

# Phoebe Lehmann Zarnetske

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## Academic Appointments

- 2020- **Associate Professor, Michigan State University** – East Lansing, MI  
Department of Integrative Biology; Adjunct: Plant Biology
- 2013-2020 **Assistant Professor, Michigan State University** – East Lansing, MI  
2019-2020: Department of Integrative Biology; Adjunct: Plant Biology  
2013-2019: Departments of Forestry, Fisheries and Wildlife; Adjunct: Plant Biology
- 2011-2013 **Postdoctoral Fellow, Yale Climate and Energy Institute**  
Yale University School of Forestry & Environmental Studies – New Haven, CT  
**Gratis Researcher, Ecology and Evolutionary Biology**, University of Connecticut – Storrs, CT  
*Research:* The community ecology of climate change: understanding and predicting changes in the composition and distribution of ecological communities during climate change.  
Advisors: D.K. Skelly (Yale), M.C. Urban (UCONN)

## Education

- 2011 **Ph.D. in Integrative Biology (Zoology), minors in Ecosystem Informatics, Statistics**  
*Dissertation:* The influence of biophysical feedbacks and species interactions on grass invasions and coastal dune morphology in the Pacific Northwest, USA.  
Oregon State University – Corvallis, OR (Advisors: S.D. Hacker, E.W. Seabloom)
- 2006 **M.S. in Ecology**  
*Thesis:* Landscape scale habitat classification modeling with incomplete data: the generation of ecologically-based pseudo-absence points.  
Utah State University, USGS Cooperative Unit – Logan, UT (Advisor: T.C. Edwards, Jr.)
- 2001 **B.A. in Biology, Environmental Science concentration**  
Colby College – Waterville, ME  
School for Field Studies, Center for Sustainable Development – Atenas, Costa Rica

## Prior Research & Work Experience

- 2010-2012 **Research Scientist, Aquatic & Reporting Unit, Science & Technical Group** Department of Conservation; National Institute of Water and Atmospheric Research – Christchurch, New Zealand.
- 2010 **Visiting Scientist, Coastal Dune Research Group** University of Otago – Dunedin, New Zealand.
- 2006-2011 **Graduate Fellow, NSF IGERT Ecosystem Informatics** Oregon State University – Corvallis, OR
- 2006-2008 **Graduate Research Assistant, Department of Zoology** Oregon State University – Corvallis, OR
- 2003-2006 **Graduate Research Assistant, Department of Wildland Resources**  
Utah State University – Logan, UT
- 2001-2003 **Department Assistant, Herpetology Department**  
Harvard University Museum of Comparative Zoology – Cambridge, MA
- 1999-2001 **Research Assistant, University of Connecticut-Patagonia Research Team**  
Torres del Paine National Park – Patagonia, Chile
- 2000-2001 **Research Assistant, Department of Biology** Colby College – Waterville, ME
- 2000 **Student Researcher, Center for Sustainable Development**  
School for Field Studies – Atenas, Costa Rica.

## Manuscripts in Review or Revision

PLZ is lead PI on publications led by mentees.

\*\*\*postdoc mentee, \*\*graduate mentee, \*undergrad mentee, +joint lead

1. **Zarnetske, P.L.**, J. Gurevitch, J. Franklin, P. Groffman, C. Harrison, J. Hellmann, F. Hoffman, S. Kothari, A. Robock, S. Tilmes, J. Wu, D. Visioni, L. Xia, and C.-E. Yang. In revision. Potential ecological impacts of climate intervention by reflecting sunlight to cool the Earth. *Proceedings of the National Academy of Sciences*.
2. Grady, J.M. \*\*\*, Q.D. Read\*\*\*, S. Record, N. Rüger, **P.L. Zarnetske**, A.I. Dell, S.P. Hubbell, S.T. Michaletz, A. Shenkin, and B.J. Enquist. In review. Life history scaling and the division of energy in forests. *Proceedings of the National Academy of Sciences*.  
Also preprint on bioRxiv:2020.06.22.163659. DOI:[10.1101/2020.06.22.163659](https://doi.org/10.1101/2020.06.22.163659).
3. Voelker, N., S. Record, **P.L. Zarnetske**, N. Wisnoski, J. Tonkin, C. Swan, L. Marazzi, N. Lany\*\*\*, T. Lamy, A. Compagnoni, M. Castorani, R. Andrade, E. Sokol. In revision. Novel insights to be gained from applying metacommunity theory to long-term biodiversity data. *Frontiers in Ecology and Evolution*.
4. Dahlin, K., **P.L. Zarnetske**, Q.D. Read\*\*\*, L. Twardochleb\*\*, A. Kamoske, K. Cheruvellil, and P. Soranno. In review. Interactions between biodiversity and ecosystem function among terrestrial and aquatic realms. *Ecosphere*.
5. Charbonneau, B., S. Dohner, J. Wnek, D. Barber, **P.L. Zarnetske**, B. Casper. In review. Coastal plants as ecosystem engineers shaping foredune genesis. *Geomorphology*.

## Refereed Publications

38. Twardochleb, L.A. \*\*, \*E. Hiltner, M. Pyne, and **P.L. Zarnetske**. Accepted. Freshwater insect occurrences and traits for the contiguous United States. *Global Ecology and Biogeography*.
37. Twardochleb, L.T.\*\*, T. Treakle\*, **P.L. Zarnetske**. 2020. Foraging strategy mediates ectotherm predator-prey responses to climate warming. *Ecology*. doi: 10.1002/ecy.3146.  
*Media Coverage: [MSU NatSci Press Release](#)*
36. Read, Q.D.\*\*\*, **P.L. Zarnetske**, S. Record, K.M. Dahlin, A.O. Finley, J.M. Grady\*\*\*, M. L. Hobi, S.L. Malone, J. Costanza, A.M. Wilson, A.M. Latimer, K.D. Gaddis, S. Pau, and S.V. Ollinger. 2020. Beyond counts and averages: relating geodiversity to dimensions of biodiversity. *Global Ecology and Biogeography*. 29: 696-710. doi: 10.1111/geb.13061  
*Media Coverage: [MSU Today](#)*
35. Lany, N.\*\*, **P.L. Zarnetske**, A. Finley, D.G. McCullough. 2020. Complementary strengths of spatially-explicit versus multi-species distribution models. *Ecography*. 43: 456-466. doi: 10.1111/ecog.04728.
34. Record, S., K.M. Dahlin, **P.L. Zarnetske**, Q.D. Read\*\*\*, S.L. Malone, K. Gaddis, J.M. Grady\*\*\*, J. Costanza, M. Hobi, A. Latimer, S. Pau, A.M. Wilson, A. Finley, S.V. Ollinger, and E. Hestir. (invited). 2020. Remote Sensing of Geodiversity as a Link to Biodiversity. Pages 225–253 in J. Cavender-Bares, J. A. Gamon, and P. A. Townsend, editors. *Remote Sensing of Plant Biodiversity*. Springer International Publishing, Cham. DOI:10.1007/978-3-030-33157-3\_10.
33. Dahlin, K.M., **P.L. Zarnetske**, S. Record. 2019. Hear every voice — working groups that work. *Frontiers in Ecology and the Environment*. 17:493-494. doi:10.1002/fee.2115
32. Schrodtt, F., J. J. Bailey, W. D. Kissling, K. F. Rijdsdijk, A. C. Seijmonsbergen, D. van Ree, J. Hjort, R. S. Lawley, C. N. Williams, M. G. Anderson, P. Beier, P. van Beukering, D. S. Boyd, J. Brilha, L. Carcavilla, K. M. Dahlin, J. C. Gill, J. E. Gordon, M. Gray, M. Grundy, M. L. Hunter, J. J. Lawler, M. Monge-Ganuzas, K. R. Royse, I. Stewart, S. Record, W. Turner, **P. L. Zarnetske**, and R. Field. 2019. Opinion: To advance sustainable stewardship, we must document not only biodiversity but geodiversity. *Proceedings of the National Academy of Sciences* 116:16155–16158. doi:10.1073/pnas.1911799116.  
*Media coverage: [The Conversation](#)*
31. **Zarnetske, P.L.**, Q.D. Read\*\*\*, S. Record, K.D. Gaddis, S. Pau, M.L. Hobi, S.L. Malone, J. Costanza, K.M. Dahlin, A.M. Latimer, A.M. Wilson, J.M. Grady\*\*\*, S.V. Ollinger, A.O. Finley. 2019. Towards connecting biodiversity and geodiversity across scales with satellite remote sensing. *Global Ecology & Biogeography*. doi:10.1111/geb.12887

30. Grady, J.M.\*\*\*, B.S. Maitner, A.S. Winter, K. Kaschner, D.P. Tittensor, S. Record, F.A. Smith, A.M. Wilson, A.I. Dell, **P.L. Zarnetske**, H.J. Wearing, B. Alfaro, J.H. Brown. 2019. Metabolic asymmetry and the global diversity of marine predators. *Science*. 363:eaat4220. doi: 10.1126/science.aat4220  
*Example Media Coverage:* [EurekaAlert](#), [The Atlantic](#), [Science](#)
29. Grady, J.M.\*\*\*, Q.D. Read\*\*\*, S.R. Record, **P.L. Zarnetske**, B. Baiser, K. Thorne, J. Belmaker. 2018. Size, Niches and the Latitudinal Diversity Gradient. *Teaching Issues and Experiments in Ecology*. 14:Set #1
28. Record, S., A. Strecker, M-N. Tuanmu, L. Beaudrot, **P.L. Zarnetske**, J. Belmaker, and B. Gerstner.\*\* 2018. Does Scale Matter? A systematic review of incorporating biological realism when predicting changes in species distributions. *PLoS ONE*. 13:4 e0194650. doi: 10.1371/journal.pone.0194650.
27. Welshofer, K.\*\*, **P.L. Zarnetske**, N.K. Lany\*\*\*, and Q.D. Read\*\*\*. 2018. Short-term responses to warming vary between native vs. exotic species and with latitude in an early successional plant community. *Oecologia*. 187:333-342. doi: 10.1007/s00442-018-4111-9.
26. Lany, N.K.\*\*, **P.L. Zarnetske**, E. M. Schliep, R. Schaeffer, C.M. Orians, D.A. Orwig, and E.L. Preisser. 2018. Asymmetric biotic interactions and abiotic niche differences revealed by a dynamic joint species distribution model. *Ecology*. 99:1018-1023. doi: 10.1002/ecy.2190.  
*Media coverage:* [MSU AgBioResearch highlight](#)
25. Read, Q.D.\*\*\*, J. Grady\*\*\*, **P.L. Zarnetske**, S. Record, B. Baiser, J. Belmaker, M-N. Tuanmu, A. Strecker, L. Beaudrot, and K. Thibault. 2018a. Among-species overlap in rodent body size distributions predicts species richness along a temperature gradient. *Ecography*. doi:10.1111/ecog.03641  
*Media coverage:* [Ecography blog feature](#)
24. Read, Q.D.\*\*\*, B. Baiser, J. Grady\*\*\*, **P.L. Zarnetske**, S. Record, J. Belmaker, and L. Beaudrot. 2018b. Tropical bird species have narrower body-size niches. *Biology Letters*. 14: 20170453.  
*Media coverage:* [MSU AgBioResearch highlight](#), [Bryn Mawr College News](#)
23. Welshofer, K.\*\*, **P.L. Zarnetske**, N.K. Lany\*\*\*, and L. Thompson. 2018. Open-top chambers for temperature manipulation in taller-stature plant communities. *Methods in Ecology and Evolution*. 9:254–259. doi: 10.1111/2041-210X.12863
22. Schliep, E., N.K. Lany\*\*\*, **P.L. Zarnetske**, R. Schaeffer, C. Orians, D. Orwig, and E. Preisser. 2018. Joint species distribution modeling for spatio-temporal occurrence and ordinal abundance data. *Global Ecology and Biogeography*. 27:142–155. doi: 10.1111/geb.12666.
21. Ruggiero, P., S.D. Hacker, E.W. Seabloom, and **P.L. Zarnetske**. 2018. (*invited*). The role of vegetation in determining dune morphology, exposure to sea level rise, and storm-induced coastal hazards: A U.S. Pacific Northwest perspective. Chapter in: *Barrier Dynamics and Response to Changing Climate*, L. Moore, B. Murray, eds. Springer International Publishing. pp 337-361.
20. Urban, M., **P.L. Zarnetske**, D.K. Skelly. 2017. (*invited*). Searching for biotic multipliers of climate change. *Integrative and Comparative Biology*. 57:134–147. doi: 10.1093/icb/ixc045.
19. Lany, N.K.\*\*\*, **P.L. Zarnetske**, T. Gouhier. T, and B.A. Menge. 2017. (*invited*). Incorporating context dependency of species interactions in species distribution models. *Integrative and Comparative Biology*. 57:159–167. doi: 10.1093/icb/ixc057
18. **Zarnetske, P.L.**, A. Strecker, S. Record, B. Baiser, J. Belmaker, and M-N. Tuanmu. 2017. (*invited*). The interplay between landscape structure and biotic interactions. *Current Landscape Ecology Reports*. 2(1), 12-29. doi:10.1007/s40823-017-0021-5
17. **Zarnetske, P.L.**, P. Ruggiero, E.W. Seabloom, and S.D. Hacker. 2015. Coastal foredune evolution: the relative influence of vegetation and sand supply in the U.S. Pacific Northwest. *Journal of the Royal Society Interface*. doi: 10.1098/rsif.2015.0017
16. Belmaker, J.+ , **P.L. Zarnetske**+, M-N. Tuanmu, S. Zonneveld, S. Record, S., A. Strecker, and L. Beaudrot. 2015. Empirical evidence for the scale-dependence of biotic interactions. *Global Ecology and Biogeography*. DOI:10.1111/geb.12311  
*Recommended to* [Faculty of 1000](#)
15. Zarnetske, J.P., and **P.L. Zarnetske**. 2015. Strategies for creating a conspicuous, effective, and memorable poster presentation. *GSA Today*. 25:66-68. doi: 10.1130/GSATG228GW.1.

14. David, A.S., **P.L. Zarnetske**, S.D. Hacker, P. Ruggiero, R. Biel, E.W. Seabloom. 2015. Invasive congeners differ in successional impacts across space and time. *PLoS ONE*. 10, e0117283. doi:10.1371/journal.pone.0117283.
13. Blois, J.L., **P.L. Zarnetske**, M.C. Fitzpatrick, and S. Finnegan. 2013. Climate Change and the Past, Present, and Future of Biotic Interactions. *Science* 341:499–504. doi: 10.1126/science.1237184 (*invited for special issue: "Natural Systems in Changing Climates"*)  
Media Coverage: [Science Podcast](#), [EurekAlert](#), [ScienceDaily](#), [NSF](#), [Yale University](#), [UC Merced](#), [UMD Center for Environmental Science](#)
12. Urban, M.C., **P.L. Zarnetske**, and D.K. Skelly. 2013. Moving forward: dispersal and species interactions determine biotic responses to climate change. *Annals of the New York Academy of Sciences*: 1297:440-60. doi: 10.1111/nyas.12184.
11. **Zarnetske, P.L.**, T.C. Gouhier, S.D. Hacker, E.W. Seabloom, and V. A. Bokil. 2013. Indirect effects and facilitation among native and non-native species promote invasion success along an environmental stress gradient. *Journal of Ecology*: 101:905-915 DOI: 10.1111/1365-2745.12093.  
*Highly Commended for Harper Prize Young Investigator Award; Featured in Virtual Issue & Journal of Ecology blog*
10. Seabloom, E.W., P. Ruggiero, S.D. Hacker, J. Mull, and **P.L. Zarnetske**. 2013. Invasive grasses, climate change, and exposure to storm-wave overtopping in coastal dune ecosystems. *Global Change Biology* 19: 824–832.
9. **Zarnetske, P.L.**, D.K. Skelly, and M.C. Urban. 2012b. Biotic multipliers of climate change. *Science* 336:1516-1518.  
Media Coverage: 2012: [Yale Scientific](#), [ClimateWire](#), [ClimateNeeds](#), [YaleNews](#), [EurekAlert](#), [ScienceNewsline](#), [ScienceDaily](#), [NSF](#), [redOrbit](#); 2017: [bitsofscience.org](#)
8. **Zarnetske, P.L.**, S.D. Hacker, E.W. Seabloom, P. Ruggiero, J.R. Killian, T.B. Maddux, and D. Cox. 2012a. Biophysical feedback mediates effects of invasive grasses on coastal dune shape. *Ecology* 93:1439-1450.
7. Hacker, S.D., **P.L. Zarnetske**, E.W. Seabloom, P. Ruggiero, J. Mull, S. Gerrity, and C. Jones\*. 2012. Subtle differences in two non-native congeneric beach grasses significantly affect their colonization, spread, and impact. *Oikos* 121:138-148.
6. **Zarnetske, P.L.**, E.W. Seabloom, and S.D. Hacker. 2010. Non-target effects of invasive species management: beachgrass, birds, and bulldozers in coastal dunes. *Ecosphere* 1(5):art13.  
Media Coverage: [The Seattle Times](#), [BreakingWaves](#), [Oregon Sea Grant](#)
5. Menge, B.A., F. Chan, S. Dudas, D. Eerkes-Medrano, K. Grorud-Colvert, K. Heiman, M. Hessing-Lewis, A. Iles, R. Milston-Clements, M. Noble, K. Page-Albins, E. Richmond, G. Rilov, J. Rose, J. Tyburczy, L. Vinueza, **P.L. Zarnetske**. 2009. Terrestrial ecologists ignore aquatic literature: Asymmetry in citation breadth in ecological publications and implications for generality and progress in ecology. *Journal of Experimental Marine Biology and Ecology* 377:93-100.
4. Menge, B.A., F. Chan, S. Dudas, D. Eerkes-Medrano, K. Grorud-Colvert, K. Heiman, M. Hessing-Lewis, A. Iles, R. Milston-Clements, M. Noble, K. Page-Albins, E. Richmond, G. Rilov, J. Rose, J. Tyburczy, L. Vinueza, **P.L. Zarnetske**. 2009. Do terrestrial ecologists ignore aquatic literature? *Frontiers in Ecology and the Environment* 7:182-183.
3. **Zarnetske, P.L.**, T.C. Edwards, Jr., and G.G. Moisen. 2007. Habitat classification modeling with incomplete data: pushing the habitat envelope. *Ecological Applications* 17:1714–1726.
2. **Zarnetske, P.L.**, T.C. Edwards, Jr., and G.G. Moisen. 2006. Modeling forest bird species likelihood of occurrence in Utah with FIA and Landfire map products. *Proceedings of the 7<sup>th</sup> Annual Forest Inventory and Analysis Symposium*. October 3-6, 2005, Portland, ME. USDA GTR WO-77.
1. Nyhus, P.J., F.R. Cole, D.H. Firmage, and **P.S. Lehmann**. 2002. Enhancing education through research in the Environmental Science Laboratory: Integrating GIS and project-based learning at Colby College. *Council on Undergraduate Research Quarterly*. September: 34-40.

## R packages, Data repositories

3. Twardochleb, L.A., E. Hiltner, M. Pyne, P. Bills, and P.L. Zarnetske. 2020. Freshwater insect occurrences and traits for the contiguous United States, 2001 - 2018 ver 5. Environmental Data Initiative. <https://doi.org/10.6073/pasta/8238ea9bc15840844b3a023b6b6ed158>



2. Smith, A.C.\*\*, **P.L. Zarnetske**, K. Dahlin, A. Wilson, A. Latimer. 2020. CRAN. geodiv: Methods for Calculating Gradient Surface Metrics. R package version 0.1.1. <https://CRAN.R-project.org/package=geodiv>
1. Smith, A.C.\*\*, A. Ballantyne, **P.L. Zarnetske**. 2019. disturbR: Disturbance detection and attribution in R. R package version 0.1.0. <https://github.com/AnnieCooper/disturbR-public>

## Theses & Non-Refereed Publications

7. **Zarnetske, P.L.** 2017. (*Invited*) Supertramps and checkerboards revisited: updating analyses of species co-occurrences and community assembly [Review of the Book *Patterns in nature: analysis of species co-occurrences*, by James Sanderson, Stuart Pimm]. In *Ecology*, 2169–2170.
6. **Zarnetske, P.L.** and A. Wilson. 2013. Sustaining ecological communities and their ecosystem services in an era of rapid global change. Yale Climate & Energy Institute. <http://climate.yale.edu/perspectives>
5. Wilson, A. and **P.L. Zarnetske**. 2013. Forecasting biodiversity: how confident should we be? Yale Climate & Energy Institute. <http://climate.yale.edu/perspectives>
4. **Zarnetske, P.L.** 2011. The influence of biophysical feedbacks and species interactions on grass invasions and coastal dune morphology in the Pacific Northwest, USA. Dissertation. Oregon State University, Corvallis, OR, USA. 178 pp.
3. Ruggiero, P., J. Mull, **P.L. Zarnetske**, S. Hacker, and E. Seabloom. 2011. Interannual to decadal foredune evolution, Proceedings Coastal Sediments 2011, ASCE, Miami, FL.
2. **Zarnetske, P.L.** 2006. Landscape-scale habitat classification modeling with incomplete data: the generation of ecologically-based pseudo-absence points. Thesis. Utah State University, Logan, UT, USA. 168 pp.
1. **Zarnetske, P.L.** 2006. Predicting habitat suitability with extant presence points and ecologically-based pseudo-absence points for a lesser-known species: the American Three-Toed Woodpecker (*Picoides dorsalis*). USFS unpublished report to accompany Zarnetske (2006). 94 pp.

## Research Grants (Role)

## Award Total

2020-2023	<b>National Science Foundation</b> REU Site (Senior Personnel) <i>REU Site: ICER ACRES: ICER Advanced Computational Research Experience for Students</i>	\$401,233
2020-2022	<b>National Aeronautics and Space Administration</b> FINESST (PI) Graduate Fellowship (B. Gerstner): <i>Using geodiversity and community ecology to improve species conservation assessments in biodiversity hotspots</i>	\$135,000
2019-2024	<b>National Science Foundation</b> DEB Macrosystems Biology (Lead PI) <i>Collaborative Research: MRA: Connecting local, regional, and continental scale drivers to biodiversity across NEON through the lens of intraspecific trait variation and disturbance.</i> Award# 1926567.	\$1,567,359
2019-2021	<b>National Science Foundation</b> Division of Environmental Biology (PI) <i>Collaborative Research: Workshop on the ecological impacts of solar radiation management Geoengineering.</i> Award# 1937699. Lead PI: J. Gurevitch.	\$50,000
2019	<b>National Science Foundation</b> DBI/BIO (Steering Committee) <i>NEON Science Summit: Initiating grassroots research communities through an “unconference”</i> PI: J. Balch, Co-PI: C. Nagy. \$99,957; travel costs for Zarnetske.	
2019	<b>Google</b> Cloud Platform Research Credits (PI) <i>Climate change and biodiversity: Detecting resilient landscapes</i>	\$7,000
2018	<b>Michigan State University</b> Discretionary Funding Initiative (PI) <i>Interactive effects of climate change and biotic interactions on plant community resilience</i>	\$50,000
2018	<b>National Science Foundation</b> REU Supplement: Award# 1550765 (PI)	\$9,876
2017-2021	<b>Michigan Invasive Species Grant Program</b> (Co-PI) (\$498,468 with match) <i>Projecting Hemlock Woolly Adelgid Distribution and Risk in Michigan.</i> PI: D. McCullough	\$314,453
2017-2021	<b>National Aeronautics and Space Administration</b> NESSF (PI) Graduate Fellowship (L. Twardochleb): <i>Predicting freshwater biodiversity across scales using measures of land use, climate, and primary productivity</i>	\$134,107
2016-2017	<b>Environmental Science and Policy Program</b> (PI) <i>VISTAS: Linking Intraspecific Trait Variation with Ecosystem Function at a Continental Scale</i>	\$2,324

2016-2019	<b>National Aeronautics and Space Administration (PI)</b> NNH15ZDA001N-BIO. Biodiversity: <i>Connecting biodiversity, geodiversity, and remote sensing across scales</i>	\$150,441
2016-2017	<b>MSU Environmental Science and Policy Program (Co-PI)</b> Watercube: <i>Cross-scale interactions in freshwater ecosystems</i>	\$80,000
2016-2018	<b>National Science Foundation, Emerging Frontiers (Lead PI)</b> <i>Collaborative Research: EAGER-NEON: Using intraspecific trait variation to understand processes structuring continental-scale biodiversity patterns</i> , Award# 1550765	\$300,000
2015-2018	<b>Arnold and Mabel Beckman Foundation (PI)</b> Postdoctoral Fellowship (N. Lany): <i>Improving predictions of climate change effects on ecological communities with ecological complexity</i> .	\$189,604
2011	<b>Yale Climate and Energy Institute, YCEI Research Grant</b> <i>The community ecology of climate change</i>	\$10,000
	<b>New Zealand Department of Conservation, Science and Research Grant</b> <i>Predicting invasion hotspots of <i>Didymosphenia geminata</i> in New Zealand</i>	\$14,500
2010	<b>NSF IGERT Ecosystem Informatics</b> , in cooperation with New Zealand Institute for Water and Atmospheric Research, and the University of Otago <i>Invasive species distribution modeling with boosted regression trees; Bio-physical mechanisms &amp; implications of beachgrass invasions on coastal dunes</i>	\$13,000
2007-2009	<b>Hatfield Marine Science Center, Mamie Markham Award</b> <i>What is the relative role of invasive vs. native species in building coastal dunes?</i>	\$10,000
2009	<b>Oregon State University Zoology Department, Research Fund</b> <i>Bio-physical mechanisms and implications of beachgrass (<i>Ammophila spp.</i>) invasions on coastal dunes</i>	
2006-2011	<b>NSF IGERT Ecosystem Informatics, Fellowship Research Grant</b>	\$10,000

## Competitive Fellowships & Awards

2014	<b>Highly Commended for Harper Prize</b> (Journal of Ecology Young Investigator Award)
2013	<b>ESA's Scaling Up: Population and Community Ecology Workshop</b> , travel & registration
2012	<b>NSF RCN Forecast Conference</b> , travel & registration
2011-2013	<b>Yale University, Yale Climate and Energy Institute Postdoctoral Fellowship</b>
2011	<b>Yale Institute for Biospheric Studies</b> , funding for 2012 AAAS Symposium
2006-2011	<b>NSF IGERT Ecosystem Informatics, Graduate Fellowship</b>
2011	<b>Oregon State University, College of Science Travel Award</b>
2010	<b>Strategic Environmental Research and Development Program</b> , ESA 2010 travel award
2007	<b>Hatfield Marine Science Center, Best Poster at Markham Research Symposium</b>
2006	<b>The Wildlife Society, Utah Chapter Best Poster Award</b>
2005	<b>Ecological Society of America (ESA), E. Lucy Braun Award</b> , for the Joint 90 <sup>th</sup> ESA and IX International Congress of Ecology (INTECOL) meeting, Montreal, Canada
2001	<b>Maine Water Conference, Best Student Research Poster</b>

## Teaching Experience

2015-2020	<b>Instructor</b> , Spatial Ecology (FOR870/FW870), Michigan State University
2020	<b>Instructor</b> , Graduate Professional Development (IBIO801)
2019	<b>Co-Instructor</b> , Professional Development (IBIO801), Michigan State University
2018	<b>Co-Instructor</b> , Forest Ecology & Lab (FOR440 & FOR440L), Michigan State University
2017	<b>Guest Lecturer</b> , FW Grad Seminar Principles and Perspectives in Fisheries and Wildlife, MSU
2017	<b>Co-Instructor</b> , Metacommunity Ecology (FW893), Michigan State University
2015-2016	<b>Instructor</b> , Introduction to Forestry (FOR202), Michigan State University
2013	<b>Guest Lecturer</b> , Forestry (FOR110), Michigan State University
2012	<b>Guest Lecturer</b> , Plant Form and Diversity (BIOL290), Wesleyan University

- 2011 **Mentor**, Environmental Analysis (ENSC520), Oregon State University  
**Guest Lecturer**, Coastal Geomorphology (GEO433/533), Oregon State University
- 2008 **Guest Lecturer**, Principles of Fluid Mechanics (CE547), Oregon State University
- 2008-2010 **Guest Lecturer**, Ecosystem Informatics Colloquium (GEO507), Oregon State University
- 2008-2009 **Graduate Teaching Instructor**, Human Anatomy and Physiology Lab and Recitation (Z343, Z443), Oregon State University
- 2007 **Graduate Teaching Instructor** and **Guest Lecturer**, Marine Biology (BI450), Oregon State University Hatfield Marine Science Center
- 2000 **GIS Course Lead**, Problems in Environmental Science (BI493), Colby College.

### **Postdoctoral advising**

- 2020- Jon Knott, Jasper Van doninck (Michigan State University)
- 2018-2019 L. Annie Cooper Smith (Michigan State University)
- 2016-2018 Quentin Read (Michigan State University)  
John Grady (Michigan State University)
- 2015-2019 Nina Lany (Michigan State University)

### **Student research and training supervision**

- 2015- 30 undergraduates including NSF REU, MSU URA, MSU PA, MSU SROP students
- 2020- Kara Dobson: PhD student (MSU IBIO & EEB)  
*Fellowships received: MSU CNS Fellowship*
- Moriah Young: PhD student (MSU IBIO & EEB)  
*Fellowships received: NSF Graduate Research Fellowship*
- 2019-2020 Tori Donovan: PhD student (University of Nebraska, Lincoln);  
*Preparing for Future Faculty Fellow* mentor
- 2017- Beth Gerstner: PhD student (MSU Fisheries & Wildlife, EEBB)  
*Fellowships received: MSU UEF, KBS Academic Programs, NASA FINESST*
- 2015- Laura Twardochleb: PhD student (MSU Fisheries & Wildlife, EEBB)  
*Fellowships received: MSU UEF, NASA NESSF Graduate Fellowship*
- 2014-2015 Danielle Miles: MS student (MSU Forestry)  
*recipient of MSU Honor's College Scholarship*
- 2013-2017 Kileigh Welshofer: MS student (MSU Forestry, EEBB)  
*Fellowships received: MSU Plant Sciences, NSF Graduate Research Fellowship*
- 2011-2013 Yale University, University of Connecticut: training and mentoring 10 graduate students, an undergraduate, an advanced math high school student (Intel prize honorable mention), a European Union Erasmus Mundus Masters Fellow in Evolutionary Biology
- 2006-2011 Oregon State University, training and mentoring of 18 undergraduate students

### **PhD Graduate Committees**

- 2014- Lauren Koenig (MSU IBIO/EEB), Pietro Sciusco (MSU GESS), Sam Ayebare (MSU IBIO/EEB), Emily Conway (MSU PLB/EEB), Isabela Lima Borges (MSU IBIO/EEB), Kayla Davis (MSU IBIO/EEB), Claire Hoffman (MSU FW), Beth Gerstner (MSU FW/EEB), Laura Twardochleb (MSU FW/EEB), Anna Groves (MSU PLB), Malcolm Itter (MSU FOR/EEB), Neil VerPlanck (MSU FOR), Kileigh Welshofer (MSU FOR/EEB), Matthew Reid (Univ Louisville), Andrew Dennhardt (MSU FW/EEB), Meredith Zettlemoyer (MSU PLB/EEB), Sean Sultaire (MSU FW/EEB)

### **Teaching and mentoring training received**

- 2020 Summer Online Instruction Readiness for Educational Excellence (SOIREE)
- 2018 National Ecological Observatory Network (NEON) NEON Data Education Fellows  
Faculty Mentoring Network, NSF QUBES.  
Diversity & Inclusion in the classroom, Michigan State University
- 2013 Desire 2 Learn: Tips for Getting the Most out of the LMS, Michigan State University

- Teaching Quantitative Reasoning. Yale Teaching Center Workshop, Yale University.  
2012 Preparing future science faculty: teaching your own course. Yale Teaching Center Workshop.  
2011 Success in the college classroom. (MB699) Oregon State University  
2009 Discover your teaching philosophy. Center for Teaching and Learning, Oregon State University  
2008 The future professoriate. (FE607) Oregon State University

### Invited Seminar Presentations

- 2020 Dept. of Ecology & Evolution, Stony Brook University, Stony Brook, NY – cancelled, COVID-19  
Kellogg Biological Station, Michigan State University, Hickory Corners, MI  
2019 NSF Macrosystems Biology PI Symposium, Boulder, CO.  
O’Neill School of Environmental and Public Affairs, Indiana University, Bloomington, IN  
2018 Michigan Natural Features Inventory, Lansing, MI; presenter: L. Twardochleb  
2017 Lansing Wild Ones, Fenner Nature Center, Lansing, MI; presenter: N. Lany  
Biology on Tap, MSU Science Festival (Midtown Brewing, Lansing, MI); presenter: Q. Read  
MSU FW Grad Seminar: Principles and Perspectives in Fisheries and Wildlife  
Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI  
2014 Kellogg Biological Station Seminar Series, Hickory Corners, MI  
2013 Hanover Seminar Series, Michigan State University, East Lansing, MI  
Michigan State University, East Lansing, MI  
Department of Biology, University New Mexico, Albuquerque, NM  
Department of Environmental Conservation, University of Massachusetts, Amherst, MA  
USGS Cooperative Unit, Utah State University, Logan, UT  
Greeley EcoLunch Seminar Series, Yale University, New Haven, CT  
2012 Women in Science at Yale, Yale University, New Haven, CT  
Greeley EcoLunch Seminar Series, Yale University, New Haven, CT  
2010 Ecosystem Informatics IGERT, OSU, Corvallis, OR  
2009 Chinese Delegation, Oregon Sea Grant, OSU, Corvallis, OR  
New River Area of Critical Environmental Concern, BLM Coos Bay District, OR  
Honeyman State Park Evening Program, Honeyman State Park, Florence, OR  
O.H. Hinsdale Wave Research Laboratory, OSU, Corvallis, OR  
Ecosystem Informatics IGERT Retreat, OSU, Corvallis, OR  
Oregon Native Plant Society, Corvallis, OR  
2008 O.H. Hinsdale Wave Research Laboratory, OSU, Corvallis, OR  
Honeyman State Park Evening Program, Honeyman State Park, Florence, OR  
Ecosystem Informatics IGERT Retreat, OSU, Corvallis, OR  
Invasive Species Seminar, Department of Fisheries and Wildlife, OSU, Corvallis, OR  
2007 Annual Snowy Plover Working Team Meeting, Eugene, OR  
2005 Reaching the World: A Campaign for Colby. Colby College, Waterville, ME

### Presentations at Scientific Conferences

*\*student/postdoc mentee*

*+award ++invited talk ^plenary*

- \*Van doninck, J., \*A Smith, \*J Knott, \*QD Read, S Record, B Baiser, AL Strecker, K Thibault, **Zarnetske, P.L.**  
December 2020. Explaining patterns of biodiversity across spatial scales with improved detection and attribution of disturbances. American Geophysical Union Meeting.  
Dahlin, K., A Kamoske, \*QD Read, S Record, S Serbin, SC Stark and **PL Zarnetske**. December 2020.  
Mapping dimensions of biodiversity in forested ecosystems with lidar and imaging spectroscopy fusion.  
American Geophysical Union Meeting.  
\*\***Zarnetske, P.L.** S Record, B Baiser, AL Strecker, \*J Van doninck, \*J Knott, \*A Smith, \*Q Read, K Dahlin, A Latimer, A Wilson, K Thibault. August 2020. "Local- to continental-scale drivers of biodiversity across NEON" in special session: Revolutionizing Our Understanding of Scale: How the NEON Network Enables Innovative Research into the Complexities of Ecological Phenomena Across Spatio-Temporal Scales.  
Ecological Society of America Annual Meeting.



- J. Gurevitch, **P.L. Zarnetske**, J. Franklin, P. Groffman, C. Harrison, J. Hellmann, F. Hoffman, S. Kothari, A. Robock, S. Tilmes, J. Wu, D. Visioni, L. Xia, and C.-E. Yang. August 2020. Potential ecological impacts of climate intervention by solar radiation management. Ecological Society of America Meeting. Poster presentation.
- ^**Zarnetske, P.L.** Advancing biodiversity science and education with NEON's organismal data. October 2019. NEON Science Summit (plenary). Boulder, CO.
- +++Lany, N.K., **Zarnetske, P.L.**, A.O. Finley, D.G. McCullough. August 2019. Complementary strengths of spatially-explicit vs. multi-species distribution models. Ecological Society of America Meeting, Louisville, KY.
- \*Read, Q.D., **P.L. Zarnetske**, S. Record, K.M. Dahlin, A.O. Finley, \*J.M. Grady, M. L. Hobi, S.L. Malone, J. Costanza, A.M. Wilson, A.M. Latimer, K.D. Gaddis, S. Pau, and S.V. Ollinger. August 2019. Beyond counts and averages: relating geodiversity to dimensions of biodiversity. Ecological Society of America Meeting, Louisville, KY.
- ++Record, S., \*Q.D. Read, \*J.M. Grady, **P.L. Zarnetske**, K. Thorne, B. Baiser, J. Belmaker, M.-N. Tuanmu, A.L. Strecker, L. Beaudrot, K.M. Thibault, Integrated research and teaching with NEON organismal data to understand drivers of community assembly. August 2019. Ecological Society of America Meeting, Louisville, KY.
- +++Smith, A.C., A.P. Ballantyne, Z. Liu, **P.L. Zarnetske**. August 2019. Detecting and characterizing forest disturbance across ecosystems. Ecological Society of America Meeting, Louisville, KY.
- Wisnoski, N.I., E.R. Sokol, R. Andrade, M.C.N. Castorani, C.P. Catano, A. Compagnoni, T. Lamy, \*N.K. Lany, L. Marazzi, S. Record, \*A.C. Smith, C.M. Swan, J.D. Tonkin, N.M. Voelker, **P.L. Zarnetske**. August 2019. Patterns and drivers of stability in long-term metacommunity data. Ecological Society of America Meeting, Louisville, KY.
- Zarnetske, P.L.**, A.C. Smith, Q.D. Read, S. Record, K.M. Dahlin, A. Latimer, J.K. Costanza, S.Pau, K. Gaddis, M.L. Hobi, A.M. Wilson. August 2019. Dimensions of biodiversity and geodiversity across scales. International Biogeography Society Meeting. Quito, Ecuador.
- \* Smith, A.C., K.M. Dahlin, **P.L. Zarnetske**, A. Latimer, S. Record, J.K. Costanza, S. Pau, K. Gaddis, M.L. Hobi, A.M. Wilson. August 2019. Using gradient metrics to determine landscape traits that enhance biodiversity. International Biogeography Society Meeting. Quito, Ecuador.
- ++**Zarnetske, P.L.** May 2019. EAGER-NEON: Using intraspecific trait variation to understand processes structuring continental-scale biodiversity patterns. National Science Foundation Macrosystems Biology PI Meeting. Boulder, CO.
- \*Twardochleb, L.T., \*E. Hiltner, M. Pyne, **P.L. Zarnetske**. May 2019. A freshwater insect occurrence and trait dataset for the continental United States. Society for Freshwater Science. Salt Lake City, UT.
- Dahlin, K.M., **P.L. Zarnetske**, S. Record, \*Q.D. Read, \*L.A. Cooper, J.K. Costanza, A.O. Finley, K. Gaddis, \*J. Grady, M.L. Hobi, A. Latimer, S.L. Malone, S.V. Ollinger, S. Pau, and A. Wilson. December 2018. Remotely sensed geodiversity for identifying and predicting biodiverse landscapes. American Geophysical Union Meeting, Washington, D.C.
- \*Chilcutt, C., \*K. Hoerr, \*H. Wei, \*B. Gerstner, **P.L. Zarnetske**, S.R. Record, B. Baiser. October 2018. Disturbance effects on species richness within and across co-located NEON-LTER sites: A Cross-site REU-Project. LTER All Scientists Meeting, Asilomar, CA. Poster presentation
- ++**Zarnetske, P.L.**, Record, S., Read, Q.D., Baiser, B., Strecker, A., Grady, J. M., Belmaker, J., Tuanmu, M.-N., Beaudrot, L., & Thibault, K.M. August 2018 (symposium). NEON's continental-scale biodiversity. Ecological Society of America Meeting, New Orleans, LA.
- ++Record, S., \*Q.D. Read, **P.L. Zarnetske**, K.M. Dahlin, J. Costanza, K. Gaddis, \*J.M. Grady, A.O. Finley, A.M. Latimer, S. Malone, M.L. Hobi, S. Ollinger, S. Pau, A.M. Wilson. August 2018. The relationship between biodiversity and geodiversity along gradients of geodiversity and anthropogenic stress. Ecological Society of America Meeting, New Orleans, LA.
- ++Hacker, S.D., P. Ruggiero, E.W. Seabloom, R. Biel, **P.L. Zarnetske**. August 2018. Beachgrass invasions, climate change, and effects on dune ecosystem functions and services in the US Pacific Northwest. Ecological Society of America Meeting, New Orleans, LA.

- \*Twardochleb, L., \*T. Treakle, **P.L. Zarnetske**. August 2018. Predator-prey interactions in a warming world will depend on predator foraging strategy and thermal performance. Ecological Society of America Meeting, New Orleans, LA.
- \*Treakle, T., \*L. Twardochleb, **P.L. Zarnetske**. August 2018. Climate change, faster species, and food webs. Ecological Society of America Meeting, New Orleans, LA. Poster presentation.
- \*Chilcutt, C., \*B. Gerstner, **P.L. Zarnetske**. Disturbance effects on species richness within North American ecological observatory networks. July 2018. (1) Summer Research Opportunities Program (SROP) Symposium. East Lansing, MI. Oral presentation. (2) Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). East Lansing, MI. Poster presentation.
- \*Hernandez, K., \*B. Gerstner, **P.L. Zarnetske**. July 2018. Can we identify regions that maximize conservation potential by aligning charismatic species' habitat with biodiversity hotspots? (1) Summer Research Opportunities Program (SROP) Symposium. East Lansing, MI. Oral presentation. (2) Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). East Lansing, MI. Poster presentation.
- \*Hiltner, E., \*L. Twardochleb, **P.L. Zarnetske**. April 2019. An ecological trait database of North American freshwater invertebrates for the assessment of climate change effects on streams. MSU UURAF. East Lansing, MI.
- ^**Zarnetske, P.L.** March 2018. Biotic interactions in the future. International Biogeography Society (plenary). Evora, Portugal.
- \*Wroblewski, A., **Zarnetske, P. L.** October 2017. Effect of warming temperatures on flowering phenology. Kellogg Biological Station Long-Term Ecological Research All-Scientists Meeting, Kellogg Biological Station, Michigan State University, East Lansing, MI. Poster presentation.
- \*Grady, J. M., **Zarnetske, P. L.**, \*Read, Q. D., Record, S. October 2017. Size-energy rules in closed forests. Hanover Forest Science Seminar Series / Vistas ESPP. Michigan State University, East Lansing, MI.
- \*Read, Q.D. \*J.M. Grady, **P.L. Zarnetske**, S. Record, B. Baiser, J. Belmaker, M-N. Tuanmu, A.L. Strecker, L. Beaudrot, and K.M. Thibault. Intraspecific variation reflects drivers of rodent community assembly across the National Ecological Observatory Network. August 2017. Ecological Society of America Meeting, Portland, OR.
- Sokol, E.R. N.I. Wisnoski, C.M. Swan, R. Andrade, H.L. Bateman, A.G. Hope, J.S. Kominoski, N.K. Lany, L. Marazzi, S.J. Presley, A. Rassweiler, S. Record, M. Willig, **P.L. Zarnetske**. August 2017. The role of long-term ecological research programs for testing metacommunity theory and understanding biodiversity patterns. August 2017. Ecological Society of America Meeting, Portland, OR.
- Record, S., **P.L. Zarnetske**, K.M. Dahlin, J.K. Costanza, A.O. Finley, K. Gaddis, \*J.M. Grady, M.L. Hobi, A.M. Latimer, S. Malone, S. Ollinger, S. Pau, \*Q.D. Read, W. Turner, A.M. Wilson. August 2017. Connecting biodiversity, geodiversity, and remote sensing across scales. Ecological Society of America Meeting, Portland, OR.
- \*Postema, E., **P.L. Zarnetske**. August 2017. Do slugs (*Arion subfuscus*) have the hots for artificially warmed plant matter? Kellogg Biological Station Undergraduate Summer Research Symposium. KBS, MSU.
- \*Jain, J. \*Q. Read, **P.L. Zarnetske**. July 26, 2017. Predicting missing values in biodiversity datasets using phylogenetics and spatial mapping. Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). East Lansing, MI. Poster presentation.
- \*Oliphant, S., \*Q. Read, and **P.L. Zarnetske**. July 24&26, 2017. Assessing the Relationship between Aquatic and Terrestrial Ecosystems: An Examination of the Spiders of the Continental United States. (1) Summer Research Opportunities Program (SROP) Symposium. East Lansing, MI. Oral presentation. (2) Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). East Lansing, MI. Poster presentation.
- \*Wroblewski, A., **P.L. Zarnetske**. August 2017. Effect of warming temperatures on flowering phenology. Kellogg Biological Station Undergraduate Summer Research Symposium.
- +++Lany, N., **P.L. Zarnetske**, T. Gouhier, and B. A. Menge. January 2017. Incorporating the effects of climate change on species interactions into species distribution models. Presented paper at Society of Integrative Biology, New Orleans, LA.
- Zarnetske, P. L.**, \*Q.D. Read, \*J. Grady, S. Record, B. Baiser, A. Strecker, J. Belmaker, L. Beaudrot, M-N. Tuanmu. December 12, 2016. Climate and Biological Drivers of Biodiversity Across the National Ecological Observatory Network (NEON). American Geophysical Union, San Francisco, CA.

- \*Niewohner, V., \*K. Welshofer, K., **Zarnetske, P.L.** August 2016. Effects of warming and herbivory on maximum relative flower abundance. Presented poster at Undergraduate Research Summer Symposium, Kellogg Biological Station, Hickory Corners, MI.
- ++**Zarnetske, P.L.**, S. Record, \*Q.D. Read, B. Baiser, A. Strecker, J. Belmaker, J., M-N. Tuanmu, L. Beaudrot. August 2016. Intraspecific trait variation at a continental scale. 101<sup>st</sup> ESA, Fort Lauderdale, FL.
- ++**Zarnetske, P.L.**, Belmaker, J., Tuanmu, M., \*Zonneveld, S., Record, S., Strecker, A., L. Beaudrot. August 2015. Empirical evidence for the scale-dependence of biotic interactions. 100<sup>th</sup> ESA, Baltimore, MD.
- ++**Zarnetske, P.L.**, Belmaker, J., Tuanmu, M., \*Zonneveld, S., Record, S., Strecker, A., L. Beaudrot. July 2015. Scale-dependence of biotic interactions: implications during climate change. International Association of Landscape Ecology 9<sup>th</sup> World Congress. Portland, OR.
- Record, S., J. Belmaker, **P.L. Zarnetske**, M.-N. Tuanmu, \*S. Zonneveld, A. Strecker, L. Beaudrot, L. 2014. Empirical evidence for the scale-dependence of biotic interactions. Ecological Society of America Meeting, Sacramento, CA.
- Belmaker, J., **Zarnetske, P.L.**, J., Tuanmu, M.-N., \*Zonneveld, S., Record, S., Strecker, A., Beaudrot, L. 2014. Empirical evidence for the scale-dependence of biotic interactions. Gordon Research Conference: Unifying Ecology Across Scales, University of New England, Biddeford, ME.
- Zarnetske, P.L.**, C. Kilroy, P. Gerbeaux, and J. Leathwick. March 2013. Integrating invasion history with environment to model *Didymosphenia geminata* hotspots across New Zealand. Providence, RI.
- Jetz, W., P. Keil, M. Barbet-Massin, **P.L. Zarnetske**. October 2012. Integrating climate and land cover for cross-scale predictions of species distributions. Synergistic Effects of Climate and Land-Use Change Symposium, The Wildlife Society Conference. Portland, OR.
- Zarnetske, P.L.**, M.C. Urban, D.K. Skelly. October 2012. Predicting the effects of climate change on communities of species. RCN Conference: New perspectives on data assimilation in global change science. Woods Hole, MA.
- Zarnetske, P.L.**, M.C. Urban, D.K. Skelly. August 2012. Climate change effects on community composition and species distributions: the relative influence of species interactions. 97<sup>th</sup> Annual Ecological Society of America Meeting (ESA), Portland, OR.
- Hacker, S.D., E.W. Seabloom, P. Ruggiero, **P.L. Zarnetske**, J. Mull. November 2011. Invasive grasses, climate change, and effects on coastal dune ecosystem functions and services. 2<sup>nd</sup> World Conference of Biological Invasions and Ecosystem Functioning, Mar de Plata, Argentina.
- Zarnetske, P.L.**, S.D. Hacker, E.W. Seabloom, P. Ruggiero, J. Mull. August 2011. Connecting process with pattern: towards a mechanistic understanding of invasions' impacts on coastal dune ecology and geomorphology. 96<sup>th</sup> ESA, Austin, TX.
- David A.S., **Zarnetske P.L.**, Seabloom E.W., Hacker S.D. August 2011. Invasive congeners uniquely alter community succession of dunes. 96<sup>th</sup> ESA, Austin, TX.
- Ruggiero, P., J. Mull, E. Seabloom, S. Hacker and **P.L. Zarnetske**. May 2011. Interannual to decadal foredune evolution. Coastal Sediments Meeting, Miami, FL.
- Zarnetske, P.L.**, P. Ruggiero, J. Mull, S.D. Hacker, E.W. Seabloom. December 2010. Coastal foredune evolution: evidence for ecological control. American Geophysical Union Meeting, San Francisco, CA.
- Ruggiero, P., **P.L. Zarnetske**, J. Mull, S.D. Hacker, E.W. Seabloom. December 2010. Coastal foredune evolution: evidence for physical control. American Geophysical Union (AGU) Mtg., San Francisco, CA.
- Zarnetske, P.L.**, S.D. Hacker, E.W. Seabloom, P. Ruggiero. August 2010. Biotic or abiotic control? Assessing the mechanisms behind coastal dune-building plant distributions. 95<sup>th</sup> ESA, Pittsburgh, PA.
- Hacker, S.D., **P.L. Zarnetske**, E.W. Seabloom, and P. Ruggiero. November 2009. Importance of species identity: implications of two non-native congeneric beach grasses (*Ammophila arenaria* and *A. breviligulata*) on dune structure and coastal protection. Coastal and Estuarine Research Federation, Portland, OR.
- Zarnetske, P.L.**, E.W. Seabloom, S.D. Hacker, P. Ruggiero, J. Killian, T. Maddox. August 2009. Native and invasive species' influence on coastal dune geomorphology: results from a moveable bed wind tunnel experiment. 94<sup>th</sup> ESA, Albuquerque, NM.
- Zarnetske, P.L.**, S.D. Hacker, E.W. Seabloom, P. Ruggiero, D. Cox, J. Killian, T. Maddox, V. Bokil, W. Pattanapol. December 2008. Coastal dune building capabilities of native and exotic beach grasses: results from a moveable bed wind tunnel experiment. AGU Meeting, San Francisco, CA.

- Zarnetske, P.L.**, S.D. Hacker, and E.W. Seabloom. August 2008. Does removal of an invasive species restore the disturbance regime and native community on coastal dunes? 93<sup>rd</sup> ESA, Milwaukee, WI.
- \*Gladics, A., **P.L. Zarnetske**, S.D. Hacker, E.W. Seabloom. February 2008. Habitat characteristics related to snowy plover reproductive success in coastal dune restoration areas in Oregon and Washington. The Wildlife Society Meeting, Lincoln City, OR.
- Zarnetske, P.L.**, E.W. Seabloom, and S.D. Hacker. August 2007. Effects of invasive beach grasses on the shape and composition of coastal dunes. 92<sup>nd</sup> ESA. San Jose, CA.
- +**Zarnetske, P.L.** 2007. Assessing beach grass invasions on the Pacific Northwest Coast: implications for dune morphology and coastal protection. Markham Research Symposium, HMSC, Newport, OR.
- Zarnetske, P.L.**, T.C. Edwards, Jr. and G.G. Moisen. August 2006. Pushing the envelope: habitat classification modeling with incomplete data. 91<sup>st</sup> ESA. Memphis, TN.
- Zarnetske, P.L.**, T.C. Edwards, Jr. and G.G. Moisen. March 2006. Bioregional species distribution modeling with pseudo-absence points. 21<sup>st</sup> Annual Symposium of the U.S. Regional Chapter of the International Association for Landscape Ecology. San Diego, CA.
- +**Zarnetske, P.L.**, T.C. Edwards, Jr. and G.G. Moisen. March 2006. Wildlife habitat suitability modeling with incomplete data: Incorporating ecological pseudo-absence points. Wildlife Society Meeting, Moab, UT.
- Zarnetske, P.L.**, T.C. Edwards, Jr. and G.G. Moisen. October 2005. Modeling forest bird species likelihood of occurrence in Utah with FIA and Landfire vegetation models and generated pseudo-absence points. 7<sup>th</sup> Annual Forest Inventory and Analysis (FIA) Meeting, Portland, ME.
- +**Zarnetske, P.L.**, T.C. Edwards, Jr. and G.G. Moisen. August 2005. Modeling forest bird species' habitat with known presence points and generated pseudo-absence points in Utah. Joint 90<sup>th</sup> ESA and INTECOL Meeting, Montreal, Canada.
- Lehmann, P.S.**, A.M. Megquier, D.G. Thornton, D.H. Firmage, F.R. Cole, P.J. Nyhus. March 2001. Geographic Information Systems and integrated watershed research at Lake Wesserunnett, ME. National Conference on Undergraduate Research, University of Kentucky, Lexington, KY.
- +**Lehmann, P.S.** and A.M. Megquier. 2001. The use of geographic information systems to assess watershed qualities. Maine Water Conference, Augusta, ME, Colby College Research Symposium, Waterville, ME.

## Other Conference Presentations

- Zarnetske, P.L.** 2009. Dune grasses: species interactions and dune building capabilities. Markham Research Symposium, Hatfield Marine Science Center (HMSC), Newport, OR.
- Zarnetske, P.L.** 2009. WindOverDunes. 22<sup>nd</sup> Annual Oregon State University Biology Graduate Student Symposium (BGSS), Newport, OR.
- Zarnetske, P.L.**, S.D. Hacker, E.W. Seabloom. 2008. Characteristics of coastal dunes with and without invasive beachgrass. Pacific Northwest Coastal Dunes Ecosystem Workshop 2008.
- Zarnetske, P.L.** 2007. Integrating invasion ecology and dune geomorphology to project coastal vulnerability in Oregon and Washington. 20<sup>th</sup> BGSS, Newport, OR.
- Zarnetske, P.L.** 2006. Modeling forest bird occurrence with FIA and Landfire vegetation models. 2006. FIA User Group Meeting, Ogden, UT.
- Lehmann, P.S.** 2002. Amphibian Declines: The importance of geographic information systems as a resource for conservation. Harvard GIS Day, Harvard University, Cambridge, MA.

## Research Workshops & Symposia

<sup>1</sup>participant <sup>2</sup>organizer <sup>3</sup>presenter

- 2021 AAAS 2021 Meeting; moderator, [Biosphere Responses to Geoengineering](#).<sup>1,3</sup>
- 2020 *Geoengineering Effects on Ecology* (Port Townsend, NY moved online due to COVID-19); co-lead, multiple online workshop sessions <sup>1,2,3</sup>
- 2019 *NEON Science Summit*. University of Colorado, Boulder, CO <sup>1,2,3</sup>
- 2018 *Non-Climatic Dimensions of Climate Refugia Workshop*, Institut National de la Recherche Agronomique (INRA), Barsac, France.<sup>1,3</sup>
- Engaging LTER Scientists and Educators in Cross-Site Undergraduate Research*, LTER All Scientists Meeting, Asilomar, CA<sup>1,3</sup>

- LTER Metacommunities Synthesis Working Group, NCEAS, Santa Barbara, CA<sup>1</sup>  
*bioXgeo: Connecting Geodiversity and Biodiversity Across Scales*, NCEAS, Santa Barbara, CA<sup>1,2,3</sup>
- 2017 Ecological Society of America Meeting, Portland, OR<sup>2</sup>  
1. Ignite Session: *Connecting Remote Sensing to Biodiversity Science in the Anthropocene*.  
2. Special Session: *How Can Current and Future Satellite Missions Advance Biodiversity Science? a Discussion of Current Tools and Future Ideas*.  
3. Organized Oral Session: *Challenges and Opportunities for Investigating Ecological Communities Across Space and Time: Insights from Coordinated Research Networks*.  
*bioXgeo: Connecting Geodiversity and Biodiversity Across Scales*, NCEAS, Santa Barbara, CA<sup>1,2,3</sup>
- 2016 *Fate of the Earth: Climate-Food-Energy-Water Nexus*. East Lansing, MI<sup>1,2</sup>
- 2015 *Fate of the Earth: Tipping Points, Crises, and Solutions*. East Lansing, MI<sup>1,2</sup>  
ESA Session: [\*The role of biotic interactions structuring species distributions\*](#). Baltimore, MD<sup>3</sup>
- 2014 *Climate Change in the Great Lakes Region and Beyond*. East Lansing, MI<sup>1,2</sup>
- 2013 *ESA's Scaling Up: Population and Community Ecology Workshop*. Baltimore, MD<sup>1</sup>
- 2012 *Climate Change & Species Interactions: Ways Forward*. Cary Institute of Ecosystem Studies, Millbrook, NY<sup>1</sup>  
*New perspectives on data assimilation in global change science*. RCN Forecast. Woods Hole, MA<sup>1,3</sup>  
[\*The future of ecological communities under climate change: no analog?\*](#) Organized Symposium, AAAS 2012 Meeting, Vancouver, BC<sup>1-3</sup>
- 2011 *NSF Workshop*. National Science Foundation Day. Oregon State University, Corvallis, OR<sup>1</sup>
- 2010 *Modeling species responses to climate change and land use change: collaborations among ecologists and computer scientists*. H.J. Andrews Forest LTER, Blue River, OR<sup>1,3</sup>
- 2008 *Riederalp 2008: The utility of species distribution models as tools for assessing impacts of global change*. Riederalp, Switzerland<sup>1-3</sup>  
*NSF IGERT Research Symposium*. Oregon State University, Corvallis, OR<sup>1-3</sup>  
*Pacific Northwest coastal dunes ecosystem workshop*. Hatfield Marine Science Ctr, Newport, OR<sup>1-3</sup>
- 2004 *Mark-recapture workshop*. Utah State University, Logan, UT<sup>1</sup>
- 2002 *Harvard GIS Day*. Harvard University, Cambridge, MA<sup>1-3</sup>

## Service

### Professional Service:

- 2018- **Associate Editor**, *Global Ecology and Biogeography*
- 2018- **Chair, Buell and Braun Student Awards Committee**, Ecological Society of America
- 2017-2018 **Subject Matter Guest Editor**, *Ecological Applications*
- 2018- **Member**, Ecosystem Structure, Ecosystem Function, Community Composition Working Groups, Intergovernmental Group on Earth Observations Biodiversity Observation Network (GEO BON)
- 2016-2017 **Editorial Board**, *Axios*
- 2011- **Proposal ad hoc Reviewer / Panelist** NSF (EAR, DEB, GSS)
- 2008- **Journal Referee**, *Nature Ecology & Evolution*, *Proceedings of the Royal Society B*, *Ecology*, *Ecology Letters*, *Ecography*, *Frontiers in Ecology and the Environment*, *Ecology and Evolution*, *Journal of Biogeography*, *Oecologia*, *Oikos*, *Plos ONE*, *Journal of Applied Ecology*, *Journal of Experimental Marine Biology and Ecology*, *American Journal of Botany*, *Journal of Experimental Marine Biology and Ecology*, *Environmental Management*, *Journal of Wildlife Biology*, *International Journal of Geographic Information Science*, *Solutions Journal*
- 2006-2011 **Award Judge**, Buell/Braun Award, Ecological Society of America annual meetings

### University Service & Leadership:

- Michigan State University**
- 2020- Member, KBS Faculty Search Committee  
Member, EEB Awards Committee
- 2019- Chair, EEB Director Search Committee  
Member, Institute for Cyber-Enabled Research (ICER) Scientific Advisory Board  
Member, Spatial Ecology Graduate Certificate Committee
- 2018-2020 Member, EEB Executive Committee

- 2018-2020 Member, EEB Curriculum Committee  
2017-2019 Member, Plant Sciences Fellowship Committee  
2016-2019 Member, Forestry Committee on Diversity, Equity & Inclusion  
2015-2016 Affirmative Action Member, Forest Biomaterials Search Committee  
2015 Member, Forestry committee on by-laws on tenure and promotion expectations  
2014-2020 Member, Ecology, Evolution, and Behavior (EEB) Seminar Series Committee  
2014-2016 Member, Fate of the Earth Symposium Committee  
2013-2019 Chair, Spatial Ecology Graduate Certificate Committee  
2013-2017 Chair, Hanover Forest Science Seminar Committee  
2013 Chief Organizer, Climate Change in the Great Lakes Region and Beyond: A Symposium  
2011-2013 **Yale University**  
Women in Science at Yale (WISAY): graduate student mentor, seminar organizer  
2006-2011 **Oregon State University**  
OSU Women in Science (WIS)  
Co-President, Zoology department graduate students  
Bargaining Team, Coalition of Graduate Employees, OSU  
Brown Bag Co-Organizer, invited speaker committee, Zoology department  
Student representative, NSF IGERT Ecosystem Informatics  
2004-2006 **Utah State University:** Co-Chair, Ecology Center Seminar Invited Speakers Committee  
2001-2003 **Harvard University:** Co-organizer and committee member, Harvard University GIS Group

## Media Coverage

- 2020 Under climate change, good things come to bugs who wait. Aug. 6 [NatSci Press Release](#)  
MSU Integrative Biologist Utilizes NEON to Illuminate Biodiversity. Jun 12.  
[MSU NatSci and MSU Today](#) Also featured as an MSU Pride Point.  
MSU Institute for Cyber-Enabled Research video on research in the MSU SpaCE Lab. Feb 19  
[ICER Video](#)  
The birds and the trees: scientists use remote sensing data to help explain patterns of life.  
[MSU Today](#) Feb. 3 [Newsbreak.com](#)  
Mapping Patterns of Biodiversity. [NEON Observatory Blog](#). Jan. 29  
2019 Where to find fantastic beasts at sea. [Science](#). Jan. 25  
In polar regions, warm-blooded marine predators rule. [EurekaAlert](#). Jan. 24  
Why Whales, Seals, and Penguins Like Their Food Cold. [The Atlantic](#). Jan. 24  
2018 How climate impacts biodiversity, [MSU Today](#), Oct 10.  
Better species mapping can improve conservation efforts. [ScienceDaily](#). April 18.  
New research lends insight into the spread of invasive species, [AgBioResearch highlight](#), April 9.  
Less variation in sizes of birds in the tropics puts them at greater risk from climate change,  
[Bryn Mawr College News](#), Mar. 21  
Rodents overlap less in their body size distributions in more diverse communities – could this  
hold a clue to explaining diversity patterns? [Ecography blog feature](#), Mar. 12.  
MSU research reveals new insights into species diversity, [AgBioResearch highlight](#), Jan 29.  
2017 MSU Extension: National Invasive Species Awareness Week: [Hemlock woolly adelgid](#) Feb 26.  
Twardochleb receives NASA fellowship, [KBS News](#) June 16.  
Lansing Wild Ones October Newsletter.  
2015 NSF awards \$4.8 million to enable creative, collaborative use of ecological data.  
[NSF Press Release](#). Aug 20.  
2013 Scientists look into Earth's past to predict future effects of climate change, [EarthSky](#) Aug 13  
Scientists look into Earth's 'deep time' to predict future effects of climate change, [EurekaAlert](#)  
[Science Podcast](#), [Phys.Org](#) Aug 2.  
Looking to the Past to Predict the Future of Climate Change, [ScienceDaily](#) Aug 5.  
Back to the future: scientists look into earth's "deep time" to predict future effects of climate



- change, [NSF](#) press release Aug 1.  
Deep past offers clues into climate-driven biotic shifts, [Yale University](#) Aug 2.  
Additional press: [UC Merced](#), [UMD Center for Environmental Science](#)  
Indirect effects and facilitation among native and non-native species promote invasion success  
along an environmental stress gradient [Journal of Ecology blog](#), June 14.  
Multiplying toward extinction: the effects of climate change on species. [Yale Scientific](#), Feb. 19.  
2012 Climate models need to account for species interactions, researchers say. [ClimateWire](#),  
[ClimateNeeds](#) June 25.  
Top predators key to extinctions as planet warms. [YaleNews](#), [EurekAlert](#), [ScienceNewslite](#),  
[ScienceDaily](#), [NSF](#) June 21.  
Species interactions could be affected by global warming. [redOrbit](#), June 23.  
2011 Invasive species: Are scientists fighting a losing battle? [The Seattle Times](#), April 24.  
Removing invading plants can harm native ecology. [Breaking Waves](#), [Oregon Sea Grant: Coastal  
Science Serving Oregon](#) April 15.  
Exploring the Oregon Dunes, [Oregon Field Guide](#) television feature, Mar.  
2010 Incorporating computational modeling into interdisciplinary research, 2009 [OSU College of  
Engineering Annual Report](#)  
2009 Line in the sand. [Colby](#) magazine, Spring.  
2008 Invaders in the dunes. [Terra](#) magazine (OSU Research magazine) Winter.  
2007 Invasion of beach grass could weaken shoreline protection. [ScienceDaily](#) Sep. 26.

## Organizations and Affiliations

Ecological Society of America (ESA)  
American Assoc. for the Advancement of Science (AAAS)  
American Geophysical Union (AGU)  
International Biogeography Society (IBS)  
National Ecological Observatory Network (NEON)  
Faculty Mentoring Network  
LTER Network (LTER)  
Kellogg Biological Station (KBS)  
H.J. Andrews Experimental Forest (HJA)  
Toolik Lake LTER (ARC)  
MSU Ecology, Evolution, and Behavior  
Program (EEB)  
MSU Environmental Science & Policy  
Program (ESPP)

## Past Institution Memberships

Yale Climate and Energy Institute (YCEI)  
Yale Institute for Biospheric Studies (YIBS)  
Women in Science at Yale (WISAY)  
OSU Women in Science (WIS)  
O.H. Hinsdale Wave Research Laboratory (HWRL)  
Hatfield Marine Science Center (HMSC)