Erin L. Meyer-Gutbrod

Assistant Professor
School of the Earth, Ocean and Environment
University of South Carolina
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RESEARCH INTERESTS

Population, Community and Ecosystem Dynamics
Anthropogenic Impacts on Marine Ecosystems
Demographic, Spatial, and Statistical Modeling
Quantitative Approaches to Conservation Forecasting and Management

EDUCATION

Ph.D. Cornell University, Earth and Atmospheric Sciences 2016
Ocean Resources and Ecosystems Program
Committee: Charles Greene (Chair), Patrick Sullivan, Bruce Monger, Christopher Clark

B.S. University of Notre Dame, Physics Department 2008
Dual major: Physics, Philosophy; Minor: Spanish

PROFESSIONAL EXPERIENCE

Assistant Professor, School of the Earth, Ocean and Environment 2020 - present
University of South Carolina

Adjunct Professor, Department of Biological Sciences 2020 - present
University of South Carolina

Postdoctoral Scholar, Marine Science Institute; University of California, Santa Barbara 2017 - 2020
Research funded by the Bureau of Ocean Energy Management assessing the net environmental benefit of oil platform decommissioning scenarios on southern California marine ecosystems

Whiteley Center Scholar, Friday Harbor Marine Laboratory 2017, 2018, 2019

Postdoctoral Associate, Cornell University 2016 - 2017
Joint appointment with the Atkinson Center for a Sustainable Future and the Environmental Defense Fund. Collaboration with the Center for Computational Sustainability. Development of a Mobile Ocean Observing Network to enhance fishery acoustic stock assessment

Research Assistant, Cornell University Spring 2010, 2011
Worked with mechanical and electrical engineers to implement active sonar on the Liquid Robotics Wave Glider, an unmanned, robotic, oceanographic and atmospheric sensing platform.:. Conducted field trials at Kawaihae Harbor, HI to test multiple echo sounder configurations on the Wave Glider sensing system.

Zoo Keeper Intern, Audubon Nature Institute, New Orleans, LA 2009 - 2010

Scientific Publication Editor, E-World Editing, Eugene, OR 2008 - 2009
Manuscript editing for scientists using English as a second language

Research Experience for Undergraduates, U.S. Naval Observatory, Flagstaff, AZ 2006
Operated 1.3 meter telescope; assess gravitational lensing to refine intergalactic distance measures.

Deckhand, AMISTAD America Inc., New Haven, CT 2005

Deckhand, US Brig Niagara and Erie Maritime Museum, Erie, PA 2004

PUBLICATIONS (PEER-REVIEWED)

Pirotta, E., Schick, R.S., Hamilton, P.K., Harris, C.M., Hewitt, J., Knowlton, A.R., Kraus, S.D., **Meyer-Gutbrod, E.,** Moore, M.J., Pettis, H.M. and Photopoulou, T., 2023. Estimating the effects of stressors on the health, survival and reproduction of a critically endangered, long-lived species.Oikos, p.e09801. https://doi.org/10.1111/oik.09801

Meyer-Gutbrod, E.L., Pierson, J.J., Behl, M. 2023. Community Perspectives on Justice, Equity, Diversity and Inclusion (JEDI) in Ocean Sciences. Oceanography. https://doi.org/10.5670/oceanog.2023.106

Love, M.S., Nishimoto, M.M., **Meyer-Gutbrod, E.L.,** Kui, L., Scarborough Bull, A., Clarke, E., Fruh, E., and Miller, R.J. 2023. The Fish Assemblages Associated with Asphalt Volcanoes in the Santa Barbara Channel, California, USA. Bulletin of Marine Science. https://doi.org/10.5343/bms.2022.0026

Meyer-Gutbrod, E.L., Davies, K.T.A.D., Johnson, C.L., Plourde, S., Sorochan, K.A., Kenney, R.D., Christian Ramp, Gosselin, J.F., Lawson, J.W., Greene, C.H. 2022. Redefining North Atlantic right whale habitat-use patterns under climate change. Limnology & Oceanography. https://doi.org/10.1002/lno.12242

Bishop, A.L., Crowe, L.M., Hamilton, P.K. and **Meyer-Gutbrod, E.L.**, 2022. Maternal Lineage and Habitat Use Patterns Explain Variation in the Fecundity of a Critically Endangered Baleen Whale. *Front.Mar. Sci*,*9*, p.880910. https://doi.org/10.3389/fmars.2022.880910

Meyer-Gutbrod, E., Kui, L., Miller, R., Nishimoto, M., Snook, L. and Love, M., 2021. Moving on up: Vertical distribution shifts in rocky reef fish species during climate-driven decline in dissolved oxygen from 1995 to 2009.Global Change Biology,27(23), pp.6280-6293. https://doi.org/10.1111/gcb.15821

Meyer-Gutbrod, E.L., C.H. Greene, K.T.A. Davies, and D.G. Johns. 2021. Ocean regime shift is driving collapse of the North Atlantic right whale population.Oceanography34(3):22 – 31,https://doi.org/10.5670/oceanog.2021.308. https://doi.org/10.5670/oceanog.2021.308

Meyer-Gutbrod, E.L., Love, M.S., Schroeder, D.M., Claisse, J.T., Kui, L., and Miller, R.J., 2020. Forecasting the legacy of offshore oil and gas platforms on fish community structure and productivity.*Ecological Applications*. https://doi.org/10.1002/eap.2185

Meyer-Gutbrod, E.L., Love, M.S., Claisse, J.T., Page, H.M., Schroeder, D.M. and Miller, R.J., 2019. Decommissioning impacts on biotic assemblages associated with shell mounds beneath southern California offshore oil and gas platforms.*Bulletin of Marine Science*,95(4), pp.683-702. https://doi.org/10.5343/bms.2018.0077

Claisse, J.T., Love, M.S., **Meyer-Gutbrod, E.L.**, Williams, C.M., Pondella, I.I. and Daniel, J., 2019. Fishes with high reproductive output potential on California offshore oil and gas platforms.*Bulletin of Marine Science*,95(4), pp.515-534. https://doi.org/10.5343/bms.2019.0016

Meyer-Gutbrod, E.L., Kui, L., Nishimoto, M.M., Love, M.S., Schroeder, D.M. and Miller, R.J., 2019. Fish densities associated with structural elements of oil and gas platforms in southern California.*Bulletin of Marine Science*,95(4), pp.639-656. https://doi.org/10.5343/bms.2018.0078

Meyer-Gutbrod, E.L., C.H. Greene, and K.T.A. Davies. (2018). Marine species range shifts necessitate advanced policy planning: The case of the North Atlantic right whale. *Oceanography* 31(2). https://doi.org/10.5670/oceanog.2018.209

Meyer-Gutbrod, E. L., & Greene, C. H. (2018). Uncertain recovery of the North Atlantic right whale in a changing ocean.*Global change biology*,24(1), 455-464. https://doi.org/10.1111/gcb.13929

Meyer-Gutbrod EL, Greene CH, Sullivan PJ, Pershing AJ (2015) Climate-associated changes in prey availability drive reproductive dynamics of the North Atlantic right whale population. *Marine Ecology Progress Series*. 535:243-258. https://doi.org/10.3354/meps11372

Meyer-Gutbrod EL, Greene CH, McGarry LP (2015) Wave Glider Technology For Fisheries Research. *Sea Technology.* 56(12):16-19.

Meyer-Gutbrod EL, Greene CH (2014) Climate-Associated Regime Shifts Drive Decadal-Scale Variability in Recovery of North Atlantic Right Whale Population. *Oceanography*. 27(3):32-137. https://doi.org/10.5670/oceanog.2014.64

Greene CH, **Meyer-Gutbrod EL**, McGarry LP, et al. (2014) A Wave Glider Approach to Fisheries Acoustics: Transforming How We Monitor the Nations Commercial Fisheries in the 21st Century. *Oceanography.* 27(4):168 – 174. https://doi.org/10.5670/oceanog.2014.82

Greene CH, **Meyer-Gutbrod E**, Monger BC, et al. (2013) Remote climate forcing of decadal-scale regime shifts in Northwest Atlantic shelf ecosystems. *Limnology and Oceanography*. 58:803-816. https://doi.org/10.4319/lo.2013.58.3.0803

Meyer-Gutbrod, E., Greene, C., Packer, A., Dorn, H., Griffith, J. Long Term Autonomous Fisheries Survey Utilizing Active Acoustics (120601-060). Paper presented at: Oceans MTS/IEEE; Oct. 14-19, 2012; Hampton Roads, VA. https://doi.org/10.1109/OCEANS.2012.6405100

PUBLICATIONS (NOT PEER-REVIEWED)

Osborne, T., Pattiaratchi, C. and **Meyer-Gutbrod, E.**, 2022. Limited Opportunities and Numerous Barriers to Ocean Science Careers in Under-Resourced Nations. *Oceanography.* *https://doi.org/10.5670/oceanog.2022.117*

Muller-Karger, F., Bhatt, E. and **Meyer-Gutbrod, E.,** 2022. Broadening Participation in TOS Through Honors Nominations and Awards. *Oceanography*,35(2), pp.4-5. *https://doi.org/10.5670/oceanog.2022.216*

Meyer-Gutbrod, E.L., 2021. JEDI Events and Programming for OSM 2022.*Oceanography*,*34*(3), pp.7-8. https://doi.org/10.5670/oceanog.2021.311

Meyer-Gutbrod, E. and Muller-Karger, F., 2021. TOS expands efforts to promote justice, equity, diversity, and inclusion in the ocean sciences.*Oceanography*,*34*(1), pp.9-9.

Meyer-Gutbrod, E.L., Love, M.S., Schroeder, D.M., Claisse, J.T., Kui, L. and Miller, R.J., 2020. Bocaccio Young-of-the-Year Below One of California's Offshore Oil and Gas Platforms.*The Bulletin of the Ecological Society of America*,*101*(4), p.e01748. https://doi.org/10.1002/bes2.1748

GRANTS AND FELLOWSHIPS

NSF ($1.2M total; $323k to USC) Lead PI: **Meyer-Gutbrod** 2023-2026
Climate and adaptation deficits: Mechanisms of response to climate change by the endangered North Atlantic right whale

California State Lands Commission ($18k to USC) Lead PI: Milton Love 2023-2024
Platform Holly Decommissioning Project Environmental Impact Report Preparation: Santa Barbara County, California

Aspire I - UofSC ($14,987) Lead PI: **Meyer-Gutbrod** 2022
Acoustic detection of critically endangered North Atlantic right whales offshore of South Carolina to assess migration timing and evaluate real-time ship strike mitigation strategies

Tides Foundation ($196,847 total; $124,947 to UofSC) Lead PI: **Meyer-Gutbrod** 2021-2023
Detecting vocalizations of endangered North Atlantic right whales along the winter migration corridor

Bureau of Ocean Energy Management ($474,728 total; $14,833 to UofSC) Lead PI: Pirotta 2021-2023
Assessing Population Effects of Offshore Wind Development on North Atlantic Right Whales

UofSC Co-Curricular Programming Award ($300) Lead PI: **Meyer-Gutbrod** 2021
Climate Theme Semester: Climate change research panel

UofSC Course Enrichment Award ($750) Lead PI: **Meyer-Gutbrod** 2021
Climate Theme Semester: MSCI 311

Lenfest Ocean Program ($285,200) Lead PI: Charles Greene 2018-2021
Climate change and the conservation oceanography of the North Atlantic right whale
Atkinson Center & Environmental Defense Fund ($87,570) Lead PI: Charles Greene 2016-2017
Transforming fisheries science and management
Department of Defense ($182,500) Lead PI: Meyer-Gutbrod 2012-2015
National Defense Science and Engineering Graduate Fellowship
Atkinson Center Biodiversity Fund ($3891) Lead PI: Meyer-Gutbrod 2012
Modeling the impacts of climate-driven variations in food availability on the demography of North Atlantic right whale and Southern Resident killer whale populations

INVITED SEMINAR PRESENTATIONS

The Whale Museum; Friday Harbor, WA 2023
Fort Johnson / College of Charleston Marine Science Seminar Series 2023
University of New England; Marine Science Seminar Series 2023
Corwith Cramer (tall ship); Woods Hole, MA / offshore 2023
Greater Piedmont Explorer's Club; Columbia, SC 2023
SECOORA Tech Talk 2022
University of South Carolina Beaufort; Biology Dept. Seminar 2022
University of South Carolina Aiken; Biology and Geology Dept. Seminar 2022
University of South Carolina; Biological Sciences Seminar 2021
University of Georgia; Dept. of Marine Sciences Seminar 2020
Purdue University; Biological Sciences Dept. Seminar 2020
University of South Carolina; SEOE Seminar 2020
Amherst College; Environmental Studies Department Seminar 2019
UC Davis; Wildlife Fish and Conservation Biology Seminar 2019
UC Santa Barbara; Marine Science Seminar 2018
Scripps Institution of Oceanography, UC San Diego; Ecology Seminar 2018
National Center for Ecological Analysis and Synthesis; Roundtable 2017
Friday Harbor Marine Lab; Seminar 2017

CONFERENCE PRESENTATIONS

NARWC Annual Meeting (oral) 2022
Society for Marine Mammalogy, West Palm Beach, FL (oral) 2022
State of the Science Workshop on Wildlife and Offshore Wind Energy 2022 (panelist) 2022
Ocean Sciences Meeting, Honolulu, HI (oral presentation and Town Hall co-chair) 2022
NARWC Annual Meeting (oral) 2021
NARWC Annual Meeting (oral) 2020
Ocean Sciences Meeting, San Diego, CA (chair of 5 sessions, oral & poster) 2020
Public Decommissioning Forum, Los Angeles, CA (oral) 2020
GeoHAB, Santa Barbara, CA (oral) 2018
Ocean Sciences Meeting, Portland, OR (oral) 2018
ESA annual meeting, Portland, OR (oral) 2017
ASLO Meeting (poster), Honolulu, HI 2017
CalCOFI Conference (2nd author) 2016
Ocean Sciences Meeting, Honolulu, HI 2014

Atkinson Center Sustainable Biodiversity Fund Donor Conference 2012
North Atlantic Right Whale Consortium Meeting (poster), New Bedford, MA 2011

SELECTED OUTREACH

Ask-a-scientist videos on YouTube 2022
"How can we help whales?" https://www.youtube.com/watch?v=2dbrQAylbQg
"What do whales eat?" https://www.youtube.com/watch?v=UvDpHLjy2AE
Science Journal for Kids lesson plan "Why are whales in trouble again?" 2022
Webinar on right whales and climate change, hosted by Lenfest Ocean Program 2021

SELECTED PRESS COVERAGE (featured in >150 news articles & podcasts)

NPR – Sea change: How melting ice is disrupting the worlds oceans Apr. 2023
https://apps.npr.org/arctic-ice-melting-climate-change/greenland-whales.html
The State – There are 340 North Atlantic right whales left. Underwater robot could save them Apr. 2023
https://www.thestate.com/news/local/environment/article274165220.html
NYTimes – New Research helps explain a sudden population crash for rare whales Sept. 2021
https://www.nytimes.com/2021/09/01/climate/whales.html
Forbes – Could policy changes save the North Atlantic right whale? Sept. 2021
https://www.forbes.com/sites/priyashukla/2021/09/03/could-policy-changes-save-the-north-atlantic-right-whale/
EOS – The Ecological Costs of Removing California's Offshore Oil Rigs Mar. 2020
https://eos.org/articles/the-ecological-costs-of-removing-californias-offshore-oil-rigs
National Public Radio – To save whales, Maine's iconic lobster industry may have to change Mar. 2018
https://www.npr.org/sections/thesalt/2018/03/24/596183734/to-save-whales-maines-iconic-lobster-industry-may-have-to-change
Science - Endangered right whales are dying in record numbers off Canada, raising alarm Aug. 2017
http://www.sciencemag.org/news/2017/08/endangered-right-whales-are-dying-record-numbers-canada-raising-alarm
National Public Radio (Living on Earth) - Worrisome right whale deaths Sept. 2017
http://loe.org/shows/segments.html?programID=17-P13-00037&segmentID=3
Canadian Broadcasting Channel - Uncertain future of the right whale linked to its tiny prey Sept. 2017
http://www.cbc.ca/news/canada/new-brunswick/right-whale-future-food-source-1.4299254

TEACHING EXPERIENCE

Instructor of Record:

Biology of Marine Organisms (MSCI 311 - USC) 2021, 2022, 2023
Marine Data Science with R (MSCI 758 - USC) 2021, 2022, 2023

Hands-on, project-oriented exposure to current approaches for research in marine science, ecology and environmental science using R, RStudio, RMarkdown, Git and GitHub. Covers programming, data manipulation and visualization, linear models, GLMs, spatial analysis

Teaching Assistantships:

Satellite Remote Sensing (Cornell) Summer 2012, 2014, 2016; Spring 2016

Workshop / methods course for graduate students and professionals covering basic programming (IDL and Python), queuing and batch processing oceanographic satellite data and data analysis.

Introduction to Oceanography (Cornell) 2010, 2011, 2015

PROFESSIONAL ACTIVITIES AND SERVICE

National Academy of Sciences Committee – Offshore wind / right whale prey 2023
Teachers On The Estuary workshop – ACE Basin 2022
UofSC travel ambassador to USFQ and the Galapagos Islands 2022
The Oceanography Society JEDI committee 2020-2023
UofSC Climate Change Panel organizer 2021
SEOE Diversity committee 2020-

UofSC Diversity and Inclusion Academy 2020-2021
NCSE Science Policy Workshop 2020
Peer Reviewer:
Global Change Biology (2), Journal of Marine Systems (2), Oceanography (2), CA Sea Grant (1), Ecology and Evolution (1), Endangered Species Research (1), Marine Ecology Progress Series (1), Marine Environmental Research (1), Marine Mammal Science (1), Marine Policy (1), Progress in Oceanography (1)
Chair and moderator at Ocean Sciences Meeting 2020
"Climate Impacts on Marine Species" (5 sessions)
Editorial Review Board; Frontiers in Marine Science 2019-
Dept. of Defense Fellowship Grant Review Committee 2019, 2022
Scientific Advisement for *Ocean Ecosystems* (6th grade text; Pam Watts) 2015
Board of Directors: Naked Whale Research 2011-2012
Earth and Atmospheric Sciences Seminar coordinator 2011-2012
Textbook review: *Oceanography: An Invitation to Marine Science* (Garrison) 2011

GRADUATE STUDENT ADVISING (* indicates major advisor)

Current

*Abby Kreuser (PhD Marine Science)
*Amadi Afua Sefah-Twerefour (PhD Marine Science)
*Kira Telford (MEERM – thesis track)
*Allie Peterson (MEERM – thesis track)
Isaac Keohane (PhD Geology)
Nayan Mallick (PhD Biology)
Samantha Kincaid (PhD Biology)
Madeleine Thompson (PhD Marine Science)

Graduated

*Ben Aland (MEERM – internship track, '23)
Kristiaan Merritt (PhD Biology, '23)
Sarah Zajovits (MS Marine Science, '21)

UNDERGRADUATE STUDENT RESEARCH ADVISING

(* indicates Honor's College thesis advisor, † indicates thesis second reader)

Current

*Kaitlyn Dirr (BS Marine Science) – Honors College Research Grant
Jasmine Witt (BS Marine Science) – Magellan Scholar, Hollings Scholar, Honors College grant
Hunter Ohmann (BS Biological Sciences) – Magellan Journey
Maddie Rich (BS Marine Science)
Laura Doughton (BS Environmental Science, Political Science) – Honors College grant

Graduated

†Sam Coroniti (BS Biology; 2022)
*Christiana Bishop (BS Marine Science; 2021) – Honors College grant
†Jamaal Jacobs (BS Biology, 2021)

HONORS AND AWARDS

Earth and Atmospheric Sciences Research Excellence Award ($1000)	2014
National Science Foundation Graduate Research Fellowship - Honorable Mention	2012
CALS Outstanding Teaching Assistant ("Golden Apple" award)	2011-2012
Bausch and Lomb Honorary Science Award	2004
University of Notre Dame Scholar	2004
US Navy Science Achievement Award	2004

PROFESSIONAL CERTIFICATIONS

American Academy of Underwater Sciences (AAUS) Certified Diver
NAUI Rescue Diver
NAUI Nitrox Certification
DAN First Aid / CPR

SOCIETY MEMBERSHIPS

Ecological Society of America, The Oceanography Society (JEDI committee member), Association for the Sciences of Limnology and Oceanography, The Society for Marine Mammalogy, GeoHAB

SOFTWARE EXPERIENCE

Programming languages:

R, Shiny, Python, C++, JAVA, FORTRAN, IDL, MATLAB, AD Model Builder, WinBUGS

Operating systems:

Mac OS, Unix / Linux, Windows

REVELEVANT WORKSHOPS AND FIELD COURSES

Low Frequency Detection and Classification Software real-time analysis (2022); Teachers On The Estuary ACE Basin workshop (2022); OOI Pioneer Array Innovation Lab II (2021); NCSE Science Dialogues Workshop (2020); Scientific Diving (2018, UCSB and USC Wrigley Institute); US/Canada Zooplankton Workshop for Right Whale Management (2020, NEFSC); Advocacy and Communication Training and Workshop (2016, Cornell), Satellite Remote Sensing Training Program (TA; 2012, 2014, 2016; Cornell), Forecasting Ecosystem Indicators Workshop (Co-Organizer, 2012, Friday Harbor Marine Lab), Conservation Oceanography (2012, The Kohala Center, Hawaii), Marine Bioacoustics Field Course (2011; Friday Harbor Marine Lab), Field Marine Science (2010; Shoals Marine Lab)