

Timothy D. Swain, PhD

Nova Southeastern University

<http://scholar.google.com/citations?user=ZkNTCCgAAAAJ&hl=en&oi=ao>**Education:**

2010 PhD Biology, Florida State University
2002 MS Biology, State University of New York at Buffalo
1998 BS Biology, State University of New York at Buffalo

Employment:

Assistant Professor 2019–present
Department of Marine and Environmental Sciences, Nova Southeastern
University, 8000 N Ocean Dr, Dania Beach, FL 33004
Research Associate 2016–2019
Northwestern University, Department of Civil and Environmental Engineering,
2145 Sheridan Rd. Room A330, Evanston, IL 60208
Field Museum of Natural History, Integrative Research Center, 1400 South Lake
Shore Drive, Chicago, IL 60605
Postdoctoral Fellow 2010–2016
Northwestern University, Department of Civil and Environmental Engineering,
2145 Sheridan Rd. Room A223, Evanston, IL 60208
Field Museum of Natural History, Biodiversity Synthesis Center, 1400 South
Lake Shore Drive, Chicago, IL 60605

Courses Taught:

Scientific Communications; Graduate, Nova Southeastern University
Symbiosis; Graduate & Undergraduate; Nova Southeastern University
Marine Speciation & Diversification; Graduate, Nova Southeastern University
Invertebrate Zoology Lecture & Lab; Graduate & Undergraduate, Nova Southeastern U
Environmental Microbiology; Undergraduate; Northwestern University
Phylogenetics; NSF REU; Field Museum of Natural History
Complex Interactions; Graduate; University of Chicago
Evolution of Neuromechanical systems; NSF IGERT; University of Chicago
Animal Diversity Laboratory; Undergraduate; Florida State University
Introductory Biology Laboratory; Undergraduate; Florida State University
Cell Biology Laboratory; Undergraduate; SUNY Buffalo
Ecology Laboratory; Undergraduate; SUNY Buffalo

Graduate Student Primary Advisor:

1/2023–8/2024 Saige Jost, NSU
8/2022–8/2024 Brady Estrada, NSU
1/2022–5/2024 Emily Salonia, NSU
8/2021–12/2023 Melissa Rex, MS Marine Biology, NSU
8/2021–8/2023 Savannah Renken, MS Marine Biology, NSU
8/2021–12/2022 Kendra Pfeil, NSU
8/2020–12/2022 Jacob Colbert, MS Marine Environmental Science, NSU
8/2020–12/2022 Shaman Patel, MS Marine Biology, NSU
8/2020–6/2022 Shaquilla Hamlett, MS Marine Biology, NSU
8/2019–12/2021 Annika Markovich, MS Marine Biology & Ecology, NSU

Graduate Student Committee Member:

4/2024– Zachary Strebeck

12/2022–1/2024 Rachel Bacaner
 8/2020–12/2022 Jordan Page, MS Marine Biology, NSU
 1/2021–12/2021 John Pettingill, MS Biology, NSU
 1/2020–5/2020 Olmo Cinti, MS Marine Biology, NSU

Directed Undergraduate Research:

8/2023–5/2024 Chantalle Ortega (Nova Southeastern University)
 8/2023–5/2024 Jason Rosales (Nova Southeastern University)
 9/2022–5/2024 Heidi Hellenbrand (Nova Southeastern University)
 10/2021–5/2023 Mackenzie Magyar (Nova Southeastern University)
 10/2021–4/2022 Andrew Hartmann (Nova Southeastern University)
 10/2021–4/2022 Breanna Calle (Nova Southeastern University)
 10/2021–4/2022 Laura Nicolas (Nova Southeastern University)
 10/2021–4/2022 Brady Estrada (Nova Southeastern University)
 10/2021–4/2022 Nadia Abeido (Nova Southeastern University)
 1/2018–8/2018 Kelly Poulos (Northwestern University)
 10/2017–8/2018 Fiona Worsfold (Northwestern University)
 10/2017–8/2018 Gabriella Boone (Northwestern University)
 2/2016–6/2018 Phillip Osborn (Northwestern University)
 6/2016–6/2017 Emily Bold (Northwestern University)
 1/2016–5/2016 Gabriela Carr (Northwestern University)
 1/2016–5/2016 Hannah Ryon (Northwestern University)
 9/2015–5/2017 Scott Goldberg (Northwestern University)
 6/2015–5/2016 Jesse Vega-Perkins (Northwestern University)
 4/2015–6/2015 Nora Jandali (Northwestern University)
 9/2013–6/2015 William Oestreich (Northwestern University)
 7/2014–5/2015 Conrad Triebold (Field Museum)
 6/2013–5/2014 Michelle Wagner (Northwestern University)
 1/2013–6/2014 Kylia Williams (Northwestern University)
 8/2012–10/2012 Rebecca Pelka (Loyola University)
 12/2011–8/2012 Josh Traub (Loyola University)
 1/2012–5/2013 Hanna Grooms (Northwestern University)
 7/2012–1/2013 John Juranek (Loyola University)
 10/2011–3/2012 Kristine Park (Niles West High School)
 6/2011–5/2012 Paige Humecki (Northwestern University)
 5/2011–9/2013 Elizabeth Velazques (Northwestern University)
 5/2011–5/2013 Emily DuBois (Northwestern University)
 10/2010–5/2012 Natalie Lake (Northwestern University)
 10/2010–3/2011 Arielle Berens (Northwestern University)
 2009–2010 Kim Reuter (Florida State University)
 2008–2010 Megan O'Boyle (Florida State University)
 2008–2010 Margeret Cowie (Florida State University)
 2006–2008 Darnley Sobers (Bellairs Research Institute, Barbados)

Undergraduate Environmental Science Internship Advisor:

Winter 2022 Katja Kramers – South Carolina Department of Natural Resources
 Winter 2021 Garrett Hardy – Sawgrass Nature Center
 Winter 2021 Madelyn Rinka – Waukesha County Land Conservancy
 Fall 2021 Sophia Theoktisto – South Florida Water Management District
 Summer 2021 Madison Rybinski – March Farm

Publications – peer reviewed (*student coauthors):

24. Davies *et al.* 2023 Building consensus around the assessment and interpretation of Symbiodiniaceae diversity. PeerJ: 10.7717/peerj.15023.
23. Swain TD, Lax S, Gilbert J., Backman V. Marcelino LA. 2021. A phylogeny-informed analysis of the global coral-Symbiodiniaceae interaction network reveals that traits correlated with thermal bleaching are specific to symbiont transmission mode. *mSystems* 6: e00266-21.
22. Swain TD, Lax S, Backman V. Marcelino LA. 2020. Uncovering the role of Symbiodiniaceae assemblage composition and abundance in coral bleaching response by minimizing sampling and evolutionary biases. *BMC Microbiol* 20: 124.
21. Spicer GLC*, Eid A*, Wangpraseurt D, Swain TD, Winkelmann JA*, Yi J*, Kühl M, Marcelino LA, Backman V. 2019. Measuring light scattering and absorption in corals with Inverse Spectroscopic Optical Coherence Tomography (ISOCT): a new tool for non-invasive monitoring. *Scientific Reports* 9: 14148.
20. Swain TD, Lax S*, Lake N*, Grooms H*, Backman V, Marcelino LA. 2018. Relating coral skeletal structures at different length scales to growth, light availability to *Symbiodinium*, and thermal bleaching. *Frontiers in Marine Science* 5: 450. [Invited Submission]
19. Swain TD, Westneat WM, Backman V, Marcelino LA. 2018. Phylogenetic analysis of symbiont transmission mechanisms reveal evolutionary patterns in thermotolerance and host specificity that enhance bleaching resistance among vertically transmitted *Symbiodinium*. *European Journal of Phycology* <https://doi.org/10.1080/09670262.2018.1466200>.
18. Swain TD, Bold EC*, Osborn PC*, Baird A, Westneat WM, Backman V, Marcelino LA. 2018. Physiological integration of coral colonies is correlated with bleaching resilience. *Marine Ecology Progress Series* 586: 1–10. [Feature Article]
17. Swain TD. 2018. Revisiting the phylogeny of Zoanthidea (Cnidaria: Anthozoa): staggered alignment of hypervariable sequences improves species tree inference. *Molecular Phylogenetics and Evolution* 118: 1–12.
16. Swain TD, DuBois E*, Goldberg SJ*, Backman V, Marcelino LA. 2017. Bleaching response of coral species in the context of assemblage response. *Coral Reefs* 36: 395–400.
15. Swain TD, Chandler J*, Backman V, Marcelino LA. 2017. Consensus thermotolerance ranking for 110 *Symbiodinium* phylotypes: an exemplar utilization of a novel iterative partial rank aggregation tool with broad application potential. *Functional Ecology* 31: 172–183.
14. Swain TD, Strimaitis A*, Reuter K*, Boudreau W*. 2016. Towards integrative systematics of Anthozoa: Evolution of form in the order Zoanthidea (Anthozoa: Hexacorallia). *Zoologica Scripta* 46: 227–244.
13. Swain TD, Vega-Perkins JB*, Oestreich WK*, Triebold C*, DuBois E*, Henss J, Ozdogan M, Baird A, Siple M*, Westneat M, Backman V, Marcelino LA. 2016. Coral bleaching response index: a new tool to standardize and compare susceptibility to thermal bleaching. *Global Change Biology* 22: 2475–2488.
12. Swain TD, DuBois E*, Gomes A*, Stoyneva VP*, Radosevich AJ*, Henss J, Wagner ME*, Derbas J*, Grooms HW*, Velazquez EM*, Traub J*, Kennedy BJ*, Grigorescu AA, Westneat MW, Sanborn K, Levine S, Schick M, Parsons G, Biggs, BC, Rogers JD, Backman VB, Marcelino LA. 2016. Skeletal light-scattering accelerates bleaching response in reef-building corals. *BMC Ecology* 16:10.
11. Swain TD, Schellinger J*, Strimaitis A*, Reuter K*. 2015. Evolution of anthozoan polyp retraction mechanisms: convergent functional morphology and evolutionary allometry of

- the marginal musculature in order Zoanthidea (Cnidaria: Anthozoa: Hexacorallia). *BMC Evolutionary Biology* 15:123.
10. Swain TD, Swain LM*. 2014. Molecular parataxonomy as taxon description: examples from recently named Zoanthidea (Cnidaria: Anthozoa) with revision based on serial histology of microanatomy. *Zootaxa* 3796: 81–107.
 9. Marcelino LA, Westneat MW, Stoyneva V*, Henss J, Rogers JD, Radosevich A*, Turzhitsky V, Siple M*, Fang A, Swain TD, Fung J, Backman V. 2013. Modulation of light-enhancement to symbiotic algae by light-scattering properties in corals and evolutionary trends in bleaching. *PLoS ONE* 8: e61492.
 8. Swain TD. 2012. Context-dependent effects of symbiosis: Zoanthidea colonization generally improves Demospongiae condition in native habitats. *Marine Biology* 159: 1429–1438.
 7. Swain TD. 2010. Evolutionary transitions in symbioses: dramatic reductions in bathymetric and geographic ranges of Zoanthidea coincide with loss of symbioses with invertebrates. *Molecular Ecology* 19: 2587–2598.
 6. Swain TD. 2009. Phylogeny-based species delimitations and the evolution of host associations in symbiotic zoanthids (Anthozoa, Zoanthidea) of the wider Caribbean region. *Zoological Journal of the Linnean Society* 156: 223–238.
 5. Swain TD. 2009. *Isozoanthus antumbrosus*, a new species of zoanthid (Cnidaria: Anthozoa: Zoanthidea) symbiotic with Hydrozoa from the Caribbean, with a key to hydroid and sponge-symbiotic zoanthid species. *Zootaxa* 2051: 41–48.
 4. Swain TD, Wulff JL. 2007. Diversity and specificity of Caribbean sponge-zoanthid symbioses: a foundation for understanding the adaptive significance of symbioses and generating hypotheses about higher-order systematics. *Biological Journal of the Linnean Society* 92: 695–711.
 3. Swain TD, Taylor DJ. 2003. Structural rRNA characters support monophyly of raptorial limbs and paraphyly of limb specialization in water fleas. *Proceedings of the Royal Society of London, Series B-Biological Sciences* 270: 887–896.
 2. Boller ML, Swain TD, Lasker HR. 2002. Skeletal morphology and material properties of a fragmenting gorgonian coral. *Marine Ecology Progress Series* 228: 131–141.
 1. Swain TD, Kim K, Lasker HR. 1997. Use of fluorescence microscopy in an assay of sperm density for the gorgonian coral, *Plexaura kuna*. *Proceedings of the 8th International Coral Reef Symposium, Panama, vol. II: p.1341–1344.*
- Publications – in prep/in review (*student coauthors):**
3. Patel SS*, Williams SD, Estrada BN*, Magyar MS*, Swain TD. 2023. Caribbean reef-building coral-Symbiodiniaceae network: Identifying symbioses critical for system stability in a changing climate.
 2. Colbert J*, Swain AK*, Swain TD. 2023. Integrative revision of five genera type species of Zoanthidea to bridge the parataxonomy gap.
 1. Markovich A*, Abeido N*, Swain AK*, Swain TD. 2023. *Parazoanthus axinellae* species complex past and present.
- Publications – et cetera:**
4. Swain LO, Swain TD. 2017. Language learning under classroom conditions during the transition to hybrid instruction: a case-study of student performance during the implementation of instructional technology. *European Journal of Foreign Language Teaching* 2: 49–64.
 3. Swain TD. 2010. Evolution of host associations in symbiotic Zoanthidea. PhD Dissertation. Florida State University, Tallahassee, Florida. 120 p.

2. Wulff JL, Swain TD. 2006. Sponges of Navassa. Photo guide to sponges collected during the 2004 NOAA survey of the coral reefs of Navassa. http://data.nodc.noaa.gov/coris/library/NOAA/CRCP/project/1056/NavassaSponge_PhotoGuide.pdf
1. Swain TD. 1998. Photo: Symbiont shuffle. Both hard (left) and soft (above) corals mix and match algal partners. *Science* 279: 807.

Presentations – scientific meetings – oral (*student coauthors):

24. Salonia E*, Swain TD. 2024. Applying integrative systematics to Zoanthidea specimens of the Okeanos Explorer RV expeditions. 52nd Annual Benthic Ecology Meeting. Charleston, South Carolina.
23. Estrada B*, Swain TD. 2024. A Systems approach to Caribbean Octocoral Symbiosis Networks. 52nd Annual Benthic Ecology Meeting. Charleston, South Carolina.
22. Swain TD. 2023. Molecular parataxonomy cannot solve the taxonomic impediment. 51st Annual Benthic Ecology Meeting. Miami, Florida (chairman of section).
21. Swain TD, Lax S, Gilbert J, Backman V Marcelino LA. 2022. Heightened frequency of association with thermotolerant Symbiodiniaceae correlates with bleaching-susceptibility only among vertically transmitting coral species. 10th International Symbiosis Society Congress, Lyon, France.
20. Swain TD, Lax S, Gilbert J, Backman V Marcelino LA. 2022. Phylogeny-informed analysis of coral-Symbiodiniaceae interaction networks to assess bleaching-susceptibility and symbiont thermotolerance. 15th International Coral Reef Symposium, Bremen, Germany.
19. Swain TD. 2020. Coral-Symbiodiniaceae interaction networks for assessing broad patterns of differential bleaching-susceptibility. HCNSO 2020 Research Symposium, Dania Beach, Florida.
18. Swain TD. 2019. Systems approach to differential coral bleaching: Synthesis of tools to examine phylogeny-informed emergent properties and hypothesis in symbiotic networks. Coral Crisis: Issues and Response, Dania Beach, Florida.
17. Swain TD, Backman VB, Marcelino LA. 2018. Phylogenetic analysis of *Symbiodinium* transmission modes reveal evolutionary patterns in thermotolerance and host specificity that may contribute to coral bleaching resistance. 9th International Symbiosis Society Congress, Corvallis, Oregon.
16. Swain TD, Backman VB, Marcelino LA. 2016. *Symbiodinium* thermotolerance and coral susceptibility to bleaching. 13th International Coral Reef Symposium, Honolulu, Hawaii.
15. Marcelino LA, Swain TD, Backman VB. 2016. (presented by first author) Coral skeletal light scattering and susceptibility to thermal bleaching. 13th International Coral Reef Symposium, Honolulu, Hawaii.
14. Swain TD, DuBois E*, Gomes A*, Stoyneva VP*, Radosevich AJ*, Henss J, Wagner ME*, Derbas J*, Grooms HW*, Velazquez EM*, Traub J*, Kennedy BJ*, Janczak CM, Grigorescu AA, Westneat MW, Sanborn K, Levine S, Schick M, Parsons G, Rogers JD, Backman VB, Marcelino LA. 2015. Efficient light transport through coral skeletons precipitates bleaching response. 44th Annual Benthic Ecology Meeting, Québec, Canada.
13. Swain LO, Swain TD 2014. (presented by first author) Technological enhancement of instruction and its effect on performance in the Spanish language classroom. 96th American Association of Teachers of Spanish and Portuguese Conference, Panamá City, Panamá.
12. Swain TD, Marcelino L, Gomes A*, Lake N*, Radosevich A*, Humecki P*, Kennedy B*, Pickard K*, Westneat M, Backman V. 2012. Coral skeletal fractality modulates light-backscattering to symbionts and bleaching susceptibility. 12th International Coral Reef Symposium, Cairns, Australia.

11. Swain TD, Pickard K*, Lake N*, Henss J, Radosevich A*, Gomes A*, Westneat M, Backman V, Marcelino LA. 2011. Light-scattering properties of coral skeletons at multiple morphological length-scales increase the risk of coral bleaching. 40th Annual Benthic Ecology Meeting, Mobile, Alabama.
10. Swain TD. 2011. Evolutionary loss of symbioses with invertebrates coincides with reduced distributions of Zoanthidea. 40th Annual Benthic Ecology Meeting, Mobile, Alabama.
9. Swain TD. 2008. Phylogenetic conservatism in the evolution of host associations in Caribbean symbiotic zoanthids. 11th International Coral Reef Symposium, Fort Lauderdale Florida.
8. Swain TD. 2008. Phylogeny-based species delimitations: a novel alignment of hypervariable nucleotide sequences. Southeastern Ecology and Evolution Conference, Tallahassee, Florida.
7. Swain TD. 2007. Specificity of Caribbean sponge-zoanthid symbioses. 36th Annual Benthic Ecology Meeting, Atlanta, Georgia. (chairman of section)
6. Swain TD. 2006. Specificity of symbiosis as the foundation for understanding the adaptive significance of Caribbean zoanthid-sponge symbioses. 5th International Symbiosis Society Congress, Vienna, Austria.
5. Swain TD. 2006. Specificity of zoanthid-sponge symbioses in the Central Western Atlantic region. 7th International Sponge Symposium, Búzios, Rio de Janeiro, Brazil.
4. Swain TD. 2005. Effects of symbiotic-zoanthid colonization on Caribbean host sponges. 34th Annual Benthic Ecology Meeting, Williamsburg, Virginia.
3. Swain TD, Taylor DJ. 2002. Nuclear rRNA structural characters support parallel evolution of limb specialization in Cladocera and a novel clade of non-ephippial orders. 6th International Symposium on Cladocera, Wierzba, Poland.
2. Boller ML*, Swain TD, Lasker HR. 2000. (presented by first author) Mechanisms of fragmentation of a gorgonian coral. Society for Integrative and Comparative Biology, Atlanta, GA.
1. Boller ML*, Swain TD, Lasker HR. 1999. (presented by first author) Axis constrictions as an adaptation for fragmentation of the gorgonian coral *Plexaura kuna*. 29th Benthic Ecology Meetings, Baton Rouge, LA.

Presentations – scientific meetings – poster (*student coauthors):

9. Estrada B*, Magyar M*, Patel SS*, Williams SD, Swain TD. 2023. Peculiar Symbiosis, Thermal Resilience, and Robustness of The Caribbean Coral-Symbiodiniaceae Network. 51st Annual Benthic Ecology Meeting. Miami, Florida.
8. Salonia E*, Renken S*, Markovich A*, Swain TD. 2023. Applying Integrative Systematics to the Poorly Explored Symbiotic Relationships of Zoanthidea in the Deep Sea. 51st Annual Benthic Ecology Meeting. Miami, Florida.
7. Rex M*, Swain TD. 2023. The Cnidome in Integrative Systematics of Zoanthidea: A Sticking Point. 51st Annual Benthic Ecology Meeting. Miami, Florida.
6. Magyar M*, Swain TD. 2023. Revisiting Generic Assignments in Zoanthidea (Cnidaria:Anthozoa:Hexacorallia) Using Key Characters of the Existing Taxonomic System. 51st Annual Benthic Ecology Meeting. Miami, Florida.
5. Magyar M*, Swain TD. 2023. Reassessing taxonomic classification of the zoanthidean *Epizoanthus giveni* using marginal musculature as a defining character. NSU Undergraduate Student Symposium. Ft Lauderdale, Florida.
4. Magyar M*, Estrada B* Swain TD. 2022. Caribbean reef-building coral- Symbiodiniaceae network: Identifying symbioses critical for system stability in a changing climate. NSU Undergraduate Student Symposium. Ft Lauderdale, Florida.

3. Williams K*, Swain TD, Wagner M*, Marcelino L. 2013. (presented by first author) Does symbiont phylotype determine host susceptibility to stress? 3rd NU Bioscientist Symposium. Evanston, Illinois.
2. Strimaitis A*, Schellinger J*, Swain TD. 2011. (presented by first author) Evolution of form in Zoanthidea. 40th Annual Benthic Ecology Meeting. Mobile, Alabama.
1. Swain TD, Kim K*, Lasker HR. 1996. Use of fluorescence microscopy in an assay of sperm density for the gorgonian coral, *Plexaura kuna*. 8th International Coral Reef Symposium. Panamá City, Republic of Panamá.

Grants:

2023 (\$3,800,000) Co-PI; National Coral Reef Institute – US Congress
 2022 (\$14,993) PI; “Developing systematics expertise in cnidarian order Zoanthidea”
 NSU President’s Faculty Research and Development Grant
 2022 (\$989) PI; NSU Halmos Collage Professional Development Grant
 2022 (\$1,579) PI; Collaborative Research, Tropical Biosphere Research Center – Japan
 2021 (\$2,734) PI; ORCHIDS Collaborative Research Grant – Japan
 2019 (\$2,500) PI; ORCHIDS Collaborative Research Grant – Japan
 2019 (\$76,000) PI; NSU Halmos College Research Incentive
 2017–2018 (\$16,000) Co-PI; Shedd Aquarium Collaborative Research
 2017 Co-PI; Danish Network Grant – Denmark
 2016 (\$5,616) Co-PI; Experiment.com
 2015 (\$1,820) P.I.; Northwestern Open Access Fund
 2010–2014 (\$56,000) Co-PI; Shedd Aquarium Collaborative Research
 2009 (\$1,000) PI; Margaret Y. Menzel Award for Outstanding Research
 2009 (\$640) PI; FSU Dissertation Research Grant
 2007 (\$2,000) PI; Jack Winn Gramling Award in Marine Biology
 2005 (\$2,000) PI; Lerner-Gray Fund for Marine Research, AMNH
 2005 (\$2,000) PI; Society of Systematic Biologists Graduate Student Award
 2004 & 2005 (\$2,000) PI; Sigma Xi Grants-in-aid-of-research
 2004 (\$1,000) PI; PADI Project AWARE
 2003–2004 (\$3,000) PI; Smithsonian Tropical Research Institute Short-term Fellow

Advised Student Grants:

2024 (\$10,000) Brady Estrada, Banks Endowment, Halmos College of Arts and Sciences
 2023 (\$1,000) Saige Jost, MA Sageman Grant, Halmos College of Arts and Sciences
 2023 (\$3,950) Melissa Rex, Society of Systematic Biologists, Mini Advancing
 Revisionary Taxonomy and Systematics (Mini-ARTS).
 2023 (\$5,000) Emily Salonia, Gale Foundation, Halmos College of Arts and Sciences
 2022 (\$10,000) Melissa Rex, Forman Foundation, Halmos College of Arts and Sciences
 2022 (\$20,000) Shaman Patel, Fishing Tournament, Halmos College of Arts and Sciences
 2022 (\$3,000) Shaman Patel, Perkins Family Grant, Halmos College of Arts and Sciences
 2022 (\$2,500) Shaquilla Hamlett, Conchologists of America Grants to Malacology
 2021 (\$10,000) Shaquilla Hamlett, Experiment.com
 2021 (\$3,000) Shaman Patel, Experiment.com
 2020 (\$3,500) Annika Markovich, Lerner-Gray Memorial Fund of the American Museum
 of Natural History.
 2020 (\$300) Annika Markovich, Sigma Xi, Grants-in-aid of Research

Presentations – invited seminars:

2022 Molecular parataxonomy cannot solve the taxonomic impediment. University of Louisiana at Lafayette.

- 2018 Phylogeny-informed quantitative symbiosis ecology: syntheses of existing and novel data provide actionable tools for research and conservation. Nova Southeastern University
- 2018 Foreign-language translation of in scientific research. DePaul University
- 2017 Current state of knowledge on differential coral bleaching: syntheses providing actionable data for research and resource management. Florida Fish and Wildlife Conservation Commission, St. Petersburg, Florida.
- 2017 Phylogenetic tools to identify potential determinants of differential coral bleaching. University of Copenhagen, Denmark.
- 2017 Use of foreign-language translations in scientific publications. DePaul University
- 2017 Biological consequences of climate change: the degradation of coral reefs in the Anthropocene. Northwestern University.
- 2016 How the Smithsonian Tropical Research Institute fit within the Indigenous Guna Community of Panamá. Transnational Latino Conference, DePaul University
- 2015 Coral bleaching is accelerated by skeletal optics. Shedd Aquarium.
- 2014 Skeletal light-scattering and bleaching response of reef-building corals. University of South Florida.
- 2014 Evolution of cnidarian symbioses. Auburn University.
- 2014 Evolution and ecology of cnidarian symbioses. Royal Ontario Museum, Canada.
- 2012 Symbiosis evolution. University of Louisiana at Lafayette.
- 2011 Ecology and evolution of symbioses. Lake Forest College (invited by Tri-Beta Undergraduate Biology Honors Society).
- 2011 Evolution of symbioses. Northwestern University.
- 2011 Evolutionary transitions in symbioses. Ohio State University.
- 2010 Evolution of symbioses in Zoanthidea. Field Museum of Natural History
- 2010 Evolution of host associations in symbiotic Zoanthidea. Florida State U.

Media reports on research:

- 2020 Interviewed for article “Neon colors may help some corals stage a comeback from bleaching” in Science News. <https://www.sciencenews.org/article/corals-algae-neon-colors-bleaching-recovery-oceans>
- 2019 “Choral” localStyle’s video art installation at 150 North Riverside Plaza in Chicago, Illinois. <https://vimeo.com/351239095>
- 2016 Interview on PBS; <http://chicagotonight.wttw.com/2016/05/04/local-scientists-institutions-join-global-fight-save-coral-reefs>
- 2016 Interview for Northwestern University Engineering News: <http://www.mccormick.northwestern.edu/news/articles/2016/06/algorithm-ranks-thermotolerance-of-algae.html>
- 2016 Interview for Northwestern University: <http://www.northwestern.edu/newscenter/stories/2016/04/web/using-data-to-protect-coral-reefs-from-climate-change.html#.VzJJY>
- 2016 Interview for VICE News: <https://news.vice.com/article/the-worlds-coral-reefs-are-undergoing-a-massive-die-off>

Professional Service:

- Peer reviews for Cahiers de Biologie Marine, Coral Reefs, Diversity, Frontiers in Marine Science, ICES Journal of Marine Science, Marine Biodiversity, Marine Biology, Proceedings of the International Sponge Symposium, Symbiosis, Zoological Studies, & Zootaxa
- 2010–2016 Curator of Zoanthidea, Encyclopedia of Life

Species identifications for NOAA and University of Louisiana, Lafayette

University Service:

2023 PFRDG FY24 Grant Application Review Committee
2023 DoMES PhD Program Internal Review Committee
2023 Education BS Program Internal Review Committee
2022–2023 DoMES Professor Faculty Search Committee
2022–2023 DoMES Lecturer Faculty Search Committee
2021 DoMES Professor Faculty Search Committee
2021 DoMES Early Immersion program
2020 DoMES Committee for Perpetuation of Online Teaching in Response to Pandemic
2020 Halmos College Reviewer for Graduate Student Scholarships
2019 DoMES Professor Faculty Search Committee
2019 DoMES Early Immersion program
2019 DoMES Professional Master’s in Marine Science Committee

Professional Memberships:

Society of Systematic Biologists, International Symbiosis Society, International Society
for Reef Studies, Sigma Xi

SCUBA Certifications:

1998 NAUI Instructor; 1998 NAUI Rescue Diver; 1995 IANTD Nitrox; 1993 NASDS
Master Diver; 1992 NASDS Open Water Diver