malinowski
South Florida Water Management District, West Palm Beach, FL

Skin Tumors of Striped Mullet (*Mugil cephalus*) in the Indian River Lagoon

Yasunari Kiryu¹, Micah D. Bakenhaster¹, Patrick W. Wilson¹, Douglas H. Adams², and Richard Paperno²

¹Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; ²Florida Fish and Wildlife Conservation Commission, Melbourne, FL

Plastic Pellet Pollution on Florida's Space Coast

Robert D. Sluka
A Rocha, Titusville, FL

1500 - 1540 Break

1540 - 1650 Oral Session 4 – IRL Biodiversity & Ecology

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

1540 - 1550 The Microbial Diversity of the IRL from a Metagenomic Perspective (STUDENT PRESENTATION)

René K.M. Xavier and Tracy J. Mincer

Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1550 - 1600 Connecting Environmental DNA Profiles to Community Diversity Assessments: An IRL Case Study

Sarah Tweedt¹, Holly Sweat¹, Christopher Meyer¹, Matthew Ogburn², Carmen Ritter², Laura Givens³, and Steven Canty¹

¹National Museum of Natural History, Washington DC; ²Smithsonian Environmental Research Center, Edgewater, MD; ³Duke University, Durham, NC

1600 - 1610 Porifera Biodiversity in the Indian River Lagoon: Evaluating the Latitudinal Ecotone and Similarities with St. Lucie Reef (STUDENT PRESENTATION)

Greer Babbe¹, Maria Cristina Diaz¹, Iris Segura-García^{1,2}, John Reed¹, and Andia Chaves-Fonnegra^{1,3}

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; Smithsonian Marine Station, Fort Pierce, FL; ³Florida Atlantic University, Jupiter, FL

1610 - 1620 Occupancy and Habitat Use of the Florida East Coast Diamondback Terrapin in the Mid Indian River Lagoon (STUDENT PRESENTATION)

Jeffrey S. Herr and Jon A. Moore
Florida Atlantic University, Jupiter FL

- 1620 - 1630 **Preliminary Smalltooth Sawfish Data from the Southern Indian River Lagoon: Is a Nursery Re-establishing?**
Andrew Wooley¹, Michael McCallister², Matthew Ajemian², Sarah Webb^{2,3}, James Whittington³, Rachel Scharer¹, Lukas Heath¹, Dylan Yakich¹, and Gregg Poulakis¹
¹Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Fish and Wildlife Conservation Commission, Tequesta, FL
- 1630 - 1640 **Variable Species Response to Environmental Fluctuations within an Urbanized Estuary (STUDENT PRESENTATION)**
Sarah Webb^{1,2}, Erick Ault¹, Robert Ellis³, Matthew Ajemian², and Phil Stevens³
¹Florida Fish and Wildlife Conservation Commission, Tequesta, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL
- 1640 - 1650 **Observations in Model Ecosystem Aquariums as Mesocosms**
Katie Skura and William Hoffman
Smithsonian Marine Station, Fort Pierce, FL
- 1650 - 1655 **Presentation of the Florida Academy of Sciences Medalist Award to Dr. Linda Walters**
- 1655 - 1715 **Three Minutes, Three Slides**
Session Chair: Kelli Hunsucker, Florida Institute of Technology
- Does *Sargassum* Macroalgae Affect Mangrove Growth?**
Loraé T. Simpson, S.J. Canty, Zachary Phillips, C. Root, and Ilka "Candy" Feller
Florida Oceanographic Society, Stuart, FL
- Substrate Preferences and the Influence of Distance from Parent Populations on Marine Fouling Organisms (STUDENT PRESENTATION)**
Samantha Pringle and Emily Ralston
Florida Institute of Technology, Melbourne, FL
- Please Call Us: Using the U.S. Sawfish Recovery Hotline as a Tool to Promote Recovery of the Smalltooth Sawfish in the Indian River Lagoon**
Gregg Poulakis, Andrew Wooley, Rachel Scharer, Lukas Heath, and Dylan Yakich
Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL
- Modeling Settlement of the Indian River Lagoon Benthic Community, with an Emphasis on Living Dock Restoration Mats (STUDENT PRESENTATION)**
Sandra Rech, Kelli Hunsucker, and Robert Weaver
Florida Institute of Technology, Melbourne, FL
- Engaging the Community to Restore Populations of *Mercenaria* in the Indian River Lagoon**
Hope Leonard¹, Todd Osborne², Olivia Escandell¹, Adam Klingenburg¹, and Tyler Provoncha¹
¹Brevard Zoo, Melbourne, FL; ²University of Florida-Whitney Lab, St. Augustine, FL

Planting Seeds: Shifting Hands-on Service Learning to Highlight Lagoon and Upland Connectivity

Emily Surmont, Irene Arpayoglou, Kirk Fusco, and Matthew Anderson
FDEP-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL

- 1720 Announcements and Transition to Poster Session & Reception**
- 1730 - 2000 Reception**
- 1930 Announcement of Student Awards (Auditorium)**

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, and Best Poster.

In the following poll, please select the presentations that you thought were most deserving of this recognition: <https://www.crowd.live/IRLS2022>. Polls will close at 1900.

1730 - 2000 Poster Session & Reception (Open to the public, too!)

All posters will be displayed in the Education Annex. During the poster session, presenters of odd-numbered posters will minimally be at their posters between 1730 and 1815; presenters of even-numbered posters will minimally be at their posters between 1815 and 1900. We also encourage students to be at their posters during the second half of lunch break. **Please join us in the Auditorium for the presentation of student awards at 1930.**

1. Biodiversity of Vegetation in Coastal Wetlands Following Removal of Brazilian Pepper (*Schinus terebinthifolia*)

(STUDENT PRESENTATION)

Lucas Acosta^{1,4}, Ava Kopchak^{1,4}, Pjark Sander^{1,4}, Zachary Mansell^{2,4}, and Michael Price^{3,4}

¹Indian River Charter High School, Vero Beach, FL; ²Vero Beach High School, Vero Beach, FL;

³Sebastian River High School, Sebastian, FL; ⁴Junior Scientists Program

2. Exploring the Geospatial Distribution of Water Quality Data for the 2016 Harmful Algal Bloom and Fish Kill in the Indian River Lagoon, Mosquito Lagoon, and Banana River Lagoon

Kirsten Jo (KJ) Ayres¹, Duane De Freese¹, Daniel Kolodny¹, Charles Jacoby², and M. Dennis Hanisak³

¹Indian River Lagoon National Estuary Program, Sebastian FL; ²St. John's River Water Management District, Palatka, FL; ³Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

3. Microplastics, Macro-Problems: Plastic Abundance in the Waters and Sediments of Florida State Parks

(STUDENT PRESENTATION)

Luciana Banquero, Andres Alatorre, Nicole Campbell, Alicia Caley, Taylor Dahlin, Mackenzie Daniels, Savanna Freeman, Madison Ganci, Colleen Gilbride, Sydney Henderson, Aron Ludviksson, Laney McGraw, Kate McLendon, Amanda Newsome, Owen Rogers, Dylan Scheaffer, Cassidy Starke, Cindy Whitten, Connor Wright, Alexander Yip, Sidney Busch, Katherine Harris, and Linda Walters
University of Central Florida, Orlando, FL

4. Effectiveness of Culverts on Sustaining Life within the Indian River Lagoon

(STUDENT PRESENTATION)

Madison Barsalou, Sally Jane Lloyd, Anthony Marzouk, Owen Stanton, and Jillian Van Dyke
Vero Beach High School, Vero Beach, FL and the Junior Scientists Program

5. Initiating Seagrass Restoration in Mosquito Lagoon: Suitability Modeling and *Halodule wrightii* Fragment Retention Adjacent to Living Shorelines and Restored Intertidal Oyster Reefs

(STUDENT PRESENTATION)

Gabriel Benson¹, Melinda Donnelly¹, Paul Sacks¹, Jessy Wayles², and Linda Walters¹

¹University of Central Florida, Orlando, FL; ²Marine Discovery Center, New Smyrna Beach, FL

6. Analysis of Stormwater Outfalls on Microplastic Abundance in the Indian River Lagoon

(STUDENT PRESENTATION)

Sidney Busch¹, Casey Craig¹, Paul Sacks¹, Jessy Wayles², Tess Sailor-Tynes², Emily Dark³, L. Holly Sweat⁴, Lei Zhai¹, David Fox¹, and Linda Walters¹

¹University of Central Florida, Orlando, FL; ²Marine Discovery Center, New Smyrna Beach, FL; ³FDEP-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL; ⁴Smithsonian Marine Station, Fort Pierce, FL

7. Microplastics in the Indian River Lagoon Sediments

(STUDENT PRESENTATION)

Brianna Corellis¹, David J. Bradshaw II², Luisa Galgani², and Tracy J. Mincer^{1,2}

¹Florida Atlantic University, Jupiter, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

- 8. Getting to Know the IRL Dolphins: Establishing a Photo-identification Program in the Southern Indian River Lagoon**
 Brooke Davis, Nicole Pegg, Lydia Moreland, Madison Hahn, Shanen Cox, Wendy Marks, Steve Burton, and Cynthia Page- Karjian
 Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 9. Porifera in the Indian River Lagoon: Cryptic Biodiversity and Potential Ecological Implications**
 Maria Cristina Díaz¹, Iris Segura-García^{1,2}, Greer Babbe¹, Holly Sweat², Megan Conkling¹, John Reed¹, Juliet Ruggiero¹, Andia Chaves-Fonnegra^{1,3}, and Shirley Pomponi¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Smithsonian Marine Station, Fort Pierce, FL; ³Florida Atlantic University, Jupiter, FL
- 10. Restore Lagoon Inflow Research: Phase 2 Project Findings and Next Steps**
 Jeff Eble¹, Jesse Blanchard², Austin Fox¹, Kevin Johnson¹, Robert Weaver¹, Gary Zarillo¹, Marcy Frick³, and Mathew Shelton³
¹Florida Institute of Technology, Melbourne, FL; ² Fish Consulting LLC, Melbourne, FL; ³ Tetra Tech, Merritt Island, FL
- 11. Environmental DNA in Practice: eDNA Biodiversity Assessments across Diverse Florida Coastal Ecosystems (STUDENT PRESENTATION)**
 Emily Farrell, Girish Kumar, Ashley Reaume, and Michelle R. Gaither
 University of Central Florida, Orlando, FL
- 12. Phytoplankton Assemblages in the C44 Canal and St. Lucie Estuary**
 Thomas A. Frankovich¹, J. William Louda², Barbara Welch³, and Ania Wachnicka³
¹Florida International University, Miami, FL; ²Florida Atlantic University, Boca Raton, FL; ³South Florida Water Management District, West Palm Beach, FL
- 13. What's CERP Got to Do with It? The Role of the Comprehensive Everglades Restoration Plan in Tracking IRL Benthic Biodiversity**
 Jess Glanz and Holly Sweat
 Smithsonian Marine Station, Fort Pierce, FL
- 14. Expanding Public Outreach for the Indian River Lagoon Observatory Network of Environmental Sensors (STUDENT PRESENTATION)**
 Natalie Howard, Jennifer Cutter, Gabby Barbarite and Dennis Hanisak
 Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 15. A Proposed Methodology for the Study and Monitoring of Seagrass Epiphytes, Mesograzers and the Macrograzers They Support.**
 J. William Louda^{1*}, Alya G. Sing-White^{1,2}, and Annabelle M.L. Brooks³
¹Florida Atlantic University, Boca Raton, FL; ²U.S. Environmental Protection Agency, Atlanta, GA; ³The Cape Eleuthera Institute of The Island School, Deep Creek, Eleuthera, The Bahamas.
- 16. Preliminary Insights on the Occurrence and Movements of the Brazilian Cownose Ray (*Rhinoptera brasiliensis*) along the East Coast of Florida**
 Michael McCallister¹, Charles Bangley^{2,3}, Christian Jones⁴, Matthew Ogburn², Nicole Phillips⁵, Helen Weber⁵, and Matthew Ajemian¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University; ²Smithsonian Environmental Research Center, Edgewater, MD; ³Dalhousie University, Halifax, NS, Canada, ⁴National Marine Fisheries Service, Pascagoula, MS; ⁵The University of Southern Mississippi, Hattiesburg, MS

- 17. Counting Crabs at Coastal Oaks
(STUDENT PRESENTATION)**
Heather O'Corry-Crowe^{1,3}, Abigail Thomas^{1,3}, Morgan Ransom^{2,3}, Jeanne Phillips^{2,3}, and Charlie Brust^{2,3}
¹Vero Beach High School, Vero Beach, FL; ²Sebastian River High School, Sebastian, FL; ³Junior Scientists Program
- 18. Leveraging Natural Selection for Restoration of Clam Populations and Water Quality in the Indian River Lagoon**
Todd Z. Osborne^{1,2}, Jose Nunez¹, Loraé T. Simpson³, Jeff Beal⁵, and Leonardo Ibarra-Castro¹
¹University of Florida-Whitney Laboratory, St. Augustine, FL; ²University of Florida, Gainesville, FL; ³Florida Oceanographic Society, Stuart, FL; ⁵Ducks Unlimited, Fort Pierce, FL
- 19. Identification of Fish Habitat Hotspots and Suitability for Use in Prioritizing Conservation and Restoration Projects in Coastal Rivers**
Richard Paperno¹, Philip W. Stevens², Jeff L. Beal^{3,4}, Timothy C. MacDonald¹, H. Nathan Miller⁵, Phyllis A. Klarmann⁶, and Christopher R. Malinowski⁶
¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL, ²Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL, ³Florida Fish and Wildlife Conservation Commission, Okeechobee, FL, ⁴Ducks Unlimited, Fort Pierce, FL; ⁵Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL, ⁶South Florida Water Management District, West Palm Beach, FL
- 20. Long-term Oyster Spat Monitoring in the St. Lucie Estuary and Indian River Lagoon, Florida**
Zachary Phillips, Vivienne Main, Sarah Cole, and Loraé T. Simpson
Florida Oceanographic Society, Stuart, FL
- 21. Youth Fishing Clinic to Educate the Next Generation of Indian River Lagoon Users
(STUDENT PRESENTATION)**
Carol Roberts¹, Beth Falls², Vincent Encomio¹, Armando J. Ubeda³, Mandy Baily⁴, and Linda Seals¹
¹University of Florida IFAS Extension, Fort Pierce, FL; ²Ocean Research Conservation Association, Vero Beach, FL; ³University of Florida/IFAS Extension, Sarasota, FL; ⁴University of Florida, Gainesville, FL; ¹UF/IFAS Extension, Fort Pierce, FL
- 22. Oyster Recruitment on Brevard County's Save Our Indian River Lagoon (SOIRL) Oyster Breakwaters**
Paul Sacks¹, Melinda Donnelly¹, Linda Walters¹, Jenny Hansen², and Virginia Barker²
¹University of Central Florida, Orlando, FL; ²Brevard County Natural Resources Management, Viera, FL
- 23. Seagrass Impacts on Predator and Forage Fish Dynamics in the Indian River Lagoon, FL
(STUDENT PRESENTATION)**
Michelle Shaffer¹, Timothy C. MacDonald², Kevin Thompson², and Kristy A. Lewis¹
¹University of Central Florida, Orlando, FL; ²Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL
- 24. Bird Interactions with Oyster Reef Restoration Materials Using Wildlife Trail Cameras
(STUDENT PRESENTATION)**
Emily Suchonic, Mekail Negash, Gabriel Benson, Paul Sacks, Melinda Donnelly, and Linda Walters
University of Central Florida, Orlando, FL
- 25. Predicting Responses of Fishes to Changes in Water Quality in the Indian River Lagoon**
Ralph G. Turingan¹, Jesse Blanchard², and Austin Anderson¹
¹Florida Institute of Technology, Melbourne, FL; ²Ichthyological Services and Habitat Consulting L.L.C., Melbourne, FL

- 26. Assessing the Habitat Usage and Movement Patterns of Juvenile Atlantic Tarpon (*Megalops atlanticus*) Associated with Mosquito Impoundments in the Southern Indian River Lagoon**
Sarah Webb, Erick Ault, Shannon Moorhead, Dayna Hunn, and Phil Stevens
Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL
- 27. Mangroves on the Move: Determining the Extent of Mangrove Acidification on Intertidal Oyster Reefs (STUDENT PRESENTATION)**
Cindy Whitten, Andres Alatorre, Luciana Banquero, Alicia Caley, Nicole Campbell, Taylor Dahlin, Mackenzie Daniels, Savanna Freeman, Madison Ganci, Colleen Gilbride, Sydney Henderson, Aron Ludviksson, Laney McGraw, Kate McLendon, Amanda Newsome, Owen Rogers, Dylan Scheaffer, Cassidy Starke, Connor Wright, Alex Yip, Katherine Harris, and Linda Walters
University of Central Florida, Orlando, FL
- 28. Environmental Hypoxia in the Indian River Lagoon (IRL) and Its Effects on Native Fish Species during Early Development (STUDENT PRESENTATION)**
Alessandra Jimenez Yap, Bing Ouyang, Paul S. Wills, and Sahar Mejri
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL