

# Stephanie S. Day

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## Education:

**University of Minnesota** August 2006 –July 2012

Ph.D. in Geology

Advisors: Karen Gran and Chris Paola

Thesis: Anthropogenically-Intensified Erosion in Incising River Systems

**University of Nebraska at Lincoln** August 2002 – May 2006

B.S. in Geology

Advisor: Darryll Pederson

Senior Thesis: Boiling Sand Springs in the Nebraska Sand Hills

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## Professional Experience:

**Assistant Professor:** August 2012 - Present

North Dakota State University, Fargo, ND

**Adjunct Faculty:** September 2010 – May 2011

University of St Thomas, St. Paul, MN

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## Research Interests:

Human/ environment interactions, terrestrial laser scanning, fluvial geomorphology, stream restoration, ge archaeology, lidar analysis, historic aerial photograph analysis, experimental geomorphology

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## Funding History:

**North Dakota NASA EPSCoR (\$30,000)**

2013

Using Machine Learning in Earth Science Research to Discern Anthropogenic vs. Natural Landform Features within Remote Sensing Datasets

**Advance FORWARD's Leap Lab Renovation (\$24,500)**

2013

Experimental Geomorphology Laboratory

**Minnesota Pollution Control Agency: (Total: \$425,000; NDSU Portion: \$118,600)**

2012

Quantifying Causes and Contributions of Non-field Sediment Loads

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## Publications:

Quintus, S., Clark, J.T., **Day, S.S.**, Schwert, D.P. *in review*. Ladcape evolution models and human settlement patterns on Ofu Island, Manu'a Group, American Samoa. *Journal Pacific Archaeology*.

Quintus, S., Clark, J.T., **Day, S.S.**, Schwert, D.P. *in press*. Investigating regional patterning in archaeological remains by pairing extensive survey with a lidar dataset: The case of the Manu'a Group, American Samoa. *Journal of Archaeological Science: Reports*.

Morris, M., Haji Mohammadi, M., **Day, S.**, Hondzo, M., Sotiropoulos, F., (2015) Prediction of Glossosoma biomass spatial distribution in Valley Creek by three-dimensional turbulent open-channel flow numerical simulation. *Water Resources Research*. DOI: 10.1002/2014WR015887.

- Day, S.S.,** Gran, K.B., Belmont, P., Wawrzyniec, T., (2013) Measuring bluff erosion part 1: Terrestrial laser scanning methods for change detection and determining bluff erosion processes. *Earth Surface Processes and Landforms*. V 38. DOI: 10.1002/esp.3353.
- Day, S.S.,** Gran, K.B., Belmont, P., Wawrzyniec, T., Wilcock, P., (2013) Measuring bluff erosion part 2: Pairing aerial photographs and terrestrial laser scanning to create a watershed scale sediment budget. *Earth Surface Processes and Landforms*. V 38. DOI: 10.1002/esp 3359.
- Gran, K.B., Belmont, P., **Day, S.S.,** Finnegan, N., Jennings, C., Lauer, J.W., Wilcock, P.R., (2011) Landscape evolution in South-Central Minnesota and the role of geomorphic history on modern erosional processes. *GSA Today*.
- Belmont, P., Gran, K.B., Schottler, S.P., Wilcock, P.R., **Day, S.S.,** Jennings, C., Lauer, J.W., Viparelli, E., Willenbring, J.K., Engstrom, D.R., Parker, G., (2011) Large shift in sediment source challenges Upper Mississippi Cleanup. *Environmental Science and Technology*. V 45. dx.doi.org/10.1021/es2019109.
- Gran, K.B., Belmont, P., **Day, S.S.,** Jennings, C., Johnson, A., Perg, L., and Wilcock, P.R., (2009) Geomorphic evolution of the Le Sueur River, Minnesota, USA, and implications for current sediment loading, in James, L.A., Rathburn, S.L., and Whittecar, G.R., eds., *Management and Restoration of Fluvial Systems with Broad Historical Changes and Human Impacts*: Geological Society of America Special Paper 451, 119 - 130, doi: 10.1130/2008.2451(08).

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### **Invited Talks:**

- November 2012, University of North Dakota: *Anthropogenically-intensified erosion in incising river systems*.
- February 2012, UNAVCO Science Workshop, Boulder, CO: *Using terrestrial laser scanning for geomorphic change detection*.

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### **Abstracts:**

- Anderson, S.L., McGranahan, D.A., Hewitt, T., **Day, S.,** (2015) Comparing terrestrial laser scanning and biometric measurements as estimates of woody understory biomass and forest structure, Society of Range Management conference.
- Day, S.S.,** Clark, J.T., Schwert, D.P., Denton, A., Li, S., Radermacher, M., Motu, N., Quintus, S., (2014) Using machine learning to discern anthropogenic features within lidar data sets, *Abstracts with Programs – Geological Society of America*, V 46. No 6.
- Motu, N., **Day, S.,** Clark, J., Schwert, D., Denton, A., Quintus, S., (2014) Automated feature identification of archaeological features using lidar. The Samoa Conference III.
- Uprety, G., **Day, S.S.,** (2014) Effect of freeze/thaw on bluff erosion in South Central Minnesota. Upper Midwest Stream Restoration Science Symposium. LaCrosse, WI.
- Clark, J.T., **Day, S.S.,** Quintus, S., Schwert, D.P., (2014) Settlement system studies in American Samoa: an integration of LiDAR analysis and pedestrian survey of tropical landscapes. 20<sup>th</sup> Congress of the Indo-Pacific Prehistory Association (IPPA), Seam Reap, Cambodia.
- Day, S.S.,** Schwert, D.P., Clark, J.T., Quintus, S. (2013) Pairing Terrestrial Laser Scanning for Landscape Analyses in Polynesia, *Abstracts with Programs – Geological Society of America*, V 45. No 7.

- Day, S.S.**, (2013) Understanding ravine growth using physical experiments. Upper Midwest Stream Restoration Conference.
- Day, S.S.**, Gran, K.B., (2012) Using TLS to measuring braided river bar movement in the Pasig Portrero River on Mt. Pinatubo *Eos Trans. AGU*, 93, Fall Meet. Suppl., Abstract EP33D-07.
- Day, S.S.**, Gran, K.B., Paola, C., (2012) Ravine growth experiments to understand effects of changing hydrology. *Abstracts with Programs – Geological Society of America*, V 44. No 7.
- Day, S.S.**, Gran, K. B., Paola, C., (2010) The effects of increased flow rate on erosional processes in a young, evolving watershed. *Abstracts with Programs – Geological Society of America*, V 42. No 5.
- Petersen, L., Flores, O., **Day, S.**, (2010) Drainage basin evolution in response to overland flow and rainfall simulation. *Abstracts with Programs – Geological Society of America*, V 42. No 5.
- Day, S.**, Gran, K., Belmont, P., Wawrzyniec, T., (2010) Bluff erosion in the Le Sueur River basin. Upper Midwest Stream Restoration Science Symposium oral presentation. LaCrosse, WI
- Day, S.**, Gran, K., Belmont, P., Jennings, C., Wawrzyniec, T., (2009) Using ground based LiDAR to identify the processes of bluff erosion in the LeSueur River basin in Southern Minnesota. *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract EP33A-0609.
- Gran, K., Johnson, A., Belmont, P., **Day, S.**, Jennings, C., Wilcock, P., (2009) Impact of Holocene valley evolution on modern sediment loading in the Le Sueur River, Minnesota. *Abstracts with Programs – Geological Society of America*, V 41. p 228.
- Day, S.**, Belmont, P., Gran, K., Jennings, C., Wilcock, P., Johnson, A., Perg, L. (2008) Using Ground Based LiDAR to quantify bluff erosion in the LeSueur River watershed in southern Minnesota. *Eos Trans. AGU*, 89(53), Fall Meet. Suppl., Abstract H53C-1084.
- Day, S.**, Belmont, P., Gran, K., Johnson, A., Jennings C. (2008) Sediment Loading in the LeSueur River basin. Minnesota Water Resources Conference oral presentation.
- Gran, K., Belmont, P., **Day, S.**, Jennings, C., Johnson, A., Perg, L., Wilcock, P. (2008) Sediment sources to the LeSueur River, Minnesota, over multiple temporal and spatial scales. *Abstracts with Programs – Geological Society of America*. V 40. p 94.
- Belmont, P., Wilcock, P., Parker, G., Gran, K., Jennings, C., Perg, L., Lauer, W., Viaparelli, E., **Day, S.**, Johnson, A. (2008) Watershed context for a sediment routing model in the LeSueur River, southern Minnesota. *Abstracts with Programs – Geological Society of America*. V 40. p 432.
- Gran, K., **Day, S.**, Jennings, C., Johnson, A., Lauer, W., Parker, G., Perg, L., Wilcock, P. (2007) Evaluating sediment sources, storage, and policy implications in the agricultural LeSueur watershed, central Minnesota. *Abstracts with Programs – Geological Society of America*. V 39. p 32.
- Day, S.**, Johnson, A., Gran, K., Jennings, C., Perg, L. (2007) Sediment Loading in the LeSueur River, Minnesota River watershed. *Abstracts with Programs – Geological Society of America*. V 39. p 243.
- Belmont, P., Perg, L., **Day, S.**, Jennings, C., Gran, K., Johnson, A., Wilcock, P. (2007) Characterization of

sediment sources in the Le Sueur River watershed, southern Minnesota. *Eos Trans. AGU*, V 88 (52), Fall Meet. Suppl. Abstract H21A-0194.

**Day, S., Belmont, P., Perg, L., Jennings, C., Gran, K., Johnson, A., Wilcock, P.** (2007) An integrated sediment budget for the Le Sueur River in southern Minnesota. *Eos Trans. AGU*, 88 (52), Fall Meet. Suppl. Abstract H21A-0194.

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### **Students Advised:**

#### **Environmental and Conservation Science, M.S.**

Chuong Le, *M.S. (in progress)*

Girish Uprety, *M.S. (in progress)*

#### **Committee Member for:**

Clayton Knudson, *M.S. Archaeology (in progress)*

Elizabeth Noel, *M.S. Software Engineering (in progress)*

Nolita Motu, *M.S. Archaeology (in progress)*

Cady Sijapati, *M.S. Software Engineering (in progress)*

Matthew Radermacher, *M.S. Archaeology (in progress)*

Kubar Ali Hussin, *PhD Civil Engineering (in progress)*

Sarah Anderson, *M.S. Range Science (in progress)*

Suvash Shiwakoti, *PhD Environmental Conservation Science (in progress)*

Niloy Saha, *PhD Civil and Environmental Engineering (in Progress)*

Eric Christeson, *M.S. Software Engineering (completed December 2014)*

Felix Zamora, *Environmental and Conservation Science (Completed August 2013)*

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### **Professional Service:**

**Chapter Treasurer:** January 2015 – Present

Association of Women Geoscientists North Dakota Chapter

**Public Talk:** January 9, 2014

*Channel Erosion: causes, effects, measurements, and solutions*

Tongue River Outreach Meeting

**Founder and Chapter President:** October 2012 – December 2014

Association of Women Geoscientists North Dakota Chapter

**Field Trip Leader:** October 2011

Geological Society of America Meeting, Minneapolis, MN

**Proposal Reviewer:**

National Science Foundation's Division of Earth Sciences

**Manuscript Reviewer:**

*Anthropocene; Remote Sensing; Remote Sensing of the Environment; Sensors*

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### **Professional Development:**

**ND Water Quality Monitoring Conference:** 2014

**NDSU Teaching and Learning Conference:** 2012, 2013, 2014

**Preparing for an Academic Career in the Geosciences:** 2010

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### **Professional Affiliations:**

American Geophysical Union

Geological Society of America

Association of Women Geoscientists

