

Publications

This list comprises research publications and presentations by Badlands Dinosaur Museum staff and associated researchers, and also research by other scholars on specimens held in our collections.

Curator: Dr. Denver Fowler

Research Publications

Warshaw EA & **Fowler DW** (2022) A transitional species of *Daspletosaurus* Russell, 1970 from the Judith River Formation of eastern Montana, *PeerJ*. <http://dx.doi.org/10.7717/peerj.14461> (Publication scheduled online 7am GMT Nov 25th 2022, **free access**). ([Summary](#) / [Press Links](#) / [Images](#))

Wilson JP, & **Fowler DW** (2020) The easternmost occurrence of *Sauornitholestes* from the Judith River Formation, Montana, indicates broad biogeographic distribution of *Sauornitholestes* in the Western Interior of North America. *Historical Biology*.
<https://doi.org/10.1080/08912963.2020.1862828> (published online Dec. 23rd 2020) ([Summary](#) / [Press Links](#) / [Images](#))

Fowler DW (2020) The Hell Creek Formation, Montana: A Stratigraphic Review and Revision Based on a Sequence Stratigraphic Approach. *Geosciences* 2020, 10(11), 435.
<https://doi.org/10.3390/geosciences10110435> ([Free Access PDF](#))

Fowler DW, Wilson JP, Freedman Fowler EA, Noto CR, Anduza DA, & Horner JR (2020) *Trierarchuncus prairiensis* gen. et sp. nov., the last alvarezsaurid: Hell Creek Formation (uppermost Maastrichtian), Montana". *Cretaceous Research* 116, December 2020, 104560. doi:10.1016/j.cretres.2020.104560 (Published online July 10th 2020) ([Summary](#) / [Press Links](#) / [Images](#))

Fowler DW & Freedman Fowler EA (2020) Transitional evolutionary forms in chasmosaurine ceratopsid dinosaurs : evidence from the Campanian of New Mexico, *PeerJ* 8:e9251. DOI [10.7717/peerj.9251](https://doi.org/10.7717/peerj.9251) ([Free Access PDF](#)) (Published online June 5th 2020) ([Summary](#) / [Press Links](#) / [Images](#))

Canoy Illies MM & **Fowler DW** (2020) *Triceratops* with a kink: Co-ossification of five distal caudal vertebrae

from the Hell Creek Formation of North Dakota. *Cretaceous Research* (108):

<https://doi.org/10.1016/j.cretres.2019.104355> (**Summary / Press Links / Images**)

Fowler DW (2017) Revised geochronology, correlation, and dinosaur stratigraphic ranges of the Santonian-Maastrichtian (Late Cretaceous) formations of the Western Interior of North America. *PLoS ONE* 12(11): e0188426. <https://doi.org/10.1371/journal.pone.0188426> (**Free Access PDF**)

Woodruff DC, **Fowler DW**, & Horner JR (2017) A new multi-faceted framework for deciphering diplodocid ontogeny. *Palaeontologica Electronica* 20.3.43A: 1-53. <https://doi.org/10.26879/674> (**Free Access PDF**)

Wilson JP & **Fowler DW** (2017) First confirmed identification of juvenile *Triceratops* epiparietals. *Cretaceous Research* 70, p. 71-76. <https://doi.org/10.1016/j.cretres.2016.10.005>

Hall LE, Hall AE, & **Fowler DW** (2016) Using the trackway fossil record to test the substrate grip hypothesis for sauropod pedal unguals. In: Richter A, and Manning PL (eds.), *Dinosaur Tracks - next steps*, Indiana University Press.

Wings O, Tutken T, **Fowler DW**, Martin T, Pfretzschner H-U, & Ge S (2015) Dinosaur teeth from the Jurassic Qigu and Shishugou Formations of the Junggar Basin (Xinjiang/China) and their paleoecologic implications. *Paläontologische Zeitschrift* 89(3), p. 485-502. (**Free Access PDF**)

Scannella JB, **Fowler DW**, Goodwin MB, Horner JR (2014) Evolutionary trends in *Triceratops* from the Hell Creek Formation, Montana. *Proceedings of the National Academy of Sciences* 111(28), p. 10245-10250. (**Free Access PDF**)

Scannella JB, & **Fowler DW** (2014). A stratigraphic survey of *Triceratops* from the Hell Creek Formation, northeastern Montana (2006-2010). in Wilson et al. (eds) Through the End of the Cretaceous in the Type Locality of the Hell Creek Formation in Montana and Adjacent Areas: *Geological Society of America Special Paper* 503: p. 313-332. (**Abstract & PDF request page**)

Newbrey MG, Brinkman DB, Winkler DA, Freedman EA, Neuman AG, **Fowler DW**, & Woodward HN (2013) Teleost centrum and jaw elements from the Upper Cretaceous Nemegt Formation (Campanian – Maastrichtian) of Mongolia and a re-identification of the fish centrum found with the theropod *Raptorex kreigsteini*. pp. 291-303 in Arratia, Schultze & Wilson (eds), *Mesozoic Fishes 5 - Global Diversity and Evolution*. Verlag, Munchen, Germany. ISBN 978-3-89937-159-8. (**Free Access PDF**)

Woodruff DC, & **Fowler DW** (2012) Ontogenetic influence on neural spine bifurcation in Diplodocoidea (Dinosauria: Sauropoda): a critical phylogenetic character. *Journal of Morphology* 273(7), p. 754-764. (**Abstract & PDF Request**)

Koenig AE, Lucas SG, Neymark LA, Heckert AB, Sullivan RM, Jasinski SE, & **Fowler DW** (2012) Direct U-Pb dating of Cretaceous and Paleocene dinosaur bones, San Juan Basin, New Mexico. COMMENT, *Geology* 40: e262, doi:10.1130/G32154C.1 ([Free Access Link](#))

Fowler DW, Freedman EA, Scannella JB, & Kambic RE (2011) The predatory ecology of *Deinonychus* and the origin of flapping in birds. *PLoS One* 6(12): e28964. doi:10.1371/journal.pone.0028964 ([Free Access](#))

Fowler DW, & Sullivan RM (2011) The first giant titanosaurian sauropod from the Upper Cretaceous of North America. *Acta Palaeontologica Polonica* 56(4): 685-690. <http://www.app.pan.pl/article/item/app20100105.html> ([Free Access](#))

Fowler DW, Woodward HN, Freedman EA, Larson PL, & Horner JR (2011) Reanalysis of “*Raptorex kriegsteini*”: a juvenile tyrannosaurid dinosaur from Mongolia. *PLoS One* 6(6): e21376. doi:10.1371/journal.pone.0021376 ([Free Access](#)).

Fowler DW, & Hall LE (2011) Scratch-digging sauropods, revisited, *Historical Biology* 23(1): 27-40. ([Abstract and PDF Request](#))

Wings O, Schwarz-Wings D, & **Fowler DW** (2011). New sauropod material from the Late Jurassic part of the Shishugou Formation (Junggar Basin, Xinjiang, NW China). *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen* 262/2: 129-150. ([Free Access](#))

Sullivan RM, & **Fowler DW** (2011) *Navajodactylus boerei*, n.gen., n.sp. (Pterosauria, ?Azhdarchidae) from the Upper Cretaceous Kirtland Formation (Upper Campanian) of New Mexico. *New Mexico Museum of Natural History and Science Bulletin* 53: p. 393-404. ([Free Access](#))

Fowler DW, Freedman EA, & Scannella JB (2009) Predatory functional morphology in raptors: Interdigital variation in talon size is related to prey restraint and immobilisation technique. *PLoS One* 4(11): e7999. doi:10.1371/journal.pone.0007999 ([Free Access](#))

Lucas SG, Sullivan RM, Cather SM, Jasinski SE, **Fowler DW**, Heckert AB, Spielmann JA & Hunt AP (2009) No definitive evidence of Paleocene dinosaurs in the San Juan Basin. *Paleontologica Electronica* 12(2); 8A: 10p. ([Free Access](#))

Wolff EDS, Fowler DW, & Bonde JW (2007) A possible case of necrotizing dermatitis in the crocodylian *Diplocynodon*, from the Oligocene of the Isle of Wight, UK. *Historical Biology* 19(2): p. 203-207. ([Abstract and PDF Request](#))

Fowler DW, & Sullivan RM (2006) A ceratopsid pelvis with toothmarks from the Upper Cretaceous Kirtland Formation, New Mexico: Evidence of late Campanian tyrannosaurid feeding behavior. *New Mexico Museum of Natural History and Science Bulletin* 35: p. 127-130. ([Free Access](#))

Sullivan RM, & **Fowler DW** (2006). New specimens of the rare ankylosaurid dinosaur *Nodocephalosaurus kirtlandensis* (Ornithischia: Ankylosauridae) from the Upper Cretaceous Kirtland Formation (De-na-zin Member), San Juan Basin, New Mexico. *New Mexico Museum of Natural History and Science Bulletin* 35: p. 259-261. ([Free Access](#))

Articles in edited books

Fowler DW (2017) Dinosaur evolution: it's about time. p40-41 in Cullum & Martinus (eds), 52 more things you should know about palaeontology. Agile Libre, Nova Scotia, Canada.

Conference Presentations & Extended Abstracts

Fowler DW, Wilson JP, Freedman Fowler EA, & Horner JR (2019) The Horned Dinosaur *Leptoceratops* (Ornithischia: Neoceratopsia) Raised its Young in Communal Nesting Burrows: Evidence from Three New Bonebeds in the Hell Creek Formation (Maastrichtian, Late Cretaceous), Montana. Abstracts volume of Cretaceous and Beyond, Paleontology of the Western Interior, *Publications of North Dakota Geological Survey, Miscellaneous Series* (94): 20.

Freedman Fowler EA & **Fowler DW** (2019) "Warwick's Duck", an Exceptional Specimen of *Edmontosaurus* (Dinosauria: Hadrosauridae) with Extensive Caudal Neural Spine Pathologies: Evidence of Mating Injuries in Hadrosaurs? Abstracts volume of Cretaceous and Beyond, Paleontology of the Western Interior, *Publications of North Dakota Geological Survey, Miscellaneous Series* (94): 21.

Canoy Illies, MM & **Fowler DW** (2019) *Triceratops* with a kink: Co-ossification of five distal caudal vertebrae from the Hell Creek Formation of North Dakota. Abstracts volume of Cretaceous and Beyond, Paleontology of the Western Interior, *Publications of North Dakota Geological Survey, Miscellaneous Series* (94): 11.

Fowler DW, Freedman Fowler EA & Alexander, JM (2018) The finest fossil owl. *Journal of Vertebrate Paleontology* 37(5, abstracts vol): 129.

Fowler DW & Freedman Fowler EA (2017) The oldest "*Chasmosaurus*"? A new skull from the Judith River Formation of Montana. *Journal of Vertebrate Paleontology* 36(5, abstracts vol): 114.

Fowler DW & Horner JR (2016) The evolutionary process of reinforcement reconciles conflicting functional hypotheses for bizarre structures in North American Late Cretaceous dinosaurs, explains apparent endemism as an artifact of vicariance and anagenesis, and suggests pre K-Pg diversity patterns may be peculiar to North America. *Journal of Vertebrate Paleontology* 35(5, abstracts vol): 138.

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Flora HM, Wilson JP, Gardner JD, & **Fowler DW** (2015) A three-dimensionally articulated probable oviraptorosaur from the Hell Creek Formation of Montana. *Journal of Vertebrate Paleontology* 34(5, abstracts vol): 124.

Anduza D & **Fowler DW** (2014) How might spinosaurids have caught fish? testing behavioral inferences through comparisons with modern fish-eating tetrapods. *Journal of Vertebrate Paleontology*, also presented at *Mid Mesozoic, the age of dinosaurs in transition*, Fruita CO.

Woodruff DC & **Fowler DW** (2014) The effects of ontogeny in regards to Morrison sauropod diversity. *Mid Mesozoic, the age of dinosaurs in transition*, Fruita CO: p. 81.

Fowler DW, Freedman-Fowler EA, Scannella JB, & Horner JR (2013) The influence of multi-niche ontogeny on differential survivorship across the K-Pg boundary. *Journal of Vertebrate Paleontology* 32(5, abstracts vol): 129.

Anduza D, **Fowler DW**, Noto C, & Horner JR (2013) New alvarezsaurid material from the Hell Creek Formation, Montana. *Journal of Vertebrate Paleontology* 32(5, abstracts vol): 77-78.

Woodruff C, **Fowler DW**, & Horner JR (2013) Changes in vertebral morphology associated with histologic data support significant change through ontogeny in diplodocid sauropods, *Journal of Vertebrate Paleontology* 32(5): 239.

Scannella JB, **Fowler DW**, Goodwin MG, & Horner JR (2013) The clandestine role of heterochrony in ceratopsian evolution as revealed by juvenile *Triceratops*. *Journal of Vertebrate Paleontology* 32(5): 206.

Fowler DW, Scannella JB, Goodwin MG, & Horner JR (2012) How to eat a *Triceratops*: large sample of toothmarks provides new insight into the feeding behavior of *Tyrannosaurus*. *Journal of Vertebrate Paleontology* 32(5): 96.

Scannella JB, **Fowler DW**, Goodwin MG, & Horner JR (2012) Transitional *Triceratops*: Details of an ontogenetic sequence from the upper Middle Unit of the Hell Creek Formation, Montana. *Journal of Vertebrate Paleontology* 32(5): 166.

Fowler DW (invited speaker), Freedman EA, Scannella JB, & Kambic RE (2011) The predatory ecology of Deinonychosauria: foot use compared among dromaeosaurids, troodontids and basal birds. Dinosaur Track Symposium, Obenkirchen, Germany: p. 22.

Fowler DW, Scannella JB, & Horner JR (2011) Reassessing ceratopsid diversity using unified frames of reference. *Journal of Vertebrate Paleontology* 31(5): 111.

Scannella JB, **Fowler DW**, Trevethan IJ, Roberts D, & Horner JR (2011) Individual variation in *Triceratops* from the Hell Creek Formation, Montana: implications for dinosaur taxonomy. *Journal of Vertebrate Paleontology* 31(5): 187.

Sander PM, Wings O, Griebeler E, **Fowler DW**, & Henderson D (2011) High maximum growth rate in c.f. *Mamenchisaurus* argues against low basal metabolic rate as the explanation for sauropod gigantism. *Journal of Vertebrate Paleontology* 31(5): 186.

Fowler DW (2010) Anagenesis and long-term morphologic trends in Chasmosaurinae (Dinosauria: Ceratopsidae) revealed by a new high-resolution chronostratigraphic framework, ontogenetic analysis, and description of two new taxa. *Journal of Vertebrate Paleontology* 30(5): 91A.

Freedman EA, & **Fowler DW** (2010) Stratigraphic correlation of Judith River Formation (Campanian, Upper Cretaceous) exposures in Kennedy Coulee (Northcentral Montana) to the Foremost Formation (Alberta): Implications for anagenesis in hadrosaurid dinosaurs. *Journal of Vertebrate Paleontology* 30(5): 92A.

Padian K, Horner JR, **Fowler DW**, & Scannella JB (2010) How a synergy of species recognition and social signaling explains cranial anatomy and ontogeny in several groups of dinosaurs. *Journal of Vertebrate Paleontology* 30(5): 143A.

Woodruff DC, & **Fowler DW** (2010) Ontogenetic influence on neural spine bifurcation in Diplodocoidea (Dinosauria: Sauropoda): a critical phylogenetic character. *Journal of Vertebrate Paleontology* 30(5): 189A.

Fowler DW (2009) The grasping foot of *Deinonychus*: implications for predator ecology, evolution of the perching foot, and a new hypothesis for the origin of flight in birds. *Journal of Vertebrate Paleontology* 29(3): 98A.

Fowler DW (2009) A sequence stratigraphic subdivision of the Hell Creek Formation: beginnings of a high-resolution regional chronostratigraphic framework for the terminal Cretaceous. *North American Paleontological Convention*: p. 136.

Scannella JB, & **Fowler DW** (2009) Anagenesis in *Triceratops*: evidence from a newly resolved stratigraphic framework for the Hell Creek Formation. *North American Paleontological Convention*: p. 148.

Fowler DW, & Hall LE (2009) Scratch-digging sauropods, revisited: similarity of sauropod pes unguals to tortoises, and inferred nest-excavating behaviour. *Museum of the Rockies occasional papers: Dinosaur Eggs & Babies*: p. 18.

Wings O, **Fowler DW**, Maisch MW, Martin T, Pfretzschner H-U & Sun, G (2007) Dinosaur teeth from the Jurassic Qigu and Shishugou Formations of the Junggar Basin, Xinjiang/China and their

palaeobiogeographical implications. In: Sun, G; Mosbrugger, V.; Sun, Y.W. & Bruch, A. (eds.) - *Proceedings of the International Symposium for Sino-German Cooperation on Geology and Environmental Changes in Northern China*; Urumqi/China: p. 5-10.

Fowler DW (2007) Recently rediscovered baryonychine teeth (Dinosauria: Theropoda): new morphologic data, range extension, & similarity to *Ceratosaurus*. *Journal of Vertebrate Palaeontology* 27(3): 76A.

Wings O, Sander PM, Tutken T, **Fowler DW**, & Sun G (2007) Growth and life history of Asia's largest dinosaur. *Journal of Vertebrate Palaeontology* 27(3): 167A.

Fowler DW (2006) Terrestrial Late Cretaceous stratigraphy of North America and the utility of ceratopsids in biostratigraphy. *Journal of Vertebrate Palaeontology* 26(3): 63A. **(poster)**

Fowler DW, Simmonds K, Green M, & Stevens KA (2003) The taphonomic setting of two mired sauropods (Wessex Fm, Isle of Wight, UK), palaeoecological implications and taxon preservation bias in a Lower Cretaceous wetland. *Journal of Vertebrate Palaeontology* 23(3): 51A. **(poster)**

Book Reviews

Fowler DW (2017) Species and speciation in the fossil record. Edited by Allmon & Yacobucci. Chicago (Illinois): University of Chicago Press. Reviewed in: *The Quarterly Review of Biology* 92(4), p. 461.

Fowler DW (2013) Bernissart Dinosaurs and Early Cretaceous Terrestrial Ecosystems. Life of the Past. Edited by Pascal Godefroit. Bloomington (Indiana): Indiana University Press. Reviewed in: *The Quarterly Review of Biology* 88(3), p. 235.