

Annette Ostling

Ecology and Evolutionary Biology
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Research Interests

Community ecology, especially the mechanisms of coexistence of competing species and implications for the structure of communities; Development and testing of niche, neutral, and stochastic niche theories of community assembly; Linking trait patterns with competitive coexistence mechanisms, especially in forests; Macroecology, especially spatial scaling patterns and implications for estimating large-scale biodiversity and its loss.

Education

- PhD *University of California, Berkeley*, Energy and Resources, December 2004
Advisor: Prof. John Harte
Dissertation Title: Development and tests of two null theories of ecological communities: a fractal theory and a dispersal-assembly theory.
- MS *University of Illinois, Urbana-Champaign*, Physics, 1999
Advisor: Prof. Robert Leigh
Dissertation Title: The propagator for graviton modes in supergravity on $AdS_5 \times S^5$
- AB *Columbia University*, Physics, 1994

Professional Appointments

- Associate Chair of Undergraduate Studies*, Ecology and Evolutionary Biology, University of Michigan (2019)
- Associate Director*, Michigan Institute for Computational Discovery and Engineering (MICDE), University of Michigan, (2016-Present)
- Miller Institute Visiting Professor*, Integrative Biology, University of California, Berkeley (2016) (hosted by David Ackerly)
- Visiting Researcher*, Center for Macroecology, Evolution, and Climate, University of Copenhagen (2015-2016)
- Associate Professor*, Ecology and Evolutionary Biology, University of Michigan. (2014-present)
- Assistant Professor*, Ecology and Evolutionary Biology, University of Michigan. (2006-2014)
- Council on Science and Technology Postdoctoral Fellow*, Ecology and Evolutionary Biology, Princeton University, Mentor: Simon Levin. (2004-2006)

Major Service Responsibilities

- Editor*, Ecology Letters 2016-Present.
- Associate Editor*, Theoretical Population Biology, 2018-Present.
- Chair* (2017, 2018), and *Vice-Chair* (2016), Theoretical Ecology Section – Ecological Society of America
- Elected to Membership in Faculty Senate Assembly*, University of Michigan (2020-)
- Executive Committee Member*, Ecology and Evolutionary Biology, University of Michigan (2020-, 2016-2018, 2014-2015)

Fellowships, Awards, Press

Featured in APS News: “Profiles in Versatility: Physicists Take Their Skills to the Great Outdoors”

<https://www.aps.org/publications/apsnews/201711/versatility.cfm>

Visiting Miller Professorship, University of California, Berkeley (2016)

Princeton University Council on Science and Technology Postdoctoral Teaching Fellowship (2004-2006)

UC Berkeley President’s Postdoctoral Fellowship Program: Finalist (2004)

EPA STAR Graduate Fellowship (2003-2004)

Santa Fe Institute Complex Systems Summer School Fellowship (2001)

Department of Education GAAN Fellowship (1995-1996)

NSF Graduate Fellowship Competition: Commended (1996)

Publications

- *, **, *** = Postdoc, Graduate Student, Undergraduate Student (respectively) advised by Ostling
- Loiseau N, N Mouquet, N Casajus, M Grenié, M Gueguen, B Maitner, D Mouillot, A Ostling, J Renaud, C Tucker, L Velez, W Thuiller, C Violle (2020) Global distribution and conservation status of ecologically rare mammal and bird species. *Nature Communications* 11,5071. DOI: [10.1038/s41467-020-18779-w](https://doi.org/10.1038/s41467-020-18779-w)
- D’Andrea, R **, J Guittar, J O’Dwyer, H Figueroa **, SJ Wright, R Condit, and **A Ostling** (2020) Counting niches: Abundance–by–trait patterns reveal niche partitioning in a Neotropical forest. *Ecology* 101:e03019. DOI: [10.1002/ecy.3019](https://doi.org/10.1002/ecy.3019) [U-M LSA news](#)
- D’Andrea, R **, M Riolo, and **A Ostling** (2019) Generalizing clusters of similar species as a signature of coexistence under competition. *PLoS Computational Biology* 15:e1006699. DOI: [10.1371/journal.pcbi.1006688](https://doi.org/10.1371/journal.pcbi.1006688) [Science Trends Piece](#)
- Rael, R *, R D’Andrea **, G Barabás **, and **A Ostling** (2018) Emergent niches lead to greater differences between niche and neutral species abundance distributions. *Ecology* 99:1633-1643. DOI: [10.1002/ecy.2238](https://doi.org/10.1002/ecy.2238)
- D’Andrea, R, J O’Dwyer, and **A Ostling** (2018) Translucent windows: how uncertainty in competitive interactions impacts detection of community pattern. *Ecology Letters* 21:826-835. DOI: [10.1111/ele.12946](https://doi.org/10.1111/ele.12946) [Recommended by Faculty of 1000](#) (by Caroline Farrior)
- Kunin, W, J Harte, F He, C Hui, RT Jobe, **A Ostling**, C Polce, A Sizling, AB Smith, K Smith, SM Smart, D Storch, E Tjørve, K-I Ugland, W Ulrich, V Varma (2018) Upscaling biodiversity: estimating the species-area relationship from small samples. *Ecological Monographs* 88: 170-187. DOI: [10.1002/ecm.1284](https://doi.org/10.1002/ecm.1284)
- D’Andrea, R ** and **A Ostling** (2017) Biodiversity maintenance may be lower under partial niche differentiation than under neutrality. *Ecology* 98:3211-3218. DOI: [10.1002/ecy.2020](https://doi.org/10.1002/ecy.2020) [Recommended by Faculty of 1000](#) (by David Vasseur)
- D’Andrea, R ** and **A Ostling** (2016) Challenges in linking trait patterns to niche processes. *Oikos* 125:1369. DOI: [10.1111/oik.02979](https://doi.org/10.1111/oik.02979).
- Fukami T, Mordecai EA, and **A Ostling** (2016) A framework for priority effects. *Journal of Vegetation Science* 27: 655-657. DOI: [10.1111/jvs.12434](https://doi.org/10.1111/jvs.12434)
- D’Andrea, R ** and **A Ostling** (2016) Can clustering in genotype space reveal "niches"? *American Naturalist* 187:130-135. DOI: [10.1086/684116](https://doi.org/10.1086/684116)

- Barabás, G**, L Pásztor, G Meszéna and **A Ostling** (2014) Community-wide sensitivity analysis: theory and application. *Ecology Letters* (Ideas & Perspectives piece) 17:1479-1494 DOI: [10.1111/ele.12350](https://doi.org/10.1111/ele.12350) [pdf](#)
- Marquet PA, AP Allen, JH Brown, J Dunne, BJ Enquist, J Gillooly, PA Gowaty, JL Green, D Storch, J Harte, SP Hubbell, J O'Dwyer, J Okie, M Ritchie, **A Ostling**, and GB West (2014) On theory in ecology. *Bioscience* 64:701-710. DOI: [10.1093/biosci/biu098](https://doi.org/10.1093/biosci/biu098) [pdf](#)
- Barabás, G**, G Meszéna, and **A Ostling** (2014) Fixed point sensitivity analysis of interacting structured populations. *Journal of Theoretical Biology* 92:97-106. DOI: [10.1016/j.tpb.2013.12.001](https://doi.org/10.1016/j.tpb.2013.12.001) [pdf](#)
- Messinger, S** and **A Ostling** (2013) Predator evolution in space: Novel effects of predator and prey ecology on the predator's attack rate. *Theoretical Population Biology* 89:55-63. DOI: [10.1016/j.tpb.2013.08.003](https://doi.org/10.1016/j.tpb.2013.08.003) [pdf](#) [supplemental animation 1](#) [supplemental animation 2](#) [supplemental animation 3](#) *Recommended by Faculty of 1000* (by Frederic Guichard)
- Barabas, G** and **A Ostling** (2013) Community robustness in periodic environments for discrete-time dynamics. *Ecological Complexity* 15:122-130. DOI: [10.1016/j.ecocom.2013.07.001](https://doi.org/10.1016/j.ecocom.2013.07.001) [pdf](#)
- Barabás, G**, R D'Andrea**, R Rael*, G Meszéna, and **A Ostling** (2013) Emergent neutrality or hidden niches? *Oikos* 122:1565-1572. [pdf](#) DOI: [10.1111/j.1600-0706.2013.00298.x](https://doi.org/10.1111/j.1600-0706.2013.00298.x), reply DOI: [10.1111/j.1600-0706.2013.00790.x](https://doi.org/10.1111/j.1600-0706.2013.00790.x)
- Sedio, B** and **A Ostling** (2013) How specialized must natural enemies be to facilitate coexistence among plants? *Ecology Letters* 16:995-1003 [pdf](#) DOI: [10.1111/ele.12130](https://doi.org/10.1111/ele.12130) *Online publication date: June, 2013* (Note Sedio is advised by C. Dick, but I served on his dissertation committee and was his main advisor for this theoretical paper.)
- D'Andrea, R**, G Barabás**, and **A Ostling** (2013) Revising the tolerance-fecundity tradeoff, or On the consequences of discontinuous resource use. *American Naturalist* 181: E91-E101. DOI: [10.1086/669902](https://doi.org/10.1086/669902) [pdf](#) [supp_appA](#) [supp_appB](#) [supp_appC](#) [supp_appD](#)
- Messinger, S** and **A Ostling** (2013) The influence of host reproduction, host death, and pathogen virulence on the evolution of pathogen transmission in a spatial context. *Evolutionary Ecology* 27:353-380. DOI: [10.1007/s10682-012-9594-y](https://doi.org/10.1007/s10682-012-9594-y) [pdf](#) *Online publication: August, 2012.*
- Barabás, G**, R D'Andrea**, and **A Ostling** (2013) Species packing in nonsmooth competition models. *Theoretical Ecology* 6: 1-19. DOI: [10.1007/s12080-011-0151-z](https://doi.org/10.1007/s12080-011-0151-z) [pdf](#) *Online publication: January, 2012.*
- Zhang, D Y, B Y Zhang, K Lin, X Jiang, Y Tao, S Hubbell, F He, and **A Ostling** (2012) Demographic tradeoffs determine species abundance and diversity. *Journal of Plant Ecology* 5:82-88. DOI: [10.1093/jpe/rtr039](https://doi.org/10.1093/jpe/rtr039) [pdf](#)
- Ostling, A** (2012b) Large-scale spatial synchrony and the stability of forest biodiversity revisited. *Journal of Plant Ecology* 5:52-63. DOI: [10.1093/jpe/rtr035](https://doi.org/10.1093/jpe/rtr035) [pdf](#) *Recommended by Faculty of 1000.* (by Ryan Chisholm)
- Barabás, G**, G Meszéna, and **A Ostling** (2012) Community robustness and limiting similarity in periodic environments. *Theoretical Ecology* 5:265-282. DOI: [10.1007/s12080-011-0127-z](https://doi.org/10.1007/s12080-011-0127-z) [pdf](#) *Online publication date: May 2011.*
- Ostling, A** (2012a) Do fitness-equalizing tradeoffs lead to neutral communities? *Theoretical Ecology* 5:181-194. DOI: [10.1007/s12080-010-0107-8](https://doi.org/10.1007/s12080-010-0107-8) [pdf](#) [supplementary material](#) *Online publication date: Jan, 2011.*

- Brym, Z T^{***}, J K Lake^{*}, Allen, D, and **A Ostling** (2011) Plant functional traits suggest novel ecological strategy for an invasive shrub in an understory woody plant community. *Journal of Applied Ecology* 48: 1098-1106. DOI: [10.1111/j.1365-2664.2011.02049.x](https://doi.org/10.1111/j.1365-2664.2011.02049.x) [pdf](#)
- Lake, J K^{*}, and **A Ostling** (2009) Comment on: Functional Traits and Niche-Based Tree Community Assembly in an Amazonian Forest. *Science* 324:1015-c. [pdf](#) [kraft reply](#) [original kraft article](#)
- Messinger, S^{**} and **A Ostling**. (2009) The consequences of spatial structure for pathogen evolution. *The American Naturalist* 174:441-454. [pdf](#)
- Morlon, H, White, E, Etienne, R, Green, J, **Ostling, A**, Alonso, D, Enquist, B, He, F, Hurlbert, A, Magurran, A, Maurer, B, McGill, B, Olf, H, Storch, D, and T Zillio (2009) Taking species abundance distributions beyond individuals. *Ecology Letters* 12:488-501. [pdf](#)
- O'Dwyer, J P, J K Lake^{*}, **A. Ostling**, V M Savage, and J L Green (2009) An integrative framework for stochastic, size-structured community assembly. *PNAS* 106:6170-6175. [pdf](#) [supplemental](#)
[Recommended by Faculty of 1000](#). (by Rampal Etienne)
- Ballantyne, F, D Menge, **A Ostling**, and P Hosseini. (2008) Nutrient recycling affects autotroph and ecosystem stoichiometry. *American Naturalist* 171: 511-523. [pdf](#)
- Alonso, D^{*}, **A Ostling**, and R Etienne. (2008) The assumption of symmetry and species abundance distributions. *Ecology Letters* 11:93-105. [pdf](#) [sup1](#) [sup2](#) (Note authorship on this paper was ordered by our relative contributions.)
- McGill, B, R S Etienne, J Gray, D Alonso, M J Anderson, H K Benecha, M Dornelas, B J Enquist, J L Green, F He, A Hurlbert, A E Magurran, P A Marquet, B A Maurer, **A Ostling**, C U Sokyan, K Ugland, and E White (2007) Species abundance distributions: Moving beyond single prediction theories to integration within an ecological framework. *Ecology Letters* 10: 995-1015. [pdf](#)
- Carey, S, **A Ostling**, J Harte, and R del Moral. (2007) Impact of curve construction and community dynamics on the species-time relationship. *Ecology* 88: 2145-2153. [pdf](#)
- Ostling, A** (2005) Neutral theory tested by birds. *Nature* 436: 635. (News and Views) [pdf](#)
- Harte, J, E Conlisk, **A Ostling**, J L Green, and A B Smith. (2005) A theory of spatial-abundance and species-abundance distributions in ecological communities at multiple spatial scales. *Ecological Monographs* 75: 179-197. [pdf](#)
- Harte, J, **A Ostling**, J L Green, and A P Kinzig. (2004) Climate Change and Extinction. *Nature* 430: Brief Communications. [pdf](#)
- Ostling, A**, J Harte, J L Green, and A P Kinzig. (2004) Self-similarity, the power-law form of the species-area relationship, and a probability rule: A reply. *The American Naturalist* 163: 627-633. [pdf](#)
- Brose, U, **A Ostling**, K Harrison, and N D Martinez. (2004) Unified spatial scaling of species and their trophic interactions. *Nature* 428:167-171. [pdf](#)
- Green, J L, and **A Ostling**. (2003) Endemics-area relationships: the influence of species dominance and spatial aggregation. *Ecology* 84: 3090-3094. [pdf](#)
- Ostling, A**, J Harte, J L Green, and A P Kinzig. (2003) A community-level fractal property produces power-law species-area relationships in nature. *Oikos* 103: 218-224. [pdf](#)
- Green, J L, J Harte, and **A Ostling**. (2003) Species richness, endemism and abundance patterns: tests of two fractal models in a serpentine grassland *Ecology Letters* 6: 919-928. [pdf](#)
- Harte, J, T Blackburn, and **A Ostling**. (2001) Self-similarity and the relationship between abundance and range size. *The American Naturalist* 157:374-386. [pdf](#)

Green, J L, J Harte, and **A Ostling**. (2001) Global warming, temperature homogenization and species extinction, in *Biotic Homogenization*, Lockwood, J. and M. McKinney, editors, Kluwer Academic/Plenum Publishers (2001). [pdf](#)

Ostling, A, J Harte, and J L Green. (2000) Self-similarity and clustering in the spatial distribution of species -Technical Comment. *Science* 290:671a. [pdf](#) [Condit article](#)

Sardesai M, C Figge, M Bodner, M Crosby, J Hansen, J A Quillfeldt, S Landau, **A Ostling**, S Vuong, and G L Shaw. (2001) Reliable short-term memory in the trion model: toward a cortical language and grammar. *Biological Cybernetics* 84:173-182.

Invited Talks

Department of Biological Sciences, University of Pittsburgh, September 2019

Ecology and Evolutionary Biology Seminar Series, Yale University, September 2018

Bambi Seminar, Barro Colorado Island, Panama, August 2018

Tupper Seminar, Smithsonian Tropical Research Institute, Panama, August 2018

Minisymposium on Coexistence in Complex Ecological Communities, Mathematical Models in Ecology and Evolution, City University of London, July 2017.

University of Michigan-Santa Fe Institute Symposium: Complexity in Ecological, Evolutionary and Social Dynamics, University of Michigan, April 2017.

Environment-energy Nexus—A Physics Perspective, Invited Speaker Session, American Physical Society March Meeting, March 2017.

Applied and Interdisciplinary Mathematics Seminar, University of Michigan, October 2016.

Network for Ecological Theory Integration, Santa Fe Institute, September 2016.

Status and Evaluation of Theory in Ecology, ESA Symposium, August 2016.

Section for Ecology and Evolution seminar, University of Copenhagen, April 2016.

Miller Institute Lunch Talk, Miller Institute, UC Berkeley, March 2016.

Information and Entropy in Biological Systems, National Institute for Mathematical and Biological Sciences (NIMBIO), TN, April 2015

Advancing Ecological Theory for Conservation Biology, ESA Symposium, August 2014.

Theory vs. empiricism in the advancement of science, ESA Ignite Session, August 2014.

Michigan State University Kellogg Biological Station, April 2013.

University of Connecticut, Department of Ecology and Evolutionary Biology, March 2013.

Gordon Conference on Metabolic Ecology, July 2012.

Oakland University, Michigan, October 2011.

International Symposium for Biodiversity and Theoretical Ecology, Sun Yat Sen University, Guangzhou, China, May 2011.

Case Western Reserve University, Department of Biology, March 2011.

University of Copenhagen, Center for Macroecology, Climate, and Conservation, September 2010.

University of California, Los Angeles, Department of Biomathematics, May 2010.

National Center for Ecological Analysis and Synthesis (NCEAS) EcoLunch, May 2008.

Department of Environmental Science, Policy, and Management, University of California, Berkeley, 2005.

Department of Ecology and Evolutionary Biology, University of Michigan, 2005.

Institute of Ecosystem Studies, Milbrook, NY, 2004.

Young Scientists Symposium on Spatial Ecology, Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, 2004.

McGill Centre for Bioinformatics. McGill University, Canada, 2004.

75th Anniversary Symposium of the Rocky Mountain Biological Laboratory: Gunnison Basin as a Model Ecosystem, Mt. Crested Butte, CO, 2003.

Meeting of the Association for Tropical Biology. Panama City, Panama, 2002.

Institute for Theoretical Physics, UC Santa Barbara, Program on Statistical Physics and Biological Information, 2001.

Invited Workshops (Invited talk and extensive participation in collaborative research at each.)

Functional Rarity in Ecology and Evolution Workshop, Centre de Synthèse et d'Analyse sur la Biodiversité, Aix-en-Provence, France, May 2018, Montpellier, France, May 2019.

Irreversible Processes in Ecological Evolution Working Group, Santa Fe Institute, January 2019.

StructInst (Structural Instability) Workshop, Queen Mary University London, September 2017

Linking Paleoecology and Community Ecology, Schoodic Institute, Acadia National Park, in May 2017.

Network for Ecological Theory Integration, Chile, October 2014, Santa Fe Institute, September 2016.

UKPopNet Biodiversity Up-scaling Workshop, University of Leeds, UK, 2009.

Towards a Unified Theory of Biodiversity. National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 2007, 2008.

Unifying Current Theories of Ecology. Santa Fe Institute, Santa Fe, New Mexico, 2006.

Tools and fresh approaches for species abundance distributions. National Center for Ecological Analysis and Synthesis (Working Group), Santa Barbara, CA, 2006, 2007, 2008.

Symposia Organized

Towards a trait-based understanding of coexistence under competition for light in forest communities (J. Lake co-organizer). Organized Oral Session at the Annual Meeting of the Ecological Society of America 2010. http://eco.confex.com/eco/2010/preliminaryprogram/session_5346.htm

Niche versus neutral: a look at an iconic idea in community ecology, its challenger, and the middle ground, Parts I and II (co-organizer with N. Sanders and J. Lake). Symposium and Organized Oral Session at the Annual Meeting of the Ecological Society of America, 2006. <http://www.esa.org/memphis/daySchedule4.php>

Contributed Talks and Posters at National or International Meetings

My lab has contributed over 40 talks and posters to National or International Meetings since 2008. A complete list is available upon request.

Student and Postdoctoral Mentoring

Current Postdoc: Michael Kalyuzhny (Life Sciences Postdoctoral Fellow)

Current Graduate Students: Hector Figueroa (EEB PhD program), Chau Ho (EEB PhD program), Sarah Orth (EEB Traditional Master's program), Ursula Trigos-Raczkowski (AIM PhD program)

Current Undergraduate Students: Dylan Debaun (Math and EEB double major), Siqi Li (Biostatistics major), Dhanuj Gandikota (Biostatistics major)

Former Personnel:

Postdocs: Yinghui Yang (Visiting Scholar at Postdoctoral Level, Chengdu University of Science and Technology), Dexiecuo Ai (Postdoctoral Fellow, Lanzhou University), Rosalyn Rael (Scientist, Los Alamos National Laboratory), [Jeffrey Lake](#) (Assistant Professor, Adrian College, MI), [David Alonso](#) (Research Scientist, Center for Advanced Studies of Blanes, Spain).

Graduate Students: [Rafael D'Andrea](#) (Assistant Professor, Stonybrook University), [György Barabás](#) (Assistant Professor, Linköping University, Sweden), Judy Wan, [Brian Sedio](#) (Ostling lab collaborator, Assistant Professor, University of Texas at Austin), Susanna Messinger (Yale University, Gaylord Donnelly Postdoctoral Fellowship then Business Intelligence Manager at Zions Bank)

Undergraduates: Josh Winters (Engineering CS concentration, EEB minor, Just started position as Software Engineer, Silicon Laboratories, but continues to consult for lab), Devin Riley (Math concentrator, Statistics minor), Cody Weinberger (University of Chicago), Kyle Anderson (Graduate Student, International Agricultural Development MS Program, UC Davis), Xinxin Li (Graduate Student, Environmental Health, UNC Chapel Hill), Jingyuan Li, Daniel Cummins, Chang Gong (Graduate Student, Department of Computational Medicine & Bioinformatics, University of Michigan), Petrina Smith, Todd Baker, Sreya Vempatti, [Zachary Brym](#) (Assistant Professor of Agroecology, Tropical Research & Education Center, University of Florida), Carlin Ziska (Program Coordinator and Resource Specialist, Peace Corps), Andrea Maguire (Graduate Student, Plant Biology, Michigan State University)

Highschool students: Shan Kothari (Graduated from MSU), Kristin Hayden

Teaching

Population and Community Ecology. Department of Ecology and Evolutionary Biology, University of Michigan, (co-taught with Mercedes Pascual) Fall 2006, (sole instructor) Fall 2008, (sole instructor) Fall 2014, (co-taught with Fernanda Valdovinos) Fall 2018 & Fall 2019.

EEB Capstone Seminar. Department of Ecology and Evolutionary Biology, University of Michigan, Fall 2017, 2018, 2019.

Modeling for Ecology and Evolutionary Biology. Department of Ecology and Evolutionary Biology, University of Michigan, Winter 2012, 2013, 2014, 2015, 2017, 2019.

General Ecology. Department of Ecology and Evolutionary Biology, University of Michigan, Winter 2008-2014, 2017 (3 terms co-instructor, 5 terms sole instructor).

Quantitative Aspects of Global Environmental Problems (graduate student instructor, lead instructor J. Harte) Energy and Resources Group, University of California, Berkeley, Spring 2003.

Physics Courses ranging from *Practical Physics: How Things Work- A Course for Nonscientists to General Field Theory* (graduate student instructor). Department of Physics, University of Illinois at Urbana-Champaign. 6 semesters during 1995-1999.

Grants

- (Pending) NSF Mathematical Biology (\$561,770): Coexistence of competing structured populations: delineating mechanisms of niche differentiation (7/1/2021-6/30/2024). Co-PI: Charles Doering.
- MCubed (University of Michigan, \$60,000) Combining functional ecology, demography, and competition theory to understand coexistence and trait pattern in forest communities. (March 15th, 2020 – March 15th, 2021) Co-PIs: Ines Ibanez, Maria Natalia Umana.
- MCubed (University of Michigan, \$60,000) A study of a size-structured competition models to understand tree species coexistence. (April 1, 2017-March 31st, 2018) Co-PIs: Charles Doering, Krishna Garikipati.
- LSA Associate Professor Support Fund (\$100,000) Building theory of the consequences of large-scale biodiversity loss. (July 1, 2016 – June 30, 2018)
- NSF Advancing Theory in Biology (ATB) (\$478,668.00) Niche versus neutral structure in populations and communities. (September, 2010– September, 2016)
- XSEDE (680,000 computing hours on Condor Pool at Purdue), Niche versus neutral structure in populations and communities. January 1, 2013- January 1, 2014.
- IBM Equipment Grant through the University of Michigan (\$28,635) A teaching initiative in ecological modeling and computation, and the development of a new tool for community ecology research. (June, 2011)
- Rackham Graduate School (\$17,000) The impact of spatial structure on the evolution of species interactions. (September, 2008 – September, 2009)
- NSF Advance at the University of Michigan, Elizabeth Caroline Crosby Research Grant (\$15,000) Towards a General Theory of Fitness-Equalized Communities. (October, 2006 – December, 2007)

Other Service: External

- Reviewer for > 25 journals, including *Science*, *Nature*, *Proceedings of the National Academy of Sciences*, *Trends in Ecology and Evolutionary Biology*.
- NSF panelist, DEB Population and Community Ecology and Advancing Theory in Biology programs.

Other Service: Departmental

- New Faculty Launch Committee* Member (Winter 2019-Fall 2019)
- Lecturer III Search Committee* Member (Fall 2019)
- PhD Admissions Committee* Member (2018-2019)
- Joint Complex Systems/Theoretical Ecology Faculty Position Search Committee* Member (2016-2017)
- Frontier's Masters Admission Committee* Member (2014-2015)
- PhD Evaluation Exam Committee* Member (2017-2018, 2013-2014, 2012-2013)
- Diversity Committee* (organized EEB portion of NextProf Future Faculty Recruiting Program) (2014-2015, 2008-2009)
- Third Year Review Committees* Member (2014-2015)
- Seminar Committee* Chair (2012-2013) and Member (2010-2011, 2007-2008)
- Biological Networks Faculty Position Search Committee* Member (2011-2012)
- Graduate Advisory Committee* Member (2008-2010)
- Joint EEB/Complex Systems Faculty Position Search Committee* Member (2008-2009)
- Early Career Scientist Symposium Co-Organizer* (2007-2008)

Outreach

Ran week-long focus group on Ecology for University of Michigan's Women in Science and Engineering (WISE) Girls in Sciences and Engineering (GISE) summer camp. (2011, 2012)