



**Johnson Education Center, FAU Harbor Branch, Fort Pierce, Florida
February 8-9, 2018**

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Indian River Lagoon Symposium 2018
Restoration of the Indian River Lagoon

Program Schedule – Technical Sessions
Thursday, February 8, 2018

(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**
Oyster Restoration in the Indian River Lagoon: Past, Present & Future
Linda Walters
University of Central Florida, Orlando, FL
- 0900 - 1000 Oral Session 1 – Restoration**
Session Chair: Jeff Beal, Florida Fish and Wildlife Conservation Commission
- 0900 - 0915 **Flow-Biota Interaction in Restored Shorelines and Oyster Reefs: An Ecohydraulic Analysis of Restoration in Mosquito Lagoon**
Kelly M. Kibler, Vasileios Kitsikoudis, David W. Spiering, Linda Walters, and Melinda Donnelly
University of Central Florida, Orlando, FL
- 0915 - 0930 **The Potential of Bivalves to Restore the Indian River Lagoon (FL) after *Aureoumbra lagunensis* Brown Tides**
Eve Galimany, Jessica Lunt, Christopher Freeman, Malcolm Mossop, Arthur Domingos, Jay Houk, Sherry A. Reed, and Valerie J. Paul
Smithsonian Marine Station, Fort Pierce, FL
- 0930 - 0945 **Bivalves at Work: How Effective Are Oysters at Cleaning the St. Lucie River?**
Jessica Lunt¹, L.J. Houk¹, and Vincent Encomio²
¹Smithsonian Marine Station, Fort Pierce, FL; ²Florida Oceanographic Society, Stuart, FL
- 0945 - 1000 **Seagrass Restoration Influenced by Small-Scale Distances to Nearby Restored Oyster Reefs**
Kathryn A. Tiling and Vincent Encomio
Florida Oceanographic Society, Stuart, FL
- 1000 - 1030 Break**
- 1030 - 1130 Oral Session 2 – Management & Outreach**
Session Chair: Patti Gorman, South Florida Water Management District
- 1030 - 1045 **Mitigating Harmful Algal Blooms in the Indian River Lagoon: How Effective Were the Fertilizer Bans?**
Rachel A. Brewton, Lynn E. Wilking, Laura W. Herren, and Brian E. Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

- 1045 - 1100 **What Was Up Is down and What Was Down Is Up ... How Do We Regain the Balance?**
Lori Morris, Robert Chamberlain, Chuck Jacoby, and Margie Lasi
St. Johns River Water Management District, Palatka, FL
- 1100 - 1115 **Living Shoreline Designs for Lagoon-front Residents: Living Shoreline Demonstration Site and Wave Tank Modeling**
Jake Zehnder¹, Robert J. Weaver², Jody B. Palmer¹, and Virginia Barker³
¹Brevard Zoo, Melbourne, FL; ²Florida Institute of Technology, Melbourne, FL; ³Brevard County Natural Resources Management, Melbourne, FL
- 1115 - 1130 **Effectiveness of Public Education at Controlling Nonpoint Source Pollution along the Mosquito Lagoon**
Andrea Orozco, Adeljean Ho, and Hyun Jung Cho
Bethune-Cookman University, Daytona Beach, FL
- 1130 - 1215 Three Minutes, Three Slides**
Session Chair: M. Dennis Hanisak, FAU Harbor Branch
- Movement and Habitat Use of Spotted Eagle Rays, *Aetobatus narinari*, along Florida's East Coast: Implications for Bivalve Restoration and Fisheries in the Indian River Lagoon**
Breanna C. DeGroot¹, Kim Bassos-Hull², Michael P. McCallister¹, and Matthew J. Ajemian¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;
²Mote Marine Laboratory, Sarasota, FL
- Impacts of Coastal Restoration on Population and Community Dynamics of Sportfish in the Indian River Lagoon**
Jennifer M. Loch and Geoffrey S. Cook
University of Central Florida, Orlando, FL
- Left in Their Wake: Impacts of Boating and Bioeroders on Oyster Reef Restoration**
Iris J. Fang, Linda J. Walters, Titchenda Chan, Kevin Mackie, and Kelly Kibler
University of Central Florida, Orlando, FL
- A Post-Restoration Analysis: How Does Intertidal Oyster Reef Restoration Effect Avian Community Structure and Behavior in Mosquito Lagoon?**
Michelle Shaffer, Melinda Donnelly, and Linda Walters
University of Central Florida, Orlando, FL
- Hydrodynamic Limitations to Mangrove Recruitment and the Implications for Living Shoreline Restoration**
Christian Pilato, Kelly Kibler, and Linda Walters
University of Central Florida, Orlando, FL
- Using Saltmarsh Grasses and Groundcovers to Support Natural Mangrove Recruitment on Appropriate Shorelines**
Kirk Fusco
Florida Department of Environmental Protection, Indian River Lagoon Aquatic Preserves, Fellsmere, FL
- Living Docks: Promoting the Growth of Benthic Communities for Improved Water Quality**
Ryan P. Christiansen, Kelli Z. Hunsucker, and Robert J. Weaver
Florida Institute of Technology, Melbourne, FL

“Livin for the Lagoon”, an Outreach Program to Promote Homeowners to Adopt Lagoon Friendly Landscaping Practices

Sara Piotter and Maryam Ghadiri
Environmental Learning Center, Vero Beach, FL

Community-Scale Enhancement and Restoration of the Rose Bay Watershed in Volusia County

Katie Tripp¹, Paul Haydt², Erica Hernandez³, and Ron Brockmeyer³
¹Save the Manatee Club, Maitland, FL; ²East Coast Greenway Alliance, Palm Coast, FL;
³St. Johns River Water Management District, Palatka, FL

1215 - 1315 Lunch (provided)

1315 - 1430 Oral Session 3 – Monitoring/Water Quality

Session Chair: Chuck Jacoby, St. John’s River Water Management District

1315 - 1330 Spatiotemporal Changes in the Indian River Lagoon Microbiome

David J. Bradshaw II and Peter J. McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1330 - 1345 Relationships between Dissolved Nutrients, Environmental Variables, and Acidification in the Indian River Lagoon

Bret Kaiser and Brian Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1345 - 1400 A Tale of Two Summers: Using IRLON Data to Compare the Effects of the Lake Okeechobee Discharges of 2016 and 2017 on the St. Lucie Estuary

Nicole Stockley, James Sullivan, Dennis Hanisak, Malcolm McFarland, and Kristen Davis
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1400 - 1415 Impacts of Dredging, Hurricanes and Seasonality on Fluxes of Nitrogen and Phosphorus from IRL Sediments

Austin L. Fox, John H. Trefry, and Stacey L. Fox
Florida Institute of Technology, Melbourne, FL

1415 - 1430 Highlights from a Two-Year Time Series for Chemical Forms of Nitrogen and Phosphorus in Tributaries to the Northern Indian River Lagoon

John H. Trefry, Austin L. Fox, and Stacey L. Fox
Florida Institute of Technology, Melbourne, FL

1430 - 1500 Three Minutes, Three Slides

Session Chair: Zack Jud, Florida Oceanographic Society

Extent of Shoreline Degradation in Urbanized Areas on the East Coast of Central Florida

Suzanne Connor, Melinda Donnelly, Michelle Shaffer, Stephanie Garvis, Annie Roddenberry, Kelly Kibler, and Linda Walters
University of Central Florida, Orlando, FL

Evaluating the Effectiveness of Living Shorelines in Mitigating Non-point Source Pollution and Increasing Soil Carbon Storage in the Mosquito Lagoon

Mallory Brooks, Adeljean L. Ho, and Hyun J. Cho
Bethune-Cookman University, Daytona Beach, FL

A Mechanical Method to Prevent Invasive Species Recruitment

Kelli Z. Hunsucker, Emily Ralston, Harrison Gardner, and Geoffrey Swain
Florida Institute of Technology, Melbourne, FL

A Review of Dolphin Disentanglements in the Indian River Lagoon for 2017

Steve Burton¹, Wendy Marks¹, Adam Schaefer¹, Anne Sleeman¹, Laurie Alexio¹, Marilyn Mazzoil¹, Wendy Noke Durden², and Annie Page-Karjian¹

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

²Hubbs-SeaWorld Research Institute, Melbourne, FL

Harmful Algal Blooms in the IRL: Plenty to Choose from

Paul E. Hargraves

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

Source Tracking Agricultural and Urban Nutrient Inputs into the North Fork of the St. Lucie River

Jordan A. Madio, Lynn E. Wilking, Rachel A. Brewton, and Brian E. Lapointe

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

The IRL as a Vehicle to Integrate STEM and the Humanities in Secondary Education

Karlheinz Haas and Nathaniel Osborn

The Pine School, Hobe Sound, FL

Creating Positive Environmental Attitudes and Connections with Nature through Youth Outdoor Exploration and Adult Environmental Education Training

Sarah Christopherson and Maryam Ghadiri

Environmental Learning Center, Vero Beach, FL

1500 - 1530 Break

1530 - 1645 Oral Session 4 – Ecology

Session Chair: Valerie Paul, Smithsonian Marine Station

1530 - 1545 MarineGEO: A Smithsonian-led Global Observatories Network Designed to Understand Change in Coastal Ecosystems

Dean S. Janiak¹, C.J. Freeman¹, J. Campbell¹, J. Seemann², D. Branson¹, V.J. Paul¹, and J.E. Duffy³

¹Smithsonian Marine Station, Fort Pierce, FL; ²Smithsonian Tropical Research Institute, Bocas del Toro, Panama; ³Smithsonian Environmental Research Center, Edgewater, MD

1545 - 1600 Dynamics of Fish Community Diversity within the Indian River Lagoon

Brittany Troast¹, Richard Paperno², and Geoffrey Cook¹

¹University of Central Florida, Orlando, FL; ²Florida Fish and Wildlife Conservation Commission, Melbourne, FL

1600 - 1615 The Impacts of Major Weather Events on Oyster Populations in the St. Lucie Estuary

Richard Radigan and Melanie Parker

Florida Fish & Wildlife Conservation Commission, St. Petersburg, FL

- 1615 - 1630 **Integrating Flow-Cytometric and Molecular Tools to Characterize Bloom Dynamics of Nano- and Picoplanktonic Algae in the Indian River Lagoon**
Eric Muhlbach¹, Charles Tilney¹, Laura Markley¹, Karen Henschen¹, Stephanie Keller-Abbe¹, Celia Villac¹, Cary Lopez¹, Susan Badylak², Edward Philips², Lauren Hall³, Margaret Lasi³, Ashley Parks³, Richard Paperno⁴, Doug Adams⁴, Karen Vaughan⁴, Dwayne Edwards⁴, Jacob Schneider⁴, Kyle Wald⁴, and Katherine Hubbard¹
¹Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; ²University of Florida, Gainesville, FL; ³St. Johns River Water Management District, Palatka, FL; ⁴Florida Fish and Wildlife Conservation Commission, Melbourne, FL
- 1630 - 1645 **Internal Nutrient Cycling in the Indian River Lagoon: Is Nitrogen Fixation an Overlooked Source for Blooms?**
Joshua Papacek¹, Edward Philips¹, Margaret Lasi², and Patrick Inglett¹
¹University of Florida, Gainesville, FL; ²St. Johns River Water Management District, Palatka, FL
- 1645 - 1720 **Three Minutes, Three Slides**
Session Chair: Kelli Hunsucker, Florida Institute of Technology
- Can Elevated Salinity Trigger the Viable But Nonculturable State in the Marine Pathogen *Vibrio vulnificus*?**
Brandon McHenry, Gabby Barbarite, and Peter McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Growth-Irradiance Relationships of *Pyrodinium bahamense***
Sugandha Shankar, Cary B. Lopez, and Katherine A. Hubbard
Florida Fish & Wildlife Conservation Commission, St. Petersburg, FL
- Light in St. Lucie Estuary before and after Irma: A Snapshot**
Amanda Kahn¹ and Jeffrey L. Beal²
¹South Florida Water Management District, West Palm Beach; ²Florida Fish and Wildlife Conservation Commission, Fort Pierce, FL
- Characterization of Elasmobranch Distribution and Habitat Use in the Southern Indian River Lagoon**
Grace Roskar, Michael P. McCallister, and Matthew J. Ajemian
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Cradle to Grave Records of IRL Dolphins**
Marilyn Mazzoil¹, Elisabeth Howells¹, Adam Schaefer¹, Steve Burton¹, Megan Stolen², and Elizabeth Titcomb¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Hubbs-SeaWorld Research Institute, Melbourne Beach, FL
- Coastal Restoration: A Florida Master Naturalist Special Topic Program**
R. LeRoy Creswell and Martin Main
University of Florida Sea Grant, Fort Pierce, FL
- Studying Seahorses through Collaboration, Education, and Citizen Science**
Nancy Pham Ho¹ and Adeljean L.F.C. Ho²
¹Coastal Biology Incorporated, Sanford, FL; ²Bethune-Cookman University, Daytona Beach, FL

Inspiring at-Risk Middle-School Girls to Achieve STEAM Careers through a Summer Mentorship Program

Sarah Rhodes-Ondi

Environmental Learning Center, Vero Beach, FL

The Junior Scientists Program: Research by the Next Generation to Preserve Our Natural Resources for All Generations

M. Dennis Hanisak¹, Yasmin Ortiz^{1,2}, John Hart¹, David Heuberger³, and Sarah Rhodes-Ondi³

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

²Indian River State College, Vero Beach FL; ³Indian River Land Trust, Vero Beach, FL

1720

Closing Comments and Transition to Poster Session & Reception

1730 - 1900 Poster Session & Reception (Open to the public, too!)

Posters will be displayed all day in the Education Annex (Posters #1-30) and the Gallery (Posters #31-40). During the poster session, presenters of odd-numbered posters will be at their posters between 1730 and 1815; presenters of even-numbered posters will be at their posters between 1815 and 1900.

There will be a coffee station at both locations during breaks. We also encourage students to be at their posters during the second half of lunch break.

- 1. Organic Contaminants as Ecological Markers in Young-of-the-Year Scalloped Hammerhead Sharks**
Douglas H. Adams¹ and Kady Lyons²
¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL; ²California State University Long Beach, Long Beach, CA
- 2. Go with the Tide: Impact of High Water on Boring Sponge Establishment**
Katie Adams, Jesse Blount, Elizabeth Boggs, Cynthia Maza Perez, Sheridan Strang, Ayssel Tanbari, Iris J. Fang, and Linda J. Walters
University of Central Florida, Orlando, FL
- 3. Identification of Bottlenose Dolphin Prey within the IRL, Utilizing Images Collected during Observed Dolphin Feeding Behaviors**
Dan Albrecht¹, Kaitlin Grell¹, Dana Katz¹, Jordan Waldron¹, Brandy Nelson², Elizabeth Murdoch Titcomb², and Marilyn Mazzoil²
¹Florida Atlantic University, Boca Raton, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 4. Survey of Mosquito Populations in the Crab Burrows of the Coastal Oaks Preserve**
Lauren Amos^{1,2}, Jaime Vazquez^{1,2}, Kyle Juarez^{1,2}, Rebeca Naveda^{1,2}, Andrew Cassera^{1,2}, and Ben Worthley^{1,2}
¹Vero Beach High School, Vero Beach, FL; ²Junior Scientists Program
- 5. Assessing the Role of Estuarine Impoundments and Marine Mammal Exclusion Devices on Red Drum Movement Patterns**
Steven Baker¹, Eric Reyier², Bonnie Ahr², and Geoffrey Cook¹
¹University of Central Florida, Orlando, FL; ²Integrated Mission Support Services, Kennedy Space Center, FL
- 6. Effect of Water Quality Sterilization Methods on Survival and Growth of Seagrass Fragments**
Joshua Bantillo¹ and Kathryn A. Tiling²
¹Indian River State College, Fort Pierce, FL; ²Florida Oceanographic Society, Stuart, FL
- 7. Hurricane Irma Effects on St. Lucie Estuary Water Quality Assessed by a Surface Water Flow through System**
Sarah Bornhoeft and Cassandra Thomas
South Florida Water Management District, West Palm Beach, FL
- 8. The Application of Ultraviolet Exposure to Prevent Biofilm Formation and Reduce Invasive Species Transport**
Cierra Braga, Kelli Hunsucker, Harrison Gardner, and Geoffrey Swain
Florida Institute of Technology, Melbourne, FL
- 9. Friend or Foe: Effects of Wrack Accumulation on Mangrove Growth in Mosquito Lagoon**
Julia Carlin, Noah Friedland, Taylor Martin, Tori Golston, Melinda Paduani, Rebecca Sweatman, Michelle Shaffer, Suzanne Connor, Melinda Donnelly, and Linda Walters
University of Central Florida, Orlando, FL

10. **Influence of Culverts on Mangrove Fouling Communities in the Coastal Oaks Preserve**
Nicole Cicco^{2,3}, Tommy Dalton^{1,3}, William Long^{1,3}, Dylan Ruggieri^{1,3}, and Cassidy Wagner^{1,3}
¹Vero Beach High School, Vero Beach, FL; ²Indian River Charter High School, Vero Beach, FL; ³Junior Scientists Program
11. **Baseline Habitat Characterization within the Coastal Oaks Preserve**
Daniel Colbert^{2,3}, Isabella Thompson^{1,3}, Sara McFarlane^{1,3}, and Alexander Harrison^{1,3}
¹Vero Beach High School, Vero Beach, FL; ²Sebastian River High School, Sebastian, FL; ³Junior Scientist Program
12. **Use of Surface Elevation Tables to Measure Sediment Elevation Changes Due to Living Shoreline Restoration**
Glenn Coldren^{1,3}, Clayton Sims², and Vincent Encomio³
¹Indian River State College, Fort Pierce, FL; ²Florida Atlantic University, Jupiter, FL; ³Florida Oceanographic Society, Stuart, FL
13. **Tracking the Changes in Quality of Water as It Moves through the Coastal Oaks Preserve**
Kaitlyn Conklin^{2,4}, Juliette D'Alessandro^{2,4}, Connor Riley^{1,4}, Per Sander^{3,4}, and Shania Suarez^{1,4}
¹Vero Beach High School, Vero Beach, FL; ²Sebastian River High School, Sebastian, FL; ³Indian River Charter High School, Vero Beach, FL; ⁴Junior Scientists Program
14. **Assessing Genetic Diversity within Populations of Smooth Cordgrass to Ensure Effective Restoration Efforts**
Michelle Gaynor, Linda Walters, and Eric Hoffman
University of Central Florida, Orlando, FL
15. **Habitat Use by Bottlenose Dolphins in the Indian River Lagoon**
Rachael Greller¹, Scott Markwith¹, Marilyn Mazzoil², Elizabeth Murdoch Titcomb², and Richard Paperno³
¹Florida Atlantic University, Boca Raton, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Fish and Wildlife Commission, Melbourne, FL
16. **Investigating Causes of Changing Tidal Range and Timing in U.S. Harbors**
Shan Guruvadoo¹, Gregory Dusek², Chris Zervas², Colleen Roche², and Rachel Krasna²
¹Bethune-Cookman University, Daytona Beach, FL; ²National Ocean Service, NOAA, Silver Spring, MD
17. **Interannual Variability in the Indian River Lagoon, Florida, Measured by a Network of Environmental Sensors**
M. Dennis Hanisak and Kristen S. Davis
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
18. **Oyster Reef Restoration and Living Shoreline Stabilization: Impacts on Infaunal Communities in Shallow-Water Estuaries**
Katherine Harris and Aiesha Stevens
University of Central Florida, Orlando, FL
19. **How Does Restoration Influence Carbon Cycling in Oyster Reefs? An Evaluation of CO₂ Emissions and Microbial Activity in Restored Oyster Reefs of the Indian River Lagoon**
Nia R. Hurst, Bryan Locher, and Lisa G. Chambers
University of Central Florida, Orlando, FL
20. **Hydrodynamic Modeling of the Indian River Lagoon**
Mingshun Jiang
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

- 21. The Effects of Nutrient Treatments on *Rhizophora mangle* Growth and Survival**
Kamelah Jones¹, Melinda Donnelly¹, Richard Baptiste², Jeff Beal³, Annie Roddenberry³, and Paul S. Wills²
¹University of Central Florida, Orlando, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Fish and Wildlife Conservation Commission, Fort Pierce, FL
- 22. The Search for Florida East Coast Diamondback Terrapins (*Malaclemys terrapin tequesta*) in the Southern Indian River Lagoon**
Richard C. Jones¹, Nancy Pham Ho², Emily Dark³, Jon A. Moore¹, and Jeffrey Herr¹
¹Florida Atlantic University, Jupiter, FL; ²Coastal Biology Incorporated, Sanford, FL; ³Florida Department of Environmental Protection-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL
- 23. Utilizing a Molecular Protocol for the Identification of Hybrid Western Atlantic Seahorses, *Hippocampus erectus* × *H. reidi***
Alexandra Katz¹, Nancy Pham-Ho², and Jeff Bush¹
¹Vero Beach High School, Vero Beach, FL; ²Coastal Biology, Inc., Gainesville, FL
- 24. A Conceptual Ecological Model for the Northern Estuaries and Southern Coastal Systems Regions of the Comprehensive Everglades Restoration Plan (CERP) REstoration, COordination, VERification (RECOVER) Program**
Phyllis A. Klarmann¹, Gretchen Ehlinger², Patricia Gorman¹, Amanda McDonald¹, Michael Simmons², Patrick Pitts³, and Dave Rudnick⁴
¹South Florida Water Management District, West Palm Beach, FL; ²United States Army Corps of Engineers, Jacksonville, FL; ³United States Fish & Wildlife Service, Vero Beach, FL; ⁴Everglades National Park, Homestead, FL
- 25. Assessment of Oyster (*Crassostrea virginica*) Health in Natural vs. Restored Reefs in the Northern, Central and Southern Indian River Lagoon, Florida**
Susan Laramore¹, Elizabeth Urban-Gedamke¹, Carolyn Sinacore¹, Emily Davidson¹, Alycia Shatters¹, Erica Rose¹, Reika Yu², Jeffrey Beal³, Emily Dark⁴, and Matthew R. Anderson⁴
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Boston University, Boston, MA; ³Florida Fish and Wildlife Conservation Commission, Fort Pierce, FL; ⁴Florida Department of Environmental Protection-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL
- 26. Early Impacts of Restoration on Nutrient Cycling of Oyster Reefs in Mosquito Lagoon**
Bryan Locher, Nia Hurst, and Lisa G. Chambers
University of Central Florida, Orlando, FL
- 27. Juvenile *Tursiops truncatus* Case Study: Monofilament Entanglement Damage and Recovery**
Wendy Marks¹, Adam M. Schaefer¹, Annie Page-Karjian¹, Robert Lyman², and Steve P. Burton¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Animal Emergency and Referral Center, Fort Pierce, FL
- 28. Habitat Suitability for Snook in Indian River Lagoon using GIS and Acoustic Telemetry**
Manuel McIlroy¹ and Joy Young²
¹Florida Atlantic University, Boca Raton, FL; ²Florida Fish and Wildlife Commission, Tequesta, FL
- 29. Nutrient Content and Restoration Ability of Wrack on Living Shorelines in the Indian River Lagoon**
Tasnim Mellouli, Lisa Chambers, Janet Ho, and Linda Walters
University of Central Florida, Orlando, FL

- 30. Assessing Treatment Wetland Efficacy in Stormwater Treatment Utilizing Native Wetland Plants**
Timothy R. Murphy, Samuel Mwenda, Adeljean L. Ho, and Hyun J. Cho
Bethune-Cookman University, Daytona Beach, FL
- 31. Quantifying Movement Patterns and Nursery Habitat Use of Endangered Scalloped Hammerhead Sharks along the Canaveral Bight**
Olivia Myers¹, Eric Reyier², Bonnie Ahr², and Geoffrey Cook¹
¹University of Central Florida, Orlando, FL; ²Kennedy Space Center Ecological Program, Kennedy Space Center, FL
- 32. Impact of Wrack Accumulation on Living Shoreline Stabilization**
Jessica Needham, Michelle Shaffer, Rebecca Sweatman, Melinda Donnelly, and Linda Walters
University of Central Florida, Orlando, FL
- 33. Nekton Response to Habitat Restoration: A Case Study from Lake Worth Lagoon, Florida**
Richard Paperno¹, Scott Markwith², Erin McDevitt³, Eric Anderson⁴, and James Whittington¹
¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL; ²Florida Atlantic University, Boca Raton, FL; ³Florida Fish and Wildlife Conservation Commission, West Palm Beach, FL; ⁴Palm Beach County Department of Environmental Resources Management, West Palm Beach, FL
- 34. Plastics under a Microscope: Accumulation of Microplastics in Oyster Spat in Mosquito Lagoon**
Megan Robbins and Linda Walters
University of Central Florida, Orlando, Florida
- 35. Relationships between Water Quality and the Microbiome of Elasmobranchs in the Southern Indian River Lagoon**
Grace Roskar¹, Matthew J. Ajemian¹, Brandie Brooks², Luke Yrastorza¹, and Adam M. Schaefer¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²University of North Florida, Jacksonville, FL
- 36. The Pine School Lemelson-MIT InvenTeam: Giving "Eyes and Ears" to ORCA's Kilroy"**
Ahmed Samar, George Ma, and Faith Hill
The Pine School, Hobe Sound, Florida
- 37. Assessing the Effects of Oyster Reef Restoration on Macroinvertebrate Assemblages in Mosquito Lagoon, FL**
Adam R. Searles and Geoffrey Cook
University of Central Florida, Orlando, FL
- 38. How Destructive is Lake Okeechobee Outflow? A Comparison of Watershed Runoff and Lake Okeechobee Releases on Macrobenthic Communities**
Michelle Stephens, Sherry Reed, and Jessica Lunt
Smithsonian Marine Station, Fort Pierce, FL
- 39. Development of a Statistical Model to Predict Percent Cover of Benthic Organisms Present in the Indian River Lagoon**
Ann Wassick, Kelli Hunsucker, and Geoff Swain
Florida Institute of Technology, Melbourne, FL
- 40. Microbial Source Tracking of Bacterial Pollution in the North Fork of the St. Lucie Estuary**
Lynn E. Wilking, Rachel A. Brewton, Jordan A. Madio, and Brian E. Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL