

## Javier A. Rodríguez-Casariago

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### EDUCATION

PhD in Biology (expected graduation: Fall 2020)

Department of Biological Science, Florida International University.

Major Professor: Dr. Jose M. Eirin-Lopez

Master of Science in Marine Biology and Aquaculture with major in Marine Biology (2012)

University of Havana, Cuba (highest honors)

Thesis Advisor: Dr. Erick Perera Bravet

Bachelor of Science in Biology with major in Marine Biology (2008)

University of Havana, Cuba (highest honors)

Thesis Advisors: Dr. Ariel Ruiz Urquiola; Dr. Maria Elena Ibarra Martín

### RESEARCH & PROFESSIONAL EXPERIENCE

#### Graduate Assistant (August 2016 - current)

Department of Biological Science, NSF-CREST Center for Aquatic Chemistry and the Environment (Fellow), Florida International University

(Supervised by Dr. Jose M. Eirin-Lopez)

**Main research topic:** Environmental epigenetics. Genetic and epigenetic mechanisms mediating response to environmental stressors in marine organisms.

#### Sr. Laboratory Technician (March 2014 – August 2016)

Ecotoxicology and Risk Assessment Laboratory, Southeast Environmental Research Center, Florida International University.

(Supervised by Dr. Gary Rand)

**Work description:** Perform toxicity testing in fresh and salt water organisms according to NELAC certification standards. Execute laboratory management duties that include: lab systems design, construction and maintenance; organism husbandry and culture maintenance; and undergraduate student supervision. Research focused on the Sub-lethal toxic effect of Deep Water Horizon's oil exposure on native and reference saltwater fish (Cardiac affects and Swimming performance variations).

#### Research Scientist/Teaching Graduate Instructor (September 2008 - July 2012)

Center for Marine Research, University of Havana, Cuba

(Supervised by Dr. Erick Perera Bravet)

**Main research topic:** Physiology of Spiny Lobster digestive system, Biochemistry, Molecular Biology, Enzyme purification and characterization.

## PUBLICATIONS

**Javier Rodríguez-Casariégo**, Mark Ladd, Andrew Shantz, Christian Lopez, Manjinder S. Cheema, Cindy Bohyun Kim, Steven Roberts, James Fourqurean, Juan Ausio, Deron Burkepile, Jose Eirin-Lopez (2018) Coral epigenetic responses to nutrient stress: Histone H2A.X phosphorylation dynamics and DNA methylation in the staghorn coral *Acropora cervicornis*. *Ecology and evolution* 8 (23), 12193-12207.

Beal, A., **Rodríguez-Casariégo, J.**, Rivera-Casas, C., Suarez-Ulloa, V., & Eirin-Lopez, J. M. (2018). in *Population Genomics: Marine Organisms*, M. Oleksiak and O. Rajora, ed. Springer Nature.

Abraham J. Smith, **Rodríguez-Casariégo, J.**, Gary M. Rand (2018) Sublethal effects of Deepwater Horizon oil on the swimming performance of the Sheepshead minnow (*Cyprinodon variegatus*) and Florida pompano (*Trachinotus carolinus*). *Canadian Journal of Fisheries and Aquatic Sciences* (under review).

Rodrigo Gonzalez-Romero, Suarez-Ulloa V., **Rodríguez-Casariégo, J.**, Daniel Garcia-Souto, Gabriel Diaz, Abraham Smith, Juan Jose Pasantes, Gary Rand, Jose M. Eirin-Lopez (2017) Effects of Florida Red Tides on histone variant expression and DNA methylation in the Eastern oyster *Crassostrea virginica*. *Aquatic Toxicology* 186: 196–204

Rodríguez-Viera, L, **Rodríguez-Casariégo, J.**, Pérez-García, J A, Olivera Espinosa, Y M, Perera-Pérez, O (2012) Invertebrados marinos de la zona central del golfo de Ana María, Cuba. *Rev. Invest. Mar.* 32(2),

Perera E, **J Rodríguez-Casariégo**, L Rodríguez-Viera, J Calero, R Perdomo-Morales, J M Mancera (2012). Lobster (*Panulirus argus*) hepatopancreatic trypsin isoforms and their digestion efficiency. *Biol. Bull.* 222(2): 158-70.

**Rodríguez-Casariégo J.**, E Perera, Perdomo- Morales R (2012). Purificación de isoformas de proteasas tipo tripsina de crustáceos (Review). *Rev. Invest. Mar.* 32(1): 1-8.

Perera E, L Rodríguez-Viera, **J Rodríguez-Casariégo**, I Fraga, O Carrillo, G Martínez-Rodríguez, JM Mancera (2011). Dietary protein quality differentially regulates trypsin enzymes at the secretion and transcription level in *Panulirus argus* by distinct signaling pathways. *Journal of Experimental Biology*; 215 (Pt 5):853-62.

## THESIS, REPORTS and PRESENTATIONS

**Javier Rodríguez-Casariégo**, Mark Ladd, Andrew Shantz, Christian Lopez, Manjinder S. Cheema, Bohyun Kim, Steven Roberts, James Fourqurean, Juan Ausio, Deron Burkepile, Jose Eirin-Lopez (2018) Nutrient loading hinders mechanisms involved in the epigenetic maintenance of genome integrity in the stony coral *Acropora cervicornis*. 9th International Symbiosis Society Congress, Corvallis OR (Oral presentation)

**Rodríguez-Casariégo J.**, S. Campbell, M. Ladd, A. Shantz, S. Roberts, D. Burkepile, J. Eirin-Lopez (2017) Nutrient loading hinders mechanisms involved in the epigenetic maintenance of genome integrity in the stony coral *Acropora cervicornis*. 38<sup>th</sup> AMLC Scientific Meeting. Merida Mexico. (Oral presentation)

Eirin-Lopez J. and **J. Rodríguez-Casariago** (2017) Coral responses to global change: an epigenetic perspective. Coral Reef Conservation Program (CRCP) Learning Exchange. (Oral presentation)

**Rodríguez-Casariago J**, S. Campbell, M. Ladd, A. Shantz, S. Roberts, D. Burkepile, J. Eirin-Lopez (2016) Preliminary analysis of the epigenetic mechanisms underlying acclimatory responses to nutrient pollution in stony corals. SETAC North America 37th Annual Meeting/7th SETAC World Congress. (Poster).

R. Gonzalez-Romero, V. Suarez-Ulloa, **J.A. Rodríguez-Casariago**, D. Garcia-Souto, G. Diaz, A. Smith, J. Pasantes, G. Rand and J. Eirin-Lopez (2016) Epigenetic mechanisms mediating responses to Florida Red Tides in the Eastern oyster *Crassostrea virginica*. SETAC North America 37th Annual Meeting/7th SETAC World Congress.

Florida International University, Southeast Environmental Research Center, Ecotoxicology and Risk Assessment Laboratory (2014) Fish Swimming Performance and Cardiac Testing Program: FIU 2014 (Data Summary Report No. 205F2) Deepwater Horizon Aquatic Toxicity Testing Program.

**Rodríguez-Casariago J** (2012). Spiny lobster *Panulirus argus* (Latreille, 1804) hepatopancreatic trypsin isoforms characterization. Master Thesis, University of Havana, Marine Research Center Library, Cuba 43 pp.

**Rodríguez-Casariago J** (2008). Biological characterization of the sea turtles fishery stock in the legal capture zones located on Jardines del Rey Archipelago, Cuba. Bachelor Thesis, University of Havana, Marine Research Center Library, Cuba 55 pp.

**Rodríguez-Casariago J**, I Lee-González, J L Fals-Sifontes, M Camps, E Pérez-Bermúdez and A Ruiz-Urquiola (2008). Seasonal fluctuation of the frequency of appearance of sea turtles (*Caretta caretta*, *Chelonia mydas* y *Eretmochelys imbricata*) in the commercial catch of D Zone (Jardines del Rey, Cuba). VIII Latin-American congress of Herpetology, Varadero, Cuba. (Oral presentation)

**Rodríguez-Casariago J**, I Lee-González, J L Fals-Sifontes, M Camps, E Pérez-Bermúdez and A Ruiz-Urquiola (2008). All sea turtles species can be consider as a single resource? Oral presentation. VIII Latin-American congress of Herpetology, Varadero, Cuba.

## TEACHING EXPERIENCE

### Teaching Assistant (Summer 2016)

Florida International University

- Courses taught: General Biology Lab II

### Graduate Instructor (September 2008-July 2012)

Faculty of Biology/University of Havana, Cuba

- Courses taught: Vertebrates Zoology (Labs), Invertebrate Taxonomy Field Trip.

## LANGUAGES

Excellent communication and writing skills in both Spanish and English languages.

## RELEVANT CERTIFICATIONS AND OTHER SKILLS

- Trained in the use of **Good Laboratory Practices and NELAC standards** for aquatic toxicology.
- **Biochemistry and Molecular biology:** I have excellent skills in buffer preparation, protein purification (Low Pressure, FPLC and HPLC), Electrophoresis, Enzyme kinetics analysis, PCR and qPCR, Western Blot, ELISA and experimental design.
- **Work with animals:** I worked directly with animals for the last 9 years. I have experience in capture, tagging, health assessment, blood and other fluid extraction, dissection and organs extraction, husbandry, and aquatic culture set up and maintenance. IACUC Animal Care Training completed at FIU.
- **Ecotoxicology and animal toxicity:** I have experience performing acute and chronic toxicity tests in reference aquatic organisms (e.g. *Hyalella azteca*, *Chironomus dilutus*, *Eohaustorius estuarinus*, *Cyprinodon variegatus*, *Menidia menidia*, *Daphnia magna*) and Gulf of Mexico native species (e.g. Cobia, Florida Pompano). I become skilled in design and execution of experiments using reference toxicants and oil materials including Oil Water Accommodated Fractions preparation.
- **Computation skills:** Experience with automated sampling and analytical chemistry equipment as well as with the controlling software. Skilled in bioinformatic analysis of RNA-seq. and genomic Data.
- **Statistical knowledge:** Experience managing and editing large databases/datasets. Knowledge of statistical and graphic processing software (STATISTICA, PRIMER, PlotDigitizer, Origin, GraphPad Prism and R)
- **Diving:** CMAS Diver (3 stars) (Dive Master Equivalent) (September 2010) - More than 300 dives. Scientific Diver AAUS certified through FIU program (June 2017). I also have certifications in CPR, oxygen administration and Adult First Aid.
- Experienced operating small vessels (under 35 feet). Florida Fish and Wildlife Conservation Commission's Safe Boating Course completed.
- Experienced and detail oriented in **underwater field sampling**, fisheries surveys, fishing/tagging techniques, data collection and data entry
- Knowledge of the ecology and systematics of South Florida and Caribbean species, invertebrates, fishes, sea turtles, marine mammals and marine vegetation.
- **Geographical Information Systems knowledge:** Experience with GPS functioning, digital charts and basic knowledge of GIS software (ArcView, MapInfo).
- Skilled in operating and configuring **UAV remote sensing and sampling**.
- **Highly motivated** with demonstrated initiative in planning, organizing, and coordinating the execution of research, monitoring, and training programs.

- **Capacity to work without supervision**, to solve problems in situ, to determine work priorities, and guarantee on time completion of work assignments.

#### **OTHER COURSES AND TRAINING**

- Coral Reef Ecology: Reef Response to Environmental Change. BIOS Bermuda (2018) Instructors: Dr. Gretchen Goodbody-Gringley (BIOS) and Dr. Hollie Putnam (URI).
- National Program for Monitoring Sea Turtle Nesting Populations in Guanahacabibes Biosphere Reserve. Marine Research Center, University of Havana. (Volunteer, 2003; 2004; 2005; 2007; 2009; 2011).
- Manatee Necropsy and Marine Stranding Techniques. Marine Research Center, University of Havana, Cuba/ Florida Fish and Wildlife Conservation Commission/ Wildlife Trust (January 2005).
- BIOLOGY 4373, Tropical Marine Biology. Marine Research Center, University of Havana/Canadian Rivers Institute, University of New Brunswick (2007)
- Take part as teaching staff on the Wallacea Operation in Guanahacabibes Biosphere Reserve. Taught sea turtles ecology and management (July 2008)
- Manatee capture, health assessment and tagging. Isla de la Juventud, Cuba. Marine Research Center, University of Havana/ Sea to Shore Alliance (Researcher, 2009)
- Noldus systems operational training (Behavioral monitoring with EthoVision). Scripts Center, Jupiter FL

#### **REFERENCES**

##### **Dr. Jose Eirin-Lopez, PhD**

Assistant Professor, Department of Biological Sciences – Marine Sciences Program. Florida International University.

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##### **Dr. Raul Cruz Izquierdo, PhD.**

Professor and Titular Research Scientist, Marine Research Center, University of Havana, Cuba  
Research Scientist & Associate Professor, Federal University of Ceará, Fortaleza, Brazil

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