

# RYAN J. ECKERT

Coral reef ecology, mesophotic coral ecosystems, molecular ecology



Ph.D. student specializing in coral reef ecology, mesophotic coral ecosystems, molecular ecology, and multivariate data analysis.

## EDUCATION

- 2019  
|  
expected  
2024

**Ph.D. Student in Integrative Biology**  
Florida Atlantic University  
Advisor: Dr. Joshua Voss

Boca Raton, FL
- 2017  
|  
2019

**M.Sc. in Biological Sciences**  
Florida Atlantic University  
Thesis: Population genetics and algal symbiont communities of the coral species *Montastraea cavernosa* on the Belize Barrier Reef  
Advisor: Dr. Joshua Voss

Boca Raton, FL
- 2005  
|  
2009

**B.Sc. in Biological Sciences**  
Florida State University  
Thesis: Associational resistance and susceptibility in *Solanum carolinense*

Tallahassee, FL

## RESEARCH EXPERIENCE

- 2017  
|  
present

**Graduate Research Assistant**  
FAU, Harbor Branch Oceanographic Institute  
Voss Laboratory

Ft. Pierce, FL
- 2009  
|  
2017

**Research Specialist**  
NOAA's Flower Garden Banks NMS  
Science Division

Galveston, TX
- 2007  
|  
2009

**Research Assistant**  
Florida State University  
Underwood Laboratory

Tallahassee, FL

## TEACHING EXPERIENCE

- 2017

**Graduate Teaching Assistant**  
FAU Harbor Branch Oceanographic Institute  
Marine Biodiversity

Ft. Pierce, FL
- 2013  
|  
2014

**Guest Lecturer**  
Texas A&M University at Galveston  
Scientific Diving Field Survey Methods

Galveston, TX
- 2010

**Instructor**  
Galveston Independent School District  
21<sup>st</sup> Century ACE

Galveston, TX

## CONTACT INFO

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- +1 (772) 224-2396
- [ryan.j.eckert@gmail.com](mailto:ryan.j.eckert@gmail.com)
- [Ryan J Eckert](#)
- [RyanEckert](#)
- [CnidaRyan](#)

## SKILLS

- Coral reef ecology
- Technical SCUBA diving
- 750+ Scientific Dives
- 350+ Days at Sea
- 90+ research expeditions
- Multivariate data analysis
- NGS Library prep
- Bioinformatic analysis
- Github, Bash, R, Python



## STUDENTS MENTORED

2018



**Emily Chei**

**Link fellowship intern**

Assessing population connectivity of the coral *Montastraea cavernosa* along the northern Florida Reef Tract  
Currently a student at Cornell University

2017



**Ashley Reaume**

**Link fellowship intern**

Optimized extraction and amplification of algal symbiont DNA from TRIzol preserved corals  
Currently a graduate student at University of Central Florida



## REFEREED PUBLICATIONS

2019



**8. Populations of the coral species *Montastraea cavernosa* on the Belize Barrier Reef lack vertical connectivity**

*Sci Rep* (2019). doi:10.1038/s41598-019-43479-x

**Eckert RJ**, Studivan MS, Voss JD

2019



**7. The Mesoamerican Reef**

In: Loya Y., Puglise K.A., Bridge T.C.L. (eds) *Mesophotic Coral Ecosystems of the World*. Springer International Publishing, Cham, pp 71–84.

doi:10.1007/978-3-319-92735-0\_5

Gress E, Voss JD, **Eckert RJ**, Rowlands G, Andradi-Brown DA

2019



**6. Coral bleaching and recovery from 2016 to 2017 at East and West Flower Garden Banks, Gulf of Mexico**

*Coral Reefs* (2019). doi:10.1007/s00338-019-01788-7

Johnston MA, Hickerson EL, Nuttall MF, Blakeway RD, Sterne TK, **Eckert RJ**, Schmahl GP

2019



**5. Localized coral reef mortality event at East Flower Garden Bank, Gulf of Mexico**

*Bull Mar Sci* (2019). doi:10.5343/bms.2018.0057

Johnston MA, Nuttall MF, **Eckert RJ**, Blakeway RD, Sterne TK, Hickerson EL, Schmahl GP, Lee MT, MacMillan J, Embesi JA

2018



**4. Seasonal variability of carbonate chemistry and decadal changes in waters of a marine sanctuary in the Northwestern Gulf of Mexico**

*Mar Chem* (2018). doi:10.1016/j.marchem.2018.07.006

Hu X, Nuttall MF, Wang H, Yao H, Saryk CJ, McCutcheon MR, **Eckert RJ**, Embesi JA, Johnston MA, Hickerson EL, Schmahl GP, Manzello D, Enochs IC, DiMarco S, Barbero L

2016



**3. Persistence of coral assemblages at East and West Flower Garden Banks, Gulf of Mexico**

*Coral Reefs* (2016). doi:10.1007/s00338-016-1452-x

Johnston MA, Embesi JA, **Eckert RJ**, Nuttall MF, Hickerson EL, Schmahl GP

**Citations: 88**

**h-index: 5**

**i10-index: 2**

2016

● **2. Rapid invasion of Indo-Pacific lionfishes *Pterois volitans* (Linnaeus, 1758) and *P. miles* (Bennett, 1828) in Flower Garden Banks National Marine Sanctuary, Gulf of Mexico, documented in multiple data sets**

*BioInvasions Rec* (2016). [doi:10.3391/bir.2016.5.2.09](https://doi.org/10.3391/bir.2016.5.2.09)

Johnston MA, Nuttall MF, **Eckert RJ**, Embesi JA, Sterne TK, Hickerson EL, Schmahl GP

2014

● **1. Lionfish (*Pterois volitans* [Linnaeus, 1758] and *P. miles* [Bennett, 1828]) records within mesophotic depth ranges on natural banks in the Northwestern Gulf of Mexico**

*BioInvasions Rec* (2014). [doi:10.3391/bir.2014.3.2.09](https://doi.org/10.3391/bir.2014.3.2.09)

Nuttall MF, Johnston MA, **Eckert RJ**, Embesi JA, Hickerson EL, Schmahl GP



## MANUSCRIPTS IN PREPARATION

● **Population structure of the scleractinian coral, *Montastraea cavernosa*, in the Northern Florida Reef Tract**

*Bull Mar Sci* (in revision).

Dodge DL, Chei E, Beal J, **Eckert RJ**, Voss JD

● **Symbiodiniaceae community variation among *Montastraea cavernosa* populations along a depth gradient on the Belize Barrier Reef**

*Front Microbiol* (in prep).

**Eckert RJ**, Reaume A, Sturm AB, Studivan MS, Voss JD



## PRESENTATIONS

2019

● **Genetically distinct depth-stratified *Montastraea cavernosa* coral populations on the Belize Barrier Reef harbor relatively homogenous Symbiodiniaceae communities**

48th Annual Benthic Ecology Meeting

📍 St. John's, NL, Canada

**Eckert RJ**, Reaume A, Voss JD

**Oral presentation**

2019

● **Populations of the coral species *Montastraea cavernosa* lack vertical connectivity on the Belize Barrier Reef**

ASLO Aquatic Sciences Meeting

📍 San Juan, PR.

**Eckert RJ**, Studivan MS, Voss JD

**Poster presentation**

2018

● **Affordable and ecologically relevant graduate research on the world's second largest barrier reef? You better Belize it!**

HBOI Science Seminar

📍 Ft. Pierce, FL.

**Eckert RJ** and Studivan MS

**Oral presentation**

- 2018

**Connected corals: population genetics of *Montastraea cavernosa* on the Belize Barrier Reef**

HBOI Ocean Discovery Visitors Center Marine Science Fridays

Ft. Pierce, FL.

Eckert RJ

Oral presentation
- 2018

**Breaking point: population genetics reveal a lack of vertical connectivity of *Montastraea cavernosa* on the Belize Barrier Reef**

47th Annual Benthic Ecology Meeting

Corpus Christi, TX.

Eckert RJ, Studivan MS, Voss JD

Oral presentation
- 2013

**Ciguatera fish poisoning in the northwestern Gulf of Mexico.**

66th Gulf and Caribbean Fisheries Institute Conference

Corpus Christi, TX

Eckert RJ, Loeffler C, Robertson A, Johnston MA, Hickerson EL, Schmahl GP

Poster presentation
- 2009

**Associational resistance and susceptibility in *Solanum carolinense***

Southeastern Ecology and Evolution Conference

Gainesville, FL.

Eckert RJ, Kim T, Underwood N

Poster presentation

FUNDING

- 2019

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2021

**FAU Presidential Fellowship**

\$10,000
- 2018

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2019

**FAU GPSA Travel Awards**

\$1,600
- 2018

**FAU Thesis Award**

\$500
- 2018

**PADI Foundation Grant**

\$4,973
- 2009

**Bess H. Ward Honors Thesis Award**

\$1,000
- 2005

|

2009

**Florida Bright Futures Academic Scholarship**

\$14,850
- 2005

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2009

**Florida State University Freshman Academic Scholarship**

\$8,000
- 2005

**Florida State University Freshman Advanced Placement Scholarship**

\$500



## AWARDS

2019  
|  
2021  
  
2006  
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2009  
  
2005

- **Florida Atlantic University Presidential Fellow**
- **Florida State University Dean’s List**
- **Florida State University President’s List**



## CERTIFICATIONS

- **AAUS Scientific Diver**  
190’, Trimix
- **TDI Technical SCUBA Diver**  
Advanced Nitrox, Decompression Procedures, Trimix 200’
- **PADI Trimix Gas Blender**
- **DAN Oxygen delivery, First Aid, and CPR for scuba diving injuries**
- **USCG Licensed Merchant Mariner**  
100 GRT
- **USFWS Motorboat Operator Certification Course**
- **Sea-Bird Electronics technician**
- **NOAA Working SCUBA Diver**



## MEMBERSHIP AND SERVICE

2019  
  
  
2019  
  
2018

- **International Coral Reef Society**
- **HBOI Graduate Student Association**  
Secretary Ft. Pierce, FL
- **Association for the Studies of Limnology and Oceanography**



## SKILLS

- Offshore field research cruise planning, logistics, and execution
- Coral sampling, benthic surveys, fish surveys, photography, navigation and mapping
- DNA and RNA extraction, PCR, qPCR, Gel electrophoresis, NGS library preparation
- Data visualization, CPCe, Primer7, Python, Bash, and R statistical software
- Bioinformatic and multivariate statistical analyses
- Technical SCUBA diving
- Operation, navigation, and handling of small boats
- Marlinspike, and mooring buoy construction/installation/maintenance
- Setup, operation, and maintenance of oceanographic equipment (Sea-Bird Electronics)
- Operation of Nitrox compressor systems and Trimix blending
- Adobe InDesign, Adobe Illustrator, and Adobe Photoshop



## REFERENCES

- **Dr. Joshua Voss**  
Ph.D. Advisor  
+1 (772) 242-2538  
[jvoss2@fau.edu](mailto:jvoss2@fau.edu)  
📍 Florida Atlantic University
- **Dr. Adrienne Simoes-Correa**  
Assistant Professor  
+1 (713) 348-3054  
[ac53@rice.edu](mailto:ac53@rice.edu)  
📍 Rice University
- **G.P. Schmahl**  
Superintendent  
+1 (409) 621-5151  
[george.schmahl@noaa.gov](mailto:george.schmahl@noaa.gov)  
📍 Flower Garden Banks National Marine Sanctuary

*This curriculum vitae was made with the R package **pagedown**.*

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