Christina Hernández

Oxford University
Department of Biology
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https://chrissy3815.github.io/website/

EDUCATION:

2015-2020 **Ph.D., MIT/Woods Hole Oceanographic Institution Joint Program**, Biological Oceanography
WHOI Biology Dept and MIT Dept of Earth, Atmospheric, and Planetary Sciences
Thesis title: *Distribution, growth, and transport of larval fishes and implications for population dynamics*.
Advisor: Joel Llopiz
Degree completion date: October 29, 2020

2009-2014 **B.S., Columbia University School of Engineering and Applied Sciences**, Earth and Environmental Engineering, *magna cum laude*

POSITIONS HELD:

Oct 2024 – Present **Marie Curie Postdoctoral Fellow**
Oxford University, Department of Biology

Oct 2023 – Present **Lecturer in Biology**
Oxford University, Balliol College

Oct 2023 – Sept 2024 **Postdoctoral Research Associate**
Oxford University, Department of Biology
Supervisor: Rob Salguero-Gómez

Nov 2020 – Present **Guest Investigator**
Woods Hole Oceanographic Institution, Biology Department
Sponsor: Joel Llopiz

Aug 2022 – May 2023 **Lecturer** (0.5*FTE)
Cornell University, Dept of Ecology and Evolutionary Biology
Course: BioEE 1781- Introduction to Evolution and Biodiversity (online)

Nov 2020 – Sept 2023 **Postdoctoral Associate**
Cornell University, Dept of Ecology and Evolutionary Biology
Supervisor: Stephen Ellner
*Note: 0.5*FTE from Aug 2022 to May 2023*

2014-2015 **Research Assistant**
Gulf of Maine Research Institute
Supervisors: Andrew Pershing and Katherine Mills

2013 **Summer Student Fellow**
Woods Hole Oceanographic Institution, Biology Department
Supervisor: Joel Llopiz

2012-2014 **Research Assistant**
Lamont-Doherty Earth Observatory
Supervisor: Jerry McManus

2012 **Summer Research Fellow**
Biosphere2, University of Arizona
Supervisor: Marcel Schaap

PUBLICATIONS

Preprints

Hernández, C. M., Stott, I., Koons, D., Salguero-Gomez, R. Density dependence impacts our understanding of population resilience. *In prep.* for *The American Naturalist*. Preprint at EcoEvoRxiv: https://doi.org/10.32942/X23C9R

Giménez Romero, A., **Hernández, C. M.**, Genovart, M., Salguero-Gómez, R. Population structure plays a key role in community stability. *In prep.* for *Nature Ecology and Evolution.* Preprint at EcoEvoRxiv https://doi.org/10.32942/X2661X

Rosen, A.**,** Battison, R., **Hernández, C. M.**, Spacey, O.**,** McLean, J.**,** Prober S., Gascoigne, S.**,** McMahon, S., Jucker, T., Salguero-Gómez, R. Modelling forest dynamics using integral projection models (IPMs) and repeat LiDAR. *In prep.* for *Methods in Ecology and Evolution.* Preprint at bioRxiv https://doi.org/10.1101/2025.01.06.631514

Gupta, A., Gascoigne, S., Barabas, G., Qi, M., Fenollosa, E., Thornley, R., **Hernández, C. M.,** Hector, A., Salguero-Gómez, R. Variation in precipitation drives differences in interactions and short-term transient instability between grassland functional groups: a stage-structured community approach. *In revision* for *Ecology Letters* Preprint at bioRxiv https://doi.org/10.1101/2024.10.07.617067

2024

Hernández, C. M., Ellner, S. P., Snyder, R. E., & Hooker, G. (2024). The natural history of luck: A synthesis study of structured population models. *Ecology Letters*, *27*(3), e14390. https://doi.org/10.1111/ele.14390

Ellner, S. P., Snyder, R. E., Adler, P. B., **Hernández, C. M.,** & Hooker, G. (2024). It's about (taking up) space: discreteness of individuals and the strength of spatial coexistence mechanisms. *Ecology, 105*(11): e4404. https://doi.org/10.1002/ecy.4404

Hernández, C. M., van Daalen, S. F., Liguori, A., Neubert, M. G., Caswell, H., & Gribble, K. E. (2025). Maternal effect senescence and caloric restriction interact to affect fitness through changes in life history timing. *Journal of Animal Ecology*, 94, 99–111. https://doi.org/10.1111/1365-2656.14220

Claassens, L.; **Hernández, C. M.**; Biondi, P.; Jaskiel, J.; Muller Karanassos, C.; Mesengei, M.; Nestor, V.; Otto, E. I.; Renguul, H.; Rotjan, R. D.; Sartori, G.; Tatebe, L. (2024). Navigating large scale ocean science in a Pacific small island developing state. *Pacific Conservation Biology*, *30*(6).

2023

Canfield, K. N., Sterling, A. R., **Hernández, C. M.,** Chu, S. N., Edwards, B. R., Fontaine, D. N., Freese, J. M., Giroux, M. S., Jones, A.E., McCarty, A. J., Morrissette H. K., Palevsky, H. I., Raker, C. E., Robuck, A. R., Serrato Marks, G., Thibodeau, P. S., Windle, A. E. (2023). Building an inclusive wave in marine science: Sense of belonging and Society for Women in Marine Science symposia. *Progress in Oceanography*, 218, 103110. https://doi.org/10.1016/j.pocean.2023.103110

Hernández, C. M., Ellner, S. P., Adler, P. B., Hooker, G., & Snyder, R. E. (2023). An exact version of Life Table Response Experiment analysis, and the R package exactLTRE. *Methods in Ecology and Evolution*, 14, 939–951. https://doi.org/10.1111/2041-210X.14065

2023 **Hernández, C. M.,** Paris, C. B., Vaz, A. C., Jones, B. T., Kellner, J. B., Richardson, D. E., Sponaugle, S., Cowen, R. K., & Llopiz, J. K. (2023). Diverse patterns of larval coral reef fish vertical distribution and consequences for dispersal and connectivity. *Coral Reefs,* 42, 453–465. https://doi.org/10.1007/s00338-023-02355-x

Gascoigne, S. J. L., Rolph, S., Sankey, D., Nidadavolu, N., Stell, A. S., **Hernández, C. M.**, Philpott, M. E. R., Salam, A., Bernard, C., Jun Lee, Y., McLean, J., Hetti Achchige Perera, S., Spacey, O. G., Kajin, M., Vinton, A. C., Ruth Archer, C., Burns, J. H., Buss, D. L., Caswell, H., … Salguero-Gómez, R. (2023). A standard protocol to report discrete stage-structured demographic information. *Methods in Ecology and Evolution.* 14, 2065–2083. https://doi.org/10.1111/2041-210X.14164

2022 van Daalen, S. F., **Hernández, C. M.,** Caswell, H., Neubert, M. G., & Gribble, K. E. (2022). The Contributions of Maternal Age Heterogeneity to Variance in Lifetime Reproductive Output. *The American Naturalist*, *199*(5), 603–616. https://doi.org/10.1086/718716

Hernández, C. M., Richardson, D. E., Rypina, I. I., Chen, K., Marancik, K. E., Shulzitski, K., & Llopiz, J. K. (2022). Support for the Slope Sea as a major spawning ground for Atlantic bluefin tuna: evidence from larval abundance, growth rates, and particle-tracking simulations. *Canadian Journal of Fisheries and Aquatic Sciences*, *79*(5), 814–824. https://doi.org/10.1139/cjfas-2020-0444

2021 Rypina I. I., Dotzel M. M., Pratt L. J., **Hernández C. M.**, Llopiz J. K. (2021). Exploring interannual variability in potential spawning habitat for Atlantic bluefin tuna in the Slope Sea. *Progress in Oceanography, 192*. https://doi.org/10.1016/j.pocean.2021.102514

2020 **Hernández C. M.**, van Daalen S. F., Caswell H., Neubert M. G., Gribble K. E. (2020). A demographic and evolutionary analysis of maternal effect senescence. *Proceedings of the National Academy of Sciences*, *117*(28), 16431-16437. https://doi.org/10.1073/pnas.1919988117

2019 **Hernández, C. M.**, Witting, J., Willis, C., Thorrold, S. R., Llopiz, J. K., & Rotjan, R. D. (2019). Evidence and patterns of tuna spawning inside a large no-take Marine Protected Area. *Scientific Reports*, *9*(1), 10772. https://doi.org/10.1038/s41598-019-47161-0

Staudinger M. D., Mills K. E., Stamieszkin K., Record N. R., Hudak C. A., Allyn A., Diamond A., Friedland K. D., Golet W., Henderson M. E., **Hernández C. M.**, Huntington T. G., Ji R., Johnson C. L., Johnson D. S., Jordaan A., Kocik J., Li Y., Liebman M., Nichols O. C., Pendleton D., Richards R. A., Robben T., Thomas A. C., Walsh H. J., Yakola K. (2019) It's about time: A synthesis of changing phenology in the Gulf of Maine ecosystem. *Fisheries Oceanography.* https://doi.org/10.1111/fog.12429

Rypina, I. I., Chen, K., **Hernández, C. M.,** Pratt, L. J., & Llopiz, J. K. (2019). Investigating the suitability of the Slope Sea for Atlantic bluefin tuna spawning using a high-resolution ocean circulation model. *ICES Journal of Marine Science*. https://doi.org/10.1093/icesjms/fsz079

2017 Mills K. E., Pershing A. J., **Hernández C. M.** (2017) Forecasting the seasonal timing of Maine's lobster fishery. *Frontiers in Marine Science*. 4:1–10. https://doi.org/10.3389/fmars.2017.00337

2016 Pershing, A. J., Alexander, M. A., **Hernández, C. M.,** Kerr, L. A., Le Bris, A., Mills, K. E., Nye, J. A. Record, N. R., Scannell, H. A., Scott, J. D., Sherwood, G. D., Thomas, A. C. (2016). Response to Comments on *Slow adaptation in the face of rapid warming leads to collapse of the Gulf of Maine cod fishery. Science*. 352 (2016): 423-423.

2015 Pershing, A. J., Alexander, M. A., **Hernández, C. M.,** Kerr, L. A., Bris, A. le, Mills, K. E., Nye, J. A., Record, N. R., Scannell, H. A., Scott, J. D., Sherwood, G. D., Thomas, A. C. (2015). Slow adaptation in the face of rapid warming leads to collapse of the Gulf of Maine cod fishery. *Science*, *350*(6262), 809–812. https://doi.org/10.1126/science.aac9819

Le Bris, A., Pershing, A. J., **Hernández, C. M.,** Mills, K. E., & Sherwood, G. D. (2015). Modelling the effects of variation in reproductive traits on fish population resilience. *ICES Journal of Marine Science*, *72*(9), 2590–2599. https://doi.org/10.1093/icesjms/fsv154

GRANTS AND FUNDING

Competitive Grants (external)

Lead PI: MSCA Postdoctoral Research Fellowship, Environmental and Geosciences. *Towards a comprehensive framework for the analysis of density dependence in population dynamics.* 2024-2026. €220,908.48

Lead PI: NSF Graduate Research Fellowship Program, Geosciences. *How do larvae get home? Transport pathways, interannual variability, and implications for recruitment success along the US East Coast.* 2015-2020. $132,000

Competitive Grants (internal)

Co-PI: Ocean Life Institute, Woods Hole Oceanographic Institution. *Atlantic Bluefin Tuna Spawning in the Slope Sea: Larval Growth and Retention*. 2016-2018. Lead PI: J. Llopiz. $32,939

Co-PI: MISTI-Chile Program, MIT. *Arrival and Survival*: *Towards an improved understanding of community structure in the marine intertidal*. 2017-2018. Co-PIs: M. Freilich (MIT), K. Archibald (MIT), J. Faundez (Pontificia Universidad Catolica, Chile), M. Orellana (PUC), and N. Muñoz (PUC). Funds for travel, organization of two workshops (MIT and PUC): $20,000

Other sources of funding

Adelaide and Charles Link Foundation. *Atlantic Bluefin Tuna Spawning in the Slope Sea: Larval Growth and Population Dynamics*. 2018-2019. Total amount to WHOI, for salary and tuition: $50,000

Marine Policy Center Graduate Student Fellowship. J. Seward Johnson Endowment in support of the Woods Hole Oceanographic Institution's Marine Policy Center. September 1-December 31, 2019.

AWARDS AND HONORS

2021 George "Gera" Pantaleyev Award, MIT-WHOI Joint Program. This award is conferred annually on the MIT-WHOI Graduate Student who best exemplifies the commitment to improving the graduate student experience and graduate student life at WHOI.

2020 Alfred J. Lotka prize for Best Student poster in Theoretical Ecology Section, Ecological Society of America Annual Meeting.

2019 Best Student Lightning Talk, Evolutionary Demography Society 6th annual meeting.

2019 Graduate Women of Excellence Award, MIT.

2014 Departmental Award to a graduating student, Earth and Environmental Engineering, Columbia University.

2013 Induction into Tau Beta Pi, Columbia University.

INVITED PRESENTATIONS

2023 **Hernández, C. M.** Luck Across the Tree of Life. *Departmental Seminar Series*, Cornell University Dept. of Ecology and Evolutionary Biology. January 30, 2023. Ithaca, New York.

Hernández, C. M., Ellner, S. P., Adler, P. B., Hooker, G., & Snyder, R. E. Comparing populations to investigate how vital rates drive population dynamics: Exact Life Table Response Experiments (LTRE). *Theoretical Ecology Seminar*, International Initiative for Theoretical Ecology. March 14, 2023. Virtual, recorded: YouTube.

Hernández, C. M., Ellner, S. P., Adler, P. B., Hooker, G., & Snyder, R. E. Comparing populations to investigate how vital rates drive population dynamics. *Methods Live*, Methods in Ecology and Evolution, British Ecological Society. June 27, 2023. Webinar, recorded: YouTube

2022 **Hernández, C. M.** There and back again: early life history and population dynamics in fishes and more. University of North Carolina – Wilmington, Department of Biology and Marine Biology. March 16, 2022. Virtual.

2021 **Hernández, C. M.** Two stories of tuna larvae: combining field observations, otolith analyses, and backtracking simulations. *Quantitative Seminar Series*, University of Washington School of Aquatic and Fishery Sciences. February 12, 2021. Virtual.

2019 **Hernández, C. M.** Biophysical modeling to maximize insight gained from field data on larval fish. *Biology Department Seminar Series*, Woods Hole Oceanographic Institution. April 25, 2019. Woods Hole, Massachusetts.

CONTRIBUTED PRESENTATIONS

2024 Hernández, C. M., Stott, I., Koons, D., Salguero-Gomez, R. Demographic resilience depends on population density, life history strategy, and the demographic target of density dependence. Evolutionary Demography Society Annual Meeting. Mexico City, Mexico. July 31, 2024. Talk.

Hernández, C. M., Stott, I., Koons, D., Salguero-Gomez, R. Population ecology needs new density-dependent analytical methods: the case of demographic resilience and suggested directions for future research. British Ecological Society Annual Meeting. Liverpool, England, United Kingdom. December 13, 2024. Talk.

2022 Hernández, C. M.; Snyder, R. E.; Ellner, S. P.; Adler, P. B.; Hooker, G. Luck across the tree of life: Results from a meta-analysis of the COMADRE and COMPADRE databases. Ecological Society of America Annual Meeting. Montreal, Quebec, Canada. August 16, 2022. Talk in organized oral session* titled "Individual heterogeneity and stochasticity: Maybe they're born with it, maybe it's luck."
**I co-organized this oral session with Silke van Daalen.*

Hernández, C. M.; Ellner, S. P.; Snyder, R. E. Comparing populations to investigate how vital rates drive population dynamics: An exact method for calculating Life Table Response Experiments and an R package that does it for you. Ecological Society of American Annual Meeting. August 15, 2022. Workshop (90 minutes, virtual).

Hernández, C. M.; Snyder, R. E.; Ellner, S. P.; Hooker, G. Luck across the tree of life: Results from a meta-analysis of the COMADRE, COMPADRE, and PADRINO databases. British Ecological Society Meeting. Edinburgh, Scotland, UK. December 18-21, 2022. Poster.

2021 Hernandez C, Richardson DE, Rypina II, Chen K, Marancik KE, Shulzitski K, Llopiz JK. Support for the Slope Sea as a major spawning ground for Atlantic bluefin tuna: evidence from larval abundance, growth rates, and particle-tracking simulations. The Tuna Conference. Virtual. May 18-20, 2021. Poster.

2020 Hernández, C. M.; van Daalen, S; Caswell, H; Neubert, M; Gribble, K. Maternal age and fitness in a rotifer: a demographic analysis.* Ecology Society of America Annual Meeting. Virtual. August 3-6, 2020. Poster.
**Awarded the Alfred J. Lotka prize for Best Student Poster in Theoretical Ecology Section*

Hernández, C. M.; Paris, C. B.; Vaz, A. C.; Jones, B. T.; Kellner, J. B.; Richardson, D. E.; Sponaugle, S.; Cowen, R. K.; Llopiz, J. K. Larval traits drive patterns of marine dispersal and connectivity. Ocean Sciences Meeting. San Diego, California. Feb 17-21, 2020. Poster.

2019 Hernández, C. M.; van Daalen, S; Caswell, H; Neubert, M; Gribble, K. Maternal age and fitness in a rotifer: a demographic analysis.* Evolutionary Demography Society 6th annual meeting. Miami, Florida. January 10, 2019. Lightning talk and poster.
**Awarded the prize for Best Student Lightning Talk*

2018 Hernández, C. M.; Llopiz, J. K.; Witting, J.; Willis, C.; Thorrold, S.; Rotjan, R. Distribution of larval tunas in the Phoenix Islands Protected Area and estimated spawning sites during multiple phases of an ENSO cycle (2015-2016). Climate Impacts on Top Predators (CLIOTOP) meeting. Keelung, Taiwan. October 15, 2018. Talk.

Hernández, C. M.; Richardson, D. E.; Rypina, I. I.; Chen, K.; Pratt, L. J.; Llopiz, J. K. Larval habitat suitability for Atlantic bluefin tuna spawned in the Slope Sea. Southern New England Chapter of the American Fisheries Society Summer Meeting. Portsmouth, Rhode Island. June 28, 2018. Talk.

Hernández, C. M.; Richardson, D. E.; Rypina, I. I.; Chen, K.; Pratt, L. J.; Llopiz, J. K. Larval habitat suitability for Atlantic bluefin tuna spawned in the Slope Sea. The 69th Annual Tuna Conference. Lake Arrowhead, California. May 21-24, 2018. talk.

Hernández, C. M.; Richardson, D. E.; Rypina, I. I.; Chen, K.; Pratt, L. J.; Llopiz, J. K. Larval habitat suitability for Atlantic bluefin tuna spawned in the Slope Sea. Ocean Sciences Meeting. Portland, Oregon. February 12-16, 2018. Poster.

2017 Hernández, C. M.; Llopiz, J. K.; Paris, C. B. Vertical distributions of coral reef fish larvae influence dispersal and connectivity. Sixth International Conference on Mathematical Modeling and Analysis of Biological Systems (ICMA VI). Tucson, Arizona. Oct 20-22, 2017. poster.

2015 Hernández, C. M.; Mills, K. E.; Pershing, A. J. Seasonal forecasts of the timing of Maine lobster landings. Regional Association for Research on the Gulf of Maine (RARGOM) Fall Meeting 2015: How is the timing of all things changing in the Gulf of Maine? Portsmouth, New Hampshire. Oct 14, 2015. oral presentation.

Hernández, C. M.; Llopiz, J. K.; Paris, C. B.; Kellner, J. B.; Vaz, A. C.; Jones, B. T. The influence of ontogenetic vertical migration of coral reef fish larvae on dispersal and connectivity. Ocean Carbon Biogeochemistry (OCB) Scoping Workshop on Trait-Based Approaches to Ocean Life. Waterville Valley, New Hampshire. Oct 5-8, 2015. poster.

2014 Hernández, C. M.; Llopiz, J. K.; Paris, C. B.; Kellner, J. B.; Vaz, A. C.; Jones, B. T. The influence of taxon-specific vertical distributions of coral reef fish larvae on dispersal and connectivity. Ocean Sciences Meeting. Honolulu, HI. Feb 24-28, 2014. oral presentation.

TECHNICAL REPORTS

2023 Alemany, F. et al. Report of the 2023 ICCAT GBYP workshop on Atlantic bluefin tuna larval indices. ICCAT SCRS Document SCRS/2023/042

2016 Die, D. et al. Report of the ICCAT GBYP workshop on bluefin tuna larval studies and surveys. ICCAT SCRS Document SCRS/2016/206.

2015 Mills, K. E., C. M. Hernández, R. Young Morse, and A. J. Pershing. 2015. Final report to the Northeast Regional Ocean Council: Environmental Influences on Spatial Patterns of Commercial Fisheries in New England. Gulf of Maine Research Institute, Portland, ME.

TEACHING AND GUEST LECTURES

2024 Lecturer at Balliol College, Oxford University. Hilary Term (May-June), organized four tutorial sessions on statistics for the Yr 2 Biology students (8 hours total). 6 students.

2024 Lecturer at Balliol College, Oxford University. Michaelmas Term (Oct-Dec), organized three tutorial sessions on statistics for the Yr 2 Biology students and three tutorial sessions on fundamental skills (R programming, presentations, essay writing) for Yr 1 Biology students (8.5 hours total). 11 students.

2024 Departmental teaching, Department of Biology, Oxford University. Delivered two lectures on natural resource management and fisheries economics and one computer practical on the analysis of population dynamics as part of the Yr 2 Biology curriculum on Ecology in the Anthropocene (8 hrs total). 120 students.

2023 Lecturer at Balliol College, Oxford University. Michaelmas Term (Oct-Dec), organized three tutorial sessions on statistics for the Yr 2 Biology students (4 hours total). 6 students.

2023 Instructor for Introduction to Evolution and Biodiversity (BioEE-1781 at Cornell University). Spring term, 4 credit hours (12-16 hours of student's time per week). 46 students.

2022 Instructor for Introduction to Evolution and Biodiversity (BioEE-1781 at Cornell University). Fall term, 4 credit hours (12-16 hours of student's time per week). 48 students.

2021 Faculty supervisor for undergraduate research for credit (BIOG 2990 at Cornell University) to Elizabeth Becker. Fall term, 1 credit-hour (3-5 hours of student's time per week)

2019 "Tuna spawning in the Phoenix Islands Protected Area: combining field data and computational methods." February 27, 2019. University of Rhode Island. Bio260X: Undergraduate Biology Seminar. Narragansett, RI.
"Tuna and PIPA: from larvae to international politics." June 18, 2019. Sea Education Association. Protecting the Phoenix Islands summer course. Woods Hole, Massachusetts.

2018 "Tuna and PIPA: from larvae to international politics." June 20, 2018. Sea Education Association. Protecting the Phoenix Islands summer course. Woods Hole, Massachusetts.

2016 "Tuna and PIPA: from larvae to international politics." June 16, 2016. Sea Education Association. Protecting the Phoenix Islands summer course. Woods Hole, Massachusetts.

MENTORSHIP EXPERIENCE

2024 Co-supervisor (with Rob Salguero-Gomez) to Young Jun Lee, Oxford University MBiol student. April 2024 – June 2025.

2017 Graduate student supervisor (under Principal Investigator Joel Llopiz) to Ciara Willis, WHOI Summer Student Fellowship Program.

2016 Supervised four undergraduate projects for Sea Education Association summer course, Protecting the Phoenix Islands.
1. Alexandra Bonecutter and Sergio Morales. Distribution of mesopelagic fish in net samples.
2. Peter Baek. Distribution of tuna larvae and the relationship to environmental factors.

3. Jennah McDonald, Ruthann Monsees, and Panyu Peng. Distribution of appendicularians and the relationship to environmental factors.
4. Alison Gaffney. Characterizing the community of coral reef fish larvae in pelagic samples.

SERVICE TO THE SCIENTIFIC COMMUNITY

In the past 5 years, I have reviewed papers for the following journals:

Astrobiology, Canadian Journal of Fisheries and Aquatic Sciences, Coral Reefs, Ecology, Ecology Letters, Evolution, Fisheries Research, Frontiers in Marine Science, ICES Journal of Marine Science, Journal of Ecology, Journal of Marine Systems, Methods in Ecology and Evolution, Oceanography, Population Ecology

Since 2023, I have served as an ad-hoc reviewer for the National Science Foundation Oceanography Program Office (4 proposals reviewed).

Positions held:

2025-present Associate Editor, *Population Ecology*

2022-2023 Vice Chair, Early Career Ecologists Section, Ecological Society of America

2021-2023 Postdoctoral Co-representative to the Ecology and Evolutionary department, Cornell University. Attend faculty meetings and act as liaison between dept chair and postdocs

2017-2022 Chair/President, Society for Women in Marine Science (SWMS)
Oversaw the establishment of chapters across the USA and internationally, managed a fundraising campaign, and spearheaded application process for non-profit status.

2019-2022 Student Representative to The Oceanography Society (TOS) Council
Attended quarterly Council meetings, established international TOS Student Committee, organized two annual online webinars related to World Oceans Day (2021 and 2022), wrote a student newsletter approximately monthly

2020 Co-organizer and presenter at a community presentation in the wake of George Floyd's murder and the Black Lives Matter protests. *Hope amidst Hurt: Anti-Racism and the Future of WHOI*. Presented *A Primer on Anti-racism*. Woods Hole Oceanographic Institution, June 12, 2020.

2019 Co-author of *A Student Charge for Measurable Progress on Diversity and Inclusion*, submitted to the President, Vice Presidents, Staff Council, and the Board of Trustees of the Woods Hole Oceanographic Institution, May 2019.

2017-2019 Student Member, Workplace Climate Committee, Woods Hole Oceanographic Institution
Planned and facilitated institution-wide community discussions on sensitive topics including racism, implicit bias, gender discrimination, and relationships between scientific and administrative staff.

2018 Steering Committee for Fall Symposium of the Society for Women in Marine Science, September 22, 2016. Woods Hole, Massachusetts.

2017 Steering Committee for Fall Symposium of the Society for Women in Marine Science, November 3, 2017. Woods Hole, Massachusetts.

2017 Session Chair, Biology and Climate Session, Graduate Climate Conference. November 10-12, 2017. Woods Hole, Massachusetts.

2016 Steering Committee for Fall Symposium of the Society for Women in Marine Science, September 29, 2016. Woods Hole, Massachusetts.

OUTREACH ACTIVITIES

2023 Family Days in the Exploration Zone at Science Oxford Centre. Display and activities about long-lived organisms and evolution of senescence. October 21, 2023. Oxford, UK.

Skype a Scientist: three sessions about marine ecology with elementary school classes (one 3rd grade class, two 5th grade classes) in Rincon, Georgia, USA. September 5-6, 2023.

Synergy II exhibit at One Ocean Exploration Zone, part of the Ocean Race Stopover in Newport, Rhode Island. May 13-21, 2023. I produced communication materials and trained docents on topics related to the *Drifters* painting and underlying science (more information below).

2022 Panel discussion on careers in marine science, Williams-Mystic program in marine science. Invited panelist. May 3 2022. Students were in Mystic, CT. Panelists attended virtually.

2021 Cornell Mathematical Competition in Modeling (https://e.math.cornell.edu/sites/mcm/). Served on judging panel. November 2021. Ithaca, NY.

2020-2021 Synergy II: Below the Surface. This is an art-science collaboration project. I partnered with the artist Kathy Hodge to create art inspired by my work on Atlantic bluefin tuna in the Slope Sea. Website for overall project: https://www.synergyexperience.org/
Our specific project, *Drifters*: https://www.synergyexperience.org/drifters

2019 Skype a Scientist: 1 session about life cycles of fish and frogs with an elementary school class in Carrollton, Georgia. January 2019.

Mashpee 9 film screening. Together with two other PhD students, I organized a screening of a documentary film about local issues of indigenous and cultural rights, and the gentrification of a nearby town (Mashpee). We invited the filmmaker (who is a Wampanoag woman from Mashpee), two of the men featured in the film, and an indigenous scholar of social justice to speak as a panel after the film. March 9, 2019. Woods Hole, Massachusetts.

Girl Scouts "Geek is Glam!" Workshop for girls ages 8-13. Together with a few other students, we put together materials for an exhibitor table, representing both SWMS and WHOI. I also served on a panel about career opportunities. October 12, 2019. Worcester, MA.

2018 Chile es Mar: full-day workshop with local summer school students. Short presentation in Spanish about bipartite life cycles, followed by a game where students match larval invertebrates with the intertidal adult forms. January 15, 2018. Las Cruces, Chile.

2018 Blue Lobster Bowl, New England Regional Ocean Sciences Bowl, March 3, 2018. Science judge. Cambridge, Massachusetts.

Skype a Scientist: 2 sessions about life cycles of plants with elementary school classes in Lima, Peru. June 2018.

Half-day event for Falmouth High School Spanish Exchange Program. Introductory talks about WHOI, geosciences, and physical oceanography, followed by hands-on activities on the dock and in the laboratory. 15-20 students, including local host students and their visitors from Spain. October 11, 2018. Woods Hole, Massachusetts.

2017 Northeast Regional Science Bowl. February 11, 2017. Timekeeper. Cambridge, Massachusetts.

Guest lecture at John Paul II High School, "Drifters and swimmers: tuna from eggs to adults." May 5, 2017. Hyannis, Massachusetts.

2016 Blue Lobster Bowl, New England Regional Ocean Sciences Bowl, March 5, 2016. Science grader and facilitator for box model group activity. Cambridge, Massachusetts.

FIELD WORK EXPERIENCE

2018 August 3 to 27, 2018: SKQ201818S. Beaufort Shelf Upwelling Project Year 2. Fish team. Deployed, recovered, and processed midwater trawl samples targeting Arctic cod.

2017 June 10 to 23, 2017: GU1702. NEFSC Larval Bluefin Tuna Survey. Participated in sampling for larval tuna, processed plankton samples, performed at-sea identification of larval fish, and trained and supervised an undergraduate researcher on these same tasks.

July 6 to 20, 2017: HB1704. NEFSC Sea Turtle Tagging Cruise. Oceanography team. Participated in sampling for larval tuna, processed plankton samples, performed at-sea identification of larval fish, and released one set of oceanographic drifters.

August 25 to September 18, 2017: SKQ201713S. Beaufort Shelf Upwelling Project Year 1. Fish team. Deployed, recovered, and processed midwater trawl samples targeting Arctic cod.

2016 June 17 to 23, 2016: AR06. R/V Armstrong Science Verification Cruise IV. Tested biological sampling techniques, including CTD-mounted Video Plankton Recorder, various plankton nets, and a mid-water trawl net system. Participated in deployment, recovery, and sample processing.

July 5 to Aug 13, 2016: S268. Sea Education Association summer program 'Protecting the Phoenix Islands.' A major cruise objective was to sample larval tunas in the Phoenix Islands Protected Area. Supervised net tows and sample processing, advised 4 undergraduate research projects.

PROFESSIONAL DEVELOPMENT AND WORKSHOP PARTICIPATION

2023 Participant, International Commission for the Conservation of Atlantic Tunas (ICCAT) Working Group on Atlantic bluefin tuna larval indices. February 7-9, 2023. Palermo, Italy.

2022 Participant, Intergroup Dialogue Project training in the Cornell University Department of Ecology and Evolutionary Biology, to advance department goals of diversity, equity, and inclusion. May 2022. Ithaca, NY (*6 hours*)

Participant, Inclusive Teaching training in the Cornell University Department of Ecology and Evolutionary Biology. August 12, 2022. Ithaca, NY (*5 hours*)

2021 Participant, NIMBioS "Discussions with Students on Quantitative Education in the Life Sciences." January 22. Virtual.

Student, Stanford course "Matrix Methods for Dynamic Models and Data Analysis" taught by Shripad Tuljapurkar. 6 sessions, January-March. Virtual.

2021 Unlearning Racism in Geoscience (URGE; https://urgeoscience.org/). FOLFE pod at Woods Hole Oceanographic Institution. 8 two-week modules, Spring 2021 (45 hours).

2021 Building Mentorship Skills for Academic Careers, Future Faculty and Academic Careers, Cornell University Graduate School, Spring 2021 (8 hours).

Teaching and Learning in the Diverse Classroom, Center for Teaching Innovation, Cornell University, 5 weeks online course and weekly live session with the Graduate Student and Postdoctoral Researcher Learning Community, June-July (20 hours).

2018 Organizer-Participant, MISTI-Chile Workshop on "Arrival and Survival: Towards an improved understanding of community structure in the marine intertidal." January 5-11. Santiago and Las Cruces, Chile.

2017 Organizer-Participant, MISTI-Chile Workshop on "Arrival and Survival: Towards an improved understanding of community structure in the marine intertidal." August 2-12. Cambridge and Woods Hole, Massachusetts.

2016 Participant, International Commission for the Conservation of Atlantic Tunas (ICCAT) Working Group on Larval Studies and Surveys, Madrid, Spain. 9-12 September.

2015 Participant, OCB: Trait-Based Approaches to Understanding Marine Life Workshop, Waterville Valley, NH, USA. 5-8 October.