Kyle F. Edwards

Curriculum Vitae

University of Hawai'i at Mānoa | Department of Oceanography
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EDUCATION

2005-2010. UC Davis, Population Biology, Ph.D. 2010.
Dissertation: "Coexistence mechanisms in a sessile marine community"
Advisor: John J. Stachowicz

1999-2003. University of Chicago,
B.A. Biology with Honors, 2003.
Thesis: "Ecological analysis of nitrogen content in the brown alga *Fucus gardneri*"
Advisor: Catherine Pfister

B.A. Religion and the Humanities, 2003.

PROFESSIONAL HISTORY

2014-present. Assistant Professor. University of Hawai'i at Mānoa, Department of Oceanography.

2010-2013. Postdoctoral Research Associate with Elena Litchman and Chris Klausmeier. Michigan State University.

RESEARCH

Current Awards

"Eating themselves sick? Ecological interactions among a mixotrophic flagellate, its prokaryotic prey, and an ingestible giant virus." NSF, 4/2016-4/2019, $774K, co-PI.

"G2P in VoM: An experimental and analytical framework for genome to phenome connections in viruses of microbes." NSF EPSCoR, 9/2017-9/2021, UH subaward $1.1M, Senior Personnel.

"The evolution of ecosystem function in phytoplankton-virus communities." Simons Foundation Early Career Investigator Award in Marine Microbial Ecology and Evolution, 4/2018-3/2021, $500K.

NMFS/Sea Grant Population and Ecosystem Dynamics Graduate Fellowship to Molly Timmers, 8/2018-7/2021, $115K, co-PI.

Publications (2014-current)

Smith, A. N., K. F. Edwards. 2019. Effects of multiple timescales of resource supply on the maintenance of species and functional diversity. Oikos.

Edwards, K. F. 2019. Mixotrophy in nanoflagellates across environmental gradients in the ocean. PNAS 116:6211-2220.

Edwards, K. F., C. T. Kremer, E. T. Miller, M. M. Osmond, E. Litchman, C. A. Klausmeier. 2018. Evolutionarily stable communities: a framework for understanding the role of trait evolution in the maintenance of diversity. Ecology letters 21:1853-1868.

Counsell, C. W. W., M. J. Donahue, K. F. Edwards, E. C. Franklin, M. A. Hixon. 2018. Variation in coral-associated cryptofaunal communities across spatial scales and environmental gradients. Coral Reefs 37:827-840.

Edwards, K. F., and G. F. Steward. 2018. Host traits drive viral life histories across phytoplankton viruses. American Naturalist 191: 566-581.

Robson, B., Brebion, J., Emlyn, J., Skerratt, J., Shimoda, Y., Kruk, C., Wild-Allen, K., Edwards, K., Trevathan-Tackett, S., Arhonditsis, G., Steven, A., van Dongen-Volges, V., Mongin, M., Baird, M., Geoffroy, L., Hébert, M., Kong, X. 2018. Towards evidence-based parameter values and priors for aquatic ecosystem modeling. Environmental Modeling and Software.

Ziegler, A. F., Smith, C. R., Edwards, K. F., and M. Vernet. 2017. Glacial dropstones: Islands enhancing seafloor species richness in West Antarctic Peninsula Fjords. Marine Ecology Progress Series 583:1-14.

Edwards, K. F. 2016. Community trait structure in phytoplankton: seasonal dynamics from a method for sparse trait data. Ecology 97:3441-3451.

Edwards, K. F., M. K. Thomas, C. A. Klausmeier, and E. Litchman. 2016. Phytoplankton growth and the interaction of light and temperature: A synthesis at the species and community level. Limnology and Oceanography 61:1232-1244.

Bonachela, J. A., C. A. Klausmeier, K. F. Edwards, E. Litchman, and S. A. Levin. 2016. The role of phytoplankton diversity in the emergent oceanic stoichiometry. Journal of Plankton Research 38:1021-1035.

Long, E. C., K. F. Edwards, and A. M. Shapiro. 2015. A test of fundamental questions in mimicry theory using long-term datasets. Biological Journal of the Linnean Society 116:487–494.

Litchman, E., K. F. Edwards, and C. A. Klausmeier. 2015. Microbial resource utilization traits and trade-offs: implications for community structure, functioning, and biogeochemical impacts at present and in the future. Frontiers in microbiology 6.

Edwards, K. F., M. K. Thomas, C. A. Klausmeier, and E. Litchman. 2015. Light and growth in marine phytoplankton: allometric, taxonomic, and environmental variation. Limnology and Oceanography 60:540–552.

Litchman, E., P. Tezanos Pinto, K. F. Edwards, C. A. Klausmeier, C. T. Kremer, and M. K. Thomas. 2015. Global biogeochemical impacts of phytoplankton: a trait-based perspective. Journal of Ecology 103:1384–1396.

Edwards, K. F., C. A. Klausmeier, and E. Litchman. 2015. Nutrient utilization traits of phytoplankton. Ecology 96:2311.

Karban, R., L. H. Yang, and K. F. Edwards. 2014. Volatile communication between plants that affects herbivory: a meta-analysis. Ecology letters 17:44–52.

Edwards, K. F, and E. Litchman. 2014. Phytoplankton communities. Pages 365–382 in Marine Community Ecology and Conservation, eds M. D. Bertness, J. F. Bruno, B. R. Silliman, J. J. Stachowicz. Sinauer.

Invited talks / workshops

Invited speaker: IGB Berlin workshop on Trait-Based Approaches in Aquatic Biodiversity Research (declined)

Invited participant:

- Ocean Carbon Biogeochemistry workshop on the Biology of the Biological Pump
- sDiv workshop on Global Changes in Marine Diversity and Productivity (declined)
- Jena workshop on Effects of Trait Variability on Complementarity

TEACHING

Courses Taught

OCN 683: Advanced Statistics in R. Fall 2014-2018. 100% taught by Edwards (3 credits). >20 students each year. Teaching evaluations from 2016: mean course score 4.8 out of 5, mean instructor score 4.8 out of 5. This course draws students from Oceanography, Marine Biology, Zoology, Botany, NREM. Will continue teaching this every fall.

OCN 621: Biological Oceanography. Spring 2017-2019. 50% taught by

Edwards (1.5 credits).

OCN 626: Microplankton Ecology. Fall 2017. ~40% taught by Edwards (~1.5 credits). Will continue co-teaching this every fall.

OCN 628: Benthic Biological Oceanography. Spring 2016. 25% taught by Edwards (1 credit).

"Enhancing Linkages between Mathematics and Ecology", Kellogg Biological Station, June 2015 (1 week sole-taught).

Graduate Student Committees

Ph.D. Thesis committee chair – Anamica Bedi

Ph.D. Thesis committee member – Lydia Baker, Chris Schvarcz, Pavica Srsen, Amanda Ziegler, Elaine Luo, Alice Vislova, Emily Young, Phoebe Woodworth-Jefcoats, Evan Barba, Erik Brush, Ryan Jones, Kristina Remple, Wesley Sparagon

MS. Thesis committee member – Sara Coffey

Comprehensive Exam committee member – Chris Schvarcz, Pavica Srsen, Amanda Ziegler, Elaine Luo, Alice Vislova, Emily Young, Kristina Remple, Evan Barba

Advisory committee member – Mika Siegelman, Stacey Naeemullah, Petra Byl

Undergraduate Advising

GES student thesis mentor – Alaina Smith

Adviser for 6 GES students

Guest Lectures

Guest lecturer (10 lectures), OCN 628

Guest lecturer (6 lectures), OCN 621

Guest participant (2 lectures), OCN 490

Guest lecturer (1 lecture), BIOL 301

Guest lecturer (1 lecture), ZOOL 780

SERVICE

Departmental

Graduate Student Recruitment Committee – BOD representative

Search Committee for Physical Oceanographer

GES Oral presentation reviewer (2)

GES Student thesis reviewer (2)

Departmental Seminar Organizer, Spring 2016

Organizer of Conference of Biological Oceanography Graduate Students (CBOGS), Spring 2018-2019

UH

Undergraduate Research Opportunities Program Oral presentation judge: Fall 2016, Spring 2017

National/International

External proposal reviewer: NSF (9); DFG (German Research Foundation) (2); Scientific Commission of Lower Saxony; PRESTIGE fellowship (France); ETAG (Estonian Research Council)

External thesis reviewer: James Cook University

Journal reviewer: (56 manuscripts total since 2014) Ecology Letters, PNAS, Limnology and Oceanography, Ecology, Marine Ecology Progress Series, American Naturalist, Frontiers in Microbiology, Journal of Plankton Research, Scientific Reports, Ecography, AIMS Geosciences, Nature Communications, Proceedings of the Royal Society B, Journal of Theoretical Biology, Theoretical Ecology, Functional Ecology, Oikos, Applied and Environmental Microbiology, Frontiers in Marine Science, New Phytologist, Journal of Phycology, ISME Journal, PLoS Computational Biology