

Gideon Bradburd

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Department of Integrative Biology, MSU
East Lansing, MI, 48824

email: bradburd@msu.edu
website: genescape.org
software: github.com/gbradburd

EDUCATION & APPOINTMENTS

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| Asst. Prof | <i>Michigan State University</i> Department of Integrative Biology Ecology, Evolutionary Biology, and Behavior Group | 2017 - present |
| Fixed-term Asst. Prof | <i>Michigan State University</i> Department of Integrative Biology Ecology, Evolutionary Biology, and Behavior Group | 2016 - 2017 |
| Postdoc | <i>University of California, Berkeley</i> Museum of Vertebrate Zoology Department of Env. Sci. Pol. and Mgmt Advisors: Michael Nachman, Bree Rosenblum | 2015 - 2016 |
| PhD | <i>University of California, Davis</i> Population Biology Graduate Group Department of Ecology and Evolutionary Biology Advisors: Graham Coop, Brad Shaffer | 2009 - 2015 |
| BS | <i>Yale University</i> Ecology and Evolutionary Biology Honors Thesis Advisor: Tom Near | 2004 - 2008 |

SOFTWARE

- Bradburd, G.S. (2018). **conStruct**. A genetic clustering method that accounts for isolation by distance. R package version v1.0.3. <https://cran.r-project.org/web/packages/conStruct/index.html>
- Bradburd, G.S. (2016). **SpaceMix**. A program for estimating geogenetic maps from allele frequency data. R package version 0.13. <https://github.com/gbradburd/SpaceMix>
- Bradburd, G.S. (2013). **BEDASSLE**. Bayesian Estimation of Differentiation in Alleles by Spatial Structure and Local Ecology. R package version 1.5. <https://cran.r-project.org/web/packages/BEDASSLE>

FUNDING

| | |
|---|--------------------|
| NSF Dimensions of Biodiversity (2017-2021) Diversification of sensory systems in novel habitat: enhanced vision or compensation in other modalities? (PI: J. Boughman, co-PIs: G. Bradburd, H. Hofmann, J. Keagy, D. Stenkamp) | \$1,846,134 |
| Beacon - NSF Center for the Study of Evolution in Action (2016-present) Evolution of sensory systems in response to loss of visual information (PI: J. Boughman, co-PIs: G. Bradburd, H. Hofmann, J. Keagy, D. Stenkamp) | \$127,579 |
| NSF Doctoral Dissertation Improvement Grant (DDIG) (2014-15) The effect of intraspecific host variation on the structure of parasite populations (PI: G. Bradburd, co-PI: G. Coop) | \$13,918 |

PUBLICATIONS

Preprints and In Review

- Fitzpatrick, S.W. G.S. Bradburd, C.T. Kremer, P.E. Salerno, L.M. Angeloni, W.C. Funk. Genetic rescue without genomic swamping in wild Trinidadian guppy populations. (*in revision*).
- Rothstein, A.; R. Knapp, G.S. Bradburd; D. Boiano, E.B. Rosenblum. Stepping into the past to conserve the future: archived skin swabs from extant and extinct populations inform genetic management of an endangered amphibian. (*in review*).
- Schweizer, R.M., J.P. Vellotta; C.M. Ivy; M.R. Jones; S.M. Muir; G.S. Bradburd; J.F. Storz; G.R. Scott; Z.A. Cheviron. Physiological and genomic evidence that a transcription factor contributes to adaptive cardiovascular function in high-altitude deer mice. (*in review*).
- Shaffer, H.B., E. McCartney-Melstad, P.L. Ralph, G.S. Bradburd, E. Lundgren, J. Vu, B. Hagerty, F. Sandmeier, C. Weitzman, C.R. Tracy. (2017). Desert Tortoises in the genomic age: population genetics and the landscape. [bioRxiv](#).

Published and Accepted Papers

(*denotes equal authorship)

- Bradburd, G.S. and P.L. Ralph. **2019**. Spatial population genetics: It's about time. **Annual Reviews in Ecology, Evolution, and Systematics** (*in press*).
- Grieneisen, L.E., M.J.E. Charpentier, S.C. Alberts, R. Blekhan, G.S. Bradburd, J. Tung, E.A. Archie. **2019**. Genes, geology, and germs: gut microbiota across a primate hybrid zone are explained by site soil properties, not host species. **Proceedings of the Royal Society B** 286: 20190431.
- Bradburd, G.S., G.M. Coop*, and P.L. Ralph*. **2018**. Inferring continuous and discrete population genetic structure across space. **Genetics** 210: 33-52.
- Weber, J.N., G.S. Bradburd, Y.E. Stuart, W.E. Stutz, D.I. Bolnick. **2017**. Partitioning the effects of isolation by distance, environment, and physical barriers on genomic divergence between parapatric threespine stickleback. **Evolution** 71: 342-56.
- Hoban, S.*, J. L. Kelley*, K. E. Lotterhos*, M. F. Antolin, G.S. Bradburd, D. B. Lowry, M. L. Poss, L. K. Reed, A. Storfer, M. C. Whitlock. **2016**. Finding the genomic basis of local adaptation in non-model organisms: pitfalls, practical solutions, and future directions. **American Naturalist** 188: 379-397.
- Bradburd, G.S., P.L. Ralph, G.M. Coop. **2016**. A Spatial Framework for Understanding Population Structure and Admixture. **PLoS Genetics** 12: e1005703.
- Hammock, B.G., S. Lesmeister, I. Flores, G.S. Bradburd, F.H. Hammock, S.J. Teh. **2016**. Low food availability narrows the tolerance of the copepod *Eurytemora affinis* to salinity, but not to temperature. **Estuaries and Coasts**. 39: 189-200.
- Agrawal, A.A., A.P. Hastings, G.S. Bradburd, E.C. Woods, T. Züst, J. Harvey, T. Bukovinsky. **2015**. Evolution of plant growth and defense in a continental introduction. **American Naturalist** 186: 1-15.
- Wang, I.J.* and G.S. Bradburd.* **2014**. Isolation by Environment. **Molecular Ecology** 23: 5649-5662.
- Bradburd, G.S., P.L. Ralph, and G.M. Coop. **2013**. Disentangling the effects of geographic and ecological isolation on genetic differentiation. **Evolution** 67: 3258-3273.
- Rejmanek, D, P. Freycon, G.S. Bradburd, J. Dinstell, and J. Foley. **2013**. Unique strains of *Anaplasma phagocytophilum* segregate among diverse questing and non-questing *Ixodes* tick species in the western United States. **Ticks and Tick-borne Diseases** 4: 482-487.
- Rejmanek, D., G.S. Bradburd, and J. Foley. **2012**. Molecular characterization reveals distinct genospecies of *Anaplasma phagocytophilum* from diverse North American hosts. **Journal of Medical Microbiology** 61: 204-212.
- Near, T.J., C.M. Bossu, G.S. Bradburd, R.L. Carlson, R.C. Harrington, P.R. Hollingsworth Jr., B.P. Keck, D.A. Etner. **2011**. Phylogeny and temporal diversification of darters (*Percidae: Etheostomatinae*). **Systematic Biology** 60: 565-595

HONORS, AWARDS, & FELLOWSHIPS

| | |
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| Fitch Award Finalist , Society for Molecular Biology and Evolution (\$2000) | 2015 |
| Hamilton Award Finalist , Society for the Study of Evolution (\$500) | 2015 |
| XSEDE SuperComputing Resource Allocation , XSEDE (50,000 SUs) | 2014-05 |
| Center for Population Biology Research Fellowship CPB, UC Davis (\$4,000) | 2011-13 |
| NSF Graduate Research Fellow National Science Foundation (\$90,000) | 2010-12 |
| Graduate Scholars Fellowship in Population Biology, UC Davis (\$30,000) | 2009-10 |
| Environmental Internship Award Yale University (\$6,000) | 2006-7 |
| Richter Fellowship Yale University (\$1,000) | 2007 |
| Mellon Forum Research Grant Yale University (\$500) | 2007 |

TEACHING

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|---|------------|--------------|
| Evolutionary Biology (IBio 849) | Instructor | 2018-present |
| Intro to Statistical Methods in Ecology/Evolution (IBio 830) | Instructor | 2017-present |
| Evolution Discussion Group (IBio 895) | Instructor | 2017-present |
| EVE100 Introduction to Evolution | TA | 2015 |
| EVE103 Macroevolution, Speciation, and Phylogeny (Lecture, Lab) | TA | 2014 |
| Herpetology (Field, Lab, Lecture) | TA | 2012 |

INVITED TALKS

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|-------------------------------------|--|------|
| Ecological Society of America | Landscape Genetics (student-organized) | 2018 |
| Indiana University | Dept. of Biology/Precision Health Initiative | 2018 |
| Penn State University | Ecology Seminar Series | 2018 |
| University of Toronto (St. George) | Dept. of Ecology and Evolutionary Biology | 2018 |
| University of Toronto (Mississauga) | Dept. of Biology | 2017 |
| University of Chicago | Dept. of Ecology and Evolution | 2017 |
| Michigan State University | Kellogg Biological Station | 2017 |
| University of Michigan | Center for Statistical Genetics | 2016 |
| University of Wyoming | Dept. of Botany | 2016 |
| University of Colorado Boulder | Dept. Ecology and Evolutionary Biology | 2016 |
| University of San Francisco | Dept. of Biology | 2016 |
| University of California Berkeley | Museum of Vertebrate Zoology | 2015 |
| Michigan State University | Ecology, Evolutionary Biology and Behavior | 2015 |
| Stanford University | Dept. Genetics and Biology | 2015 |
| University of Southern California | Molecular and Computational Biology | 2014 |
| University of Montana | Division of Biological Sciences | 2014 |
| University of Minnesota | Dept. of Plant Biology | 2014 |
| Sonoma State University | Biology Dept. | 2014 |
| University of Texas, Austin | Dept. Integrative Biology | 2013 |

CONTRIBUTED PRESENTATIONS

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| Population, Evolutionary, Quantitative Genetics Meeting | 2018 |
| Midwestern Population Genetics Meeting | 2016 |
| American Society of Naturalists | 2016-18 |
| Society for Molecular Biology and Evolution | 2015 |
| Society for the Study of Evolution | 2012-13,15,17,19 |
| Bay Area Population Genomics (BAPG) | 2014 |
| E&EB Senior Symposium, Yale University | 2008 |

MENTORSHIP & ADVISING

Postdocs

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| Dr. Kelsey Yule | 2018-2019 |
| <i>current position:</i> Project Manager of the NEON Biorepository, Arizona State University | |
| Dr. Emily Puckett | 2017 - 2018 |
| <i>current position:</i> Asst. Professor of Biological Sciences, U. Tennessee, Memphis | |

Undergraduates

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|----------------|----------------|
| Lindsay Guare | 2017 - present |
| Josh Confer | 2018 - present |
| Sarah Frocillo | 2017 - 2018 |
| Nick Stants | 2017 - 2018 |

Graduate student committees

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| Michael Foisy | 2019-present |
| Sara Hugentobler | 2019-present |
| Devin Lake | 2019-present |
| Isabela Borges | 2019-present |
| Jason Olsen | 2018-present |
| Viviana Ortiz Londono | 2018-present |
| Miranda Wade | 2018-present |
| Ava Garrison | 2017-present |
| Dr. Emily Dolson | 2017-2019 |

SERVICE & LEADERSHIP

National/International Service

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| Organizing Committee Midwest Population Genetics Conference | 2016-present |
| Course Instructor UCLA/La Kretz Center Workshop in Conservation | 2014, 16, 19 |
| Judge Hamilton Award (Society for the Study of Evolution) | 2017, 19 |
| Reviewer including: Ecology Letters; Evolution; Genetics; Systematic Biology; American Journal of Human Genetics; Heredity; Molecular Ecology; Proceedings of the Royal Society B; Molecular Ecology Resources; Methods in Ecology and Evolution; Molecular Phylogenetics and Evolution; New Phytologist; Bioinformatics; Ecological Monographs; NSERC | |
| Society Memberships Society for the Study of Evolution (SSE); American Society of Naturalists (ASN); Genetics Society of America (GSA) | |

Institutional Service

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| Strategic Hiring Planning Committee, Dept. Integrative Biology | 2018-present |
| Curriculum Planning Committee (Intro to Evolution - IBio 445) | 2016-17 |
| Student Representative, Population Biology Grad Group Steering Committee | 2013-14 |
| Chair of Student Research Symposium, Center for Population Biology/Pop Bio Grad Group | 2013 |
| Course Organizer, The Bodega Bay Applied Phylogenetics Workshop | 2012-13 |
| Chair, UC Davis Non-Model Genomics Workshop Committee | 2010 |
| Graduate Student Mentor | 2009-2015 |