

Javier A. Rodriguez-Casariago

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SUMMARY

I'm a marine biologist with a strong formation in physiology, biochemistry and molecular biology, but also an extensive field ecology and experimental biology experience.

EDUCATION

PhD. in Biology, Florida International University, USA 2016 - 2021

Master of Science in Marine Biology, University of Havana, Cuba 2008 - 2012

Bachelor of Science, Biology major, University of Havana, Cuba 2003 - 2008

WORK

EXPERIENCE

09/2021 - 08/2023

NSF-CREST Postdoctoral Fellow, Puerto Rico Center for Environmental Neurobiology (University of Puerto Rico), Center for Aquatic Chemistry and the Environment (Florida International University), Rosenstiel School of Marine and Atmospheric Science (University of Miami).

Main research topic:

- Behavioral, neurophysiology and molecular plasticity of opisthobranch mollusks in response to hypoxia. Acclimatization and preconditioning.

08/2016 - 8/2021

Graduate Assistant, Department of Biological Sciences, Florida International University. USA.

Main research topic:

- Environmental epigenetics. Genetic and epigenetic mechanisms mediating response to environmental stressors in marine organisms.

03/2014 - 08/2016

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

Responsibilities:

- 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.
- Develop 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).

09/2008 - 02/2012

Junior Research Scientist/Teaching Graduate Instructor, Center for Marine Research, University of Havana, Cuba

Responsibilities:

- Develop research on the digestive physiology of spiny lobsters utilizing Biochemistry and Molecular Biology techniques.
 - Teaching undergraduate education.
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PUBLICATIONS

Rodríguez-Casariego J. A., R. Cunning, A. C. Baker, J. M. Eirin-Lopez, Symbiont shuffling induces differential DNA methylation responses to thermal stress in the coral *Montastraea cavernosa*. *Molecular Ecology*, 00, 1-15 doi: 10.1111/mec.16246

Lugo Charriez K., L. Soledade Lemos, Y. Carrazana, **JA. Rodríguez-Casariego**, JM. Eirin-Lopez, RA. Hauser-Davis, P. Gardinali, N. Soares Quinete (2021) Application of an improved chloroform-free lipid extraction method to staghorn coral (*Acropora cervicornis*) lipidomics assessments. *Bull Environ Contam Toxicol*. doi: 10.1007/s00128-020-03078-3. Epub ahead of print. PMID: 33392686.

Rodríguez-Casariego JA, AE Mercado-Molina, D Garcia-Souto, I Ortiz, C Lopes, IB Baums, AM Sabat and JM Eirin-Lopez (2020). Genome-wide DNA methylation analysis reveals a conserved epigenetic response to seasonal environmental variation in the staghorn coral *Acropora cervicornis*. *Front. Mar. Sci.* 7: 822. doi: 10.3389/fmars.2020.560424.

Rodríguez-Casariego JA, M Ladd, A Shantz, C Lopez, MS Cheema, CB Kim, S Roberts, JW Fourqurean, J Ausio, D Burkepile, JM 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-Casariego, 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.

Rodrigo Gonzalez-Romero, Suarez-Ulloa V., **Rodríguez-Casariego, 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-Casariego, 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, **Rodríguez-Casariego J**, 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-Casariego 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-Casariego**, 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 & PRESENTATIONS

Javier A. Rodríguez-Casariego, Alex Mercado-Molina, Daniel Garcia-Souto, Iliana Baums, Alberto Sabat and Jose Eirin-Lopez (2020) Epigenetic and demographic responses of stony corals to hurricanes Irma and Maria in Puerto Rico. HurriCon: Science at the Intersection of Hurricanes and the Populated Coast, Greenville, NC. (Oral Presentation)

Javier A. Rodríguez-Casariago, Ivanna Ortiz, Alex Mercado-Molina, Daniel Garcia-Souto, Alberto Sabat, Iliana Baums, Jose Eirin-Lopez (2020). Seasonal variation on DNA methylation patterns in the staghorn coral *Acropora cervicornis* in Culebra Island, PR. Ocean Science Meeting 2020, San Diego, CA. (Poster)

Javier Rodríguez-Casariago, Alex Mercado-Molina, Iliana Baums, Alberto Sabat and Jose Eirin-Lopez (2019) Non-genetic mechanisms of coral response to global change: preliminary epigenetic analyses in corals impacted by hurricanes Irma and Maria in Puerto Rico. ASLO 2019 Aquatic Sciences Meeting, San Juan, PR (Oral presentation)

Javier Rodríguez-Casariago, 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)

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

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

Rodríguez-Casariago JA (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.

Javier A. Rodríguez-Casariago, 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)

Javier A. Rodríguez-Casariago, 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? VIII Latin-American congress of Herpetology, Varadero, Cuba. (Oral presentation)

**COMMUNITY
WORK &
OUTREACH**

Presenter at the **Broward Youth Climate Summit** (2020)

Lecturer in the **OSHER Continuing Learning** group at FIU. Continued education for elderly (2019)

Presenter at **Science Nights** at Cooper City Elementary School (2018)

Heat/Miccosukee Tribe **Glades Sweep** (2017)

Community training in **Manatee capture, health assessment and tagging**. Isla de la Juventud, Cuba. Marine Research Center, University of Havana/ Sea to Shore Alliance (Researcher, 2009)

Teaching staff on the **Wallacea Operation** in Guanahacabibes Biosphere Reserve, Cuba (2008)

Organized and participated in the **Endemic Birds Festival** focused in elementary school environmental education. University of Havana, Cuba (2005-2010)

National Program for Monitoring Sea Turtle Nesting Populations in Guanahacabibes Biosphere Reserve. With outreach activities with local communities. University of Havana. (Volunteer, 2003; 2004; 2005; 2007; 2009; 2011)