



**RESEARCH GRANTS and CONTRACTS**

---

<b>2016- 2018</b>	<b>NOAA Coral Reef Conservation Program,</b> Identifying disease resistant and thermal tolerant threatened coral genotypes Co-PI: Dr. Steven Miller, Project Manager: Morgan Hightshoe	<b>\$50,356</b>
<b>2015-2018</b>	<b>National Science Foundation, \$1,091,594 total</b> <i>Collaborative Research: Hybridization, the key to threatened species survival or the harbinger of extinction?</i> Co-PI: Dr. Iliana Baums, Dr. Webb Miller	<b>\$391,917 (NSU)</b>
<b>2016-2017</b>	<b>Mote Marine Laboratory Protect Our Reef Grant</b> Can forming coral chimeras (colonies with multiple genotypes) be a novel restoration method used with microfragmenting techniques? Project Manager: Ashley Dungan	<b>\$5,000</b>
<b>2016</b>	<b>Florida Department of Environmental Protection, \$25,000 total</b> Comprehensive Conditions Assessment, Co-PI: Dr. Esther Peters	<b>\$12,500 (NSU)</b>
<b>2016</b>	<b>The Nature Conservancy</b> Contract: <i>Acropora cervicornis</i> genotyping	<b>\$12,000</b>
<b>2015-2016</b>	<b>Mote Marine Laboratory Protect Our Reef Grant</b> <i>Multigenerational investigation of Diadema antillarum under ocean acidification conditions.</i> Co-PI: Emily Hall; Research Assistant: Ashley Dungan	<b>\$9,886</b>
<b>2015-2016</b>	<b>NSU President's Faculty Research &amp; Development Grant</b> <i>Do hybrids of threatened corals survive better in a warming ocean?</i> Collaborators: Cliff Ross, Ester Peters, Graduate assistant: Margaret Rushmore	<b>\$14,985.90</b>
<b>2014-2017</b>	<b>NOAA Coral Reef Conservation Program, \$319,389 total</b> <i>Investigating how coral recruitment and juvenile survivorship varies along the Florida Reef Tract.</i> Co-PIs: Rob Ruzicka, Danny Gleason; Graduate Assistant: Leah Harper	<b>\$106,224 (NSU)</b>
<b>2014-2015</b>	<b>Mote Marine Laboratory Protect Our Reef Grant</b> <i>Quantifying the effect of ocean acidification on microcalcification among coral life history stages.</i> Graduate Assistant: Ashley Dungan	<b>\$9,926</b>
<b>2014-2016</b>	<b>NSU President's Faculty Research &amp; Development Grant</b> <i>How does colony size and density influence paternity in a brooding coral?</i> Graduate Assistant: Alicia Vollmer	<b>\$9,985</b>
<b>2014- 2016</b>	<b>NSU President's Faculty Research &amp; Development Grant</b> <i>Reproductive Behavior of Nursery Reared Staghorn Coral: Documenting Outplant Success</i> Co-PI: Dave Gilliam; Graduate Assistant: Katie Correia	<b>\$10,000</b>
<b>2014-2015</b>	<b>NOAA Coral Reef Conservation Program</b> <i>MESOPHOTIC REEFS: The Future of Shallow Reefs May Lie Deeper than Expected</i> Graduate assistant: Alicia Vollmer	<b>\$34,548</b>
<b>2013-2016</b>	<b>Florida State Wildlife Grant</b> <i>Population structure of Montastraea annularis and M. franksi and their associated zooxanthellae endosymbionts throughout the Florida reef tract</i> Co-PIs: Joe Jopez, Don Levitan	<b>\$72,500</b>

<b>2013-2015</b>	<b>NSU President's Faculty Research &amp; Development Grant</b> <i>Effects of sex steroids on coral reproduction and growth</i>	<b>\$9,985</b> Graduate assistant: Josh Stocker
<b>2013-2015</b>	<b>NSU President's Faculty Research &amp; Development Grant</b> <i>The effects of petroleum pollutants on sea urchin reproduction and development</i>	<b>\$8,168</b> Graduate assistant: Kellie Pelikan
<b>2011-2013</b>	<b>Smithsonian Walcott Endowment</b> <i>Carrie Bow Belize Caribbean acroporid coral demographic project.</i>	<b>\$21,500</b> Co-PI Dr. Valerie Paul
<b>2007-2009</b>	<b>National Geographic Society #8230-07</b> <i>The significance of hybridization in a threatened Caribbean coral genus, <i>Acropora</i></i>	<b>\$20,000</b> Co-PI: Dr. Don Levitan

**PUBLICATIONS (ORCID # 0000-0003-3811-3791) H-index = 9**

---

Devlin-Durante, M.K., M.W. Miller, Caribbean Acropora Research Group (L. Carne, T.B. Smith, A. T. Banaszak, L. Greer, Adele Irwin, **N.D. Fogarty**), W.F. Precht, I.B. Baums. (2016). How old are you? Age estimates in a clonal animal. *Molecular Ecology* (online Sept. 26)

GIGA community scientists 2014. Global Invertebrate Genomics Alliance (GIGA): Developing Community Resources to Study Diverse Invertebrate Genomes; *Journal of Heredity*: 105(1):1-18.

Kirk, N.L., R. Ritson-Williams, M.A. Coffroth, M.W. Miller, **N.D. Fogarty**, S.R. Santos. 2013. Tracking Transmission of Apicomplexan Symbionts in Diverse Caribbean Corals. *PLoS ONE*. 8(11): e80618.doi:10.1371/journal.pone.0080618

**Fogarty, N.D.**, M. Lowenberg, M.N. Ojima, and N. Knowlton, D.R. Levitan. 2012. Asymmetric conspecific sperm precedence in relation to spawning times in the *Montastraea annularis* species complex (Cnidaria: Scleractinia). *The Journal of Evolutionary Biology* 25: 2481-2488.

**Fogarty, N.D.** Caribbean acroporid hybrids are viable across life history stages. 2012. Caribbean acroporid coral hybrids are viable across life history stages. *Marine Ecology Progress Series*, 446: 145-159.

Jeffery, C.F.G., S.D. Hile, C.M. Addison, J. Ault, C. Currin, D. Field, **N.D. Fogarty**, J. Luo, V. McDonough, D. Morrison, G.A. Piniak, V. Ransibrahmanakul, S.G. Smith, S. Viehman. 2012. Assessment of natural resource condition in and adjacent to the Dry Tortugas National Park. *Natural Resource Report NPS/DRTO/NRR*: 1-178.

**Fogarty, N.D.**, S.V. Vollmer, D.R. Levitan. 2011. Weak prezygotic isolating mechanisms in threatened Caribbean *Acropora* species. *PLoS ONE* 7(2): e30486.doi:10.1371/journal.pone.0030486

Levitan, D.R., **N.D. Fogarty**, J. Jara, Kathleen Lotterhos, and N. Knowlton. 2011. Genetic, spatial and temporal components to precise spawning synchrony in reef building corals of the *Montastraea annularis* species complex. *Evolution* 65 (5): 1254-1270

**Fogarty, N.D.** 2010. Reproductive isolation and hybridization dynamics in threatened Caribbean acroporid corals. [dissertation] Florida State University, Tallahassee, Florida.

- Greg Piniak, Shay Viehman, Christine Addison and **Nicole Fogarty**. 2011. Characterization of Benthic Communities. pp 31-42. In: C.F.G. Jeffrey, V.R. Leeworthy, M.E., Monaco, G. Piniak, M. Fonseca (eds.). 2010. An Integrated Biogeographic Assessment of Reef Fish Populations and Fisheries in Dry Tortugas: Effects of No-take Reserves. NOAA Technical Memorandum NOS NCCOS 111. Prepared by the NCCOS Center for Coastal Monitoring and Assessment Biogeography Branch. Silver Spring, MD. 147 pp.
- Arnold, M.L., **N.D. Fogarty**. 2009. Reticulate Evolution and Marine Organisms: The Final Frontier? 2009. Int. J. Mol. Sci. 10(9): 3836-3860.
- Ritson-Williams, R., S. Arnold, **N.D. Fogarty**, R. Steneck, M. Vermeij and V. Paul. 2009. New perspectives on ecological mechanisms affecting coral recruitment on reefs. Smithsonian Contributions to Marine Science, 38:437-457.
- Levitan, D.R., C.P. terHorst, **N.D. Fogarty**. 2007. The risk of excess sperm in three congeneric sea urchins. Evolution. 61(8):2007-2014.
- Vermeij, M.J.A., **N.D. Fogarty**, M.W. Miller. 2006. Pre- and post-settlement dynamics of Caribbean coral planulae in a variable planktonic environment. Marine Ecology Progress Series 310:119-128.
- Piniak, G.A, **N.D. Fogarty**, C.M. Addison. 2005. Fluorescence census techniques for coral recruits. Coral Reefs 24(3): 496-500.
- Fogarty, N.D.** and M. Enstrom. 2002. Sea Stewards a volunteer ecological monitoring program. Pages 27-30 in US Department of Commerce. Sanctuary Monitoring Report 2000. Florida Keys National Marine Sanctuary, Marathon, Florida USA.
- Fogarty, N.D.**, B.D. Keller, and P.B. Dye. 2001. Effects of installing flow-through culverts on canal water quality and benthic communities at Jolly Roger Estates. Final Report. The Nature Conservancy, Key West, Florida.

**MANUSCRIPTS in REVIEW/ ADVANCED PREPARATION (drafts available upon request)**

---

- Dungan, A., Blackwelder, P., E. Hall, **N.D. Fogarty** (in revision). Ocean acidification alters the skeletal ultrastructure of a threatened Caribbean coral. Coral Reefs
- Dungan, A., Blackwelder, P., E. Hall, **N.D. Fogarty** (in revision) Future oceans lead to diminished calcification for the reef building Caribbean corals *Montastraea cavernosa* and *Dichocoenia stokes*.
- Rushmore, M., C. Ross, **N.D. Fogarty**. (submitting spring 2017) Short-term effects of sediments on physiology and survival of the *Montastraea cavernosa* and *Porites astreoides* corals. Marine Pollution Bulletin
- Noren, H.G. and **N.D. Fogarty** (submitting spring 2017). Twilight reefs may usher in a new dawn for depauperate, shallow reefs will submit to Coral reefs. PNAS submission by end of 2016
- Fogarty, N.D.**, Walker, B.K. Walker, D.R. Levitan. (submitting summer 2017) Using genotypic diversity to determine the frequency of hybridization in imperiled corals. Molecular Ecology

## **PUBLIC SEMINARS and EDUCATIONAL OUTREACH**

---

### Public lectures

- 2016 Dive-In Lecture Series at NSUOC, Dania Beach, FL
- 2016 Gumbo Limbo Nature Center Lecture Series, Boca Raton, FL
- 2015 Frost Museum Underwater Festival – Science Up Close Keynote speaker, Miami, FL
- 2014 Our Florida Reefs Community Working Group, NSUOC Dania Beach, FL
- 2014 Beneath the Waves Film Festival Scientific Panel, Miami, FL
- 2014 South Broward High School STEM workshops, Dania Beach, FL
- 2013 Nova Southeastern University’s Lifetime Learning Institute, Davie, FL
- 2012 Museum of Arts and Sciences, Daytona, FL COSEE event
- 2012 Smithsonian Marine Lecture at Pelican Yacht Club, Fort Pierce, FL

### Outreach/Community Service/ Media

- 2017 Caribbean Coral Restoration Webinar Series: Coral spawning and larval propagation
- 2017 Darwin Days, Spoke to high school students about my hybridization research
- 2016 Broward County High School lecture to marine biology students
- 2016 Changing Seas, “Speaking Sustainability” at the Deering Estates
- 2015 Coral reproduction workshop, University of the Virgin Islands
- 2014 Science Friday, Fused Staghorn Coral by Chau,  
<http://www.sciencefriday.com/blogs/09/22/2014/picture-of-the-week-fused-staghorn-coral.html?series=31>
- 2014 Hybrid Corals: Sex gone awry or saving grace? By Marah Hardt  
<http://blogs.scientificamerican.com/guest-blog/hybrid-corals-sex-gone-awry-or-saving-grace/>
- 2013 Changing Seas Series documentary “Coral Hybrids” highlighting my scientific research; produced by Miami public broadcast system WPBT  
<http://video.wpbt2.org/video/2365027764/>
- 2013 Mini-documentary on acroporid demographic project at Carrie Bow Caye, Belize
- 2012 Developed COSEE Flash (Florida Aquatic Science Heroes) Video for 7<sup>th</sup> Graders  
<http://www.youtube.com/watch?v=5clLIF9CYWk>
- 2010-2012 Mentored High School Student, Michael Kaiser, who presented his research at the Intel National Science Fair
- 2010-2012 Smithsonian Public Open House Volunteer
- 2009-2010 Science Fair Judge

## **TEACHING EXPERIENCE**

---

### Lead Instructor

- Fertilization Ecology (Grad course- NSU)
- Coral Reef Ecology (Grad course- NSU)
- Marine Speciation (Grad course- NSU)
- Professional Development (Grad course- NSU)
- Animal Diversity and Evolution (Ungrad non-majors- FSU)

### Teaching Assistant - Undergraduate Courses

- Animal Diversity (FSU)
- Introductory Biology Laboratory (FSU)
- Experimental Biology(FSU)

Comments from Graduate Course Evaluations

"I wish you taught every course! Lots of info, but concise, clear delivery."

"Loved this course, felt like a grad course with discussions."

"Dr. Fogarty is a great professor that shows care in the classes she teaches."

"Lectures were great! It's nice to be engaged with questions and discussion and not just talked at."

"Very well prepared and structure of class made learning in 4 weeks better."

"I very much enjoyed this course. It is what I expect as a graduate level course."

"This course was incredible. The debates were excellent. Don't change a thing!"

**PRIMARY ADVISOR TO GRADUATE STUDENT MASTERS PROJECTS**

---

**Current**

Kelly Habicht	<i>How will reef-building corals respond to thermal stress and ocean acidification during the earliest life history stages?</i>
Hannah Nylander-Asplin	<i>Quantifying shifts in acroporid community composition in the US Virgin Islands</i>
Morgan Hightshoe	<i>Identifying disease resistant and thermal tolerant genotypes in the threatened staghorn coral, <i>Acropora cervicornis</i></i>
Leah Harper	<i>Quantifying coral recruitment in the northern portion of the Florida Reef Tract</i>
Anna Jordan	<i>Trends in Caribbean coral spawning</i>
Alicia Vollmer	<i>How does colony size and density influence paternity in a brooding coral?</i>
Megan Bock	<i>Disease Transmission, Tolerance, and Survival of the Caribbean Reef-Building Coral, <i>Acropora cervicornis</i></i>

**Graduated**

Justin Voss	<i>Influence of <i>Laurencia</i> algae species on coral settlement and metamorphosis</i>
Josh Stocker	<i>Effects of 17 <math>\beta</math>-estradiol and progesterone on <i>Porites astreoides</i> and <i>Acropora cervicornis</i> reproduction and growth</i>
Hunter Noren	<i>Twilight reefs may usher in a new dawn for depauperate, shallow reefs</i>
Margaret Rushmore	<i>The effect of sedimentation on <i>Porites astreoides</i>: examining oxidative stress and survival among life-history stages</i>
Ashley Dungan	<i>Does ocean acidification affect the coral ultrastructure across life history stage?</i>
Kellie Pelican	<i>The effects of petroleum pollutants on sea urchins reproduction and development</i>

## **GRADUATE COMMITTEE MEMBER**

---

<u>Current M.S.</u>	<u>Current Ph.D.</u>	<u>Graduated</u>
Cameron Baxley	Liz Larson	Beranda Harper (M.S. 2016)
Katie Correa		Alyson Kuba (M.S. 2016)
Haylee DeMarcus		Heather Schaneen (M.S. 2016)
Collin Howe (UVI)		Steven DiLauro (M.S. 2015)
Sarah Koerner		John McDermond (M.S. 2014)
Britney Lenz		Cody Bliss (M.S. 2014)
		Robert Brewer (M.S. 2013)

## **PROFESSIONAL SERVICES**

---

2017	US Coral Reef Task Force- Florida Planning Committee
2016	Internal Review Committee for Marine Biology M.S. Program
2016	Internal Review Committee for Coastal Zone Management M.S. Program
2015- present	DoMES Curriculum Committee
2015	NSU President's Faculty Research & Development Grant Evaluation Committee
2015- present	South Atlantic Fishery Management Council
2014	NSU Research misconduct investigation committee
2014- present	NSUOC Masters of Professional Science Committee
2014	NSU Branding Committee
2013- present	Elected Benthic Ecology Committee Member at-large
2013 -present	American Academy of Underwater Science (AAUS) member
2013- present	NSUOC Dive Safety Board
2013	NSUOC MA Marine and Coast Studies Curriculum Evaluation Committee
2013	NSUOC MS Biological Sciences Curriculum Evaluation Committee
2010	FSU Biological Science' Graduate Program Review Committee (student rep)
2008	Organizing committee for hosting Southeast Ecology and Evolution Conference
<u>Peer Reviewer:</u>	National Science Foundation BMC Ecology, Marine Ecology Progress Series, Journal of Experimental Biology, Journal of Heredity, Marine Biology Journal of Marine Systems, Coral Reefs, Marine and Freshwater Research Marine Pollution Bulletin, U. of Puerto Rico SeaGrant College, Smithsonian Institution Scholarly Press, PLoSOne

## **CERTIFICATIONS and MEMBERSHIPS**

---

NSUOC Research Diver; PADI Advanced Open SCUBA; AAUS diver; 35-hour Boat Handling Course; DAN CPR/AED and First Aid; DAN Oxygen Administration; IANTD Open Water Nitrox Diver; NOAA research diver; Canadian Red Cross Pleasure Craft Operator; Drysuit Diver, Divers Alert Network member, Ecological Society of America member, International Society for Reef Studies member,

## **NON-STUDENT COLLABORATORS (in past 5 years in alphabetical order)**

---

Suzanne Arnold (U. Maine), Iliana Baums (Penn State), Nancy Budd (U. of Iowa), Justin Campbell (Smithsonian), Mary Alice Coffroth (St. U. of NY at Buffalo), Joana Figueiredo (NSU), Zachary Foltz (Smithsonian), David Gilliam (Nova SE U.), Lisa Greer (Fragments of Hope), Danny Gleason (Georgia Southern U.), Dan Holstein (UVI), Javier Jara (Smithsonian), Scott Jones (Smithsonian), Nathan Kirk (Oregon St. U.), Jim Klaus (U. Miami), Nancy Knowlton (Smithsonian), Howard Lasker (St. U. of NY at Buffalo), Don Levitan (FSU), Kemit-Amon Lewis (TNC), Joe Lopez (NSU), Megan Lowenberg (Indian River St. Coll.), Kate Lunz (FWC), Margaret W. Miller (NOAA), Steven Miller (NSU), Webb Miller (Penn St. U.), Ken Nedimery (Coral Restoration Foundation), Valerie Paul (Smithsonian), Esther Peters (George Mason U.), Dirk Peterson (SECORE), Raphael Ritson-Williams (Smithsonian), Cliff Ross (UNF), Rob Ruzicka (FWC), Scott Santos (Auburn), Xaymara Serrano (U. Miami), Tyler Smith (UVI), Jennifer Sneed (Smithsonian), Bob Steneck (U. Maine), Mark Vermeij (Univ. of Amsterdam), Steve Vollmer (Northeastern University)

## **CONFERENCE PRESENTATIONS**

---

2017 Benthic Ecology Meeting, Myrtle Beach, SC (session chair)  
2016 Ecological Society of America, Fort Lauderdale, Florida  
2016 International Coral Reef Symposium, Honolulu, Hawaii  
2016 Nova Southeastern University Science Jamboree  
2015 Benthic Ecology Meeting, Quebec City, Quebec Canada  
2013 Benthic Ecology Meeting, Savannah, Georgia (session chair)  
2012 International Coral Reef Symposium, Cairns, Australia  
2012 Benthic Ecology Meeting, Norfolk, Virginia (session chair)  
2011 Benthic Ecology Meeting, Mobile, Alabama (session chair)  
2010 Benthic Ecology Meeting, Wilmington, North Carolina (chair, best student talk award)  
2010 Linking Science to Management, Duck Keys, Florida  
2009 Evolution, Moscow, Idaho  
2009 Benthic Ecology Meeting, Corpus Christi, Texas  
2008 Evolution, Minneapolis, Minnesota  
2008 International Coral Reef Symposium, Fort Lauderdale, Florida (poster)  
2008 Southeastern Ecology and Evolution Conference, Tallahassee, Florida  
2007 Smithsonian Marine Science Symposium, Washington DC (poster)  
2007 FSU Ecology and Evolution Seminar Series, Tallahassee, Florida  
2006 Evolution, Stony Brook, New York  
2006 Benthic Ecology Meeting, Quebec City, Quebec  
2005 Evolution Fairbanks, Alaska (poster)  
2004 Benthic Ecology Meeting, Mobile, Alabama  
2004 International Coral Reef Symposium, Okinawa, Japan  
2002 Benthic Ecology Meeting, Orlando, Florida (poster)  
2001 Florida Bay Science Conference, Key Largo, Florida (poster)  
1998 The National Conference of Undergraduate Research, Salisbury, Maryland (poster)  
1997 The Ohio Academy of Science 106<sup>th</sup> Annual Meeting, Bowling Green, Ohio (poster)

## SCHOLARSHIPS and FELLOWSHIPS

---

2012	International Coral Reef Symposium Registration Scholarship	\$1,295
2010-2012	Smithsonian Marine Science Network Fellowship	\$100,000
2008-2009	Florida State International Dissertation Research Fellowship	\$14,000
2008-2009	Florida State Jack Winn Gramling Award in Marine Biology	\$3,405
2005-2006	American Academy of Underwater Science PhD Scholarship	\$2,500
2007-2009	PADI Project AWARE Foundation Award	\$2,185
2005-2006	Florida State University Short Scholarship	\$1,500
2005-2006	Lerner-Gray Marine Research Scholarship	\$880
2005-2006	Florida State University Bennison Scholarship	\$890
2006-2007	PADI Foundation Research Scholarship	\$3,800

## COMMUNITY SERVICES

---

### *Kids in Distress*

2016- present            Licensed foster parents

### *Humane Society of Broward County*

2013- present            Therapy Dog Outreach: Wags and Tales/Assisted Living Facilities; Relay for Life

2014                        Education Department

2013-2014                Adoption Ambassador- Foster Dogs

## REFERENCES

---

Dr. Dick Dodge: Dean, Nova Southeastern University, [dodge@nova.edu](mailto:dodge@nova.edu)

Dr. Don Levitan: PhD advisor, Florida State University, [levitan@bio.fsu.edu](mailto:levitan@bio.fsu.edu)

Dr. Valerie Paul: Postdoctoral advisor, Smithsonian Marine Station, [paul@si.edu](mailto:paul@si.edu)

Dr. Nancy Knowlton: Postdoctoral advisor, Smithsonian Institution, [knowlton@si.edu](mailto:knowlton@si.edu)

Dr. Iliana Baums, NSF collaborator, Penn State University, [baums@psu.edu](mailto:baums@psu.edu)