

SHEILA A. KITCHEN, Ph.D.

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RESEARCH INTEREST

I am molecular ecologist that integrates field, laboratory and computational tools to address fundamental questions surrounding interspecies interactions and their persistence in a changing world. My goal is to transform these results into applied solutions for conservation.

PROFESSIONAL APPOINTMENTS

- 2024-Present TAMU Ecology and Evolutionary Biology Program, Core Faculty
- 2023-Present Assistant Professor, Department of Marine Biology, Texas A&M University Galveston
- 2018-2022 Postdoctoral Fellow, Division of Biology and Biological Engineering, Caltech
- 2016-2018 Postdoctoral Researcher, Department of Biology, The Pennsylvania State University

EDUCATION

- 2010-2016 Ph.D. in Zoology, Oregon State University
- 2008-2010 M.S. in Marine Biology, UNC Wilmington
- 2004-2007 B.S. in Marine Biology with Honors, UNC Wilmington

PUBLICATIONS h-index 14 i10-index 15 Citations 783

Co-first authors #; mentored graduate student * or undergraduate student ^
Senior author +, corresponding author ++, senior and corresponding author +++

Published Manuscripts

25. Locatelli, N.S.#, S.A. **Kitchen**#, K.H. Stankiewicz#, C.C. Osborne, Z. Dellaert, H. Elder, B. Kamel, H.R. Koch, N.D. Fogarty, I.B. Baums (*accepted*) Chromosome-level genome assemblies and genetic maps reveal heterochiasmy and macrosyteny in endangered Atlantic *Acropora*. *BMC Genomics*, <https://doi.org/10.1101/2023.12.22.573044>
24. **Kitchen**, S.A., T.H. Naragon*, A. Brückner, M.S. Ladinsky, S.A. Quinodoz, J.M. Badroos*, J.W. Viliunas*, Y. Kishi*, J.M. Wagner*, D.R. Miller*, M. Yousefelahiyeh, I.A. Antoshechkin, K.T. Eldredge, S. Pirro, M. Guttman, S.R. Davis, M.L. Aardema, and J. Parker. (2024) The genomic and cellular basis of biosynthetic innovation in rove beetles. *Cell*. <https://doi.org/10.1016/j.cell.2024.05.012>
- *Online Press*: "Beetles Conquered Earth by Evolving Their Own Biochemical Laboratory" *The Caltech Weekly* (<https://bit.ly/3VHfWKB>)
23. Blanco-Pimentel M., C.D. Kenkel, S.A. **Kitchen**, I.B. Baums, J. Calle-Triviño, C. Cortés-Useche, M.K. Morikawa. (2024) Overcoming barriers to reef restoration: field-based method for approximate genotyping of *Acropora cervicornis*. *Restoration Ecology*, e14073.
22. Davies, S.W., ... (**60 co-authors**) (2023) Building consensus around the assessment and interpretation of Symbiodiniaceae diversity. *PeerJ* 11:e15023.
21. Ashley, I.A.*, S.A. **Kitchen**, L.M. Gorman, A.R. Grossman, C.A. Oakley, D.J. Suggett, V.M. Weis, S.L. Rosset, S.K. Davy. (2023) Genomic conservation and putative downstream functionality of the phosphatidylinositol signalling pathway in cnidarian-dinoflagellate symbiosis. *Frontiers in Microbiology*, 13:1094255.

20. **Kitchen++**, S.A., D. Jiang, S. Harii, N. Satoh, V.M. Weis, and C. Shinzato. (2022) Coral larvae suppress the heat stress response during the onset of symbiosis thereby decreasing their odds of survival. *Molecular Ecology*, 31(22):5813-5830.
19. García-Urueña, R., S.A. **Kitchen**, N. Sckizas. (2022) Fine scale population structure of *Acropora palmata* and *A. cervicornis* in the Colombian Caribbean. *PeerJ*, 10:e13854.
18. Vasquez Kuntz, K.L. ^{**}, S.A. **Kitchen**[#], T.L. Conn^{*}, S.A. Vohsen^{*}, A.N. Chan^{*}, M.J.A. Vermeij, C. Page, K.L. Marhaver, I.B. Baums. (2022) Inheritance of somatic mutations by animal offspring. *Science Advances*, 8(35):eabn0707.
- Online Press: "Corals are first animals seen to pass on mutations acquired as adults" *New Scientist* (<https://bit.ly/2UihBG9>)
 - Online Press: "Corals pass mutations acquired during their lifetimes to offspring" Penn State (<https://bit.ly/3ROzPuL>)
17. **Kitchen++**, S.A., C.C. Osborne^{*}, N.D. Fogarty and I.B. Baums. (2022) Morphotype is not linked to mitochondrial haplogroups of Caribbean acroporid hybrids. *Coral Reefs*, 41: 829–836.
16. Brückner, A., A.A. Barnett, P. Bhat, I.A. Antoshechkin and S.A. **Kitchen+**. (2022) Molecular evolutionary trends and biosynthesis pathways in the Oribatida revealed by the genome of *Archezogetes longisetosus*. *Acarologia*, 62(3):532-573.
15. Baker, L.J., H.G. Reich, S.A. **Kitchen**, J.G. Klingses, H.R. Koch, I.B. Baums, E. Muller, and R. Vega Thurber. (2022) The coral symbiont *Candidatus Aquarickettsia* is variably abundant in threatened Caribbean acroporids and transmitted horizontally. *The ISME Journal*, 16: 400–411.
14. Brückner, A., J.M. Badroos, R.W. Learsch, M. Yousefelahiyeh, S.A. **Kitchen**, and J. Parker. (2021) Evolutionary assembly of cooperating cell types in an animal chemical defense system. *Cell*, 184(25): 6138-6156.e28
- Online Press: "Toxic beetle's genetics reveals how evolution makes new organs" *New Scientist* (<https://bit.ly/2U3Tmyj>)
 - Online Press: "A Beetle Gland Illustrates How New Organs Evolve" *The Caltech Weekly*
13. Reich, H.G. ^{*}, S.A. **Kitchen**, K.H. Stankiewicz^{*}, M.K. Devlin-Durante, N.D. Fogarty, and I.B. Baums. (2021) Genomic variation of an endosymbiotic dinoflagellate (*Symbiodinium 'fitti'*) among closely related coral hosts. *Molecular Ecology*, 30:3500-3514.
- Online Press: "Reef-building corals and microscopic algae within their cells evolve together" *Penn State Eberly College of Science News* (<https://bit.ly/3zV1NfQ>)
12. Gorman, L.M. ^{*}, S.P. Wilkinson, S.A. **Kitchen**, C.A. Oakley, A.R. Grossman, V.M. Weis, and S.K. Davy. (2020) Phylogenetic analysis of cell-cycle regulatory proteins within the Symbiodiniaceae. *Scientific Reports*, 10:20473.
11. **Kitchen**, S.A., G. Von Kuster, K.L. Vasquez Kuntz^{*}, H.G. Reich^{*}, W. Miller, S. Griffin, N.D. Fogarty and I.B. Baums. (2020) STAGdb: a 30K SNP genotyping array and Science Gateway for *Acropora* corals and their dinoflagellate symbionts. *Scientific Reports*, 10:12488.
- Online Press: National Science Foundation's, "4 Awesome Discoveries You Probably Didn't Hear About", October 2020 episode (<https://bit.ly/2H9bKjy>)
 - Online Press: "New tool for identifying endangered corals could aid conservation efforts" *Penn State Eberly College of Science News* (<https://bit.ly/2YEyRrv>)
10. Parkinson, J.E., A.C. Baker, I.B. Baums, S.W. Davies, A. Grottoli, S.A. **Kitchen**, T.C. LaJeunesse, M.V. Matz, M.W. Miller, A.A. Shantz, and C.D. Kenkel. (2020) Molecular tools for coral reef restoration: beyond biomarker discovery. *Conservation Letters*, e12687.

9. Baums, I.B., A.C. Baker, S.W. Davies, A. Grottoli, C.D. Kenkel, S.A. **Kitchen**, I.B. Kuffner, T.C. LaJeunesse, M.V. Matz, M.W. Miller, J.E. Parkinson, and A.A. Shantz. (2019) Considerations for maximizing the adaptive potential of restored coral populations in the western Atlantic. *Ecological Applications*, e01978.
 - *Online Press*: “How to restore a coral reef: New guidelines for helping corals adapt to changing environment”, *Penn State Eberly College of Science News*. (<https://bit.ly/2SOoT2V>)
 - Voted top 15 Coral Reef Research Contributors of 2020 in *Environment Coastal and Offshore Magazine* (<https://bit.ly/3n7Q72T>)
8. **Kitchen**[#], S.A., A. Ratan[#], O.C. Bedoya-Renia, R. Burhans, N.D. Fogarty, W. Miller, and I.B. Baums. (2019) Genomic variants among threatened *Acropora* corals. *G3: Genes/Genomes/Genetics*, 9(5): 1633-1646.
7. Kramer, B., A.J. Bourdelais, S.A. **Kitchen**, and A.R. Taylor. (2019) Uptake and localization of fluorescently-labeled *Karenia brevis* metabolites in marine microbial taxa. *Journal of Phycology*, 55: 47-59.
6. **Kitchen**, S.A., A.J. Bourdelais, and A.R. Taylor. (2018) Interaction of a dinoflagellate neurotoxin with voltage-activated ion channels in a marine diatom. *PeerJ*, 6: e4533.
5. Sproles^{*}, A.E., N.L. Kirk, S.A. **Kitchen**, C.A. Oakley, A.R. Grossman, V.M. Weis, and S.K. Davy. (2018) Phylogenetic characterization of transporter proteins in the cnidarian-dinoflagellate symbiosis. *Molecular Phylogenetics and Evolution*, 120: 307-320.
4. **Kitchen**⁺⁺, S.A., A.Z. Poole, and V.M. Weis. (2017) Sphingolipid metabolism of a sea anemone is altered by the presence of dinoflagellate symbionts. *The Biological Bulletin*, 233(3): 242-254.
3. **Kitchen**⁺⁺, S.A. and V.M. Weis. (2017) The sphingosine rheostat is involved in the cnidarian heat stress response but not necessarily in bleaching. *Journal of Experimental Biology*, 220: 1709-1720.
2. Poole, A.Z., S.A. **Kitchen**, and V.M. Weis. (2016) The role of complement in cnidarian-dinoflagellate symbiosis and immune challenge in the sea anemone *Aiptasia pallida*. *Frontiers in Microbiology*, 7: 519.
1. **Kitchen**[#] S.A., C.M. Crowder[#], A.Z. Poole, V.M. Weis, and E. Meyer. (2015) *De novo* assembly and characterization of four Anthozoan (phylum Cnidaria) transcriptomes. *G3: Genes/Genomes/Genetics*, 5(11): 2441-2452.

Papers in Review/Pre-Print

3. Baums, I.B., A.C. Baker, S.W. Davies, A. Grottoli, C.D. Kenkel, S.A. **Kitchen**, I.B. Kuffner, M.V. Matz, M.W. Miller, J.E. Parkinson, C. Prada, and A.A. Shantz. (*revise and resubmit*) Managing expectations for breeding of “super corals”. *PNAS*
2. Stankiewicz, K. H.*^{*}, N. Guiglielmoni, S.A. **Kitchen**, J.F. Flot, K.L. Barrot, S.W. Davies, J.R. Finnerty, S.P. Grace, L.S. Kaufman, H.M. Putnam, R.D. Rotjan, K.H. Sharp, I.B. Baums. (*in review*) Genomic comparison of the temperate coral *Astrangia poculata* with tropical corals yields insights into winter quiescence, innate immunity, and sexual reproduction. *G3: Genes/Genomes/Genetics*, <https://doi.org/10.1101/2023.09.22.558704>
1. Ohdera, A.H., J. Darymple, V Avila-Magaña, V. Sharp, K. Watson, M. McCauley, B. Steinworth, E.M. Diaz-Almeyda, S.A. **Kitchen**, A.Z. Poole, A. Bellantuono, S. Haridas, I.V. Grigoriev, L. Goentoro, E. Vallen, D.M. Baker, T.C. LaJeunesse, S. Loesgen, M.Q. Martindale, M. DeGennaro, W.K. Fitt, M. Medina (*in review*) Symbiosis-driven development in an early branching metazoan. <https://doi.org/10.1101/2022.07.21.500558>

Papers in Preparation

2. **Kitchen+++**, S.A., A.Z. Poole, A. Bilsky[^], M.B. Rowland[^], K. Turnham*, S.B. Piorkowski[^], M. Medina, and A.H. Ohdera (*in prep*) Inhibition of sphingosine kinase disrupts symbiosis of two cnidarian model systems. For *Current Biology*
1. **Kitchen**, S.A, K.H. Stankiewicz*, C.C. Osborne*, M.K. Devlin-Durante, S.B. Piorkowski[^], W. Miller, N.D. Fogarty, and I.B. Baums (*in prep*) Genomic signatures of biased introgression in F1 coral hybrids. For *Molecular Biology and Evolution*

White Papers

1. Safeguarding Florida's Coral Reefs: The Urgency of Assisted Gene Flow for Elkhorn Coral Conservation. (2024) Coral Restoration Consortium's Genetics Working Group.

Other Media Coverage

- 2018 Print: "Racing to save Florida's coral from climate change, scientists turn to a once-unthinkable strategy: 'assisted evolution'", *Los Angeles Times* (<https://lat.ms/2Ckagoz>)
- 2015 Print: "Lab Studies Coral, Anemones", *The Daily Barometer*, OSU (<https://bit.ly/2YkxpHI>)
- 2010 Print: "Tiny but deadly: *Karenia brevis*' method for poisoning", *Re:Search, a Journal of Intellectual Inquiry*, UNCW (<https://bit.ly/2Y64rjI>)

INVITED SEMINARS

- 2024 TAMU Ecology and Evolutionary Biology Seminar Series, "Evolving together: genomic insights from recent and deep-time symbioses"
- 2023 Dauphin Island Sea Lab; "Sources of novel genetic variation in endangered corals and their symbionts"
- 2022 Texas A&M University Galveston; "Adaptive potential of endangered corals and their symbionts to a changing climate"
- 2022 Tulane University; "Evolving together: genomic insights of two symbioses at different time scales"
- 2021 Wellcome Sanger Institute; "Evolving together: genomic insights of two symbioses at different time scales"
- 2021 Lehigh University; "Adaptive potential and limits in Caribbean acroporid corals"
- 2020 Thermo Fisher Scientific webinar; "STAG: Standard tools for acroporid genotyping"
- 2019 University of Southern California, "Adaptive potential and limits of the Caribbean acroporid corals"
- 2019 Chen Institute, California Institute of Technology; "Developing genomic resources for an emerging model of social and symbiotic evolution"
- 2018 California Institute of Technology; "Revisiting contemporary hybridization between Caribbean corals *Acropora palmata* and *Acropora cervicornis*"
- 2018 University of Guelph; "Revisiting contemporary hybridization between Caribbean corals *Acropora palmata* and *Acropora cervicornis*"
- 2015 The Pennsylvania State University; "Determinants and consequences of cnidarian-dinoflagellate symbiosis in a changing world through a host-centric lens"
- 2015 Northeastern University; "Determinants and consequences of cnidarian-dinoflagellate symbiosis in a changing world through a host-centric lens"
- 2013 Tropical Biosphere Research Center at the University of Ryukyus; "NSF EAPSI Summer Program: Impacts of Hyperthermal Stress on Coral Larvae Undergoing Symbiont Colonization"

SELECT ORAL PRESENTATIONS

21. **Kitchen**, S.A., A.Z. Poole, A. Bilsky[^], M.B. Rowland[^], K. Turnham*, S.B. Piorkowski[^], M. Medina, and A.H. Ohdera (2024) Inhibition of sphingosine kinase disrupts symbiosis of two cnidarian model systems. *7th Annual International Cassiopea Workshop, Key Largo, FL, May 10-12.*
20. **Kitchen**, S.A., A.Z. Poole, A. Bilsky[^], M.B. Rowland[^], K. Turnham*, S.B. Piorkowski[^], M. Medina, and A.H. Ohdera (2024) Inhibition of sphingosine kinase disrupts symbiosis of two cnidarian model systems. *Gordon Research Conference: 2024 Glycolipid and Sphingolipid Biology, Galveston, TX, February 19-22.*
19. Smihula, H., J.M. Wagner, S.A. **Kitchen**, J. Parker. (2024) The role of rove beetle odorant receptors in the evolution of symbiotic lifestyles. *Society for Integrative and Comparative Biology final program and abstracts, Seattle, WA, January 2-6.*
18. **Kitchen**, S.A., A.Z. Poole, A. Bilsky[^], M.B. Rowland[^], K. Turnham*, S.B. Piorkowski[^], M. Medina, and A.H. Ohdera (2024) Inhibition of sphingosine kinase disrupts symbiosis of two cnidarian model systems. *Society for Integrative and Comparative Biology final program and abstracts, Seattle, WA, January 2-6.*
17. **Kitchen** S.A., R. Hall[^], J.M. Wagner, T.H. Naragon, D.R. Miller, A. Harvard[^], Caltech Bi160 class[^], J. Parker (2023) Is Genetic Differentiation of Symbiotic Beetles Tied to Their Host Ant? *Society for Integrative and Comparative Biology final program and abstracts, Austin, TX, January 3-7.*
16. **Kitchen**, S.A., T.H. Naragon*, A. Brückner, S.A. Quinodoz, J.M. Badroos*, M.S. Ladinsky, J.M. Wagner*, D.R. Miller*, M. Yousefelahiyeh, I.A. Antoshechkin, S. Pirro, M. Guttman, M.L. Aardema, S. Davis and J. Parker. (2022) Genomic and biosynthetic evolution of a chemical key innovation in rove beetles. *Biodiversity Genomics 2022 Conference, October 3-7. ONLINE*
15. **Kitchen** S.A., R. Garcia, N.D. Fogarty and I.B. Baums. (2021) Applications of the acroporid SNP array beyond genotyping. *14th International Coral Reef Symposium, July 19-23. ONLINE*
14. **Kitchen** S.A., A. Brückner, Y. Kishi*, D.R. Miller*, T. Naragon*, J. Wagner*, and J. Parker. (2020) Genomic insights into gland development of rove beetles. *Society for Integrative and Comparative Biology final program and abstracts, Austin, TX, January 3-7.*
13. **Kitchen** S.A., A. Brückner, Y. Kishi*, D.R. Miller*, T. Naragon*, J. Wagner*, and J. Parker. (2019) Rove beetle genomes provide insight into lineage hyperdiversification. *Entomological Society of America Annual Meeting, St. Louis, MO, November 17-20.*
12. **Kitchen** S.A. and I.B. Baums (2018) Demonstration on SNP array data use for standardized acroporid genotyping. *Reef Futures 2018, Key Largo, Florida. December 10-14.*
11. **Kitchen** S.A., M.K. Devlin-Durante, K. Stankiewicz*, A. Ratan, N.D. Fogarty, W. Miller, I.B. Baums. (2018) Revisiting contemporary hybridization between Caribbean acroporids. *Third Global Invertebrate Genomics Alliance Research Conference and Workshop, Curacao. October 19-21.*
10. **Kitchen**, S.A., A.Z. Poole, K. Turnham*, S.B. Piorkowski[^], M. Medina, A.H. Ohdera (2018) Inhibition of sphingosine kinase reduces symbiont colonization in two symbiotic model cnidarians, the sea anemone *Exaiptasia pallida* and jellyfish *Cassiopea xamachana*. *The 9th Congress of the International Symbiosis Society at Oregon State University, Corvallis, Oregon. July 15-20.*
9. **Kitchen**, S.A. (2018) Genetic diversity of breeding programs and nurseries: Determining genetic and genotypic diversity of host and symbionts. *Coral Restoration Consortium Genetic Working Group, Pennsylvania State University, April 27.*
8. **Kitchen**, S.A., H.G. Reich*, M.K. Devlin-Durante, K. Stankiewicz*, T.C. LaJeunesse, I.B. Baums. (2018) Whole genome data resolves strain-specific associations of *Symbiodinium 'fitti'* with Caribbean *Acropora* species. *Symbiofest, Athens, GA. April 20.*

7. **Kitchen**, S.A., A. Ratan, W. Miller, and I.B. Baums. (2018) Genome synteny, divergence and introgression between Caribbean Acroporids. *Society for Integrative and Comparative Biology final program and abstracts, San Francisco, CA. January 3-7.*
6. **Kitchen**, S.A., M.K. Devlin-Durante, R.S. Harris, A. Ratan, N.D. Fogarty, W. Miller, and I.B. Baums. (2017) Genomic evidence of complex hybridization in Caribbean acroporids. *Society for Integrative and Comparative Biology final program and abstracts, New Orleans, LA. January 4-8.*
5. **Kitchen**, S.A., D. Jiang, S. Harii, N. Satoh, V.M. Weis, and C. Shinzato. (2016) Hyperthermal stress alters transcriptomic response of coral larvae at the onset of symbiosis. *13th International Coral Reef Symposium, Honolulu, HI. June 19-24.*
4. **Kitchen**, S.A., A.Z. Poole, and V.M. Weis. (2016) Modulation of cnidarian sphingosine rheostat during symbiosis onset and breakdown. *Society for Integrative and Comparative Biology final program and abstracts, Portland, OR. January 3-7.*
3. **Kitchen**, S.A., C. Shinzato, S. Harii, N. Satoh, and V.M. Weis. (2015) Consequence of hyperthermal stress on larvae undergoing symbiont colonization. *Society for Integrative and Comparative Biology final program and abstracts, West Palm Beach, FL. January 3-7.*
2. **Kitchen**, S.A. and V.M. Weis. (2012) Impacts of thermal stress on sphingolipid metabolism in *Aiptasia pallida*. *12th International Coral Reef Symposium, Cairns, Australia. July 9-13.*
1. **Kitchen**, S.A. and A.R. Taylor. (2011) Brevetoxin interaction with voltage-activated ionic currents of a marine diatom. *Journal of Phycology*, 47: S26.

SELECT POSTER PRESENTATIONS

11. Pritchett, K.A.[^], A. Aguayo[^], L. Bothwell[^], A. Ohdera, **S.A. Kitchen** (2023) Chemically-induced bleaching of the upside-down jellyfish *Cassiopea*. *TAMUG REU/Undergraduate Research Symposium. Texas A&M University at Galveston, Galveston, TX. August 4.*
10. Bothwell, L[^], A. Ohdera, **S.A. Kitchen** (2023) Amino acid influence on regeneration in Cnidaria: a comparative study of *Cassiopea xamachana*. *TAMUG REU/Undergraduate Research Symposium. Texas A&M University at Galveston, Galveston, TX. August 4.*
9. Aguayo, A[^], C. Gardner, **S.A. Kitchen** (2023) Genotyping through allorecognition in mesotrophic coral restoration: enhancing genetic diversity for improved survival. *TAMUG REU/Undergraduate Research Symposium. Texas A&M University at Galveston, Galveston, TX. August 4.*
8. Yang[^], I, J. Parker, S.A. **Kitchen** (2022) Degenerate genome evolution in Mimecitiini army ant myrmecophiles. *Society for Integrative and Comparative Biology final program and abstracts, Phoenix, AZ. January 3-7. ONLINE*
7. **Kitchen**, S.A., D.R. Miller*, J. Kanwal, H. Kim*, J.M. Wagner*, J. Parker (2022) Novel roles of lineage-specific odorant receptors in rove beetles. *Society for Integrative and Comparative Biology final program and abstracts, Phoenix, AZ. January 3-7. ONLINE*
6. **Kitchen**, S.A., G. Von Kuster, W. Miller and I.B. Baums (2018) STAG: Standard Tools for Acroporid Genotyping. *Society for Integrative and Comparative Biology final program and abstracts, San Francisco, CA. January 3-7.*
5. **Kitchen**, S.A., A.Z. Poole, and V.M. Weis. (2015) Sphingolipids in cnidarian-dinoflagellate interactions: investigating the role of the sphingosine rheostat during symbiont colonization. *The 8th Congress of the International Symbiosis Society at University of Lisbon, Lisbon, Portugal. July 12-18.*
4. **Kitchen**, S.A., C. Shinzato, S.Harii, N. Satoh, and V.M. Weis. (2014) Consequence of hyperthermal stress on larvae undergoing symbiont colonization. *5th Multidisciplinary Science Forum of the US Japan Society of Promotion of Science Fellows Alumni Association, Gainesville, FL. November 7-8.*

3. **Kitchen, S.A., A.Z. Poole, C.M. Crowder, V.M. Weis, and E. Meyer.** (2014) *De novo* assembly and characterization of four anthozoan transcriptomes. *Center for Genome Research and Biocomputing Fall Conference, Oregon State University, Corvallis, OR. September 12.*
2. **Kitchen, S.A., C.W. Paxton, A.Z. Poole, C.M. Crowder, J.J. McGraw[^], B. Haslam, J. Flesher[^] and V.M. Weis.** (2011) The study of cnidarian-dinoflagellate symbiosis at OSU. *Center for Genome Research and Biocomputing Fall Conference, Oregon State University, Corvallis, OR. September 18-19.*
1. **Kitchen, S.A., A.J. Bourdelais, C. Tomas, and A.R. Taylor.** An electrophysiological investigation of *Karenia brevis*. (2009) *1st North America Section Meeting. The International Society of Protistologist, Bristol, Rhode Island. June 11-13.*

GRANTS, FELLOWSHIPS & AWARDS

Funded:

- \$97,290 **NMS-NOAA Mesophotic and Deep Benthic Communities subcontract**, 2024-2025. "Genotyping and parentage analysis of mesophotic corals". Role: PI.
- \$15,000 **TAMUG Texas Comprehensive Research Fund**, 2024. "Acquisition of a coral spawning tank" Role: PI.

Submitted, decision pending:

- \$736,598 **NSF Chemical Oceanography**, 2025-2028. "Impact of submarine groundwater discharge on coral reef chemical budget", Role: Co-PI with PI D. Adyasari at TAMUG and X. Geng at UHM. \$139,149 to Kitchen

Concluded prior to TAMUG:

- \$19,000 **Caltech Center for Environmental Microbial Interactions**, 2020, "Horizontal transmission of an insect primary endosymbiont". Role: Co-PI with PI J. Parker.
- \$70,392 **NOAA Domestic Coral Reef Conservation Grant Program NA17NOS4820083**, 2017-2019. "Building a genetic and bioinformatic analysis pipeline for genotyping of Caribbean corals", Role: Co-PI with PI I. Baums.
- \$ 6,225 **Dovetail Genomics EOY Matching Funds Grant**, 2017. Role: PI.
- \$ 3,610 **PADI Foundation Grant**, 2014. Role: PI.
- \$ 500 **SIGMA XI Grants in Aid of Research**, 2014. Role: PI.
- \$11,000 **NSF East Asia and Pacific Summer Institutes (OISE #1311087)/ Japanese Society for Promotion of Science (SP #13027)** - 2013. Role: PI.

Other Awards:

- \$118,000 **Biology and Biological Engineering Postdoctoral Fellow**, 2020-2022
- **NOAA travel support to Reef Futures Conference**, FL 2018
- **NSF travel support to GIGA III workshop**, Curacao 2018
- \$200 **Travel Award from the Office of Postdoctoral Affairs**, Penn State, 2016
- \$1,950 **Oregon State University Libraries & Press Open Access Fund**, 2015
- **SICB Charlotte Mangum Student Support Program**, Housing, 2014
- \$2,500 **ZoRF Funds from the Dept. of Integrative Biology at OSU**, 2011-2015
- \$650 **College of Science Student Travel Award at OSU**, 2012, 2014
- \$300 **Poster presentation at International Society of Protistologist conference received Third Place Honors**, 2009
- \$7,800 **UNCW Merit Scholarship**, 2005-2007

TEACHING EXPERIENCE *original course

TAMUG Undergraduate Courses

*MARB 489: Coral Reef Biology (Spring 2024)

Teaching Assistants: M. Hood (2024)

MARB 435: Invertebrate Zoology (Fall 2024)

Teaching Assistants: D. Carballosa (2024), B. Lin (2024), V. Fernandez Rodriguez (CIRTL TAR Fellow 2024)

TAMUG Graduate Courses

*MARB 689: Applied Molecular Ecology (Fall 2023, Spring 2025)

Course Development and Instruction prior to TAMUG

*Bi 160: Molecular Basis of Animal Evolution Laboratory, Caltech (Spring 2019, 2022)

*Z 362: Invertebrate Zoology Laboratory course redesign, Oregon State University (Fall 2013)

*Z 362: Invertebrate Zoology Laboratory, Oregon State University (Spring 2011-2014)

*Bi 358: Symbiosis in the Environment lecture, Oregon State University (Spring 2015)

Bi 341/342/343: Human Anatomy and Physiology Laboratory, Oregon State University (2012-2015)

Bi 211/212: Principles of Biology Laboratory, Oregon State University (2010-2011)

Bio 201: Principles of Biology Laboratory: Cell, University of North Carolina Wilmington (2008-2009)

*Ocean Lab Lead Instructor, MarineQuest, University of North Carolina Wilmington (2007-2010)

Guest Lectures

2017 Coastal Biology, Pennsylvania State University

MENTORSHIP

TAMUG Graduate Students:

Michael Hood, MARB PhD, Fall 2023- Present

- 2024 PADI Foundation Grant #90250, \$4,200

Demi Carballosa, MARB MS, Fall 2023- Present

- 2023-2024 TAMUG Merit Graduate Student Award
- 2024 SACNAS Travel Grant

Tiana Acito, MARB PhD, Fall 2024-Present

Non-TAMUG Graduate Students:

Rianna Collins – Victoria University of Wellington, New Zealand, Summer 2023-present

Jun Cai – Oregon State University, USA, Spring 2023-present

- 2024 ISS Student Exchange, \$2,000

Graduate Student Committee Service:

2024-present: Emily Fritsche (TAMUG MARB PhD) – committee member

2024-present: Mikayla Clark (TAMU BIO PhD) – committee member

2024-present: Sophie Wong (UA, Dauphin Island Sea Lab, PhD) – committee member

2023-present: Myles Wagner (TAMU EEB PhD) – committee co-chair

2023-present: Brooke Torjman (TAMU EEB PhD) – committee member

2023-2024: Megan Sporre (TAMUG MARB PhD) – committee member

TAMUG Undergraduate Students:

Alvaro Aguayo (MARB), Spring 2023-present

- NSF LSAMP Scholarship Summer 2023, Fall 2023, Spring 2024

- 2024 Undergrad Research Scholar Thesis, “Genotyping through allorecognition for mesophotic coral restoration”
- Post-bac Research Technician, Summer 2024

Lauren Bothwell (Oceans & One Health), Spring 2023-present

- Aggies Commit to Excellence Scholar Summer 2023, Fall 2023, Spring 2024
- 2025 Undergrad Research Scholar Thesis, “The influence of amino acids and symbionts on *Cassiopea* regeneration”

Garrett Hernandez (MCES), Fall 2023-present

- NSF LSAMP Scholarship Fall 2023, Spring 2024, Fall 2024
- 2025 Undergrad Research Scholar Thesis, “Influence of temperature and nutrients on asexual reproduction of the upside-down jellyfish, *Cassiopea xamachana*”

Jaelyn Rodriguez (Oceans & One Health), Spring 2024-present

- Aggies Commit to Excellence Scholar Summer 2024, Fall 2024

Andrea Graham (MARB), Summer 2024- present

- NSF LSAMP Scholarship Fall 2024

Non-TAMUG Undergraduate Students:

Kharisma Pritchett – Collins College, Summer 2023

- REU OCEANUS participant

Graduate Students mentored prior to TAMUG: Joani Viliunas- Caltech (2022-present), Hayley Smihula – Caltech (2022), Marina Lecoeuche- Caltech (2022), Immy Ashley- Victoria University of Wellington, New Zealand (2021-2022), C. Cornelia Osborne - Pennsylvania State University (2020-2022), Lucy Gorman- Victoria University of Wellington, New Zealand (2020), Jean Badroos- Caltech (2019-2022), Tom Naragon- Caltech (2018-2022), Yuriko Kishi- Caltech (2018-2022), Kira Turnham- Pennsylvania State University (2018), Kathryn Stankiewicz- Pennsylvania State University (2017-2022), Kate Vasquez Kuntz - Pennsylvania State University (2017-2020), Andrea Chan- Pennsylvania State University (2016-2018), Hannah Reich- Pennsylvania State University (2016-2020), Jeremy Berthelie- Aix Marseille University, France (2015), Ashely Sproles- Victoria University of Wellington, New Zealand (2015)

Undergraduate Students mentored prior to TAMUG: Robert Hall- University of Wisconsin-Madison (2022), Isabell Yang- Caltech (2021-2022), Austin Harvard- Caltech (2019), Sam Piorkowski- Pennsylvania State University (2017-2018), Macklin Elder- Pennsylvania State University (2016-2017), Kristin Brandon- Oregon State University (2014-2015), Jessica Flesher- Oregon State University (2012-2013), Ariana Meltvedt- Oregon State University (2011-2012), Jamie Jo McGraw- Oregon State University (2011), Sam Kelly-Quattrocchi- Oregon State University (2011)

OUTREACH AND SERVICE

Professional Service:

- 2023 Co-organizer Gulf of Mexico Reef Symposium (135 participants)
- 2021 Co-chair of evolutionary ecology session at International Coral Research Symposium
- 2018 Workshop lead on SNPchip demonstration (70 participants), Reef Futures 2018
- 2018-2022 *Acropora* Recovery Implementation Team Database Working Group, NOAA
- 2018 Instructor of SNP analysis for Conservation Genomics workshop (35 participants), Third Global Invertebrate Genomics Alliance Research Conference and Workshop
- 2017-2023 Caribbean Coral Restoration Genetics Working Group, NOAA
- 2016 Co-chair Symbiosis Session, SICB

Department and University Service:

2024-2026 Research Advisory Council, TAMUG

2023-2025 MARB Space Committee, TAMUG
2023-2025 MARB Graduate Affairs Committee, TAMUG
2023-2025 Dive Safety Board, TAMUG
2021-2022 BBE DEI Representative, Caltech
2017-2018 Postdoc Committee of the PSU Microbiome Center, organize seminar series at PSU
2017-2018 NSF Includes USVI Summer Program, taught visiting students for two weeks at PSU
2016-2017 Symbiosis Reading Group, founder of multi-department monthly reading group at PSU
2015 OSU Molecular and Cellular Biology Discussion Panel Member
2014 Fundraising committee, Dept. of Integrative Biology
2012-2013 Biology Graduate Student Symposium, Food Fundraising and Service
2011-2012 Biology Graduate Student Symposium, Fundraising and Publicity Rep.

Community Service:

2024 Dive into the Gulf, outreach event at Moody Gardens
2017 WPSU Eventapalooza, coral activities designed for children 4-7 years old at PSU
2016 ECOGIG Ocean Discovery Zone, volunteer for Penn State outreach event
2013 Winter Wonderings, classroom activities for 3rd-4th graders
2009 Blue Heron Bowl, volunteer the National Ocean Sciences Bowl

Thesis review: University of Melbourne (2022), University of Victoria (2024)

Peer Review for: *Aquatic Conservation: Marine and Freshwater Ecosystems* (1), *The Biological Bulletin* (1), *BMC Genomics* (1), *Communications Biology* (1), *Conservation Genetics* (1), *Conservation Genetic Resources* (1), *Coral Reefs* (3), *Frontiers* (3), *G3* (2), *GigaScience* (2), *Global Change Biology* (1), *Journal of Experimental Marine Biology and Ecology* (1), *Marine Genomics* (1), *Molecular Biology and Evolution* (1), *Molecular and Cellular Toxicology* (1), *Molecular Ecology* (1), *Nature Climate Change* (1), *Scientific Reports* (2), *Science Advances* (1), *The ISME Journal* (1)

Grant Review for: National Science Foundation (3 *ad hoc*, 1 panel)

Society memberships: Global Invertebrate Genomics Alliance (2021-2023), Entomological Society of America (2019-2020), International Society for Reef Studies (2015-2021), International Symbiosis Society (2015-2018), Society for Integrative and Comparative Biology (2014-2023), Sigma Xi (2010, 2014), The International Society of Protistologists (2009-2011)

PROFESSIONAL DEVELOPMENT AND TRAINING

2022 5th International *Cassiopea* Workshop (virtual)
2021 Reef Futures (virtual)
2021 4th International *Cassiopea* Workshop (virtual)
2021 Genomes of Animals and Plants Conference (virtual), Dovetail Genomics
2020 Equity Training, Caltech
2019 Chen Institute Workshop on Genomic Neuroscience, Caltech
2018 PSU Bootcamp on Reproducible Research, Pennsylvania State University
2018 Molecular Mechanisms of Adaptation- 32nd Mini Symposium, Carnegie Institution for Science
2018 Anatomy of a Chalk Talk, Pennsylvania State University
2017 Global Biodiversity Genomics Conference, Smithsonian National Museum of Natural History
2016 How to be Your Own Best Mentor, Pennsylvania State University
2016 Broader Impacts Workshop, Pennsylvania State University
2014 Structuring Classrooms for Engaged and Active Learning, Oregon State University
2014 Center for Genome Research and Biocomputing Fall Conference, Oregon State University
2011 Center for Genome Research and Biocomputing Fall Conference, Oregon State University

- 2011 Seeing is Believing: Advances in Live Imaging in Optogenetics, University of Oregon
2010 Center for Genome Research and Biocomputing Fall Conference, Oregon State University

PROFESSIONAL CERTIFICATIONS

- 2016 NAUI Diver (nitrox, rescue and advanced)/2010 SDI Scuba Certification (open water)
2016 First Aid and CPR
2015 Blood Borne Pathogen Training, OSU
2013 Sea Safety & Survival Training Class, OSU

RESEARCH CRUISES

- 2023 *R/V Pelican*, NOAA MDBC PE-23-26_MERCI 3 in Gulf of Mexico June 19-30th. Role: Scientist

PROFESSIONAL REFERENCES

1. **Dr. Joseph Parker**, Caltech, phone: 626-395-8729, email: joep@caltech.edu
2. **Dr. Iliana Baums**, Pennsylvania State University, phone: 814-867-0492, email: baums@psu.edu
3. **Dr. Virginia Weis**, Oregon State University, phone: 541-737-4359, email: weisv@oregonstate.edu
4. **Dr. Alison Taylor**, University of North Carolina Wilmington, phone: 910-962-2176, email: taylor@uncw.edu

COLLABORATORS

1. **Dr. Rocío García-Urueña** - Universidad del Magdalena, Colombia
2. **Dr. Simon Davy** - Victoria University of Wellington, New Zealand
3. **Dr. Chuya Shinzato** - University of Tokyo, Japan
4. **Dr. Nori Satoh** – Okinawa Institute of Science and Technology, Japan
5. **Dr. Saki Harii** – University of the Ryukyus, Japan
6. **Dr. Angela Poole** – Berry College, Georgia, USA
7. **Dr. Mónica Medina** – Pennsylvania State University, Pennsylvania, USA
8. **Dr. Aki Ohdera** – University of Arizona, Arizona, USA
9. **Dr. Dustin Kemp** – University of Alabama Birmingham, Alabama, USA
10. **Dr. Bill Fitt**- University of Georgia, Georgia, USA
11. **Dr. Michael Abrams**- UC Berkeley, California, USA
12. **Dr. Anthony Bellantuono** – Florida International University, Florida, USA