

IAN M. MILLER
Director of the Earth and Space Sciences
Chair of the Earth Sciences Department
Curator of Paleobotany
Denver Museum of Nature & Science

Contact Information:

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Educational Background:

Postdoctoral Fellow 2006-2008, Denver Museum of Nature & Science.

Advisor: Kirk R. Johnson.

PhD, May 2007. Yale University, New Haven, CT. Geology and Geophysics.

Advisors: Leo J. Hickey and Mark T. Brandon.

Dissertation Title: *The Taxonomy, Paleoecology and Paleolatitude of the Early Cretaceous (Albian) Winthrop Formation Flora, Washington State, USA*. 1156 p.

Masters of Philosophy, 2003, Yale University, New Haven CT. Geology and Geophysics.

Civil Engineering M.S. program, 2000-2001, University of New Mexico, Albuquerque, NM.

B.A. with honors in Geology, 1999, Colorado College, Colorado Springs, CO.

Principle Research Interests:

(1) Evolutionary history and ecology of Late Cretaceous plants; (2) recovery of North American forests following the Cretaceous-Paleogene extinction ;(3) paleobotanical proxies for and statistical analysis of paleoclimate, paleolatitude, and paleoelevation; (4) the tectonic evolution of the Western Cordillera of North America. Complementary methodological research seeks to (a) improve reliability and accuracy of paleoclimate proxies based on leaf physiognomy through analysis of living floras; (b) refine existing paleobotanical techniques for estimating paleolatitude and paleoelevation; and (c) standardize and advance digitization of fossil floras.

Professional Experience:

Spring 2012–	Director, Earth and Space Sciences, Denver Museum of Nature & Science
Winter 2009–	Chair, Department of Earth Sciences, Denver Museum of Nature & Science
Winter 2008–	Curator of Paleobotany, Denver Museum of Nature & Science
Winter 2008–2010	Acting Curator of Geology, Denver Museum of Nature & Science
Summer 2006–2008	Postdoctoral Fellow, Denver Museum of Nature & Science
Spring 2006–2019	Associate Editor <i>Palaeontologia Electronica</i>
Fall 2015-2018	Project Captain, Natural World of Colorado Initiative
Fall 2006	EARTHTIME III, Santa Fe Institute, NM
Summer 2005	NSF-funded Paleoelevation Workshop, Lehigh Univ.
Fall 2004	NSF-funded Northeast Russia Tectonics Workshop, Stanford Univ.
Spring 2005	Teaching assistant for Global Environmental Change, Prof. K. Turekian
Fall 2003	Teaching assistant for Paleobotany, Prof. L. Hickey
Fall 2002	Teaching assistant for Sedimentology and Stratigraphy, Prof. L. Hickey
Spring 2002	Teaching assistant for Global Environmental Change, Prof. K. Turekian
1999–2001	Field Geologist, Vineyard & Assoc. Inc., Albuquerque, NM

Field Experience:

Fall 2010–2014 Project lead, The Snowmastodon Project

Summer 2014–	Project lead, Denver Basin Project, CO
Summer 2014–	Field Geologist/Paleontologist, San Juan Basin Project
Summer 2012–	Field Geologist/Paleontologist, Madagascar
Summer 2012–	Field Geologist/Paleontologist, Williston Basin Project
Summer 2006–	Field Geologist/Paleontologist, Kaiparowits Basin Project
Summer 2006–2012	Field Geologist/Paleontologist, Denver Basin Project, CO
Summers 2001–2006	Project lead, Methow Basin Project

Honors and Awards:

2017	Colorado College Spirit of Adventure Award, Alumni Association
2015	American Association of Petroleum Geologists Geosciences in the Media Award
2012	Journalism Award from the Rocky Mountain Association of Geologists
2012	Stephen H. Hard Award for Historic Preservation in the State of Colorado
2006	Philip C. Orville Prize for outstanding scholarship in Earth Sciences, Yale University
2006	G. Simpson Prize for outstanding paper on the fossil record, Yale Peabody Museum
2001–2005	Charlton Dows Cooksey Jr. Memorial Fellowship, Yale University
2002–2005	Yale University Teaching Fellowship
2004	Estwing Hammer Prize for outstanding performance in geology, Yale University
2004	Sigma Xi Research Grant
2004	John F. Enders Fellowship Grant, Yale University
2004	GSA Graduate Student Research Grant – Alexander Sisson Award
2004	Evolving Earth Foundation Student Grant
2004	GSA Travel Grant – Northeastern Section
2004	Yale University Graduate Student Assembly Travel Grant
2003	GSA Graduate Student Research Grant
2003	Yale Institute of Biospheric Studies Field Ecology Grant
2002	GSA Outstanding Mention for exceptional student research grant proposal
2002	GSA Graduate Student Research Grant
2002	GSA Travel Grant – Cordilleran Section
2002	Sigma Xi Research Grant
2002	Honorable Mention, National Science Foundation Graduate Fellowship
1999	Estwing Outstanding Senior Geologist, Colorado College, CO
1999	Colorado College Venture Grant
1998	Howard Hughes Undergraduate Research Grant
1995–1996	Dean's List

Publications (scientific articles [22] and popular books [1]):

- Crystal, V.F., Evans, E.S.J., Fricke, H., **Miller, I.M.**, and Sertich, J.J.W. (*in press*, 2019 release) Late Cretaceous fluvial hydrology and dinosaur behavior in southern Utah, USA: Insights from stable isotopes of biogenic carbonate: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 516, p. 152-165, doi:10.1016/j.palaeo.2018.11.022
- Kowalczyk, J.B., Royer, D.L., **Miller, I.M.**, Anderson, C.W., Beerling, D.J., Franks, P.J., Grein, M., Konrad, W., Roth-Nebelsick, A., Bowring, S.A., Johnson, K.R., and Ramezani, J., 2018. Multiple proxy estimates of atmospheric CO₂ from an early Paleocene rainforest: *Paleoceanography and Paleoclimatology*, vol. 33(12), doi: 10.1029/2018PA003356.
- Dahlberg, E.L., Eberle, J.J., Sertich, J.J.W., and **Miller, I.M.**, 2016. A new earliest Paleocene (Puercan) mammalian fauna from Colorado's Denver Basin, U.S.A.: *Rocky Mountain Geology*, v. 51, no. 1, p. 1-22, doi:10.2113/gsrocky.51.1.1.

- Barclay, R. S., Rioux, M., Meyer, L. B., Bowring, S. A., Johnson, K. R., and **Miller, I. M.**, 2015. High precision U-Pb zircon geochronology for the Cenomanian Dakota Formation floras in Utah: *Cretaceous Research*, 52(part A), p. 213-237.
- Blonder, B., Royer, D.L., Johnson, K.R., **Miller, I.M.**, Enquist, B.J., 2014. Plant ecological strategies shift across the Cretaceous-Paleogene Boundary: *PLoS Biology*, 12(9), e1001949, doi:10.1371/journal.pbio.1001949.
- Johnson, K. R., **Miller, I. M.**, Pigati, J. S., and the Snowmastodon Project Science Team, 2014. The Snowmastodon Project. *Quaternary Research* 82 (3), p. 473-476. <http://dx.doi.org/10.1016/j.yqres.2013.12.010>.
- Pigati, J. S., **Miller, I. M.**, Johnson, K. R., Honke, J. S., Carrara, P. E., Muhs, D. R., Skipp, G., and Bryant, B., 2014. Geologic setting and stratigraphy of the Ziegler Reservoir fossil site, Snowmass Village, Colorado. *Quaternary Research* 82 (3), p. 477-489. <http://dx.doi.org/10.1016/j.yqres.2013.12.011>.
- Miller, D. M., **Miller, I. M.**, and Jackson, S. T., 2014. Biogeography of Pleistocene conifer species from the Ziegler Reservoir fossil site, Snowmass Village, Colorado. *Quaternary Research* 82 (3), p. 567-574. <http://dx.doi.org/10.1016/j.yqres.2014.06.003>.
- **Miller, I. M.**, Pigati, J. S., Anderson, R. S., Johnson, K. R., Mahan, S. A., Ager, T. A., Baker, R. G., Blaauw, M., Bright, J., Brown, P. M., Bryant, B., Calamari, Z. T., Carrara, P. E., Cherney, M. D., Demboski, J. R., Elias, S. A., Fisher, D. C., Gray, H. J., Haskett, D. R., Honke, J. S., Jackson, S. T., Jiménez-Moreno, G., Kline, D., Leonard, E. M., Lifton, N. A., Lucking, C., McDonald, H. G., Miller, D. M., Muhs, D. R., Nash, S. E., Newton, C., Paces, J. B., Petrie, L., Plummer, M. A., Porinchu, D. F., Rountrey, A. N., Scott, E., Sertich, J. J. W., Sharpe, S. E., Skipp, G. L., Strickland, L. E., Stucky, R. K., Thompson, R. S., and Wilson, J., 2014. A high-elevation, multi-proxy biotic and environmental record of MIS 6-4 from the Ziegler Reservoir fossil site, Snowmass Village, Colorado, USA. *Quaternary Research* 82 (3), p. 618-634. <http://dx.doi.org/10.1016/j.yqres.2014.07.004>.
- **Miller, I. M.**, Johnson, K. R., Kline, D. E., Nichols, D. J., Barclay, R. S., 2013. A Late Campanian Flora from the Kaiparowits Formation, Southern Utah, and a Brief Overview of the Widely Sampled but Little-Known Campanian Vegetation of the Western Interior of North America in *At the Top of the Grand Staircase: The Late Cretaceous of Southern Utah*: edited by Titus, A. L., and Loewen, M. A. Indiana University Press, 2013, p. 656.
- Johnson, K. R. and **Miller, I. M.**, 2012. *Digging Snowmastodon: Discovering an Ice Age World in the Colorado Rockies*: Aspen, CO, Denver Museum of Nature and Science and People's Press.
- Lucking, C., Johnson, K. R., Pigati, J. S., and **Miller, I. M.**, 2012. Primary Mapping, Stratigraphic Data, and Field Methods for the Snowmastodon Project: Denver Museum of Nature & Science Technical Report 2012-4, 102 pp.
- Cole, J. C., Trexler, Jr., J. H., Cashman, P. H., **Miller, I. M.**, Shroba, R. R., Cosca, M. A., and Workman, J. B., 2010. Beyond Colorado's Front Range—A new look at Laramide basin subsidence, sedimentation, and deformation in north-central Colorado, in Morgan, L.A., and Quane, S., eds.: *Geological Society of America Field Guide* 18, doi:10.1130/2010.0018.
- **Miller, I. M.** and Hickey, L. J. 2010. The Fossil Flora of the Winthrop Formation (Albian-Early Cretaceous) of Washington State, USA. Part II: Pinophytina. *Bulletin of the Peabody Museum of Natural History* 51(1), p. 3-96.
- Royer, D.L., **Miller, I. M.**, Peppe, D.J., Hickey, L.J., 2010. Leaf economic traits from fossils support a weedy habit for early angiosperms: *American Journal of Botany* 97(3), p. 438-445.
- **Miller, I. M.** and Hickey, L.J. 2008. The Fossil Flora of the Winthrop Formation (Albian-Early Cretaceous) of Washington State, USA. Part I: Bryophyta and Pteridophytina. *Bulletin of the Peabody Museum of Natural History* 49(2), p. 135-180.

- Peppe, D.J., Hickey, L.J., **Miller, I. M.**, and Green, W.A., 2008. A Morphotype Catalogue, Floristic Analysis and Stratigraphic Description of the Aspen Shale Flora (Cretaceous-Albian) of Southwestern Wyoming. *Bulletin of the Peabody Museum of Natural History* 49 (2), p. 181-208.
- Gorman, M.A., **Miller, I. M.**, Pardo, J., Small, B., 2008. Fish, Turtles, Plants, and Insects within the Morrison Formation: A Walk through a Late Jurassic Ecosystem *in* Roaming the Rocky Mountains and Environs, Reynolds, R.G. ed. *GSA Field Guide Series* 10.
- Pott, C., **Miller, I. M.**, Kerp, H., van Konijnenburg-van Cittert, J. H. A., & Zijlstra, G., 2007. (1791) Proposal to conserve the name *Pterophyllum* (fossil *Bennettitales*) with a conserved type: *Taxon*, vol. 56(3), p. 966-967.
- Reynolds, R., Johnson, K. J., Ellis, B., Bowring, S., Dechesne, M., **Miller, I. M.**, 2007. Earth history along Colorado's Front Range: Salvaging geologic data in the suburbs and Sharing it with the citizens: *GSA Today*, vol. 17, no. 12, doi: 10.1130/GSATO1712A.1
- **Miller, I. M.** and Prevec, R. 2006. Palaeobotany in the digital age: Unearthing the future of taxonomy: *Palaeontologia Electronica*, vol. 9 (2).
- **Miller, I. M.**, Brandon, M., and Hickey, L., 2006. Using leaf margin analysis to estimate the mid-Cretaceous (Albian) paleolatitude of the Baja BC block: *Earth and Planetary Science Letters*, vol. 245, p. 95-114. doi: 10.1016/j.epsl.2006.02.022.
- **Miller, I. M.**, Ellis, B., Miller, D. M., Hutton, C. and Johnson, K. J., 2006. The Kauffman Creek Fossil Plant Excavation Project: Denver Museum of Nature & Science Technical Report 2006-1, 47p.

Books/Volumes edited [1]:

- Pigati, J. S., **Miller, I. M.**, (eds.), The Snowmastodon Project: Quaternary Research, vol. 82, issue 3, p. 473-634.

Published Abstracts [63]:

- Maccracken, S.A., **Miller, I.M.**, Mitter, C., and Labandeira, C. 2018. Novel insect herbivory from the Late Cretaceous of Western North America: Geol. Soc. Am. Abstracts with Programs, Indianapolis, IN.
- Fuentes, A.J., Clyde, W.C., Lyson, T.R., Weissenburger, K., **Miller, I.M.**, and Bercovici, A.D., 2018. High-resolution magnetostratigraphy of the K-Pg Boundary interval, Corral Bluffs, Denver Basin, Colorado (USA): Geol. Soc. Am. Abstracts with Programs, Indianapolis, IN.
- Crystal, V., and **Miller, I.M.**, 2017. A new earliest Paleocene, mountain proximal, mature forest floor fossil leaf site in the Denver Basin: Implications for the origins of rainforests: Geol. Soc. Am. Abstracts with Programs, Seattle, WA.
- Brandon, M.T., Mitchell, R.N., Hyland, E.G., Ward, P.D., and **Miller, I.M.**, 2017. Using paleoclimate to estimate paleolatitude of cordilleran terranes: Geol. Soc. Am. Abstracts with Programs, Seattle, WA.
- Butterworth, L.E., Laughton, K.L., Flowers, K., Fontes, J., Gutierrez, L., Way-Smith, A., Wooten, B., Flora, G., Hups, K., Lyson, T., **Miller, I.M.**, and Skaer, A., 2017. Teen Science Scholars: Expanding diversity and accessibility in the sciences through an inclusive museum program Geol. Soc. Am. Abstracts with Programs, Seattle, WA.
- Maccracken, S.A., **Miller, I.M.**, Mitter, C., and Labandeira, C. 2017. Plant-insect associations of the Kaiparowits Formation, Late Cretaceous (Campanian) of Utah. Entomology Conference Abstracts with Programs, Annual Meeting, Denver, CO.
- Maccracken, S.A., **Miller, I.M.**, Mitter, C., and Labandeira, C. 2017. Insect herbivory of the Kaiparowits Formation, Late Cretaceous (Campanian) of Utah. Botany Conference Abstracts with Programs, Annual Meeting, Ft. Worth, TX.

- Evans, E.S.J., Fricke, H., Crystal, V., Sertich, J.J.W., and **Miller, I.M.**, 2016. Fluvial Landscapes of the Cretaceous: Insights from stable isotope geochemistry, sedimentology and taphonomy. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Fricke, H., Crystal, V., **Miller, I.M.**, and Sertich, J.J.W., 2016. Using carbon isotope ratios to study forest soils and canopies of the Late Cretaceous in Southern Utah. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- McCracken, S. A., **Miller, I.M.**, Mitter, C.W., and Labandeira, C.C., 2016. Preliminary assessment of plant-insect associations in the Kaiparowits flora, Late Cretaceous of Utah. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Marshall, M.S., Sertich, J.J.W., **Miller, I.M.**, Andrainavivo, M. 2015. Stratigraphy and paleontology of a new nearshore dinosaur-bearing succession from the Late Cretaceous of the Morondava Basin, Western Madagascar. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Baltimore, MD, Nov. 1-4.
- Kowalczyk, J. B., Royer, D. L., and **Miller, I. M.**, 2014. A comparison of multiple proxy estimate of atmospheric CO₂ from an Earth Paleocene rainforest. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Vancouver, BC, Oct. 19-22.
- Crystal, V. F., Fricke, H. F., Sertich, J. W., and **Miller, I. M.**, 2014. Focusing on the floodplain: Cycling of carbon and structure of forests in western North America during the Late Cretaceous. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Vancouver, BC, Oct. 19-22.
- **Miller, I. M.**, Pigati, J., Johnson, K.R., and Anderson, S.R. 2013. An unprecedented, multi-proxy, high-elevation record of the Sangamon Interglacial in the Colorado Rockies. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Pigati, J., **Miller, I. M.**, Johnson, K.R., Honke, J., Carrara, P., Muhs, D.R., Skipp, G., and Bryant, B. 2013. Geologic setting and stratigraphy of the Ziegler Reservoir Fossil Site, Snowmass Village, Colorado. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Miller, D.M., Jackson, S., and **Miller, I. M.** 2013. Biogeographic history of Late Pleistocene conifers in Snowmass Village, Colorado. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Veatch, S.W., Brown, T.R., Sepulveda, Z.J., and **Miller, I. M.** 2013. A preliminary investigation into the occurrence of carbonized wood in the Cripple Creek Volcanic Complex. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- **Miller, I. M.** 2013. Overview of Late Cretaceous and Early Tertiary megaflores in Western North America and the vegetation they represent. Burpee Museum of Natural History, PaleoFest, Rockford, IL.
- **Miller, I. M.** 2013. Overview of Late Cretaceous and Early Tertiary megaflores in Western North America and the vegetation they represent. Casper College Tate Museum, Cretaceous Conference, Casper, WY.
- **Miller, I. M.** 2013. Digging Snowmastadon: Discovering an Ice Age World in the Colorado Rockies. AIPG, 50th Annual Conference, Denver, CO.
- Johnson, K.R., **Miller, I. M.**, Pigati, J., Bryant, B., and Lucking, C. 2012. Regional Geological Overview and Stratigraphy of the Basin-Margin Debris Flows at Ziegler Reservoir, Pitkin County, Colorado. DMNS Technical Report Series 2012-5, Denver Museum of Nature and Science, Denver, CO, June 26-28, 2012.
- Kline, D., and **Miller, I. M.**, 2012. Taxonomic analysis of fossil wood from the Late Pleistocene deposits at Ziegler Reservoir. DMNS Technical Report Series 2012-5, Denver Museum of Nature and Science, Denver, CO, June 26-28, 2012.
- Lucking, C., Johnson, K.R., Pigati, J., and **Miller, I. M.** 2012. Primary Mapping and Stratigraphic Data and Field Methods for the Snowmastadon Project. DMNS Technical Report Series 2012-5, Denver Museum of Nature and Science, Denver, CO, June 26-28, 2012.

- Miller, D.M., Jackson, S.T., and **Miller, I. M.** 2012. Morphometric analysis of fossil conifer cones collected from a high-elevation, Late Pleistocene, deposit near Snowmass Village, Colorado. DMNS Technical Report Series 2012-5, Denver Museum of Nature and Science, Denver, CO, June 26-28, 2012.
- Miller, D.M., Jackson, S.T., and **Miller, I. M.** 2012. Tying fossil conifer cone taxa to the stratigraphic lake sequences of Ziegler reservoir in order to understand forest transitions in a high-elevation Late Pleistocene deposit near Snowmass Village, Colorado. American Quaternary Association, Programs with Abstracts vol. 22nd Biennial Meeting 2012, pg. 93.
- Fricke, H. C., Kochevar, B., Clyde, W. C., Snell, K., Martin, K., and **Miller, I. M.** 2011. Landscape change and megafan deposition in the Denver Basin during the PETM. American Geophysical Union, Abstracts with Programs, San Francisco, CA.
- **Miller, I. M.**, and Johnson, K. R., 2011, The Campanian Flora of Laramidia, Society of Vertebrate Paleontology Annual Meeting, Las Vegas, Nevada, November 2-5, 2011.
- Johnson, K. R., **Miller, I. M.**, Sertich, J., Stucky, R., Fisher, D. C., and Pigati, J. S. 2011, Ziegler Reservoir and the Snowmastodon Project: Overview and Geologic Setting of a Recently Discovered Series of High-Elevation Pleistocene (Sangamonian) Ecosystems Near Snowmass Village, Colorado. Society of Vertebrate Paleontology Annual Meeting, Las Vegas, Nevada, November 2-5, 2011.
- Stucky, R., Sertich, J., Johnson, K. R., **Miller, I. M.**, Fisher, D. C., Graham, R. W., McDonald, H. G., and Pigati, J. S., 2011, A New High Altitude Late Pleistocene Interglacial/Glacial Site (Mis 5?) Preserving Large and Small Vertebrate Fossils from Western Colorado: The Snowmastodon Site at Ziegler Reservoir, Pitkin County. Society of Vertebrate Paleontology Annual Meeting, Las Vegas, Nevada, November 2-5, 2011.
- Gorman, M. II., and **Miller, I. M.**, 2011. Temporal and latitudinal flora gradients in the Late Jurassic Morrison Formation: Geol. Soc. Am. Abstracts with Programs, 2011 Annual Meeting, Minneapolis, MN.
- Stucky, R., Sertich, J., Johnson, K. R., **Miller, I. M.**, Fisher, D. C., Graham, R. W., McDonald, H. G., and Pigati, J. S. Ziegler Reservoir and the Snowmastodon Project: New high-elevation fossil vertebrate faunas from Snowmass Village CO: Geol. Soc. Am. Abstracts with Programs, 2011 Annual Meeting, Minneapolis, MN.
- Richards, S., Johnson, K. R., **Miller, I. M.**, Hays, K. and Schoemer, J. A community digs the Ice Age: Real-time science outreach on a world-class Pleistocene fossil site in Snowmass Village, CO: Geol. Soc. Am. Abstracts with Programs, 2011 Annual Meeting, Minneapolis, MN.
- Johnson, K. R., **Miller, I. M.**, Sertich, J., Stucky, R., Fisher, D. C., and Pigati, J. S. Ziegler Reservoir and the Snowmastodon Project: Overview and geologic setting of a recently discovered series of high-elevation Pleistocene ecosystems near Snowmass Village, CO: Geol. Soc. Am. Abstracts with Programs, 2011 Annual Meeting, Minneapolis, MN.
- Meyer, H. W., D. Smith, K. R. Johnson, **I. M. Miller**, E. B. Leopold, and E. Nesbitt, 2011. Full disclosure of paleontological locality data: An integral component of credible science. In: Proceedings of the 9th Conference on Fossil Resources, Brigham Young University Geology Studies, vol. 49(A), p. 26.
- Stucky, R. K., **Miller, I. M.**, Chinnery-Allgeier, B. Dodge, B. 2010. Teen Science Scholars at the Denver Museum of Nature and Science: Nurturing the next generation of scientific leaders, Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Martin, K., Snell, K. E., **Miller, I. M.**, and Johnson, K. R. 2010. Searching for the PETM in carbon isotope values of bulk organic matter from the paleosol interval of the D2 synorogenic strata of the Denver Basin, Colorado. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- **Miller, I.M.**, Johnson, K.R., Kline, D., Nichols, D., 2009. Merging the ancient past with cutting-edge technology: A Late Campanian flora from the Kaiparowits Formation, Grand Staircase-Escalante

National Monument, Utah, and a successful model for high-resolution outreach: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Portland, OR.

- Royer, D.L., Peppe, D.J., **Miller, I.M.**, Hickey, L.J. Leaf economic traits from fossils support a weedy habit for early angiosperms: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Portland, OR.
- **Miller, I. M.**, 2009. Paleotemperature Estimates of Paleoelevation: Factors That Affect Resolution (invited presentation) *in* Session Theme XIII: Grand Challenges that Limit Our Ability to Understand Paleoclimate and Paleoceanography in Deep Time: American Association of Petroleum Geologists (AAPG) 2009 Annual Convention, June 7-10.
- **Miller, I. M.** and Johnson, K. R., 2009. A Late Campanian flora from the Kaiparowits Formation, Grand Staircase–Escalante National Monument, Utah: Advances in Western Interior Late Cretaceous Paleontology and Geology, Grand Staircase-Escalante National Monument Cretaceous Conference, St. George, UT, May 22-23.
- **Miller, I. M.**, Brandon, M. T., Johnson, K. R., Peppe, D., Dunn, R., and Ellis, B., 2008. Paleobotanical Estimates fo Laramide Relief in the Western Interior of North America: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Houston, TX.
- Hickey, L.J. and **Miller, I. M.**, 2008. The Winthrop Flora: A Far-Traveled, Albian Age, “Viking Funeral Ship” from Washington State, USA. International Organization of Paleobotany Meeting, Bonn, Germany.
- Bowring, S. A., Johnson, K. R., Clyde, W., Ramezani, J., **Miller, I. M.**, Peppe, D., 2008. A Paleocene Timescale for the Rocky Mountains: Status and Potential: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Houston, TX.
- Johnson, K., Ellis, B., **Miller, I. M.**, 2008. The Paleocene Megafloora of the Western Interior of North America: Tapping the Potential of One of the Most Extensive Terrestrial Fossil Records: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Houston, TX.
- **Miller, I. M.**, Johnson, K. J., Ellis, B., Fricke, H., and Reynolds, R. 2007. Evolution of relief on the Colorado Front Range: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Gorman, M. A. II, **Miller, I. M.**, Small, B., Pardo, J. 2007. A lacustrine Late Jurassic flora in the Morrison Formation: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Ellis, B., Johnson, K. J., **Miller, I. M.**, Hutton, C., Dunn, R., Barclay, R., Miller, D. M., 2007. Snapshots in Time: Floral change in the Denver Basin from 68-64 Ma: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- Johnson, K., Reynolds, R., Ellis, B., **Miller, I. M.**, 2007. Outreach opportunities related to museum-sponsored research on the urban geology and surprising paleontology of the Laramide strata of the Denver Basin: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- **Miller, I. M.**, Johnson, K. J., and Ellis, B., 2007. A Complete Cycad Plant from the Castle Rock Rainforest: Implications for the Evolution and Paleo-distribution of American Zamiaceae. Mid-Continent Paleobotanical Colloquium, Southern Methodist University, Dallas, TX.
- **Miller, I. M.**, Johnson, K. R., Ellis, B., and Miller, D. M., 2006. An exceptionally preserved Paleocene flora from the Middle Park Formation, Colorado: Implications for the Laramide paleotopography of the Central Rocky Mountain Region. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Philadelphia, PA.
- Ellis, B., Johnson, K. R., **Miller, I. M.**, and Barclay, R., 2006. The Paleocene enigma: High diversity floras along the Rocky Mountain Front Range. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Philadelphia, PA.
- Prevec, R., **Miller, I. M.**, and Rumford, J. P., 2006. Palaeontology in the digital age: Taxonomy and the Future of Electronic Publication. Congress of the Palaeontological Society of Southern Africa (PSSA), Grahamston, South Africa.

- **Miller, I. M.**, Green, W., 2006. Using LMA and CLAMP data to build new models for estimating elevation. Mid-Continent Paleobotanical Colloquium (MPC), Gainesville, FL.
- **Miller, I. M.**, Green, W., Zaitchik, B., Brandon, M., and Hickey, L., 2005. Evaluating LMA and CLAMP: Choosing a model for estimating elevation. American Geophysical Union, Abstracts with Programs, San Francisco, CA.
- Green, W. A., **Miller, I. M.**, and Hickey, L., 2005. Taking the climate out of CLAMP: Dealing with spatial autocorrelation under irregular geographical sampling of dicot leaf floras analyzed under the Climate Leaf Analysis Multivariate Program: Paleontological Association Annual Meeting, Oxford, UK.
- **Miller, I. M.**, Brandon, M. T. 2004. Cordilleran magmatic patterns consistent with Baja BC. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO.
- **Miller, I. M.**, Brandon, M. T., and Hickey, L.J. 2003. Paleobotanical method for restoring far-traveled terranes. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Seattle, WA.
- **Miller, I. M.**, Brandon, M. T., and Hickey, L.J. 2002. Paleofloral tests for a far-traveled Baja BC. Geol. Soc. Am. Abstracts with Programs, 98th Cordilleran Section, Corvallis, OR.
- **Miller, I. M.** and Johnson, K. R. 2000. Quantitative analysis of the Winthrop Formation flora of north-central Washington argues for vegetational dominance of angiosperms by the end of the Early Cretaceous: Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Reno, NV.

Select Invited Colloquia and Keynotes:

Evolution and early diversification of angiosperms. Colorado College, CO, Colloquia Series, Nov., 2000.

Reading the Leaves: Paleofloral Tests for Far-Traveled Terranes. WIPS monthly speaker, Sept., 2006.

The Fossil Record of Land Plants. Evolution and the Fossil Record, WIPS Symposium, Golden, CO, Mar., 2007.

Reading the Leaves: Paleofloral Tests for Far-Traveled Terranes. DMNS, Lunchtime Lecture, 2007.

From Paleobotany to Geophysics: Fossil Plants as a Tool in Tectonics. Washington and Lee University, VA, Nov. 2007.

Evolution of the Colorado Front Range: A view from the Denver Basin. University of Colorado Denver, Feb., 2008.

Evolution of the Colorado Front Range: A view from the Denver Basin. Roxborough State Park, Oct., 2008.

Evolution of the Colorado Rockies: A view from the Denver Basin. Bureau of Land Management, Nov. 2008.

Deep Time Climate Change and its Relevance to Our Understanding of Global Warming. Colorado Renewable Energy Society Meeting, Nov., 2008.

Plankton, and Plants, and Tectonics! Oh, my! The role of the long-term carbon cycle in Earth's climate. WIPS monthly speaker, March, 2009.

It's a Jungle Out There: Late Cretaceous Flora of the Kaiparowits Formation, Grand Staircase-Escalante NM. Bureau of Land Management, Oct. 2009.

Evolution of the Colorado Rockies: A view from the Denver Basin. Bear Creek Nature Center, Colorado Springs, CO; Oct. 2009.

Plant Evolution on an Island Continent. Native Plant Society, Escalante, UT, May, 2010.

Reading the Leaves: Deciphering the Geology of Western North America using fossil plants. University of Colorado in Boulder, Feb. 2013.

Reading the Leaves: Deciphering the Geology of Western North America using fossil plants. University of Wyoming in Laramie, Jan. 2013.

From Mastodon to Mountain Climates: Final Results of The Snowmastodon Project. University of Colorado in Boulder, Dec. 2014.

A Natural History Museum of the Community, by the Community, and for the Community. International Council of Museums, Milan, Italy, June, 2016.

Select Synergistic/Outreach Activities:

- NOVA-National Geographic special, *How the Earth Was Made*, participant, 2015.
- Co-convenor for the GSA Topical Session (T33): *The Snowmastodon Project: A Multi-Proxy Approach to Understanding the Response of Alpine Ecosystems to Climate Change in the Colorado Rockies*: Geol. Soc. Am. Ann. Meeting, Denver, 2013.
- Curator for *Mammoths and Mastodons: Titans of the Ice Age*; displayed at DMNS between Feb. and May 2013.
- America's Geologic Heritage Workshop, USGS, Denver.
http://www.nature.nps.gov/geology/americas_geologic_heritage/overview.cfm
- *Digging Snowmastodon: Discovering an Ice Age Ecosystem in the Colorado Rockies* book tour, Spring 2012.
- NOVA-National Geographic special, *Ice Age Death Trap*, lead participant, 2012.
- Curator for *A Day in Pompeii*; displayed at DMNS from Sept., 2012 to Jan. 2013.
- Lead convenor for the GSA Topical Session (T80): *System Science in Museums: Tapping the Potential to Engage the General Public in the Complexity of the Earth*. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO, 2010.
- Co-convenor for the GSA Topical Session (T155). *Cryptic Uplift of the Interior of the U.S. Cordilleran Orogen*. Geol. Soc. Am. Abstracts with Programs, Annual Meeting, Denver, CO, 2010.
- Lead convenor for the GSA Topical Session (T1): *Denver Then and Now: From Paleontology to Public Policy in the Front Range Urban Corridor*. Geol. Soc. Am. Ann. Meeting, Denver, 2007.
- Curator for *Dinosaurs: Ancient Fossils New Discoveries* from the American Museum of Natural History; displayed at DMNS from Sept. 27, 2008 to Jan. 4, 2009.
- History Channel, *How the Earth Was Made*, lead participant, 2009.
- Scientific consultant for the design of the Washakie Museum and Cultural Center in Worland, WY, 2009.
- Co-convenor for the GSA Topical Session: *After the last ammonite and before the first horse: patterns of ecological and climatic change during the Paleocene*: Geol. Soc. Am. Ann. Meeting, Houston, 2008.
- Variable Atmosphere Laboratories (VAL) Research Project (NSF), Arizona State University, Feb., 2008.
- *Sea Monsters: A Prehistoric Adventure* National Geographic production; scientific advisor, 2007.
- Azolla Project <http://www.bio.uu.nl/~palaeo/Azolla/Azolla.html>
- EARTHTIME III (NSF), Santa Fe Institute, NM, <http://www.earth-time.org>
- Paleoelevation Workshop (NSF), Lehigh University,
<http://www.ei.lehigh.edu:16080/paleoelevation/index.html>
- Northeast Russia Tectonic Workshop (NSF), Stanford University,
<http://pangea.stanford.edu/research/structure/nerussia/index.html>

Select major media in last five years:

- The Snowmastodon Project at the Denver Museum of Nature and Science, which I led with Dr. Kirk Johnson, Sant Director of the National Museum of Natural History, has generated more than 1000 newspaper, television, or radio stories since October, 2010. These included front page coverage in the science section of the New York Times, multiple front page stories in the Denver Post, radio stories for CBC, BBC, NPR and Living on Earth, a television segment for PBS News Hour, and many mentions of the story in the Washington Post, the Huffington Post, the Los

Angeles Times, USA Today, Associated Press, ABCNews.com, FoxNews.com, the Chicago Tribune, and Salon.com. A NOVA-National Geographic special was produced on the dig and was aired on PBS to 6.3 million people in February of 2012. The program currently streams on Netflix and PBS, which also reruns the show, and has been seen by more than an estimated 15 million people.

- Featured in May, 2014 issue of the National Geographic Magazine, which highlighted my research on the fossil plants that occur on the lost dinosaur continent of Laramidia. Circulation of this magazine is approximately 15 million worldwide.
- Featured in July, 2015 issue of New York Times, which highlighted my research on the fossil plants that occur on the lost dinosaur continent of Laramidia. Circulation of print and digital is about 5 million.

Select Academic and Professional Service:

2015–2019 External Committee Member, University of Colorado, Colorado USA
 2014–2018 Geological Society of America Education Fellow
 2012–2014 External Committee Member, Wesleyan University, Connecticut USA
 2012– Board Member, Snowmass Discovery 501c3
 2006–2019 *Palaeontologia Electronica*, Associate Editor
 2004– Peer-reviewer for multiple academic journals, NSF, and ACS-PRF.

Select recent collaborators in last five years:

Scott Anderson (NAU), Richard Barclay (Northwestern Univ.), Benjamin Blonder (Univ. of Copenhagen), Mark Brandon (Yale), Sam Bowring (MIT), Will Clyde (Univ. New Hampshire), Victoria Crystal (UC Boulder), Marieke Dechesne (USGS), Jaelyn Eberle (CU), Brian Enquist (Univ. AZ), Erica Evans (Yale), Dan Fisher (Univ. Michigan), Henry Fricke (Colorado College), Russ Graham (Penn State), Jeff Honke (USGS), Steve Jackson (USGS), Kirk Johnson (Smithsonian Institute), Jenny Kowalczyk (Brown), Tyler Lyson (DMNS), Sarah MacCracken (UMD), Greg McDonald (NPS), Herb Meyer (NPS), Dan Muhs (USGS), Jeff Pigati (USGS), Jeff Rahl (Washington and Lee University), Robert Reynolds (DMNS), Dana Royer (Wesleyan), Katie Snell (CU), Scott Sampson (Science World), Joe Sertich (DMNS), Dena Smith (CU), Peter Wilf (Penn State).

Society Memberships:

American Association for the Advancement of Science (AAAS)
 American Association of Stratigraphic Palynologists (AASP)
 American Geophysical Union (AGU)
 Geological Society of America (GSA)
 International Council of Museums (ICOM)
 Paleontological Society (PS)
 Society of Vertebrate Paleontology (SVP)
 Western Interior Paleontological Society (WIPS)