

## Holly V. Moeller

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<https://moellerlab.org/>

### EDUCATION:

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- 2010-2015 Ph.D., Stanford University**, Biology Department, 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, Mesodinium rubrum*  
Advisor: Paul G. Falkowski

### POSITIONS HELD:

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- 2016-Present Assistant Professor, Ecology, Evolution & Marine Biology,**  
**University of California, Santa Barbara**
- 2017 Biodiversity Research Centre Postdoctoral Fellow,**  
**University of British Columbia**
- 2015-2016 NSF Postdoctoral Fellow, Biology, Woods Hole Oceanographic Institution**  
*Mixotrophy and the role of metabolic flexibility in community assembly and function*  
Co-Supervisors: Matthew D. Johnson and Michael G. Neubert
- 2014 Adjunct Lecturer, Environmental Studies & Sciences,**  
**Santa Clara University**  
Instructor, Introduction to Environmental Science Lecture and Lab

### PEER-REVIEWED PUBLICATIONS:

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- 2020 Detmer, AR**, RJ Miller, DC Reed, TW Bell, AC Stier, and **HV Moeller**.  
Variation in disturbance to a foundation species structures the dynamics of a benthic reef community. *Ecology* (in press).
- Bui, A**, D Orr, **M Lepori-Bui**, K Konicek, HS Young, and **HV Moeller**. Soil fungal community composition and functional similarity shift across distinct climatic conditions. *FEMS Microbiology Ecology* (in press).
- Pisapia, C, PJ Edmunds, **HV Moeller**, B Riegl, M McWilliam, CD Wells, and MS Pratchett. Projected shifts in coral size structure in the Anthropocene. *Advances in Marine Biology* (in press).
- Rice, MM, BL Maher, AMS Correa, **HV Moeller**, NP Lemoine, AA Shantz, DE

- Burkepile, and NJ Silbiger. Macroborer presence on corals increases with nutrient input and promotes parrotfish bioerosion. *Coral Reefs* 39: 409-418.
- Visalli, ME, BD Best, RB Cabral, ... **HV Moeller**, ... DJ McCauley. Data-driven approach for highlighting priority areas for protection in marine areas beyond national jurisdiction. *Marine Policy* 122: 103927.
- 2019** **Moeller, HV**, MG Neubert, and MD Johnson. Intraguild predation enables coexistence of competing phytoplankton in a well-mixed water column. *Ecology* 100 (12): e02874.
- Moeller, HV**, C Laufkötter, EM Sweeney, and MD Johnson. Light-dependent grazing: A new mechanism for formation of Deep Chlorophyll Maxima. *Nature Communications* 10: 1978.
- 2018** **Moeller, HV** and MD Johnson. Preferential plastid retention by the acquired phototroph *Mesodinium chamaeleon*. *Journal of Eukaryotic Microbiology* 65(2): 148-158.
- Doering, GN, I Scharf, **HV Moeller\***, and JN Pruitt\*. Social tipping points in animal societies in response to heat stress. *Nature Ecology & Evolution* 2(8): 1298.
- \*Denotes equal contribution by senior authors.
- Pruitt, JN, A. Berdahl, C Riehl, N Pinter-Wollman, **HV Moeller**, et al. Social tipping points in animal societies. *Proceedings of the Royal Society B* 285(1887): 20181282.
- Johnson, MD and **HV Moeller**. Mixotrophy in protists: from model systems to mathematical models. *Frontiers in Marine Science* 5: 490.
- 2017** Johnson, MD, E Lasek-Nesselquist, **HV Moeller**, et al. *Mesodinium rubrum*: The symbiosis that wasn't. *PNAS* 114(7): E1040-E1042.
- 2016** **Moeller, HV** and KG Peay. Competition-function tradeoffs in ectomycorrhizal fungi. *Peer J* 4:e2270.
- Moeller, HV**, IA Dickie, T Fukami, and DA Peltzer. Hierarchical neighbor effects on mycorrhizal community structure and function. *Ecology & Evolution* 6(15): 5416-5430.
- 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:**

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**2020** Simons Foundation Early Career Investigator in Marine Microbial Ecology and Evolution (\$666,000)

**2019** NSF Emerging Frontiers. "COLLABORATIVE RESEARCH: URoL : Epigenetics 2: Predicting phenotypic and eco-evolutionary consequences of environmental-energetic-epigenetic linkages." PI: H Putnam; Co-PIs: HV Moeller, R Nisbet, R Cunning, S Roberts, J Eirin-Lopez (\$2,998,175)

NSF Biological Oceanography. "BEE: Testing the evolutionary response of mixotrophs to future ocean conditions." To HV Moeller. (\$536,087)

Hellman Faculty Fellowship (\$35,000)

**2018** Army Institute for Collaborative Biotechnologies. "Harnessing acquired metabolism in microbial systems." To HV Moeller. (\$95,000)

**2017** Norma J. Lang Early Career Fellowship from the Phycological Society of America. "Quantifying niche partitioning along an acquired phototrophy gradient." To HV Moeller. (\$9,826)

- 2016** Department of Energy Joint Genome Institute CSP17 503035. “The role of acquired phototrophy in phytoplankton blooms: Insights from the *Mesodinium rubrum* genome.” To MD Johnson et al. (led writing)
- WHOI Coastal Oceans Institute / Ocean Life Institute Grant 22443.01. “Dynamic bioeconomic models of marine reserves when fishing damages habitat.” To MG Neubert and HV Moeller (\$44,904)
- University of British Columbia Biodiversity Research Centre Postdoctoral Fellowship (\$110,000)
- 2014** NSF Postdoctoral Research Fellowship in Biology Grant DBI- 401332. “Mixotrophy and the role of metabolic flexibility in community assembly and function.” (\$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:**

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- 2020** **Moeller, HV.** Trade, Borrow, or Steal: How acquired metabolism fuels ecological opportunity and evolutionary innovation. University of British Columbia Biodiversity Research Centre. 9 December. (virtual)
- Moeller, HV.** Trade, Borrow, or Steal: How acquired metabolism shapes ecological communities. Drexel University. 8 October. (virtual)
- Moeller, HV.** Jacks of All Trades or Masters of None: Mixotrophy in the global ocean. Rutgers University. 21 September. (virtual)
- Moeller, HV.** Modeling Complex Endosymbiosis: Empirical and mathematical studies of the genus *Mesodinium*. Norma J. Lang Lecture, Phycological Society of America Annual Meeting. 29 July. (virtual)
- Moeller, HV.** Jacks of All Trades or Masters of None: How diverse mixotroph strategies shape current and future oceans. Scripps Institute of Oceanography. 27 May. (virtual)
- 2019** **Moeller, HV.** Acquired metabolism, ecological opportunity, and evolutionary innovation. UCLA. 16 October. Los Angeles, CA, USA.
- Moeller, HV.** When bad partners do good: Maintenance of partner quality variation in multispecies mutualism. Evolution Meeting (T806). 23 June. Providence, RI, USA.
- Moeller, HV.** How acquired metabolism fuels ecological opportunity and evolutionary innovation. University of Nebraska-Lincoln. 18 April. Lincoln, NE,

USA.

**Moeller, HV.** Trade, Borrow, or Steal: How acquired metabolism fuels ecological opportunity and evolutionary innovation. California State University, Northridge. 5 April. Northridge, CA, USA.

**2018** **Moeller, HV.** Smearing the Niche: Acquired metabolism, ecological opportunity, and evolutionary innovation. Gordon Conference: Unifying Ecology Across Scales. 25 July. Biddeford, ME, USA.

**Moeller, HV.** Mixotrophic modulators of the surface ocean. University of Southern California. 6 March. Los Angeles, CA, USA.

**2017** **Moeller, HV.** Trade, Borrow, or Steal: Acquired metabolism and evolutionary innovation. University of California, Riverside. 5 October. Riverside, CA, USA.

**Moeller, HV** and MG Neubert. Acquired metabolism as an evolutionary path to mixotrophy. ICMA-VI. 21 October. Tucson, AZ, USA.

**Moeller, HV** and MG Neubert. Acquired Metabolism: An evolutionary pathway to mixotrophy? Ecological Society of America Annual Meeting, OOS 44-6. 11 August. Portland, OR, USA.

**Moeller, HV.** Tree-ectomycorrhizal symbioses: Does diversity confer function? Canadian Society for Ecology & Evolution Meeting. 8 May. Victoria, BC, Canada.

**Moeller, HV.** Trade, borrow, or steal: How acquired metabolism confers phenotypic plasticity. 13<sup>th</sup> Annual Early Career Scientists Symposium: Ecology and Evolutionary Biology of Phenotypic Plasticity. University of Michigan. 11 March. Ann Arbor, MI, USA.

**2016** **Moeller, HV.** Optimizing fisheries management: Habitat damage, marine reserves and the value of spatial knowledge. University of Maine. 14 October. Orono, ME, USA.

**Moeller, HV.** Mixotrophic Modulators of the Biological Pump. 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:**

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- 2019** **Moeller, HV,** MD Johnson, and MG Neubert. Trait-based evolution of acquired phototrophs: New models for complex endosymbiosis. 4<sup>th</sup> Trait Based Approaches Workshop. 20 August. Buckinghamshire, UK.
- 2018** **Moeller, HV** and MD Johnson. The *Mesodinium* genus as a model for secondary endosymbiosis. Joint Phycological Society of America/International Society of Protistology Meeting. 31 July. Vancouver, BC, Canada.
- Moeller, HV,** C Laufkötter, EM Sweeney, Y Shaked, and MD Johnson. A new hypothesis for Deep Chlorophyll Maximum formation: Light-dependent grazing. Ocean Sciences Meeting, MM14A-1421. 13 February. Portland, OR, USA.
- 2016** **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 and PRESENTATIONS:**

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- 2018** "Trade, Borrow, or Steal: How Life Exceeds its Metabolic Potential." Public Talk, Santa Barbara Museum of Natural History Science Pub Night, Santa Barbara, 8 October 2018.
- 2017** "Trade, Borrow, or Steal: How Life Exceeds its Metabolic Potential." Public Talk, Café Scientifique Vancouver, 28 March 2017.
- 2015** 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/](http://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**, 6<sup>th</sup> 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:**

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- 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:**

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- Scholarship* Rollie F. Lambertson Award for Best Theory Paper (2017)  
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:**

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- 2016-present** Member and scientific advisor, National Network of Ocean and Climate Change Interpreters: Central California Regional Study Circle
- 2016** Classroom guest instructor, Biology, Cape Cod Academy (9<sup>th</sup> grade)
- 2015-2016** 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; Ecology Letters; 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**

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- 2010-present** Participant and (since 2016) Co-Leader and Faculty Mentor, Nantucket Annual Math Ecology Retreat (ACKME). UMass Nantucket Field Station, Nantucket, MA, USA. Annually in October or November.  
*Workshop for graduate students and postdocs to generate and analyze new mathematical models.*
- 2017** Participant, Pan-microbial Trait Ecology investigative workshop. NIMBioS, University of Tennessee, Knoxville, TN, USA. 14-16 June.
- 2016** Participant, Game Theoretic Modeling Tutorial. NIMBioS, University of Tennessee, Knoxville, TN, USA. 25-27 April.  
Science Fellow, National Network for Ocean 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.