

Joshua H. Miller

Curriculum Vitae

Department of Geology
University of Cincinnati
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Cincinnati, OH 45221

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PROFESSIONAL APPOINTMENTS

2017 - Present	University of Cincinnati	Assistant Professor
2012 - 2017	University of Cincinnati	Fenneman Assistant Research Professor of Quaternary and Anthropocene Science
2015 - Present	Cincinnati Museum Center	Research Associate
2014 - Present	National Museum of Natural History (Smithsonian Institution)	Research Associate
2013 - Present	University of Alaska Fairbanks Museum of the North	Research Associate
2011 - Present	Florida Museum of Natural History	Affiliated Research Scientist
2010 - 2011	Wright State University	Adjunct Professor
2009 - 2011	Wright State University	Postdoctoral Research Fellow: Spatial statistics, Paleobiology, Species distribution modeling

EDUCATION

2009	Ph.D., Evolutionary Biology, The University of Chicago. Dissertation Research: "The large-mammal death assemblage of Yellowstone National Park: Historical ecology, conservation biology, paleoecology" Advisor: Dr. Susan Kidwell Committee: Drs. Michael LaBarbera, Kevin Boyce, Lawrence Heaney (Field Museum), Anna K. Behrensmeyer (National Museum of Natural History)
2005	S.M., Evolutionary Biology, The University of Chicago.
2000	B.A. (<i>Magna cum Laude</i>), Geology, Macalester College Honors Thesis: "Paleosols as indicators of paleoclimate in the Upper Cretaceous Maevarano Formation, Mahajanga Basin, northwestern Madagascar"

RESEARCH INTERESTS

My research uses sub-fossil and fossil bone accumulations to quantify the biological, environmental, and anthropogenic drivers of ecological change. My research motivations are to quantify ecological processes that occur across extended timescales and establish new tools and analytical frameworks that expand the observation window we use to study modern populations. The brief temporal perspectives provided by most ecological datasets (years to decades) impose limitations on how we understand population dynamics and interactions among species and their ecosystems. Sub-fossil and fossil records offer unique insights and enable historically informed assessments of the mode and intensity of recent climatic and anthropogenic perturbations on animal populations.

RESEARCH GRANTS & AWARDS

Research Support

2019		Geoscientist in the Parks to Abby Kelly	
2019	PI	US National Park Service "Historical calving grounds of the Western Arctic caribou Herd"	In-kind fieldwork, lab support
2019	PI	Faculty Development Fund	\$2,411
2018-2019	PI	US Fish and Wildlife Service "Analysis and data processing of 2018 caribou antler specimens" (Contract to UC)	\$15,000
2018	PI	US Fish and Wildlife Service "Fieldwork Support: Antler Surveys of Katakturuk, Jago, and Kongakut Rivers"	\$30,000 (administered by US Fish and Wildlife Service)
2018	Co-PI	UC Forward "DAAP 6090 Interdisciplinary Topics in Design, Architecture, Art, and Planning (Nature Playscape Charrette)"	\$5,050
2017	PI	Faculty Development Council, University of Cincinnati Travel to Arctic Long-Term Ecological Research Working Group	\$1,000
2010-2012, 2014-2015	PI	US Fish & Wildlife Service "Historical calving grounds of the Porcupine Caribou Herd"	Fieldwork support
2015-2016	Co-PI	National Geographic Society. "The bones of Amboseli – 40 years of death, destruction, and preservation in an East African ecosystem"	\$23,478
2014-2015	PI	University Research Council Faculty Research Grant (University of Cincinnati) "Antlers of the Arctic National Wildlife Refuge: Recovering a millennium of ecological history from bones on the tundra"	\$6,500
2012-2015	PI	National Geographic Society "Antlers of the Arctic Refuge: Revealing historical caribou calving grounds from bones on the tundra"	\$25,012
2012-2015	PI	Animal Welfare Institute, Christine Stevens Wildlife Award "Bone surveys as a new non-invasive biological monitoring tool"	\$10,000
2011	PI	U.S. Fish & Wildlife Service Challenge Cost Share Agreement "Old bones offer new insight into caribou ecology"	\$31,300
2011	PI	NSF (Polar Programs Postdoctoral Fellowship Travel Grant)	\$3,000
2010	Co-PI	National Geographic Society "Taphonomy of catastrophic drought mortality in Amboseli Park, Kenya"	\$21,539
2006-2008	PI	National Science Foundation Doctoral Dissertation Improvement Grant	\$12,000

2008	PI	Patterson Award (Society of Vertebrate Paleontology)	\$1,250
2008	PI	Theodore Roosevelt Fund (American Museum of Natural History)	\$2,500
2008	PI	Paleontological Society Yochelson Student Research Award	\$750
2008	PI	Hinds Fund (University of Chicago)	\$2,000
2007	PI	¹⁴ C-Dating Fund, Smithsonian Institution	\$2,000
2007	PI	Goodfriend Fund (University of Chicago)	\$2,000
2006	PI	Exploration Fund Grant (The Explorer's Club)	\$1,200
2006	PI	American Society of Mammalogists Grant-in-Aid	\$1,500
2005	PI	American Society of Mammalogists Grant-in-Aid	\$1,500
2005	PI	Theodore Roosevelt Fund (American Museum of Natural History)	\$1,500
2005	PI	Geological Society of America Grant-in-Aid	\$2,500
2005	PI	Paleontological Society, "Steven J. Gould" Grant-in-Aid	\$500
2004	PI	Sigma Xi Grant-in-Aid (#3040192)	\$200
1998	PI	Research Experience for Undergraduates (NSF)	\$3,000

Research Fellowships

2007 - 2009	U.S. Dept. of Education GAANN Fellow in Evolutionary Environmental Biology	\$60,000
2004 - 2007	National Science Foundation Graduate Research Fellowship	\$120,000
2003 - 2004	Berkman Fellowship (University of Chicago)	\$30,000
2000 - 2001	Thomas J. Watson Fellowship "In search of the Cultural Rosetta Stone: Linking cultures through their folk music"	\$22,000
2000	Minnesota Space Grant Consortium (NASA) Research Fellowship	\$3,000
1999	Beltmann Fellowship (Macalester College)	\$3,000

Academic Awards and Other Accomplishments

2008	Alfred Sherwood Romer Prize (Soc. Vert. Paleo. – Best student presentation)
2007 - 2008	Graduate Student Teaching Award (Univ. of Chicago: Bio. Sci. Division)
2005	Geological Society of America Outstanding Research Proposal
2003	NDSEG Graduate Fellowship Honorable Mention
2001	Rhodes Scholarship Competition, Washington State Finalist
2000	First Non-Aboriginal to live with the Yolngu Aboriginals of Galiwin'ku Island; Arnhem Land, Australia. Adopted into the group.
2000	Phi Beta Kappa
2000	High S. Alexander Endowed Prize (Macalester College)

Field/Research Experience

- Summer, 2019 Bone and antler surveys of the Western Arctic Caribou Herd (National Petroleum Reserve, Alaska)
- Summers 2010-2012, 2014-15, 2018 Bone and antler surveys of the Arctic National Wildlife Refuge, AK.
Collaborators: Pat Druckenmiller (University of Alaska Fairbanks), Eric Wald (U.S. National Park Service), Steve Arthur (U.S. Fish & Wildlife Service)
- Summer 2016 Bone surveys of a post-mass mortality death assemblage, Amboseli, Kenya.
Collaborator: A.K. Behrensmeyer (Smithsonian)
- Summer 2013 Taphonomic surveys of landscape death assemblage, Ellesmere Island, Canada
Stratigraphic analysis and paleosol sampling, Fram formation (late Devonian), Ellesmere Island, Canada
Collaborators: Neil Shubin (University of Chicago), Ted Daeschler (Academy of Natural Sciences)
- Spring 2011 Bone weathering study, Isle Royale, MI
Collaborator: Rolf Peterson (Michigan Technological University)
- Spring 2011 Caribou antler morphometrics (Amer. Mus. Nat. Hist. collections)
- Summer 2010 Bone and antler surveys of Denali National Park, AK.
Collaborator: Pat Druckenmiller (University of Alaska Fairbanks)
- Summer 2010 Bone surveys of a mass mortality event, Amboseli, Kenya.
PI: A.K. Behrensmeyer (Smithsonian)
- Summers 2004-'08 *Dissertation* Fieldwork, Yellowstone National Park, WY
- Summer 2007 Carcass surveys of the rapidly melting Wind River Glaciers, WY
- Summer 2006 Microstratigraphy and Taphonomy of Fram Form., Ellesmere Island, Canada
- Summer 2004 Field Assistant to A.K. Behrensmeyer; Amboseli National Park, Kenya
- Fall 2003 Field Assistant to P. Sereno (University of Chicago); Sahara Desert, Niger
- Summer 2003 Field Assistant to P. Sereno (University of Chicago); Wyoming/South Dakota
- May-Dec. 2002 Visiting Researcher, The University of Natal, South Africa
- Aug. 2000-'01 Thomas Watson Fellow (ethnomusicalogical research in Australia & Ireland)
- Summer 1998 Field Assistant to R. Rogers (Macalester College): Berivotra, Madagascar

PUBLICATIONS

authors contributed equally, *UC graduate student author, ** post-baccalaureate student, **lab members**

Miller, J.H., B.E. Crowley, C.P. Bataille, E.J. Wald, ***A. Kelly**, ***M. Gaetano**, V. Bahn, and P. Druckenmiller. 2021. Historical landscape use of migratory caribou: New insights from old antlers. *Frontiers in Ecology and Evolution*. doi: 10.3389/fevo.2020.590837.

Fraser, D.L., L. Soul, A.B. Tóth, M.A. Balk, J.T. Eronen, S. Pineda-Muñoz, A.B. Shupinski, A. Villaseñor, W.A. Barr, A.K. Behrensmeyer, A. Du, J.T. Faith, N.J. Gotelli, G.R. Graves, A.M. Jukar, C. Looy, **J.H. Miller**, R. Potts, and S.K. Lyons. 2020. Investigating biotic interactions in deep time. *Trends in Ecology and Evolution*. <https://doi.org/10.1016/j.tree.2020.09.001>

Pineda-Muñoz, S., A.M. Jukar, A.B. Tóth, D.L. Fraser, A. Du, W.A. Barr, K.L. Amatangelo, M.A. Balk, A.K. Behrensmeyer, J. Blois, M. Davis, J.T. Eronen, N.J. Gotelli, C. Looy, **J.H. Miller**, A.B. Shupinski, L. Soul, A. Villaseñor, S. Wing, and S.K. Lyons. 2020. Body mass related changes in mammal community assembly patterns during the late Quaternary of North America. *Ecography*. **43**: 1–11. doi: 10.1111/ecog.05027

Tóth, A.B., L. Soul, S.K. Lyons, A.K. Behrensmeyer, A. Jukar, K. Amatangelo, A. Barr, A. Bercovici, J.L. Blois, R. Bobe, M. Davis, A. Du, W.A. DiMichele, J.T. Eronen, J.T. Faith, D.L. Fraser, N.J. Gotelli, G.R. Graves, **J.H. Miller**, N. Jud, C. Labandeira, C.V. Looy, B. McGill, D. Patterson, S. Pineda-Munoz, R. Potts, B. Riddle, A. Villaseñor, S. Wing, and J. Alroy. 2019. Reorganization of surviving mammal communities after the end-Pleistocene megafaunal extinction. *Science*. 365(6459): 1305-1308. DOI: 10.1126/science.aaw1605.

*New, E., Y. Yanes, R.A.D. Cameron, R.A.D., **J.H. Miller**, D. Teixeira, D.S. Kaufman (2019). Aminochronology and time-averaging of Quaternary land snail assemblages from colluvial deposits in the Madeira Archipelago (Portugal). *Quaternary Research*. 1-14. DOI: <https://doi.org/10.1017/qua.2019.1>

*Wallace, J.P., B.E. Crowley, and **J.H. Miller**, 2019. Investigating equid mobility in Miocene Florida, USA using strontium isotope ratios. *Palaeogeography, Palaeoclimatology, Palaeoecology*. 516: 232-243. DOI: 10.1016/j.palaeo.2018.11.036

*Botner, E.C., A. Townsend-Small, D.B. Nash, X. Xu, A. Schimmelmann, and **J.H. Miller**, 2018. Monitoring concentration and isotopic composition of methane in groundwater in the Utica Shale hydraulic fracturing region of Ohio. *Environmental Monitoring and Assessment*. 190(322). DOI: 10.1007/s10661-018-6696-1.

Harnik, P.G., H. Maherali, **J.H. Miller**, and P.S. Manos, 2018. Geographic range velocity and its association with phylogeny and life history traits in North American woody plants. *Ecology and Evolution*. 8(5): 2632-2644. DOI: 10.1002/ece3.3880.

*Wall, A.F., Y. Yanes, **J.H. Miller**, and A. Miller, 2018. Bellwether of the Canaries: Anthropogenic effects on the land snail faunas of the Canary Islands. *Biodiversity and Conservation*. 27(2): 395-415. DOI: 10.1007/s10531-017-1443-4.

#Crowley, B.E., #**J.H. Miller**, and C. Bataille, 2017. Strontium isotopes ($^{87}\text{Sr}/^{86}\text{Sr}$) in terrestrial ecological and paleoecological research: empirical efforts and recent advances in continental-scale models. *Biological Reviews*. 92: 43-59. DOI: 10.1111/brv.12217

- Lyons, S.K., **J.H. Miller**, K.L. Amatangelo, A.K. Behrensmeyer, A. Bercovici, J.L. Blois, *M. Davis, W.A. DiMichele, *A. Du, J.Y. Eronen, J.T. Faith, G.R. Graves, N. Judd, C. Labandeira, C.V. Looy, B. McGill, D. Patterson, *S. Pineda-Munoz, R. Potts, B. Riddle, R.C. Terry, **A. Toth, W. Ulrich, *A. Villasenor, S. Wing, H. Anderson, J. Anderson, and N.J. Gotelli, 2016. Reply to How foreign is the past? *Nature*. 538: E3-E4. DOI: 10.1038/nature20097.
- Lyons, S.K., **J.H. Miller**, **A. Toth, K.L. Amatangelo, A.K. Behrensmeyer, A. Bercovici, J.L. Blois, *M. Davis, W.A. DiMichele, *A. Du, J.Y. Eronen, J.T. Faith, G.R. Graves, N. Judd, C. Labandeira, C.V. Looy, B. McGill, D. Patterson, *S. Pineda-Munoz, R. Potts, B. Riddle, R.C. Terry, W. Ulrich, *A. Villasenor, S. Wing, H. Anderson, J. Anderson, and N.J. Gotelli, 2016. Reply to Questioning Holocene community shifts. *Nature*. 537: E5-E6. DOI: 10.1038/nature19111.
- Lyons, S.K., K.L. Amatangelo, A.K. Behrensmeyer, A. Bercovici, J.L. Blois, *M. Davis, W.A. DiMichele, *A. Du, J.Y. Eronen, J.T. Faith, G.R. Graves, N. Judd, C. Labandeira, C.V. Looy, B. McGill, **J.H. Miller**, D. Patterson, *S. Pineda-Munoz, R. Potts, B. Riddle, R.C. Terry, **A. Toth, W. Ulrich, *A. Villasenor, S. Wing, H. Anderson, J. Anderson, D. Waller, and N.J. Gotelli, 2016. Holocene shifts in the assembly of plant and animal communities implicate human impacts. *Nature*. 529: 80-83. DOI: 10.1038/nature16447.
- Lyons, S.K., **J.H. Miller**, F. Smith, A. Boyer, E. Lindsey, and A. Mychajliw, 2016. The changing role of mammal life histories in late Quaternary extinction vulnerability on continents and islands. *Biology Letters*. 12: 20160342. DOI: 10.1098/rsbl.2016.0342.
- Miller, J.H.**, A.K. Behrensmeyer, *A. Du, S.K. Lyons, *D. Patterson, **A. Toth, *A. Villasenor, E. Kanga, D. Reed, 2014. Ecological fidelity of functional traits based on species presence-absence in a modern mammalian bone assemblage. *Paleobiology*. 40(4): 560-583. DOI: 10.1666/13062.
- Miller, J.A., **J.H. Miller**, D. Pham, and K. Beentjes, 2014. Cyberdiversity: Improving the informatic value and rapid assessment of diverse tropical arthropod communities. *PLoS One*. 9(12): e115750. DOI: 10.1371/journal.pone.0115750.
- *Lavretsky, P., **J.H. Miller**, V. Bahn, and J.L. Peters, 2014. Exploring fall migratory patterns of American black ducks using 80 years of band-recovery data. *Journal of Wildlife Management*. 78(6): 991-1004. DOI: 10.1002/jwmg.752.
- Seddon, A.W.R. et al. (including **J.H. Miller**), 2014. Looking forward through the past: Identification of fifty priority research questions in palaeoecology. *Journal of Ecology*. 102:256-267. DOI: 10.1111/1365-2745.12195.
- Miller, J.H.**, P. Druckenmiller, and V. Bahn, 2013. Antlers of the Arctic Refuge: Capturing multi-generational patterns of calving ground use from bones on the landscape. *Proceedings of the Royal Society B*. 280: 20130275. DOI: 10.1098/rspb.2013.0275.
- Miller, J.H.**, 2012. The spatial fidelity of skeletal remains: Elk wintering and calving grounds revealed by bones on the Yellowstone landscape. *Ecology*. 93(11): 2474-2482.
- Behrensmeyer, A.K. and **J.H. Miller**, 2012. Building links between ecology and paleontology using taphonomic studies of recent vertebrate communities. In "Paleontology in Ecology and Conservation" J. Louys (editor), Springer, 69-91. DOI: 10.1007/978-3-642-25038-5_5.

Miller, J.H., 2011. Ghosts of Yellowstone: Multi-decadal histories of wildlife populations captured by bones on a modern landscape. *PLoS One*, 6(3) e18057. DOI: 10.1371/journal.pone.0018057.

Non-refereed Publications

Miller, J.H., 2013. Elk antlers and neonatal remains record landscape use. *Yellowstone Science*, 21(1): 4.

Miller, J.H. 2014. Old antlers and bones on the tundra track historical caribou calving grounds. *Animal Welfare Institute (AWI) Quarterly*. 63(1): 26.

Invited Talks to Universities, Government Agencies, and Non-Governmental Organizations

- 2020 University of Chicago, Department of Geophysical Sciences, Chicago, IL
(Canceled due to COVID-19)
- 2020 University of Cincinnati, Department of Geography. Cincinnati, OH (Canceled due to COVID-19)
- 2019 University of California Berkeley, Museum of Paleontology. Berkeley, CA
- 2019 U.S. National Park Service, Kotzebue, Alaska
- 2019 Spring Barrows Lecture (Advanced Inquiry Program)
Cincinnati Zoo and Botanical Gardens, Cincinnati, OH
- 2018 Oregon State University, Department of Integrative Biology, Corvallis, OR
- 2018 Northern Kentucky University, Department of Physics, Geology and Engineering
Technology, Highland Heights, KY
- 2018 University of Alaska Fairbanks, School of Fisheries and Ocean Sciences, Fairbanks, AK
- 2018 University of Minnesota, Department of Fisheries, Wildlife and Conservation Biology,
Minneapolis, MN
- 2018 Northeast Ohio Medical University, Department of Anatomy and Neurobiology,
Rootstown, OH
- 2017 University of Cincinnati, Department of Biology, Cincinnati, OH
- 2017 Ohio University, Department of Geological Sciences, Athens, OH
- 2017 Arctic LTER Winter Meeting, Woods Hole, MA
- 2017 Center College, Department of Biology, Danville, KY
- 2016 Macalester College, Department of Biology & Department of Geology, St. Paul, MN
- 2016 Creighton University. Department of History, Omaha, NB
- 2016 Distinguished Insights Lecture
Cincinnati Museum Center. Cincinnati, OH
- 2015 U.S. Fish and Wildlife Service (Arctic National Wildlife Refuge Office), Fairbanks, AK
- 2015 Cincinnati Museum Center, Cincinnati, OH
- 2013 Montana State University, Department of Geology, Bozeman, MT.
- 2012 University of Florida, Department of Wildlife Ecology and Conservation, Gainesville, FL
- 2012 University of Cincinnati, Department of Geology, Cincinnati, OH
- 2011 University of Alaska Fairbanks, Department of Biology and Wildlife, Fairbanks, AK
- 2011 US Fish and Wildlife Service (Arctic National Wildlife Refuge Office), Fairbanks, AK
- 2010 Denali National Park, AK
- 2008 California Academy of Sciences, San Francisco, CA
- 2007 Yellowstone Center for Resources, Yellowstone National Park, WY

PROFESSIONAL DEVELOPMENT ACTIVITIES

- 2020 Write Winning Grants Workshop, University of Cincinnati, Cincinnati, OH
- 2017 - 2019 A&S Faculty iPad Initiative
- 2016 A&S Online Learning Summer Workshop

2013

Writing NSF CAREER Award Grants Workshop, University of Cincinnati,
Cincinnati, OH

PROFESSIONAL SOCIETIES

Geological Society of America, The Paleontological Society, Society of Vertebrate Paleontology,
Phi Beta Kappa

SUPERVISION OF STUDENT RESEARCH

Graduate student advisees:

Abigail Kelly, Ph.D. student, Geology, graduation expected 2022
Maddie Gaetano, Ph.D. student, Geology, graduation expected 2023

Graduate student committees:

Zeke Phillips, Ph.D. Geology 2023 (expected)
Andrea Corpolongo, Ph.D. Geology 2022 (expected)
Janelle Wallace, M.S Geology, 2018
Tim Patton, M.S Geology, 2018
Elizabeth Bullard, M.S. Geology, 2016
Alex Wall, M.S. Geology, 2016

Undergraduate students supervised:

Will Wright, Geology Major, expected 2021
Bianca Neale, Geology Major, expected 2023
Maegan Thomas, Geology Major, expected 2023
Madison Wells, Geology Major, expected 2021
Lorraine Villaver, Environmental Studies Major, 2017
Ryan Lunn, Biology Major (Creighton University), 2017
Jennifer Goff, Environmental Studies Major, 2016
Sarah Fretwell, Environmental Studies Major, 2016
David Stickles, Environmental Studies Major, 2016
Morgan Billingsley, Geology Major, expected 2015
Ryan Shanks, Geology Major, Cornell College, 2015

External thesis reviewer:

Kelly Ann Hopkins, Masters, Emerging Media Design & Development, Ball State University, 2017

TEACHING

Courses Taught at UC

All were developed from scratch except "Paleobiology Seminar"

Semester	Course #	Title	Enrollment
Fall 2021	GEOL1008	The Age of Dinosaurs (online)	40
Fall 2020	GEOL1008	The Age of Dinosaurs (online)	103
Spring 2020	GEOL6040	Taphonomy	12
Fall 2019	GEOL1008	The Age of Dinosaurs	128
	GEOL6038	Analytical Methods and Scripting in R	19
Fall 2018	GEOL1008	The Age of Dinosaurs	94
	GEOL1008-002	The Age of Dinosaurs (online)	23
	EVST4012	Advanced Topics - Biodiversity	31
Fall 2017	GEOL1008	The Age of Dinosaurs	97
Spring 2017	GEOL1008	The Age of Dinosaurs	67
Spring 2016	GEOL1008	The Age of Dinosaurs	195
	EVST4012	Advanced Topics - Biodiversity	48
Spring 2015	GEOL6038	Analytical Methods and Scripting in R	9
Fall 2013	GEOL7006	Paleobiology Seminar ("The wild world of taphonomy", with A. Miller & Y. Yanes)	10

Informal Graduate Short-courses Taught

Spring 2014	"Introduction to R" (University of Cincinnati)
March 2013	"R Analysis & Modeling Short Course, II" (Smithsonian Institution and George Washington University)
June 2012	"R Analysis & Modeling Short Course" (Smithsonian Institution and George Washington University)

Other Undergraduate Courses Taught

Spring 2011	"The fossil record of species' originations, interactions, and extinctions" (Wright State University)
Spring 2010	"Ecosystems through time" (Wright State University)
Summer 2003	"Stones & bones" (University of Chicago, co-Instructor with P. Sereno)

Teaching Assistantships

Winter 2008	"Environmental Ecology" (University of Chicago, instructor: T. Price)
Fall 2007	"Biodiversity" (University of Chicago, instructor: M. LaBarbera)
Winter 2006	"Evolution and the Scientific Method" (Northwestern University, instructor: B. Sageman)

Fall 2006	“Analytical Paleobiology” (University of Chicago, instructor: M. Foote)
Spring 1999	“Paleontology” (Macalester College, instructor: R. Rogers)
Winter 1999	“Biology and Geology of the Hawaiian Islands” (Macalester College, instructors: Dr. J. Craddock, K. Wirth)
Fall 1998	“Sedimentology and Stratigraphy” (Macalester College, instructor: R. Rogers)
1998 - 2000	Intro. geology classes, evening lab supervisor (Macalester College)

Invited Guest Lectures in Colleague’s Courses

Conservation Paleobiology, for Dr. Ray Rogers’ Paleobiology course, Macalester College, 2020.

Dinosaurs, for Dr. Yurena Yanes’ Historical Geology course, UC Geology, 2019.

Conservation Paleobiology, for Dr. Martha Tappen’s Interpreting Ancient Bone course, University of Minnesota Department of Anthropology, 2018.

Conservation Paleobiology, for Dr. Carl Brett’s Paleontology and Evolution course, UC Geology, 2012 – 2019.

Live-dead studies and measuring biodiversity, for Dr. Brooke Crowley’s Zooarcheology course, UC Geology, 2013 – 2018.

Pleistocene Megafauna Mass Extinctions, for Brooke Crowley’s Ice Age Mammals course, UC Geology, 2014 – 2016.

Conservation Paleobiology and Quaternary Paleobiology, for Lewis Owen’s Quaternary Geology course, UC Geology, 2012.

Other Teaching

2003-2009	Education Consultant & Teacher, “Project Exploration” (Chicago-based non-profit for science education of minorities and girls)
Fall 2007	High school biology tutor
Jan.-April 2003	Earth Science Instructor, 8 th grade, The Northwest School (Seattle, WA)

Commentary/Coverage of Miller’s Outreach and/or Project Exploration

Fenichel, M and H.A. Schweingruber, 2010. Surrounded by Science: Learning science in informal environments. National Resource Council, National Academic Press. 240pp.

Kuczka, S., March 5, 2009. Digging into dinosaurs. Chicago Tribune.

SERVICE

SERVICE TO THE SCIENTIFIC COMMUNITY

2019-2020	Co-Chair, Host Committee, Society of Vertebrate Paleontology 2020 Annual Meeting
2019	Invited Panelist, Conservation Paleobiology Panel, North American Paleontology Congress
2018	National Science Foundation Panelist (Sedimentary Geology and Paleobiology)
2017 - Present	Associate Editor for the journal <i>Palaios</i>
2017 - Present	Chair, SVP Education and Outreach Committee
2016	National Science Foundation Panelist (Division of Environmental Biology)
2012 - 2017	SVP (Society of Vertebrate Paleontology) Program Committee
2008 - Present	Member, SVP Education and Outreach Committee

Manuscript Reviews

<i>Acta Palaeontologica Polonica</i>	<i>Methods in Ecology and Evolution</i>
<i>Conservation Biology</i>	<i>PalArch's Journal of Vertebrate Paleontology</i>
<i>Frontiers in Ecology and Evolution</i>	<i>Palaeogeography, Palaeoclimatology, Palaeoecology</i>
<i>Global Ecology and Biogeography</i>	<i>Palaios</i>
<i>Journal of Archaeological Science</i>	<i>Paleobiology</i>
<i>Journal of Quaternary Science Reviews</i>	<i>PeerJ</i>
<i>Marine Ecology Progress Series</i>	<i>Quaternary International</i>

Abstract Reviews

2012 - Present	Abstracts for Society of Vertebrate Paleontology Annual meetings (science and outreach abstracts)
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Grant Proposal Reviews

Leakey Foundation	National Science Foundation
National Geographic Society	

Book Proposals/Books Reviews

University of California Press
Dinosauria 3 rd edition

Professional Symposia Organized

July 2019	“Strontium isotope applications in Quaternary paleoecological and archeological research,” <i>Congress for the International Union for Quaternary Research (INQUA)</i> , Dublin, Ireland. Co-conveners: M. Wooller, K. Britton, B. Crowley
Nov. 2018	“Evolution of Terrestrial Ecosystems: Community assembly through time,” <i>Geological Society of America Annual meeting</i> , Indianapolis, IN

- Co-conveners: L. Soul, D. Fraser
- Nov. 2015 “Conservation paleobiology: insights into modern ecosystems from vertebrate Records,” Society of Vertebrate Paleontology Annual Meeting, Dallas, TX
Co-convener: L. DeSantis
- January 2014 “Ecological fidelity and resolution of the fossil record across broad spatial and temporal scales,” North American Paleontological Congress, Gainesville, FL.
Co-conveners: A. Tomasovych, J. Nebelsick, M. Zuschin
- June 2009 “Taphonomic fidelity and infidelity in modern and ancient communities,” North American Paleontological Congress, Cincinnati, OH
Co-conveners: R.C. Terry, N. Pyenson, A.K. Behrensmeier

SERVICE TO THE UNIVERSITY

- 2018 - current Member, eLearning Committee, University of Cincinnati
- 2017 - 2018 Member, Personal Response System Taskforce, University of Cincinnati
- 2014 - 2017 Reviewer, University of Cincinnati Research Council Faculty Grants
- 2007 Student board member, Registrar Search Committee (Univ. of Chicago)

SERVICE TO THE DEPARTMENT

- 2019 Host to colloquium speaker Dr. Eric Mittelstaedt, University of Idaho
- 2019 Host to colloquium speaker Dr. Kate Lyons, University of Nebraska–Lincoln
- 2018 Host to colloquium speaker Dr. James Pokines, Boston University
- 2017 - Present Coordinator, UC Earth Science Outreach Program
- 2016 Host to colloquium speaker Jack Conrad, NY College of Osteopathic Medicine
- 2015 Host to colloquium speaker Colin Robins, Claremont McKenna College
- 2015 Foundations in Geosciences Committee (Chair); tasked with establishing a new introductory course for majors and developing the basic curricular structure
- 2015 Contributed to redesign of undergraduate geology curriculum
- 2012 - Present Member, UC Quaternary and Anthropocene Research Group
- 2012 - Present Member, UC Paleobiology and Stratigraphy Research Group

SERVICE TO THE BROADER COMMUNITY

- 2019 Presentation to Kotzebue Alaska Native community
- 2018 “Dinosaurs” presentation, UC Arlitt Center
- 2017 - Present Member (UC representative), Clifton Area Neighborhood School Partnership Committee
- 2017 - Present Chair, Clifton Area Neighborhood School Facilities Committee
- 2017 Evolution of Terrestrial Ecosystems 20th Anniversary Celebration “Meet the Scientists” Event (National Museum of Natural History)
- 2016, 2018 “Dinosaurs” presentation, UC Early Learning Center
- 2015 Scientist in-residence, PaleoX field discovery program for teachers in MT

- 2010 - 2011 St. Louis Science Museum Resident Scientist for Museum Tours (Field Museum, Chicago; American Museum of Natural History, New York)
- 2010 Ohio teacher continuing education program: “The ecology of bones”
- 2003 Assisted in running a paleontology awareness festival, Agadez, Niger with P. Sereno

Media Outreach

- 2016 National Geographic
 “Best job ever” video series
<http://voices.nationalgeographic.com/2016/03/17/best-job-ever-collecting-bones-in-alaska-anwr/>
- 2015 Filmed in documentary on Permafrost fossil deposits, Fairbanks, AK
- 2013 Filmed as part of the *Tiktaalik* research team (PBS’s “Your Inner Fish”)
- 2012 Interview with Thane Maynard (NPR, Cincinnati Edition)
- 2011 Interview on CBC TV & Radio about bone survey results presented at the 2011 Arctic Ungulate Conference (Yellowknife, Canada)

PUBLISHED CONFERENCE ABSTRACTS

[†]*Invited presentation*, **graduate student author*, ***undergraduate or post-baccalaureate student*, ***lab members***

- Miller, J.H.** and ****J. Goff**. 2020. Predators rule the roost: Small mammal taphonomy at landscape-scales. Society of Vertebrate Paleontology Annual Meeting. Virtual Meeting.
- ***Kelly, A., J.H. Miller**, L. DeSantis, M.J. Wooller, C. Seaton, and P.S. Druckenmiller. 2020. When grazer didn’t just eat grass: Dietary preferences of bison and horse in Northern Alaska. Society of Vertebrate Paleontology Annual Meeting. Virtual Meeting.
- ***Maetano, M., J.H. Miller**, E.J. Wald, and P.S. Druckenmiller. 2020. Chew on this: Expanding diagnostic criteria of ungulate-gnawed bones. Society of Vertebrate Paleontology Annual Meeting. Virtual Meeting.
- ****Neale, B.N., J.H. Miller**, E.J. Wald, and P.S. Druckenmiller. 2020. Owl pellets of the Arctic National Wildlife Refuge reveal spatial gradient in small mammal communities. Society of Vertebrate Paleontology Annual Meeting. Virtual Meeting.

Nominated for the Colbert Prize

- [†]**Miller, J.H.**, 2019 (Keynote presentation). Integrating landscape bone records with federal wildlife policy. North American Paleontological Congress, Riverside, CA.
- Miller, J.H.**, B.E. Crowley, D.C. Fisher, and R. Secord, 2019. Trail of the mastodon: Reconstructing landscape use with stable oxygen and strontium isotope ratios from a serially sampled tusk. INQUA, Dublin, Ireland.
- ***Kelly, A., J.H. Miller**, and DeSantis, L., 2019, Survival of the flexible? A comparison of dietary strategies between late Pleistocene Beringian Bison and Horses. Geological Society of America Annual Meeting, Phoenix, Arizona.
- Miller, J.H.**, B.E. Crowley, D.C. Fisher, and R. Secord, 2018. Tracking an American mastodon:

- Isotopic reconstruction of landscape use from a serially sampled tusk. Society of Vertebrate Paleontology Annual Meeting, Albuquerque, NM.
- *Kelly, A., **J.H. Miller**, and L. DeSantis, 2018. Niche partitioning between Late Pleistocene Beringian bison and horse: new insights regarding dietary behavior of herbivorous ungulates across space and through time. Geological Society of America Annual Meeting, Indianapolis, IN.
- Miller, J.H.**, B.E. Crowley, D.C. Fisher, and R. Secord, 2017. Isotopically reconstructing late Pleistocene landscape use by an American Mastodon. Geological Society of American Annual Meeting, Seattle, WA.
- [†]**Miller, J.H.** and E. Wald, 2017 (invited presentation). Reconstructing historical migrations of the Porcupine Caribou Herd using antlers on the tundra. Alaska Chapter of the Wildlife Society Annual Meeting, Fairbanks, AK.
- [†]**Miller, J.H.** and E. Wald, 2016 (invited presentation). Antlers of the National Wildlife Refuge: Baselines of biological variability from bones on the tundra. Geological Society of America Annual Meeting, Denver, Colorado.
- Miller, J.H.** and A.K. Behrensmeyer, 2016. Taphonomic signatures of mass mortality in a Kenyan large mammal death assemblage. Geological Society of America Annual Meeting, Denver, Colorado.
- [†]Behrensmeyer, A.K. and **J.H. Miller**, 2016 (invited presentation). Death, destruction, and preservation: Lessons from the bones of Amboseli Park, Kenya. 4th ICAZ Taphonomy Working Group Meeting, Paris, France.
- Miller, J.H.** and E. Wald, 2015. Antlers of the Arctic National Wildlife Refuge: Baselines of biological variability from bones on the tundra. Society of Vertebrate Paleontology Annual Meeting, Dallas, TX.
- Behrensmeyer, A.K., F.L. Odock, J.T. Fiath, and **J.H. Miller**, 2015. Insights from conservation paleobiology from 35 years of taphonomic research in modern African ecosystems. Society of Vertebrate Paleontology Annual Meeting, Dallas, TX.
- Behrensmeyer, A.K., D. Western, and **J.H. Miller**, 2015. Mammal carcasses, migration, and drought in Amboseli National Park, Kenya. Ecological Society of America Meeting, Baltimore, MD.
- Lyons, S.K. et al (including **J.H. Miller**), 2015. Species associations of plant and mammal communities from deep time to the recent. Ecological Society of America Meeting, Baltimore, MD.
- [†]**Miller, J.H.** and E. Wald, 2014 (invited presentation). Antlers of the Arctic National Wildlife Refuge: Baselines of biological variability from arctic bone accumulations. Arctic Biodiversity Congress, Trondheim, Norway.
- Miller, J.H.** and B.E. Crowley, 2014. Last march of the Proboscideans: Changes in landscape use and mobility preceding the Pleistocene megafaunal extinction. Society of Vertebrate Paleontology Annual Meeting, Berlin, Germany.
- Miller, J.H.** and B.E. Crowley, 2014. Last march of the Proboscideans: Changes in landscape use and mobility preceding the Pleistocene megafaunal extinction. Geological Society of America Annual Meeting, Vancouver, Canada.
- Miller, J.H.**, A.K. Behrensmeyer, *A. Du, S.K. Lyons, *D. Patterson, **A. Toth, *A. Villasenor, E. Kanga, D. Reed, 2014. Ecological fidelity of functional traits based on species presence-

- absence in a modern mammalian bone assemblage. North American Paleontological Convention, Gainesville, FL.
- Crowley, B.E., and **J.H. Miller**, 2014. How well do modeled strontium isotope ratios predict bioavailable strontium for migratory and non-migratory mammals in North America? North American Paleontological Convention, Gainesville, FL.
- **Toth, A., A.K. Behrensmeyer, J.H. Miller, and S.K. Lyons**, 2014. Species richness, community dynamics, and time-averaging in Recent Kenyan ecosystems. North American Paleontological Convention, Gainesville, FL.
- Harnik, P.G., H. Maherali, P.S. Manos, and **J.H. Miller**, 2014. Phylogenetic and environmental controls on the geographic range dynamics of woody plants since the Last Glacial Maximum. Society for the Study of Evolution, Raleigh, NC.
- Harnik, P.G., H. Maherali, P.S. Manos, and **J.H. Miller**, 2013. Phylogenetic and environmental controls on the geographic range dynamics of woody plants since the Last Glacial Maximum. Geological Society of America Annual Meeting, Denver, CO.
- Miller, J.H.**, A.K. Behrensmeyer, *A. Du, S.K. Lyons, *D. Patterson, ****A. Toth, *A. Villasenor, E. Kanga, and D. Reed**. 2013. Size-biased modern bone accumulations can faithfully record whole-community ecology. Society of Vertebrate Paleontology Annual Meeting, Los Angeles, CA.
- Miller, J.H.**, 2012. Arctic antlers and the bones of newborns: A new method for studying historical caribou calving grounds. Society for Conservation Biology, Oakland, CA.
- Miller, J.H.**, 2012. Ghosts of Yellowstone: Historical ecological perspectives from bones on the landscape. 11th Biennial Science Conference on the Greater Yellowstone Ecosystem, Mammoth, WY.
- Miller, J.H.**, 2012. Temporal megabias: Latitudinal controls on time-averaging of terrestrial death assemblages and their ecological data. Society of Vertebrate Paleontology Annual Meeting, Raleigh, North Carolina.
- Behrensmeyer, A.K., D. Western, C. Badgley, **J.H. Miller**, and F.L. Odock, 2012. The impact of mass mortality on the surface bone assemblage of Amboseli Park, Kenya. Society of Vertebrate Paleontology Annual Meeting, Raleigh, North Carolina.
- Miller, J.H.**, 2012. Temporal Megabias: Latitudinal controls on time-averaging of terrestrial large-mammal death assemblages. Geological Society of America Meeting, Charlotte, NC.
- Miller, J.H.**, 2011. Arctic antlers, the bones of newborns, and a new method for reconstructing historical caribou calving grounds. Arctic Ungulate Conference, Yellowknife, Canada.
- Miller, J.H.**, 2011. Arctic antlers, caribou calving grounds and the spatial fidelity of vertebrate death assemblages. Society of Vertebrate Paleontology Annual Meeting, Las Vegas, NV.
- Miller, J.H.** and V. Bahn, 2011. Biogeography of the North American Pleistocene megafaunal extinction. Geological Society of America Annual Meeting, Minneapolis, MN.
- Bahn, V., **J.H. Miller**, and J.L. Peters, 2011. Independent estimates of population history help unlock the genetic signatures in duck populations. Ecological Society of America Annual Meeting, Austin, TX.
- Miller, J.H.**, 2010. On the spatial fidelity of arctic death assemblages: Caribou calving grounds and their skeletal indicators. Geological Society of America Annual Meeting, Denver, CO.
- Miller, J.H.** and V. Bahn, 2010. Spatial dynamics and structure of the North American Pleistocene megafaunal extinction. Society of Vertebrate Paleontology Annual Meeting, Pittsburgh, PA.

- Bahn, V., **J.H. Miller**, P. McAfee, and J.L. Peters, 2010. Continental-scale variability in climate history since the last glacial maximum provide a natural experiment for the influence of climate on duck distributions (genus *Anas*). Ecological Society of America Annual Meeting, Pittsburg, PA.
- Miller, J.H.**, 2009. Climatic and environmental controls on bone weathering: Time-averaging, accumulation histories, and ecological insight. Geological Society of America Annual Meeting, Portland, OR.
- Miller, J.H.**, 2009. Testing recent surficial mammalian bone assemblages as sources of high-quality historical community data: A new resource for conservation and management. Society of Conservation Biology North American Section Meeting, Flagstaff, AZ.
- Miller, J.H.**, 2009. Comparing ecological data from different depositional environments. Society of Vertebrate Paleontology Annual Meeting, Bristol, United Kingdom.
- Miller, J.H.**, 2009. Testing habitat-controls on ecological fidelity of terrestrial vertebrate death assemblages. North American Paleontological Conference, Cincinnati, OH.
- Miller, J.H.**, 2008. Testing the ecological fidelity of Yellowstone National Park's large-mammal Death Assemblage: Paleoecological implications and conservation applications. Society of Vertebrate Paleontology Annual Meeting, Cleveland, OH.
- Alfred Sherwood Romer Prize-winning contribution**
- Miller, J.H.**, 2008. Richness, population structure, and habitat-specific sampling patterns of Yellowstone National Park's large-mammal death assemblage: Paleoecological and neontological implications. Geological Society of America Annual Meeting, Houston, TX.
- Miller, J.H.**, 2008. Testing Yellowstone National Park's multigenerational large-mammal death assemblage as a source of historical and contemporary data on ungulate habitat utilization. American Society of Mammalogists Annual Meeting, Brookings, SD.
- Miller, J.H.**, N. Shubin, T. Daeschler, and J. Downs, 2007. Stratigraphic context of *Tiktaalik roseae* (Late Devonian): Paleoenvironment of the fish-tetrapod transition. Geological Society of America Meeting, Denver, CO.
- Miller, J.H.**, 2007. Habitat differentiation based on taxon-free analysis of skeletal representation in Yellowstone National Park, WY. Society of Vertebrate Paleontology Annual Meeting, Austin, TX.
- Miller, J.H.**, 2007. The living and dead ungulates of Yellowstone National Park: Testing recent surficial bone assemblages as a source of high-quality historical insight. Ecological Society of America Annual Meeting, San Jose, CA.
- Miller, J.H.**, 2007. Testing Yellowstone National Park's multi-generational large-mammal death assemblages as sources of historical community data. American Society of Mammalogists Annual Meeting, Albuquerque, NM.
- Miller, J.H.**, 2006. Taphonomy of temperate large-mammal death assemblages: A live-dead analysis of Yellowstone National Park. Society of Vertebrate Paleontology Annual Meeting, Ottawa, Canada.
- Miller, J.H.**, 2005. The death assemblage of Yellowstone National Park: A live-dead A live-dead analysis of a temperate mammalian community. Geological Society of America Annual Meeting, Salt Lake City, UT.
- Miller, J.H.** and A. K. Behrensmeyer, 2005. Skeletal distributions across time: A multivariate approach to the changing taphonomy of Amboseli Park, Kenya. Society of Vertebrate Paleontology Annual Meeting, Mesa, Arizona.

- Miller, J.H.**, 2005. Taphonomic biases and signatures of macrofloral fusain. North American Paleontological Congress, Halifax, Canada.
- Rogers, R.R., and **J.H. Miller**, 2002. Paleoenvironmental and taphonomic perspectives on the Late Cretaceous world of the abelisaurid theropod *Majungatholus atopus*. Society of Vertebrate Paleontology Annual Meeting, Albuquerque, New Mexico.
- Miller, J.H.**, R.R. Rogers, K.R. Wirth, and R.K. Dunn, 2000. Preliminary analyses of paleosols in the Upper Cretaceous Maevarano Formation (Mahajanga Basin), northwestern Madagascar: Paleoclimatic implications: Geological society of America, Annual Meeting, Reno, Nevada.