

Emily E. Puckett

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<https://PuckettResearch.org/>

EDUCATION

- 2015 PhD University of Missouri, Columbia, MO; Biological Sciences (Advisor: LS Eggert) Certificate: Science and Public Policy, 2013
- 2008 MS State University of New York- College of Environmental Science and Forestry, Syracuse, NY; Environmental and Forest Biology (Advisor: LB Smart)
- 2004 BS North Carolina State University, Raleigh, NC; Botany (*summa cum laude*)

RESEARCH EXPERIENCE

- 2018-*present* Assistant Professor: University of Memphis, Memphis, TN
- 2017-2018 Postdoctoral Associate: Michigan State University, East Lansing, MI (PI: G Bradburd)
- 2015-2017 Postdoctoral Associate: Fordham University, Bronx, NY (PI: J Munshi-South)
- 2010-2015 Graduate Assistant: University of Missouri, Columbia, MO (Advisor: LS Eggert)
- 2008-2010 Research Associate III: Edenspace Systems Corporation, Chantilly, VA
- 2006-2008 Research Project Assistant: SUNY- College of Environmental Science and Forestry, Syracuse, NY (Advisor: LB Smart)
- 2005-2006 Research Assistant: University of North Carolina, Chapel Hill, NC (PI: CE Mitchell)

PUBLICATIONS

- Puckett, EE** and IS Davis. (*In Review*) Spatial patterns of genetic diversity in eight bear (Ursidae) species.
- Sjodin, B, **EE Puckett**, R Irvine, G Howald, J Munshi-South, M Russello. (*Accepted*) Global origins of invasive brown rats (*Rattus norvegicus*) in the Haida Gwaii archipelago. *Biological Invasions*.
- Puckett, EE**, E Sherratt, M Combs, E Carlen, W Harcourt-Smith, and J Munshi-South. 2020. Variation in brown rat cranial shape shows directional selection in nasal and tooth row lengths over 120 years in New York City. *Ecology and Evolution* 10(11): 4739-4748.
- Puckett, EE**, D Orton, and J Munshi-South. 2020. Integrating phylogeography and zooarchaeology of commensal rats to understand connections between human societies. *BioEssays* 42: 1900160.
- Cover Article

- Puckett, EE, E Magnussen, LA Khyllap, TM Strand, A Ludkvist, and J Munshi-South.** 2020. Genomic analyses reveal three independent introductions of the invasive brown rat (*Rattus norvegicus*) to the Faroe Islands. *Heredity* 124 (1): 15-27.
- Cover Article
 - Media Coverage: Heredity Podcast
- Burkhart, JJ, **EE Puckett**, CJ Kroese, CN Sholy, RD Semlitsch, and LS Eggert. 2019. Post-Pleistocene differentiation in a Central Interior Highlands endemic salamander. *Ecology and Evolution* 9(19): 11171-11184.
- Puckett, EE and J Munshi-South.** 2019. Brown rat demography reveals pre-commensal structure in eastern Asia prior to expansion into Southeast Asia. *Genome Research* 29: 762-770.
- Puckett, EE, O Micci-Smith, and J Munshi-South.** 2018. Genomic analyses identify multiple Asian origins and deeply diverged mitochondrial clades in inbred brown rats (*Rattus norvegicus*). *Evolutionary Applications* 11 (5): 718-726.
- Kristensen, TV, **EE Puckett**, EL Landguth, JL Belant, JT Hast, C Carpenter, JL Sajecki, J Beringer, M Means, JT Cox, LS Eggert, D White Jr, KG Smith. 2018. Genetic structuring in American black bears (*Ursus americanus*) can be explained by more than female philopatry: interactions of density, genetic diversity, and sex-biased dispersal. *Heredity* 4: 329-341.
- Cover Article
- Combs, M, **EE Puckett**, JR Richardson, D Mims, and J Munshi-South. 2018. Spatial population genomics of the brown rat (*Rattus norvegicus*) in New York City. *Molecular Ecology* 27: 83-98.
- Media Coverage: NPR, The Atlantic, Popular Science
- Puckett, EE.** 2017. Variability in total project and per sample genotyping costs under varying study designs including with microsatellites or SNPs to answer conservation genetic questions. *Conservation Genetics Resources* 9 (2): 289-304.
- Puckett, EE, J Park, M Combs, MJ Blum, JE Bryant, A Caccone, F Costa, EE Deinum, A Esther, CG Himsworth, PD Keightley, A Ko, A Lundkvist, LM McElhinney, S Morand, J Robins, J Russell, TM Strand, O Suarez, L Yon, and J Munshi-South.** 2016. Global population divergence and admixture of the brown rat (*Rattus norvegicus*). *Proceedings of the Royal Society B* 283: 20161762.
- Media Coverage: New York Times, Popular Science, and Business Insider
- Puckett, EE, DC Kesler, and DN Greenwald.** 2016. Taxonomic class, petitioning agency, and lawsuits affect time spent awaiting listing under the Endangered Species Act. *Biological Conservation* 201: 220-229.
- Media Coverage: Huffington Post
- Wilton, CM, J Beringer, **EE Puckett**, LS Eggert, and JL Belant. 2016. Spatio-temporal capture-recapture biases in black bear detection probability. *Journal of Mammalogy* 97: 266-273.
- Puckett, EE and LS Eggert.** 2016. Comparison of SNP and microsatellite genotyping panels for spatial assignment of individuals to natal range: A case study using the American black bear (*Ursus americanus*). *Biological Conservation* 193: 86-93.

- Puckett, EE, PD Etter, EA Johnson, and LS Eggert.** 2015. Phylogeographic analyses of American black bears (*Ursus americanus*) suggest four glacial refugia and complex patterns of post-glacial admixture. *Molecular Biology and Evolution* 32: 2338-2350.
- Wilton, CM, **EE Puckett**, J Beringer, B Gardner, LS Eggert, and JL Belant. 2014. Trap array configuration influences estimates and precision of black bear density and abundance. *PLoS One* 9(10): e111257.
- Puckett, EE, TV Kristensen, CM Wilton, SB Lyda, KV Noyce, PM Holahan, DM Leslie, Jr, J Beringer, JL Belant, D White, Jr, and LS Eggert.** 2014. Influence of drift and admixture on population structure of American black bears (*Ursus americanus*) in the Central Interior Highlands, USA 50 years after translocation. *Molecular Ecology* 23: 2414-2427.
- Puckett, EE, MJ Serapiglia, AM DeLeon, S Long, R Minocha, and LB Smart.** 2012. Differential expression of genes encoding phosphate transporters contributes to arsenic tolerance and accumulation in shrub willow (*Salix* spp.). *Environmental and Experimental Botany* 75: 248-257.
- Hudson, CM, **EE Puckett**, M Bekaert, JC Pires, and GC Conant. 2011. Selection for higher gene copy number after different types of plant gene duplication. *Genome Biology and Evolution* 3: 1369-1380.
- Mitchell, CE, D Blumenthal, V Jarosik, **EE Puckett**, P Pysek. 2010. Controls on pathogen species richness in plants' introduced and native ranges: roles of residence time, range size and host traits. *Ecology Letters* 13 (12): 1525-1535.

BOOK CHAPTERS

- Puckett, EE and LS Eggert.** 2020. "Using genetics in the conservation management of the American black bear (*Ursus americanus*) in Missouri." IN: J Ortega and JE Maldonado (eds.), *Conservation Genomics in Mammals: integrative research using novel approaches*. Springer, New York.

MANUSCRIPTS

- Puckett, EE, S Murphy, and G Bradburd.** (*In Prep*) Phylogeographic analysis delimits three evolutionary significant units of least chipmunks and identifies unique genetic diversity within *Neotamias minimus atristriatus*, an imperiled population.

DISSERTATION & THESIS

- Phylogeography and Population Genomics of the American Black Bear (*Ursus americanus*). PhD Dissertation, University of Missouri, 2015, p 190.

- Molecular Basis for Differential Uptake and Sensitivity to Arsenic among Clones of Shrub Willow (*Salix* spp.). MS Thesis, SUNY-ESF, 2008, p 168.

GRANTS

- 2020 College of Arts and Sciences, University of Memphis
Using Whole Genome Resequencing to Identify Low Diversity Regions of the Genome in Louisiana Black Bear (*Ursus americanus luteolus*) Subpopulations to Target during Genetic Rescue- \$7,181
- 2018 New Mexico Department of Game and Fish and US Fish and Wildlife Service
Range-wide assessment of genomic diversity, demography, and subspecies status for the least (*Tamias minimus*) and Colorado (*T. quadrivittatus*) chipmunks- \$52,664

RESEARCH TALKS

Invited

- Canadian Society for Ecology and Evolution: Edmonton, AB *Canceled Covid-19*
- University of Mississippi, Biology Department: Oxford, MS 2019
- Association of Southeastern Biologists: Memphis, TN 2019
- University of Memphis: Memphis, TN 2018
- Evolution Meeting, Evolution in Urban Environments Symposium: Portland, OR 2017
- Yale University, DNA Analysis Facility: New Haven, CT 2017
- 24th International Conference on Bear Research & Management: Anchorage, AK 2016
- Fordham University, Biology Department: Bronx, NY 2016
- Missouri Chapter of The Wildlife Society: Bois D'Arc Conservation Area, MO 2013
- Missouri Department of Conservation: Columbia, MO 2013

Contributed

- International Bear Association: Kalispell, MT *Canceled Covid-19*
- Evolution Meeting: Austin, TX 2016
- SMBE-GAP Genetics of Admixed Populations: San Antonio, TX 2016
- NY Area Population Genomics Workshop: Princeton, NJ 2016
- University of Missouri, Life Sciences Fellows: Columbia, MO 2014
- Evolution Meeting: Snowbird, UT 2013
- University of Missouri, EcoLunch: Columbia, MO 2013

Public

- Biology on Tap, Lansing, MI 2018

POSTER PRESENTATIONS

- Evolution Meeting: Providence, RI 2019
- 24th Eastern Black Bear Workshop: Potosi, MO 2019
- 13th Western Black Bear Workshop: Grand Junction, CO 2018
- 23rd Eastern Black Bear Workshop: Ligonier, PA 2017
- Bronx Science Consortium: Bronx, NY 2016
- Ecological and Evolutionary Genomics, Gordon Research Conference: Biddeford, ME 2015
- 12th Western Black Bear Workshop: Canamore, AB 2015

22 nd Eastern Black Bear Workshop: Louisville, MS	2015
12 th Ecological Genomics Symposium: Kansas City, MO	2014
Life Sciences Week, University of Missouri: Columbia, MO (3 rd place- Best EEB Poster)	2014
11 th Ecological Genomics Symposium: Kansas City, MO	2013
Life Sciences Week, University of Missouri: Columbia, MO	2013
10 th Ecological Genomics Symposium: Kansas City, MO	2012
Evolution Meeting: Ottawa, ON	2012
11 th Western Black Bear Workshop: Coeur d'Alene, ID	2012
Life Sciences Week, University of Missouri: Columbia, MO	2012
Ecological and Evolutionary Genomics, Gordon Research Conferences: Biddeford, ME	2011
20 th Eastern Black Bear Workshop: Hendersonville, NC	2011
Northeast Section, American Society of Plant Biologists: Storrs, CT	2008
Symposium in Plant Biology, University of Massachusetts: Amherst, MA	2007
Ecological Society of America: San Jose, CA	2007

TEACHING EXPERIENCE

Instructor on Record- University of Memphis

Spring	BIOL 3072: General Genetics
Fall- Even Yrs	BIOL 7017/8017: Topics in Evolution- Speciation
Spring 2020	UNHP 1100: Honors Forum: Women in Science

Guest Lectures

2019	Phylogeography, BIOL 4096: Molecular Ecology, University of Memphis
2017	RADseq, American Museum of Natural History
2017	Molecular Phylogenetics, BISC 3244: Evolution, Fordham University
2017	Natural Selection, BISC 3244: Evolution, Fordham University
2016	Genomic Evolution, BISC 7501: Population Biology, Fordham University
2015	Evolution of Sex, BISC 3244: Evolution, Fordham University
2013	Phylogeography, BIO 4983: Molecular Ecology, University of Missouri

Teaching Assistant

2014-2015	Teaching Assistant, BIO 2200: General Genetics, University of Missouri
2008 (Spring)	Teaching Assistant, EFB 531: Plant Physiology Laboratory, SUNY-ESF
2003 (Fall)	Teaching Assistant, BCH 451: Principles of Biochemistry, NC State University

GRADUATE MENTORING

2020-present	Heather Clendenin
2019-present	Matthew Pollard

GRADUATE COMMITTEE SERVICE

2018-present	Avery Tucker (PI: Shawn Brown)
2018-2019	Caroline Melton (PI: Bernie Daigle)
2019-2020	Steven M. Ballou (PI: Jennifer Mandel)

2020-present Paige Murin (PI: Jennifer Mandel)

UNDERGRADUATE MENTORING (*- denotes co-author)

2020-present Samhitha Swarna

2020-present Heather Thomasovich

2020 Ravi Lipman

2018-present Isis Davis*

Global spatial genetic variation across Ursidae

Oral talk at U of Memphis Student Research Forum 2020

Oral talk at TLSAMP Annual Research Conference 2020

2017- 2018 Sarah Frocillo

Variation in isolation-by-distance in marine species along the Scotian shelf

Presented poster at University Undergraduate Research and Arts Forum 2018

2016- 2017 Olivia Micci-Smith*

Geographic origin of inbred brown rats using genomic data

Presented poster at Evolution 2017

Summer 2016 Destiny Mims*

Sex-biased dispersal of brown rats in New York City

Presented poster at Evolution 2017

2011- 2013 Michelle Anderson

Geographic variation in *CLOCK* and *FTO* in American black bears

Presented poster at the University of Missouri- Life Sciences Week 2013

2011- 2012 Jessica (Philbrick) Wayhart

Mitochondrial phylogeography of American black bears

Presented poster at the University of Missouri- Life Sciences Week 2012

2007- 2008 Alyssa DeLeon*

Molecular analysis of genes related to arsenic uptake and detoxification in sensitive and tolerant varieties of shrub willow (*Salix* spp.)

Presented poster at American Society of Plant Biologists 2009

PROFESSIONAL SERVICE

Journal Reviewer: *Evolutionary Applications*, *Heredity*, *Molecular Ecology Resources*, *Journal of Biogeography*, *Biological Journal of the Linnean Society*, *Royal Society: Proceedings B*, *Genome*, *Biological Conservation*, *Conservation Genetics*, *Animal Conservation*, *Journal of Mammalogy*, *Scientific Reports*, *Ursus*, *Biological Invasions*, *Environmental Science and Pollution Research*, *Axios Reviews*

2019-present Associate Editor, *Ecology and Evolution*

2019, 2020 Panelist, NSF advisory panel

2016-present Member, IUCN Bear Specialist Group

2014-2015 Member, Systems Biology Search Committee, Biological Sciences, U Missouri

2011-2014 Member, Biology Seminar Organizing Committee, Biological Sciences,
U Missouri

- 2013 Graduate Student Representative, Divisional Council, Biological Sciences,
U Missouri
- 2010-2015 Secretary (2011-2013) and Member, Biology Graduate Student Association,
U Missouri
- 2008 Member, Graduate Advisory Council, Dept. of Environmental and Forest
Biology, SUNY-ESF
- 2001-2004 President, Botany Club, NC State University

U MEMPHIS BIOLOGICAL SCIENCES DEPARTMENT COMMITTEE SERVICE

- 2019-*present* Co-chair, Seminar Committee
- 2019-*present* Founding Member, Center for Biodiversity Research Advisory Board
- 2018-*present* Member, Communications Committee

OUTREACH

- 2013-*present* Founder and blogger at WildlifeSNPits (<http://wildlifesnpits.wordpress.com>)
As of October 2018: 53 posts as EEPuckett & 126 posts as WildlifeSNPits
- 2002-2004 Volunteer, Young Scientists Program: Weekly science tutoring with a fourth
grade student in Raleigh, NC

PATENTS

Gampala, S, D Lee, **EE Puckett**, R Nair, and F Chumley. Poplar genomic DNA sequences that regulate gene expression in plants and uses thereof. Patent Filing date: June 4, 2009.

SCHOLARSHIPS AND HONORS

- 2012 TransWorld Airlines Scholarship, U Missouri
- 2010-2014 Life Science Fellow, U Missouri
- 2008, 2006 Lowe-Wilcox Graduate Scholarship, Department of Environmental and Forest
Biology, SUNY-ESF
- 2004 Outstanding Botany Senior Award, Department of Botany, NC State University
- 2004 University Scholars Program, NC State University
- 2004 Honors Program, College of Agriculture and Life Sciences, NC State University
- 2003 Larry A. Whitford Scholarship, Department of Botany, NC State University
- 2001 Promising Young Botanist Award, Department of Botany, NC State University

PROFESSIONAL AFFILIATIONS

Society for the Study of Evolution
International Association for Bear Research and Management
Phi Beta Kappa