Lisa C. McManus

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EDUCATION

2012-2017 Ph.D. in Ecology and Evolutionary Biology, Princeton University
2006-2010 B.S. in Marine and Atmospheric Science, University of Miami, *summa cum laude*

APPOINTMENTS

2020-present Assistant Research Professor
Hawai‘i Institute of Marine Biology, University of Hawai‘i at Mānoa
2017-2020 Postdoctoral Associate
Department of Ecology, Evolution, and Natural Resources, Rutgers University

AWARDS AND HONORS

2015 Princeton EEB Women Scientists in Conservation Biology Research Award
2015 Best Poster: NMFS-Sea Grant Fellowship Symposium
2014-2017 NMFS-Sea Grant Fellowship in Population and Ecosystem Dynamics
2014-2017 National Defense Science and Engineering Graduate Fellowship
2014 Princeton Environmental Institute Walbridge Fund Graduate Award

PEER-REVIEWED PUBLICATIONS (*=Co-first author)

DeFilippo LB*, **McManus LC***, Pinsky ML, Colton MA, Webster MS, Essington TE, Palumbi SR, Mumby PJ and Schindler DE. (2022). Assessing the potential for demographic restoration and assisted evolution to build climate resilience in coral reefs. *Ecological Applications*. 10.1002/eap.2650

van Woesik R, Shlesinger T, Grottoli AG, Toonen RJ, Vega Thurber R, Warner M, Hulver AM, Chapron, L, McLachlan RH, Albright R, Crandall E, DeCarlo TM, Donovan MK, Eirin-Lopez J, Harrison HB, Heron SF, Huang D, Humanes A, Krueger T, Madin JS, Manzello D, **McManus LC**, Matz M, Muller EM, Rodriguez-Lanetty M, Vega-Rodriguez M, Voolstra CR and Zaneveld J. (2022) Coral-bleaching responses to climate change across biological scales. *Global Change Biology* 28: 4229-4250. 10.1111/gcb.16192

McManus LC, Forrest DL, Tekwa E, Schindler DE, Walsworth TE, Colton MA, Webster MS, Essington TE, Palumbi SR, Mumby PJ, and Pinsky ML. (2021). Evolution and connectivity influence the persistence and recovery of coral reefs under climate change in the Caribbean, Southwest Pacific, and Coral Triangle. *Global Change Biology* 00:1-15. 10.1111/gcb.15725

McManus LC, Tekwa E, Schindler DE, Walsworth TE, Colton MA, Webster MS, Essington TE, Palumbi SR, Mumby PJ, Forrest DL, and Pinsky ML. (2021). Evolution reverses the effect of network structure on metapopulation persistence. *Ecology* 102(7), e03381. 10.1002/ecy.3381

Tekwa EW, **McManus LC**, Greiner A, Colton MA, Webster MS, and Pinsky ML. (2021). Geometric Analysis of Regime Shifts in Coral Reef Communities. *Ecosphere* 12(1):e03319. 10.1002/ecs2.3319

McManus LC, Vasconcelos VV, Levin SA, Thompson DM, Kleypas JA, Castruccio FS, Curchitser EN, Watson JR. (2020). Extreme temperature events will drive coral decline in the Coral Triangle. *Global Change Biology* 26:2120-2133. 10.1111/gcb.14972

McManus LC, Watson JR, Vasconcelos VV and Levin SA. (2019). The stability and recovery of coral-algae systems: the importance of recruitment seasonality and grazing influence. *Theoretical Ecology* 12:61-72. 10.1007/s12080-018-0388-x

McManus LC, Yurek S, Teare PB, Dolan TE and Serafy JE. (2014). Killifish habitat suitability as a measure of coastal restoration performance: integrating field data, behavioral trials and simulation. *Ecological Indicators* 44:173-181.

OTHER PUBLICATIONS

McClanahan, TR, Darling, ES, Oddenyo, R, Surya, G, Beger, M, Fox, F, Jupiter, SD., McLeod, L **McManus, L,** van Woesik, R., Grantham, H, Logan, C, Maina, J, Patankar, V, Wenger, A and Zinke, J. (2022). Forecasting Climate Sanctuaries for Securing the Future of Coral Reefs. https://wcs.org/coral-science-whitepaper

McManus JW and **McManus LC**. (2012). Proposed Dredging for an Aircraft Carrier Turning Basin in Apra Harbor, Guam: Options for Assessment and Mitigation. Technical Report. Engineer Research and Development Center, U.S. Army Corps of Engineers. 121 pages.

MANUSCRIPTS UNDER REVIEW (*=Co-first author)

McManus JW & **McManus LC**. CoralPatchSim: Simulating potential impacts of disturbances on the resilience of patches of coral and associated organisms, and related ecosystem services. *In revision*, Methods in Ecology and Evolution.

GRANTS AND FELLOWSHIPS

2022-2024 Hawai‘i Sea Grant College Program, “Working towards sustainability of Hawai‘i’s nearshore fisheries through characterizing and modeling fisheries regulation effects.” EMP Madin, KLL Oleson, LC McManus, AA Innes-Gold and Z Rago. ($140,000).

2021 Banff International Research Station for Mathematical Innovation and Discovery Workshop Grant, “Rate-induced transitions in networked systems” (March 27-April 1, 2022). Organizers: VV Vasconcelos, FM Darcie Marquitti, LC McManus and TW Ong.

2018 National Institute for Mathematical and Biological Synthesis Short-term Visit. LC McManus. ($2000).

2015 Princeton EEB Women Scientists in Conservation Biology Research Award. LC McManus. ($6000).

2014-2017 NMFS-Sea Grant Fellowship in Population and Ecosystem Dynamics. LC McManus. ($96,000).

2014-2017 National Defense Science and Engineering Graduate Fellowship. LC McManus. ($250,000).

2014 Princeton Environmental Institute Walbridge Fund Graduate Award. LC McManus. ($7500).

PRESENTATIONS

Invited

2021 **Marine Science Seminar, Hawai‘i Pacific University.** Adaptive potential, spatial management, and pattern formation on coral reef systems.

2021 **Special Seminar on Theoretical Ecology, International Forum on Advanced Environmental Sciences and Technology, University of Oklahoma.** Conservation for evolving coral populations.

2021 **Fisheries Ecology Division, NOAA Southwest Fisheries Science Center.** Conservation for evolving coral populations.

2021 **Marine Biology Graduate Program Seminar, University of Hawai‘i at Mānoa.** Coral reef eco-evolutionary dynamics: theory and conservation applications.

2020 **School of Aquatic and Fisheries Sciences, University of Washington.** Coral reef eco-evolutionary dynamics: theory and conservation applications.

2019 **Smithsonian Environmental Research Center**, Edgewater, MD. Coral reef dynamics in a changing world: a multiscale perspective.

2019 **Department of Ecology, Evolution and Natural Resources, Rutgers University**, New Brunswick, NJ. Coral reef dynamics in a changing world: a multiscale perspective.

2018 **Ecological Society of America Annual Meeting**, New Orleans, LA. Spatial marine metacommunity connectivity and the response of the Coral Triangle to climate change.

Contributed

2021 **International Coral Reef Symposium.** Network structure drives the eco-evolutionary response of coral populations to climate change.

2019 **Ecological Society of America Annual Meeting**, Louisville, KY. Dispersal network structure constrains eco-evolutionary response under directed environmental change.

2018 **Ocean Sciences Meeting**, Portland, Oregon. Ecological implications of thermal stress and larval connectivity in the Coral Triangle.

2016 **International Coral Reef Symposium**, Honolulu, HI. Larval dispersal as a mechanism for coral persistence on reef communities.

2015 **Ecological Society of America Annual Meeting**, Baltimore, MD. Larval dispersal as a mechanism for coral persistence on reef metacommunities.

Outreach, Policy, and Management

2021 **NOAA MPA Center Webinar.** Coral reef eco-evolutionary dynamics: Adaptation and connectivity in MPA networks under future climate change.

2015 **NOAA Pacific Islands Fisheries Science Center**, Honolulu, HI. Linking dispersal scales, genetic differentiation and persistence in corals.

MENTORING

Primary Graduate Advisor

Sophia Rahnke, M.S., Marine Biology Graduate Program, UH Mānoa, 2021-present

Anne Innes-Gold, Ph.D., Marine Biology Graduate Program, UH Mānoa, 2022-present (co-advised with Elizabeth Madin, HIMB)

Graduate Committees

Nakoa Goo, Ph.D., Marine Biology Graduate Program, UH Mānoa (2020-present)
Leon Tran, Ph.D., Marine Biology Graduate Program, UH Mānoa (2020-present)
Devynn Wulstein, Ph.D., Marine Biology Graduate Program, UH Mānoa (2020-present)
Cameron Walsh, Ph.D., Marine Biology Graduate Program, UH Mānoa (2021-present)
Paige Wernli, Ph.D., Marine Biology Graduate Program, UH Mānoa (2021-present)
Toby Matthews, Ph.D., Marine Biology Graduate Program, UH Mānoa (2022-present)
Samantha Shedd, Ph.D., Marine Biology Graduate Program, UH Mānoa (2022-present)

Undergraduate Research

Eojin Lee, Columbia University (2021-present), Independent research
Miya Khoo, University of Chicago (2021), Independent research
Connor Anderson, Rutgers University (2020-2021), Senior thesis
Beth McKenna, Princeton University (2012-2014), Senior thesis
Clare Gallagher, Princeton University (2012-2014), Senior thesis

High School Research

Katherine Lew, Millburn High School, NJ (2021), Independent research

TEACHING

2021 Mathematical Ecology of Marine Systems (MBIO 740), University of Hawai‘i at Mānoa

2013 Marine Biology (EEB 312), Princeton University (Assistant in Instruction for James Gould)

2012 Life on Earth (EEB 211), Princeton University (Assistant in Instruction for Daniel Rubenstein and Stephen Pacala)

Guest Lectures

2021, 2022 Corals and Coral Reefs (BIOL 411), Coral Adaptive Capacity. UH Mānoa
2013 Marine Biology (EEB 312), Princeton University

COMMUNITY OUTREACH

Ecological Modeling for High School Students: I partnered with the New Brunswick High School STEM Club in 2018 to teach an informal class on NetLogo agent-based modeling. Materials for this course are available here: https://lmcmanus47.github.io/outreach

Build It Better Design Challenge: I served as a volunteer judge for the Build It Better Design Challenge hosted by the New Brunswick High School STEM Club in 2018 and 2019. In this event, student teams are tasked with designing, budgeting for and building an assigned product.

Rutgers Future Scholars Internship: I served as a mentor for the Rutgers Future Scholars at Rutgers University in 2018. This program allows first-generation, low-income high school students to interface with Rutgers University researchers. I worked with 2 high school students for one week on an agent-based modeling module, and introduced them to ecology-related work such as tree surveys and fish dissections.

PROFESSIONAL SERVICE

National

2021 National Science Foundation review panel

Peer review

Journals: *Nature Climate Change, American Naturalist, Global Ecology and Biogeography, Theoretical Ecology, Journal of Applied Ecology*
Funding Agencies: *National Science Foundation*

University

2022 Marine Biology Graduate Program Admissions Committee, UH Mānoa
2021 Search Committee, Biocultural Ecologist, UH Mānoa

PROFESSIONAL ASSOCIATIONS

International Society for Reef Studies, Ecological Society of America, Association for the Sciences of Limnology and Oceanography

SKILLS

Scientific Diver: 300+ logged scientific dives
Programming languages – Python, Mathematica, R, MATLAB, Latex
Foreign languages – Filipino (native)