

Dr. Matthew A Kuchta

Associate Professor, University of Wisconsin-Stout
Concentration Director, University of Wisconsin-Stout
Biology Department
College of Science, Technology, Engineering, Mathematics and
Management

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Teaching Interests: SCHOLARSHIP OF TEACHING & LEARNING Effective visualization techniques for geoscience concepts, interests and attitudes toward geoscience topics, problem and inquiry-based content delivery methods. Hydrology. Geomorphology Soil science and mechanics Fluid and stream dynamics Optics, meteorology Planetary geology Introductory geology Sedimentology and stratigraphy Evolution and extinction Gemstones Geologic field methods Paleocology Vertebrate and invertebrate paleontology Regional geology Climatology GIS mapping and analysis

Research Interests: EARTH & ENVIRONMENTAL SCIENCE Phosphorus sources and sink in the Red Cedar Watershed, sedimentary and fluvial history of the lower Chippewa valley, Paleozoic and Quaternary stratigraphy of the upper Mississippi valley, taphonomy and paleoecology, sequence stratigraphy, geologic mapping of western Wisconsin, terrestrial gastropod ecology and conservation, watershed hydrology and nutrient transport/storage, low-cost 3D scanning methods using the KINECT sensor system.

Education

- **Ph D Geology**
University of Wisconsin Madison
Madison, WI, 2009
- **MS Geology**
University of Wisconsin Madison
Madison, WI, 2000
- **BS Geology and Studio Art**
Lawrence University
Appleton, WI, 1998

Work Experience

Academic - Post-Secondary

- **University of Wisconsin-Stout**, Chemistry and Physics Department
Associate Professor
July 2015 -
- **University of Wisconsin-Stout**, Land Resources
Concentration Director
July 2015 -
- **University of Wisconsin-Stout**, Chemistry and Physics Department
Assistant Professor
July 2010 - June 2015
- **Wasatch-Uinta Geology Summer Field Camp**
Faculty
2008 - 2010

- **University of Wisconsin Stout**, Chemistry and Physics Department
Adjunct Lecturer
July 2008 - June 2010
- **University of Minnesota Duluth**, Department of Geological Sciences
Lecturer
2007 - 2008
- **University of Minnesota Duluth**, Department of Geological Sciences
Research Fellow
2005 - 2006
- **University of Wisconsin- Madison**, Center for Climatic Research
Graduate Project Assistant
2004 - 2005
- **University of Wisconsin Geology Museum**
Research Specialist
2003 - 2005
- **University of Wisconsin Madison**, Department of Geosciences
Lecturer
2002 - 2005
- **University of Wisconsin- Madison**, Department of Geosciences
Graduate Teaching Assistant
2001
- **University of Wisconsin- Madison**, Geology Museum
Graduate Project Assistant
1998 - 2001

Intellectual Contributions

Abstract

- Kuchta, M. A. Beyond the stream table: other geoscience education applications for ground melamine plastic. *Geological Society of America Abstracts with Programs*, 46(6), 500.
- Little, A. M., Kuchta, M. A., Church, J., Hines, M., & Osborne, E. Geomorphology and watershed soil texture influences peat development, water chemistry, and hydroperiod in wetlands of western Wisconsin's Chippewa Moraine. *Geological Society of America Abstracts with Programs*, 46(6), 151.
- Kuchta, M. A., & Zimmerman, T. A. Three dimensional measurement and analysis of a mobile-bed stream model with the Microsoft KINECT sensor. *Geological Society of America Abstracts with Programs*, 45(7), 146.
- Kuchta, M. A. (2013). The Paleoenvironmental Significance of Terrestrial Gastropod Fossils from the Upper Mississippi Valley in Minnesota and Wisconsin. .
- Kuchta, M. A. Late Pleistocene climatic influences on the sedimentary architecture of the Upper Mississippi Valley: Implications for fossil preservation and Quaternary reconstruction. *Geological Society of America Abstracts with Programs*, 41(7), 707.
- Kuchta, M. A., Geary, D. H., & Slaughter, R. W. Paleoecology and Taphonomy of Full-Glacial Terrestrial Gastropods from the Latch Valley, West-Central Wisconsin . *Geological Society of America Abstracts with Programs*, 40.
- Kuchta, M. A., Geary, D. H., Diem, B., & Slaughter, R. W. Taphonomy of terrestrial gastropods at the Big Platte locality, southwestern Wisconsin. *Geological Society of America Abstracts with Programs*, 39(6), 401.
- Kuchta, M. A., GE, D. H., & Slaughter, R. W. Late Pleistocene gastropods from alluvium in the Driftless Area of Minnesota and Wisconsin. *Geological Society of America Abstracts with Programs*, 38(7), 118.
- Kuchta, M. A. Potential applications of GIS to the Iowa Pleistocene Snail *Discus macclintocki*. *Midwest Student Symposium on Paleontological Research 2nd Annual meeting Abstracts*, 2, 21.
- Kuchta, M. A., & Skulan, J. L. A tale from the Crypt: Struvite mineralization in a rotting rhinoceros. *Society for Vertebrate Paleontology Abstracts with Programs*, 23(3), 98.

- Kuchta, M. A., Geary, D. H., & Carroll, A. H. Utility of nonmarine mollusca as paleoenvironmental indicators in the Green River Formation, Wyoming. *Geological Society of America Abstracts with Programs*, 32(7), A12.
- Kuchta, M. A., Watkins, R., & Smith, G. L. A Silurian crinozoan-dominated community in the lower Racine Formation, Waukesha County, Wisconsin. *Geological Society of America Abstracts with Programs*, 29(4), 28.

Journal Article

- Kuchta, M. A. (2011). Late Quaternary Terrace and Long Profile Development in the Lower Chippewa Valley. *Geological Society of America*, 43.
- Kuchta, M. A., & Gurke, K. (2011). Terrace Development Within the Lower Red Cedar River Valley. *Geological Society of America*, 43.
- Kuchta, M. A. (2009). Late Pleistocene Climatic Influences on the Sedimentary Architecture of the Upper Mississippi Valley: Implications for Fossil Preservation and Paleoenvironmental Reconstruction. *Geological Society of America*.
- Kuchta, M. A., Slaughter, R. W., & Geary, D. H. Full-glacial gastropods and rodents from Kulas . *Current Research in the Pleistocene*, 24, 170-172.

PhD Thesis

- Kuchta, M. A. (Unpublished). The paleoenvironmental significance of terrestrial gastropod fossils from the Upper (PhD Thesis). *University of Wisconsin-Madison*, 259.

Master's Thesis

- Kuchta, M. A. (Unpublished). Paleoenvironmental significance of nonmarine mollusca in the Luman Tongue of the Green River Formation, Wyoming (Master's Thesis). *University of Wisconsin, Madison*.

Presentations

Oral Abstract

- Kuchta, M. A. (2014). Dispatches from the Dirt Lab: The Art of Science Communication. European Geological Union General Assembly,

Uncategorized

- Kuchta, M. A. (September, 2014). Land Snails in the Tiffany Bottoms State Natural Area. Lower Chippewa River Alliance, WI.
- Kuchta, M. A. (September, 2014). Healthy Prairie Soils. The Prairie Enthusiasts Prairie Days Event,
- Kuchta, M. A., & Zimmerman, T. A. (2012). Scaling the Fourth Dimension: Improving student knowledge development using high speed and time lapse video. UW-System Women & Science Program, Menomonie, WI.
- Kuchta, M. A. (May, 2012). Balancing Content Delivery With Knowledge Development Using Concept Sketches. UW-System Women & Science Program, Menomonie, WI.
- Kuchta, M. A. (February 25, 2012). Snails in Native Prairie Ecosystems. The Prairie Enthusiasts Annual Conference,
- Kuchta, M. A. (May, 2010). Snails and Natural History of the Tiffany Bottoms Natural Area. The Prairie Enthusiasts,
- Kuchta, M. A. (February, 2010). Field guide to the geologic history of Muddy Creek. Wisconsin Wetland Association field trip,
- Kuchta, M. A. (September, 2009). BioBlitz, gastropod specialist. Western Wisconsin Land Trust, Sherman Creek, WI.
- Kuchta, M. A. (February, 2009). Birding 101: Bird Identification Basics” for the Great Backyard Bird Count. Western Wisconsin Land Trust,
- Kuchta, M. A. (2008). Digging Dinosaurs. , Altoona, WI.

- Kuchta, M. A. (November, 2008). Environmental Significance of Late Pleistocene Terrestrial Gastropods. ,
- Kuchta, M. A. (April, 2008). An introduction to sedimentology and paleontology. , Duluth, MN.
- Kuchta, M. A. (April, 2008). Meteorite Impacts and Mass Extinctions. , Duluth, MN.
- Kuchta, M. A. (January, 2008). Digital Photography and Photoshop for the Geologist. , Duluth, MN.
- Kuchta, M. A. (March, 2007). Biotic Response of Terrestrial Gastropods to late Pleistocene Climate Change. ,
- Kuchta, M. A. (February, 2007). Terrestrial Gastropod Response to Late Pleistocene Climate Change: Current Research and Implications for the Future. , Duluth, MN.
- Kuchta, M. A. (February, 2006). Ecophenotypy of *Goniobasis tenera*, Eocene Green River Formation, Wyoming. , Duluth, MN.
- Kuchta, M. A. (May, 2005). Gems: The Science Behind the Sparkle. , Madison, WI.
- Kuchta, M. A. (February, 2005). Jurassic Dinosaurs at the Westphal Quarry, Wyoming. Graduate Seminars, University of Wisconsin – Madison Department of Geoscience, Madison, WI.
- Kuchta, M. A. (April, 2004). Career Day” interview about careers in paleontology. ,

Panelist

- Kuchta, M. A. (July, 2014). . CONvergence convention, Bloomington, MN.

Local - Student

- Wahl, S., Sombrio, A., Little, A. M., & Kuchta, M. A. (2012). Moisture and Terrestrial Gastropod Diversity in Dunn County. UW-Stout Research Day, Menomonie, WI.

Poster

- Kuchta, M. A., Nadziejka, B., & Zimmerman, T. A. (October, 2012). Box Kinect and Em2 stream table: Tools for analysis of Quaternary fluvial geomorphology. LU-R1 Research Project Poster Presentations,

Grants, Contracts, and Sponsored Research

Grant

- Kuchta, M. A., Paulson, N., & Nold, S. C. REU: Linking Applied Knowledge and Environmental Studies (LAKES). Sponsored by NSF-REU, \$300000.
- Kuchta, M. A. Advancing Science Learning (Brian McAlister lead PI). (Funded).
- Little, A. M., Church, J., Bomar, C., & Kuchta, M. A. NSF-DEB Wetland Research Grant (Senior Personnel). Sponsored by NSF, \$550000 (Funded).
- McAlister, B., & Kuchta, M. A. Advancing Science Learning. Sponsored by UW-System Wisconsin Improving Teacher Quality Program, \$38701.
- Little, A. M., Church, J., & Kuchta, M. A. RUI: Testing metacommunity models in forested vernal wetlands using a multi-taxa, multi-year approach. Sponsored by NSF-DEB, \$550000.
- Kuchta, M. A. Faculty Research Initiative: Red Cedar Geomorphology. \$7000 (Funded).
- Kuchta, M. A. State Wildlife Grants (SWGs). (Funded).
- Kuchta, M. A. University of Wisconsin System Women in Science Grant. (Funded).
- Kuchta, M. A. State Wildlife Grants (SWGs). (Funded).
- Perez, K. E., Theler, J., Nekola, J., Hyde, T., Kuchta, M. A., & Little, A. M. Wisconsin land snail database and surveys in the Driftless area. Sponsored by Wisconsin Department of Natural Resources State Wildlife Grant, \$49971.

Media Contributions

TV

- **Secrets of the Earth, Season 2 on The Weather Channel** (October 20, 2014)
Quicksand

Internet

- **TED youth 2013 event speaker** (November 2013)
The Science of Sand

Reviewer / Editor

Manuscript Reviewer

- **Natural Areas Journal** (2014)
- **Holocene** (2011)

Manuscript reviewer

- **Current Research in the Pleistocene** (2009)

Awards, Fellowships, Honors, and Scholarships

Honor

- Literacy in Science (Forest Shcultz lead PI), (2013)

Fellowship

- Lawrence University IDEA Fellowship, (1996)

Professional Memberships

- The Prairie Enthusiasts
- Geological Society of America

Service

College

- **UW-Stout Faculty Senate**, CSTEM at-large representative (2014 - Present)
- **Coordinator**, Environmental Science Program, Land Resources Concentration (February 2013 - Present)

University

UW Stout

- **Advisor**, Analysis of gastropod ecological data for a GIS habitat conservation model (2010 - Present)
- **Student Research Advisor**, Symposium Posters for PHYS-358 (2013 - 2014)
- **Committee Member**, January Professional Development Committee, Nakatani Teaching and Learning Center (September 2012 - May 2013)
- **Student Research Supervisor**, Western Wisconsin Land Snail Survey (2010 - 2012)
- **Student Research Advisor**, Terrestrial gastropod diversity – hotspot analysis for conservation (2010)
- **Student Research Advisor**, Analysis of terrestrial gastropod ecological data for a GIS-based habitat conservation model (2008 - 2010)

University of Minnesota- Duluth

- Preparation and photogrammetry of a dinosaur fossil slab (2007 - 2008)

University of Wisconsin-Madison

- **Student Research Advisor**, Taphonomy of Pleistocene terrestrial gastropods from southwestern Wisconsin (2006 - 2007)

Professional

- **Member**, January Professional Development Committee (September 2012 - May 2013)
- **Supervisor**, Fossil Preparation Lab, University Minnesota – Duluth (2007 - 2008)
- **Geology Museum tour guide** , University of Wisconsin Madison (1998 - 2005)