

KAREN BOBBITT GRAN
Department of Earth & Environmental Sciences
University of Minnesota, Duluth
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EDUCATION:

Ph.D. in Geology, University of Washington, 2005
M.S. in Geology, University of Minnesota, 2000
B.A. in Geology, Carleton College, 1996

EXPERIENCE:

2013 – present: **Associate Professor**, Department of Earth & Environmental Sciences, University of Minnesota Duluth.
2007 – 2013: **Assistant Professor**, Department of Geological Sciences, University of Minnesota, Duluth.
2006 – 2007: **Research Fellow & Graduate Program Coordinator** (Stream Restoration Science & Engineering), National Center for Earth-surface Dynamics, University of Minnesota, Minneapolis.
2000 – 2005: **Graduate Research/Teaching Assistant**, Department of Earth & Space Sciences, University of Washington, Seattle.
Spring 2000: **Visiting Instructor**, Department of Geology, University of St. Thomas.
Fall 1999: **Acting Technical Director**, Department of Geology, Carleton College.
1997 – 1999: **Graduate Research/Teaching Assistant**, Department of Geology & Geophysics, University of Minnesota, Minneapolis.
1996 – 1997: **Geologist/Technician**, Foth & Van Dyke, Eagan, Minnesota.

RESEARCH INTERESTS:

Fluvial processes and sediment transport, braided rivers, disturbed systems, stream restoration, volcanic geomorphology, interactions between physical landscape and ecological systems, landscape evolution, watershed history, sediment source delineation, sediment budgeting, lidar analyses, geomorphic change detection

RECENT FUNDING HISTORY:

2018 Impacts of beaver dams on low flow hydrology and hydraulics. Funding from Minnesota Sea Grant. PI: Gran, Co-Is: Dymond, Teasley, Dumke (\$174,447; (\$99,200 + graduate student)) (7/18-7/20).
2017 Restoration Assessment for water quality. Funding from Minnesota's Lake Superior Coastal Program. PI: Gran (\$35,939) (8/17-12/18)
2017 Drainage network evolution following continental glaciation. Funding from National Science Foundation, Geomorphology & Land Use Dynamics Division, PIs: Gran (UMD), Moore, Bradley (Iowa State), Anders (U Illinois). (\$399,717; UMD portion: \$127,644) (8/17-7/20).

- 2017 Landslide hazards and impacts on Minnesota's natural environment. Funding from LCCMR (Legislative-Citizen Commission on Minnesota Resources). PI: Gran, Co-Is: Jennings, Wickert (UMTC). (\$500,000) (7/17-6/20).
- 2014 Lake Superior Streams Sediment Stressor Investigation, Funding from Minnesota Pollution Control Agency. PI: Nieber (UMTC), Co-I: Gran (UMD). (\$200,000) (8/14-8/16)
- 2013 Identifying and mitigating impacts from expanding urbanization to Duluth-area streams. Funding from the University of Minnesota's Center for Urban and Regional Affairs (CURA). PI: Gran. (\$37,147) (5/13 – 6/16)
- 2012 Climate and Human Dynamics as Amplifiers of Natural Change: a Framework for Vulnerability Assessment and Mitigation Planning, Funding from National Science Foundation's Water Sustainability and Climate Program. PI: Foufoula-Georgiou; Co-Is: Finlay, Roehrig, Gran. (Collaborative grant including Investigators Belmont, Parker, Rabotyagov, Kling, Wilcock at other institutions). (Total UMN: \$2,200,000; UMD portion: \$392,101). (9/12 – 8/18)
- 2012 Collaborative for Sediment Source Reduction: Greater Blue Earth River, Funding from Minnesota Department of Agriculture, PI: Gran, (Total \$180,000; UMD portion: \$113,331) (5/12-6/16).
- 2012 Predicting Erosional hotspots in North Shore streams from high-resolution spatial data, Funding from University of Minnesota Water Resources Center from funding to Water Resources Research Institutes through the US Geological Survey, PI: Gran, (\$16,547 + \$22,500 augmentation in 2014) (5/12-6/15).
- 2012 LiDAR-based bluff assessment for coastal land use planning, Funding from Minnesota's Lake Superior Coastal Program. PI: Host (UMD NRRI), Co-I: Gran, (\$34,723) (8/12-12/13)
- 2011 Improving experimental imaging capabilities from the micro scale to the landscape scale, Funding from University of Minnesota's I³ program, PI: Gran, Co-Is: Swenson, Hoxie, Johnson, Musselman, Host, Brashaw (\$318,500) (7/11 – 6/16).
- 2011 Amity Creek Restoration Project, Funding from Minnesota Pollution Control Agency as part of U.S. Environmental Protection Agency's Great Lakes Restoration Initiative, PI: Axler, Co-Is: Host, Breneman, Brady, Schomberg, Gran, (Total: \$488,495; UMD Geological Sciences portion: \$60,588), (7/11 – 6/13).
- 2011 Greater Blue Earth River Sediment Reduction Strategy, Funding from Minnesota Pollution Control Agency 319 Project. PI: Marr, Co-Is: Belmont, Gran, Hobbs, Wilcock, (Total: \$300,000; run through St. Anthony Falls Laboratory at University of Minnesota, Twin Cities), (4/12 – 6/15).

- 2011 National Center for Earth-surface Dynamics (NCED) (Gran portion: \$39,152 + additional \$23,000 in 2012). (12/11 - 6/13). This amount was allocated to me as an NCED PI for related research. The original funding source is the National Science Foundation through their Science and Technology Center program. This funding runs through the St. Anthony Falls Laboratory at University of Minnesota, Twin Cities.
- 2010 Assessment of habitat improvement effectiveness on the Sucker River, Funding from the Center for Community and Regional Research at the University of Minnesota Duluth, PI: Gran, (\$5,979) (5/10 – 4/12).
- 2010 Water sustainability and climate in the Great Lakes region of East Africa, Funding from National Science Foundation's Water Sustainability and Climate Program, PI: Johnson, Co-Is: Austin, Gran, Guildford, Hecky, (\$136,809) (10/10-9/11).
- 2009 Decadal-scale channel evolution at Mount Pinatubo, Philippines, National Science Foundation, PI: Gran, (\$124,090) (3/09 – 2/12).
- 2008 Riparian vegetation controls on channel planform evolution, University of Minnesota Grant-in-Aid, PI: Gran, (\$27,726) (1/09 – 6/10).
- 2008 A Preliminary Investigation of In-Stream Light Quality and Photochemistry at Amity Creek, VCAA Office at University of Minnesota Duluth, PI: Minor, Co-I: Gran, Austin (\$10,600) (5/08–6/09).
- 2006 Le Sueur River integrated sediment budget, Minnesota Pollution Control Agency, PI: Gran, Co-I: Jennings, Perg (initial PI), (\$482,000) (5/07 – 6/09); Extension for additional \$185,000 (7/09-6/11). Funding was run through St. Anthony Falls Laboratory at the University of Minnesota, Twin Cities.

COURSES TAUGHT at UMD (*new courses):

Geology & Earth Systems, Spring 2009, 2010, 2011, 2012, 2014, 2017
Geomorphology, Every year, Fall 2007-2012, 2014-2017
**Fluvial Geomorphology, Fall 2008, 2010, 2012, 2014*
**Tectonic Geomorphology, Spring 2010, 2012, 2014, 2018*
**Introduction to Stream Restoration, Fall 2016 (UMD)*
**Stream Restoration Practice, Spring 2015, 2017*
**Stream Crossing Design, Fall 2017*
Field Geology (Wasatch-Unita Field Camp), Summer 2010, 2012, 2013, 2016, 2018
Natural Hazards & Civilization, Spring 2008

UNDERGRADUATE RESEARCH STUDENTS: (*denotes UROP student)

*Ryan Huggett, Molly Ciaccio, Zach Toland, *Mike Beyer, *Julia Halbur, *Ehren Inkel, *Edward Berg, Kirsti Hakala, Bridgette Eischens, Ryan Birkemeier, Ryan Peterson, Daniel Johnson, Vance Smith, Drew Faherty, Jacob Kolke, *Kaitlin Johnson, Aaron Knowlton, Emily Vanlonden, Crystal Lambert, Amber Michels, Evan Lahr, Austin Cavallin, Preston Wallin, Matt Sunderman, *Chase Poppenhagen, Elizabeth Boor, Craig Steiskal

GRADUATE STUDENTS ADVISED:

University of Minnesota Duluth, Geological Sciences, M.S.:

Andrea Johnson, *M.S. 2012*

Thesis: *Timing and pattern of valley excavation, Le Sueur River, south-central Minnesota, USA.*

Emily Dunn (Wartman), *M.S. 2011*

Thesis: *Incipient vegetation recovery and its effect on braided channel morphology at Mount Pinatubo, Philippines.*

Grant Nietzel, *M.S. 2013*

Thesis: *Monitoring event-scale stream bluff erosion with repeat terrestrial lidar scanning: Amity Creek, MN.*

Martin Bevis, *M.S. 2015*

Thesis: *Pleistocene base-level fall is a fundamental driver of erosion in southern Minnesota's Greater Blue Earth River Basin.*

Nathaniel Mitchell, *M.S. 2015*

Thesis: *Achieving peak flow and sediment loading reductions through increased water storage in the Le Sueur watershed, Minnesota; A modeling approach.*

Pichawut Manopkawe, *M.S. 2015*

Thesis: *Identifying erosional hot spots in Duluth-area streams after the 2012 flood using high-resolution repeat aerial lidar data.*

Courtney Targos, *M.S. 2017*

Thesis: *Changes in channel geometry through the Holocene in the Le Sueur River, south-central Minnesota.*

Ian Treat, *M.S. 2018*

Thesis: *Ravine alluvial fans as records of landscape change in the Le Sueur River basin, southern Minnesota.*

Ellie Brown (Curie), *M.S. expected 2018*

Brian Sockness, *M.S. expected 2019*

Emilie Richard, *incoming Fall 2018*

University of Minnesota and UM-Duluth, Water Resources Science, M.S.:

Jenny Magyar (Jasperson), *M.S. 2016, Co-advised*

Thesis: *Seasonal and flood-induced variations in groundwater-surface water exchange dynamics in a shallow aquifer system: Amity Creek, Minnesota.*

Molly Wick, *M.S. 2013*

Thesis: *Identifying erosional hotspots in streams along the North Shore of Lake Superior, Minnesota using new high-resolution elevation and soils data.*

Virginia Batts, *M.S. 2017*

Thesis: *Effects of vegetation-sediment interactions in the morphological evolution of coarse-bedded rivers: Results from flume experiments.*

Anna Baker, *M.S. 2018, Co-advised*

Thesis: *Phosphorus-sediment interactions and their implications for watershed scale phosphorus dynamics in the Le Sueur River Basin.*

Larissa Scott, *M.S. expected spring 2019*

Hannah Behar, *incoming fall 2018, Co-advised*

Emma Burgeson, *incoming fall 2018, Co-advised*

University of Minnesota (Twin Cities), Geology & Geophysics, Ph.D.:
(now Dept. of Earth Sciences)

Stephanie Day, *Ph.D. 2012, Co-advised*

Thesis: *Anthropogenically-intensified erosion in incising river systems.*

Ted Fuller, *Ph.D. 2013, Co-advised*

Thesis: *Mechanisms of lateral bedrock erosion and controls on the ratio of vertical to lateral incision rates in bedrock rivers.*

PUBLICATIONS: (*denotes student author)

In prep or review:

- *Baker, A., Finlay, J., **Gran, K.**, Engstrom, D., Karwan, D.,L., *Atkins, W.S.C., *Muramoto-Mathieu, M., Dolph, C., in prep. Sediment as a modulator rather than a primary source of phosphorus transport and fate in the Le Sueur River basin, Minnesota. To be submitted to *Water Resources Research*, June 2018.
- *Cho, S.J., Wilcock, P., Hobbs, B.J., **Gran, K.**, and Belmont, P., in prep. Data-driven, reduced-complexity watershed simulation model for transparent evaluation of nonpoint source sediment pollution and management impact. To be submitted to *Water Resources Research*, June 2018. 48 msp. (*Research completed while Cho was a Ph.D. student)
- *Cho, S.J., Wilcock, P., **Gran, K.**, in prep. Topographic filtering simulation model for evaluating variable sediment transport scenarios at the watershed scale. To be submitted to *Geomorphology*, June 2018, 48 msp. (*Research completed while Cho was a Ph.D. student)
- *Mitchell, N., Kumarasamy, K., Cho, S.J., Belmont, P., Dalzell, B., **Gran, K.**, in review. Achieving peak flow and sediment loading reductions through increased water storage in an agricultural watershed of the Upper Midwest. Submitted to *Water*. 35 msp.

Published, accepted, or in press:

- *Jaspersen, J., **Gran, K. B.**, Magner, J., in press. Seasonal and flood-induced variations in groundwater-surface water exchange in a northern coldwater fishery. *Journal of the American Water Resources Association*. 58 msp.
- Day, S.S., **Gran, K.B.**, Paola, C., 2018. Impacts of changing hydrology on ravine growth: Experimental results. *Hydrology and Earth System Sciences*. doi:10.5194/hess-2017-567.
- *Czuba, J.A., Fofoula-Georgiou, E., **Gran, K.B.**, Belmont, P., Wilcock, P.R., 2017. Interplay between spatially explicit sediment sourcing, hierarchical river-network structure, and in-channel bed material sediment transport and storage dynamics. *Journal of Geophysical Research – Earth Surface*, v. 122, 1090-1120, doi:10.1002/2016JF003965.
- Gran, K. B.**, *Czuba, J.A., 2017. Sediment pulse evolution and the role of network structure. *Geomorphology*. DOI: 10.1016/j.geomorph.2015.12.015.
- *Fuller, T., **Gran, K. B.**, Sklar, L., Paola, C., 2016. Lateral erosion in an experimental bedrock channel: the influence of bed roughness on erosion by bed-load impacts. *Journal of Geophysical Research - Earth Surface*, v. 121, doi: 10.1002/2015JF003728.
- Fofoula-Georgiou, E., *Czuba, J.A., *Schwenk, J., *Talbiri, Z., Belmont, P., Wilcock, P., **Gran, K.**, Finlay, J., Kumar, P., 2016. Comment on “Climate and agricultural land use change impacts on streamflow in the upper Midwestern United States” by Satish Gupta et al.. Submitted to *Water Resources Research*.
- Gran, K. B.**, Tal, M., *Wartman, E. D., 2015. Co-evolution of riparian vegetation and channel dynamics in an aggrading braided river system, Mount Pinatubo, Philippines. *Earth Surface Processes and Landforms*. DOI: 10.1002/esp.3699.

- Gran, K.B.**, Finnegan, N., *Johnson, A., Belmont, P., Rittenour, T., and Wittkop, C., 2013, Landscape evolution, valley excavation, and terrace development following abrupt postglacial base level fall. *GSA Bulletin*, doi: 10.1130/B30772.1.
- **Winner of 2018 Kirk Bryan Award for research excellence, *GSA QG&G Division Award*
- *Day, S., **Gran, K.**, Belmont, P., and Wawrzyniec, T., 2012, Measuring bluff erosion part 1: Terrestrial laser scanning methods for change detection and determining bluff erosion processes. *Earth Surface Processes and Landforms*, 13 p., doi:10.1002/esp.3353.
- *Day, S., **Gran, K.**, Belmont, P., and Wawrzyniec, T., 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*, 15 p., doi:10.1002/esp.3359.
- *Maalim, F.K., Melesse, A.M., Belmont, P., **Gran, K.B.**, 2013, Modeling the impact of land use changes on runoff and sediment yield in the Le Sueur watershed, Minnesota, using GeoWEPP. *Catena* v. 107, pp. 35-45. (*Maalim was a student at Florida International University.)
- Gran, K.B.**, 2012, Strong seasonality in sand loading and resulting feedbacks on sediment transport, bed texture, and channel planform at Mount Pinatubo, Philippines. *Earth Surface Processes and Landforms*, v. 37, n. 9, pp. 1012-1022, doi: 10.1002/esp.3241.
- Gran, K.B.**, Belmont, P., *Day, S.S., Finnegan, N.J., Jennings, C., Lauer, J.W., and Wilcock, P.R., 2011, Landscape evolution in south-central Minnesota and the role of geomorphic history on modern erosional processes. *GSA Today*, v.21, n.9, doi: 10.1130/G121A.1., pp. 7-9.
- Gran, K.B.**, Montgomery, D.R., *Halbur, J.C., 2011, Long term post-eruption elevated sediment yields at Mount Pinatubo, Philippines. *Geology*, v. 39, n. 4, pp. 367-370.
- 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 source of fine sediment in the Upper Mississippi River, *Environmental Science & Technology*, DOI: 10.1021/es2019109.
- Belmont, P., **Gran, K.**, Jennings, C.E., Wittkop, C., *Day, S.S., 2011, Holocene landscape evolution and erosional processes in the Le Sueur River, central Minnesota. In Miller, J.S., Hudak, G.J., Wittkop, C., and McLaughlin, P.I., eds., *Archean to the Anthropocene: Field Guides to the Geology of the Mid-Continent of North America: Geological Society of American Field Guide* 24, p. 439-455, doi:10.1130/2011.0024(21).
- Voller, V.R., Paola, C., **Gran, K.B.**, Hudleston, D., and Campbell, K.M., 2011, Designing graduate curriculum for stream restoration. Proceedings of the 2011 World Environmental and Water Resources Congress: Bearing Knowledge for Sustainability, ASCE Conference Proceedings, doi:10.1061/41173(414)270.
- *Dumke, J.D., Hrabik, T.R., Brady, V.J., **Gran, K.B.**, Regal, R.R., Seider, M.J., 2010, Channel morphology response to selective wood removals in a sand-laden Wisconsin trout stream. *North American Journal of Fisheries Management*, v. 30, n. 3, pp. 776-790.
- Gran, K.B.**, Belmont, P., *Day, S.S., Jennings, C., *Johnson, A., Perg, L., Wilcock, P.R., 2009, Geomorphic evolution of the Le Sueur River, Minnesota, 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 American Special Paper* 451, 12 p., doi: 10.1130/2008.2451(08).
- Gran, K.B.**, Montgomery, D.R., and Sutherland, D.G., 2006, Channel bed evolution and sediment transport under declining sand inputs. *Water Resources Research*, v. 42, W10407.

- Gran, K.B.**, and Montgomery, D.R., 2005, Spatial and temporal patterns in fluvial recovery following volcanic eruptions: Channel response to basin-wide sediment loading at Mount Pinatubo, Philippines. *GSA Bulletin*, v. 117, n. 1/2, p. 195-211.
- Tal, M., **Gran, K.B.**, Murray, A.B., Paola, C., and Hicks, M., 2004, Riparian vegetation as a primary control on channel characteristics in multi-thread rivers. Eds. Bennett, SH, Collison, AJC, Simon, A, *Riparian Vegetation and Fluvial Geomorphology*, Water Science and Application, v. 8, p. 43-58.
- Gran, K.B.**, and Paola, C., 2001, Riparian vegetation controls on braided stream dynamics. *Water Resources Research*, v.37, n.12, p.3275-3284.
- Montgomery, D.R., and **Gran, K.B.**, 2001, Downstream variations in the width of bedrock channels. *Water Resources Research*, v.37, n.6, p.1841-1846.
- Jacobson, R.B. and **Gran, K.B.**, 1999, Gravel routing from widespread, low-intensity landscape disturbance, Current River Basin, Missouri. *Earth Surface Processes and Landforms*, v. 24, n. 10, p. 897-917.

MAJOR REPORTS and TECHNICAL DOCUMENTS:

- *Bevis, M.A., **Gran, K.B.**, 2017. Greater Blue Earth River Basin Sediment Budget Shapefiles. Data Repository for the University of Minnesota, <https://doi.org/10.13020/D6XS3V>.
- *Cho, S.J., Wilcock, P., **Gran, K.**, Belmont, P., Hobbs, B., Collaborative for Sediment Source Reduction--Greater Blue Earth River Basin, 2017. Management Option Simulation Model (MOSM) and supporting documents. University of Minnesota Digital Conservancy, <http://hdl.handle.net/11299/191082>.
- Wilcock, P., *Cho, S.J., **Gran, K.**, Hobbs, B., Belmont, P., *Bevis, M., Heitkamp, B., Marr, J., Mielke, S., Mitchell, N., Kumarasamy, K., 2016, Collaborative for Sediment Source Reduction Greater Blue Earth Basin. Final Report, Nonpoint source pollution water project grants, 319 program, 86 p.
- Gran, K.B.**, Belmont, P., *Bevis, M., *Cho, S.J., Heitkamp, B., Hobbs, B., Marr, J., Mielke, S., *Mitchell, N., Kumarasamy, K., Wilcock, P., 2016, Collaborative for sediment source reduction : Greater Blue Earth River Basin - Sediment budget for the Greater Blue Earth basin. Final report to the Minnesota Department of Agriculture. August 2016, 33 p.
- Gran, K.B.**, Belmont, P., *Day, S., Jennings, C., Lauer, J.W., Viparelli, E., Wilcock, P., Parker, G., 2011, An integrated sediment budget for the Le Sueur River basin. Final report to the Minnesota Pollution Control Agency, June 2011, 128 p.
- Gran, K.**, Hansen, B., Nieber, J., 2007. Little Fork River Channel Stability and Geomorphic Assessment: Final Report to the MPCA, Impaired Waters and Stormwater Program. 108p.

ABSTRACTS: (*denotes student author)

2018:

- *Baker, A.C., **Gran, K.B.**, Finlay, J., Karwan, D.L., Engstrom, D.R., *Atkins, W.S.C., *Muramoto-Mathieu, M., *Belo, T., 2018. The role of sediment in driving Phosphorus loading and dynamics in the highly altered agricultural Le Sueur River basin. April 16, 2018. North-central section GSA (Geological Society of America) meeting, Ames, IA.
- Gran, K.B.**, *Neitzel, G., *Hall, L., *Brown, E., 2018. Utilizing repeat terrestrial lidar data to track bluff erosion in and after a major flood event. April 16, 2018. North-central section GSA (Geological Society of America) meeting, Ames, IA.
- DeLong, S.B., Wickert, A.D., **Gran, K.B.**, Breckenridge, A.J., DeLong, W.M., Jennings, C., 2018. Characterizing landscape response to an extreme meteorological event in northeastern

Minnesota in 2012 using multitemporal lidar. April 16, 2018. North-central section GSA (Geological Society of America) meeting, Ames, IA.

- *Popenhagen, C.G., **Gran, K.B.**, 2018. Predicting landslide hazards in the Greater Duluth area north to the Knife River along the North Shore of Lake Superior. April 17, 2018. North-central section GSA (Geological Society of America) meeting, Ames, IA.
- *Brown, E., **Gran, K.B.**, 2018. Monitoring bluff erosion using terrestrial laser scanning and structure-from-motion photogrammetry on Minnesota's North Shore streams. April 17, 2018. North-central section GSA (Geological Society of America) meeting, Ames, IA.
- *McDanel, J.J., Miller, B.A., Moore, P.L., *Sockness, B., **Gran, K.B.**, *Cullen C., Anders, A., 2018. A harmonized map of glacial landform regions in the Central Lowlands of North America. April 17, 2018. North-central section GSA (Geological Society of America) meeting, Ames, IA.

2017:

- *Baker, A.C., *Belo, T., *Yetter, K., *Atkins, W., Finlay, J.C., **Gran, K.B.**, 2017. Sediment-Phosphorus interactions and their implications for watershed management in agricultural landscapes, February 27th, 2017, Upper Midwest Stream Restoration Symposium, La Crosse, WI.
- *Baker, A.C., **Gran, K.B.**, Finlay, J.C., *Belo, T., 2017. Sediment as a Modulator of Phosphorus Dynamics in Post-Glacial Channels, March 19th 2017, Geological Society of America North East- North Central Joint Meeting, Pittsburgh, PA.
- *Baker, A.C., *Belo, T., *Yetter, K., *Atkins, W., Finlay, J.C., **Gran, K.B.**, 2017. Sediment-Phosphorus interactions and their implications for watershed management in agricultural landscapes, March 23rd, 2017, Shared Waters Shared Responsibility Panel Discussion, Minneapolis, MN.
- *Baker, A.C., Finlay, J., Karwan, D., *Belo, T., Atkiins, W., **Gran, K.**, Engstrom, D., 2017. Sediment-phosphorus interactions and their implications for watershed management in agricultural landscapes. October 17, 2017. Minnesota's Water Resources Conference: St. Paul, MN.
- *Baker, A., Finlay, J.C., **Gran, K.B.**, Karwan, D., Engstrom, D.R., *Atkins, W., *Muramoto-Mathieu, M., 2017. The influence of erosional hotspots on watershed-scale Phosphorus dynamics in intensively managed agricultural landscapes. December 15, 2017, AGU national meeting: New Orleans, LA.
- *Brown, E., **Gran, K.**, *Hall, L., 2017. Monitoring bluff erosion rates using terrestrial laser scanning and structure-from-motion photogrammetry on Minnesota's North Shore streams. Upper Midwest Stream Symposium, La Crosse, WI. February, 2017.
- *Brown, E., **Gran, K.**, 2017. Monitoring bluff erosion rates using terrestrial laser scanning and structure-from-motion photogrammetry on Minnesota's North Shore streams, October, 25, 2017, Geological Society of America national meeting, Seattle, WA.
- *Brown, E., *Upton, M., *LaBonne, N., *Labuz, S., *Scott, L., *Sinner, K., *Strasser, A., *Treat, I., *Voigt, T., **Gran, K.**, 2017. Restoration design evaluation of the East Branch of the Beaver River, Silver Bay, Minnesota: A student-led investigation comparing two designs. October 25, 2017, Geological Society of America national meeting, Seattle, WA.
- Gran, K.**, *Treat, I., *Targos, C., 2017. What's missing? What's left behind? How human alterations to land use and drainage are recorded in different fluvial environments in an incising agricultural landscape of the Upper Midwest, USA. October 23, 2017. Geological Society of America national meeting, Seattle, WA.

- Gran, K.,** *Bevis, M., 2017. How far can you expand your sediment budget? Attempts to take an integrated sediment budget and extrapolate it to neighboring basins in an agricultural watershed in the Upper Midwest, USA. October 25, 2017. Geological Society of America national meeting, Seattle, WA.
- *McLane, L., Giorgis, S., **Gran, K.,** 2017. Constraints on uplift from geomorphic analysis of a digital elevation model of the Central Range Mountains, Trinidad. October 23, 2017, Geological Society of America national meeting, Seattle, WA.
- *Scott, L., **Gran, K.** Johnson, L., 2017. Groundwater-surface Water Exchange Dynamics Following a Channel Reconfiguration Project: Stewart River, MN. Upper Midwest Stream Restoration Symposium, La Crosse, WI.
- *Scott, L., **Gran, K.** Johnson, L., 2017. Groundwater-surface Water Exchange Dynamics Following a Channel Reconfiguration Project: Stewart River, MN. University of Minnesota Water Resources Students In Action (WRSIA) on March 23, 2017, Minneapolis, MN.
- *Scott, L., **Gran, K.,** Johnson, L., 2017. Groundwater-surface water exchange dynamics following a channel reconfiguration project: Stewart River, MN. October 18, 2017, Minnesota's Water Resources Conference: St. Paul, MN.
- *Treat, I. H., **Gran, K.B.,** and *Cavallin, A., 2017, Fly ash in ravine alluvium: mapping the Holocene-Anthropocene divide in the LSRB. Geological Society of America Abstracts with Programs, v. 49, n. 2, doi: 10.1130/abs/2017NE-290512.
- Wilcock, P., Cho, S.J., **Gran, K.,** Belmont, P., Hobbs, B.F., Heitkamp, B., Marr, J.D.G., 2017. Mud, Models, and managers: Reaching a consensus on a watershed strategy for sediment load reduction. AGU National meeting: December 15, 2017, New Orleans, LA.

2016:

- *Czuba, J.A., Fofoula-Georgiou, E., **Gran, K.B.,** Belmont, P., and Wilcock, P.R., 2016. Modeling bed-material sediment transport on a river network. RiverFlow 2016, Eighth international conference on fluvial hydraulics, July 12-15, 2016, St. Louis, MO.
- Gran, K.,** 2016, Stream resiliency under a changing climate. Presented at the Minnesota Lake Superior Streams Symposium, January 6-7, 2016, Duluth, MN.
- Gran, K.B.,** *Cho, S.J., Hobbs, B., Belmont, P., Wilcock, P., Kumarasamy, K., Heitkamp, B., Marr, J., February 8, 2016, Prioritization of restoration actions using real-time reduced complexity modeling in a large agricultural watershed. Presented at the 2016 Upper Midwest Stream Restoration Symposium, Milwaukee, WI.
- Gran, K. B.,** Cho, S. J., Wilcock, P., Belmont, P., Hobbs, B., Watershed-scale management for fine sediment loading: Balancing alternative restoration scenarios from bank stabilization to water retention, Geological Society of America Annual Meeting, Denver, Colorado, United States. September 2016.
- *Treat, I., **Gran, K. B.,** *Lahr, E., 2016, "Ravine alluvial fans as records of Holocene and western settlement," Geological Society of America Annual Meeting, Denver, Colorado, United States. September, 2016.

2015:

- *Batts, V., *Eiden, R., *Bass, G., *Mitchell, N, *Targos, C., Abeyta, A., **Gran, K.,** 2015, Analysis of the resilience and future effectiveness of a habitat improvement project following a high magnitude flood: Sucker River, Duluth, MN. 2015 Upper Midwest Stream Restoration Symposium, Dubuque, Iowa, February 2015.

- *Batts, V., **Gran, K.**, 2015, The role of fine sediment in the morphologic evolution of vegetated, braided channel networks: Results from flume experiments. Presented at the fall American Geophysical Union meeting, Dec. 14-18, San Francisco, CA. Abstract EP51C-0932.
- *Bevis, M., **Gran, K.**, 2015, Sediment budgets for the Greater Blue Earth River basin: Pleistocene base-level fall drives near-channel erosion. 2015 Upper Midwest Stream Restoration Symposium, Dubuque, Iowa, February 2015.
- *Czuba, J., Fofoula-Georgiou, E., **Gran, K.**, Belmont, P., Wilcock, P., 2015, Near-channel sediment sources now dominate in many agricultural landscapes: The emergence of river-network models to guide watershed management (invited). Presented at the fall American Geophysical Union meeting, Dec. 14-18, San Francisco, CA. Abstract EP24B-03.
- *Czuba, J.A., Fofoula-Georgiou, E., **Gran, K.B.**, Belmont, P., Wilcock, P., 2015, Sediment dynamics on river networks: Incorporating sources, stores, and sinks from a sediment budget into a network-modeling framework. Extended abstract presented at SEDHYD 2015: Joint Federal Interagency Conference: Sustainable Water Resources in a Changing Environment. April 19-23, Reno, NV.
- *Czuba, J., Fofoula-Georgiou, E., **Gran, K.B.**, Belmont, P., Wilcock, P.R., 2015, Identifying hotspots of channel migration in the Minnesota River basin. Presented at the Water Resources Conference, October 13-14, 2015, St. Paul, MN.
- Fofoula-Georgiou, E., *Czuba, J, Belmont, P., Wilcock, P., **Gran, K.**, and Kumar, P., 2015, Climate and humans as amplifiers of hydro-ecologic change: Science and policy implications for intensively managed landscapes (invited). Presented at the fall American Geophysical Union meeting, Dec. 14-18, San Francisco, CA. Abstract H33O-02.
- Gran, K.B.**, 2015, Lateral erosion encourages vertical incision in a bimodal alluvial river (*invited*). Presented at the fall American Geophysical Union meeting, Dec. 14-18, San Francisco, CA. Abstract EP31D-02.
- Gran, K.**, Abeyta, A., Paola, C., and Voller, V., 2015, Stream restoration science and engineering graduate program at the University of Minnesota expands. 2015 Upper Midwest Stream Restoration Symposium, Dubuque, Iowa, February 2015.
- *Jasperson, J., **Gran, K.**, Magner, J., Swenson, J., 2015, Flood effects on surface water-groundwater connectivity in entrenched stream valley, shallow groundwater systems – East Branch Amity Creek, Duluth, MN. Presented at the Water Resources Conference, October 13-14, 2015, St. Paul, MN.
- Lenhart, C.F., *Triplett, L., *Rausch, R.E., **Gran, K.B.**, *Fasching, J., and *Batts, V., 2015, Impact of hydrologic change on the riparian vegetation dynamics of the Minnesota River basin. Presented at the Ecological Society of America annual meeting, August 9-14, 2015, Baltimore, MD.
- *Mitchell, N., *Cho, S.J., Dalzell, B., Kumarasamy, K., **Gran, K.**, 2015. Modeling stream management through spatially distributed water control structures in the Le Sueur watershed with SWAT. 2015 Upper Midwest Stream Restoration Symposium, Dubuque, Iowa, February 2015.
- *Mitchell, N., **Gran, K.**, *Cho, S.J., Dalzell, B., Kumarasamy, K., 2015, Achieving peak flow and sediment loading reductions through increased water storage in the Le Sueur watershed, Minnesota: A modeling approach. Presented at the fall American Geophysical Union meeting, Dec. 14-18, San Francisco, CA. Abstract H11K-07.

2014:

- Axler, R., Brady, V., Host, G., **Gran, K.**, Schomberg, J., *Neitzel, G., *Wick, M., *Jaspersen, J., Henneck, J., Ruzycski, E., Will, N., Geissler, J., Kleist, C., Carlson, T., Anderson, K., Kubiak, K., Boheim, R.C., Magner, J., Breneman, D., Johnson, L., Story, B., 2014. Amity Creek Restoration Initiative, Minnesota, USA: Demonstration project to help restore and protect north shore Lake Superior Basin trout streams. Minnesota Lake Superior Stream Science Symposium, January 7-8, 2014, Duluth, MN.
- *Birkemeier, R., **Gran, K.B.**, Haensel, C., 2014, Monitoring the effectiveness of large wood at maintaining deep pool habitat through a 500-year flood event. Minnesota Lake Superior Stream Science Symposium, January 7-8, 2014, Duluth, MN.
- Gran, K.B.**, 2014, Geologic history of western Lake Superior streams. Minnesota Lake Superior Stream Science Symposium, January 7-8, 2014, Duluth, MN.
- Gran, K.B.**, 2014, Stream restoration: An evolving practice. Minnesota Lake Superior Stream Science Symposium, January 7-8, 2014, Duluth, MN.
- Hansen, B., **Gran, K.**, Nieber, J., 2014, Cross River channel survey: Present day effects of historical logging structures. Minnesota Lake Superior Stream Science Symposium, January 7-8, 2014, Duluth, MN.
- *Neitzel, G.D., **Gran, K.B.**, 2014, Monitoring event-scale stream bluff erosion with repeat terrestrial laser scanning: Amity Creek. Minnesota Lake Superior Stream Science Symposium, January 7-8, 2014, Duluth, MN.
- Riker-Coleman, K., **Gran, K.**, Hiller, K., 2014, Geomorphic effects of the Forbay Levee breach at Jay Cooke State Park. Minnesota Lake Superior Stream Science Symposium, January 7-8, 2014, Duluth, MN.
- *Wick, M., **Gran, K.** 2014, Identifying erosional hotspots in North Shore streams using airborne LiDAR. Minnesota Lake Superior Stream Science Symposium, January 7-8, 2014, Duluth, MN.

2013:

- Gran, K.B.**, Belmont, P., Finnegan, N., 2013, Changing patterns in sediment delivery in incising agricultural watersheds. Ecological Society of America national meeting, Minneapolis, MN.
- Gran, K.B.**, Belmont, P., Finnegan, N., 2013, Tracking sediment through the Holocene: Determining anthropogenic contributions to a sediment-rich agricultural system, north-central USA. European Geophysical Union annual meeting, Vienna, Austria.
- Gran, K.B.**, Riker-Coleman, K., Hiller, K., 2013, Seize the day: What to do when a 500-year flood strikes in your backyard. *Geological Society of America Abstracts with Programs*. Vol. 45, No. 7, p.792.

2012:

- Day, S.S., and **Gran, K.B.**, 2012, Using TLS to measure braided river bar movement in the Pasig-Potrero River on Mt. Pinatubo, Abstract submitted to the AGU.
- *Day, S.S., **Gran, K.**, and Paola, C., 2012, Ravine growth experiments to understand effects of changing hydrology, *Geological Society of America Abstracts with Programs*. Vol. 44, No. 7, p.418.
- Finnegan, N.J., and **Gran, K.B.**, 2012, Natural or controlled experiment? Disentangling anthropogenic and geologic contributions to the sediment load of the Le Sueur River, MN, USA, Abstract submitted to the AGU.
- Gran, K.B.**, 2012, Monitoring the effectiveness of large wood at maintaining deep pool habitat... through a 500-year flood event, Presented at the 43rd Annual Binghamton Symposium, Jackson, WY.

Gran, K.B., Belmont, P., and Matteson, S., 2012, Ravine contributions to basin-wide sediment loads in an incising agricultural basin, south-central Minnesota USA, *Geological Society of America Abstracts with Programs*. Vol. 44, No. 7, p.341.

*Neitzel, G., and **Gran, K.B.**, 2012, Monitoring stream bluff erosion using repeat terrestrial laser scanning, Abstract submitted to the AGU.

*Wick, M.J., and **Gran, K.B.**, 2012, Identifying Riverine Erosional Hotspots Using Airborne Lidar, Abstract submitted to the AGU.

2011:

Gran, K.B., 2011, Sediment Loading in the Le Sueur River Watershed, from Post-glacial Times to Modern. Minnesota Water Resources Conference, October 18-19, 2011, in St. Paul, MN.

Wilcock, P.R., Belmont, P., and **Gran, K.B.**, 2011, Human Amplified Natural Change: An approach for vulnerability assessment and mitigation planning, *EOS, Transactions of the AGU*, Abstract # EP23B-0749.

2010:

*Day, S.S., and **Gran, K.B.**, 2010, The effects of changes in flow rate on erosion volumes in young incising river systems. *EOS, Transactions of the AGU*, Fall 2010.

*Day, S.S., **Gran, K.B.**, and Paola, C., 2010, The effects of increased flow rate on erosional processes in a young, evolving watershed. *Geological Society of America Abstracts with Programs*, v. 42, n. 5, p. 179.

Gran, K.B., 2010, Two decades of channel evolution following the eruption of Mount Pinatubo, Philippines. *EOS, Transactions of the AGU*, Fall 2010.

Gran, K.B., 2010, Two decades of channel evolution following the 1991 eruption of Mount Pinatubo, Philippines. *Geological Society of America Abstracts with Programs*, V. 42, n. 5, p. 316.

Gran, K., 2010, Two decades of channel bed evolution at Mount Pinatubo, Philippines. Gravel-Bed Rivers VII, Tadoussac, Quebec, September 6-10, 2010.

Finnegan, N.J., **Gran, K.**, *Johnson, A., Belmont, P., Wilcock, P., Dietrich, W.E., 2010, The importance of downstream bed surface coarsening in predicting the wave of incision in response to a sudden base level drop at the mouth of a river: the Holocene Le Sueur River, Minnesota, USA. *EOS, Transactions of the AGU*, Fall 2010.

*Fuller, T.K., Sklar, L.S., and **Gran, K.B.**, 2010, Lateral bedrock erosion in an experimental channel: the influence of bed roughness on wear by bedload impacts. *Geological Society of America Abstracts with Programs*, v. 42, n. 5, p. 315.

*Fuller, T.K., Sklar, L.S., and **Gran, K.B.**, 2010, Lateral bedrock erosion in an experimental channel: the influence of bed roughness on wear by bedload impacts. *EOS, Transactions of the AGU*, Abstracts with Programs, Fall 2010.

2009:

*Day, S.S., **Gran, K.B.**, Belmont, P., Jennings, C.E., Wawrzyniec, 2009, Using ground-based LiDAR to identify the processes of bluff erosion in the LeSueur River basin in Southern Minnesota. American Geophysical Union Annual Meeting, EP33A-0609.

Gran, K.B., *Dunn, E., Tal, M., 2009, Incipient vegetation recovery in the braidplain nearly two decades after the eruption of Mount Pinatubo, Philippines. American Geophysical Union Annual Meeting, EP23C-0648.

Gran, K.B., *Johnson, A.L., Belmont, P., *Day, S., Jennings, C.E., Wilcock, P., 2009, Impact of Holocene valley evolution on modern sediment loading in the Le Sueur River, Minnesota.

Geological Society of American Annual meeting, October 18-21, 2009, *GSA Abstracts with Programs*, v. 41, n. 7, p. 228.

Jennings, C.E., Belmont, P., Blumentritt, D., *Day, S.S., Engstrom, D.R., **Gran, K.B.**, *Johnson, A.L., Lauer, J.W., Parker, G., Schottler, S., Viparelli, E., Wilcock, P., 2009, Mapping to inform modeling of turbidity in agricultural watersheds of the Minnesota basin. Geological Society of America Annual meeting, October 18-21, 2009, *GSA Abstracts with Programs*, V. 41, n. 7, p. 167.

2008:

Belmont, P., Wilcock, P., Parker, G., **Gran, K.**, Jennings, C., Perg, L., Lauer, W., Viparelli, E., *Day, S., and *Johnson, A., 2008, Watershed context for a sediment routing model in the Le Sueur River, southern Minnesota. Geological Society of America Annual Meeting, Abstract 283-8.

Belmont, P., Viparelli, E., Parker, G., Lauer, W., Jennings, C., **Gran, K.**, Wilcock, P., Melesse, A., 2008, Parameterization of a complex landscape for a sediment routing model of the Le Sueur River, southern Minnesota, *Eos Transactions of the AGU*, v. 89(53), Fall Meeting Suppl., Abstract H33K-02, Invited.

*Day, S.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 Transactions of the AGU*, v. 89(53), Fall Meeting Suppl., Abstract H53C-1084.

Gran, K.B., 2008, Role of historic land cover change vs. post-glacial recovery on current sediment loading in two rural Minnesota watersheds. MYRES III Conference (Meeting of Young Researchers in Earth Sciences), New Orleans, Louisiana, May 20-23, 2008.

Gran, K., Belmont, P., *Day, S., Jennings, C., *Johnson, A., Perg, L., and Wilcock, P., 2008, Sediment sources to the Le Sueur River, Minnesota, over multiple temporal and spatial scales. Geological Society of America Annual Meeting, Abstract 123-13.

Gran, K., Minor, E., and *Huggett, R., 2008, The role of local geology and topography on suspended sediment and organic carbon in a Minnesota North Shore bedrock stream, *Eos. Trans. of AGU*, v. 89 (53), Fall Meeting Suppl., Abstract H53B-1042.

*Johnson, A., **Gran, K.**, Belmont, P., and Jennings, C., 2008, Investigating timing and pattern of valley excavation, Le Sueur River, south-central Minnesota, in *Fluvial Deposits and Environmental History*, 39th Annual Binghamton Geomorphology Symposium, Austin, TX, October 9-11, 2008.

Parker, G., Belmont, P., **Gran, K.**, Jennings, C., Lauer, J., Perg, L., Viparelli, E., Wilcock, P., 2008, Effect on rivers of massive changes in hydrologic regime due to human intervention (invited). EGU General Assembly 2008, Geophysical Research Abstracts, Vol. 10, EGU2008-A-12136.

2007:

*Day, S.S., Belmont, P., Perg, L., *Johnson, A., **Gran, K.**, Jennings, C., Wilcock, P., 2007, An integrated sediment budget for the Le Sueur River in southern Minnesota. *EOS Trans. of the AGU, Fall Meeting Suppl.*, v. 88, n. 52, Abstract H21A-0195.

*Day, S.S., *Johnson, A.L., **Gran, K.B.**, Jennings, C., Perg, L., 2007, Sediment loading in the Le Sueur River, Minnesota River watershed. *GSA Abstracts with Programs*, v. 39, n. 6, p. 243.

Gran, K.B., Day, S.S., Jennings, C., *Johnson, A., Lauer, J.W., Parker, G., Perg, L., Wilcock, P., 2007, Evaluating sediment sources, storage, and policy implications in the agricultural Le Sueur River watershed, central Minnesota. *GSA Abstracts with Programs*, v. 39, n. 6, p. 32.

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. of the AGU, Fall Meeting Suppl.*, v. 88, n. 52, Abstract H21A-0194.

Pre-2007 (listed chronologically):

Gran, K.B., Montgomery, D.R., and Daag, A., 2006, Basin-scale erosion at Mount Pinatubo, Philippines, and implications for long-term sediment yield following volcanic eruptions. *GSA Abstracts with Programs*, Fall Meeting, Paper No. 71-10.

Jennings, C.R., Regan, C., Blumentritt, D.J., **Gran, K.**, Gunderson, L., Kuehner, K., Perg, L., Schottler, S., Thorleifson, L.H., and Wright, H., 2006, Turbidity in the Minnesota River – coordinating a basin-wide study. *GSA Abstracts with Programs*, Fall Meeting, Paper No. 112-22.

Gran, K.B., Montgomery, D.R., Sutherland, D., and Lisle, T., 2004, Experiments in eruption recovery: Channel bed and sediment transport adjustments as sand inputs decline. *EOS Trans. of the AGU*, v. 85, n.47, Fall Meeting Supplement, Abstract H34A-0360.

Balco, G., Anders, A., Finnegan, N., **Gran, K.**, Mitchell, S., Stone, J.O.H., 2002, Be-10 measurements of soil balance and landscape stability in the Pacific Northwest. *EOS Trans. of the AGU*, v. 83, n. 47, Fall Meeting Supplement, Abstract H22B-0895.

Gran, K.B., and Montgomery, D.R., 2002, Watershed and channel recovery on the east flank of Mount Pinatubo. *GSA Abstracts with Programs*, Vol. 34, No. 6.

Gran, K.B., Tal, M., and Paola, C., 2002, (INVITED) Riparian vegetation controls on channels formed in non-cohesive sediment. *EOS Trans. of the AGU*, v. 83, n. 19, Spring Meeting Supplement, Abstract OS21A-02.

Gran, K.B., and Montgomery, D.R., 2001, Watershed recovery following extreme sediment loading at Mount Pinatubo, Philippines. *EOS Trans. of the AGU*, v.82, p.F17.

Tal, M., **Gran, K.**, and Paola, C., 2001, Riparian vegetation: Controls on channel planform in noncohesive beds. *EOS Trans. of the AGU*, v.82, p.F415.

Gran, K.B., and Montgomery, D.R., 2000, Channel-bed recovery following extreme sediment loading at Mount Pinatubo. *EOS Trans. of the AGU*, v.81, n.48, p.F491.

Gran, K.B., and Paola, C., 1999, Effects of riparian vegetation on braided stream dynamics: Experimental results. *EOS Trans. of the AGU*, v. 80, n. 46, p. F446.

Bobbitt, K.E., and Jacobson, R.B., 1996, Controls on channel instability at the drainage-basin scale, Current River basin, Missouri. *EOS Trans. of the AGU*, v.77 n.17, p. S 125.

Bobbitt, K.E., Doswell, K., and Twining, K., 1995, Lithologic mapping with Landsat TM band ratioed images, Dagger Mountain, Big Bend National Park, Texas. *The Eighth Keck Research Symposium in Geology (Abstracts Volume)*, v. 8, p. 130-133.

Garrettson, M., Bodrie, V., and **Bobbitt, K.**, 1995, Organic carbon content of soils: Variations in crop type and soil texture. *Journal of the Minnesota Academy of Science*, v. 59 n. 3, p. 4.

INVITED TALKS:

- February 2018, Upper Midwest Stream Restoration Symposium, Dubuque, Iowa: Invited panelist for a discussion on *Certification in Stream Restoration: What's Feasible?*
- October 2017, Geological Society of America national meeting, Seattle, WA: *What's missing? What's left behind? How human alterations to land use and drainage are recorded in different fluvial environments in an incising agricultural landscape of the Upper Midwest, USA.*
- October 2017, Geological Society of America national meeting, Seattle, WA: *How far can you expand your sediment budget? Attempts to take an integrated sediment budget and extrapolate it to neighboring basins in an agricultural watershed in the Upper Midwest, USA.*
- July 2017, Drainage Management Team, St. Paul, MN: *Storage Effects on Sediment Reduction: Greater Blue Earth River Basin.*
- June 2017, Drainage Work Group, St. Paul, MN: *Collaborative for Sediment Source Reduction (CSSR) in the Greater Blue Earth River Basin: Summary of Findings.*
- December 2016, Advocates of the Knife River Watershed, Twin Harbors, MN: *Geologic and geomorphic history of the Knife River watershed and what it means for the river today.*
- September 2016, Geological Society of America national meeting, Denver, CO: *Watershed-scale management for fine sediment loading: Balancing alternative restoration scenarios from bank stabilization to water retention.*
- September 2016, Binghamton Symposium on Geomorphology, Fort Collins, CO: *Sediment pulse evolution and the role of network structure.*
- March 2016, University of Illinois, Urbana-Champaign Department of Geology seminar: *Cleaning up the muddy Minnesota River: Incorporating geomorphic history into watershed management.*
- March 2016, Waseca County Farmer Forum: *Targeting water storage to maintain productive land and restore clean water.*
- January 2016, Minnesota Lake Superior Streams Symposium, Duluth, MN: *Stream resiliency under a changing climate.*
- December 2015, AGU National Meeting, San Francisco, CA: *Lateral erosion encourages vertical incision in a bimodal alluvial river.*
- March 2015, NRRI Synergy Seminar, Duluth, MN: *Before and after the flood.*
- May 2015, Workshop on Digital topographic analysis: LiDAR, satellite imagery, terrestrial laser scanning, and GIS, Minneapolis, MN: *Geomorphic change detection and site documentation with terrestrial laser scanning.*
- January 2014, Minnesota Lake Superior Stream Science Symposium, Duluth, MN: *Geologic History of Western Lake Superior Streams.*
- January 2014, Minnesota Lake Superior Stream Science Symposium, Duluth, MN: *Stream Restoration: An Evolving Practice.*
- August 2013, Ecological Society of America national meeting, Minneapolis, MN: *Understanding changes in non-field contributions to suspended sediments.*
- February 2013, CEREGE (Centre Europeen de Recherche et d'Enseignement des Geosciences de l'Environnement), University of Aix-Marseille, France: *Tracking sediment through the Holocene: Determining anthropogenic contributions to a sediment-rich agricultural system, north-central USA.*
- October 2012, University of Northern Illinois: *Two decades of channel evolution following the eruption of Mount Pinatubo, Philippines.*

April 2012, Association for Women Geoscientists and American Institute of Professional Geologists joint meeting, Roseville, Minnesota: *Evolving sediment sources in the Minnesota River basin: Implications for resource management.*

January 2012, Near-channel sediment management forum, Mankato, Minnesota: *Role of Geomorphic and Recent History on Near-Channel Erosion.*

November 2011, Water Resources Science Seminar, University of Minnesota Duluth: *Sediment loading in the Le Sueur River basin, Minnesota, from post-glacial times to modern.*

October 2011, Minnesota Pollution Control Agency: *Sediment Loading in the Le Sueur River Watershed, from Post-glacial Times to Modern.*

February 2011, Minnesota Geological Survey: *Impact of Holocene valley evolution on modern sediment loading in the Le Sueur River, Minnesota.*

April 2010, University of Minnesota, Department of Geology and Geophysics: *Two decades of channel evolution following the eruption of Mount Pinatubo, Philippines.*

April 2010, National Center for Earth-surface Dynamics: *Two decades of channel evolution following the eruption of Mount Pinatubo, Philippines.*

June 2009, Environmental Protection Agency, Midcontinent Research Division, Duluth, Minnesota: *Watershed disturbances and sediment loading in south-central Minnesota.*

April 2009, Water Resources Science Seminar, University of Minnesota: *Watershed disturbances and sediment loading in south-central Minnesota.*

March 2009, Philosophy Department Seminar, University of Minnesota Duluth: *Stream restoration: State of the science in a societal context.*

March 2008, Twin Ports Freshwater Folks, Duluth, Minnesota: *Watershed geomorphology as a tool for understanding sediment problems in the Twin Ports and Greater Minnesota and beyond.*

July 2006, Minnesota River TMDL and Lake Pepin TMDL Joint Meeting, Southern Research and Outreach Center, Waseca, Minnesota: *Causes and consequences of stream instability.*

July 2006, National Center for Earth-surface Dynamics Stream Restoration Partners Group Meeting, Richmond, California: *Current status of graduate education in stream restoration.*

March 2006, Stream Restoration Training Summit Workshop, Heber Valley, Utah: *Graduate certificate program in Stream Restoration Science & Engineering (SRSE).*

March 2006, University of Minnesota, Duluth, Department of Geological Sciences, Duluth, Minnesota: *Fluvial recovery following extreme sediment loading at Mount Pinatubo, Philippines.*

February 2005, Washington State Department of Natural Resources, Olympia, Washington: *Channel recovery following extreme disturbances at Mount Pinatubo, Philippines.*

October 2004, Center for Water and Watershed Studies, University of Washington, Seattle, Washington: *Channel recovery following extreme disturbances at Mount Pinatubo, Philippines.*

February 2004, Humboldt State University, Arcata, California: *Channel bed recovery following extreme sediment loading at Mt. Pinatubo, Philippines.*

May 2003, Terrestrial Environment Research Center, University of Tsukuba, Japan: *Channel recovery from extreme disturbances, Mt. Pinatubo, Philippines.*

February 2003, Terrestrial Environment Research Center, University of Tsukuba, Japan: *Riparian vegetation controls on braided river morphology.*

May 2002, Spring AGU Meeting, Washington, DC: *Riparian vegetation controls on channels formed in non-cohesive sediment.*

AWARDS AND FELLOWSHIPS:

2018 Kirk Bryan Award for Research Excellence, Geological Society of America, Quaternary Geology & Geomorphology Division (For Gran et al., 2013, *GSA Bulletin* paper)

2017 Outstanding Graduate Advisor, University of Minnesota Duluth

2017 Institute on the Environment Fellow, University of Minnesota

2005-2006 Joseph A. Vance Fellowship

2001-2004 EPA STAR Graduate Fellowship

2000-2001 Outstanding Teaching Award, Dept. of Earth & Space Sciences, Univ. of WA

1998-1999 Francis Gibson Fellowship, Dept. of Geology & Geophysics, Univ. of MN

1997-1998 Graduate School Fellowship, University of Minnesota

1995-1996 Duncan Stewart Fellowship, Department of Geology, Carleton College

1996 Elected to Phi Beta Kappa, Sigma Xi

SERVICE:

Professional Community:

GSA, Quaternary Geology & Geomorphology Division Panel: 2010-2012; 2017-present

GSA, Quaternary Geology & Geomorphology Division student proposal reviewer: 2017

GSA, Co-Vice Chair, Duluth 2020 North-Central regional meeting

GSA, Kirk Bryan Field Trip leader: 2011

NSF Panelist: 2009, 2014, 2015

UMSRS (Upper Midwest Stream Restoration Symposium) Planning Committee: 2016

Manuscript reviewer: *Geomorphology*; *Geology*; *Earth Surface Processes and Landforms*; *Journal of Geophysical Research – Earth Surface*; *Geophysical Research Letters*; *Earth Surface Dynamics (ESurf)*; *American Journal of Science*; *Journal of the American Water Resources Association (JAWRA)*; *GSA Bulletin*; *Water Resources Research*; *Earth Science Reviews*; *Journal of Environmental Quality*; *Arctic, Antarctic, and Alpine Research*; *Quaternary Research*; *Environmental Management*; *Journal of Arid Environments*

Proposal reviewer: NSF (Geomorphology & Land Use Dynamics, Geography and Spatial Analyses; Partnerships in Innovation; Hydrologic Sciences)

Technical Advisory Team Member, Minnesota Sediment Reduction Strategy, 2017-present.

Workshop co-convener, SERC (Science Education Resource Center), *Innovative Approaches to Teaching Sedimentary Geology, Geomorphology, and Paleontology*, 2014

University:

Executive Committee Member, Water Resources Science: 2013 – 2018

Water Resources Science Admissions Committee: 2017 – 2018

Faculty Representative Liaison to UEA Executive Committee: 2011 – 2015

College:

Chair, Women in STEM Strategic Planning Committee: 2014 – 2015

STEM Teaching and Learning Committee Member: 2016 – present

Field safety committee: 2017 – 2018
Member, SCSE Dean search committee: 2013

Department (recent):

Member, curriculum committee: 2016 – present
Coordinator, Program Assessment Liaison: 2017 – present
Departmental representative to the UEA Rep Council, 2009 – present.
Member, Merit review committee: 2014-15, 2018
Seminar series coordinator: spring 2018

PROFESSIONAL AFFILIATIONS:

Geological Society of America
American Geophysical Union
National Association of Geoscience Teachers
Northwoods Women in Science
American Water Resources Association