Jaime Ashander, Ph.D.

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Education

University of California, Davis	Ph.D. in Population Biology	2016
University of Alberta	M.Sc. in Applied Mathematics	2010
Stanford University	B.Sc. in Physics	2004

Appointments

Postdoctoral Fellow	Resources for the Future (RFF)	2018–
Certified Instructor	Data & Software Carpentry	2016–
Postdoctoral Scholar	UCLA / University of Oregon	2016–2018
Affiliate	Data Science Institute, UC Davis	2015–2018

Peer-reviewed Publications (h-index: 6; citations: 120; most relevant three: *)

9. * **Ashander, J.**, L. Thompson, J. N. Sanchirico, M. L. Baskett. (2019) Optimal investment to enable evolutionary rescue. *Theoretical Ecology* doi: 10.1007/s12080-019-0413-8.
8. Chmura, H., H. Kharouba, **J. Ashander**, S. Ehlman, E. Rivest, L. Yang. (2019) The mechanisms of phenology: the patterns and processes of phenological shifts. *Ecological Monographs* doi: 10.1002/ecm.1337.
7. Kelleher, J., K. R. Thornton, **J. Ashander**, P. L. Ralph. (2018) Efficient pedigree recording for fast population genetics simulation. *PLoS Computational Biology* 14(11):e1006581 doi: 10.1371/journal.pcbi.1006581.
6. (Kreitzman, M., **Ashander, J.**),* A. Bateman, J. Driscoll, M.A. Lewis, K. Chan, M. Krkošek. (2018) Wild salmon sustain the effectiveness of parasite control on salmon farms: conservation implications from an evolutionary ecosystem service. *Conservation Letters* 11(2):e12395 doi: 10.1111/conl.12395. ( )*denotes co-equal first authorship.
5. Chevin, L.-M., O. Cotto, **J. Ashander**. (2017) Stochastic evolutionary demography under a fluctuating optimum phenotype. *The American Naturalist* 190(6) doi: 10.1086/694121.
4. * **Ashander, J.**, L.-M. Chevin, M. L. Baskett. (2016) Predicting evolutionary rescue via evolving plasticity in stochastic environments. *Proceedings of the Royal Society, B* 283:1839-1849 doi: 10.1098/rspb.2016.1690.
3. Meek, M., C. Wells, K. Tomalty, **J. Ashander**, E. Cole, D. Gille, B. Putman, J. Rose, M. Savoca, L. Yamane, J. Hull, D. Rogers, E.B. Rosenblum, J.F. Shogren, R. Swaisgood, B. May. (2015) Overcoming the fear of failure to improve the conservation of extremely small populations. *Biological Conservation* 184:209-217 doi: 10.1016/j.biocon.2015.01.025.
2. Krkošek, M., **J. Ashander**, L. Neil Frazer, M.A. Lewis. (2013) Allee effect from parasite spillback. *The American Naturalist* 182:640-652 doi: 10.1086/673238.

1. **Ashander, J.**, M. Krkošek, M.A. Lewis. (2012) Aquaculture-induced changes to dynamics of a migratory host and specialist parasite: a case study of pink salmon and sea lice. *Theoretical Ecology* 5:231-252 doi: 10.1007/s12080-011-0122-4.

Pre-prints

*** Ashander, J.**, E. McCartney-Melstad, P. L. Ralph, H.B. Shaffer. (2018) Demographic inference in a spatially-explicit ecological model from genomic data: A proof of concept for the Mojave Desert Tortoise. *In revision* at *Molecular Ecology Resources* (preprint *bioRxiV* doi: 10.1101/354530).

Grants (since 2010: $366,876 USD awarded / $1,961,671 USD total including pending)

NSF CNH2-L (*in revision*) 2019
Co-PI with Laura E. Dee (PI; CU Boulder), S. Allesina (Chicago), R. Epanchin-Niell (RFF), K. Kroetz (ASU). *Managing Widespread Species Invasions in Social-Environmental Systems with Feedbacks* (**$1,594,795 USD** *total costs*).

Fred Hutch (*declined*) 2018
Mahan Postdoctoral Fellowship for *Inference from spatiotemporal sequence data with complex demography and recombination* (**$108,000** USD *approximate direct costs*).

Bureau of Reclamation (*declined*) 2016
Delta Science Program Postdoctoral Fellowship with S. Carlson (Berkeley) and R. Johnson (NOAA) for *Population Consequences of Life-history Variability and Water Management in Central Valley Chinook* (**$158,188** USD *total costs*).

UC Davis–**The Nature Conservancy, CA** 2015
Sub-contract with M. Clapp and C. Whitesell to analyze 23-year dataset of bird captures in two Sierra Nevada meadows and determine effect of restoration. Sub-agreement under Contract No. 03122014-2096 (**$3,000** USD *direct costs*).

NSF REACH IGERT Internship Grant 2014
Two-month internship with Luis-Miguel Chevin at Centre d'Ecologie Fonctionnelle & Evolutive (CEFE) at Centre National de la Recherche Scientifique (CNRS). NSF Grant No. DGE-0801430 (**$7,688** USD *direct costs*).

NSF REACH IGERT Trainee & Bridge RA 2010-2012, 2013
Interdisciplinary Graduate Education and Research Traineeship (IGERT) in Responding to Rapid Environmental Change (REACH), UC Davis. NSF Grant No. DGE-0801430 (**$90,000** USD *direct costs*).

PIMS IGTC Fellowship 2008-2010
International Graduate Training Center (IGTC), University of Alberta. Pacific Institute of Mathematical Sciences Grant. (**$40,000** CAD *direct costs*)

Master's Recruitment Scholarship 2008-2009
Department of Mathematics and Statistical Sciences, University of Alberta. (*declined* **$8,000** CAD)

Software

Kelleher, J., P. L. Ralph, D. Nelson, **J. Ashander**, ... and 13 others. (2018) `msprime` An effiicient coalescent simulator for modern data sets. https://github.com/tskit-dev/msprime – Lanugage: `Python` and `C`.

Ashander, J., P. L. Ralph. (2017) `ftprime` Forward-time simulation of the `msprime` data structure. doi: 10.5281/zenodo.831698 – Language: `Python`.

Ashander, J., L.-M. Chevin. (2016) `phenoecosim` Quantitative genetic simulations for eco-evolutionary dynamics. doi: 10.5281/zenodo.56416 – Language: `R` and `C++`.

Teaching and Curriculum Development

Quantitative Workshops (Instructor)

2019 Data Carpentry – Geospatial with `R` "Geospatial Workshop @ GWU" *George Washington University*, Washington, DC.

2019 Reproducible workflows with `R` – "Data & Code Management for Easier, Better Research" *RFF Junior Seminar Series*, Washington, DC.

2017 Data Carpentry with `R` – "Data Carpentry Workshop for QuARRC (Quality Assurance Research Reproducibility Collaborative)" *UMN Department of Veternary Medicine, University of Minnesota*, Minneapolis, MN.

2017 Software Carpentry with `R` – "Software Carpentry Workshop for California State Water Science Agencies" *Delta Science Program*, Sacramento, CA.

2015 Applied statistics tutorial with `R` – "Visualizing fits, inference, implications of (G)LMMs" *R Users Group*, Davis, CA.

University Courses (TA / Lab Leader) (average evaluation 2012–2016: 4.1/5.0)

2016 Introduction to Evolution and Ecology (UC Davis BIS 2B lab; also 2014)

2015 Ecology (UC Davis EVE 101 discussion; also 2014)

2013 Population Dynamics and Estimation (UC Davis WFC 122 lab)

2010 Linear Algebra for Engineering Students (U Alberta MATH 102 lab; also 2009).

2009 Introduction to Applied Statistics (U Alberta STAT 100 lab).

Software/Data Carpentry Curricula Contributions

Wilson, G., Silva, R., ... **Ashander, J.**,... *et al.* (2017, April). SQL Ecology Lesson v2017.04.0. *Data Carpentry* . http://doi.org/10.5281/zenodo.570049.

Michonneau, F., Teal, T., ... **Ashander, J.**, ... *et al.* (2017, April). R Ecology Lesson v2017.04.3. *Data Carpentry*. http://doi.org/10.5281/zenodo.569875.

Allen, J., Arnold, J., ... **Ashander, J.**, ... *et al.* (2017, February). R for Reproducible Scientific Analysis. *Software Carpentry*. http://doi.org/10.5281/zenodo.278224.

Selected Academic Presentations (out of > 14 including 11 at national or international conferences)

2019 Ecological forecasts for integrated socio-environmental systems. *Ecological Forecasting Initiative (EFI) Conference*, Washington, DC, USA.

2017 Using genomic data to inform population viability in a long-lived endangered vertebrate. *Evolution*, Portland, Oregon, USA.

2016 Predicting rescue via evolving plasticity in stochastic environments. *Conference of the American Society of Naturalists (ASN)*, Asilomar, California, USA.

2015 Bioeconomic optimization of interventions to aid evolutionary rescue of a population threatened by environmental change. *27th International Congress for Conservation Biology (ICCB)*, Montpellier, France.

2014 Demographic limits to the role of plasticity in adaptation to environmental shifts. *Ecological Society of America (ESA)*, Sacramento, CA, USA.

2014 Estimating plastic and evolutionary change under density-dependence from time series. *International Conference on Statistical Ecology*, Montpellier, France.

2013 Understanding the joint effects of plastic and evolutionary change on demography from time series. *Ecological Society of America (ESA)*, Minneapolis, MN, USA. (**Lotka award**)

2011 Aquaculture-induced changes to dynamics of a migratory host and specialist parasite: a case study of pink salmon and sea lice. *American Fisheries Society (AFS)*, Seattle, WA, USA.

Honors & Awards

Second Place Poster 2014
Student Awards, International Statistical Ecology Conference

Lotka Award 2013
Best Student Poster, Ecological Society of America—Theory Section.

Service

Working Groups / Workshops 2010–

2019 *Advancing interdisciplinary research on social-ecological networks to understand ecosystem services across scales*, National Socio-Environmental Synthesis Center (SESYNC), Annapolis, MD, USA.

2019 *Socio-Environmental Networks to Improve the Management of Socio-Environmental Systems*, National Socio-Environmental Synthesis Center (SESYNC), Annapolis, MD, USA (*co-organizer*).

2019 *Advancing Integrated Process-Based Modeling of Complex Socio-Environmental Systems*, National Socio-Environmental Synthesis Center (SESYNC), Annapolis, MD, USA (*co-organizer*).

2013 *Rapid Evolution and Sustainability* Mathematical Biology Institute (MBI) Ohio, USA. (*participant*).

2012 *Multiple Goals in Floodplain Restoration: A Historical and Ecological Perspective* Capstone Workshop for REACH IGERT Collaborative Project, UC Davis, (*co-organizer* 2012).

2012 *The Conservation of Extremely Small Populations* Symposium, UC Davis (*co-organizer*).

2010 *Hierarchical Modeling in Ecology* CPB Workshop, UC Davis. (*co-organizer*).

Volunteer Mentor 2010–2014
Student and Landowner Education & Watershed Stewardship (SLEWS) Program,
Center for Land-Based Learning.

Reviewer 2014–
15+ reviews for journals including *Theoretical Ecology*, *The American Naturalist*, *Journal of Animal Ecology*, *Conservation Letters*, *Evolution*, *Ecology*, *Ecological Modelling*

Updated September 17, 2019