

Holly V. Moeller

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EDUCATION:

- 2010-2015** **Ph.D.**, Biology: Ecology and Evolution
The role and maintenance of diversity in a multi-partner mutualism: Trees and Ectomycorrhizal Fungi
Co-Advisors: Tadashi Fukami and Peter Vitousek
- 2008-2010** **M.S., MIT/Woods Hole Oceanographic Institution**, Biological Oceanography
On the economic optimality of marine reserves when fishing damages habitat
Advisor: Michael G. Neubert
- 2004-2008** **B.A., Rutgers, the State University of New Jersey**, Chemistry and Biology
Honors Thesis: *The bioenergetics of a marine ciliate, Myrionecta rubra*
Advisor: Paul G. Falkowski

POSITIONS HELD:

- 2015-Current** **NSF Postdoctoral Fellow, Woods Hole Oceanographic Institution**
Mixotrophy and the role of metabolic flexibility in community assembly and function
Co-Advisors: Matthew D. Johnson and Michael G. Neubert
- 2014** **Adjunct Lecturer, Santa Clara University**
Instructor, Introduction to Environmental Science Lecture and Lab

PUBLICATIONS:

- 2016** **Moeller, HV**, IA Dickie, T Fukami, and DA Peltzer. Hierarchical neighbor effects on mycorrhizal community structure and function. *Ecology & Evolution*, in press.
- Herrera, T, **HV Moeller**, and MG Neubert. High-seas fish wars generate marine reserves. *PNAS* 113(14): 3767-3772.
- Moeller, HV**, E Peltomaa, MD Johnson, and MG Neubert. Acquired phototrophy stabilizes coexistence and shapes intrinsic dynamics of an intraguild predator and its prey. *Ecology Letters* 19: 393-402.
- Pedersen, E, J Marleau, M Granados, **HV Moeller**, and F Guichard. Non-hierarchical movement promotes stability and resilience in a tritrophic system. *The American Naturalist* 187(5): E116-E128.
- Moeller, HV**, and MG Neubert. Multiple friends with benefits: An optimal mutualist management strategy? *The American Naturalist* 187(1): E1-E12.
- 2015** **Moeller, HV**, IA Dickie, T Fukami, and DA Peltzer. Mycorrhizal co-invasion and novel interactions depend on neighborhood context. *Ecology* 96(9): 2336-2347.

Moeller, HV, and MG Neubert. Economically optimal marine reserves without spatial heterogeneity in a simple two-patch model. *Natural Resource Modeling* 28(3): 244-255.

Wood, J, I Dickie, **HV Moeller**, D Peltzer, K Boot, G Rattray, and J Wilmshurst. Novel interactions between non-native mammals and fungi facilitate establishment of invasive pines. *Journal of Ecology* 103: 121-129.

2014 **Moeller, HV**, KG Peay, and T Fukami. Ectomycorrhizal fungal traits reflect environmental conditions along a coastal California edaphic gradient. *FEMS Microbiology Ecology* 87(3): 797-806.

2013 **Moeller, HV**, and MG Neubert. Habitat damage, marine reserves, and the value of spatial management. *Ecological Applications* 23, 959-971.

Karp, DS, **HV Moeller**, and LO Frishkoff. Non-random extinction patterns can modulate pest-control service decline. *Ecological Applications* 23: 840-849.

Sailley, SF, HW Ducklow, **HV Moeller**, WR Fraser, OME Schofield, DK Steinberg, LM Garzio, and SC Doney. Carbon fluxes and pelagic ecosystem dynamics near two western Antarctic Peninsula Adelie penguin colonies: an inverse model approach. *Marine Ecology Progress Series* 492: 253-272.

2012 Ducklow, H, SC Doney, ... **HV Moeller**, et al. Marine Pelagic Ecosystems: The West Antarctic Peninsula. In: Antarctic Ecosystems: An extreme environment in a changing world, 121-159.

2011 **Moeller, HV**, MD Johnson, and PG Falkowski. Photoacclimation in the phototrophic marine ciliate, *Mesodinium rubrum* (Ciliophora). *Journal of Phycology* 47: 324-332.

2009 Johnson, MD, J Volker, **HV Moeller**, E Laws, KJ Breslauer, and PG Falkowski. Universal constant for heat production in protists. *PNAS* 106: 6696-6699.

GRANTS AND FUNDING:

2014 NSF Postdoctoral Research Fellowship in Biology (\$138,000)
Woods Hole Oceanographic Institution Postdoctoral Scholarship (\$88,250; declined)

2013 Achievement Rewards for College Scientists Fellowship (\$24,000)

2012 NSF Doctoral Dissertation Improvement Grant (\$15,000)

2009 NSF Graduate Research Fellowship (\$121,500)

2008 MIT Linden Earth Systems Fellowship (\$10,000)

2007 NSF Research Experience for Undergraduates Fellow, Univ. Alaska Southeast

2004 Rutgers University Merit Award (\$96,000)

INVITED PRESENTATIONS:

2016 **Moeller, HV**. Mixotrophy and the Biological Pump: New directions for the oceanographic community. Ocean Carbon Biogeochemistry Summer Workshop. 25 July. Woods Hole, MA, USA.

Moeller, HV. Trade, Borrow, or Steal: Acquired metabolism in community ecology. University of California, Berkeley. 10 February. Berkeley, CA, USA.

Moeller, HV. Trade, Borrow, or Steal: Acquired metabolism in community ecology. University of California, Santa Barbara. 21 January. Santa Barbara, CA, USA.

2015 **Moeller, HV.** Trade, Borrow, or Steal: Acquired metabolism in community ecology. Georgia Institute of Technology. 3 December. Atlanta, GA, USA.

Moeller, HV. Trade, Borrow, or Steal: Acquired metabolism in community ecology. Vanzant Seminar Series, Rice University. 19 November. Houston, TX, USA.

Moeller, HV. Trade, Borrow, or Steal: Acquired metabolism in community ecology. University of Pennsylvania. 5 November. Philadelphia, PA, USA.

Moeller, HV. The role and maintenance of diversity in a multi-partner mutualism. Biology Department Seminar Series, Woods Hole Oceanographic Institution. 2 April. Woods Hole, MA, USA.

Moeller, HV. Habitat damage, marine reserves, and the value of spatial knowledge. School for Marine Science & Technology Seminar Series, University of Massachusetts, Dartmouth. 18 February. Fairhaven, MA, USA.

2013 **Moeller, HV,** MG Neubert. Optimal investment in a multi-mutualist system: Trees and ectomycorrhizal fungi. Oral Presentation: American Mathematical Society Joint Meeting, 1086-92-1753. San Diego, CA, USA.

2012 **Moeller, HV,** and MG Neubert. Accounting for habitat damage increases the economic optimality of marine reserves. Oral Presentation: American Mathematical Society Joint Meeting, 1077-92-2201. Boston, MA, USA.

2010 **Moeller, HV,** and MG Neubert. On the economic optimality of marine reserves when fishing damages habitat. Biology Department Seminar Series, Woods Hole Oceanographic Institution. August. Woods Hole, MA, USA.

CONTRIBUTED PRESENTATIONS:

2016 **Moeller, HV,** MD Johnson, and MG Neubert. Aquatic mixotrophs: Are these jacks of all trades masters of some? Oral presentation: Ecological Society of America Annual Meeting, COS 75-1. 11 August. Fort Lauderdale, FL, USA.

Moeller, HV, E Peltomaa, MD Johnson, and MG Neubert. Acquired phototrophy stabilizes coexistence and shapes intrinsic dynamics in planktonic communities. Poster Presentation: Ocean Sciences Meeting, PP24B-0557. 23 February. New Orleans, LA, USA.

Moeller, HV, E Peltomaa, MD Johnson, and MG Neubert. Merging models and data to understand acquired phototroph blooms. Poster Presentation: EMBO-EMBL Symposium on A New Age of Discovery for Aquatic Microeukaryotes. 27 January. EMBL, Heidelberg, Germany.

2015 **Moeller, HV,** MD Johnson, and MG Neubert. Acquired phototrophs as mediators of planktonic community dynamics. Poster Presentation: OCB Trait-Based Approaches to Ocean Life Workshop. 5 October. Waterville Valley, NH,

USA.

Moeller, HV, E Lasek-Nesselquist, and MD Johnson. Regulation of acquired metabolic potential by the marine ciliate *Mesodinium rubrum*. Oral presentation: Ecological Society of America Annual Meeting, COS 72-1. 12 August. Baltimore, MD, USA.

Moeller, HV, and MG Neubert. Accounting for habitat damage increases the economic optimality of marine reserves. Oral Presentation: MPE 2013+ Workshop on Natural Resources. 5 June. Howard University, Washington, D.C., USA.

2014 **Moeller, HV**, and MG Neubert. Optimal investment in a multi-mutualist system: Trees and ectomycorrhizal fungi*. Oral Presentation: Ecological Society of America Annual Meeting, COS 139-10. Sacramento, CA, USA.

**Awarded the Volterra Prize for Best Student Talk in Mathematical Ecology*

2013 **Moeller, HV**, IA Dickie, DA Peltzer, and T Fukami. Novel fungal partnerships highlight host flexibility in the New Zealand Douglas-fir invasion. Oral Presentation: Ecological Society of America Annual Meeting, COS 93-3. Minneapolis, MN, USA.

Moeller, HV. Optimal investment in a multi-mutualist system: Trees and ectomycorrhizal fungi. Oral Presentation: AARMS Math Biology Workshop. July. St. John's, NFLD, Canada.

Moeller, HV. Accounting for habitat damage increases the economic optimality of marine reserves. Oral Presentation: AARMS Workshop on the Sustainability of Aquatic Ecosystem Networks. 24 October. Fredericton, NB, Canada.

2012 **Moeller, HV**, KG Peay, and T Fukami. Turnover in the ectomycorrhizal fungal community along a soil age gradient. Oral Presentation: Ecological Society of America Annual Meeting, COS 66-2. Portland, OR, USA.

2010 **Moeller, HV**, and MG Neubert. The role of marine reserves in optimal harvesting when fishing damages habitat. Oral Presentation: Ecological Society of America Annual Meeting, COS 22-5. Pittsburgh, PA, USA.

2007 Heavner, MJ, DR Fatland, **HV Moeller**, E Hood, and MS Schultz. Sensor webs in digital earth. Poster: American Geophysical Union Fall Meeting, Session II. San Francisco, CA, USA.

NON-TECHNICAL PUBLICATIONS:

2015-Current Guest columnist, **Millennium Assessment of Humans and the Biosphere Blog**

2007-2015 “**Seeing Green**” Columnist, The Stanford Daily, The MIT Tech, the Rutgers Daily Targum, examples online at: www.stanforddaily.com/author/hollymoeller/
**Winner of the 2014 California Journalism Awards Katharine M. Macdonald Student Award and the 2013 Stanford Daily William F. Woo Prize.*

2012 “Future depends on long-term planning,” **San Francisco Chronicle**, 12 October.
“Say, Don’t Spray,” collected in **Real Science Writing**, 6th Edition.
“Species count down at Stanford’s Lake Lagunita as dry spring drives species

away,” **Peninsula Press**, 23 May.

“Noise pollution drives birds out of their homes, study shows,” **Peninsula Press**, 7 May.

TEACHING and MENTORING EXPERIENCE:

- 2015** Co-Mentor (with Michael Neubert and Emily Moberg) of Ann Dunham (Dartmouth College), WHOI Summer Student Fellow, Summer 2015
- 2014** Instructor, Introduction to Environmental Science (lecture and laboratory), Santa Clara University, Winter Quarter
- 2012** Mentor of Jose Rosales, Stanford Research In Science and Engineering Program (to increase minority representation in science and engineering), Summer 2012
- 2011** Teaching Assistant, Biology and Global Change, Stanford, Winter Quarter
Teaching Assistant, Core Ecology and Evolutionary Biology Lab, Stanford, Spring Quarter
Discussion Leader, Ethics in Ecology and Evolution, Stanford, Fall Quarter
- 2009** Co-Instructor, Environmental Engineering: Sustainable Living and Engineering, MIT, Summer 2009
- 2008** Teaching Assistant, Ecology 1: The Earth System, MIT, Fall Semester
- 2006** Teaching Assistant, Functional Human Anatomy Laboratory, Rutgers University, Fall Semester

HONORS AND AWARDS:

- Scholarship* ESA Math Ecology Section Volterra Prize for Best Student Talk (2014)
Frances Lou Kallman Award for Graduate Student Excellence (2014)
Barry M. Goldwater Scholarship (2007-2008)
Peter F.E. Marapodi Scholarship (2005-2008)
Phyllis Dunbar Award for Excellence in Physical Chemistry (2006)
Croda Award for Outstanding Organic Chemistry Laboratory Student (2006)
National Starch Award for General Academic Excellence (2005)
Phi Beta Kappa (2006)
National Society for Collegiate Scholars (2005)
Dean’s Award for Co-Curricular Excellence (2004, 2005)
IBM Thomas J. Watson Memorial Scholar (2004-2008)
Robert C. Byrd Scholarship (2004-2008)
National Merit Scholar (2004)
- Journalism* California Journalism Awards Katherine M. Macdonald Student Award (2014)
William F. Woo Award for Best Opinion Columnist (2013)
- Teaching* Stanford University Excellence in Teaching Award (2011)

PROFESSIONAL SERVICE and OUTREACH:

- 2016** Classroom guest instructor, Biology, Cape Cod Academy (9th grade)
- 2015-current** Postdoctoral Representative, WHOI Gender Equity Committee

- President and Biology Representative, WHOI Postdoctoral Association
- 2015** Guest instructor, Ecology, Woods Hole Summer Science School (10-year-olds)
- 2014** Featured guest, Goggles Optional podcast, Episode 13: The secret life of fungi
- 2013-2014** Graduate Voice and Influence Program, Stanford University
Graduate Student Peer Mentor, Stanford University
- 2010-2012** Eco-Evo Lunch Seminar Series Coordinator, Stanford University
- 2007-2008** President, Phi Lambda Upsilon Chemistry Honors Society, Rutgers University
Undergraduate representative, Rutgers Executive Dean Search Committee
- Ad-hoc reviewer *Acta Oecologica; The American Naturalist; Biological Invasions; Ecosystems; Ecological Applications; FEMS Microbiology Ecology; Frontiers in Microbiology; Fungal Ecology; Harmful Algae; Journal of Theoretical Biology; Marine Ecology Progress Series; Molecular Ecology; New Phytologist; Symbiosis; Trees: Structure and Function*

PROFESSIONAL DEVELOPMENT and WORKSHOP PARTICIPATION

- 2016** Science Fellow, National Network for Oceanic and Climate Change Interpretation, Spring 2016 Study Circle A.
Participant, EMBO-EMBL Symposium: A New Age of Discovery for Aquatic Microeukaryotes. EMBL Heidelberg, Germany. 26-29 January.
- 2015** Participant, OCB: Trait-Based Approaches to Understanding Marine Life Workshop, Waterville Valley, NH, USA. 5-8 October.
Participant, MPE 2013+ Workshop on Natural Resources. Howard University, Washington, D.C., USA. 4-6 June.
- 2013-2014** Inaugural class, Graduate Voice and Influence Program. Stanford University.
Workshop series on causes of and solutions for gender inequality in academia.
- 2013** Participant, AARMS Mathematical Biology Workshop. Memorial University, Newfoundland, St. John's, Newfoundland, Canada. 27-29 July.
Participant, AARMS-CRM Workshop on Sustainability of Aquatic Ecosystem Networks. Fredericton, New Brunswick, Canada. 22-25 October.
- 2011** Student, Functioning of Boreal Forest Ecosystems Ph.D. course. SLU, Umeå, Sweden. 4-10 June.
Student, Joint MBI-NIMBioS-CAMBAM Summer Graduate Program: Mathematical Ecology and Evolution. Mathematical Biosciences Institute, Columbus, Ohio, USA. 25 July-5 August.
- 2009** Student, Tutorial in Optimal Control Theory. NIMBioS, University of Tennessee, Knoxville, Tennessee, USA. 21-23 November.
- 2007** NSF Research Experience for Undergraduates Fellow. University of Alaska, Southeast. June-August.