

BRYAN S. MCLEAN, PHD

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EDUCATION

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

RESEARCH FOCI

biodiversity informatics, comparative methods, essential biodiversity variables, global change response, ground squirrels, landscape genetics, life history evolution, mammals, morphological variation, natural history collections, phenology, phylogeography, Rodentia, specimen-based research

APPOINTMENTS

- 2018-present NSF Postdoctoral Research Fellow in Biology
Sponsors: Robert Guralnick, David Reed, David Blackburn
- 2018-present Visiting Research Scientist, University of North Carolina Greensboro Department of Biology
- 2018-present Research Assistant Professor, UNM Department of Biology
- 2017-2018 Postdoctoral Associate, Florida Museum of Natural History
- 2015 Peter Buck Predoctoral Fellow, National Museum of Natural History
Sponsors: Kristofer Helgen, Gene Hunt
- 2014 Curatorial Assistant, Museum of Southwestern Biology, Division of Mammals
- 2011-2014 Curatorial Assistant, Museum of Southwestern Biology, Division of Genomic Resources
- 2006-2009 Collection Technician, North Carolina Museum of Natural Sciences, Mammalogy Division

PUBLICATIONS

- 13) Dunnum JD, **McLean BS**, Dowler RC, ASM Systematic Collections Committee. Mammal collections of the Western Hemisphere - A survey and directory of collections. in press *Journal of Mammalogy*.
- 12) **McLean BS**, Bell KC, Allen JM, Helgen KM, Cook JA. Impacts of inference method and dataset filtering on phylogenomic resolution in a rapid radiation of ground squirrels (Xerinae: Marmotini). in press *Systematic Biology*.
- 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)

- 1) **McLean BS**, Barve N, Flenniken J, Guralnick RP. Evolution of litter size in North America's most common small mammal: An informatics-based approach. in revision *Journal of Mammalogy*.
- 2) **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*.

FELLOWSHIPS AND RESEARCH AWARDS

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

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

SELECTED 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).

TEACHING

- 2016 - Guest Lecturer, Univ. of North Carolina Greensboro, Evolution (undergrad.): "Molecular Phylogenetics"
- 2016 - Guest Lecturer, Univ. of South Florida, Mammalogy (grad./undergrad.): "Mammalian Phylogenetics and Morphological Evolution"
- 2014 - Guest Lecturer, UNM, Mammalogy (grad./undergrad.): "Order Cetacea"
- 2013 - Guest Lecturer, UNM, Mammalogy (grad./undergrad.): "Defining Characteristics of Mammals"
- 2013 - Guest Lecturer, UNM, Mammalogy (grad./undergrad.): "Orders Dermoptera and Scandentia"
- 2013-2014 (2 semesters) - Teaching Assistant, UNM, Mammalogy (grad./undergrad.) **
- 2009-2011 (4 semesters) - Teaching Assistant, UNCW, Human Anatomy and Physiology (undergrad.) **
- 2006-2009 (continuous) - Supervisor (volunteers and summer interns), NC Museum of Natural Sciences
- Spring 2004 - Laboratory Assistant, Introductory Botany, ASU (undergrad.)
- Fall 2003 - Teaching Assistant, General Chemistry, ASU (undergrad.)
- (** - coordinated all aspects of lesson plans, lab setup, and student evaluation)

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)

PROFESSIONAL AFFILIATIONS

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

PROFESSIONAL SERVICE

Peer Reviewer: *Biological Conservation; Journal of Mammalogy; Journal of Zoological Systematics and Evolutionary Research; Paleogeography, Paleoclimatology, Paleoecology*

Society Service: I have actively served on the Systematic Collections Committee of the American Society of Mammalogists since 2013. The committee tracks and accredits mammalian natural history collections across the Western Hemisphere. I have also reviewed graduate student grant applications for the American Society of Mammalogists and Society of Systematic Biologists.

Mentoring: 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), molecular data analysis, and biodiversity informatics.

Collections Development: I have led or participated in numerous national and international field expeditions over the past 10 years. These expeditions have collectively resulted in >5000 mammal specimens (most with associated tissue and/or parasite samples) and are deposited in four different U.S. natural history museums.