

## **Joseph A. Mason**

Professor  
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**Research Interests:** Eolian and hillslope geomorphology, loess stratigraphy/sedimentology, pedology and soil geomorphology, paleopedology, Quaternary landscape evolution, geomorphic response to Quaternary climate change. *Geographic focus:* Great Plains, northern China, central Rocky Mountains, Upper Mississippi Valley.

### **Formal Education**

- Ph. D., University of Wisconsin-Madison (1995). Major: Geography. Minor: Geology.  
Dissertation title: "Effects of glacial-interglacial climate change on mass wasting, southeastern Minnesota." (Advisor: James C. Knox).
- M. S., University of Minnesota (1992). Major: Soil Science. Minor: Geology. Thesis title:  
"Loess stratigraphy and soil landscape evolution, southeastern Minnesota." (Advisor:  
Edward A. Nater).
- B. S., University of Wisconsin--Stevens Point (1989). Major: Soil Science.

### **Academic Positions**

- Professor (2008), Associate Professor (2004-2008), Assistant Professor (2003-2004)  
Department of Geography, University of Wisconsin-Madison. Affiliate status in  
Department of Soil Science
- Assistant Professor, Conservation and Survey Division (Nebraska's state geological  
survey)(0.75 FTE), and Department of Geosciences (0.25 FTE), University of  
Nebraska-Lincoln (1997-2003).
- Assistant Professor, Department of Geography, Northern Illinois University (1995-1997).  
Visiting Professor, Department of Geography, University of Oregon (Summer, 1995).  
Lecturer, Department of Geography, University of Wisconsin-Madison (1993-1994).  
Graduate Fellow, University of Wisconsin-Madison (1992-1993; 1994-95).  
NSF Graduate Fellow, University of Minnesota (1989-91) and UW-Madison (1991-1992).

### **Honors and Fellowships**

- J. H. Mackin Grant, Quaternary Geology and Geomorphology Division, Geological Society  
of America, 1993.
- National Science Foundation Graduate Fellowship, 1989-92.

## Extramural Funding

National Science Foundation, “Collaborative Research: The significance of the loess mantle in Midwestern soil catena evolution,” BCS-0751750 PIs: J.A. **Mason**, P.M. Jacobs (Univ. of Wisconsin-Whitewater) and P.R Hanson (University of Nebraska), \$239,840 (award to all three institutions, UW-Madison portion is \$162,169), 2008-2010.

National Science Foundation, “Acquisition of an X-ray diffraction unit for earth science research and education at the University of Wisconsin, Madison,” EAR-0824890, P.I. Huifang Xu, Co-P.I.s Clark Johnson, Eric Roden, Joseph Mason, Nita Sahai, \$148,346, 2008-2009.

National Science Foundation, “Collaborative Research: Dunefield records of late Quaternary climate change, northern China,” ATM-0502489 and ATM-0502511; PIs: J.A. **Mason**, R.J. Goble (Univ. of Nebraska) and J.B. Swinehart (Univ. of Nebraska), Collaborator: H.-Y. Lu, Nanjing University. \$376,246 (award to both institutions, UW-Madison portion is \$288,665), 2005-2010.

National Science Foundation, “Collaborative Research: Resolving the Enigma of Late Quaternary Loess on the Great Plains,” BCS-0352683 and BCS-0352748; PIs: J.A. **Mason** and D. B. Loope (Univ. of Nebraska), Co-PIs: R.J. Goble and J.B. Swinehart (Univ. of Nebraska), Collaborator: H.-Y. Lu, Chinese Academy of Sciences—Institute of Earth Environment. \$249,817 (award to both institutions, UW-Madison portion is \$133,561), 2004-2007.

National Science Foundation, “Sand Hills Biocomplexity: Integrating Biogeophysical Processes Across Time and Space,” PI: D. Wedin, Co-PIs: G. M. Henebry, D. B. Loope, Co-Investigators: T. J. Arkebauer, D. P. Billesbach, S. C. Fritz, R. J. Goble, D. C. Gosselin, F. E. Harvey, Q. Hu, J. A. **Mason**, C. M. Rowe, J. B. Swinehart, C. W. Zanner, V. A. Zlotnik. \$1,794,236, 2003-2008 [award to University of Nebraska-Lincoln, with subcontract of \$27,549 to UW-Madison for Mason’s contribution].

U. S. Geological Survey, “Urban and Rural Geologic Mapping in Nebraska,” M. Kuzila, J. Swinehart, R. F. Diffendal, **J. A. Mason**, R. M. Joeckel, and H. LaGarry, \$183,685, 2002-2003.

U. S. Geological Survey, “Urban and Rural Geologic Mapping in Nebraska,” M. Kuzila, J. Swinehart, R. F. Diffendal, **J. A. Mason**, R. M. Joeckel, and H. LaGarry, \$183,870, 2001-2002.

U. S. Geological Survey, “Evaluation of Conductive Properties of Surficial Aquifer in the Nebraska Sand Hills,” P. I.: V. Zlotnik, Co-P. I.’s: D. Loope and **J. A. Mason**, \$14,946, 2001-2002.

National Science Foundation “Collaborative Research: A Detailed Chronology of the Loess-Paleosol Record of the Last Two Glacial/Interglacial Cycles in the North American

Midcontinent,” P. I.’s: E. A. Bettis III (University of Iowa), **J. A. Mason**, and J. Morris (Washington University), \$222,495 [total to all institutions, University of Nebraska-Lincoln portion = \$38,063], 2001-2003.

National Science Foundation, “Collaborative Research: Detecting Spatial Patterns of Dust Effects on Soils: Testing New methodology in the Central Great Plains,” P. I.’s: **J. A. Mason** and P. M. Jacobs (Univ. of Wisconsin-Whitewater), \$180,000 [total to all institutions, University of Nebraska-Lincoln portion = \$100,365], 2000-2003.

National Science Foundation, “Biocomplexity Incubation Activity - Spatio-temporal coupling of ecological and geological dynamics in the Nebraska Sandhills,” P. I.: David Wedin, Co-P. I.’s: G. Henebry, D. Loope, A. Joern, T. Arkebauer, S. Fritz, J. Knops, **J. A. Mason**, W.Schacht, and J. Clark (Duke University), \$100,000, 2000-2002.

U. S. Geological Survey, “Urban and Rural Geologic Mapping in Nebraska,” M. Kuzila, J. Swinehart, R. F. Diffendal, **J. A. Mason**, R. M. Joeckel, and H. LaGarry, \$102,066, 2000-2001.

City of Loup City, “Sources of Ground Water Beneath Loup City, Nebraska,” P. I.: F. E. Harvey, Co-P. I.’s: **J. A. Mason** and J. Goeke, \$17,300, 2000-2001.

Nebraska Military Department, “Environmental Geographic Information Systems for Three Nebraska Army National Guard Sites,” P. I.: S. Narumalani, Co-P. I.: **J. A. Mason**, \$92,419, 2000-2001.

## **Publications**

### ***1. Peer-Reviewed Journal Articles***

Zhou, Y., Lu, H., Zhang, J., **Mason**, J.A., Zhou, L.P. 2009. Luminescence dating of sand-loess sequences and response of Mu Us and Otindag sand fields (North China) to climatic changes. *Journal of Quaternary Science* 24: 336-344.

**Mason**, J.A., Swinehart, J.B., Lu, H.Y., Miao, X.D., Cha, P., Zhou, Y.L. 2008. Limited change in dune mobility in response to a large change in wind power in semi-arid northern China since the 1970s. *Geomorphology* 102: 351-363.

**Mason**, J.A., Miao, X.D., Hanson, P.R., Johnson, W.C., Jacobs, P.M., and Goble, R.J. 2008. Loess record of the Late Pleistocene to Holocene transition on the central and northern Great Plains. *Quaternary Science Reviews* 27: 1772-1783

Zhou, Y. L., Lu H. Y., **Mason** J.A., Miao, X. D., Swinehart, J., Goble R. 2008. Optically stimulated luminescence dating of aeolian sand in the Otindag dune field and Holocene climate change. *Science in China Series D: Earth Sciences* 51: 837-847.

Loope, D.B., Seiler, W.M., **Mason**, J.A., Chan, M.A. 2008. Wind scour of Navajo Sandstone

at the Wave (Central Colorado Plateau, U.S.A). *Journal of Geology* 116: 173-183.

- Johnson, W.C., Willey, K.L., **Mason**, J.A., and May, D.E. 2007. Stratigraphy and environmental reconstruction at the Middle Wisconsinan Gilman Canyon Formation type locality, Buzzard's Roost, Southwestern Nebraska, U.S.A. *Quaternary Research* 67: 474-486
- Mason**, J.A., Joeckel, R.M., and Bettis, E.A., III. 2007. Middle to Late Pleistocene loess record in eastern Nebraska, U.S.A., and implications for the unique nature of Oxygen Isotope Stage 2. *Quaternary Science Reviews* 26: 773-792.
- Jacobs, P.M., and **Mason**, J.A. 2007. Late-Quaternary climate change, loess sedimentation, and soil profile development in the central Great Plains: A pedosedimentary model. *Geological Society of America Bulletin* 119: 462-475
- Miao, X.D., **Mason**, J.A., Johnson, W.C., and Wang, H. 2007. High-resolution proxy record of Holocene climate from a loess section in Southwestern Nebraska, USA. *Palaeogeography, Palaeoclimatology, Palaeoecology* 245:368-381.
- Miao, X.D., **Mason**, J.A., Swinehart, J.B., Loope, D.B., Hanson, P.R., Goble, R.J., and Liu, X.D. 2007. A 10,000-yr record of dune activity, dust storms, and severe drought in the central Great Plains, U.S.A. *Geology* 35: 119-122.
- Wang, H, **Mason**, J.A., and Balsam, W.L. 2006. The importance of both geological and pedological processes in control of grain size and sedimentation rates in Peoria Loess. *Geoderma* 136: 388-400.
- Sridhar, V., Loope, D.B., Swinehart, J.B., **Mason**, J.A., Oglesby, R, J., and Rowe, C.M. 2006. Large wind shift on the Great Plains during the Medieval Warm Period, *Science* 313: 345 – 347, DOI: 10.1126/science.1128941
- Miao, X.D., Wang, X.L., and **Mason**, J.A. 2006. Isolation of the syndepositional magnetic susceptibility signals from loessic paleosols of China. *Journal of Asian Earth Sciences*, 27: 684-690
- Hanson, P. R., **Mason**, J. A., and Goble, R.J. 2006. Terrace formation along the non-glaciated Laramie Range, Wyoming. *Geomorphology* 26:12-25.
- Lu, H.Y., Miao, X.D., Zhou, Y.L., **Mason**, J.A., Swinehart, J., Zhang, J.F., Zhou, L.P., Yi, S.W. 2005. Late Quaternary aeolian activity in the Mu Us and Otindag dunefields (north China) and lagged response to insolation forcing. *Geophysical Research Letters* 32: L21716, doi:10.1029/2005GL024560.
- Miao, X. D., **Mason**, J. A., Goble, R. J., and Hanson, P. R. 2005. Loess record of dry climate and eolian activity in the early to mid-Holocene, central Great Plains, North America. *The Holocene* 15: 339-346.

- Balco, G., Stone, J.O.H., and **Mason**, J.A. 2005. Numerical ages for Plio-Pleistocene sediment sequences by  $^{26}\text{Al}/^{10}\text{Be}$  dating of quartz in buried paleosols. *Earth and Planetary Science Letters* 232:179-191.
- Loope, D.B., **Mason**, J.A., Bao, H., Kettler, R.M., and Zanner, C.W. 2005. Inputs of tephra and sulfuric acid to an ancient Great Plains playa (Oligocene of Nebraska, USA). *Sedimentology* 52: 123-139.
- Jacobs, P. M., and **Mason**, J.A. 2005. Dust aggradation, carbon sequestration, and the origin of thick A horizons in Mollisols of the Great Plains. *Geoderma* 125: 95-106.
- Feggestad, A.J., Jacobs, P.M., Miao, X.-D., and **Mason**, J.A. 2004. Stable carbon isotope record of Holocene environmental change in the Central Great Plains. *Physical Geography* 25: 170-190.
- Hanson, P. R., **Mason**, J. A., and Goble, R.J. 2004. Episodic late Quaternary slope wash deposition as recorded in colluvial aprons, southeastern Wyoming. *Quaternary Science Reviews* 23: 1835-1846
- Miao, X.-D., Sun, Y.-B., Lu, H.-Y., and **Mason**, J.A. 2004. Spatial pattern of grain size in the Late Tertiary 'Red Clay' deposits (North China) indicates transport by low-level northerly winds. *Palaeogeography, Palaeoclimatology, Palaeoecology* 206: 149-155.
- Goble, R. J., **Mason**, J.A., Loope, D.B. and Swinehart, J.B. 2004. Optical and radiocarbon ages of stacked paleosols and dune sands in the Nebraska Sand Hills, USA. *Quaternary Science Reviews* 23: 1173-1182
- Jacobs, P. M., and **Mason**, J. A. 2004. Paleopedology of soils in thick Holocene loess, Nebraska, USA. *Revista Mexicana de Ciencias Geologicas* (Mexican Journal of Geological Sciences), 21: 54-70.
- Mason**, J. A., Swinehart, J.B., Goble, R.J., and Loope, D.B. 2004. Late Holocene dune activity linked to hydrological drought, Nebraska Sand Hills, USA. *The Holocene* 14: 209-217.
- Mason**, J. A., Jacobs, P.M., Hanson, P.R., Miao, X.-M., and Goble, R.J. 2003. Sources and paleoclimatic significance of Holocene Bignell Loess, central Great Plains, USA. *Quaternary Research* 60: 330-339.
- Mason**, J. A., Jacobs, P.M., Greene, R.S.B., and Nettleton, W.D. 2003. Sedimentary aggregates in the Peoria Loess of Nebraska, U. S. A. *Catena* 53: 377-397
- Mays, M. D., Nettleton, W.D., Greene, R.S.B., and **Mason**, J.A. 2003. Dispersibility of glacial loess in particle size analysis. *Australian Journal of Soil Science* 41: 229-244.

- Fang, X.-M., Lu, L.-Q, **Mason**, J.A., Yang, S., An, Z.-S., and Li, J.-J. 2003. Pedogenic response to millennial summer monsoon enhancements on the Tibetan Plateau. *Quaternary International* 106-107: 79-88.
- Konen, M. E., Jacobs, P.M., Burras, C.L., Talaga, B.J., and **Mason**, J.A. 2002. Equations for predicting soil organic carbon using loss-on-ignition for selected soils of the north central United States. *Soil Science Society of America Journal* 66:1878-1881
- Mason**, J. A. 2001. Transport direction of Peoria Loess in Nebraska and implications for loess sources on the central Great Plains. *Quaternary Research* 56: 79-86.
- Lu, L.-Q., Fang, X.-M., **Mason**, J.A., Li, J.-J., and An, Z.-S. 2001. The evolution of coupling of Asian winter monsoon and high latitude climate of the Northern Hemisphere--Grain evidence from 8.1 Ma loess-red clay sequence on the Chinese central Loess Plateau. *Science in China (D)*, 44 (Supplement): 185-191.
- Mason**, J. A., and Kuzila, M.S. 2000. Episodic Holocene loess deposition in central Nebraska. *Quaternary International* 67:119-131.
- Baker, R. G., **Mason**, J.A., and Maher, L.J. 1999. Petaloid organs preserved in an Arctic plant macrofossil assemblage from full glacial sediments in southeastern Minnesota. *Quaternary Research* 52: 388-392
- Loope, D. B., **Mason**, J.A., and Dingus, L. 1999. Lethal sandslides from eolian dunes. *Journal of Geology* 107: 707-713.
- Mason**, J. A., and Jacobs, P.M. 1999. High-resolution particle size analysis as a tool for interpreting incipient soils in loess. *Chinese Science Bulletin* 44: 70-74.
- Mason**, J. A., Nater, E.A., Zanner, C.W., and Bell, J.C. 1999. A new model of topographic control on loess distribution. *Geomorphology* 28: 223-236.
- Mason**, J. A. 1998. Relative rates of loess accumulation and pedogenic processes: implications for paleoclimatic inference. *Quaternary International* 51/52: 169-174.
- Mason**, J. A., and Jacobs, P.M. 1998. Chemical and particle size evidence for addition of fine dust to soils of the midwestern United States. *Geology* 26: 1135-1138.
- Mason**, J. A., and Knox, J.C. 1997. Age of colluvium indicates accelerated late Wisconsinan hillslope erosion in the Upper Mississippi Valley. *Geology* 25:267-270.
- Jacobs, P. M., Knox, J.C., and **Mason**, J.A. 1997. Preservation and recognition of Middle and Early Pleistocene loess in the Driftless Area, Wisconsin. *Quaternary Research* 47:147-154.
- Mason**, J. A., Nater, E.A., and Hobbs, H.C. 1994. Transport direction of Wisconsinan loess

in southeastern Minnesota. *Quaternary Research* 41:44-51.

**Mason, J. A., and Nater, E.A.** 1994. Soil morphology--Peoria Loess grain size relationships, southeastern Minnesota. *Soil Science Society of America Journal* 58:432-439.

**Mason, J. A., Milfred, C.J., and Nater, E.A.** 1994. Distinguishing parent material and soil age effects on an Ultisol of north-central Wisconsin, U.S.A. *Geoderma* 61:165-189.

## **2. Encyclopedia Chapters (each reviewed by 1-2 referees)**

**Mason, J.A. and Jacobs, P.M.** 2007. Nature of Quaternary paleosols. In *Encyclopedia of Quaternary Science* (S. Elias, ed.). Elsevier.

**Mason, J. A., and Zanner, C.W.** 2004. Grassland Soils. In D. Hillel and M. Singer (eds.) *Encyclopedia of Environmental Soil Science*. Elsevier.

## **3. Field Trip Guidebook Section**

Bettis, E.A., III, J.A. **Mason, J.B.** Swinehart, X.-D. Miao, P.R. Hanson, R.J. Goble, D.B. Loope, P.M. Jacobs, H.M. Roberts. 2003. Cenozoic eolian sedimentary systems of the USA mid-continent. In D. Easterbrook (ed.), *Quaternary Geology of the United States*. Geological Society of America, Boulder, Colorado, pp. 195-218.

## **4. Open-File Reports (internal state geological survey review only)**

**Mason, J. A., and R. M. Joeckel.** 2002. Surficial geology of the Platte River Valley, Fremont to Ashland (Fremont East, Arlington, Valley, Wann, and Ashland East 7.5-Minute Quadrangles). Conservation and Survey Division Open-File Report 68, University of Nebraska, Lincoln [CDROM].

**Mason, J. A., R. F. Diffendal, Jr., and R. M. Joeckel (Eds.).** 2001. Program and Abstracts, 7th International Conference on Fluvial Sedimentology. Conservation and Survey Division Open-File Report 60, University of Nebraska, Lincoln [CDROM].

**Mason, J. A.** 2001. Surficial geology of the Fort Calhoun and Kennard Quadrangles, Nebraska. Conservation and Survey Division Open-File Report 56, University of Nebraska, Lincoln [CDROM].

## **5. Digital Geologic Maps (internal state geological survey review only)**

**Mason, J. A.** 1999. Surficial Geology of the Fort Calhoun 7.5' Quadrangle.

**Mason, J. A.** 1999. Stack Map of the Fort Calhoun 7.5' Quadrangle.

**Mason, J. A.** 1999. Surficial Geology of the Kennard 7.5' Quadrangle.

**Mason, J. A.** 1999. Stack Map of the Kennard 7.5' Quadrangle.

**Mason, J. A., and R. M. Joeckel.** 2000. Surficial Geology of the Arlington 7.5' Quadrangle.

**Mason, J. A., and R. M. Joeckel.** 2000. Stack Map of the Arlington 7.5' Quadrangle.

**Mason, J. A., and R. M. Joeckel.** 2000. Surficial Geology of the Valley 7.5' Quadrangle.  
**Mason, J. A., and R. M. Joeckel.** 2000. Stack Map of the Valley 7.5' Quadrangle.  
**Mason, J. A., and R. M. Joeckel.** 2000. Surficial Geology of the Wann 7.5' Quadrangle.  
**Mason, J. A., and R. M. Joeckel.** 2000. Stack Map of the Wann 7.5' Quadrangle.  
**Mason, J. A., and R. M. Joeckel.** 2001. Surficial Geology of the Ashland East Quadrangle.  
**Mason, J. A., and R. M. Joeckel.** 2001. Stack Map of the Ashland East Quadrangle.  
**R. M. Joeckel and J. A. Mason.** 2001. Surficial Geology of the Fremont East Quadrangle.  
**R. M. Joeckel and J. A. Mason.** 2001. Stack Map of the Fremont East Quadrangle.  
**Mason, J. A., and R. M. Joeckel.** 2003. Stack Map of the Ashland West Quadrangle.

**6. Abstracts/Meeting presentations (last five years)**

**Mason, J.A., Johnson, W.C., Miao, X.D., Jacobs, P.M., and Goble, R.J.** Formation of a Thick A Horizon through Aggradational Pedogenesis in the Buried Brady Soil, Central Great Plains. Geological Society of America and Soil Science Society of America Joint Annual Meeting, Houston, October 2008.

**Mason, J.A.** Landscape-Scale Interpretation of the Loess Record. American Geophysical Union, Fall Meeting, San Francisco, December 2008.

**Mason, J.A., Goble, R.J, Werner, C., Loope, D.B., Swinehart, J.B., Lu, H.Y., Miao, X.D., and Hanson, P.R.** 2007. Ecology and geomorphology of episodically active inland dunefields of the Great Plains and northern China. Geological Society of America Annual Meeting, Denver.

**Mason, J.A., Goble, R.J, Werner, C., Loope, D.B., Swinehart, J.B., Lu, H.Y., Miao, X.D., and Hanson, P.R.** 2007. Ecology and geomorphology of episodically active inland dunefields of the Great Plains and northern China. Geological Society of America Annual Meeting, Denver.

**Mason, J.A., and Jacobs, P.M.** 2007. A sedimentary upper fine zone in Peoria Loess of the Great Plains and Midwest: The result of fine dust rainout? Geological Society of America North Central and South Central Sections, Annual Meeting, Lawrence, Kansas.

**Mason, J.A., Swinehart, J.B., Lu, H.Y., Miao, X.D., Zhou, Y.L., and Goble, R. J.** 2006. Comparison of Holocene eolian systems in North China and the Great Plains, USA: Implications for paleoclimatic interpretation. Rapid Change in Asia's Drylands (RACHAD) Workshop, Lanzhou University. *Invited.*

**Mason, J.A., Joeckel, R.M., Miao, X.D., Hanson, P.R., and Jacobs, P.M.** 2005. Loess stratigraphy of Nebraska in a global context. Geological Society of America North Central Section, Annual Meeting, Minneapolis.

**Mason, J.A.** 2005. Relief produced by loess deposition in the central Great Plains: A "natural experiment" in geomorphology. Geological Society of America Annual

Meeting, Salt Lake City.

Miao, X.D., **Mason**, J., Swinehart, J., Loope, D., Goble, R., Hanson, P., and Liu, X.D. 2005. A 10,000-year record of dune activity, dust storms, and drought in the Central Great Plains. Geological Society of America Annual Meeting, Salt Lake City.

Jacobs, P.M., and **Mason**, J.A. 2005. Aggradational pedogenesis: The upland landscape response to climate change. Geological Society of America North Central Section, Annual Meeting, Minneapolis.

Joeckel, R.M., and **Mason**, J.A. 2005. Ridgetop loess pedostratigraphy: A key to understanding landscape evolution in eastern Nebraska. Geological Society of America North Central Section, Annual Meeting, Minneapolis.

Zhou, Y.L., Lu, H.Y., Zhang, J.F., Zhou, L.P., Miao, X.D., and **Mason**, J.A. 2005. Optically stimulated luminescence dating sand-loess system in Mu Us and Otindag deserts in North China. PAGES 2nd Open Science Meeting, Beijing.

**Mason**, J. A., 2004. Tableland evolution in the central Great Plains. Geological Society of America Annual Meeting, Denver.

**Mason**, J. A., 2004. Abrupt boundaries in eolian systems of the central U.S.: Influence of climate, vegetation, topography, and groundwater. American Quaternary Association Biennial Meeting, Lawrence, Kansas. *Invited*.

**Mason**, J. A., 2004. Loess distribution controlled by topographic and hydrologic barriers to eolian sand transport. Association of American Geographers Annual Meeting, Philadelphia.

### **Invited Lectures**

- 1998 Northern Illinois University, Department of Geography
- 1999 University of Minnesota, Department of Soil Science
- 1999 University of Minnesota, Department of Geology and Geophysics
- 2003 Nebraska Society of Professional Soil Scientists
- 2003 Northern Illinois University, Department of Geology
- 2004 University of Wisconsin-Eau Claire, Department of Geography
- 2004 Institute for Earth Environment-Chinese Academy of Sciences
- 2005 University of Minnesota, Quaternary Paleoecology Program
- 2006 Minnesota Native Plant Society, Annual Symposium
- 2008 Nanjing University

### **Courses Taught**

#### ***A. At University of Nebraska-Lincoln, Department of Geosciences:***

- Physical Geology
- Environmental Geology

Soil Geomorphology  
Urban and Environmental Geology  
GIS/RS Applications in Geosciences

***B. At Northern Illinois University, Department of Geography:***

Introduction to Natural Environmental Systems (= Intro. Physical Geography)  
Introduction to Soil Science  
Field Methods  
Pedology

***C. At University of Oregon, Department of Geography:***

Geomorphology  
Global Environmental Change

***D. At University of Wisconsin-Madison, Department of Geography:***

(as lecturer, 1993-1994 and as faculty member, 2003- )

Geomorphology  
Soil Geomorphology  
Landforms and Landscapes of North America  
The Quaternary Period  
Global Physical Environments  
The American West

**Graduate Students Advised**

***A. At Northern Illinois University***

Jay Angel, M. S. 1997  
Mukila Maitha, M. S. 1997  
Jennifer Troast, M. S. 1998.  
Cathryn Dowd, M. S., 1998.  
William Wetzal, M. S. 1998  
Mark Stelford, Ph. D. 2001 (I was advisor, 1995-1997)

***B. At University of Nebraska-Lincoln***

Paul R. Hanson, M.S. 2002, Ph. D., 2005. Currently Assistant Professor, University of  
Nebraska-Lincoln  
Xiaodong Miao, transferred to UW-Madison

***C. At UW-Madison***

Xiaodong Miao, Ph.D. 2005, currently Geoscientist, Illinois State Geological Survey  
Corey Werner, Ph.D. 2007, currently Assistant Professor, Central Missouri State University  
Aaron Feggstad, M.S., 2005; Ph.D. in progress (on leave of absence)  
Anthony Beauchaine, M.S. 2008  
Karen Russ, Ph.D. in progress (coadvisor with Jack Williams)

Henry Loope, Ph.D. in progress  
Paul Reyerson, Ph.D. in progress  
Kristy Stanley, Ph.D. in progress  
Ty Sabin, Ph. D. in progress

***D. At Institute for Earth Environment-Chinese Academy of Sciences***

Zhou Yali, Ph.D. 2008 (coadvisor)

**Mentoring/Research Experience for Undergraduate Students (examples):**

Supervised senior thesis of Nicholas Legg (2006), on paleohydrology of streams draining the Medicine Bow Mountains, Wyoming. I spent one week in the field with Nick, getting him started on data collection for this project.

Research Mentor, Undergraduate Research Scholars Program (2006-2007): Supervised work by Phueng Cha on the NSF-funded project, "Dunefield records of late Quaternary climate change, northern China." I trained Phueng Cha in the use of ArcGIS, including several basic types of spatial analysis. Using ArcGIS and Excel, she studied the relationships between climate variables and NDVI in dunefields of north China over the period 1983-2003. She presented a poster on her work at the undergraduate research fair in spring, 2007, and she is a coauthor of a paper in press on remote-sensing based analysis of recent dunefield activity in north China.

Undergraduate Research Experience. Tony Giuffre, an undergraduate chemistry/geology major, has carried out lab work for several of my projects. I have worked with him to test and refine several fairly complex lab procedures (e.g. soil phosphorus fractionation), and he is now working with Paul Reyerson to develop biogenic silica extraction methods for use in Paul's Ph.D. research.

**Public Service Activities (examples):**

Provided information on soils and geomorphology on colluvial slopes in southeastern Minnesota for MN Dept. of Natural Resources classification of natural plant communities; invited lecture on the same topic presented at MN Native Plant Society symposium, March 2006.

Provided information on Nebraska's loess hills to the village of Brady, Nebraska, for their website.

Educational activities. Examples include field geology activity with Science Focus High School students in Lincoln, and field trip for Nebraska Environmental Educators Association

**Professional Service**

***National/International:***

Associate Editor, *The Holocene* (2005-2009); this is one of the three top-ranked journals in the field of Quaternary studies, and I am one of two editors handling most North American papers.

Abstract Coordinator for Seventh International Conference on Fluvial Sedimentology, Lincoln Nebraska, August 2001 (compiled and edited > 230 abstracts).

Nebraska representative (1998-2002) and 2002 chair of NCR-3 Committee; this committee, sponsored by the U. S. D. A., coordinates linkages between pedologists at Midwestern land grant universities and the National Cooperative Soil Survey.

Reviewer for *Annals of the American Association of Geographers*, *Catena*, *Journal of Arid Environments*, *Journal of Quaternary Science*, *The Holocene*, *Earth Surface Processes and Landforms*, *Earth and Planetary Science Letters*, *European Journal of Soil Science*, *Geochimica et Cosmochimica Acta*, *Geoderma*, *Geology*, *Geological Society of America Bulletin*, *Geoarchaeology*, *Geomorphology*, *Geophysical Research Letters*, *Nature Geoscience*, *Quaternary Research*, *Quaternary International*, *Quaternary Science Reviews*, *Journal of Sedimentary Research*, *Soil Science Society of America Journal*, special publications of the Soil Science Society of America and INQUA, the U. S. Geological Survey, the National Science Foundation, the Royal Netherlands Academy of Science, and the Israel Science Foundation.

***University of Wisconsin:***

University Library Committee (Physical Sciences Division representative (2005-present))

Campus Planning Committee (non-voting member representing University Library Committee, 2007-8)

Faculty Appeals Committee, College of Letters and Science (2004-2006);

Department of Geography: Chair, Graduate Budget Committee (2006-), Faculty Recruitment Committee (2007); member, Advisory Committee (2007-), Budget Committee (2006-2007), Graduate Affairs Committee (2003-). Advisor for Physical Geography, Area Studies, and Honors (2003-2005).

Wisconsin Geological and Natural History Survey, UW-Extension: Search committee member (2007)

***Other Institutional Service:***

Conservation and Survey Division (UNL): Member of Director's Advisory Committee (1999-2001), Field/Drilling/Safety Committee (1998-2003).

Department of Geosciences (UNL): Graduate Admissions Committee (2000-2003).