**Education**

Ph.D. Princeton University, Ecology & Evolutionary Biology 2019

*Advisor: Dr. Bridgett vonHoldt*

B.A. Franklin & Marshall College, Biology 2014

*Magna Cum Laude*, *Departmental Honors in Biology*

**Research Interests**

Population & landscape genomics, molecular ecology, genomic consequences of hybridization, ecological epigenetics, molecular convergence, phenotype evolution

**Technical Skills**

Laboratory Computational

DNA Extraction & Quantification Linux/Unix command-line

PCR & Gel Imaging Bash scripting (e.g. AWK, sed, grep)\*

NGS Library Prep (RADseq & RRBS) High performance computing cluster R

\*custom scripts available at [www.elizabethheppenheimer.com/bioinformatics.html](http://www.elizabethheppenheimer.com/bioinformatics.html)

**Funding & Awards**

Professional Development Travel Fund Award, Princeton University 2016

Summer Institute in Statistical Genetics Travel Award, University of Washington 2015

Women in Conservation Science Award, National Fish & Wildlife Foundation 2015

Graduate Student Research Award, Princeton University 2015

Phi Beta Kappa 2014

Carl & Ellen Pike Senior Biology Award, Franklin & Marshall College 2014

Michelle Ann Kayal Memorial Award in Biology, Franklin & Marshall College 2013

Isaac E. Roberts Prize in Biology, Franklin & Marshall College 2013

**Peer- Reviewed Publications (!=undergraduate student coauthor; †= equal contribution)**

**Heppenheimer E**, Brzeski KE, Hinton J, Chamberlain MJ, Robinson J, Wayne RK, VonHoldt BM (2020). A Genome-wide perspective on the persistence of red wolf ancestry in southeastern canids. *Journal of Heredity*. <http://doi.org/10.1093/jhered/esaa006>   
  
vonHoldt BM, DeCandia AL, **Heppenheimer E**, Koch IJ, Shi R, Zhou H, German CA, Brzeski KE, Cassidy KA, Stahler DR, Sinsheimer JS. Heritability of inter‐pack aggression in a wild pedigreed population of North American gray wolves. *Molecular Ecology*. [cover image]. [http://doi.org/  
10.1111/mec.15349](http://doi.org/10.1111/mec.15349)

* Perspective by Christopher Schell: <https://doi.org/10.1111/mec.15453>

Cavedon M, Goubili C, **Heppenheimer E,** vonHoldt B, Mariani S, Hebblewhite M, Hegel T, Hervieux D, Serrouya R, Steenwig R, Weckworth BV, Musiani M. (2019). Genomics, environment and balancing selection in behaviorally bimodal populations: the caribou case. *Molecular Ecology*. 28(8): 1946-1963. <https://doi.org/10.1111/mec.15039>

Hinton JW, **Heppenheimer E**, West KM, Caudill D, Earthman M, Kilgo JC, Mayer J, Miller KV, vonHoldt B, Chamberlain MJ. (2019). Geographic patterns in morphometric and genetic variation for coyote populations in North America with consideration of coyotes in the southeastern United States. *Ecology and Evolution.* 9(6): 3389-3404.<https://doi.org/10.1002/ece3.4966>

DeCandia A, Brzeski K, **Heppenheimer E**, Caro C!, Camenisch G, Wandeler P, Driscoll C, vonHoldt B. (2019). Exploring urban colonization through multiple genetic lenses: the city-fox phenomenon revisited. *Ecology and Evolution.* 9(4): 2046-2060*.* <https://doi.org/10.1002/ece3.4898>

**Heppenheimer, E**†,Brzeski KE†, Wooten R, Waddell W, Rutledge LY, Chamberlain MJ, Stahler DR, Hinton JW, vonHoldt BM. (2018). Rediscovery of red wolf ghost alleles in a canid population along the American GulfCoast. *Genes.* 9(12): 618. <https://doi.org/10.3390/genes9120618>

*bioRxiv* preprint: <https://doi.org/10.1101/420356>

* Featured Media: [The Associated Press](https://apnews.com/41e2f719d14549f8b5b2d88149385a0e), [Gizmodo](https://gizmodo.com/scientists-find-red-wolf-dna-in-a-unique-group-of-wild-1831233985?utm_medium=sharefromsite&utm_source=gizmodo_twitter&utm_campaign=sharebar), [The Wildlife Professional](http://wildlife.org/hybrids-and-maybe-a-full-red-wolf-found-in-former-range/?platform=hootsuite), [Princeton University](https://www.princeton.edu/news/2018/12/18/red-wolf-dna-found-mysterious-texas-canines), [The Daily Mail](https://www.dailymail.co.uk/sciencetech/article-6509683/Mystery-red-wolves-DNA-dogs-living-small-island-coast-Texas.html), [The Galveston County Daily News](https://www.galvnews.com/news/article_4f9a4cf1-d990-52fa-9ac5-8afad7dd6079.html), and other media outlets.

**Heppenheimer E**†,Harrigan RJ†, Rutledge LY, Koepfli KP, Horwath R, DeCandia AL, Brzeski KE, Benson JF, Wheeldon T, Patterson BR, Kays R, Hohenlohe PA, vonHoldt BM. (2018). Population genomic analysis of North American eastern wolves (*Canis lycaon*) supports their conservation priority status. *Genes.* 9(12): 606.<https://doi.org/10.3390/genes9120606>

**Heppenheimer E,** Brzeski KE, Hinton JW, Patterson BR, Rutledge LY, DeCandia AD, Wheeldon T, Fain SR, Hohenlohe PA, Kays R, White BN, Chamberlain MJ, vonHoldt BM. (In Press). High genomic diversity and candidate genes under selection associated with range expansion in eastern coyote (*Canis latrans*) populations. *Ecology and Evolution.* 8(24): 12641-12655.

<https://doi.org/10.1002/ece3.4688>

* Featured Media: [The New York Times](https://www.nytimes.com/2018/12/14/world/canada/montreal-coyote-hazing.html)

**Heppenheimer E,** Cosio DS!, Brzeski KE, Caudill D, Van Why K, Chamberlain MJ, Hinton JW, vonHoldt B. (2018). Demographic history influences spatial patterns of genetic diversity in recently expanded coyote (*Canis latrans*) populations. *Heredity.* 120:183-195[Editor’s Choice]. <https://doi.org/10.1038/s41437-017-0014-5>

vonHoldt B, **Heppenheimer E**, Petrenko V, Croonquist P, Rutledge LY. (2017). Ancestry-specific methylation patterns in admixed offspring from an experimental coyote and gray wolf cross. *Journal of Heredity*. 108: 341- 348 [cover image]. <https://doi.org/10.1093/jhered/esx004>

**Additional Manuscripts (submitted, in review, or in revision)**

**Heppenheimer E,** DeCandia AL, Brzeski KE, Braz C!, Rodgers D!, Johnson K!, d’Orgeix D, vonHoldt B*.* Genetic convergence among sky island populations of Slevin’s bunchgrass lizards (*Sceloporus slevini*)*.* In Revision.

**Non- Peer Reviewed Publications**

Book Chapter: Stahler DR, vonHoldt B, **Heppenheimer E**, Wayne RK (in press). “Yellowstone Wolves at the Frontiers of Genetic Research.” In Yellowstone Wolves: Reintroduction, Ecology, Behavior and Conservation. DW Smith, DR Stahler, DR MacNulty eds. University of Chicago Press.

Non-Fiction Essay: **Heppenheimer E**. (2015). “The Jumpers.” In Tortoise: A Journal of Writing Pedagogy, Issue 2: Rethinking the Gap Between Science and the Humanities. B Lax ed. Princeton University Writing Center. [PDF](https://tortoise.princeton.edu/2015/11/05/jumpers/).

**Academic Presentations**

Northeastern Natural History Conference 2019

Oral Presentation: *High genomic diversity and candidate genes under selection associated with range expansion in eastern coyote (*Canis latrans*) populations*

Evolution in Philadelphia Conference 2018

Poster Presentation: *High genomic diversity and candidate genes under selection associated with range expansion in eastern coyote (*Canis latrans*) populations*

Student’s Conference on Conservation Science- New York 2017

Poster Presentation: *Genetic variation in recently expanded eastern coyote* (Canis latrans) *populations*

The Wildlife Society Annual Meeting 2017

Oral Presentation: *Genetics to genomics: Insights into eastern coyote populations*

Northeastern Natural History Conference 2016

Oral Presentation: *Genetic survey of coyote* (Canis latrans*) expansion and hybridization in the eastern U.S.*

**Teaching Experience**

Teaching Assistantships

EEB 409: Evolution of Adaptive Systems, Princeton University 2017

EEB 346: Biology of Coral Reefs, Princeton University 2017

EEB 309: Evolutionary Biology, Princeton University 2014, 2015

BIO 305: Genetics, Franklin & Marshall College 2013

FND 161: The Nature of Disease, Franklin & Marshall College 2013

BIO 110: Evolution, Ecology, and Heredity, Franklin & Marshall College 2013

Additional Experiences

Biology Tutor, Quantitative and Science Center, Franklin & Marshall College 2014

Curriculum Developer, Intro to Biology Lab, Franklin & Marshall College 2012

Education Coursework, EDU 211: Foundations of Modern Education;

EDU 241: Psychological Foundation of Teaching, Millersville University 2012

**Scientific Outreach**

Podcast Guest on *ScienCentric* 2019

Solving a Red Wolf Mystery with Biologist Elizabeth Heppenheimer

Listen on [YouTube](https://www.youtube.com/watch?v=wow4qgMRMsM&list=PLDuFtA5Z6Bp-xBQPxxkryaBAAhX01xDgE&index=15&t=2s)

Open Labs Research Café, Princeton, NJ 2018

Oral Presentation for Local High School Students: Coyote Genomes

March for Science, Princeton, NJ 2017

Children’s Activity: How Genes Work Together to Build a Dog

**Professional Activities**

Reviewer for:

*Conservation Genetics*

*Evolutionary Applications*

*Animals*

English Language Editor with Boston Professional Group Editors 2019