

# S. Christopher Whisner

## CURRICULUM VITAE

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**Work:** Dept. of Geography and Geosciences  
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### EDUCATION

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**Ph.D.**, Geology (Structural Geology and Tectonics), University of Tennessee, August 2005

**Dissertation:** The Middle Ordovician Tellico-Sevier Syncline: A Stratigraphic, Structural, and Paleoseismic Investigation. *Advisor:* Dr. Robert D. Hatcher, Jr.

**Course work:** Tectonics, Applied Methods in Structural Geology, Sedimentation and Tectonics, Topics in Remote Sensing, Southern and Central Appalachian Tectonics, Cross Section Construction, Tectonics of Mountain Chains, Advanced Structural Geology, Understanding Energy Balance in Geologic Deformations, Carbon Cycling and Climate Change

**M. S.**, Geology (Structural Geology), Western Michigan University, May 1998

**Thesis:** Application of the Paleomagnetic Fold Test to Determine the Relative Timing of Sill Intrusion and Deformation in the Southwest Helena Salient, Montana. *Advisor:* Dr. Christopher J. Schmidt.

**Course work:** Hydrogeology, Plate Tectonics, Structural Analysis, Environmental Geophysics, Geophysical Field Methods, Seismic Reflection, Gravity and Magnetics, Horizontal Drilling Methods, Geochronology and Global Change

**B. S.**, Geology, Western Michigan University, December 1994.

**Course work:** Mineralogy, Optical Mineralogy, Geomorphology, Petrology, Structural Geology, Geophysics, Invertebrate Paleontology, Summer Geology Field Camp (Indiana Univ.).

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### EXPERIENCE

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#### *Research*

- **University of Tennessee-Knoxville (2005-2008)** Post-Doctoral Researcher.  
Evaluating thermal properties of terrestrial sedimentary features as distinguishing characteristics for identifying similar features on other planets, specifically Mars. Member of Mars Exploration Rover Payload Downlink Team.
- **University of Tennessee-Knoxville (2002-2004)** Graduate Research Assistant under direction of Dr. Robert D. Hatcher, Jr. Created 1:24,000-scale geologic map of bedrock and Quaternary geology between Tellico Plains and Vonore, TN. Compiled regional geologic map and created new stratigraphic column. Searched for paleoseismic activity using detailed map, previous geologic mapping, soil surveys, and aerial photography. Used structure, stratigraphy, and basin modeling to construct new development model for the Tellico-Sevier Basin, East Tennessee.
- **Western Michigan University (1995)** Graduate Research Assistant under direction of Dr. Christopher J. Schmidt. Collected oriented samples of igneous intrusions near Cardwell, MT, for paleomagnetic analysis. Separated heavy minerals for radiometric age dating using the  $Ar^{40}/Ar^{39}$  method.
- **Western Michigan University (1994)** Undergraduate Research Assistant under direction of Dr. Christopher J. Schmidt. Mapped over 12 mi<sup>2</sup>, collecting and analyzing structural data, and collecting samples for thin section analysis as part of project reevaluating the amount of shortening along the southern margin of the Helena Salient, MT. Analyzed stereoplots, down-plunge sections, and balanced cross sections. Collected oriented samples, prepared thin sections, and quantified strain using oolites (modified Fry method) and calcite twins. Work partially funded by the Petroleum Research Fund.

#### *Teaching*

- **Bloomsburg University of Pennsylvania (2008-Present)** Assistant professor: Courses Taught: Physical Geology, Structural Geology, Mineralogy, Petrology (Course Numbers 51.120, 51.121, 51.369, 51.261, and 51.262.)

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- **University of Tennessee-Knoxville (2008)** Instructor for Planetary Surface Processes (EPS 685) Graduate-level class comparing terrestrial surface processes to those on other planetary bodies.
- **University of Tennessee-Knoxville (2005-2008)** Guest lecturer for Physical Geology (EPS 101) Covered all topics in physical geology as a substitute for primary lecturer over two years.

### *Teaching - continued*

- **University of Tennessee-Knoxville (1997-2003)** Graduate Teaching Assistant. Taught structural geology lab to junior and senior level students focusing on basics of structural geology including topographic and geologic map interpretation, stereographic projection, kinematic analysis and cross section construction. Taught physical and historical geology labs introducing basic geology concepts to freshmen level college students.
- **Western Michigan University (1995-1997)** Graduate Teaching Assistant. Taught physical geology lab introducing basic geology concepts to freshmen level college students.
- **Western Michigan University (1995-1997)** Physical Geology Lab Coordinator. Developed lab exercises, exams, and quizzes for physical geology lab. Supervised all other physical geology TAs.

### **PUBLICATIONS**

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- Hardgrove, C., Moersch, J. E., and **Whisner, S. C.**, 2009, Thermal Imaging of Alluvial Fans; A New Technique for Remote Classification of Sedimentary Features, , Earth and Planetary Science Letters, Vol. 285, pp. 124-130.
- Harlan, S.S., Geissman, J.W., **Whisner, S.C.** and Schmidt, C.J., 2008, Paleomagnetism and geochronology of sills of the Doherty Mountain area, southwestern Montana: Implications for the timing of fold and thrust belt deformation and vertical-axis rotations along the southern margin of the Helena salient: Geological Society of America Bulletin v. 120, p. 1091-1104.
- Whisner, S. C.**, Hatcher, R. D. Jr., and Munsey, J. W., 2003, Disturbed sediments in the east Tennessee seismic zone: Evidence of large prehistoric earthquakes in east Tennessee?: Southeastern Geology. v. 42, p.67-82.

### **ABSTRACTS**

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- Moersch, J.E., **Whisner, S.C.**, Hardgrove, C., Thermal Imaging of Alluvial Fans: A New Technique for Remote Classification of Sedimentary Processes, Eos Transactions AGU, 2008.
- Moersch, J.E., **Whisner, S.C.**, Hardgrove, C., 2007, Thermophysical Characterization Of Terrestrial Analogs For Martian Sedimentary Features: Seventh International Conference on Mars
- Whisner, S.C.** and Moersch, J.E., 2007, Field Observations of Thermoclinometric Effects in Dumont Dunes, California: Lunar and Planetary Sciences Conference XXXVIII, Houston, TX.
- Evenick, J.C., Hatcher, R.D. Jr., and **Whisner, S.C.**, 2007, What is the origin of the Middle Ordovician Sevier Basin, Southern Appalachians? Geological Society of America Abstracts with Programs, v. 39, p. 78
- Moersch, J.E., **Whisner, S.C.**, Hardgrove, C., 2005, Thermophysical Characterization of Terrestrial Alluvial Fans, With Applications to Mars: Eos Transactions AGU, v. 86 p.52.
- Whisner, S.C.** and Moersch, J.E., 2005, The use of ASTER TIR data to distinguish between different lithologic units in the southern Appalachians and the relationship to problems of distinguishing among lithologies on Mars: Lunar and Planetary Sciences Conference XXXVI, Houston, TX.
- Harlan, S.S., Geissman, J.W., **Whisner, S.C.**, and Schmidt, C.J., 2005, Paleomagnetism and  $^{40}\text{Ar}/^{39}\text{Ar}$  dating of folded sills in the Lombard Thrust Sheet, south central Montana: Implications for the timing and fold and thrust belt deformation and vertical axis rotations along the southern margin of the Helena Salient: EarthScope in the Rocky Mountains Meeting
- Hatcher, R.D. Jr., **Whisner, S.C.**, Bream, B.R., and Miller, C.F., 2004, Sediments derived from mountain chains do not always land in foredeeps: Southern Appalachian Sevier-Blountian basin dynamics: Geological Society of America Abstracts with Programs, v. 33, p. 59
- Whitmer, N.E., Hatcher, R.D. Jr., **Whisner, S.C.**, Whisner, J.B., Thigpen, J.R. and Bultman, J.G., 2003, Middle Ordovician Clastic Wedges in East Tennessee: A New Look at an Old Basin, American Association of Petroleum Geologists (Eastern Section) Pittsburgh ,PA.
- Chapman, M.C., Munsey, J.W., **Whisner, S.C.**, and Whisner, J.B., 2002, The eastern Tennessee seismic zone; small earthquakes illuminating major basement faults?: Geological Society of America Abstracts with Programs, v. 34, p. 31.

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- Chapman, M.C., Munsey, J. W., Powell, C.A. **Whisner, S.C.**, and Whisner, J. B., 2002, The eastern Tennessee seismic zone; summary after 20 years of network monitoring: *Seismological Res. Letters*, v. 73, p. 245
- Whisner, S.C.**, Hatcher, R.D. Jr., and Munsey, J.W., 2001, The possible link between east-west trending faults in the valley and ridge province of eastern Tennessee and the Gray fossil site: *Geological Society of America Abstracts with Programs*, v. 33, p. 59
- Mills, H.H., and **Whisner, S.C.**, 2000, Old fan deposits on the northwestern flanks of Chilhowee Mountain, southeastern Tennessee; indicators of an inactive landscape?: *American Quaternary Association Programs and Abstracts*, v. 16, p. 84
- Schmidt, C.J., **Whisner, S.C.**, Harlan, S.S., Geissman, J.W., 2000, Paleomagnetic and geochronologic results bearing on the timing of fold and thrust belt deformation in the Lombard thrust sheet along the southern margin of the Helena Salient, south central Montana: *Geological Society of America Abstracts with Programs*, v. 32, p. 82.
- Hatcher, R.D. Jr., **Whisner, S.C.**, Munsey, J.W., Moore, H., 2000, Fractures, dewatering, and carbonate blocks in a lake deposit at Gray, northeastern Tennessee; a window into Southeastern U.S. Pleistocene (?) tectonics and possible seismicity: *Geological Society of America Abstracts with Programs* v. 32, p. 82.
- Whisner, S.C.**, Hatcher, R.D. Jr., Munsey, J.W., and Mills, H.H., 2000, Disturbed Quaternary terrace deposits in eastern Tennessee; smoking gun for old earthquakes, hillslope creep, or evidence for Megatherium trip and fall?: *Geological Society of America Abstracts with Programs*, v. 32, p. 28.
- Bergin, J.K. and **Whisner, S.C.** 1995. Imbricate thrusting and internal strain near the southwest margin of the Helena salient, Montana. *Geological Society of America Abstracts with Programs*, v. 27, p. 2-3.

**SKILLS**

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Proficient in both Mac and PC versions of Microsoft Word and Excel, Canvas, Adobe Illustrator, Photoshop. Comfortable with ArcGIS, ENVI, Imagine, Arc/Info. Built both PC and Macintosh computers.

**AWARDS**

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- 2005 - University of Tennessee C.H. Gordon Award for Exceptional Professional Promise  
1997 - Western Michigan University Graduate Research and Creative Scholar  
1993 – Elected to Sigma Gamma Epsilon, Earth Science Honor Society

**OUTREACH**

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- 2007-2008 Part of the MONS (Mars Outreach for North Carolina Students) with Durham Academy, Durham, North Carolina  
2008 – Invited Speaker – Bearden Middle School, Knoxville, TN, Remote Sensing and Mars.  
2007-2008 Co-Chair Knoxville Montessori Rockin' Fall Festival 2007, Earth science themed fair for pre-school through elementary  
2006-2007 Invited speaker, Knoxville Montessori Geology and Culture of Egypt for pre-school through elementary children  
1999, 2000 Oak Ridge Institute for Continued Learning (ORICL) field trip assistant