

KRISTIN E. BRZESKI

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APPOINTMENTS

- 2018-present Assistant Professor of Wildlife Science and Conservation, School of Forest Resources and Environmental Science, Michigan Technological University.
2016-2018 Postdoctoral fellowship. Ecology and Evolutionary Biology, Princeton University.

EDUCATION

- 2015 PhD. Renewable Natural Resources: Wildlife, Louisiana State University.
2010 MS. Natural Resources: Wildlife, Humboldt State University.
2005 BS. Environmental Science, Loyola University Chicago. Cum Laude

CURRENT PROJECTS

- Biodiversity conservation and capacity building in Equatorial Guinea.
- Red wolf conservation genomics and ancestry.
- Epigenetic and fitness consequences of mercury exposure in songbirds.
- Application of environmental DNA and ancient DNA analyses for wildlife conservation and management.

RESEARCH INTERESTS

- Impact of environmental stress and disease on wildlife.
- Noninvasive methods to monitor and manage wildlife populations.
- Genetic management of small populations and threatened wildlife species.

TEACHING INTERESTS

- Mammalogy (FW4240) & Mammal Management
- Conservation Genetics (FW4128)
- Wildlife Conservation, Techniques, and Scientific Writing

RESEARCH GRANTS AND FELLOWSHIPS

Awarded

- October 2018-October 2020: McIntire Stennis SFRES Research Award, \$24,000: *monitoring wildlife response to variation in silviculture practices in the Upper Peninsula of MI.*
- October 2018: Martin Jurgensen Teaching Development Award Endowed Fund, \$2,500: *building a world-class osteology teaching collection at SFRES.*
- January 2016: National Science Foundation Postdoctoral Research Fellow, \$138,000: *ecological epigenetics and landscape genomics.*
- March 2016: USFWS Wildlife Without Border, \$50,000: *Protected Areas monitoring and capacity building in Africa.*
- May 2015: Stone Hill Education, \$15,000: *Equatorial Guinea wildlife research and science education.*
- 2014: USFWS Flex Fund, \$12,000: *inbreeding and disease monitoring in endangered red wolves.*

- May 2013: National Science Foundation Doctoral Dissertation Improvement Grant, \$17,000: *immunogenetic variation in wild canids*.
- September 2012: Point Defiance Zoo & Aquarium Grant, \$12,000: *predator conservation and disease management*.
- March 2012: American Society of Mammalogists Grant-in-Aid, \$1,500: *ancient canid DNA analyses*.
- August 2010- December 2015: McIntire-Stennis Fellowship recipient, \$500,000.

HONORS, AWARDS, AND SCHOLARSHIPS

- December 2016: Distinguished Dissertation Award, *College of Agriculture, Louisiana State University*.
- May 2015: Clark M. Hoffpauer Memorial Graduate Student of the Year Scholarship, *Department of Renewable Natural Resources, Louisiana State University*.
- September 2014: Honorable mention Best Student Presentation, *Louisiana Association of Professional Biologists annual meeting*.
- August 2013-2014: Rockefeller Louisiana State Wildlife Scholarship, *Louisiana Department of Wildlife and Fisheries*.
- June 2011: Glasgow Travel Grant, *Department of Renewable Natural Resources, Louisiana State University*.
- December 2010: Patricia O. McConkey Outstanding Graduate Student recipient, *Humboldt State University*
- December 2010: Wildlife Graduate Student of the Year, *Humboldt State University*.
- April 2010: Richard J. Guadagno Memorial Scholarship recipient, *Humboldt Bay National Wildlife Refuge*.
- May 2009: Stanley W. & Lorene J. Harris Scholarship recipient, *Wildlife Department, Humboldt State University*.
- May 2009: Marin Rod & Gun Club Annual Scholarship recipient, *Marin County Rod and Gun club, CA*.
- September 2008: Student Travel Award recipient, *The Wildlife Society Western Section*.
- August 2008: Joseph S. Woolford Scholarship recipient, *Eureka Rotary*.
- October 2007: Women's Enrichment Fund Award recipient, *Humboldt State University*.
- May 2005: Track Team Leadership Award recipient, *Loyola University of Chicago*.
- May 2004: Female Cross Country/Track & Field Scholar Athlete of the Year, *Loyola University of Chicago*.

PUBLICATIONS

Manuscripts peer reviewed:

2019

15. DeCandia, A. **K. Brzeski**, E. Heppenheimer, C. Carol, G. Camenisch, P. Wandeler, C. Driscoll, B. vonHoldt. 2019. Urban colonization through multiple genetic lenses: The city-fox phenomenon revisited. *Ecology and Evolution*. DOI: 10.1002/ece3.4898

2018

14. Heppenheimer E. *, **K. Brzeski***, R. Wooten, W. Waddell, Rutledge, M. Chamberlain, D. Stahler, J. Hinton, B. vonHoldt. 2018. Rediscovery of red wolf ghost alleles in a canid

population along the American Gulf Coast. *Genes*. 9(12):618. *co-lead & corresponding author.

13. Heppenheimer, E., **K. Brzeski**, J. Hinton, B. Patterson, L. Rutledge, A. DeCandia, T. Wheeldon, S. Fain, P. Hohenlohe, R. Kays, B. White, B. vonHoldt. 2018. 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.
 12. vonHoldt, B., **K. Brzeski**, D. Wilcove, L. Rutledge. 2018. Redefining the impact of admixture and genomics in endangered species conservation. *Conservation Letters*. 11(2): e12371 doi:10.1111/conl.12371
 11. Heppenheimer, E., R. Harrigan, L. Rutledge, K. Koepfli, A. DeCandia, **K. Brzeski**, J. Benson, T. Wheeldon, B. Patterson, R. Kays, P. Hohenlohe, B. vonHoldt. 2018. Population genomic analysis of North American eastern wolves (*Canis lycaon*) supports their conservation priority status. *Genes*. 9(12):606.
 10. Heppenheimer E., D. Cosio, **K. Brzeski**, D. Caudill, M. Chamberlain, J. Hinton, B. vonHoldt. 2018. Demographic history influences spatial patterns of genetic diversity in recently expanded coyote (*Canis latrans*) populations. *Heredity*. 120:183-195. doi:10.1038/s41437-017-0014-5.
- 2017
9. Cooper, J., O. Johnson, T. Davis, R. Terrill, **K. Brzeski**, J. Wolfe., A. Etingüe, L. Powell. 2017. Notes on the distribution of the avifauna of Bioko Island, Equatorial Guinea, with one new country record. *Malimbus*. 39(1):1-15.
- 2016
8. **Brzeski, K.**, J. Wolfe., J. Cooper, L. Powell. 2016. Camera sighting of Congo Clawless otter in the midst of rapid development on mainland Equatorial Guinea. *IUCN Otter Specialist Group Bulletin*. 33 (1), 96-101.
 7. **Brzeski, K.**, M. DeBiasse, D. Rabon, M. Chamberlain, S. Taylor. 2016. Mitochondrial DNA variation in Eastern pre-Columbian canids. *Journal of Heredity*, 107:287-293.
 6. Hinton, J., **K. Brzeski**, D. Rabon, M. Chamberlain. 2016. Effects of anthropogenic mortality on red wolf breeding pairs: Implications for red wolf recovery, *Oryx*:1-8. doi:10.1017/S0030605315000770
- 2015 & older
5. **Brzeski, K.**, B. Bartel, W. Waddell, K. Wolf, D. Rabon, S. Taylor. 2015. Infectious disease and red wolf conservation: assessment of disease occurrence and associated risks. *Journal of Mammalogy*, 96:751-761.
 4. **Brzeski, K.**, D. Rabon, M. Chamberlain, L. Waits, S. Taylor. 2014. Inbreeding and inbreeding depression in endangered red wolves (*Canis rufus*). *Molecular Ecology*, 23:4241-4255.
 3. **Brzeski, K.**, M. S. Gunther, J. Black. 2013. Evaluating river otter demography using noninvasive genetic methods. *Journal of Wildlife Management*, 77:1523-1531.
 2. Wolfe, J, E. Johnson, P. Stouffer, F. Owens, E. DeLeon, E. Liffmann, **Brzeski, K.**, et al. 2013. Annual survival of birds captured in a habitat island bordered by the urban matrix of Baton Rouge, Louisiana. *South Eastern Naturalist*, 12:492-499.
 1. Wolfe, J., E. Johnson, P. Stouffer, E. Liffmann, E. DeLeon, K. Mokross, **Brzeski, K.** 2013. Brown Thrasher (*Toxostoma rufum*) with bill deformity captured at Bluebonnet Swamp Nature Center, Baton Rouge, LA. *Journal of Louisiana Ornithology*, 9:27-30.

Manuscripts in review:

- **Brzeski, K.**, S. Taylor. *In review*. Endangered red wolves (*Canis rufus*) are not immunocompromised despite being depauperate at immune genes when compared to sympatric coyotes (*Canis latrans*). *Heredity*.
- Diogo, F., L. Torrent, J. Wolfe, **K. Brzeski**, L. Powell. *In review*. First record of a piebald Large-eared Slit-faced Bat, *Nycteris hispida* (Chiroptera: Nycteridae) from Equatorial Guinea, Central Africa. *Mammalia*.
- Heppenheimer E., A. DeCandia, **K. Brzeski**, C. Braz, D. Rogers, K. Johnson, C. d’Orgeix, B. vonHoldt. *In review*. Genetic convergence among disjunct sky island populations of Slevin’s bunchgrass lizards (*Sceloporus slevin*). *Conservation Genetics*.
- vonHoldt, B., E. Heppenheimer, I. Koch, **K. Brzeski**, K. Cassidy, D. Stahler, J. Sinsheimer. *In review*. Heritable aggression in a pedigreed gray wolf population is associated with neurogenetic variation. *Molecular Ecology*.

CONTRIBUTED PAPERS AND POSTERS

17. **Brzeski, K.** October 2018. Red wolves rediscovered! Now what? The Wildlife Society Annual Conference, Cleveland, OH. **Invited SPARK Speaker*.
16. **Brzeski, K.**, J. Wolfe, F. Eyono, L. Powell. October 2018. Education, research, and passive protection to conserve wildlife and defend protected areas in Central Africa. The Wildlife Society Annual Conference, Cleveland, OH. **Invited Symposium Speaker*.
15. **Brzeski, K.** September 2017. Beyond population genomics- ecological epigenetics and application to wildlife management. The Wildlife Society Annual Conference, Albuquerque, NM. **Symposium Organizer*.
14. **Brzeski, K.**, D. Cristol, B. vonHoldt. May 2017. Mercury Rising: Epigenetic response to mercury exposure in songbirds. Canadian Society of Ecology and Evolutionary Biology, Victoria, British Columbia. **Invited Symposium Speaker*
13. **Brzeski, K.**, M. Chamberlain, S. Taylor. October 2016. Inbreeding and mate-choice in wild canids. The Wildlife Society Annual Conference, Raleigh, NC.
12. Johnson, E., **K. Brzeski**, S. Duke-Sylvester, A. Jackson, et al. September 2016. The Louisiana Bird Observatory 6 years of avian monitoring and a platform for scientific investigations. LA Association of Professional Biologists’ Symposium, Baton Rouge, LA.
11. **Brzeski, K.**, J. Wolfe, E. Johnson, A. Jackson, C. Eagles-Smith, B. vonHoldt. August 2016. Blood-mercury contamination, carotenoid-based plumage coloration, and epigenetics. The North American Ornithological Conference, Washington DC.
10. **Brzeski, K.** April 2016. Contemporary conservation challenges for endangered red wolves. Northeast Natural History Conference, Springfield, MS. **Invited Symposium Speaker*
9. **Brzeski, K.**, M. Chamberlain, S. Taylor. August 2015. Genetic variation at MHC and TLR genes and their relationship to disease in red wolves and sympatric coyotes. The International Congress for Conservation Biology, Montpellier, France.
8. **Brzeski, K.**, M. Chamberlain, S. Taylor. May 2015. Endangered red wolves: assessing inbreeding, immune gene variation, and disease. Wildlife & Fisheries Science Symposium, Humboldt State University, Arcata, CA.

7. **Brzeski, K.**, B. Bartel, W. Waddell, K. Wolf, D. Rabon, S. Taylor. October 2014. Infectious disease and red wolf conservation: baseline pathogen prevalence. The Wildlife Society Annual Conference, Pittsburgh, PA.
6. **Brzeski, K.**, D. Rabon, M. Chamberlain, S. Taylor. September 2014. Endangered red wolves: historic and contemporary threats. Louisiana Association of Professional Biologist Fall Symposium, Baton Rouge, LA.
5. **Brzeski, K.**, D. Rabon, M. Chamberlain, S. August 2013. MHC variation and its effects on red wolf fitness. Annual Conference of the European Society of Evolutionary Biology, Lisbon, Portugal.
4. **Brzeski, K.**, M. S. Gunther. November 2011. Non-invasive approach evaluating river otter abundance and sociality. The Wildlife Society Annual Conference, Waikoloa, HI.
3. **Brzeski, K.**, D. Rabon, M. Chamberlain, S. Taylor. November 2011. Inbreeding in wild wolves. The Wildlife Society Annual Conference, Waikoloa, HI.
2. **Brzeski, K.**, M. Gunther. May 2009. Non-invasive river otters genetics. Wildlife & Fisheries Science Symposium, Humboldt State University, Arcata, CA.
1. **Brzeski, K.**, J. Terry, J. Black, M. Gunther. October 2008. Using non-invasive techniques to study stress and genetics in river otters. The Wildlife Society Western Section's Conference, Redding, CA.

TEACHING EXPERIENCE

- Feb. 2019 Invited instructor for Ecological Bioinformatics Workshop – Yaoundé, Cameroon, Biodiversity Initiative.
- Fall 2018 Mammalogy lecture and lab – Michigan Technological University
- Fall 2017 Guest Lecturer, Princeton University– Invited lecturer for Evolutionary Biology.
- Fall 2017 Guest Lecturer, Humboldt State University– Invited lecturer for Wildlife Techniques.
- 2015, 2016 Program Developer, Bioko and Oyalá, Equatorial Guinea– Creator and instructor of a wildlife ecology, conservation, and techniques workshop taught to Equatoguinean university students and government biologists.
- Fall 2015 Lecturer, Humboldt State University– Instructor for Wildlife Ecology & Management for non-majors.
- 2012-2014 Instructor, LSU 4-H Clover College– Designed and taught 4-H summer course to introduce Louisiana high school students to wildlife conservation and management.
- Fall 2012 Lecturer, Louisiana State University– Instructor for Introduction to Natural Resources, a seminar course with weekly lectures, discussion, and writing assignments.
- Fall 2011 Guest Lecturer, Louisiana State University– Invited lecturer for Conservation Genetics.
- 2009-2010 Graduate Teachers Assistant, Humboldt State University– Teaching assistant in Department of Wildlife, responsible for lab instruction, grading, office hours, and assisting with class projects.
- 2009-2010 Elderhostel instructor, Humboldt State University– Lecturer for adult learning course on ecology, natural history, and behavior of North American river otters.

SERVICE AND OUTREACH

- 2018-2020 Vice-President elect, The Wildlife Society's Molecular Ecology Working Group
- 2016-present IUCN Otter Specialist Working Group member
- 2016-present African Otter Network member
- 2016-present Louisiana Bird Observatory Scientific Advisory Board Member
- 2015-present Biodiversity Initiative Co-founder
- 2014-present Founding board member of The Wildlife Society's Molecular Ecology Working Group
- 2011-2014 Conservation outreach volunteer and natural history instructor at Bluebonnet Swamp Nature Center summer camps, Baton Rouge, LA.
- 2010-2015 Primary bird bander and founding member of Louisiana Bird Observatory, Baton Rouge, LA.
- 2008-2010 Treasurer/Co-President of HSU Wildlife Graduate Student Society, Arcata, CA.

INVITED PRESENTATIONS AND SEMINARS

- January, 2019: Guest Seminar Speaker, National University of Equatorial Guinea, Malabo, EG. *Camera traps for Protected Area's management.*
- October, 2018: Wolf Conservation Center, South Salem, NY. *The American Red Wolf: disease, genetics, and the future.*
- October, 2017: Conservation Science Seminar, Princeton University, NJ. *Conservation action in Equatorial Guinea.*
- June, 2017: Renewable Natural Resources invited Seminar, Louisiana State University, LA. *Wildlife ecology & extension from Central Africa to the Gulf Coast.*
- April, 2016: Ecology and Evolution Seminar, Princeton University, NJ. *Immunogenetic variation and disease susceptibility in red wolves.*
- November, 2015: Ecoseries, Wildlife Department, Humboldt State University, Arcata, CA. *An introduction to the red wolf; disease, genetics, and introgression.*
- March, 2015: Redwood Region Audubon Society, Eureka, CA. *Conservation of an endemic America predator: Endangered red wolves.*
- January, 2015: Museum of Natural Science, Louisiana State University, Baton Rouge, LA. *Endangered red wolves: ecology, evolution, and introgression.*
- October, 2014: Smithsonian Conservation Biology Institute, Washington D.C. *Endangered red wolves: inbreeding, MHC, and the future.*
- July, 2013: AZA Species Survival Plan Meeting, *C. rufus gregoryi*, Homosassa Springs, FL. *Inbreeding, mate choice, and immunocompetence in wild red wolves.*

RELEVANT PROFESSIONAL EXPERIENCE

- 2010-present Invited Reviewer for: Animal Conservation, Biological Conservation, Forests, Journal of Heredity, Journal of Mammalogy, Journal of Wildlife Management, Molecular Ecology, Molecular Ecology Resources, Polish-Lithuanian Funding Initiative Grant Proposal, Scientific Reports, ZooKeys.
- 2010-2015 Graduate Research Assistant, Louisiana State University, Baton Rouge, LA.
- 2007-2009 Wildlife Game Pens Graduate Technician, Humboldt State University, Arcata, CA.
- 2005-2007 USDA Animal and Plant Health Inspection Service Tree Climber, Chicago, IL.
- 2004 Student Conservation Association Field Intern, Sierra Nevada Mountain Range, CA.
- 2003 Women in Science Enabling Research Intern, Loyola University Chicago, IL.

2002 Conservation Department Intern, Zoological Society of Milwaukee, WI.

POPULAR PRESS COVERAGE

National Press for rediscovering red wolf ancestry on the Gulf Coast in December 2018:

Heppenheimer E., K. Brzeski, R. Wooten, W. Waddell, Rutledge, M. Chamberlain, D. Stahler, J. Hinton, B. vonHoldt. 2018. Rediscovery of red wolf ghost alleles in a canid population along the American Gulf Coast. Genes. 9(12):618. *co-lead & corresponding author.*

<http://wildlife.org/hybrids-and-maybe-a-full-red-wolf-found-in-former-range/>

<https://www.sciencedaily.com/releases/2018/12/181211122449.htm>

<https://www.mtu.edu/news/stories/2018/december/a-future-for-red-wolves-may-be-found-on-galveston-island.html>

<https://www.mnn.com/earth-matters/animals/blogs/red-wolf-dna-texas-canines>

<https://www.princeton.edu/news/2018/12/18/red-wolf-dna-found-mysterious-texas-canines>

https://www.galvnews.com/news/article_4f9a4cf1-d990-52fa-9ac5-8afad7dd6079.html

Audubon Magazine, July/August 2016, Biodiversity Initiative featured on cover.

<http://www.audubon.org/magazine/summer-2016/land-lost-birds-searching-life-forests-bioko#8>.

The Magazine of Humboldt State University, Spring 2014, featured river otter research.

<http://magazine.humboldt.edu/spring14/critter-census>

The North Coast Journal, 20 March 2014, featured river otter research.

<http://www.northcoastjournal.com/humboldt/otter-spotter/Content?oid=2516458>

The Wildlife Professional, Spring 2014. Science in Short, featured river otter manuscript.

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science, American Society of Mammalogy, Society of Conservation Biology, The Wildlife Society.