



FORT HAYS STATE UNIVERSITY

Forward thinking. World ready.

DEPARTMENT OF GEOSCIENCES

PERSONAL INFORMATION

Laura E. Wilson
Professor, Department of Geosciences
Chief Curator/Curator of Paleontology, Sternberg Museum of Natural History
Fort Hays State University
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EDUCATION

- 2012 Ph.D. Geological Sciences, University of Colorado at Boulder
Dissertation: Paleobiology of hesperornithiforms (Aves) from the Campanian Western Interior Seaway of North America, with analyses of extant penguin bone histology [Advisor: Dr. Karen Chin]
- 2006 M.S. Earth Sciences, Montana State University
Thesis: Comparative taphonomy and paleoecological reconstruction from two microvertebrate accumulations from the lower Hell Creek Formation (late Maastrichtian), Garfield County, Montana [Advisor: Dr. John R. Horner]
- 2003 B.S. Geology with honors, Washington and Lee University
Thesis: Taphonomy and depositional setting of a *Tyrannosaurus rex* quarry from the Hell Creek Formation (late Maastrichtian), eastern Montana [Advisor: Dr. Fredrick Schwab]

RESEARCH INTERESTS

Paleontology/Vertebrate paleontology
Paleoecology and paleobiology
Fossil and Modern Osteohistology
Taphonomy, Sedimentology, and stratigraphy
Paleornithology

PROFESSIONAL EXPERIENCE

2022-Present Professor, Department of Geosciences
Fort Hays State University
Courses taught: Introduction to Geology, Historical geology (+ lab), Invertebrate paleontology (+ lab), Lower vertebrate paleontology (+ lab), Higher vertebrate paleontology (+lab), Field Trips in Geology (online), Paleobiology, Understanding Earth's History (online), Scientific Writing, Research Design and Professionalism, Internship in Paleontology

- 2012-Present Chief Curator/Curator of Paleontology, Sternberg Museum of Natural History
Fort Hays State University
Duties: Care and archiving of specimens, data, and metadata for the vertebrate paleontology, invertebrate paleontology, and geology collections; organization of and participation in public programming; grant writing; assist with exhibit design
- 2019-2020 Interim Chair, Department of Geosciences
Fort Hays State University
Duties: Oversee department budget and financial accounts, create faculty teaching schedules, lead faculty meetings, lead department initiatives for program and course assessment, conflict management, department assessment
- 2017-2022 Associate Professor, Department of Geosciences
Fort Hays State University
- 2012-2017 Assistant Professor, Department of Geosciences
Fort Hays State University

HONORS AND DISTINCTIONS

- 2022 Fort Hays State University Outstanding Graduate Advisor
- 2019 Fort Hays State University Faculty Member of the Year
- 2018 Fort Hays State University Outstanding Scholarship Faculty Award
- 2018 Fort Hays State University Werth College of Science, Technology, and Math Edmund Shearer Faculty Advisor of the Year Award
- 2017 Fort Hays State University Werth College of Science, Technology, and Math Outstanding Teaching Award

EXTERNAL GRANTS RECEIVED

- 2022 The Institute of Museum and Library Services, Museums for America, PI (co-PI Aly Baumgartner)
Project Title: Miocene Minium Quarry Fossil Preservation Project [\$134,274 grant funds, \$153,685 cost share, \$287,959 total]
- 2018 The Institute of Museum and Library Services, Museums for America, PI
Project Title: Curation of the Geology Collection at the Sternberg Museum of Natural History [\$24,478]
- 2017 The Dane G. Hansen Foundation
Project Title: Fossil Preparation Lab at the Sternberg Museum [\$81,000 match; \$165,000 raised]
- 2016 National Science Foundation, Collections in Support of Biological Research, PI
Project Title: Implementation of a relational database for the Sternberg Museum paleontology collections [\$197,597]
- 2016 National Science Foundation, Advancing Digitization of Biodiversity Collections, PI
Project Title: Digitization TCN: Collaborative Research: The Cretaceous World: Digitizing Fossils to Reconstruct Evolving Ecosystems in the Western Interior Seaway [\$116,266]

INTERNAL GRANTS RECEIVED

- 2015 Fort Hays State University, Undergraduate Research Experience Grant, PI
Project Title: Applications in Paleohistology [\$3457]
- 2014 Fort Hays State University, Undergraduate Research Experience Grant, Co-PI
Project Title: Paleontology Resource Map of Gove County [\$4418]
- 2014 Fort Hays State University, Undergraduate Research Experience Grant, Co-PI
Project Title: The Heinrichs Research Group: Student led discovery in remote sensing [\$3074]
- 2013 FHSU Action Plan
Project Title: Bone Histology Prep Lab [\$15,175]

SCHOLARLY SUBMISSIONS, PUBLICATIONS, AND PAPERS (* denotes student author)

Peer-Reviewed Articles and Book Chapters

- In Press Benito, J., Chen, A., **Wilson, L.E.**, Bhullar, B-A., Burnham, D., Field, D.J. 40 new specimens of *Ichthyornis* provide unprecedented insight into the postcranial morphology of crownward stem group birds. PeerJ.
- 2019 **Wilson, L.E.** A bird's eye view: Hesperornithiforms as environmental indicators in the Late Cretaceous Western Interior Seaway. *Transactions of the Kansas Academy of Science* 122(3-4): 193-213.
- 2018 Field, D.J., Hanson, M., Burnham, D. **Wilson, L.E.**, Super, K.*, Ehret, D., Ebersole, J.A., Bhullar, B-A., S. Complete *Ichthyornis* skull shows unforeseen mosaicism late in the dinosaur-bird transition. *Nature* 557: 96-100.
- 2016 **Wilson, L.E.**, Chin, K., Cumbaa, S.L. A new hesperornithiform (Aves) specimen from the Late Cretaceous Canadian High Arctic with comments on hesperornithiform diet. *Canadian Journal of Earth Sciences* 53(12): 1476-1483.
- Shimada, T.R.*, **Wilson, L.E.** A new specimen of the Late Cretaceous bird, cf. *Ichthyornis* sp., from the Cenomanian of central Kansas, with comments on the size distribution of *Ichthyornis* in North America. *Transactions of the Kansas Academy of Science* 119(2): 231-237.
- 2014 **Wilson, L.E.**, Chin, K. Comparative osteohistology of *Hesperornis* with reference to pygoscelid penguins: The effects of climate and behaviour on avian bone microstructure. *Royal Society Open Science* 1:140245.
- 2013 **Wilson, L.E.**, de Boef Miara, M. Chapter 6: Database standardization. *In Bone Histology of Fossil Tetrapods: Issues, Methods, and Databases* (eds. Padian, K, Lamm, E.-T.), University of California Press, Berkeley.
- Padian, K., de Boef Miara, M., Larsson, H.C.E., **Wilson, L.E.**, Bromage, T. Chapter 10: Research applications and integration. *In Bone Histology of Fossil Tetrapods: Issues, Methods, and Databases* (eds. Padian, K, Lamm, E.-T.), University of California Press, Berkeley.

- 2011 **Wilson, L.E.**, Chin, K., Cumbaa, S, Dyke, G. A high latitude hesperornithiform (Aves) from Devon Island: Palaeobiogeography and size distribution of North American hesperornithiforms. *Journal of Systematic Palaeontology* 9(1): 9-23.
- 2008 **Wilson, L.E.** Comparative taphonomy and paleoecological reconstruction of two microvertebrate accumulations from the Hell Creek Formation (Maastrichtian), eastern Montana. *Palaios* 23: 289-297.

Educational Websites

- 2020 Byrd, C.J., Unruh, R., **Wilson, L.E.** 2020. Minerals. <https://sternberg.fhsu.edu/research-collections/geology/minerals-start-page.html>
- 2010 **Wilson, L.E.**, Chin, K., Jackson, F.D., and Bray, E.S. Fossil eggshell: Fragments from the past. <http://www.ucmp.berkeley.edu/science/eggshell/index.php>

Selected Conference Presentations

- 2022 **Wilson, L.E.** Osteohistology of *Protostega gigas* (Testudines: Protostegidae) reveals unique life history strategies. 6th International Symposium on Paleohistology. Prune, Maharashtra, India
- 2021 **Wilson, L.E.** Osteohistology of *Protostega gigas* (Testudines: Protostegidae) reveals unique life history strategies. *Journal of Vertebrate Paleontology*, Program and Abstracts: 272.
- Chapman, B.R.*, **Wilson, L.E.** Controls on the campanian distribution of hesperornis (aves: hesperornithiformes) in the western interior seaway. *Journal of Vertebrate Paleontology*, Program and Abstracts: 82-83.
- Carr, R.*, **Wilson, L.E.** Assessing the distribution of cranial kinesis among mosasauroids (squamata). *Journal of Vertebrate Paleontology*, Program and Abstracts: 78.
- Wilson, L.E.** Osteohistology of *Protostega gigas* (Testudines: Protostegidae) reveals unique life history strategies. Proceedings of the 26th Annual Tate Geological Museum Conference.
- Wilson, L.E.**, Unruh, R., Barrick, R. A New Way to Museum: Educational programming born from COVID. Association for Materials and Methods 12th Annual Meeting, Program and Abstracts.
- 2020 Byrd, C.J., Franks, A.G.*, **Wilson, L.E.** A Rocking Revamp: How an IMLS Grant Brought a Fresh Look to the Sternberg Museum Geology Collection. Society for the Preservation of Natural History Collections annual meeting.
- 2019 Field, D.J., Hanson, M., Burnham, D.A., **Wilson, L.E.**, Super, K.J., Ehret, D.J., Ebersole, J.A., Bhullar, B.A.S. Exceptional Mesozoic fossils reveal the mosaic assembly of the crown bird skull. *Journal of Morphology*, International Congress of Vertebrate Morphology Abstract Issue 280(S1): S121.

Wilson, L.E. All it takes is money... and a few other things. Association for Materials and Methods 12th Annual Meeting, Program and Abstracts, p.69.

Sanford, R.*, Scriven, K.*, O'Dell, K.*, Watts, J.*, **Wilson, L.E.** Effectiveness of fossil preparation training from the volunteer's perspective. Association for Materials and Methods 12th Annual Meeting, Program and Abstracts, p.57.

2018

Green, C.G.*, **Wilson, L.E.** Osteohistology and skeletochronology in an ontogenetic series of *Clidastes* (Squamata, Mosasauridae): Growth and metabolic rates in basal mosasaurids. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2018: 137.

Field, D., Hanson, M., Burnham, D.A., **Wilson, L.E.**, Super, K.J.*, Ehret, D.J., Ebersole, J.A., Bhullar, A.S. Complete Ichthyornis skull illuminates mosaic assembly of avian head. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2018: 126.

Holman, P.L.*, **Wilson, L.E.** Initial description of the thoracic rib histology for the genus *Dolichorhynchops* (Sauropterygian, Plesiosauria). *Journal of Vertebrate Paleontology*, Program and Abstracts, 2018: 149.

Michels, A.N.*, **Wilson, L.E.** The use of morphospace occupation to aid in understanding trophic ecology of actinopterygian clades in the Western Interior Seaway. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2018: 182.

2017

Wilson, L.E. Seabirds as ecological indicators in Late Cretaceous marine environments. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2017: 214.

Bhullar, A.S., Hanson, M., Botelho, J., Smith, D., Field, D., Fabri, M., Burnham, D.A., **Wilson, L.E.** Iterative evolutionary and developmental appearance of the avian beak revealed by new fossil and embryological data. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2017: 81.

Green, C.C.*, **Wilson, L.E.** Preliminary results of long bone histology in an ontogenetic series of *Clidastes* (Squamata: Mosasaurine). *Journal of Vertebrate Paleontology*, Program and Abstracts, 2017: 121.

Michels, A.N.*, **Wilson, L.E.** Preliminary approach toward determining trophic relationships among actinopterygian clades from the Western Interior Seaway. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2017: 163.

Byrd, C.J., **Wilson, L.E.**, Jorgensen, D.D.*, King, L.J.* The new age of an old collection: Bringing the fossils of the Sternberg Museum into the digital realm. *Abstracts from the 149th Annual Meeting of the Kansas Academy of Science*. Transactions of the Kansas Academy of Science 120(1-2):100.

Green, C.*, **Wilson, L.E.** Preliminary results of long bone histology in an ontogenetic series of *Clidastes* (Squamata: Mosasaurinae). *Abstracts from the 149th Annual Meeting of the Kansas Academy of Science*. Transactions of the Kansas Academy of Science 120(1-2):104.

- 2016 Buskuskie, T.R.*, **Wilson, L.E.** Osteohistology of *Niobrarasaurus coleii* (Dinosauria, Nodosauridae). *Journal of Vertebrate Paleontology*, Program and Abstracts, 2016: 107.
- Green, C.C.*, **Wilson, L.E.** Histological description of an infectious pathology in the vertebrae of *Tylosaurus* sp. (Mosasauridae). *Journal of Vertebrate Paleontology*, Program and Abstracts, 2016: 147.
- Hutchinson, H.R.*, Vlamis, T.W.*, White, L.J.*, **Wilson, L.E.** Preliminary analysis of *Protostega gigas* osteohistology. *Journal of Vertebrate Paleontology*, Program and Abstracts, 2016: 244.
- Buskuskie, T.R.*, **Wilson, L.E.** Osteohistology of *Niobrarasaurus coleii*. *Abstracts from the 148th Annual Meeting of the Kansas Academy of Science*. Transactions of the Kansas Academy of Science 119(2): 242.
- 2015 **Wilson, L.E.** Osteohistological Insight into *Pteranodon* ontogeny. *Journal of Vertebrate Paleontology* 35(supplement): 239.
- Buskuskie, T.R.*, **Wilson, L.E.** Preliminary osteohistology of the type specimen of *Niobrarasaurus coleii* (Dinosauria: Nodosauridae) and comparison with potential juvenile material. *Journal of Vertebrate Paleontology* 35(supplement): 100.
- Wilson, L.E.** Preliminary analysis of *Pteranodon* long bone histology. *3rd International Symposium on Paleohistology*. Steinmann Institute for Geology, Mineralogy, and Paleontology, University of Bonn.
- Wilson, L.E.** Preliminary analysis of *Pteranodon* long bone histology. *Abstracts from the 147th Annual Meeting of the Kansas Academy of Science*. Transactions of the Kansas Academy of Science 118(1-2): 162.
- 2013 **Wilson, L.E.**, Chin, K. Effects of environment and behavior on bone growth patterns in *Pygoscelis* penguins. *2nd International Symposium on Paleohistology*. Museum of the Rockies, Montana State University.
- Wilson, L.E.** Ecology of the Late Cretaceous Western Interior Seaway by studying hesperornithiform birds. *19th Annual Tate Summer Conference*. Tate Museum, Casper College.
- 2012 **Wilson, L.E.** The effects of climate and behavior on avian bone microstructure: A comparative osteohistology study of hesperornithiforms from the Late Cretaceous Western Interior Seaway. *Journal of Vertebrate Paleontology* 32(3): 195A.

FIELDWORK EXPERIENCE

- 2012-present Niobrara Formation, Late Cretaceous, Kansas, USA
 2008-2009 Green River Formation, Eocene, Utah/Colorado, USA
 2007 Kanguk Formation, Late Cretaceous, Bylot Island, Nunavut, Canada
 2005,2008 Judith River Formation, Late Cretaceous, Montana, USA

2005 Sundance Formation, Late Jurassic, Montana, USA
Willow Tank Formation, Early Cretaceous, Nevada, USA
2001-2009 Hell Creek Formation, Late Cretaceous, Montana, USA

INVITED LECTURES, PRESENTATIONS, AND WORKING GROUPS

2021-present National Science Foundation, EAGER: Collaborative Research: Networking Faculty Seeds for Collective Change in the Geosciences (PI Jason Chen, co-PI Francis Tanglao Aguas); teammate
2020 Wichita State University Colloquium Series
Talk Title: Paleontology at the Sternberg Museum of Natural History
2019 Washington and Lee University, Lexington, Virginia
Talk Title: A Bird's Eye View of the Late Cretaceous Western Interior Seaway
2016 PaleoFest, Burpee Museum of Natural History, Rockford, Illinois
Talk Title: What can *Pteranodon* osteohistology tell us about pterosaur ontogeny?
2015 Denver Museum of Nature and Science
Talk Title: Shiver Me Timbers! A look into the bones of high-latitude seabirds
2014 Oklahoma State University Medical Center, Tulsa, Oklahoma
Talk Title: The Effects of Climate and Behavior on Avian Bone Microstructure
Peachtree Road United Methodist Church, Atlanta, Georgia
Talk Title: Science, Evolution, and the Brain
2013 Topeka Gem and Mineral Society, Topeka, Kansas
Talk Title: The Effects of Climate and Behavior on Avian Bone Growth: Lessons from the Past and Present
2010 National Evolutionary Synthesis Center, Durham, North Carolina
Working Group: Data Collection and Database Storage of Living and Fossil Hard Tissue Vertebrate Histology
Coordinators: Dr. Kevin Padian, University of California at Berkeley; Dr. Andrew Lee, Midwestern University

SERVICE AT FORT HAYS STATE UNIVERSITY

2022-present Faculty Mentoring program (mentor)
2022 GSCI department promotion committee (chair)
GSCI department tenure committee
2021 BIOL faculty search committee, Chair
2020-present University Values Committee
Natural Sciences CORE faculty advisory panel
Endowed Professor Committee
2020-2022 University Tenure Committee (chair 2021-2022)
2020 GSCI Department Chair search committee, Chair
2020 Sternberg Museum staff search committee, Chair
2019 Werth College of Science, Mathematics, and Technology Dean search committee
2017-2018 GSCI department tenure committee
2017 Kansas Academy of Math and Science; Camp Professor
Camp: Life in Prehistoric Kansas
2016-2019 Faculty Senate
2016-2018 Sternberg Museum Gala, Organizer
2016,2017 GSCI faculty search committees

2016 Sternberg Museum staff search committee, Chair
CHEM faculty search committee

2015-present Darwin Day, Sternberg Museum, organizer
Scholarship Environment Committee, member

2015-2020 Women in STEM club advisor

2015-2019 Honors College Steering Council, Nationally Competitive Scholarships subcommittee
(chair 2016)

2015-2016 Department Space Committee, chair

2014-present Graduate program coordinator

2014 GSCI Department Chair search committee

2013-present National Fossil Day, Sternberg Museum, organizer

2013 Sternberg Museum staff search committee

2013-2022 GSCI student scholarship committee (chair 2013-2014)

2013-2016 Kansas Teacher Licensure and Accreditation Standards Revision – Earth and Space
Sciences
Sternberg Geoscience Club advisor

2013-2014 Jack Kilby Science Day, Barton Community College

2012-2015 Noyce STEM Teacher-Leader Scholarship Advisory Committee

PROFESSIONAL SERVICE

2021 Review Panelist, National Science Foundation, EAR Sedimentary Geology and
Paleontology division

2019 Host Committee Chair, Association for Materials and Methods in Paleontology
annual meeting, Hays, KS

2017 Host Committee member, Kansas Academy of Science Annual Meeting, Hays, KS

2015-present Round Table Host, Society of Vertebrate Paleontology annual meeting, Student &
Post-Doc Liaison Committee round table

2015-present Review Editor, *Frontiers in Paleontology*
Associated journals: *Frontiers in Ecology and Evolution*, *Frontiers in Earth Science*

OUTREACH

Ongoing Skype a Scientist; job shadows; A New Way to Museum
(<https://www.youtube.com/playlist?list=PL5kGHhdehopjHSXXLwIQLvkVh04A7iSqG>); community tours of the Sternberg Museum

2022 Museum Exhibit, Sternberg Museum of Natural History
Exhibit title: Gradeur In This View
High Plains Public Radio/National Public Radio
Segment: Eighty million years ago, western Kansas was ‘hell’s aquarium’. Here’s
what it can teach us today, <https://www.hppr.org/hppr-news/2022-08-08/western-kansas-was-hells-aquarium-80-million-years-ago-heres-what-it-can-teach-us-today>
Kansas Tourism, “Secret Kansas: Uncovering Out History”,
<https://www.youtube.com/watch?v=eel8qRQN6Zo>

2021 Paleo Nerds Podcast
Segment: A Deep Dive into Hell’s Aquarium with Laura Wilson,
<https://www.paleonerds.com/podcast/laurawilson>

- 2020 Science Café, Hays, Kansas
Talk Title: Patterns in Bones: Understanding ecological influences on bird bone growth
 Inside Edition, “Construction Crew Digs up Woolly Mammoth Tusk in Kansas”,
<https://www.youtube.com/watch?v=8nv7IzqZj8o&t=5s>
- 2019 FHSU ROAR Magazine, Fort Hays State University
Article: Bringing Ancient History to Life.
https://issuu.com/forthays/docs/roar_win19/s/10135575
 Soroptimist International, Hays, Kansas
Talk Title: Paleontology at the Sternberg Museum of Natural History
- 2018 STEM Teacher Workshop: Museum Data in the Classroom; Organizer, Co-leader
 Funded by National Science Foundation, hosted at the Sternberg Museum
 Invited Presentation: “Giants of the sky: Interpreting the fossils of the pterosaur *Quetzalcoatlus*”, National Fossil Day, Sternberg Museum of Natural History
- 2017 Science Friday, Public Radio International
Segment: Finding Fossils Under the Sea (of Kansas),
<https://www.sciencefriday.com/segments/finding-fossils-under-the-sea-of-kansas/>
- 2016 Special Presentation: “Penguin Distribution: Winging Their Way Through Space and Time”, Penguin Awareness Day, Sternberg Museum of Natural History
- 2015 Optimist International, Hays, Kansas
Talk Title: Ancient seabirds as indicators of Late Cretaceous Western Interior Seaway ecology
 Special Presentation: “Penguins Inside Out”, Penguin Awareness Day, Sternberg Museum of Natural History
- 2014 Invited Field Trip Guide: ARCS Foundation, Atlanta Chapter field trip to Boulder, Colorado
 Optimist International, Hays, Kansas
Talk Title: The Many Faces of Science Education
 Special Presentation: “Dinosaurs in Entertainment”, Sternberg Museum of Natural History exhibit opening
- 2013-2014 Educational Outreach: Smoky Hill Public Television Family Day
- 2013 Kiwanis Club of Hays, Hays, Kansas
Talk Title: Discover What’s Happening Under the Dome
 4-H of Kansas, 4-H Annual Field Trip, Ellis, Kansas
Talk Title: Fossils of the Western Interior Seaway
 Special Event: “Skype an Expert”, Dillion Nature Center
 Invited Presentation: “CSI: Girls’ Math and Science Camp”, Fort Hays State University
 Hays Chamber of Commerce, Hays, Kansas
Talk Title: Discover What’s Happening Under the Dome