Johnson Education Center, FAU Harbor Branch, Fort Pierce, Florida
February 9-10, 2017

IRLS 2017 Steering Committee
Jeff Beal, Florida Fish and Wildlife Conservation Commission; Leroy Creswell, University of Florida Sea Grant Program; Patti Gorman, South Florida Water Management District; Dennis Hanisak, Harbor Branch Oceanographic Institute at Florida Atlantic University; Kelli Hunsucker, Florida Institute of Technology; Chuck Jacoby, St. Johns River Water Management District; Jessica Lunt, Smithsonian Marine Station at Fort Pierce; Mark Perry, Florida Oceanographic Society; Linda Walters, University of Central Florida

IRLS 2017 Sponsors
Since 2012, the Indian River Lagoon Symposium has been funded through proceeds of the Harbor Branch Oceanographic Institute 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. Seagrass Sponsors: Ms. Marjorie Raines & Mr. Harold Baker. Oyster Sponsors: The Law Firm of Dean, Mead, Minton & Zwemer; Mr. James Johnson and Mrs. Gretchen Johnson; Treasure Coast Newspapers. Dolphin Sponsors: Evans Properties, Inc.; Ms. Katha Kissman; Mr. John Papa and Mrs. Barbara Papa; William J. Stewart, Esq. & Mrs. Laurie Kane-Stewart and the Law Firm of Rossway Swan Tierney Barry Lacey & Oliver, P.L.; Mr. Michael Toner and Mrs. Carol Toner; 97.1 Ocean FM and Newsradio 1490 WTTB AM/FM. Manatee Sponsors: Adams Ranch; AT&T; Ms. Marilyn C. Link; Dr. Ed Lippisch and Mrs. Jacqui Thurlow-Lippisch; Mr. Michael D. Minton & Mrs. Misty Minton; Mr. Ed Michelson and The Atlanta Consulting Group; PNC; Wells Fargo. Seahorse Sponsors: Mr. & Mrs. Michael Brown, Sr; Mr. C. Amos Bussmann & Sea Technology Magazine; Dr. Joseph Ferro & Mrs. Olivia Ferro; Florida Power and Light; Drs. Tom & Shannon Galinis of Aesthetic Dentistry, Palm City; Mr. Patrick Higgs & Mrs. Nancy Higgs; Dr. Megan Davis-Hodgkins and Mr. Gary Hodgkins; Kmetz, Nuttall, Elwell, Graham CPAs; Mrs. Clare Kremer; Martin Health Systems; Metz, Husband & Daughton; Mikita Foundation; Natalie’s Orchid Island Juice Company; Ott Hydromet; Mr. Shaun & Ms. Stacey Plymale of Treasure Coast Legal; Dr. Thomas Plymale and Mrs. Sherry Plymale; Premier Estate Properties; Stuart Magazine; Jim and Jonnie Swann Corp.; Mr. Christopher Waln and Mrs. Janet Waln; Windsor; Wyland Foundation.

We also thank Katha Kissman, President & CEO, Debbie Dutton, Director of Operations, and Cyndi Permenter, Administrative Assistant, of the Harbor Branch Foundation, for all of their support.
Indian River Lagoon Symposium 2017
An Estuary in Peril

Program Schedule – Technical Sessions
Thursday, February 9, 2017

(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
Harmful Algal Blooms in the Indian River Lagoon: Past, Present and Future
Jim Sullivan
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

0900 - 1000  Oral Session 1 – Lagoon in Peril?
Session Chair: Valerie Paul, Smithsonian Marine Station

0900 - 0915  Pico and Nanophytoplankton Ecology in the Indian River Lagoon: An Understudied Component of an Estuary in Peril
Malcolm McFarland, James Sullivan, Nicole Stockley, Dennis Hanisak, and Kristen Davis
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

0915 - 0930  Changing Times: Abundance and Distribution of Manatees and Seagrass in the Waters Surrounding the Kennedy Space Center, Past, Present, and Future (?)
Jane A. Provancha¹, Douglas M. Scheidt¹, Resa R. Cancro¹, Russell H. Lowers³, Eric A. Reyier¹, Mark J. Provancha¹, Carla M. Bourtis¹, and Lynne V. Phillips²
¹Integrated Mission Support Services, Kennedy Space Center, FL; ²NASA, Kennedy Space Center, FL

0930 - 0945  Elasmobranchs in Peril? Shark and Ray Assessment in the Indian River Lagoon
Matthew J. Ajemian, Michael P. McCallister, Tyler J. Harrington, and Adam M. Schaefer
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

0945 - 1000  Detection of the HAB Toxins Saxitoxin and Brevetoxin in Indian River Lagoon Dolphins, 2002-2016
Spencer Fire¹, Jeremy Browning¹, Wendy Noke Durden², Megan Stolen², Adam Schaefer³, and James Sullivan³
¹Florida Institute of Technology, Melbourne, FL; ²Hubbs-SeaWorld Research Institute, Melbourne Beach, FL; ³Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

1000 - 1030  Break

1030 - 1145  Oral Session 2 – Water Quality
Session Chair: Patti Gorman, South Florida Water Management District

1030 - 1045  Exploring the Unknown Microbiome of the Indian River Lagoon
David J. Bradshaw II and Peter J. McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
A GIS Approach for Determining the Potential Runoff Coefficient and Runoff Depth for the Mosquito Lagoon, FL
Philip Bellamy and Hyun J. Cho
Bethune-Cookman University

Stable Nitrogen Isotopes in Primary Producers Reveal Evidence of Sewage Pollution in the Indian River Lagoon
Rachel A. Brewton, Laura W. Herren, and Brian E. Lapointe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Water Quality Assessment of the St. Lucie River Watershed
Gary Goforth
Gary Goforth, LLC, Stuart, FL

Encouraging Stakeholder Participation in the Indian River Lagoon through Participatory GIS
Timothy L. Hawthorne, Fernando Rivera, Linda Walters, Geoffrey S. Cook, Kelly Kibler, and Lisa Chambers
University of Central Florida, Orlando, FL

Oysters and Brown Tide in Mosquito Lagoon
Linda Walters¹, Margaret Lasi², Pedro Quintana-Ascencio¹, and Edward Phlips³
¹University of Central Florida, Orlando, FL; ²St. Johns River Water Management District, Palatka, FL; ³University of Florida, Gainesville, FL

Excess Nutrients Can Impact the IRL through Various Pathways: Experimental Evidence
Robert Virnstein
Seagrass Ecosystems Analysts, East Palatka, FL

Living to the Extremes: Examining the Degree of Salinity Variability in Southern Indian River Lagoon as Related to Seagrass Distribution
Amanda Kahn Dickens, Patricia Gorman, Beth Orlando, Rebecca Robbins, and Barbara Welch
South Florida Water Management District, West Palm Beach, FL

Investigating Impacts of Estuarine Discharge within the St. Lucie Watershed Basin and IRL System on Local Coral Reef Ecosystems
Danielle Dodge, Jeff Beal, and Joshua Voss
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Nutrient Levels in St. Lucie West’s Lakes: Implications to Reduce Lake Okeechobee Discharges to the St. Lucie River and Southern Indian River Lagoon
Joseph L. Gilio
Sunergy Power Systems, Inc., Palm City, FL

Hydraulic Impact on the St. Lucie Estuary from Lake Releases
Detong Sun, Peter Doering, and Teresa Coley
South Florida Water Management District, West Palm Beach, FL

A Short-term Change in Community Structure Due to a Large Meteorological Event in the Indian River Lagoon
Ann Wassick, Kelli Hunsucker, Emily Ralston, Kody Lieberman, and Geoff Swain
Florida Institute of Technology, Melbourne, FL
Links 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

Blood Mercury Concentrations in Common Bottlenose Dolphins from the Indian River Lagoon, Florida: Patterns of Social Distribution
Elizabeth Murdoch Titcomb1, John S. Reif2, Patricia A. Fair3, Hui-Chen W. Stavros2,4, Marilyn Mazziol1, Gregory D. Bossart5,6, and Adam M. Schaefer1
1Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; 2Colorado State University, Fort Collins, CO; 3NOAA/National Ocean Service, Charleston, SC; 4O2Si Smart Solutions, Charleston, SC; 5Georgia Aquarium, Atlanta, GA; 6University of Miami, Miami, FL

Effectiveness of Public Education at Controlling Nonpoint Source Pollution along the Mosquito Lagoon
Andrea Orozco, Hyun Jung Cho, Adeljean Ho, and Philip Bellamy
Bethune-Cookman University, Daytona Beach, FL

Engaging Children (and Adults) to Care about the IRL through Oyster Yoga
Violette Gibbs and Linda Walters
University of Central Florida, Orlando, FL

1225 - 1330 Lunch (provided)

1330 - 1500 Oral Session 3 – Ecology
Session Chair: Chuck Jacoby, St. John’s River Water Management District

1330 - 1345 Fishing to Survive: Britain’s Smyrnéa Settlement along the Northern Indian River Lagoon, 1766-1777
Arlene Fradkin
Florida Atlantic University, Boca Raton, FL

1345 - 1400 A Tale of Two Ports: Comparing Distributions of Microbes and Macrofoulers from Indian River Lagoon Inlets
L. Holly Sweat1 and Kevin B. Johnson2
1Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; 2Florida Institute of Technology, Melbourne, FL

1400 - 1415 Benthic Foraminiferal Distributions in the Indian River Lagoon and the Influence of Environmental Factors
Angelica Zamora-Duran, Anthony Cox, Daniel Hope, and Kevin B. Johnson
Florida Institute of Technology, Melbourne, FL

1415 - 1430 The Role of Biotic and Environmental Factors in Spatial and Temporal Variability of Indian River Lagoon Copepod Communities
Hannah G. Kolb1, L. Holly Sweat2, Xiao Ma1, Chuck Jacoby3, and Kevin B. Johnson1
1Florida Institute of Technology, Melbourne, FL; 2Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; 3St. John’s River Water Management District, Palatka, FL

1430 - 1445 Freshwater Inflow and Sediment Type Influence Infaunal Community Assemblages in the St. Lucie Estuary
Jessica Lunt, Michelle Stephens, and Sherry Reed
Smithsonian Marine Station, Fort Pierce, FL
1445 - 1500  It Takes a Community: The Role of Epifaunal Diversity in Particle Removal in the IRL
Christopher J. Freeman, Dean S. Janiak, Jay Houk, Malcolm Mossop, and Valerie Paul
Smithsonian Marine Station, Fort Pierce, FL

1500 - 1530  Break

1530 - 1645  Oral Session 4 – Restoration
Session Chair: Linda Walters, University of Central Florida
1530 - 1545  Removal of Nutrients from Dredged Muck Residuals Utilizing High-Valence Iron (FeO$_4^{2-}$)
Thomas D. Waite
Florida Institute of Technology, Melbourne, FL
1545 - 1600  Research-Based Lagoon Protection and Restoration
James David
St. Lucie County Mosquito Control and Coastal Management Services (retired), Fort Pierce, FL
1600 - 1615  Oyster Restoration Efforts in the Southern Indian River Lagoon – Incorporating Resiliency to Future Discharges
Vincent Encomio, Kathryn Tiling, Pam Hopkins, and Mark Perry
Florida Oceanographic Society, Stuart, FL
1615 - 1630  How Well Do Restored Oyster Reefs Support Key Biogeochemical Functions in the Indian River Lagoon?
Lisa G. Chambers¹, Stephanie Gaspar¹, Christian Pilato¹, Havalend Steinmuller¹, Kevin McCarthy¹, Paul Sacks², and Linda J. Walters¹
¹University of Central Florida, Orlando, FL; ²Winter Springs High School, Winter Spring, FL
1630 - 1645  An Opportunistic Test of Living Shoreline Resistance to Hurricanes in the Indian River Lagoon
Melinda Donnelly and Linda Walters
University of Central Florida, Orlando, FL

1645 - 1720  Three Minutes, Three Slides
Session Chair: Zack Jud, Florida Oceanographic Society
Ciliates of the IRL Muck Layer: A Novel Thriving Community
Hunter N. Hines¹,², Peter J. McCarthy², and Genoveva F. Esteban¹
¹Bournemouth University, Dorset, UK; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Maintenance Dredging of KSC Navigational Channels and Muck Removal
Thomas L. Price Jr.¹, Douglas C. Durham², and Robert A. Kline²
¹KEMCON, Kennedy Space Center, FL; ²Environmental Assurance Branch, Kennedy Space Center, FL

Genetic and Functional Trait Variation of Black Mangrove (Avicennia germinans) in the Indian River Lagoon, FL
John Paul Kennedy¹ and Ilka C. Feller²
¹Smithsonian Marine Station, Fort Pierce, FL; ²Smithsonian Environmental Research Center, Edgewater, MD
Status of the Florida Atlantic Coast Telemetry (FACT) Array: Expanding Coverage and Collaboration
Eric Reyier¹, Joy Young², and Douglas Scheidt¹
¹Integrated Mission Support Services, Kennedy Space Center, FL; ²Florida Fish & Wildlife Conservation Commission, Tequesta, FL

Observations of Copper Tolerant Species in the IRL: A Story of Invasion
Hannah Briant, Kelli Z. Hunsucker, Emily Ralston, and Geoffrey Swain
Florida Institute of Technology, Melbourne FL

Selective Avoidance by Copepods Grazing on Bloom-Forming Algal Species in the Indian River Lagoon
Xiao Ma¹, Kevin B. Johnson¹, L. Holly Sweat², and Hannah G. Kolb¹
¹Florida Institute of Technology, Melbourne, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Investigation into the Health of Oysters (Crassostrea virginica) in Natural and Restored Reefs across a Latitudinal Gradient in the Indian River Lagoon (IRL), Florida
Jeffrey Beal¹, Susan Laramore², Emily Dark³, and Matthew R. Anderson³
¹Florida Fish and Wildlife Conservation Commission, Fort Pierce, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Department of Environmental Protection-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL

Ventilation Rates of the Indian River Lagoon through Its Inlets
Lysel Garavelli and Laurent Chérubin
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

The Indian River Lagoon Shoreline Restoration Project: Combatting Erosion and Maintaining Natural Lagoon Processes through Implementation of Living Shoreline Methods
Kirk Fusco
Florida Department of Environmental Protection, Indian River Lagoon Aquatic Preserves, Fellsmere, FL

Coastal Restoration: A Florida Master Naturalist Special Topic Program
R. LeRoy Creswell¹ and Marty Main²
¹University of Florida Sea Grant, Fort Pierce, FL; ²University of Florida Sea Grant, Gainesville, FL

Living Shorelines as Tools for Citizen Science and Runoff Mitigation
Adeljean L.F.C. Ho, Andrea Orozco, Phillip Bellamy, and Hyun J. Cho
Bethune-Cookman University, Daytona Beach, FL

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 #31-41). 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. **Laboratory Scale Modeling of Living Shorelines to Determine Design Parameters**
   Ashley Allen¹, Nathan Bonanno¹, Robert J. Weaver¹, Jacob Zehnder², Jody B. Palmer², Samantha Anderson², and Virginia Barker³
   ¹Florida Institute of Technology, Melbourne, FL; ²Brevard Zoo, Melbourne, FL; ³Brevard County Natural Resources Management, Melbourne, FL

2. **Red Mangrove, *Rhizophora mangle*, Prop Root Communities Are Shaped by the Presence of Secondary Foundation Species**
   Jessene Aquino-Thomas¹ and C. Edward Proffitt²
   ¹Florida Atlantic University, Boca Raton, FL; ²Texas A&M University-Corpus Christi, Corpus Christi, TX

3. **Little Animals, Big Insight: Using Soft-Sediment Communities as a Proxy for Environmental Health**
   Katrina Bayliss, Sherry Reed, Jessica Lunt, and Valerie Paul
   Smithsonian Marine Station, Fort Pierce, FL

4. **Comparing Techniques Used to Determine Biodiversity on the Prop Roots**
   Andrea Carmona and Jessene Aquino-Thomas
   Florida Atlantic University, Boca Raton, FL

5. **Determining the Source of Fecal Indicator Bacteria in the DOT Canal of the Coastal Oaks Preserve**
   Nicholas Cassera¹,³, Armand Ercoli¹,³, Shania Maza¹,³, and Tatyana Udell²,³
   ¹Vero Beach High School, Vero Beach, FL; ²Sebastian River High School, Sebastian, FL; ³Junior Scientist Fellows Program

6. **Developing a GIS-based Habitat Suitability Index Model for Eastern Oyster in the St. Lucie Estuary, Florida**
   Zhiqiang Chen and Barbara Welch
   South Florida Water Management District, West Palm Beach, FL

7. **Emigration of Juvenile Snook and Tarpon from a Mosquito Control Impoundment Is Enhanced through a Draw-Down of Water Level in Summer**
   Anthony Cianciotto¹, Jonathan Shenker¹, Aaron Adams¹, and David Heuberger²
   ¹Florida Institute of Technology, Melbourne FL; ²Indian River Land Trust, Vero Beach, FL

   Jennifer Cutter¹ and Donna Devlin²
   ¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Texas A&M University-Corpus Christi, Corpus Christi, TX

9. **Dolphin Abundance in the Vicinity of Land/Ocean Biogeochemical Observatories (LOBOs): Relationship to Water Quality**
   Mackenzie Daniel¹, Tyler Harrington¹, Marilyn Mazzoil¹, Adam Schaefer¹, John Reif², and M. Dennis Hanisak¹
   ¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Colorado State University, Fort Collins, CO
10. Implementation of CUAHSI ODM2 Information Model for Data Management of the Indian River Lagoon Observatory Network of Environmental Sensors
Kristen S. Davis, Bryan Botson, and M. Dennis Hanisak
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

11. Source of Freshwater Inflow and Water Quality at the Roosevelt Bridge, St. Lucie Estuary FL
Peter H. Doering and Zhiqiang Chen
South Florida Water Management District, West Palm Beach, FL

Iris J. Fang and Linda J. Walters
University of Central Florida, Orlando, FL

13. Assessing Genetic Diversity within Natural Populations of Smooth Cordgrass to Ensure Effective Restoration Efforts
Michelle Gaynor, Linda Walters, and Eric Hoffman
University of Central Florida, Orlando, FL

14. Heritage Monitoring Scouts (HMS Florida): A Program Engaging the Public to Monitor Florida’s At-Risk Heritage
Kevin Gidusko and Sarah Miller
Florida Public Archaeology Network, Merritt Island, FL

15. Eight-Year Manatee Survey Looking at Seasonal Patterns of Frequently Observed Individuals in the Harbor Branch Channel Using Photo-Identification Techniques
Lauren Goldsworthy and Jon Moore
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

16. Modeling Seagrass Effects on the Hydrodynamics in the Southern Indian River Lagoon
Md Ahsan Habib1, Mingshun Jiang1, Laurent Cherubin1, Dennis Hanisak1, and Lori Morris2
1Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; 2St. Johns River Water Management District, Palatka, FL

17. Observations and Modeling of Water Quality and Carbon Cycle in St. Lucie Estuary and Nearshore Coral Reefs
Mingshun Jiang, Brian Lapointe, Ahsan Habib, Dennis Hanisak, and Laura Herren
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

18. Land Crab Population in the Coastal Oaks Preserve
Kyle Juarez1,3, Yasmin Ortiz1,3, Treyton McLeod1,3, and Pedro Tellez2,3
1Vero Beach High School, Vero Beach, FL; 2Indian River Charter High School, Vero Beach, FL; 3Junior Scientist Fellows Program

19. Wetland Preservation and Mosquito Control: An Integrated Approach
Kendall Karcher
Florida Gulf Coast University, Fort Myers, FL

20. Changes in Salinity in St. Lucie in Response to High Pulse Discharges from Lake Okeechobee
Lauren Kircher1, Joy Young2, Jessica Noble1, Matia Gingras1, Lissette Geubelle1, and John Baldwin1
1Florida Atlantic University, Boca Raton, FL; 2Florida Wildlife Research Institute, Tequesta, FL

Jesse Martin
Bayside High School, Palm Bay, FL
22. The Presence of Pathogenic *Vibrio* spp. along Florida’s East Coast Beaches and Their Physiological Response to Salinity Fluctuations
Brandon McHenry, Gabby Barbarite and Peter McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

23. 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

24. Digital Holography: A Unique Approach to Studying Planktonic Species Distributions, Harmful Algal Blooms and Biophysical Interactions in the Indian River Lagoon
Aditya R. Nayak, Malcolm N. McFarland, James M. Sullivan, Michael S. Twardowski, and Nicole D. Stockley
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

25. Did a Disturbance Event Impact the Overwintering Home Range of Common Snook?
Jessica Noble¹, Joy Young², Lauren Kircher¹, Matia Gringas¹, Lissette Geubelle¹, and John Baldwin¹
¹Florida Atlantic University, Boca Raton, FL; ²Florida Wildlife Research Institute, Tequesta, FL

26. Investigating the Diet of the Invasive Lionfish off Florida’s Treasure Coast through DNA Barcoding
Shannon Ofner¹, Nancy Pham-Ho², and Jeff Bush¹
¹Vero Beach High School, Vero Beach, FL; ²Florida Institute of Technology, Melbourne, FL

27. The Development of a Standardized Sampling Program to Enhance Monitoring of Age-1 Common Snook in Florida Estuaries – What Else Is in the Bag?
R. Paperno¹, B. Winner², R. H. McMichael², R. E. Matheson², T. MacDonald², D. Leffler², D. Blewett¹, P. Stevens², G. Onorato², K. Fischer², K. Flaherty-Walia², and C. Saari³
¹Florida Fish & Wildlife Conservation Commission, Melbourne FL; ²Florida Fish & Wildlife Conservation Commission, St. Petersburg, FL; ³Florida Fish & Wildlife Conservation Commission, Port Charlotte, FL

28. Validation of a Human-Associated qPCR Assay Used to Assess Fecal Pollution in Environmental Waters
Carlie S. Perricone and Peter J. McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

29. What Our Eyes Can’t See: Distribution of Microplastic Pollution within Mosquito Lagoon and the Eastern Coast of Central Florida
Christian Pilato, Victoria Brodie, Jennifer Griffith, Aliris Loperena, Meagan Minadie, Phyllis Klarmann, and Linda Walters
University of Central Florida, Orlando, FL

30. Assessing Damage of *Sphaeroma terebrans* on *Rhizophora mangle* Prop Root Fouling Communities
Krystyna Powell, Jessene Aquino-Thomas, C. Edward Proffitt, and Erik Noonburg
Florida Atlantic University, Boca Raton, FL

31. Mapping and Trend Analysis of Seagrass Beds along the Coastal Oaks Preserve
Katherine Riley¹,³, Alexandra Knudson¹,³, Daniel Colbert²,³, Sarah Haluch¹,³, and Dylan Ruggieri¹,³
¹Vero Beach High School, Vero Beach, FL; ²Sebastian River High School, Sebastian, FL; ³Junior Scientist Fellows Program
32. **Determining Physical and Ecological Factors Affecting Abundances of Juvenile Indicator Species**  
   Adam Searles and Geoffrey Cook  
   University of Central Florida, Orlando, FL

33. **Following the Oyster Restoration Footprint: Does Oyster Restoration in Mosquito Lagoon Positively Impact Local Bird Communities?**  
   Michelle Shaffer, Melinda Donnelly, and Linda Walters  
   University of Central Florida, Orlando, FL

34. **Ecosystem Health and Environmental Influences on Innate Immune Function in the Green Sea Turtle (Chelonia mydas)**  
   Patricia Sposato and Sarah L. Milton  
   Florida Atlantic University, Boca Raton, FL

35. **Ecological Disturbances in the St. Lucie Estuary and the Southern Indian River Lagoon, Elucidated through Macrobenthic Monitoring**  
   Michelle Stephens, Katrina Bayliss, Sherry Reed, Bjorn Tunberg, and Jessica Lunt  
   Smithsonian Marine Station, Fort Pierce, FL

36. **Examining the Spatial Variability of the Indian River Lagoon**  
   Nicole Stockley, James Sullivan, Malcolm McFarland, and Dennis Hanisak  
   Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

37. **From Fragments to Meadows: Seagrass Restoration in the Indian River Lagoon from Nursery Grown Seagrass Fragments**  
   Kathryn A. Tiling and Vincent Encomio  
   Florida Oceanographic Society, Stuart, FL

38. **Assessing Patterns of Fish Community Diversity in 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

39. **Indian River Lagoon through a Microscope: Microplastics in the Organic Tissues of Oysters and Crabs**  
   Heidi Waite and Linda Walters  
   University of Central Florida, Orlando, FL

40. **Florida’s Fish Kill Hotline: Reporting Sick or Dead Fish for Science**  
   Beau G. Yeiser, Catalina Brown, and Douglas H. Adams  
   Florida Fish and Wildlife Conservation Commission, Tequesta, FL

41. **Health of Oyster (Crassostrea Virginica) Populations in Natural and Restored Reefs along a North to South Gradient in the Indian River Lagoon (IRL), Florida**  
   Reika Yu¹, Susan Laramore², Elizabeth Urban², Carolyn Sinacore², Emily Davidson², Erica Rose², Nicholas Brandimarte², Jeffrey Beal³, Emily Dark⁴, and Matthew R. Anderson⁴  
   ¹Boston University, Boston, MA; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Fish and Wildlife Conservation Commission, Fort Pierce, FL; ⁴Florida Department of Environmental Protection-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL