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DEPARTMENT OF BIOLOGY
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EDUCATION

- 2017 Ph.D Biology, University of New Mexico (with distinction)
Pattern and Process in the Radiation of Ground-dwelling Squirrels
- 2011 M.S. Biology, University of North Carolina Wilmington
Late Quaternary Paleoecology of Two High-Elevation Mammal Species from the Southern Rocky Mountains, Colorado
- 2004 B.S. Biology, Appalachian State University

RESEARCH FOCI

mammalogy, biodiversity informatics, phylogenetics/omics, speciation, hybridization, phenotypic evolution, life history variation, global change, specimen-based research

APPOINTMENTS

- University of Florida, Florida Museum of Natural History
2019 - present Adjoint Curator
2018 - 2019 NSF Postdoctoral Fellow (*Sponsors: Rob Guralnick, David Blackburn, David Reed*)
2017 - 2018 Postdoctoral Associate
- University of New Mexico, Museum of Southwestern Biology
2018 - present Research Assistant Professor
2014 Curatorial Assistant, Division of Mammals
2011 - 2014 Curatorial Assistant, Division of Genomic Resources
- Smithsonian Institution, National Museum of Natural History
2015 Peter Buck Predoctoral Fellow (*Sponsors: Kristofer Helgen, Gene Hunt*)
- North Carolina Museum of Natural Sciences
2006 - 2009 Collection Technician, Mammalogy Division

PUBLICATIONS

- 16) McLean BS, Cook JA, Durden LA, Hoberg EP, Guralnick RP. 2019. The next chapter of human-plague science. *Proceedings of the National Academy of Sciences* 116:14411-14412. DOI: doi.org/10.1073/pnas.1908836116
- 15) Durden LA, Robinson C, Cook JA, **McLean BS**, Nyamsuren B, Greiman SE. 2019. A new species of sucking louse from the long-tailed ground squirrel, *Urocitellus undulatus*, from Mongolia, with a key to species, and a review of host associations and geographical distributions of members of the Genus *Linognathoides* (Psocodea: Anoplura: Polyplacidae). *Journal of Parasitology* 105:469-479. DOI:doi.org/10.1645/18-198
- 14) **McLean BS**, Barve N, Flenniken J, Guralnick RP. 2019. Evolution of litter size in North America's most common small mammal: An informatics-based approach. *Journal of Mammalogy* 100:365-381 DOI: 10.1093/jmammal/gyz057
- 13) **McLean BS**, Bell KC, Allen JM, Helgen KM, Cook JA. 2019. Impacts of inference method and dataset filtering on phylogenomic resolution in a rapid radiation of ground squirrels (Xerinae: Marmotini). *Systematic Biology* 68:298-316. DOI:10.1093/sysbio/syy064
- 12) Dunnun JD, **McLean BS**, Dowler RC, ASM Systematic Collections Committee. 2018. Mammal collections of the Western Hemisphere - A survey and directory of collections. *Journal of Mammalogy* 99:1307-1322. doi: 10.1093/jmammal/gyy151
- 11) **McLean BS**. 2018. *Urocitellus parryii* (Rodentia: Sciuridae). *Mammalian Species* 50:84-99. doi:10.1093/mspecies/sey011

- 10) **McLean BS**, Nyamsuren B, Tchabovsky A, Cook JA. 2018. Impacts of late Quaternary environmental change on the long-tailed ground squirrel (*Urocitellus undulatus*) in Mongolia. *Zoological Research* 39:364-372 (special issue on Mammal Biodiversity in Asia). doi:10.24272/j.issn.2095-8137.2018.042
- 9) **McLean BS**, Helgen KM, Goodwin HT, Cook JA. 2018. Trait-specific processes of convergence and conservatism shape ecomorphological evolution in ground-dwelling squirrels. *Evolution* 72:473-489. doi: 10.1111/evo.13422
- 8) Cook JA et al. (**author 27 of 36**). 2017. The Beringian Coevolution Project: Holistic collections of mammals and associated parasites reveal novel perspectives on evolutionary and environmental change in the north. *Arctic Science* 3:585-617. doi:10.1139/AS-2016-0042 (special issue on Arctic Museum Collections)
- 7) **McLean BS**. 2017. Splendid (continental) radiations. *Evolution* 71:802-803. doi:10.1111/evo.13183
- 6) **McLean BS**, Jackson DJ, Cook JA. 2016. Rapid divergence and gene flow at high latitudes shape the history of Holarctic ground squirrels (*Urocitellus*). *Molecular Phylogenetics and Evolution* 102:174-188. doi:10.1016/j.ympev.2016.05.040
- 5) Cook JA, **McLean BS**, Jackson DJ, Colella JP, Greiman SE, Tkach VV, Jung TS, Dunnum JL. 2016. First record of the Eurasian Least Shrew (*Sorex minutissimus*) and associated helminths from Canada: new light on northern Pleistocene refugia. *Canadian Journal of Zoology* 94:367-372. doi:10.1139/cjz-2015-0212
- 4) Cook JA, Lacey EA, Ickert-Bond SM, Hoberg EP, Galbreath KE, Bell KC, Greiman SE, **McLean BS**, Edwards S. 2016. From museum cases to the classroom: emerging opportunities for specimen-based education. *Archives of the Zoological Museum of Moscow State University* 38.
- 3) **McLean BS**, Bell KC, Dunnum JL, Abrahamson B, Colella JP, Deardorff ER, Weber J, Jones AK, Salazar-Miralles F, Cook JA. 2016. Natural history collections-based research: progress, promise and best practices. *Journal of Mammalogy* 97:287-297. doi:10.1093/jmammal/gyv178
- 2) **McLean BS**, Ward JK, Polito MJ, Emslie SD. 2014. Responses of high-elevation herbaceous plant assemblages to low glacial CO2 concentrations revealed by fossil marmot (*Marmota*) teeth. *Oecologia* 175:1117-1127. doi:10.1007/s00442-014-2982-y
- 1) **McLean BS**, Emslie SD. 2012. Stable isotopes reflect the ecological stability of two high-elevation mammals from the late Quaternary of Colorado. *Quaternary Research* 77:408-417. doi:10.1016/j.yqres.2012.02.001

PUBLICATIONS (in review/revision/full draft)

McLean BS, Cook JA, Guralnick RP. Rapid niche and range evolution shape climate response in Great Basin ground squirrels (*Urocitellus*). in prep *Molecular Ecology*

McLean BS, Bell KC, Allen JM, Cook JA. Taxon sampling and SNP-based inference help resolve species relationships of Holarctic ground squirrels. in prep *Molecular Phylogenetics and Evolution*.

PRESENTATIONS TO PROFESSIONAL MEETINGS (first author only)

McLean BS, Guralnick RP, Barve N. Evolution of litter size in North America's most common small mammal: An informatics-based approach. American Society of Mammalogists 98th Annual Meeting, oral pres. (June 2018).

McLean BS. Pattern and process in the radiation of ground-dwelling squirrels. American Society of Mammalogists, plenary presentation (June 2017).

McLean BS, Bell KC, Allen JM, Helgen KM, Cook JA. Impacts of phylogenomic dataset filtering for resolving a rapid radiation of ground squirrels. Society of Systematic Biologists standalone meeting, oral pres. (Jan. 2017).

McLean BS, Cook JA. Pattern and process in the Pleistocene diversification of small-eared ground squirrels (*Urocitellus*). American Quaternary Association 24th Biennial Meeting, poster pres. (June 2016).

McLean BS, Cook JA. Parallel ecomorphological evolution in ground-dwelling squirrels: roles of phylogeny, allometry, and integration. *Evolution* 2016, poster pres. (June 2016).

McLean BS, Jackson DJ, Cook JA. Diversity, distribution and conservation of Holarctic ground squirrels (*Urocitellus*): new phylogenetic insights. American Society of Mammalogists 95th Annual Meeting, oral pres. (June 2015).

McLean BS, Cook JA. A history of high-latitude adaptation in Holarctic ground squirrels. *Evolution* 2014, oral pres. (June 2014). <https://www.youtube.com/watch?v=ilsG5SQJkdk>

- McLean BS.** An isotopic role for fossil small mammals in paleoecology and paleoclimatology. Wisc-SIMS High Resolution Proxies of Paleoclimate workshop, University of Wisconsin, oral pres. (June 2013).
- McLean BS,** Cook JA. New geometric morphometric methods for taxonomic identification of fossil ground squirrels (Rodentia: Marmotini). American Society of Mammalogists 93rd Annual Meeting, oral pres. (June 2013).
- McLean BS.** Inferring geographic modes of speciation in ground-dwelling sciurids. American Society of Mammalogists 92nd Annual Meeting, poster pres. (July 2012).
- McLean BS,** Emslie SD. A unique isotopic record of mammal ecology from the Southern Rockies during and after the last glacial period. American Society of Mammalogists 91st Annual Meeting, poster pres. (July 2011).
- McLean BS,** Emslie SD. Mammalian paleoecology across the Last Glacial Maximum in the Southern Rocky Mountains. American Quaternary Association 21st Biennial Meeting, poster pres. (August 2010) and American Society of Mammalogists 90th Annual Meeting, poster pres. (June 2010).

RESEARCH FUNDING AND AWARDS (to date: >\$212,000)

- 2018 Postdoctoral Research Fellowship in Biology, National Science Foundation (\$138,000)
Linking processes of speciation and extreme genital evolution: a multi-clade comparison in squirrels
- 2016 Candidate Conservation Fund, United States Fish and Wildlife Service (\$10,000)
*Distribution and Population Connectivity of Merriam's Ground Squirrel (*Uroditellus canus vigilis*)*
- 2016 ASM Fellowship, American Society of Mammalogists (\$7,500)
Pattern and process in the radiation of ground-dwelling squirrels
- 2015 Peter Buck Predoctoral Fellowship, National Museum of Natural History (\$32,000)
Finding common ground: towards a timescale for analyzing the radiation of ground-dwelling squirrels
- 2015 Theodore Roosevelt Memorial Grant, American Museum of Natural History (\$2,275)
- 2014 Grant-in-Aid of Research, American Society of Mammalogists (\$2,000)
- 2014 Elizabeth Horner Award, American Society of Mammalogists (\$500)
- 2014 Joseph Gaudin Scholarship, UNM Department of Biology (\$2,750)
- 2013 Joseph Gaudin Scholarship, UNM Department of Biology (\$2,250)
- 2012 Joseph Gaudin Scholarship, UNM Department of Biology (\$1,000)
- 2012 Research Grant, Prairie Biotic Research (\$900)
- 2012 Research Grant, National Speleological Society (\$750)
- 2012 Research Grant, T&E, Inc. of New Mexico (\$2,500)
- 2011 Lee R.G. Snyder Graduate Research Fellowship, Rocky Mountain Biological Lab. (\$600)
- 2010 Dr. James F. and Frances B. Parnell Fellowship, UNCW Dept. of Biology (\$2,300)
- 2010 Dr. Ralph W. Brauer Fellowship, UNCW Graduate School (\$800)

*** \$6,275 in additional research and travel support since 2010

PROFESSIONAL AFFILIATIONS

American Society of Mammalogists
Society of Systematic Biologists
Society for the Study of Evolution

PROFESSIONAL SERVICE

Peer Review: *Biological Conservation; Biological Journal of the Linnean Society; Diversity and Distributions; Journal of Mammalogy; Journal of Zoological Systematics and Evolutionary Research; Mammalia; Occasional Papers of the Museum (Texas Tech University); Paleogeography, Paleoclimatology, Paleoecology; PLoS One*

Grant Review: *American Society of Mammalogists (Grants-in-Aid of Research 2018, 2019); Society of Systematic Biologists (Graduate Research Fellowships 2018, 2019); UNM Biology Graduate Research and Allocations Committee (Research and Travel Awards 2014-2017).*

Society Involvement: *American Society of Mammalogists, Systematic Collections Committee (2013-present).*

Student Mentorship: *I have mentored numerous undergraduate students since 2006 in field methods (small mammal trapping and sampling), mammalian specimen preparation and curatorial methods, wet lab methods (DNA extraction, sequencing), conservation genetic data analysis, and mammalian biodiversity*

informatics. I have also supervised and mentored numerous undergraduates and volunteers in museum collections management and data curation (NCSM, MSB, FLMNH).

Collections Development: I have led or participated in national and international field expeditions since 2006 that have resulted in >8000 mammal voucher specimens (most with associated tissue and/or parasite samples), which are deposited in four different U.S. natural history museums (NCSM, DMNS, MSB).

TEACHING

University of North Carolina Greensboro

2017 EHS: "Detecting Global Change Responses in Mammal Communities" (Guest Lecture)

2017 Ecology: "Large-Scale Patterns in Biodiversity" (Guest Lecture)

2016 Evolution: "Molecular Phylogenetics" (Guest Lecture)

University of South Florida

2016 Mammalogy: "Mammalian Phylogenetics and Morphological Evolution" (Guest Lecture)

University of New Mexico

2014 Mammalogy: "Order Cetacea" (Guest Lecture)

2013 Mammalogy: "Defining Characteristics of Mammals" (Guest Lecture)

2013 Mammalogy: "Orders Dermoptera and Scandentia" (Guest Lecture)

2014 Mammalogy Laboratory (Instructor)

2013 Mammalogy Laboratory (Instructor)

University of North Carolina Wilmington

2011 Human Anatomy and Physiology Laboratory (Instructor)

2010 Human Anatomy and Physiology Laboratory (Instructor)

2010 Human Anatomy and Physiology Laboratory (Instructor)

2009 Human Anatomy and Physiology Laboratory (Instructor)

Appalachian State University

2004 Introductory Botany Laboratory (Lab Assistant)

2003 General Chemistry Laboratory (Teaching Assistant)

POPULAR WRITING

The Molecular Ecologist (molecularecologist.com) - since January 2016 (links to examples below)

[Island-Hopping with an E.I.D.](#)

[The Evolution of Molecular Dating](#)

[The Carnivorous Rodents of Southeast Asia](#)

UNM Department of Biology BioBlog (unm-bioblog)

[The Time Conundrum](#) (Feb. 2015)