Matthew W. Weiler
Geology Instructor
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Career Interests

- Teaching interests: undergraduate geology and paleontology based courses (both traditional and on-line), perspective student advising, service-learning projects, and creating active-learning environments.
- Research interests: biostratigraphy, evolution and functional morphology of Eocene, Oligocene, and Miocene mammals; evolution and functional morphology of the hyoid apparatus in equids and other grazing mammals; tooth morphology of mammals; paleopathologies in mammals; reconstruction of paleoenvironments using faunal and sedimentological data.
- Service interests: increasing science and paleontology interest in preK-12 students, program assessment, and curriculum mapping.

Education

Doctorate of Philosophy – Geology *Expected graduation 2015*
Minor in Geography
Certificate in College Teaching (conferred May 2013)
University of North Dakota
Dissertation topic: Comparison of the White River Group Paleofauna and Strata in North Dakota to Other Eocene-Oligocene Paleofauna and Strata of the Northern Great Plains through Paleontology, Biostratigraphy, and Geology

Master of Science – Paleontology *Graduated May 2008*
South Dakota School of Mines & Technology
Thesis topic: Paleofauna and Geology of the Fort Randall Formation at Feyereisen Gap, Gregory County, South Dakota

Bachelor of Science – Geology *Graduated May 2005*
Specialization in Paleontology
South Dakota School of Mines & Technology
Senior thesis: A Fossil Horse Specimen from Northern Oregon (Hemphillian) with Uncommon Pathologies and Preservation of Rare Features

Experience

Victoria College

Geology Instructor *2013 – Present*

- Courses taught:
  - Traditional: Physical Geology, Environmental Geology, and Environmental Science.
- Duties included making and giving class lectures, making exams, quizzes and homework assignments, responsible for all grading and submission of final grades, and answering student questions.
- Responsible for helping students with any questions or problems that they encounter during the course and updating Blackboard with class notes, assignments, and announcements.

University of North Dakota (UND)

Graduate Student *2008 – Present*

- Completed classes that had large scale projects, with both field and laboratory applications related to the fields of geology and paleontology.
- Completed biology and geography classes focusing on statistical analyses, modeling, and geographic information system (ArcGIS, DivaGIS, ERDAS Imagine) analyses.
- Helped lead field teams in Montana working on the Hell Creek Formation.
- Helped complete sedimentological and X-ray diffraction analyses of the Fox Hills and Hell Creek Formations, and the Intertrappean from India for on-going projects.
- Reviewed a paper for the Journal of Geoscience Education.
- Member of Sigma Gamma Epsilon - Beta Zeta Chapter (SGE), president for 2009-2010 academic year.
- Implemented the creation of the "geology help session" which is open to all students enrolled in earth science courses.
- Co-initiated the field camp "prep" class for students attending geology field camps.
- Volunteered to help with the Sigma Gamma Epsilon preK-12 outreach program, museum lobby tours, and geology help sessions.

Instructor for Earth Through Time & Introduction to Geology Lecture Courses *2011*

- Duties included making and giving class lectures, making exams, quizzes and homework assignments, responsible for all grading and submission of final grades, and answering student questions.
- Responsible for helping students with any questions or problems that they encounter during the course and updating both Blackboard and Moodle with class notes, assignments, and announcements.

Teaching Assistant *2008 – 2011*

- Courses taught:
  2011 – Introduction to Geology and Earth Through Time labs
  2010 – Introduction to Geology and Petrology labs
  2009 – Introduction to Geology, Earth Through Time, and Introduction to Paleontology labs
  2008 – Introduction to Geology, Earth Through Time, and Introduction to Paleontology labs
- Duties included preparation of laboratory exercises/lectures, overseeing students on weekend fieldwork trips, answering student questions, grading assignments, quizzes and exams, and assisting with formulating quiz and exam questions.

North Dakota Geological Survey

Core Technician *2011 – 2013*

- Duties include reboxing, relabeling, and organizing the well cores on the shelves based on rock formation, cataloging and organizing drill cuttings from new oil wells drilled in North Dakota, and photographing petrographic thin sections.
- Assist with updating the main core library database with core interval, formation, and location information.
- Assist director with day to day tasks of pulling and measuring core and preparing thin section samples for visiting researchers.

AMEC Earth & Environmental

Field Assistant *2011*

- Duties included locating each water main and fire hydrant valve at Grand Forks Air Force Base, acquiring GPS position points for each valve, downloading GPS data for use in ArcGIS, documenting the condition of the valve covers and external markings, photographing valve locations, completing weekly reports, photograph logs, and hand maps of all valve locations.
- Assisted the contracted surveyor with valve relocations and the Grand Forks Air Force Base water shop with valve operating tests.

Badlands National Park, South Dakota (BADL)

Summer Physical Science Technician for Resource Management *2006 – 2010*

- Erosion study co-investigator (2010)
  Duties included assisting the park paleontologist with everyday tasks, creating ArcGIS models to determine best possible locations for erosion study plots, organizing and creating initial database for information and photographs related to potential erosion plots, and completing all paperwork and text associated with erosion sites.
- Paleontological locality surveyor and construction monitor (2009)
  Duties included assisting the park paleontologist with everyday tasks, monitoring and reporting on existing localities, creation of new localities where needed, checking on the location and validity of fossils reported by visitors, monitoring construction sites for paleontological and archaeological resources, completing all paperwork associated with visitor site reports and maintaining working

relationships with landowners, and completed interviews with South Dakota Public Radio.

- Fossil quarry site supervisor (2007 & 2008)
  Duties included assisting the park paleontologist with everyday tasks, monitoring the "Big Pig Dig" fossil quarry site, teaching tasks to new employees, hand mapping and surveying of in situ fossils, importing data from total station into ArcGIS and creating shape files and maps of exact locations of fossils, excavation and preparation of fossils, transporting fossil jackets from field to museum lab and properly accessioning the specimens, handling disputes between fellow employees, educating the public about the aspects of paleontology, completed all paperwork associated with general geology/paleontology information for Resource Education division, and completed interviews for Weather Ventures.
- Paleontological locality surveyor and construction monitor (2006 & 2007)
  Duties included assisting the park paleontologist with everyday tasks, monitoring and reporting on existing localities, creation of new localities where needed, checking on the location and validity of fossils reported by visitors, monitoring construction sites for paleontological and archaeological resources, completing all paperwork associated with visitor site reports and maintaining working relationships with landowners.

South Dakota School of Mines and Technology (SDSMT)

Graduate Student *2005 – 2008*

- Completed classes that had large scale projects directly related to the fields of geology and paleontology and participated in activities related to geology and paleontology outside of the curriculum.
- Macerated, identified, and described modern mammals and birds, restored and curated fossil specimens, designed an exhibit for the Museum of Geology, researched various fossil groups, completed sedimentological analyses of two localities in South Dakota, member of Paleontology Club for 7 years, president of club for 3 years, and was a tutor for Mineralogy labs.
- Volunteered to help with the Paleontology Club preK-12 outreach program and museum organization days.

Instructor for Biology Lecture Course *2008*

- Duties included making and giving class lectures, making exams, quizzes and homework assignments, responsible for all grading and submission of final grades.
- Responsible for helping students with any questions or problems that they encountered during the course.

Director of General Biology Laboratories *2008*

- Duties included making lab quizzes and exams, determining assignments for class work, writing and distributing notes for lecture, organizing and assembling supplies for lab exercises, obtaining, mixing and properly disposing of chemicals and solutions.
- Responsible for handling disputes between teaching assistants and students.

Teaching Assistant *2005 – 2007*

- Courses Taught
  2007 – General Biology I & II, Human Anatomy and Physiology labs
  2006 – Human Anatomy, Invertebrate Paleontology, Physical Geology, and Structural Geology labs
  2005 – Petrology and General Biology I labs
- Duties included preparation of laboratory exercises/lectures, answering student questions, grading assignments and assisting with formulating quiz and exam questions.

Museum of Geology *2001 – 2008*

- Museum assistant (2007 & 2008)
  Duties included organizing and cataloging the museum library and properly storing archival material.
- Lab fossil preparator (2002 – 2007)
  Duties included fossil preparation, conservation, mapping and curation of fossil specimens that were collected from Badlands National Park (South Dakota), central South Dakota, Nebraska, Colorado, and Antarctica.
- Fossil molding and casting assistant (2005 – 2007)
  Duties included making molds and casts of specimens for the Science Museum in Ottawa, Museum of Geology in Rapid City, and Badlands National Park. Also, assisted in the creation of new and reconfiguration of existing fossil displays.
- Bureau of Reclamation surveyor (2005)
  Duties included surveying and mapping (both GPS and hand) fossil remains along the shorelines of the Belle Fourche Reservoir (South Dakota).
- Museum gift shop attendant (2001 – 2002)
  Duties included maintaining cleanliness of museum, answering visitor questions, and the sale of museum merchandise to visitors.

Undergraduate Student *2001 – 2005*

- Completed courses needed to obtain a bachelor's degree in Geology with an emphasis in Paleontology and began taking graduate courses as a senior.
- Acquired hands on experience working for the Museum of Geology, as well as volunteering to organize rock and mineral collections for the Department of Geology.
- Volunteered with preK-12 outreach program sponsored by SDSMT Paleontology Club.

Publications - Papers

Hartman, Joseph H., Raymond D. Butler, **Matthew W. Weiler**, and Karew K. Schumaker. *Accepted*. Context, naming, and formal designation of the Cretaceous Hell Creek Formation lectostratotype, Garfield County, Montana. Geological Society of America Special Paper.

Boyd, Clint A., **Matthew W. Weiler**, Mindy L. Householder, and Karew K. Schumaker. *In press*. Reappraisal of specimens previously referred to *Chadronia* (Cimolesta, Pantolestidae) from the White River Group and description of a new cimolestid species. Acta Paleontologica Polonica.

Publications – Short Communications

Weiler, Matthew W. and Karew K. Schumaker. 2011. An occurrence of the fossil insectivore, *Ankylodon progressus* in the Brule Formation of southwestern North Dakota and implications regarding *Ankylodon* systematics. Proceedings of the North Dakota Academy of Science. 65:32.

Weiler, Matthew W. 2010. Paleontology and Geology of the Fort Randall Formation at Feyereisen Gap, Gregory County, South Dakota. Proceedings of the North Dakota Academy of Science. 64:31.

Schumaker, Karew K., **Matthew W. Weiler**, and Rebecca Simmons. 2010. The Fossil Carnivores of the Turtle Butte Assemblage (Arikareean), Tripp County, South Dakota. Proceedings of the North Dakota Academy of Science. 64:30.

Weiler, Matthew W. 2009. A New Interpretation of the Paleoecology of the Big Pig Dig Quarry, Badlands National Park, South Dakota. Proceedings of the North Dakota Academy of Science. 63:67.

Thompson, Wayne and **Matthew W. Weiler**. 2010. The Final Closing of the Pig Dig: An Unusual Dilemma Encountered at the Unique Site in Badlands National Park. Proceedings of the South Dakota Academy of Sciences. 89:200.

Publications – Conference Abstracts

Weiler, Matthew W. and Karew K. Schumaker. 2012. Lost and Found: The Challenges, Opportunities, and Significance of a Fossil Rhinoceros Specimen Found During a Storage Cleaning Event. Journal of Vertebrate Paleontology Abstracts of Papers. 32(5):191.

Weiler, Matthew W. and Karew K. Schumaker. 2011. Development and Benefits of Student Organization Led Outreach Programs: Two Case Studies from the University of North Dakota and South Dakota School of Mines & Technology. Journal of Vertebrate Paleontology Abstracts of Papers. 31(5):212.

Schumaker, Karew K., Allen J. Kihm, **Matthew W. Weiler**, and Joseph H. Hartman. 2011. Geology and Mammalian Paleontology of the Cvancara Locality (Paleocene),

Tongue River Member, Fort Union Formation, Grant County, North Dakota. Journal of Vertebrate Paleontology Abstracts of Papers. 31(5):190.

Weiler, Matthew W., and Clint A. Boyd. 2010. Brief Report on the Geology and Paleontology of Fossil Localities within the Chadron Formation (Eocene) in the North Unit of Badlands National Park, South Dakota. GSA Abstracts with Programs. 42(5):190.

Weiler, Matthew W., Karew K. Schumaker, and Dean Pearson. 2010. Marsupials and Insectivores from the Oligocene of Southwestern North Dakota from a Previously Undescribed Collection from the Pioneer Trails Regional Museum. Journal of Vertebrate Paleontology Abstracts of Papers. 30(3):184-185A.

Hartman, Joseph H., **Matthew W. Weiler**, and Karew K. Schumaker. 2010. Benefits, Challenges, and Solutions of Collections at Small Programs and Institutions Using Experience from the University of North Dakota. Journal of Vertebrate Paleontology Abstracts of Papers. 30(3):102A.

Benton, Rachel, **Matthew W. Weiler**, and Wayne Thompson. 2010. Long Term Documentation of the Conata Picnic Ground Site (Big Pig Dig) Badlands National Park, South Dakota. Journal of Vertebrate Paleontology Abstracts of Papers. 30(3):59A

Schumaker, Karew K., **Matthew W. Weiler**, and Megan E. Wheeler. 2010. Developing a Paleontology Outreach Curriculum for Preschool and Kindergarten Children at the University of North Dakota [poster]. Education and Outreach Symposium, Society of Vertebrate Paleontology Annual Conference.

Hartman, J. H., **Matthew W. Weiler**, Karew K. Schumaker, and Emmett Evanoff. 2010. Correlating the South Dakota White River Group and its continental mollusks to North Dakota; a beginning up the slippery slope of utilizing historic faunas. GSA Abstracts with Programs. 42(3):13.

Schumaker, Karew K., **Matthew W. Weiler**, Eric G. Zimny, Robert C. Klenner, Joshua J. Crowell, Benjamin J. Mooney, Donald P. McCollor, Raymond D. Butler, and Joseph H. Hartman. 2009. Involving Students in Practical Field and Laboratory Studies in the Cretaceous Hell Creek Formation, Montana – From Sample Collection to Poster Construction. GSA Abstracts with Programs. 41(7):315.

Starck, Ellen, **Matthew Weiler**, Eric Hoffnagle, Danielle Olinger, and Amanda Dopheide. 2008. Challenges of a National Park Paleontological Quarry: The Big Pig Dig. Journal of Vertebrate Paleontology Abstracts of Papers. 28(3):147A.

Weiler, Matthew. 2008. Paleontology and Geology of the Fort Randall Formation at Feyereisen Gap, Gregory County, South Dakota. Journal of Vertebrate Paleontology Abstracts of Papers. 28(3):158A.

Weiler, Matthew. 2006. A Fossil Horse Specimen from Northern Oregon (Hemphillian) with Uncommon Pathologies and Preservation of Rare Features. Journal of Vertebrate Paleontology Abstracts of Papers. 26(3):137A.

Cavin, Jennifer, Matthew Sheldon, **Matthew Weiler**, Shawna Johnson, Allen Tate, Carrie Herbel. 2005. A Look at the Unique and Problematic Preservation Found With the Big Pig Dig Quarry Site, Conata Picnic Area, Badlands National Park, South Dakota. Journal of Vertebrate Paleontology Abstracts of Papers. 25(3):43A.

Weiler, Matthew, Shawna Johnson, Matthew Sheldon, Allen Tate, Carrie Herbel. 2005. Preparation of Uniquely Preserved Vertebrate Fossils From the Big Pig Dig

Quarry in Badlands National Park, South Dakota. Journal of Vertebrate Paleontology Abstracts of Papers. 25(3):128A.

Awards

Alan M. Cvancara Award – UND ($1200)	Spring 2013
Doctoral Travel Grant – UND ($430)	Fall 2012
Research Development & Compliance Travel Grant – UND ($250)	Fall 2012
Student Research Grant – Society for Sedimentary Geology ($2000)	Summer 2012
Summer Doctoral Fellowship – UND ($5000)	Summer 2012
Alan M. Cvancara Award – UND ($500)	Spring 2012
Doctoral Travel Grant – UND ($435)	Fall 2011
Research Development & Compliance Travel Grant – UND ($500)	Fall 2011
Outstanding Teaching Assistant Award – UND	Spring 2011
F. D. Holland Jr. Award – SGE	Spring 2011
Ford Foundation Fellowship Honorable Mention	Spring 2011
Geological Society of America Travel Grant ($400)	Fall 2010
Research Development & Compliance Travel Grant – UND ($500)	Fall 2010
Star Award – BADL ($300)	Summer 2010
F. D. Holland Jr. Award – SGE	Spring 2010
Outstanding Teaching Assistant Award – UND	Spring 2010
Alan M. Cvancara Award – UND ($1000)	Spring 2010
Geological Society of America Travel Grant ($150)	Spring 2010
Star Award – BADL ($300)	Summer 2009
Denison Graduate Award, 1st Place – ND Academy of Science	Spring 2009
Alan M. Cvancara Award – UND ($1000)	Spring 2009
Research Development & Compliance Travel Grant – UND ($500)	Fall 2009
McGillicuddy Award – SDSMT	Spring 2008
Abbott Fund Award – SDSMT ($100)	Spring 2008
Society of Vertebrate Paleontology Travel Grant ($150)	Fall 2008
J.P. Gries Fellowship – SDSMT ($1000)	Fall 2006
Molding and Casting Excellence – BADL	Summer 2005

Memberships

Society of Vertebrate Paleontology	2004 – Present
Geological Society of America	2005 – Present
Paleontological Society	2005 – Present
Sigma Gamma Epsilon (Beta Zeta Chapter) (president for 2010)	2008 – Present
North Dakota Academy of Science	2008 – Present
Society for Sedimentary Geology	2009 – Present
Sigma Xi	2013 – Present
SDSMT Paleontology Club (President for last 3 years)	2001 – 2008
SDSMT Geological Association	2001 – 2004