Ben G. Weinstein

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2619 NE Flanders, Portland, Oregon

EDUCATION

Ph.D. Ecology and Evolution, Stony Brook University 2016
B.S. Biology, University of Richmond 2010
School for International Training, Ecology and Conservation, Ecuador 2007

ACADEMIC POSITIONS

Postdoctoral Scholar, Marine Mammal Institute, Oregon State University 2016 - present

RESEARCH INTERESTS

- Niche overlap and the co-occurrence of related species
- The phenology of plant-pollinator interactions
- Hierarchical Bayesian models for community ecology
- Automation and computer vision for ecological monitoring

SOFTWARE DEVELOPMENT

My research includes development of new quantitative and computational methods for ecological analysis. My code and data are available on Github. I believe making data and tools available is my responsibility as a member of the scientific community.

MotionMeerkat – Computer vision program for finding animals in video. Weinstein (2015).
AlienR – R package for predicting species interactions from ecological data. Weinstein, B. Cazelles, K. Poisot, T., Gravel, D., & I. Bartomeus. *In development.*

GRANTS AND AWARDS

2017 Segment Open Source Fellowship ($24,000)
2016 Committee for Science and Exploration, National Geographic Society, Co-investigator. #9952- 16 ($20,000)
2016 eScience Data Science Fellowship. University of Washington ($150,000). *Declined*
2016 Best Student Talk – International Statistical Ecology Conference
2015 NSF Graduate Data Science Workshop. University of Washington ($1,000)
2014 High Performance Cloud Computing Workshop, National Institute for Mathematical & Biological
2013 Synthesis. Travel Award. ($1,000)
2013 Committee for Science and Exploration, National Geographic Society, Co-investigator. #9382- 13 ($20,000)
2013 Graduate Research Fellowship, National Science Foundation ($125,000)
2012 XSEDE High Performance Computing Account (100,000 CPU Hours)
2012 Student Travel Award, International Biogeography Society ($500)
2011 Slobodkin Award, Stony Brook University ($750)
2009 Robert Smart Undergraduate Fellowship, University of Richmond ($4,000)
2008 University of Richmond Summer Research Fellowship ($3,500)
2008 Best Student Speaker. Virginia Herpetological Society ($200)

PUBLICATIONS – Total citations: 74, H-index: 4, i10: 3

1. A computer vision for ecology. **Weinstein, B. G**. Journal of Animal Ecology. *Accepted.*
   *invited synthesis as part of consideration for the young investigator award.
2. Davidson, A. D., Shoemaker, K. T., **Weinstein**, **B. G.**, Costa, G. C., Brooks, T. M., Ceballos, G., Radeloff, V. C., Rondinini, C. and C. H. Graham. Geography of current and future global mammal extinction risk. PlosONE. *Accepted.*
3. **Weinstein, B. G.,** Parra, J. L, and C. H. Graham. Reduced co-occurrence among closely related hummingbird species. PlosONE. *Accepted.*
4. **Weinstein, B. G.** and A. S. Friedlaender. 2017. Dynamic foraging by a top marine predator in a polar marine environment. Oecologia. 1: 1-9
5. **Weinstein, B. G.** and C. H Graham. 2017. Traits, abundance, and the detectability of species interaction networks. Foodwebs. 11: 17-25.
6. **Weinstein**, **B. G.,** Double, M, Gales, N., Johnston D.W., and Friedlaender, A. S. 2017. Identifying overlap between humpback whale foraging grounds and the Antarctic krill fishery. Biological Conservation. 210: 184-191.
7. Graham, L. **Weinstein, B. G.**, Supp, S. and C. H. Graham. Taxonomic, phylogenetic and functional dimensions of no-analog assemblages. 2017. Diversity and Distributions. 00:1-11.
8. **Weinstein, B. G.**, and C. H. Graham. Persistent bill and corolla matching despite shifting temporal resources in tropical hummingbird-plant interactions. 2017. Ecology Letters. 20: 326-335.
9. Penone, C.*, **Weinstein, B. G.*,** Graham, C. H., Hedges, S. B., Rondonini, C., Davidson, A. and C. G. Costa. 2016. Global mammal betadiversity reveals convergence between isolated forest assemblages. Proceeding of the Royal Academy B: Biological Sciences. 283: 20161028.
   * authors contributed equally
10. Cruzan, M.B, **Weinstein, B. G.,** Grasty, M. R., Kohrn, B., Schroyer, T and Pamela G. Thompson. 2016. Small Unmanned Aerial Vehicles (Micro-UAVs -Drones) in Plant Ecology. Applications in Plant Sciences. 4: 1600041.
11. **Weinstein, B. G.** and Graham, C. H. 2016, Evaluating broad scale patterns among related species using resource experiments in tropical hummingbirds. Ecology, 97: 2085-2093.
12. Lessard, J.P., **Weinstein, B.G.,** Borregaard, M.K., Marske, K.A., Martin, D.R., McGuire, J.A., Parra, J.L., Rahbek, C. and Graham, C.H., 2016. Process-Based Species Pools Reveal the Hidden Signature of Biotic Interactions Amid the Influence of Temperature Filtering. The American Naturalist, 187:75-88.
13. **Weinstein, B. G.** 2015. MotionMeerkat: integrating motion video detection and ecological monitoring. Methods in Ecology and Evolution 6:357–362. * Highlighted in Monitoring Wildlife Virtual Issue
14. **Weinstein, B. G.,** Tinoco, B., Parra, J. L., Brown, L. M., McGuire, J. A., Stiles, F. G., and C. H. Graham. 2014. Taxonomic, Phylogenetic, and Trait Beta Diversity in South American Hummingbirds. The American Naturalist 184:211–224.
15. Salisbury, D. S., and **B. G. Weinstein**. 2014. Cultural Diversity in the Amazon Borderlands: Implications for Conservation and Development. Journal of Borderlands Studies *1:37–41*.

Book Review

1. **Weinstein, B. G.**, and H. J. Lynch. 2015. Book Review: A Primer in Biological Data Analysis and Visualization Using R. Quarterly Review of Biology 90:17–18.

PRESENTATIONS AND WORKING GROUPS

2017 'Persistent trait-matching in dynamic tropical hummingbird assemblages', ESA
2017 'Bayesian Models for Ecological Theory and Conservation', Boise State University
2016 Working Group: Inferring species interaction networks, University of Sherbrooke
2016 'Analyzing ecological networks through time', Winfree Lab, Rutgers
2016 'Modeling humpback whale movement in dynamic landscapes', Palmer Antarctica Long Term Ecological Research Meeting, Rutgers
2016 'Hierarchical N-mixture models for species interactions', International Statistical Ecology Conference (ISEC), University of Washington
2015 'Connecting local and broad scale occurrence patterns using resource experiments', IALE World Congress of Landscape Ecology
2015 'MotionMeerkat and Ecological Video Analysis', ESA
2015 'Available resources and trait-matching in a tropical pollinator community', ESA
2015 'Hummingbird trait-matching and nestedness', Betts Lab, Oregon State University
2015 'Harnessing Computer Vision for Ecological Monitoring'. Society for Northwest Vertebrate Biology
2014 'Colibris y Flores del Norte De Ecuador'. Dept. of Biology, University de Azuay, Ecuador
2014 'Hummingbird niche overlap at multiple scales', Wilcove Lab, Princeton University
2014 'Reduced co-occurrence of related hummingbird species', Species Distribution Modeling Group, American Museum of Natural History
2012 'Hummingbird taxonomic, phylogenetic and trait diversity', International Biogeography Society
2009 'Cultural geography of protected areas in Amazonia', American Association of Geographers

PROFESSIONAL EXPERIENCE

2011 Field Biologist – Bird Surveys, U.S Forest Service, California
2010 Molecular and Spatial Ecology Technician. Kozak Lab, University of Minnesota
2010 Field Assistant - Bird Surveys, Hubbard Brook Experimental Forest, NH
2007 Field Assistant – Bird Surveys, Institute for Bird Populations, Yosemite National Park
2006 Field Assistant – Bird Surveys, Rocky Mountain Biological Lab, CO
2005 Field Assistant – Bird Surveys, Chester River Research Center, MD

TEACHING EXPERIENCE

2017 Instructor. Geohackweek, eScience Center, UW.
2017 Instructor. Geospatial analysis in R. GIS in Action Conference Workshop
2016 Instructor. Geohackweek, eScience Center, UW.
2016 Instructor. Software Carpentry Workshop (Fall), eScience Center, University of Washington.
2016 Instructor. Software Carpentry Workshop (Spring), eScience Center, University of Washington.
2015 Instructor. Pacific Northwest National Laboratory. Software Carpentry Workshop
2015 Assistant Instructor. Oregon Health and Science University. Data Carpentry Workshop
2015 Assistant Instructor. Washington State University. Software Carpentry Workshop
2015 Software Carpentry Instructor Course
2014 Instructor, Introduction to Statistical Computing Graduate Seminar
2011 Lab Instructor, Bio 204: Fundamentals of Scientific Inquiry

Service

Reviewer

Methods in Ecology and Evolution (4), Global Ecology and Biogeography (3), Ecography (2), Journal of Biogeography (2), Functional Ecology (2), Oecologica (1), Global Ecology and Conservation (1), Ecology and Evolution (1), Scientific Reports (1), Ecology (1), Journal of Tropical Ecology (1), Functional Ecology (1), Journal of Field Ornithology (1), Environmental Monitoring and Assessment (1), Journal of Zoology (1).

Organizer, Computer Vision for Ecology, Ignite Session, Ecological Society of America, 2015.
Organizer, Phenology in a Community Context, Oral Symposium, Ecological Society of America, 2017.

Pertinent Skills

Languages: English, Spanish

Programming Languages

Advanced: R, Python, Git (Github: bw4sz), Amazon Web Services, Google Cloud Platform

Intermediate: Unix, Bash

Novice: HTML, D3