CJ Battey C.V.
Computional Biologist, Myriad Genetics
cjbattey@gmail.com; 1-650-291-4362; cjbattey.com

Education

University of California, Berkeley	Integrative Biology	B.A., 2006-2010
University of California, Berkeley	English	B.A., 2006-2010
University of Washington	Biology	Ph.D., 2013-2018

Publications

Genome variation and population structure among 1,142 mosquitoes of the African malaria vector species Anopheles gambiae and Anopheles coluzzii
Chris S Clarkson, Alistair Miles, Nicholas J Harding, Eric R Lucas, **C. J. Battey …** Dominic P Kwiatkowski. 2019*. Genome Research*. Published in Advance September 28, 2020, doi:10.1101/gr.262790.120

Predicting Geographic Location from Genetic Variation with Deep Neural Networks.
C. J. Battey, Peter L. Ralph, Andrew D. Kern. 2019. *In Press, eLife*.
preprint: *bioRxiv* 2019.12.11.872051; doi: https://doi.org/10.1101/2019.12.11.872051

Space is the Place: Effects of Continuous Spatial Structure on Analysis of Population Genetic Data.
C. J. Battey, Peter L. Ralph, Andrew D. Kern. 2020. *GENETICS.* May 1, 2020 vol. 215 no. 1 193-214; https://doi.org/10.1534/genetics.120.303143

Evidence of Linked Selection on the Z Chromosome of Hybridizing Hummingbirds.
C. J. Battey. 2019. *In Press. Evolution,* November 2019.
https://doi.org/10.1111/evo.13888

Ecological Release of the Anna's Hummingbird during a Northern Range Expansion,
C. J. Battey. 2019. *The American Naturalist* 194, no. 3 (September 2019): 306-315.
https://www.journals.uchicago.edu/doi/10.1086/704249

Minor allele frequency thresholds strongly affect population structure inference with genomic data sets.
Linck, E, **Battey, C. J.** *Mol Ecol Resour*. 2019; 19: 639-746.
https://doi.org/10.1111/1755-0998.12995

A Migratory Divide in the Painted Bunting (Passerina ciris)
C. J. Battey, Ethan B. Linck, Kevin L. Epperly, Cooper French, David L. Slager, Paul W. Sykes, and John Klicka. 2018. *The American Naturalist* 191, no. 2 (February 2018): 259-268. https://doi.org/10.1086/695439 Appendix_1

Cryptic Speciation and Gene Flow in a Migratory Songbird Species Complex: Insights from the Red-Eyed Vireo (Vireo olivaceus).
C. J. Battey & Klicka, J. 2017. *Molecular Phylogenetics and Evolution*, Available online 12 May 2017, ISSN 1055-7903, https://doi.org/10.1016/j.ympev.2017.05.006.

A multilocus phylogeny of a major New World avian radiation: The Vireonidae
Slager, D.L., **C. J. Battey**, Robert W. Bryson Jr., Gary Voelker, John Klicka. *Molecular Phylogenetics and Evolution*, Volume 80, November 2014, Pages 95-104, ISSN 1055-7903, http://dx.doi.org/10.1016/j.ympev.2014.07.021.

CJ Battey
Computional Biologist, Myriad Genetics
cjbattey@gmail.com; 1-650-291-4362; cjbattey.com

C.V.

Preprints

Visualizing Population Structure with Variational Autoencoders.
C. J. Battey, Gabrielle C. Coffing, and Andrew D. Kern. 2020. bioRvix.
https://doi.org/10.1101/2020.08.12.248278.

On the Relative Ease of Speciation with Periodic Gene Flow.
Ethan Linck and **C. J. Battey**. 2019. *bioRxiv* 758664; doi: https://doi.org/10.1101/758664

Why montane Puerto Rican lizards are moving downhill while the climate warms.
Battey, C. J., Luisa M. Otero, George C. Gorman, Paul E. Hertz, Bradford C. Lister, Andres Garcia, Patricia A. Burrowes, and Raymond B. Huey. 2019.
bioRxiv 751941; doi: https://doi.org/10.1101/751941

Software

Popvae. A variational autoencoder for dimensionality reduction of genotype data.
https://github.com/kr-colab/popvae

Locator. Supervised machine learning for predicting sample locations from genotypes.
https://github.com/kr-colab/locator

***driftR*.** An interactive single-locus Wright-Fisher simulator for teaching population genetic summary statistics.
https://cjbattey.shinyapps.io/driftR/
http://doi.org/10.5281/zenodo.345172

***LDsim*.** An R shiny app for visualizing aspects of linkage and linkage disequilibrium.
https://cjbattey.shinyapps.io/LDsim/
https://github.com/cjbattey/ldsim

adaptR. Interactive Wright-Fisher simulator for modeling change in allele frequency under time-varying selection and demographic parameters.
https://cjbattey.shinyapps.io/adaptR/

***structurePlotter*.** A web tool for plotting output of genotype clustering programs like STRUCTURE or ADMIXTURE.
http://doi.org/10.5281/zenodo.345154

Other

Migration Increases Niche Breadth in North American Hummingbirds.
Battey, C.J. 2015. *Electronic Journal of Applied Multivariate Statistics*, Vol 7.8 (2015): 1-10.
http://cjbattey.com/papers/EJAMS_v7_2015.pdf

Impacts of Habitat Restoration and Status of Avian Communities in Seattle City Parks.
Battey, C.J., T. Ross. May 2015. Seattle Audubon Society:
http://cjbattey.com/papers/nbp_report.pdf

CJ Battey C.V.
Computional Biologist, Myriad Genetics
cjbattey@gmail.com; 1-650-291-4362; cjbattey.com

Grants and Awards

2020	National Institutes of Health NIGMS	NRSA postdoctoral Fellowship (F32)
2019	Society for Molecular Biology and Evolution	Travel Grant
2016	National Science Foundation DEB	Doctoral Dissertation Improvement Grant (DDIG)
	American Ornithologists' Union	Student Travel Award
2015	American Museum of Natural History	Frank M. Chapman Grant.
	UW Department of Biology	Iuvo Award
	UW Department of Biology	Sargent Award
	NSF GRFP	Honorable Mention
2014	American Ornithologists' Union	Student Travel Award
	NSF GRFP	Honorable Mention

Teaching & Employment

2020	Computational Biologist, Myriad Genetics, South San Francisco, CA
	- R&D for monogenetic genetic disorder testing and cancer risk assessment. - Working on improved SNP and CNV calling for repetitive regions of the genome.
2020	NIH F32 Postdoctoral Fellow, Kern Lab, Dept of Biology, U. Oregon
2018-2020	Postdoctoral Researcher, Kern Lab, Dept. of Biology, U. Oregon
2017	Teaching Assistant, Comparative Anatomy, Dept. of Biology, U. Washington Teaching Assistant, Conservation Biology, Dept. of Biology, UW Teaching Assistant, Genetics and Molecular Ecology, Dept. of Biology, UW
2016	Teaching Assistant, Introductory Evolution & Ecology, Dept of Biology, UW Teaching Assistant, Biological Impacts of Climate Change, Dept. of Biology, UW Research Assistant, Huey Lab Teaching Assistant, Genetics and Molecular Ecology, Dept. of Biology, UW
2015	Teaching Assistant, Conservation Biology, Dept. of Biology, UW Teaching Assistant, Introductory Physiology (x2), Dept. of Biology, UW
2014	Teaching Assistant, Molecular Biology, Dept. of Biology, UW Teaching Assistant, Introductory Physiology, Dept. of Biology, UW Curatorial Assistant, Dept. of Ornithology, Burke Museum of Natural History Teaching Assistant, Introductory Physiology, Dept. of Biology, UW
2013	WRF Hall Fellow, Dept. of Biology, UW Research Assistant, Fundación Proaves, Magdalena, Colombia
2012	Avian Point Count Technician, Point Reyes Bird Observatory, Pescadero, CA

CJ Battey C.V.
Computional Biologist, Myriad Genetics
cjbattey@gmail.com; 1-650-291-4362; cjbattey.com

2010-2012 Staff Scientist; Cardno ENTRIX, Concord, CA
- Survey and monitoring of protected species in northern California (Swainson's hawk, burrowing owl, California tiger salamander, California red-legged frog)
- Environmental impact assessments for small utility projects.

2008-2009 Research Assistant, Daane Lab, UC Berkeley Dept. Environmental Science, Policy, & Management

Presentations

Battey, C. J., Ralph, P., Kern, A. *Space is the Place: Effects of Continuous Spatial Structure on Analysis of Population Genetic Data.* SMBE 2019, Manchester, U.K.

Battey, C. J.; Klicka, J. 2016. *Phylogeography of the Rufous Hummingbird (S. rufus): Insights on Migratory Connectivity and a Recent Wintering Range Expansion* North American Ornithological Conference; Washington, DC.

Battey, C.J. 2016. *Impacts of Habitat Restoration on Native Birds in Seattle City Parks*. Edmonds Birdfest, Edmonds, WA.

Battey, C.J. 2016. *The Californians are Coming: Recent Range Shifts in North American Hummingbirds*. University of Washington Graduate Student Symposium, Seattle, WA.

Battey, C.J. 2016. *Status and Trends in Avian Communities in Seattle City Parks: 20 Years of the Neighborhood Bird Project*. Seattle Audubon Society, Seattle, WA.

Battey, C.J. 2016. *Impacts of Habitat Restoration on Native Birds in Seattle City Parks*. Green Seattle Partnership and Seattle Audubon Society, Seattle, WA.

Battey, C. J.; Slager, D. L.; Bryson, R. W.; Klicka, J. 2014. *Paraphyly and Migration in the Red-Eyed Vireo Species Complex*. Presentation at the meeting of the American Ornithologists' Union, Estes Park, CO.

Battey, C. J.; Slager, D. L.; Bryson, R. W.; Klicka, J. 2014. *Return of the Chivi Vireo: Phylogenetic Inference with Genome-Wide SNPs.* University of Washington Graduate Student Symposium, Seattle, WA.

Teaching & Public Outreach

Undergraduate Education & Mentoring
- Developed a free interactive Wright-Fisher simulator for population genetics labs: https://cjbattey.shinyapps.io/driftR/
  - Used in undergraduate classes at U. Washington (BIOL340 & BIOL476), U. Wyoming, UC Davis, Michigan State University, and Kenyon College.
- Designed assignment and teaching modules for Biological Impacts of Climate Change (BIOL 315, UW Seattle), based on students' independent analyses of data from peer-reviewed studies.
- Mentored an undergraduate student on her study of reticulate evolution in the Great-Tailed Grackle (presented at the American Ornithologists' Union Conference, 2014).
- Collaborated with labmates to develop a 3-hr introduction to museum-based science for Introductory Biology (Biol 180) classes. Over 2000 students have since participated.

CJ Battey C.V.
Computional Biologist, Myriad Genetics
cjbattey@gmail.com; 1-650-291-4362; cjbattey.com

Seattle Audubon Society

- Worked with Seattle Audubon staff and volunteers to analyze 17 years of citizen-science point count data to assess impacts of restoration projects on avian communities in city parks.
- Presented results at Seattle Parks stakeholders' meeting and three public Audubon meetings.
- Results helped convince parks to adjust maintenance schedules impacting Savannah Sparrows at Discovery Park, and lead to a boost in volunteers in following years.

Burke Museum of Natural History

- Volunteer presenter and guide for public tours and events at the Burke Museum.
- Developed hummingbird/sunbird convergent evolution display for "Birds at the Burke".
- Ornithology collecting trips in WA, ID, MT, CO, and the Sierra Madre Occidental (MX).
- Weekly preparation of biological specimens (2013-present).

Contributions to the Field

- Peer Reviewer: *J. Biogeography, PLOS one, Molecular Phylogenetics and Evolution, Molecular Ecology*, *Molecular Ecology Resources, Nature Scientific Reports, The American Naturalist, eLife, Ecology Letters, Bioinformatics, G3, The Auk*
- R and shell scripts for visualization and bioinformatics processing of sequence data (github.com/cjbattey)