



February 18-19, 2021

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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
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Indian River Lagoon Symposium 2021
IRL Research during the Pandemic

Program Schedule

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

Thursday, February 18, 2021

- 1215** **The WebEx site opens.** The link will be sent to all registrants at 1115.
- 1230 – 1245** **Welcome**
M. Dennis Hanisak, FAU Harbor Branch
- 1245 – 1315** **Keynote Address**
A 23-year View of Algal Blooms in the Northern Indian River Lagoon: Cyclical Patterns and a Regime Shift
Edward J. Philips¹, Susan Badylak¹, Natalie G. Nelson², Lauren M. Hall³, Charles Jacoby³, Margaret A. Lasi³, Jean C. Lockwood¹, and Janice Miller³
¹University of Florida, Gainesville, FL; ²North Carolina State University, Raleigh, NC; ³St. Johns River Water Management District, Palatka, FL
- 1315 – 1415** **Oral Session 1 – A Taste of IRL Research during the Pandemic**
Session Chair: Jeff Beal, Ducks Unlimited
- 1315 – 1325** **Tracking an Ongoing Novel Cyanobacterium Bloom in the Indian River Lagoon during the Summer and Fall of 2020**
Stephanie Keller Abbe, Karen Henschen, Laura Markley, Célia Villac, Eric Muhlbach, Charles Tilney, Autumn Biddle, Richard Paperno, and Katherine Hubbard
Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL
- 1325 – 1335** **Quantifying Trophic Competition between a Tropical Herbivorous Fish and Its Congener in the Indian River Lagoon, Florida**
(STUDENT PRESENTATION)
Adam R. Searles¹, Douglas H. Adams², Charles W. Martin¹, and Laura K. Reynolds¹
¹University of Florida, Gainesville, FL; ²Florida Fish and Wildlife Conservation Commission, Melbourne, FL
- 1335 – 1345** **Expanding Biodiversity: Continued Development of the Indian River Lagoon Species Inventory**
L. Holly Sweat¹, Greer Babbe², Andia Chaves-Fonnegra², Megan Conkling², Maria Cristina Díaz², Andrew Meashaw¹, Shirley A. Pomponi², John Reed², Juliet Ruggiero², Michelle Stephens¹, and Iris Segura-García^{1,2}
¹Smithsonian Marine Station, Fort Pierce, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 1345 – 1355** **The State of the Indian River Lagoon Technical Report: Opportunities and Challenges**
Claudia Listopad¹, Duane De Freese², Danielle Huffner¹, and Zach Leibowitz¹
¹Applied Ecology, Inc., Indialantic, FL; ²Indian River Lagoon National Estuary Program, Sebastian, FL

- 1355 – 1405 **Multi-Disciplinary Research during the Pandemic: Reconstructing Human-Environment Interactions and Ecosystem Conditions of the Indian River Lagoon over Deep-Time (STUDENT PRESENTATION)**
Jacklyn D. Rumberger¹, Sarah B. Barber², Joseph Donoghue², Peter Jacques², Seabird McKeon², Kristy Lewis², Melinda Donnelly², Kelly Kibler², Neil Duncan², Kitty F. Emery³, and Nicole Cannarozzi³
¹Washington State University, Pullman, WA; ²University of Central Florida, Orlando, FL; ³Florida Museum of Natural History, University of Florida, Gainesville, FL
- 1405 – 1415 **eDNA: The New Frontier in Biomonitoring**
Michelle R. Gaither
University of Central Florida, Orlando, FL
- 1415 – 1430 **Break**
- 1430 – 1530 **Oral Session 2 – IRL Restoration**
Session Chair: Irene Arpayoglou, FDEP/Indian River Lagoon Aquatic Preserves
- 1430 – 1440 **Restoration Methods for a Successful Mangrove Living Shoreline in Mosquito Lagoon (STUDENT PRESENTATION)**
Rebecca Fillyaw, Kelly Kibler, Melinda Donnelly, and Linda Walters
University of Central Florida, Orlando, FL
- 1440 – 1450 **Canopy-flow Interactions in Mosquito Lagoon: A Review of Recent Work on Eastern Oyster (*Crassostrea virginica*) Reefs and Shallow Shoal Grass (*Halodule wrightii*) Fringes**
David Cannon¹, Kelly Kibler¹, Vasilis Kitsikoudis², Linda Walters¹, and Stephen Medeiros³
¹University of Central Florida, Orlando, FL; ²University of Twente, Enschede, The Netherlands; ³Embry-Riddle Aeronautical University, Daytona Beach, FL
- 1450 – 1500 **Leveraging Natural Selection for Restoration of Clam Populations and Water Quality in the Indian River Lagoon**
Todd Z. Osborne^{1,2}, Jose Nunez¹, and Jeff Beal³
¹University of Florida, St. Augustine, FL; ²University of Florida, Gainesville, FL; ³Ducks Unlimited, Fort Pierce, FL
- 1500 – 1510 **Restored Coastal Habitat in the Indian River Lagoon Can Reel in Juvenile Sportfish (STUDENT PRESENTATION)**
Jennifer M. Loch, Geoffrey S. Cook, and Linda J. Walters
University of Central Florida, Orlando, FL
- 1510 – 1520 **Effect of Biodegradable Materials on Oyster Reef Restoration and Biogeochemistry (STUDENT PRESENTATION)**
Chelsea K. Nitsch¹, Joshua S. Sacks², Linda J. Walters¹, Paul E. Sacks¹, and Lisa G. Chambers¹
¹University of Central Florida, Orlando, FL; ²University of Washington, Seattle, WA
- 1520 – 1530 **Decreasing Nutrient Concentrations in the Indian River Lagoon, FL with One Isolated Bottle Cap at a Time (STUDENT PRESENTATION)**
Abigail Gering, Austin Fox, and Stacey Fox
Florida Institute of Technology, Melbourne, FL

1530 - 1600

Three Minutes, Three Slides #1

Session Chair: M. Dennis Hanisak, FAU Harbor Branch

**Monitoring a Synechococcaceae Cyanobacteria Bloom in the Indian River Lagoon, FL
(STUDENT PRESENTATION)**

Connor J. Wong and Kevin B. Johnson

Florida Institute of Technology, Melbourne, FL

**Phytoplankton Blooms in a Shallow Subtropical Estuary and the Potential Role of Silica
(STUDENT PRESENTATION)**

Amanda Capuano, Austin Fox, and Kevin Johnson

Florida Institute of Technology, Melbourne, FL

Evolution of a Cyanobacteria Bloom in the Northern Indian River Lagoon in 2020

Tim Moore, Malcolm McFarland, and Nicole Stockley

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

**Primary Producer Shifts in the Northern Indian River Lagoon and Banana River during COVID
(STUDENT PRESENTATION)**

Rachel A. Brewton, Diana Baladi, and Brian E. Lapointe

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

**Resident Fishes as Higher Trophic Level Indicators of Oyster Reef Restoration Success
(STUDENT PRESENTATION)**

Katie E. Durham, Dakota M. Lewis, Linda J. Walters, and Geoffrey S. Cook

University of Central Florida, Orlando, FL

Testing Alternative Nitrogen-Reducing Media under Conventional Septic System Drainfields

Anthony Gubler, Virginia Barker, Matthew Badolato, and Terry Williamson

Brevard County Natural Resources Management, Melbourne, FL

Testing Alternative Oyster Restoration Materials in the Indian River Lagoon

Jenny Hansen¹, Adam Klingenberg², Jake Zehnder², Terry Williamson¹, and Virginia Barker¹

¹Brevard County Natural Resources Management, Viera, FL; ²Brevard Zoo, Melbourne, FL

The One Lagoon Monitoring Plan: Connecting Monitoring to the Lagoon's Vital Signs

David Heuberger and M. Dennis Hanisak

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

How Many Amphipods Can Dance on a Blade of Seagrass?

Robert Virnstein¹ and Patrick Dowling²

¹Seagrass Ecosystems Analysts, Gainesville, FL; ²Unknown whereabouts

1600 – 1700 **Poster Session 1 – The links to the 6 groups of posters will be sent to all registrants at 1500.**
Participants may review posters before the meeting at https://www.fau.edu/hboi/irlo/irlsymposium_2021.php and during the two virtual poster sessions. All posters have been placed into 6 groups, with 3 groups of posters scheduled for presentation in a 30-minute block during each session. That staggered approach will allow all participants to engage with the presenters and allow the presenters to see other posters during the meeting, too; that is particularly important for students to do. A moderator in each session will keep things on time and facilitate Q&A and discussions. Presenters will have 3 minutes for an overview of their posters in the order posted below (that will allow other participants who wish an opportunity to move between “rooms”). The second half of the session will be moderated Q&A.

1600 – 1630 **Group 1 Posters (IRL HABs)**
Session Chair: Chuck Jacoby, St. Johns River Water Management District

Development of a Coupled Hydrodynamic-biogeochemical-*Microcystis* Model for the St. Lucie Estuary, FL

Mingshun Jiang, Brian Lapointe, Malcolm McFarland, Ash Brereton, Rachel Brewton, Dennis Hanisak, and Nicole Stockley

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

Determining the Regulation and Control of Saxitoxin Production in *Pyrodinium bahamense* in the Indian River Lagoon

(STUDENT PRESENTATION)

Jackie L. Metz, Rachel L. Hedinger, Malcom McFarland, and Guojun Wang

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

Improvements in *Microcystis* Quantification Using Sonication and Flow Cytometry

Nicole Stockley and Malcolm McFarland

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

Group 2 Posters (IRL Restoration)

Session Chair: Annie Roddenberry, Florida Fish and Wildlife Conservation Commission

Test of Biodegradable Alternatives to Plastics Used in Living Shoreline Stabilization in Mosquito Lagoon

Melinda Donnelly¹, Annie Roddenberry², Paul Sacks¹, Linda Walters¹, and Jessy Wayles³

¹University of Central Florida, Orlando, FL; ²Florida Fish and Wildlife Conservation Commission, New Smyrna Beach, FL; ³Marine Discovery Center, New Smyrna Beach, FL

Underutilized Potential of Small-Scale Oyster Reef Restoration Units as Habitat for Invertebrates
(STUDENT PRESENTATION)

Jillian Hanley^{1,2} and Rachel Harris^{1,2}

¹Florida Atlantic University, Jupiter FL; ²Loxahatchee River District, Jupiter FL

Vertebrate Impact on a Newly Deployed Shoreline Stabilization Project by Wildlife Camera Analysis
(STUDENT PRESENTATION)

Julia Rifenberg, Jason Litwak, Linda Walters, and Rebecca Fillyaw

University of Central Florida, Orlando, FL

Monitoring Success of Brevard County's Save Our Indian River Lagoon (SOIRL) Oyster Breakwaters

Paul E. Sacks¹, Melinda Donnelly¹, Linda Walters¹, Jenny Hansen², and Virginia Barker²

¹University of Central Florida, Orlando, FL; ²Brevard County Natural Resources Management, Viera, FL

WeShore: Connecting Homeowners, Contractors and Nature through Living Shorelines
(STUDENT PRESENTATION)

Marjorie M. Shropshire¹ and Vincent Encomio²

¹University of Florida, Gainesville, FL; Florida Sea Grant, Stuart, FL

Group 3 Posters (Human Impacts 1)

Session Chair: Austin Fox, Florida Institute of Technology

IRLON 2.0: Emerging Environmental Issues in the Indian River Lagoon

M. Dennis Hanisak and Kristen S. Davis

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

Proposed Study to Understand the Pollution Historical Changes and Application of Meiofauna Bioindicators in Banana River Lagoon

Michael Martínez-Colón¹, Fajemila Olugbenga², and María A. Alves-Martins³

¹Florida A&M University, Tallahassee, FL; ²Osun State University, Osogbo, Nigeria; ³Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil

Continuously Monitoring Bottom Water Oxygen in Muck and Sand Sediments in the IRL
(STUDENT PRESENTATION)

Tyler Provoncha, Austin Fox, Stacey Fox, Iulia Bibire, and Abigail Gering

Florida Institute of Technology, Melbourne, FL

Acute and Chronic Effects of Roundup QuickPro™ (73.3% Glyphosate Salt) on *Halodule wrightii* and *Halophila johnsonii* Seagrass in Closed Tank Systems

(STUDENT PRESENTATION)

Owen Silvera¹, Rachel J. Harris^{1,2}, and D. Albrecht Arrington²

¹Florida Atlantic University, Jupiter FL; ²Loxahatchee River District, Jupiter FL

1630 – 1700

Group 4 Posters (Human Impacts 2 & Outreach)

Session Chair: Phyllis Klarmann, South Florida Water Management District

Influences of Boating Activity on Abundance, Biodiversity and Behaviors of Wading Bird Species on Oyster Reef Habitats

(STUDENT PRESENTATION)

Melanie Dallavalle, Paul Sacks, and Linda Walters

University of Central Florida, Orlando, FL

Boring Sponges on Oyster Reefs: Distance from Boating Channels and Impact on Boring Damage
(STUDENT PRESENTATION)

Katherine Harris and Linda Walters

University of Central Florida, Orlando, FL

Connecting the Community with the Indian River Lagoon through Public Education
(STUDENT PRESENTATION)

Skyler Klingshirm, Madeleine Arencibia, and Gabby Barbarite

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

Microplastic Exposure in Pea Crabs from the Indian River Lagoon
(STUDENT PRESENTATION)

Sophia Vermeulen, Casey Craig, and Linda Walters

University of Central Florida, Orlando, FL

Group 5 Posters (Ecology)

Session Chair: Jeff Eble, Florida Institute of Technology

Expansion and Reduction of Estuarine Fish Species in a Changing Subtropical Estuary

Douglas H. Adams¹, Dwayne Edwards¹, Jacob Schneider¹, and Adam R. Searles²

¹Florida Fish & Wildlife Conservation Commission, Melbourne, FL; ²Nature Coast Biological Station, University of Florida, Cedar Key, FL

Identifying Population Structure of the Gulf pipefish, *Syngnathus scovelli*, across Florida (STUDENT PRESENTATION)

Malia L. Boudreau, Gillian Báez, and Michelle R. Gaither
University of Central Florida, Orlando, FL

Noninvasive Collection of Dolphin Dorsal Fin Images in the Indian River Lagoon Using Trail Cameras

Steve Burton, Brittany Baldrice, Brooke Davis, Madison Hahn, Megan Hoffman, Lydia Moreland, Annie Page-Karjian, and Wendy Marks

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

Stable Isotope Analysis of an Invasive Crab Species, *Charybdis hellerii*, in the Indian River Lagoon (STUDENT PRESENTATION)

Justin Meyer and Geoffrey Cook
University of Central Florida, Orlando, FL

Replacement of Oyster Reefs by Mangroves: Unexpected Climate-Driven Ecosystem Shifts

Linda Walters¹, Giovanna McClenchan^{1,2}, and Megan Witt¹

¹University of Central Florida, Orlando; ²Nichols State University, Thibodaux, LA

Group 6 Posters (IRL Biodiversity)

Session Chair: Derek Cox, Florida Fish & Wildlife Conservation Commission

Environmental DNA Analysis of Forage Fish Diversity and Distribution in the Indian River Lagoon (STUDENT PRESENTATION)

Emily Farrell, Girish Kumar, and Michelle R. Gaither
University of Central Florida, Orlando, FL

Smithsonian Indian River Lagoon Species Inventory: Documenting and Barcoding Benthic Infauna

Andrew Meashaw, Iris Segura-García, Michelle Stephens, and L. Holly Sweat
Smithsonian Marine Station, Fort Pierce, FL

DNA Sequencing from Home: Using a Portable DNA Sequencer to Monitor Eukaryotic Microorganisms in the Indian River Lagoon

Heidi J.T. Pagán, Tatiana Ferrer, and Greg O'Corry-Crowe
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Diversity and Distribution of Foraminifera in the Indian River Lagoon, Florida: An Updated Species Checklist

Susan L. Richardson
Florida Atlantic University, Jupiter, FL

1700

Adjourn

Friday, February 19, 2021

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0830 – 0930 **Poster Session 2**
Notes on poster sessions: See page 5.

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Susan L. Richardson
Florida Atlantic University, Jupiter, FL

0930 – 0940 Day 2 Announcements – The link to the oral session will be sent to all registrants at 0815. The WebEx site will open at 0915.

Remembrance – Leroy Cresswell

- 0940 – 1040 Oral Session 3 – Water Quality/Human Impacts**
Session Chair: Vincent Encomio, Florida Sea Grant & UF/IFAS Extension
- 0940 – 0950 www.irlon.org: A Data Portal for the Indian River Lagoon Observatory Network of Environmental Sensors (IRLON)**
Kristen S. Davis, Bryan Botson, and M. Dennis Hanisak
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 0950 – 1000 Applying an Ensemble Modeling Approach to Understand Shifts in an Estuarine Fish Community Following a Large Fish Kill in the Indian River Lagoon (STUDENT PRESENTATION)**
Dakota M. Lewis¹, Kevin A. Thompson², Tim C. MacDonald², and Geoffrey S. Cook¹
¹University of Central Florida, Orlando, FL; ²Florida Fish and Wildlife Conservation Commission, St. Petersburg, FL
- 1000 – 1010 Characteristics of Wastewater Contaminated Groundwater in the Indian River Lagoon**
Claudia Listopad¹, Leesa Souto², Virginia Barker³, and Andrew Kameronosky¹
¹Applied Ecology, Inc., Indialantic, FL; ²Marine Resources Council, Palm Bay, FL; ³Brevard County Natural Resources Management, Viera, FL
- 1010 – 1020 The Bull Shark, *Carcharhinus leucas*, as a Sentinel Species for Harmful Algal Bloom Toxins in the Indian River Lagoon, Florida (STUDENT PRESENTATION)**
Michelle L. Edwards, Michael McCallister, Adam M. Schaefer, and Matthew J. Ajemian
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- 1020 – 1030 How Efficient Are Oysters at Excreting Microplastics? (STUDENT PRESENTATION)**
Casey Craig¹, Linda Walters¹, Jessy Wayles², Tess Sailor-Tines², Emily Dark³, Kirk Fusco³, Vincent Encomio^{4,5}, David Fox Jr¹, and Lei Zhai¹
¹University of Central Florida, Orlando, FL; ²Marine Discovery Center, New Smyrna Beach, FL; ³Indian River Lagoon Aquatic Preserves/Florida Department of Environmental Protection, Fort Pierce, FL; ⁴University of Florida/Florida Sea Grant, Stuart, FL; ⁵Florida Oceanographic Society, Stuart, FL
- 1030 – 1040 Changes in the Abundance and Distribution of Benthic Mollusks in Polluted Sediments of a Shallow Subtropical Estuary (STUDENT PRESENTATION)**
Rachael Stark and Kevin B. Johnson
Florida Institute of Technology, Melbourne, FL
- 1040 - 1110 Three Minutes, Three Slides #2**
Session Chair: Kelli Hunsucker, Florida Institute of Technology
- Redox Environment Controls on the Degradation of Harmful Organic Contaminants in Marine Sediment (STUDENT PRESENTATION)**
Matthew Quinan¹, Michael Martinez-Colon², Christoph Aeppli³, and Jordon Beckler¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Florida A&M University, Tallahassee, FL; ³Bigelow Laboratory for Ocean Sciences, East Boothbay, ME
- Modeling the Ventilation and Connectivity in the Indian River Lagoon**
Mingshun Jiang and Ash Brereton
Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Developing a 3D Hydrodynamic Model for Mosquito Lagoon: Using a Present-Day Model to Investigate Future and Deep-Time Changes in Hydrodynamics

(STUDENT PRESENTATION)

Angelo Hernandez, Christopher Hagglund, Kelly Kibler, David Cannon, and Sarah Barber
University of Central Florida, Orlando, FL

Hydrodynamic Impact of Boat Wakes to Shoreline Ecotones

(STUDENT PRESENTATION)

Gabriela Ford, Iris Peterson, Kelly M. Kibler, and David Cannon
University of Central Florida, Orlando, FL

Rapid Response of Coastal Mangroves to Hydrological Restoration

Loraé T. Simpson¹, Erin McDevitt², Zachary Huges³, Samantha C. Smith¹, and Jeff Beal⁴

¹Florida Oceanographic Society, Stuart, FL; ²Florida Fish and Wildlife Conservation Commission, Tequesta, FL; ³Martin County Public Works, Stuart, FL; ⁴Ducks Unlimited, Fort Pierce, FL

A Biological Assessment of Living Docks throughout the Indian River Lagoon

(STUDENT PRESENTATION)

Morgan Gilligan, Robert Weaver, and Kelli Hunsucker
Florida Institute of Technology, Melbourne, FL

Lessons Learned from a Student Based Seagrass Restoration Project during COVID

Olivia Escandell¹, Robert Virnstein², Jake Zehnder¹, and Callie Shaffer¹

¹Brevard Zoo, Melbourne, FL; ²Seagrass Ecosystems Analysts, Gainesville, FL

Vegetation Husbandry: A Tool to Engage Volunteers in a COVID-19 World

Emily Surmont, Irene Arpayoglou, Kirk Fusco, Emily Dark, and Matthew Anderson

Indian River Lagoon Aquatic Preserves/Florida Department of Environmental Protection, Fort Pierce, FL

Using Deliberative Discussion Forums to Foster Solutions for IRL Water Quality and Community Well-Being

(STUDENT PRESENTATION)

Carol Roberts¹, Linda Seals¹, Martha Monroe², Holly Abeels³, Curtis Johnson⁴, and Mandy Baily²

¹University of Florida/IFAS Extension, Fort Pierce, FL; ²University of Florida, Gainesville, FL;

³University of Florida/IFAS Extension, Cocoa, FL; ⁴Fort Pierce County Commission, Fort Pierce, FL

1110 – 1120 Break

1120 – 1220 Oral Session 4 – IRL Biodiversity

Session Chair: Holly Sweat, Smithsonian Marine Station

1120 – 1130 Biodiversity of Sponges in the Indian River Lagoon (IRL), Florida

Maria Cristina Díaz¹, Greer Babbe¹, Iris Segura-Garcia^{1,3}, Juliet Ruggiero¹, Holly Sweat³, Megan Conkling¹, John Reed¹, Andia Chaves-Fonnegra^{1,2}, and Shirley Pomponi¹

¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Florida Atlantic University, Jupiter, FL; ³Smithsonian Marine Station, Fort Pierce, FL

1130 – 1140 Unlocking Sponge Biodiversity (Phylum Porifera) in the Indian River Lagoon, Florida, Using DNA Barcoding

Iris Segura-Garcia^{1,2}, Maria Cristina Díaz², Andia Chaves-Fonnegra^{2,3}, Shirley Pomponi², John Reed², and Holly Sweat¹

¹Smithsonian Marine Station, Fort Pierce, FL; ²Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ³Florida Atlantic University, Jupiter, FL.

- 1140 – 1150 A Comprehensive Diet Description for the Whitespotted Eagle Ray (*Aetobatus narinari*) in Florida Coastal Waters (STUDENT PRESENTATION)**
 Brianna V. Cahill¹, Kim Bassos-Hull², Carlos A. Santamaria³, Christelle Bouchard³, Lisa A. Hoopes⁴, and Matthew J. Ajemian¹
¹ Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Mote Marine Laboratory, Sarasota, FL; ³University of South Florida Sarasota-Manatee, Sarasota, FL; ⁴Georgia Aquarium, Atlanta, GA
- 1150 – 1200 Diamondback Terrapins in the Central Indian River Lagoon: What We Know Now (STUDENT PRESENTATION)**
 Jeffrey Herr¹, Isabella Martin¹, David Torres¹, Emily Dark², and Jon A. Moore¹
¹Florida Atlantic University, Jupiter, FL; ²Florida Department of Environmental Protection-Indian River Lagoon Aquatic Preserves, Fort Pierce, FL
- 1200 – 1210 Validating Ultrasonography of Shoulder Fat Thickness as a Non-Invasive Technique for Estimating Body Condition in Green (*Chelonia mydas*) and Loggerhead (*Caretta caretta*) Sea Turtles (STUDENT PRESENTATION)**
 Marisa Pico¹, Justin R. Perrault², and Annie Page-Karjian¹
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Loggerhead Marinelifelife Center, Juno Beach, FL
- 1210 – 1220 A Survey of Bird Abundance and Diversity in Mosquito Lagoon (STUDENT PRESENTATION)**
 Jessica Copertino, Jacob Hromyak, Paul Sacks, and Linda Walters
 University of Central Florida, Department of Biology, Orlando, FL
- 1220 – 1250 Three Minutes, Three Slides #3**
 Session Chair: Zack Jud Florida Oceanographic Society
- Do Sponge Communities Reflect a Biome Transition Zone in the Indian River Lagoon? (STUDENT PRESENTATION)**
 Greer Babbe¹, Maria Cristina Diaz¹, Iris Segura-Garcia^{1,2}, John Reed¹, and Andia Chaves-Fonnegra^{1,3}
¹Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL; ²Smithsonian Marine Station, Fort Pierce, FL; ³Florida Atlantic University, Jupiter, FL
- The HBOI-FAU Sponge Cell Culture Collection: A Frozen Bank of Indian River Lagoon Sponge Cells for Habitat Restoration and Biotechnology Applications (STUDENT PRESENTATION)**
 Megan Conkling and Shirley A. Pomponi
 Harbor Branch Oceanographic Institute, Florida Atlantic University, Fort Pierce, FL
- Investigation of Survivin-targeting Marine Natural Products from the Indian River Lagoon (STUDENT PRESENTATION)**
 Kirstie R. Tandberg, Tara P. Pitts, Esther A. Guzmán, Priscilla L. Winder, Peter J. McCarthy, and Amy E. Wright
 Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL
- Revealing Fine-scale Behavior of Bull Sharks in the Indian River Lagoon**
 Lauran R. Brewster, Michael P. McCallister, and Matthew J. Ajemian
 Harbor Branch Oceanographic Institute at Florida Atlantic University, Fort Pierce, FL

Restoring Lagoon Inflow Update: Numerical Model Tests of Indian River Lagoon Anthropogenic Inflow Scenarios

Gary A. Zarillo

Florida Institute of Technology, Melbourne, FL

Restore Lagoon Inflow Research: Biogeochemical Responses to Ocean Inflow, Would Inflow Promote Lower Concentrations of Nitrogen and Phosphorus in the IRL?

Austin L. Fox, Abbey Gering, Iulia Bibire, Tyler Provoncha, and Stacey Fox

Florida Institute of Technology, Melbourne, FL

Restore Lagoon Inflow Research: IRL Benthic Communities (STUDENT PRESENTATION)

Sean Crowley and Kevin B. Johnson

Florida Institute of Technology, Melbourne, FL

Restore Lagoon Inflow Research: Abiotic Determinants of IRL Fish Community Structure

Jesse Blanchard¹, Ralph Turingan², and Austin Anderson²

¹FISH Consulting LLC, Melbourne FL; ²Florida Institute of Technology, Melbourne, FL

Restore Lagoon Inflow Research: eDNA-Based Biodiversity Assessment

Jeff Eble¹, Kyle Heffner¹, Girish Kumar², and Michelle Gaither²

¹Florida Institute of Technology, Melbourne, FL; ²University of Central Florida, Orlando, FL

1250 – 1300 Closing Comments

Special IRLS 2021 Event and Student Awards

1530 – 1700 IRL Trivia Challenge

Student Awards (Best Student Presentations and People's Choice)

Notes on 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 E-Poster

In the following poll, please select the presentations that you thought were most deserving of this recognition: <https://www.crowd.live/IRLS2021>. Polls will close Friday at 1400.

Remembrance

Roger Leroy Creswell
October 11, 1950 – October 27, 2020



This past October, Leroy Creswell passed away after a long battle with cancer. Leroy was a beloved, long standing, and well-respected member of the IRL science community, whose reach and influence extended throughout Florida, nationally, and internationally.

Leroy earned a Bachelor's Degree in Biology at Frostburg State University in Maryland and a Master's Degree in Marine Biology and Oceanography from the University of Miami Rosenstiel School of Marine and Atmospheric Science. He also worked for the Belize Department of Fisheries conducting stock assessments of queen conch, thus initiating life-long professional endeavors in shellfish aquaculture and Gulf of Mexico and Caribbean fisheries.

After his Master's, Leroy became the Director of Tropical Aquaculture at Harbor Branch Oceanographic Institution working with Dr. John Ryther and developing culture techniques for a variety of molluscan and crustacean species. He directed USAID projects to develop aquaculture in the Caribbean. He helped establish conch hatcheries in Belize and the Turks and Caicos, again examples of his influence in Florida and the Caribbean.

Leroy worked for Florida Sea Grant, first as a St. Lucie County Extension Agent from 2000-2011, and then as a Regional Extension Program Manager until his retirement in 2019. Already recognized as a leader in aquaculture, he continued to contribute to the field, publishing numerous articles on candidate species for aquaculture and helping create a curriculum for teaching aquaculture in schools, as well as other efforts to educate the public in water quality, oyster, and shoreline restoration and invasive species such as lionfish.

Leroy was an active leader in the scientific community, serving as a past President of the National Shellfish Association and the World Aquaculture Society and as the Executive Secretary and proceedings editor for the Gulf and Caribbean Fisheries Institute, all organizations that benefited from his incredible work ethic, cheerful attitude, and (sometimes quirky) sense of humor. Whatever hat he was wearing, Leroy was a great resource, ready to share his wealth of knowledge, often accompanied by a humorous story or anecdote. Leroy was well known for being welcoming, encouraging, and inclusive to new people in these organizations, especially to students. He was also a great musician and lover of dogs.

Leroy was an advocate for research and education on the Indian River Lagoon, always in a very inclusive way. He brought his strong sense of collaboration to the IRLS Steering Committee, becoming a member in 2016. In particular, Leroy embraced the student awards at the annual symposium, serving as one of the judging coordinators and always encouraging the students. Each year, quietly behind the scenes, he provided the certificates, frames for the awards, and donating to their prize money.

In recognition of Leroy and his many contributions to the IRL research community, the 2021 Steering Committee has designated that the IRLS student poster awards will now be "The Leroy Creswell Best Student Presentation Awards" in his honor.

Contributed by Vincent Encomio