



**Johnson Education Center, FAU Harbor Branch, Fort Pierce, Florida
February 11-12, 2016**

IRLS 2016 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; Chuck Jacoby, St. Johns River Water Management District; Seabird McKeon, Smithsonian Institution; Mark Perry, Florida Oceanographic Society; Linda Walters, University of Central Florida; John Windsor, Florida Institute of Technology

IRLS 2016 Sponsors

Generous sponsorship under the auspices of the Harbor Branch Oceanographic Institute Foundation has helped to underwrite the cost of this symposium, and the 2016 *Love Your Lagoon*, a dinner event on February 5 at HBOI to raise funds to support research on the Indian River Lagoon. We thank all of our donors:

Mangrove Sponsors: Mr. Joseph Z. Duke, III and Mrs. Jennifer Johnson Duke. Seagrass Sponsors: Mr. Michael O'Reilly and Mrs. Marie O'Reilly. Oyster Sponsors: Mr. James Johnson and Mrs. Gretchen Johnson; PNC Bank; Treasure Coast Newspapers. Dolphin Sponsors: Dr. Ralph W. Alewine, III and Mrs. Betty C. Alewine; Mr. Howard Brennan & Mrs. Colleen Brennan: Evans Properties, Inc.; Ms. Katha Kissman; Dr. Ed Lippisch and Mrs. Jacqui Thurlow-Lippisch; Mr. John N. McConnell, Jr. and Mrs. Marilyn McConnell; Mr. Michael D. Minton & Mrs. Misty Minton and The Law Firm of Dean, Mead, Minton & Zwemer; Ms. Marjorie Raines; Mr. William J. Stewart, Esq. and Mrs. Laurie Kaneb-Stewart; Mr. Michael Toner and Mrs. Carol Toner; 93.7 WGYL, 97.1 Ocean FM, and Newsradio 1490 WTTB. Manatee Sponsors: Adams Ranch; AT&T; Mr. John Connors and Mrs. Sheila Connors; Dr. Tom Galinis and Dr. Shannon Plymale-Galinis and Aesthetic Dentistry of Palm City; The Kahle Foundation; Ms. Marilyn C. Link; Martin Health Systems; Mr. Patrick J. McDougal and Ms. Denise Battaglini; Mr. Ed Michelson and The Atlanta Consulting Group; Wells Fargo; Windsor; Seahorse Sponsors: Bottom's Up Beverage; Mr. C. Amos Bussmann & Sea Technology Magazine; Dale Sorensen Real Estate; Florida Power and Light; Mr. Patrick Higgs & Mrs. Nancy Higgs; Dr. Megan Davis & Mr. Gary Hodgkins; J.J. Taylor Companies, Inc.; Kmetz, Nuttall, Elwell, Graham CPAs; Mrs. Clare Kremer; Metz, Husband & Daughton; Mikita Foundation; Natalie's Orchid Island Juice Company; OTT Hydromet; Mr. Shaun Plymale and Mrs. Stacey Plymale and Treasure Coast Legal; Mr. Robert J. Stilley and The Honorable MaryLynn Magar; Stuart Magazine; Mr. Jim Swann and Mrs. Jonnie Swann; UniFirst-Uniform Services.

We also thank Katha Kissman, President & CEO, Colleen Brennan, Director of Operations, and Cyndi Permenter, Administrative Assistant of the Harbor Branch Foundation, for all of their support.

Indian River Lagoon Symposium 2016
Linking Research with Management
Program Schedule – Technical Sessions
Thursday, February 11, 2016

(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**
How Do We Get to “One Lagoon – One Community – One Voice”? The Role of Science
Duane De Freese, Indian River Lagoon Council, Sebastian, FL
- 0900 - 1015 Oral Session 1 – Management**
Session Chair: Patti Gorman, South Florida Water Management District
- 0900 - 0915 **Seagrass Fish Assemblages in Martin County: A Vulnerable National Treasure**
R. Grant Gilmore, Jr.¹ and Vincent Encomio²
¹Estuarine, Coastal and Ocean Science, Inc., Vero Beach FL; ²Florida Oceanographic Society, Stuart, FL
- 0915 - 0930 **Kennedy Space Center: Launching Land Management for Future Generations**
Douglas M. Scheidt¹, Carlton R. Hall¹, and Lynne V. Phillips²
¹Integrated Mission Support Services, Kennedy Space Center, FL; ²NASA Environmental Management Branch, Kennedy Space Center, FL
- 0930 - 0945 **Total Maximum Daily Loads (TMDLs) Adopted for the Indian River Lagoon**
Virginia Barker¹, Anthony Janicki², Steve Peene³, Harvey Harper⁴, and Claudia Listopad⁵
¹Brevard County Natural Resources Management Department, Viera, FL; ²Janicki Environmental, St. Petersburg, FL; ³Applied Technology and Management, Tallahassee FL; ⁴Environmental Research and Design, Orlando, FL; ⁵Applied Ecology, Satellite Beach, FL
- 0945 - 1000 **Evidence of Sewage-Driven Eutrophication in the St. Lucie Estuary and Nearshore Reefs: A Science-Based Management Approach**
Laura Herren, Brian Lapointe, Marie Tarnowski, and Alison Feibel
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 1000 - 1015 **Connecting IRL Users with Data – New Directions for Advancing Research and Management**
Amy W. Adams¹ and M. Dennis Hanisak²
¹Cape Canaveral Scientific, Inc., Melbourne Beach, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Assessing the Ecological Health of the Indian River Lagoon: Outcomes from the Science Assembly**
Leesa Souto, Marine Resources Council, Palm Bay, FL
- 1015 - 1045 Break**

- 1045 - 1200 Oral Session 2 – Monitoring**
Session Chair: Lori Morris, St. Johns River Water Management District
- 1045 - 1100 **Seagrass Recovery in the Indian River Lagoon: The Tortoise or the Hare**
Lauren M. Hall¹, Lori J. Morris², and Melissa Adams¹
¹St. Johns River Water Management District, Palm Bay, FL; ²St. Johns River Water Management District, Palatka, FL
- 1100 - 1115 **Dolphins in the Health and Environmental Risk Assessment Program (2003 to 2015)**
Adam M. Schaefer¹, Gregory D. Bossart^{2,3}, Patricia A. Fair⁴ and John S. Reif⁵
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Georgia Aquarium, Atlanta, GA; ³University of Miami, Miami, FL; ⁴Center for Coastal Environmental Health and Biomolecular Research, Charleston, SC; Colorado State University, CO
- 1115 - 1130 **Evaluating the Impacts of an Unusual Rain Event in the Indian River Lagoon and St. Lucie Estuary Using the Indian River Lagoon Observatory Network of Environmental Sensors (IRLON)**
Kristen Davis, M. Dennis Hanisak, and Bryan Botson
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 1130 - 1145 **Identifying Controls on Fluxes of Dissolved Nitrogen from Sediments in the Northern Indian River Lagoon**
Austin L. Fox, John H. Trefry, Robert P. Trocine, and Stacey L. Fox
Florida Institute of Technology, Melbourne, FL
- 1145 - 1200 **Reality of Climate Change: What Does Archaeology Have to Offer?**
Jennifer Green and Christian Davenport
Florida Atlantic University, Boca Raton, FL
- 1200 - 1230 Three Minutes, Three Slides**
Session Chair: M. Dennis Hanisak, FAU Harbor Branch
- Punch-Drunk: Extreme Hits to the IRL**
Melissa Adams², Lori J. Morris¹, and Robert Chamberlain¹
¹St. Johns River Water Management District, Palatka, FL; ²St. Johns River Water Management District, Palm Bay, FL
- In the Wake of the Superbloom: Tracking Green and Brown Tides in the Indian River Lagoon with Integrated Technologies**
Charles Tilney¹, Eric Muhlbach¹, Susan Murasko¹, Steven Bruzek¹, Susan Badylak², Lauren Hall³, Edward Philips², Margaret Lasi², Katherine Hubbard¹, and Alina A. Corcoran¹
¹Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; ²University of Florida, Gainesville, FL; ³St. Johns River Water Management District, Palatka, FL
- Six Years of Barnacles: A Sign of a Recovering Indian River Lagoon?**
Kody Lieberman and Geoff Swain
Florida Institute of Technology, Melbourne, FL
- Marine Turtles in the Northern Indian River Lagoon – What’s Up?**
Jane Provancha and Resa Cancro
Integrated Mission Support Services, Kennedy Space Center, FL

Is Functional Trait Variation in East Florida Red Mangrove (*Rhizophora mangle*) a Product of Genetic Differences or Phenotypic Plasticity?

John Paul Kennedy¹ and Ilka C. Feller²

¹Smithsonian Marine Station, Fort Pierce, FL; ²Smithsonian Environmental Research Center, Edgewater, MD

Shifting Baselines: Has the Productivity and Nutrient Content of *Sargassum* Changed over the Past Three Decades?

Alison Feibel and Brian Lapointe

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

Virtual Outreach at Florida Oceanographic Society – Sharing Educational and Scientific Topics across Regions (SEASTAR)

Zachary Jud, Michelle Byriel, and Shannon Dack

Florida Oceanographic Society, Stuart, FL

1230 - 1345 Lunch (provided)

1345 - 1500 Oral Session 3 – Restoration

Session Chair: Jeff Beal, Florida Fish and Wildlife Conservation Commission

1345 - 1400 Comparison of Abiotic and Biotic Factors between Restored, Natural, and Altered Shorelines in Mosquito Lagoon

Melinda Donnelly and Linda Walters

University of Central Florida, Orlando, FL

1300 - 1415 From Gardens to Reefs: Methods for Reintroducing Eastern Oysters to Brevard County

Lacie Anderson¹, Samantha Anderson², Linda Walters¹, Jody Palmer², Paul Sacks¹, and Virginia Barker³

¹University of Central Florida, Orlando, FL; ²Brevard Zoo, Melbourne, FL; ³Brevard County Natural Resources Management, Melbourne, FL

1415 – 1430 A Shell Midden’s Story: Investigating How Multiple Factors Affect the Lack of *Rhizophora mangle* Propagule Recruitment at Stabilized Shorelines along Turtle Mound

Michelle Shaffer, Kristin Kramer, Melinda Donnelly, and Linda Walters

University of Central Florida, Orlando, FL

1430 - 1445 The Northern Estuaries Resource Recovery Program: A Pilot Program to Restore Oyster and Seagrass Habitats in the St. Lucie River/Southern Indian River Lagoon and Caloosahatchee River

Vincent Encomio¹, Karla George¹, Pam Hopkins¹, Joshua Mills¹, Kathryn Tiling^{1,2}, and Mark Perry¹

¹Florida Oceanographic Society, Stuart, FL; ²Florida Atlantic University, Boca Raton, FL

1445 - 1500 Morphology of *Halodule wrightii* Clones: Implications for Restoration

Kathryn A. Tiling^{1,2}, Vincent Encomio¹, and C. Edward Proffitt²

¹Florida Oceanographic Society, Stuart, FL; ²Florida Atlantic University, Boca Raton, FL

1500 - 1530 Break

- 1530 - 1645 Oral Session 4 – Ecology**
Session Chair: Linda Walters, University of Central Florida
- 1530 - 1545 **Florida’s Panama Canal: Investigating the Link between Biofouling and Biofilms Transported through the Okeechobee Waterway**
L. Holly Sweat, Geoffrey W. Swain, and Kevin B. Johnson
Florida Institute of Technology, Melbourne, FL
- 1545 - 1600 **Understanding the Feeding Behavior of Oysters (*Crassostrea virginica*) and Hard Clams (*Mercenaria mercenaria*) in the Indian River Lagoon**
Eve Galimany, Jessica Lunt, Christopher Freeman, Sherry A. Reed, and Valerie J. Paul
Smithsonian Marine Station, Fort Pierce, FL
- 1600 - 1615 **Nom Nom on the POM: Filter Feeders in the Indian River Lagoon and their Role in Particulate Organic Matter Removal and Algal Bloom Mitigation**
Christopher J. Freeman¹, Dean S. Janiak¹, Richard Osman², Sherry Reed¹, Eve Galimany¹, Jessica Lunt¹, and Valerie Paul¹
¹Smithsonian Marine Station, Fort Pierce, FL; ²Smithsonian Environmental Research Center, Edgewater, MD
- 1615 - 1630 **“To Spawn or Not to Spawn? Evidence of Possible Skipped Spawning and Delayed Maturation by Florida East Coast Common Snook *Centropomus undecimalis***
Beau Yeiser¹, Joy Young¹, Jim Whittington¹, Erick Ault¹, Alexis Trotter², Ron Taylor², and Jynessa Dutka-Gianelli³
¹Florida Fish and Wildlife Conservation Commission, Tequesta, FL; ² Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; ³University of Florida, Gainesville, FL
- 1630 - 1645 ***Vibrio* Bacteria in Florida Waterways: Myth Busters and Safety Tips**
Gabby Barbarite¹, Holly Abeels², and Peter J. McCarthy¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL;
²University of Florida IFAS Extension Brevard County, Cocoa, FL
- 1645 - 1715 Three Minutes, Three Slides**
Session Chair: Seabird McKeon, Smithsonian Institution, Washington, DC
- Development of a Seagrass Nursery for Restoration of Seagrass in the Indian River Lagoon**
M. Dennis Hanisak, Paul Wills, and Christopher Robinson
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- The Indian River Lagoon Shoreline Restoration Project: Project Monitoring for Better Shoreline Management**
Emily Dark and Dana Kellgren
Florida Department of Environmental Protection, Fort Pierce, FL
- The Living Dock**
Kelli Hunsucker¹, Robert Weaver¹, Holly Sweat¹, Kody Lieberman¹, Abby Meyers², Avery Bethurum², Anastacia Devlin², Anna Grenevicki², Kaylee Kraver², Kate Longoria², Sabrina Bethurum², Marsha Lewis Meyers², Sandra Bruner², Inga Devlin², Amy Grenevicki², and Tina Kraver²
¹Florida Institute of Technology, Melbourne, FL; ²Girl Scout Troop 156, Turtle Tracks Unit of Citrus Council, Brevard County, FL

Social Science Survey of Oyster Gardening Program Participants in Brevard County, Florida

Phyllis Klarmann¹, Linda Walters¹, Hyung Sam Park¹, Samantha Anderson², and Virginia Barker³

¹University of Central Florida, Orlando, FL; ²Brevard Zoo, Melbourne, FL; ³Brevard County Natural Resources Management, Melbourne, FL

Update on Oyster Research in Mosquito Lagoon

Linda Walters¹, Stephanie Garvis¹, Melinda Donnelly¹, Ron Brockmeyer², Erica Hernandez², Nikki Dix³, Andrea Noel⁴, Donna Campbell¹, Panayiota Makris¹, Lacie Anderson¹, Heidi Waite¹, and Paul Sacks¹

¹University of Central Florida, Orlando, FL; ²St. Johns River Water Management District, Palatka, FL; ³GTM National Estuarine Research Reserve, Ponte Vedra, FL; ⁴Northeast Florida Aquatic Preserve, Ponte Vedra, FL

Organic Sediment Characteristics and Benthic Infaunal Diversity in the Indian River Lagoon

Daniel Hope, Tony Cox, Angelica Zamora-Duran, and Kevin B. Johnson
Florida Institute of Technology, Melbourne, FL

Benthic Foraminifera as Bioindicators of Environmental Conditions in the Indian River Lagoon

Angelica Zamora-Duran, Anthony Cox, Daniel Hope, and Kevin B. Johnson
Florida Institute of Technology, Melbourne, FL

Temperature Sexual Dependency of the American Alligator at the Kennedy Space Center

Russell Lowers and Stephanie Weiss
Integrated Mission Support Services, Kennedy Space Center, FL

1715

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 #31-42). 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 all students to be at their posters during the morning coffee break and the second half of lunch break.

1. Maternal Transfer of Organochlorine Contaminants in the Pseudo-placental Scalloped Hammerhead Shark

Douglas H. Adams¹ and Kady Lyons²

¹Florida Fish and Wildlife Conservation Commission, Melbourne, FL; ²University of Calgary, Canada

2. Assessing the Influence of Predation on Mangrove Prop Root Residing Species Diversity along the Latitudinal Gradient

Jessene Aquino-Thomas

Florida Atlantic University, Boca Raton, FL

3. Florida Atlantic Coast Telemetry (FACT) Array: A Working Partnership

Erick Ault¹, Robert Ellis², Samuel Gruber³, Joseph Iafrate⁴, Chris Kalinowsky⁵, Eric Reyier⁶, Douglas Scheidt⁶, David Snyder⁷, Stephanie Watwood⁴, and Joy Young¹

¹Florida Fish & Wildlife Conservation Commission, Tequesta, FL; ²Florida State University, Tallahassee, FL; ³Bimini Biological Field Station, Bimini, Bahamas; ⁴Naval Undersea Warfare Center, Newport, RI; ⁵Georgia Department of Natural Resources, Brunswick, GA; ⁶Integrated Mission Support Services, Kennedy Space Center, FL; ⁷CSA Ocean Sciences Inc., Stuart, FL

4. Little Animals, Big Insight: Using Soft-Sediment Communities as Proxies for Environmental Health

Katrina Bayliss, Katherine Skura, Jessica Lunt, Sherry Reed, and Valerie Paul

Smithsonian Marine Station, Fort Pierce, FL

5. Effect of Rainfall on the Levels of Fecal Coliform in the Coastal Oaks Preserve

Bianca Beton^{1,3}, Emily Brandes^{2,3}, Taylor Bryant^{1,3}, Halley Nunes^{1,3}, and Parker Schlitt^{1,3}

¹Vero Beach High School, Vero Beach, FL; ²Sebastian River High School, Sebastian, FL; ³Junior Scientist Fellows Program

6. Microbial Diversity in the Indian River Lagoon

David J. Bradshaw II and Peter J. McCarthy

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

7. A Snapshot of Phytoplankton Communities along the Indian River Lagoon and the Okeechobee Waterway

Hannah Briant, Erika Neave, Kelli Hunsucker, Emily Ralston, and Geoffrey Swain

Florida Institute of Technology, Melbourne, FL

8. The Importance of Sediment-Water Exchanges and Internal Nutrient Loading to System-Level Biogeochemical Attributes of the St. Lucie Estuary

Christopher Buzzelli¹, Teresa Coley¹, Peter Doering¹, Brian Howes², Roland Samimy², and David Schlesinger²

¹South Florida Water Management District, West Palm Beach, FL; ²University of Massachusetts-Dartmouth, New Bedford, MA

9. Crustacean Mesograzers Influence Algal Epiphyte Loading in a Subtropical Seagrass Meadow

Justin Campbell¹, Valerie Paul¹, Lane Johnston¹, Andrew Altieri², and Emmett Duffy³

¹Smithsonian Marine Station, Fort Pierce, FL; ²Smithsonian Tropical Research Institute, Panama City, Panama; ³Smithsonian Institution, Washington, DC

10. **Determining Factors that Influence Smooth Cordgrass (*Spartina alterniflora* Loisel) Transplant Success in Community-Based Living Shoreline Projects**
Steven A. Carrion, Melinda Donnelly, and Linda J. Walters
University of Central Florida, Orlando, FL
11. **The Effect of the Retention Pond on Water Quality in the Coastal Oaks Preserve's DOT Canal**
Nicholas Cassera^{1,3} and Melvin Baker^{2,3}
¹Vero Beach High School, Vero Beach, FL, ²Sebastian River High School, Sebastian FL; ³Junior Scientist Fellows Program
12. **Using Passive Integrated Transponder Tags to Track the Emigration of Juvenile Snook and Tarpon That Were Previously Trapped in a Mosquito Control Impoundment**
Anthony Cianciotto, Jonathan Shenker, and Aaron Adams
Florida Institute of Technology, Melbourne FL
13. **Natural Recruitment of the Red Mangrove: Sediment Type as a Limiting Factor in Root Structure Development**
Suzanne Connor, Melinda Donnelly, and Linda Walters
University of Central Florida, Orlando, FL
14. **Preventing Introductions to Sustain Healthy Ecosystems: Establish Eradication Protocols for a Popular Aquarium Seaweed**
Julie R. Deslauriers and Linda J. Walters
University of Central Florida, Orlando, FL
15. **The Indian River Lagoon Species Inventory: Promoting Awareness; Fostering Collaboration**
Joseph Dineen¹, L. Holly Sweat², Valerie Paul¹, Julie Piraino¹, and Sunkanmi Akintoye²
¹Smithsonian Marine Station, Fort Pierce, FL; ²Florida Institute of Technology, Melbourne, FL
16. **Potential Competition between the Invasive Mussel, *Mytella charruana*, and the Eastern Oyster, *Crassostrea virginica*, in the Mosquito Lagoon**
Arthur Domingos¹ Christopher Freeman¹, Jessica Lunt¹, Paul Sacks², Linda Walters², and Eve Galimany¹
¹Smithsonian Marine Station, Fort Pierce, FL; ²University of Central Florida, Orlando, FL
17. **The Dynamics within the IRL Seagrass Beds**
Lisa Gemma, Matthew Badolato, and Lori Morris
St. John's River Water Management District, Palatka, FL
18. **Patterns and Distributions of Post-mortem evidence of Cetacean Interactions with Sharks among Coastal and Estuarine Communities**
Tyler Harrington, Wendy Marks, Steve Burton, and Adam Schaefer
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
19. **Out of Africa: First Records for the Americas for Several Species of Ciliates**
Hunter N. Hines^{1,2}, Peter J. McCarthy², and Genoveva F. Esteban¹
¹Bournemouth University, Bournemouth, UK; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
20. **Does Plant Density Influence Growth of *Spartina alterniflora* and *Rhizophora mangle*? A Competition Study**
Paige Jaffe, Melinda Donnelly, and Linda Walters
University of Central Florida, Orlando, FL

21. **Fauna Utilizing the Seagrass Adjacent to the Coastal Oaks Preserve**
Ashley Jenks^{1,2}, Alexandra Knudson^{1,2}, Jackson Oberlink^{1,2}, Katherine Riley^{1,2}, and Alexis Walsh^{1,2}
¹Vero Beach High School, Vero Beach, FL; ²Junior Scientist Fellows Program
22. **Copepod Communities of the Northern Indian River Lagoon System**
H.G. Kolb¹, L. Holly Sweat¹, Kevin B. Johnson¹, and Charles Jacoby²
¹Florida Institute of Technology, Melbourne, FL; ²St. John's River Water Management District, Palatka, FL
23. **Wave Energy Distribution on Restored Shorelines versus Unrestored Shorelines**
Kristin Kramer and Melinda Donnelly
University of Central Florida, Orlando, FL
24. **Integrating Continuous Ammonium Measurements with Real-Time LOBO Monitoring in Florida's Indian River Lagoon**
Brian Lapointe¹, Laura Herren¹, Marie Tarnowski¹, Natchanon Amornthammarong^{2,3}, Jack Stamates³, Peter Ortner², James Hendee³, and Sara Ouly¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²University of Miami, FL; ³Atlantic Oceanographic and Meteorological Laboratory, Miami, FL
25. **Algal Bloom Update for the Northern and North-Central Indian River Lagoon**
Margaret Lasi¹, Edward Philips², Susan Badylak², Ali Simpson¹, Rex Ellis¹, Jan Miller¹, Christy Akers³, and Charles Jacoby¹
¹St. Johns River Water Management District, Palatka, FL; ²University of Florida, Gainesville, FL; ³St. Johns River Water Management District, Palm Bay, FL
26. **Fish Diversity and Abundance within the Coastal Oaks Preserve**
Andrew Lovelady^{1,4}, Caleigh Allen^{1,4}, Haley Meade^{1,4}, Shayla Macias^{2,4}, and Pedro Tellez^{3,4}
¹Vero Beach High School, Vero Beach, FL; ²Sebastian River High School, Sebastian FL; ³Indian River Charter High School, Vero Beach, FL; ⁴Junior Scientist Fellows Program
27. **The Never Ending Assays: Will Bivalves Eat Algal Blooms in the Indian River Lagoon?**
Jillian Lunt^{1,2}, Daniel Armellino¹, Jessica Lunt¹, Christopher Freeman¹, J. Houk¹, Maria Kolmakova¹, Valerie Paul¹, and Eve Galimany¹
¹Smithsonian Marine Station, Fort Pierce, FL; ²University of West Florida, Pensacola, FL
28. **A Murky Situation: Effects of Brown Tide Harmful Algal Blooms Caused by *Aureoumbra lagunensis* on the Eastern Oyster *Crassostrea virginica***
Panayiota Makris, Pedro Quintana-Ascencio, and Linda Walters
University of Central Florida, Orlando, FL
29. **Blue Crab Population in Peril in the IRL: Will Invasive Blue Crab Species Tolerate or Select Polluted Habitats More Often Than Native *Callinectes* Species?**
Jesse Martin
West Shore Junior Senior High, Melbourne, FL
30. **Pathogenic *Vibrio* Bacteria in Mangrove Snapper Meat**
Brandon McHenry, Gabby Barbarite, and Peter J. McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
31. **Mangrove-Insect Interactions in Mosquito Lagoon**
Meagan Minadie, Linda Walters, and Sandor L. Kelly
University of Central Florida, Orlando, FL

- 32. Variation in the Trophic Diversity of the Barnacle *Amphibalanus eburneus* over Time and Space in the Indian River Lagoon**
Malcolm J. Mossop^{1,2}, Dean Janiak¹, Richard Osman³, Sherry Reed¹, Valerie Paul¹, and Christopher J. Freeman¹
¹Smithsonian Marine Station, Fort Pierce, FL; ²Indian River State College, Fort Pierce, FL; ³Smithsonian Environmental Research Center, Edgewater, MD
- 33. A Survey of Nitrogen Fixation in the Northern Indian River Lagoon**
Joshua Papacek¹, Margaret Lasi², Edward Philips¹, and Patrick Inglett¹
¹University of Florida, Gainesville, FL; ²St. Johns River Water Management District, Palatka, FL
- 34. Monitoring Changes in Fish Community Composition Relative to the Occurrence of an Extended Algal Bloom/Seagrass Die-off Event: Where Are We Now?**
Richard Paperno, Doug Adams, and Agustin Sebastian
Florida Fish and Wildlife Conservation Commission, Melbourne, FL
- 35. Microbial Source Tracking in the Indian River Lagoon: Assessment of Fecal Pollution**
Carlie S. Perricone and Peter J. McCarthy
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 36. The Effects of Grain Size Distribution on Red Mangrove, *Rhizophora mangle*, Root Structure**
Christian Pilato, Linda Walters, and Kelly Kibler
University of Central Florida, Orlando, FL
- 37. Seagrass Mapping from Aerial Photography – Southern Indian River Lagoon Addressing Photointerpretation Challenges**
Becky Robbins and Mayra Ashton
South Florida Water Management District, West Palm Beach, FL
- 38. Resilience of a Tropical Sport Fish Population (Common Snook) to a Severe Cold Event Varies across Five Estuaries in Southern Florida**
P.W. Stevens¹, D.A. Blewett², R.E. Boucek³, J.S. Rehage³, B.L. Winner¹, J.M. Young⁴, J.A. Whittington⁴, and R. Paperno⁵
Florida Fish and Wildlife Conservation Commission, St. Petersburg¹, Port Charlotte², Tequesta⁴, and Melbourne⁵, FL; Florida International University, Department of Biology, Miami³, FL
- 39. Leafy Lunch: The Effects of Leaf Herbivory on Established Seedlings of the White Mangrove**
Frank Suarez and Melinda Donnelly
University of Central Florida, Orlando, FL
- 40. Modeling Inundation and Residence Time of Saltwater in the Loxahatchee River Floodplain**
Jessica C. Sullivan, Yongshan Wan, and Marion Hedgepeth
South Florida Water Management District, West Palm Beach, FL
- 41. Dry Season Surface Water Quality Changes in the St. Lucie Estuary with Periodic Lake Okeechobee Water Releases**
Cassandra Thomas, Teresa Coley, and Mayra Ashton
South Florida Water Management District, West Palm Beach, FL
- 42. In the Wake of the Superbloom: Development and Validation of Integrated Technologies for Monitoring Green and Brown Tides in the Indian River Lagoon**
Charles Tilney¹, Eric Muhlbach¹, Susan Murasko¹, Steven Bruzek¹, Susan Badylak², Lauren Hall³, Edward Philips², Margaret Lasi², Katherine Hubbard¹, and Alina A. Corcoran¹
¹Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL; ²University of Florida, Gainesville, FL; ³St. Johns River Water Management District, Palatka, FL