# BOB WEEK

Curriculum Vitae

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## EDUCATION

2020 **PhD Bioinformatics & Computational Biology** — **S.L. Nuismer Lab, IBEST, University of Idaho**
Dissertation focused on modeling eco-evolutionary processes and developing statistical methods

2015 **BS Mathematics** — **University of Idaho**
Traditional math degree with electives in electrical engineering

## PEER-REVIEWED PUBLICATIONS

2025 **Quantitative Genetics of Microbiome Mediated Traits** — **Evolution**
*Week, B.*; Ralph, P.L.; Tavalire, H.F.; Cresko, W.A.; Bohannan, B.J.M. — doi:TBD

2025 **Applying Evolutionary Theory to Understand Host-Microbiome Evolution** — **Nature EcoEvo**
*Week, B.*; Russel, S.L.; Schulenburg, H.; Bohannan, B.J.M.; Bruijning, M. — doi:TBD

2023 **Host-Parasite Coevolution in Continuous Space Leads to Variation in Local Adaptation Across Spatial Scales** — **The American Naturalist**
*Week, B.*; Bradburd, G.S. — doi:10.1086/727470

2022 **Uncovering Cryptic Coevolution** — **The American Naturalist**
Nuismer, S.L.; *Week, B.*; Harmon, L.J. — doi:10.1086/717436

2021 **A White Noise Approach to Evolutionary Ecology** — **Journal of Theoretical Biology**
*Week, B.*; Nuismer, S.L.; Harmon, L.J.; Krone, S.M. — doi:10.1016/j.jtbi.2021.110660

2021 **Coevolutionary Arms Races and the Conditions for the Maintenance of Mutualism** — **The American Naturalist**
*Week, B.*; Nuismer, S.L. — doi:10.1086/714274

2021 **A Unified Model of Species Abundance, Genetic Diversity, and Functional Diversity Reveals the Mechanisms Structuring Ecological Communities** — **Molecular Ecology Resources**
Overcast, I.; Ruffley, M.; Rosindell, J.; Harmon, L.; Borges, P.; Emerson, B.; Etienne, R.S.; Gillespie, R.; Krehenwinkel, H.; Mahler, L.; Massol, F.; Parent, K.; Patiño, J.; Peter, B.; *Week, B.*; Wagner, C.; Hickerson, M.J.; Rominger, A. — doi:10.1111/1755-0998.13514

2019 **Identifying Models of Trait-Mediated Community Assembly using Random Forests and Approximate Bayesian Computation** — **Ecology and Evolution**
Ruffley, M.; Peterson, K.; *Week, B.*; Tank, D.; Harmon, L.J. — doi:10.1002/ece3.5773

2019 **Approximate Bayesian Estimation of Coevolutionary Arms Races** — **PLOS Computational Biology**
Nuismer, S.L.; *Week, B.* — doi:10.1371/journal.pcbi.1006988

2019 **The Measurement of Coevolution in the Wild** — **Ecology Letters**
*Week, B.*; Nuismer, S.L. — doi:10.1111/ele.13231

2018 **Coevolution Slows the Disassembly of Mutualistic Communities** — **The American Naturalist**
Nuismer, S.L.; *Week, B.*; Aizen, M. — doi:10.1086/699218

## PREPRINTS

2025 **Stochastic Eco-Evolutionary Dynamics of Multivariate Traits** — **bioRxiv**
*Week, B.* — doi:10.1101/2025.06.07.658444

2024 **The Evolution of Microbiome-Mediated Traits** — **bioRxiv**
*Week, B.*; Morris, A.H.; Bohannan, B.J.M. — doi:10.1101/2024.03.29.587374

## AWARDS

2024 – 2027 **EU/DFG Postdoctoral Fellowship** — **KiTE, Kiel University**
The "Kiel Training for Excellence" programme is cofunded by the Marie Sklodowska-Curie Actions from the European Commission's Horizon Europe programme (project number: 101081480) and by Kiel University

2018 – 2019 **Bioinformatics & Computational Biology Fellowship** — **IBEST, University of Idaho**
Project aimed to model the duration of coevolutionary associations

2017-2018 **Bioinformatics & Computational Biology Fellowship** **IBEST, University of Idaho**
Project aimed to develop a statistical method to measure coevolution in continuous space

2017 **Paul Joyce Memorial BCB Fellowship Endowment** **IBEST, University of Idaho**
Nominated by Professor Scott Nuismer because of my "love for mathematics and helping others to appreciate how it can be used to understand biological processes"

2013-2015 **Undergraduate Research in Biology & Mathematics** **IBEST, University of Idaho**
Efforts focused on developing a statistical method to measure coevolution in metapopulations

## PROFESSIONAL EXPERIENCE

2024 – 2027 **KiTE Postdoctoral Research Fellow** **H. Schulenburg Lab, Kiel University**
Establishing theoretical foundations for the study of microbiome mediated trait dynamics

2022 – 2024 **Postdoctoral Research Fellow** **B.J.M. Bohannan Lab, University of Oregon**
Extended evolutionary theory for traits jointly determined by host genotype and host microbiome

2020 – 2022 **Postdoctoral Researcher** **G.S. Bradburd Lab, Michigan State University**
Developed mathematical and computational approaches to understand coevolution in continuous space

2018 **Visiting Scientist** **P.J. CaraDonna Lab, Rocky Mountain Biological Laboratory**
Field ecology training on estimating floral abundance and phenology, recording plant-pollinator interactions and estimating percent cover

## TEACHING EXPERIENCE

2017 **Teaching Assistant** **University of Idaho, Department of Biological Sciences**
Taught the lab portion of a 300-level ecology and population biology course

2012 – 2014 **Mathematics Tutor** **Clark Community College, Mathematics Department**
Part-time work at tutoring center supporting students taking a wide-range of coursework

## PRESENTATIONS

2025 **Quantitative Genetics of Microbiome Mediated Traits** - Talk **ESEB 2025 - Barcelona, Spain**

2025 **Quantitative Genetics of Microbiome Mediated Traits** - Seminar **Theoretical Biology Department - MPI, Plön**

2025 **When is Microbial Rescue More or Less Effective than Genetic Rescue?** - Poster **Evolutionary Rescue Workshop - MPI, Plön**

2025 **Microbiome-Mediated Host Adaptation: A Niche Construction Approach** - Poster **Concepts in Evolution Workshop - MPI, Plön**

2024 **Host-Parasite Coevolution & Microbiome-Mediated Adaptation** - Seminar **TransEvo Core Seminar - CAU, Kiel**

2023 **The Evolution of Microbiome-Mediated Traits** - Talk **Symbiosis Theory Workshop - Eugene, Oregon**

2023 **Modeling Adaptation of Microbiome-Mediated Traits** - Talk **EvoWibo - Port Townsend, Washington**

2022 **Host-Parasite Coevolution in Continuous Space** - Poster **PEQG2022 - Pacific Grove, California**

2021 **Coevolutionary Arms Races and The Conditions for The Maintenance of Mutualism** - Talk **AmNat2021 - Virtual**

2020 **A Bayesian Methodology for Estimating the Distribution of Coevolution within Ecological Communities** - Talk **AmNat2020 - Pacific Grove, California**

2018 **The Measurement of Coevolution in Nature** - Poster **EvoWibo - Port Townsend, Washington**

2017 **The Measurement of Coevolution in Mutualisms** - Talk **Evolution - Portland, Oregon**

## SERVICE & LEADERSHIP

2022 **Code Contributer** **SLiM 4.0**
Developed a nucleotide-based model of coevolution for SLiM. See §19.7 *here*. doi:10.1086/723601

2018-2019 **Graduate Student Representative** **IBEST, University of Idaho**
Represented graduate students in the Bioinformatics & Computational Biology program at institutional meetings

—— **Manuscript Reviewer**
The American Naturalist, Ecology, Evolution, PCI Evol Biol, Population Ecology, Proceedings of The Royal Society B, Theoretical Population Biology, Molecular Biology & Evolution

## SOCIETIES

2021-Present **The International Society of Nonbinary Scientists** **isnbs.org**

2020-Present **The American Society of Naturalists** **amnat.org**

## INTERESTS

I am broadly interested in collaborating on any scientific topic where my skills are useful. I am particularly interested in developing and formalizing models to clarify conceptual issues in population biology and community ecology.

## SKILLS

**Software:** LaTeX, Python, R, Linux, Julia, Mathematica, SLURM, SLiM, C/C++

**Statistics:** Modeling, Analysis, Inference, Methods Development

**Math:** Linear Algebra, Dynamical Systems, Functional Analysis, Stochastic Processes