

Hannah Rachel Nelson

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Education

University of California, Davis, Ph.D. student, Population Biology 2017-present
California State University, Northridge, M.S. Biology with distinction 2016
Brown University, B.S. Marine Biology with honors, *magna cum laude* 2014
Northeastern University, Three Seas Program 2012-2103

Publications

Courtney TA, Barnes BB, Chollett I, Elahi R, Gross K, Guest JR, Kuffner IB, Lenz EA, **Nelson HR**, Rogers CS, Toth LT, Andersson AJ. 2020. Disturbances drive changes in coral community assemblages and coral calcification capacity. *Ecosphere* 11(4):eo3066. <https://doi.org/10.1002/ecs2.3066>

Altieri AH, **Nelson HR**, Gedan KB. 2019. The significance of ocean deoxygenation for tropical ecosystems—corals, seagrasses, and mangroves. In D. Laffoley & JM Baxter (Eds.), *Ocean Deoxygenation—Everyone's Problem: Causes, Impacts, Consequences and Solutions* (pp. 401-429). International Union for Conservation of Nature and Natural Resources. Gland, Switzerland. <https://doi.org/10.2305/IUCN.CH.2019.13.en>

Nelson HR, Altieri AH. 2019. Oxygen: the universal currency on coral reefs. *Coral Reefs* 38(2):177-198. <https://doi.org/10.1007/s00338-019-01765-0>

Edmunds PJ, **Nelson HR**, Bramanti L. 2018. Density-dependence mediates coral community structure. *Ecology* 99(11):2605-2613. <https://doi.org/10.1002/ecy.2511>

Guest JR, Edmunds PJ, Gates RD, Kuffner IB, Andersson AJ, Barnes BB, Chollett I, Courtney TA, Elahi R, Gross K, Lenz EA, Mitarai S, Mumby PJ, **Nelson HR**, Parker BA, Putnam HM, Rogers CS, Toth LT. A framework for identifying and characterising coral-reef “oases” against a backdrop of degradation. *Journal of Applied Ecology* 55(6):2865-2875. <https://doi.org/10.1111/1365-2664.13179>

Nelson HR, Kuempel CD, Altieri AH. 2016. The resilience of reef invertebrate biodiversity to coral mortality. *Ecosphere* 7(7):eo1399. <https://doi.org/10.1002/ecs2.1399>

Research Experience

Research Assistant, University of California, Davis, Bodega Marine Laboratory 2017-present
Construction and deployment of seagrass field experiments, tank cleaning and maintenance, rocky shore algal and invertebrate surveys, and various other projects.

Intern, Smithsonian Tropical Research Institute, Panama City, Panama 2017
Compiled and wrote literature review on the role of oxygen in the structure and dynamics of coral reefs.

Research Assistant, California State University, Northridge, USA 2014-2016
Assisted with the St. John Long-Term Coral Reef Dynamics (NSF-LTREB) and Moorea Coral Reef Long-Term Ecological Research (NSF-LTER) projects through field support, mesocosm measurements and maintenance, and analysis of time series photographs.

Intern, Smithsonian Tropical Research Institute, Bocas del Toro, Panama 2013-2014
Designed experiments and field surveys to examine resilience of invertebrate communities to coral reef hypoxia event. Also assisted with other reef, mangrove, and seagrass projects.

<i>NSF REU Program, Whitney Laboratory for Marine Bioscience, St. Augustine, FL, USA</i>	2012
Examined the effects of multiple predators and prey-size preferences on Atlantic oyster populations through field surveys, laboratory feeding trails, and a mesocosm experiment.	
<i>Research Assistant, Leslie Lab, Brown University, Providence, RI, USA, 2012</i>	2012
Assisted Brown-MBL PhD student Sarah Corman process salt marsh core samples for her project entitled "Salt Marsh Responses to Climate Change Impacts."	

Funding

Center for Population Biology Research Award, University of California, Davis (\$2244)	2020
Center for Population Biology Supplement for Citizen Science & Outreach Award, University of California, Davis (\$500)	2020
Center for Population Biology Research Award, University of California, Davis (\$700)	2019
Center for Population Biology Supplement for Citizen Science & Outreach Award, University of California, Davis (\$350)	2019
XSEDE Startup Grant, National Science Foundation (\$909.50)	2019
Graduate Student Association (GSA) Travel Award, University of California, Davis (\$500)	2018
Student Travel & Academic Research (STAR), California State University, Northridge (\$400)	2016
Student Travel Award, Council on Ocean Affairs, Science, & Technology (COAST) (\$1000)	2016
Graduate Studies Travel Award, California State University, Northridge (\$400)	2016
Thesis Support Award, California State University, Northridge (\$1000)	2014
Brown International Scholars Program Award, Brown University (\$5000)	2013
Undergraduate Teaching and Research Award, Brown University (\$1500)	2011

Academic Honors & Awards

Best Paper Award, Coral Reefs, Journal of the International Coral Reef Society	2019
Golden Key International Honour Society, University of California, Davis	2018
Julie Gorchynski, M.D. Center for Cancer & Developmental Biology Graduate Research Award	2017
Honorable Mention, Best Student Presentation in Population & Organismal Biology, WSN Meeting	2015
Honorable Mention, NSF Graduate Research Fellowship Program	2015
2nd Place, Best Graduate Student Poster, CSUN Student Research & Creative Works Symposium	2015
Sigma Xi Honor Society, Brown University	2014
Phi Beta Kappa Honor Society, Brown University	2014
Finalist, Raymond B. Huey (DEE) Best Student Poster Presentation, SICB Meeting	2013
Dean's List, Spring 2013 Semester, Northeastern University	2013
Dean's List, Fall 2012 Semester, Northeastern University	2012
Best Poster Presentation, REU Program, UF Whitney Laboratory for Marine Bioscience	2012

Presentations

* oral presentation, † poster presentation, ° co-presenter, ◇ invited speaker

Nelson, HR. 2020. From Trees to Octocorals: The Role of Phenotypic Integration in Underwater Animal Forests. *Biology Research Seminar Course (NSM90), California State University, Sacramento*. Sacramento, CA*◇

Nelson HR. 2020. STEM Outreach: Middle School. *Science Communication Tools for the Modern Era Course (ANB290), University of California, Davis*. Davis, CA*◇

Nelson HR. 2019. STEM Outreach: Middle School. *Science Outreach: How to Increase the Impact of Your Work Workshop, University of California, Davis*. Davis, CA*◇

Nelson HR. 2018. The evolution of coloniality in ascidians. *Population Biology Graduate Group Annual Student Symposium, University of California, Davis*. Davis, CA*

Nelson HR, Altieri AH. 2017. Coral reefs: Extreme oxygen environments? *Coastal & Estuarine Research Federation 24th Biennial Conference*. Providence, RI*

Nelson HR, Edmunds PJ. 2016. The role of density-associated processes and shading in the structure and distribution of octocoral communities. *97th Annual Western Society of Naturalists Meeting*. Monterey, CA*

Nelson HR, Edmunds PJ. 2016. Allometry and integration constrain Caribbean octocoral morphology. *13th International Coral Reef Symposium*. Honolulu, HI*

Sternberg DR, **Nelson HR, Edmunds PJ.** 2015. Asexual budding and aggregated spatial distribution of fungiid corals from disturbed reefs in Moorea, French Polynesia. *Moorea Coral Reef Long Term Ecological Research Site 11th Annual All Investigators Meeting*. Santa Barbara, CA*°

Nelson HR, Edmunds PJ. 2015. Allometry and integration constrain Caribbean octocoral morphology. *96th Western Society of Naturalists Meeting*. Sacramento, CA*

Nelson HR, Altieri AH, Kuempel CD. 2015. Effects of coral mortality on reef invertebrate communities. *California State University, Northridge 19th Annual Student Research and Creative Works Symposium*. Northridge, CA†

Nelson HR, Sternberg DR, and Edmunds PJ. 2015. Asexual budding and aggregated spatial distribution of fungiid corals from disturbed reefs in Moorea, French Polynesia. *9th Long Term Ecological Research All Scientists Meeting*. Estes Park, CO†

Nelson HR, Altieri AH, Kuempel CD. 2014. Effects of coral mortality on reef invertebrate communities. *95th Annual Western Society of Naturalists Meeting*. Tacoma, WA†

Nelson HR, Griffin J, McCoy M, Silliman B. 2013. Despite resource partition, multiple predators reduce mortality risk for foundation species. *Society for Integrative & Comparative Biology Annual Meeting*. San Francisco, CA†

Teaching Experience

Associate Instructor, Introductory Biology Co-Class, University of California, Davis	Fall 2020
Instructor, BUSP Biology Boot Camp, University of California, Davis	Summer 2020
Teaching Assistant, Introductory Biology Co-Class, University of California, Davis	Spring 2020
Teaching Assistant, Marine Ecology, University of California, Davis	Winter 2019
Teaching Assistant, BUSP Biology Boot Camp, University of California, Davis	Summer 2019
Teaching Assistant, Principles of Ecology and Evolution, University of California, Davis	Fall 2018, 2019
Graduate Assistant, Biometry, California State University, Northridge	Fall 2015, 2016
Peer Learning Facilitator, Evolutionary Biology, California State University, Northridge	Fall 2016
Peer Learning Facilitator, Biological Principles, California State University, Northridge	Fall 2015

Professional Service

Academic Organizations

Teaching Assistant Consulting Fellows, Center for Educational Effectiveness, University of California, Davis

Program Improvement Lead (2020-present), *Graduate Teaching Fellow* (2019-present)

Graduate Teaching Community, Center for Educational Effectiveness, University of California, Davis

Facilitator (2020-present)

Equity in Science, Technology, Engineering, Math, and Entrepreneurship, University of California, Davis

Vice President of Outreach (2018-2019), *STEM Squad Coordinator* (2017-present)

Biology Alumni Association Board, California State University, Northridge

Student Liaison (2016)

Women in Science Club, California State University, Northridge

President (2015-2016), *Vice President* (2014-2015)

Marine Biology Graduate Student Association, California State University, Northridge

Vice President (2014-2015)

Professional Membership

Ecology Society of America

International Society for Reef Studies

Western Society of Naturalists

Society for Integrative and Comparative Biology

Working Groups

Participant. 2016. Local-scale ecosystem resilience amid global-scale ocean change: the coral reef example. USGS Powell Center for Analysis and Synthesis. Fort Collins, CO.

Professional Development

Research

Ensembl Browser Workshop, Bioinformatics Core, University of California, Davis 2019

Comparative Genomics Course, Physalia Courses, Berlin, Germany 2018

RevBayes Workshop, Center for Population Biology, University of California, Davis 2018

Teaching

Inclusive and Accurate Approaches for Teaching Sex and Gender in Biology, Project Biodiversify Workshop, UC Davis 2020

Fall Foundations in Teaching Workshop Series, UC Davis Center for Educational Effectiveness 2017

California STEM Symposium Attendee, Anaheim, CA 2015

Diversity & Inclusion

Diversity in STEM Conference Panelist & Attendee, UC Davis	2020
Mental Health Gatekeeper Training, UC Davis	2018
Diversity 102 Workshop, GradPathways, UC Davis Graduate Studies	2018
Foundations in LGBTQIA Allyship Training, UC Davis LGBTQIA Resource Center	2018
UndocuAlly Program for Educators, UC Davis AB540 and Undocumented Center	2017
Graduate Diversity Orientation Program Extension Workshops, UC Davis	2017-2018

Outreach & Community Service

Organizer, Evolution & Ecology Graduate School Preview Series, UC Davis https://eegradpreview.weebly.com/	2020
Panelist, Graduate School Experience Panel, Diversity in STEM Conference, UC Davis	2020
Volunteer station leader, Picnic Day, Evolution & Ecology Department, UC Davis	2019
Volunteer ambassador, Team Graduate School, UC Davis	2019
Coordinator/co-founder, STEM Squad, Winters Middle School, Winters, CA https://estemestemsquad.weebly.com/	2018-present
Volunteer station leader, STEM Stars, Shirley Rominger Intermediate School, Winters, CA	2018-2019
Volunteer teaching assistant, Visualizing and Mapping Bioassessment Data in R, 25th Annual Meeting of California Aquatic Bioassessment Workgroup, UC Davis	2018
Volunteer facilitator, Creek Science Investigations, Putah Creek Council, Winters, CA	2018
Volunteer scientist, Family STEAM Night, John Barrett Middle School, Carmichael, CA	2017-2018
Coordinator/co-founder, Girls in Science & Technology Club, Portola Middle School, Tarzana, CA https://gistclub.weebly.com/	2016
Volunteer presenter, Multnomah Elementary School Career Day, Los Angeles, CA	2016
Volunteer judge, Portola Middle School Highly Gifted Magnet Science Fair, Tarzana, CA	2016
Volunteer alumni interviewer, Brown University	2016
Guest lecturer, Viewpoint School, Calabasas, CA	2015-2016
Guest lecturer, Virgin Islands Environmental Resource Station, St. John, USVI	2014-2016
Mentor, Calabasas High School Marine Biology Club, Calabasas, CA	2014-2015