

Kelly E. Speare

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EDUCATION

- 2021 Ph.D. Ecology, Evolution, and Marine Biology, University of California, Santa Barbara
Advisor: Dr. Deron E. Burkepile
- 2013 B.S. Biology, Highest Honors, University of North Carolina at Chapel Hill

PROFESSIONAL APPOINTMENTS

- 2023-present National Science Foundation Ocean Sciences Post-Doctoral Research Fellow
School of Geographical Sciences & Urban Planning, Arizona State University
- 2022 Post-Doctoral Scholar
Marine Science Institute, University of California, Santa Barbara
- 2015-2021 Doctoral Candidate
Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara
- 2019-2020 Schmidt Environmental Solutions Fellow
Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara
- 2015-2019 National Science Foundation Graduate Research Fellow
Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara

PEER REVIEWED PUBLICATIONS (12)

- 12) **Speare, K.E.**, Duran, A., Miller, M.W., Moeller, H.V., Burkepile, D.E. (*In Press*). Small-scale habitat selection by larvae of a reef-building coral. *Marine Ecology Progress Series*.
- 11) Leinbach, S.E., **Speare, K.E.**, Strader, M.S. (2023). Reef habitats structure symbiotic microalgal assemblages in corals and contribute to differential heat stress responses. *Coral Reefs*. 42(1), 205-217
- 10) **Speare, K.E.**, Adam, T.C., Winslow E.M., Lenihan, H.S., Burkepile, D.E. (2022). Size-dependent mortality of corals during marine heatwave erodes recovery capacity of a coral reef. *Global Change Biology*. 28 (4), 1342-1358
- 9) Adam, T.C., Holbrook, S.J., Burkepile, D.E., **Speare, K.E.**, Brooks, A.J., Ladd, M.C., Shantz, A.A., Vega Thurber, R., Schmitt, R.J. (2022). Priority effects in coral-macroalgae interactions can drive alternate community paths in the absence of top-down control. *Ecology*. 103(12): e3831
- 8) Strader, M.S., Howe-Kerr, L. Sims, J., **Speare, K.E.**, Shore, A.N., Burkepile, D.E., Correa, A.M.S. (2022). Nitrate enrichment has lineage specific effects on *Pocillopora acuta* adults, but no transgenerational effects in planulae. *Coral Reefs*. 41(2), 303-317
- 7) Leinbach, S.E., **Speare, K.E.**, Rossin, A.M., Holstein, D.M., Strader, M.S. (2021). Energetic and reproductive costs of coral recovery in divergent bleaching responses. *Scientific Reports*. 11(1), 1-10.

- 6) Donovan, M.K., Adam, T.C., Shantz, A.A., **Speare, K.E.**, Munsterman, K.S., Rice, M.M., Schmitt, R.J., Holbrook, S.J., Burkepile, D.E. (2020). Nitrogen pollution interacts with heat stress to increase coral bleaching across the seascape. *Proceedings of the National Academy of Sciences USA*. 117 (10), 5351-5357
- 5) Burkepile, D.E., Shantz, A.A., Adam, T.C., Munsterman, K.S., **Speare, K.E.**, Ladd, M.C., Rice, M.M., Ezzat, L., McIlroy, S., Wong, J.C.Y., Baker, D.M., Brooks, A.J., Schmitt, R.S., Holbrook, S.J. (2020). Nitrogen identity drives differential impacts of nutrients on coral bleaching and mortality. *Ecosystems*. 23(4), 798-811.
- 4) **Speare, K.E.**, Duran, A., Miller, M.W., Burkepile, D.E. (2019). Sediment associated with algal turfs inhibits the settlement of two endangered coral species. *Marine Pollution Bulletin*. 144, 189-195.
- 3) Allgeier, J.E., **Speare, K.E.**, Burkepile, D.E. (2018). Estimates of fish and coral larvae as nutrient subsidies to coral reef ecosystems. *Ecosphere*. 9 (6), e02216.
- 2) Yang, T., **Speare, K.E.**, McKay, L., MacGregor, B.J., Joye, S.B., Teske, A. (2016). Distinct bacterial communities in surficial seafloor sediments following the 2010 Deepwater Horizon blowout. *Frontiers in Microbiology*. 7, 1384.
- 1) Zhang, S., **Speare, K.E.**, Long, Z.T., McKeever, K.A., Gyoerkoe, M., Ramus, A.P., Mohorn, Z., Atkins, K.L., Hambridge, S.M., Graham, N.A.J., Nash, K.L., Selig, E.R., Bruno, J.F. (2014). Is coral richness related to community resistance to and recovery from disturbance? *PeerJ*. 2, e308.

PUBLICATIONS IN REVIEW

- Speare, K.E.**, *Enright, L., *Aplin, A., Adam, T.C., Edmunds, P.J., Burkepile, D.E. Early life stage bottleneck determines rates of coral recovery following severe disturbance. (*In Review at Ecology*)
- Winslow, E.M., **Speare, K.E.**, Adam, T.C., Burkepile, D.E., Lenihan, H.S. Corals survive severe bleaching event in refuges related to taxa, colony size, and water depth. (*In Review at Scientific Reports*)
- Vompe, A., Epstein H., **Speare, K.E.**, Schmeltzer, E., Adam, T.C., Burkepile, D.E., Sharpton, T., Vega Thurber, R. Microbiome ecological memory and responses to repeated marine heatwaves clarify variation in coral bleaching and mortality. (*In revision at Global Change Biology*)

**Denotes undergraduate mentee coauthor*

TEACHING

- 2018 Instructor, Coral Reef Ecology and Field Methods
Sea Education Association (SEA)
- 2020 Teaching Assistant, Coral Reefs – EEMB 147
University of California, Santa Barbara
- 2020 Teaching Assistant, Ecology – EEMB 120
University of California, Santa Barbara
- 2016 Teaching Assistant, Introduction to Biology – EEMB 2
University of California, Santa Barbara
- 2016 Teaching Assistant, Aquatic Community Ecology – EEMB 152
University of California, Santa Barbara

GRANTS, AWARDS, AND FELLOWSHIPS

- 2022-2024 NSF Ocean Sciences Postdoctoral Research Fellowship, *Investigating coral demographic processes to understand how local conditions interact with climate change to influence coral recovery trajectories*. K.E. Speare (P.I.) - (\$298,357)
- 2022 Schmidt Foundation Undergraduate Mentorship Award, *Quantifying the effects of anthropogenic stressors on coral growth and mortality* (\$6,000)
- 2019 Ruth Gates Memorial Young Investigator Travel Award, Moorea Coral Reef LTER, University of California, Santa Barbara (\$2,000)
- 2019-2020 Schmidt Foundation Research Fellowship, *Resolving the effects of local stressors on coral recruitment, the key link to resilient coral reefs* (\$20,000)
- 2018 Environmental Education Foundation Thomas J. Cashman Post-Graduate Scholarship (\$1,000)
- 2018 Women Divers Hall of Fame Grant for Marine Conservation, *Testing the effects of herbivorous fish size on coral recruitment and mediation by protective structural refuges* (\$2,000)
- 2017 Environmental Education Foundation Thomas J. Cashman Post-Graduate Scholarship (\$1,500)
- 2016 Environmental Education Foundation Thomas J. Cashman Post-Graduate Scholarship (\$4,000)
- 2015 Environmental Education Foundation College Post-Graduate Scholarship (\$2,500)
- 2014 National Science Foundation, Graduate Research Fellowship, *Effects of chemically defended marine sponges on coral recruitment and survival* (\$138,000)
- 2013 PADI Foundation Research Grant (\$2,000)
- 2013 Bermuda Institute of Ocean Sciences Grant-In-Aid of Research (\$2,000)
- 2013 Coker Award for Outstanding Research in Ecology, University of North Carolina at Chapel Hill
- 2012 National Science Foundation Research Experience for Undergraduates—Bermuda
- 2011-2013 NOAA Hollings Scholarship (\$24,000)
- 2011 Dean's Award—Sea Education Association (\$2,000)
- 2011 Summer Undergraduate Research Fellowship, University of North Carolina at Chapel Hill (\$3,000)
- 2009-2013 Environmental Education Foundation Thomas E. Reynolds Endowment Scholarship (\$8,000)

CONFERENCE PRESENTATIONS (presenting author only)

- 2023 *Ecological Society of America Annual Meeting*, Portland, OR
- 2022 **Schmidt Environmental Solutions Open House*, Santa Barbara, CA
- 2022 *International Coral Reef Symposium*, Bremen, Germany (virtual)
- 2019 *Western Society of Naturalists Annual Meeting*, Ensenada, Mexico
- 2019 *EEMB Graduate Research Symposium*, Santa Barbara, CA
- 2018 *Western Society of Naturalists Annual Meeting*, Tacoma, WA
- 2017 *Western Society of Naturalists Annual Meeting*, Pasadena, CA
- 2016 *International Coral Reef Symposium*, Honolulu, HI
- 2015 *Association of Marine Labs of the Caribbean Meeting*, Curaçao, Netherlands
- 2014 *ASLO Ocean Science Meeting*, Honolulu, HI
- 2013 *Benthic Ecology Meeting*, Savannah, GA
- 2012 *NOAA Undergraduate Research Symposium*, Silver Spring, MD
- 2012 *Benthic Ecology Meeting*, Norfolk, VA

**Invited Talk*

STUDENTS MENTORED

Current undergraduate student mentee: Francesca Fee

Past undergraduate students mentored: Ally Aplin (currently enrolled in graduate school at Duke University), Andrew Petitt (currently enrolled in graduate school at UCSB), Lauren Enright (currently enrolled in graduate school at UCSB), Hailee Clover (received MA in teaching at UCI, currently a high school science teacher), Nelson Beltran, Sriram Ramamurthy (currently enrolled in graduate school at UCSB), Katherine Le (currently enrolled in graduate school at UCSB), Andre Nguyen (received MA in teaching at UCLA, currently is a biology lecturer at UCLA), Alyssa Carney, Channing Mink, Alyssa Chamberlain, Shivam Patel, and Jeremy Marquez, Steffanie Wise, Maya Gorgas (received MS in biochemistry at Georgetown University), Taylor Traxler.

Mentor for the Women in Science and Engineering (WiSE) club at UCSB 2015-2017

Mentored >80 undergraduate students in the field during Sea Education Association Semester Classes C252- C254 in 2014; S280 in 2018

ACADEMIC SERVICE AND MEMBERSHIP

Session Chair and Organizer: –*International Coral Reef Symposium*; Bremen, Germany 2021 and 2022; session title: *How will the coral populations of today affect the ecology and recovery of reefs in the future?*

Journal reviews for: *Ecology*, *Ecosphere*, *Marine Ecology Progress Series*, *Marine Pollution Bulletin*, *Coral Reefs*, *PeerJ*

Grant reviews for: *National Science Foundation*, *Division of Ocean Sciences (OCE)*

Society Member: *Ecological Society of America*, *Western Society of Naturalists*, *International Coral Reef Society*

Peer Advisor: *Office for Undergraduate Research*, *University of North Carolina at Chapel Hill*, 2011-2013

CERTIFICATIONS, TRAINING, SKILLS

Software and Coding: R, GitHub, Microsoft Office, Affinity Designer, Procreate

Other Training: Bayesian Models for Ecologists (NSF-funded 14-day workshop; 2023)

Diving: >1,000 logged scientific dives; AAUS Scientific Diver since 2012 (60' depth certification, night diver), PADI Open Water Diver, PADI Advanced Open Water Diver, PADI Rescue Diver, PADI Nitrox Diver, PADI Divemaster

Safety: CPR, First Aid, Oxygen Administration

Boating: Operation of small boats in lagoons and inland waters, Operation of boats <30 ft in near-coastal ocean waters

PUBLIC OUTREACH

Invited Speaker: University of California, Santa Barbara SCUBA Club 2019

Interviewed for NCEAS climate change documentary 2017

Volunteer: Moorea Coral Reef LTER Earth Day Exhibit 2017, 2018, 2019

Editorial Staff: Carolina Scientific Magazine, University of North Carolina at Chapel Hill

Managing Editor: 2012-2013

Life Sciences Editor: 2010-2013