

Syverson GeoConsulting LLC

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<http://www.uwec.edu/academics/college-arts-sciences/departments-programs/geology/about/faculty-staff/>

EDUCATION/CREDENTIALS

State of Wisconsin Professional Geologist #548 (Licensed in 1995).

24-hour MSHA training (completed 17 June 2015, updated August 2018)

Ph.D. Geology, 1992, minor distributed between Civil and Environmental Engineering [CEE] and Geography,
University of Wisconsin-Madison. Advisor: David M. Mickelson.

M.S. Geology, 1988, University of Wisconsin-Madison. Advisor: David M. Mickelson.

B.S. Geology, Summa Cum Laude, 1986, minor in chemistry, University of Minnesota-Duluth

JOB/RESEARCH EXPERIENCE (REFERENCES AVAILABLE ON REQUEST)

Univ. of Wisconsin-Eau Claire Dept. of Geology, Assistant to Full Professor, 1992-present, Chair 2010-present.

Non-metallic mineral prospecting and client education (frac sand and gravel), 1991-present.

Maine Geological Survey, 2002-03, 2004-05, 2007-08, 2009-10. Research associate, mapped Pleistocene materials.

Wisconsin Geological and Natural History Survey [WGNHS], 1987, 1996-2001. Mapped Pleistocene materials.

National Geographic Society, Burroughs Glacier Expedition, Glacier Bay, AK, summers 1989-90. Ph.D. research.

SKILLS USEFUL TO SOLVE GEOLOGICAL PROBLEMS

- **Demonstrated expertise about the glacial stratigraphy of western Wisconsin**
 - * Co-author of invited overview article about Wisconsin's glacial stratigraphy (Syverson and Colgan, 2011)
 - * Hired by WGNHS to edit the updated Pleistocene lithostratigraphy volume (Syverson et al., 2011)
 - * Mapped Pleistocene geology of Chippewa County for WGNHS (Syverson, 2007)
- **Many years of experience with sedimentology and frac sand prospecting/client education**
 - * Frac sand prospecting for firms in western Wisconsin since January 2009
 - * Frac sand evaluations/education sessions for private citizens, realtors/land brokers, and mining opponents
 - * Third-party deposit evaluations for financial companies conducting due diligence work on properties
 - * Invited co-lead speaker and field trip co-leader at the *Conference on Silica Sand Resources in Minnesota and Wisconsin*, 10/2012. Lecture title: *Geological Occurrences and Origins of Silica Sand in the Upper Mississippi Valley*. Field trip took 110 participants on geological tour of western Wisconsin.
 - * Planner and co-leader of frac sand field trip associated with the Sept. 2014 SME meeting in Eau Claire, WI. Field trip took ~100 participants on geological tour of western Wisconsin.
 - * Collect Wisconsin and Texas frac sand intelligence for national market-research companies.
 - * Expert frac sand testimony at many township and county board meetings, 2012-present.
 - * Invited to speak on sand quality and trends at the 6th Annual Frac Sand Supply & Logistics conference in Houston, TX, 29 September 2017. (Sponsored by Petroleum Connection.)
- **Demonstrated experience communicating science to novices in clear, non-jargon-rich manner**
 - * UW-Eau Claire Excellence in Teaching Award (2012), selected by alumni
- **Coursework beyond traditional geology core program to better understand complex geologic problems**

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| Soil Mechanics (UW CEE 330) | Geotech. Field Methods (UW CEE 639) |
| Physical Hydrogeology (UW G627) | Contaminant Hydrogeology (UW G629) |
| Physical Sedimentology (UW G630, as well as one semester of TAing this course for Dr. Robert Dott) | |

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SELECTED PUBLICATIONS AND TALKS SHOWING GEOLOGY EXPERTISE

- Syverson, K.M.**, 2018, Musings on Logistics and Sand from Wisconsin, Texas, and Elsewhere – A Geologist’s Perspective (invited Guest Post): *Infill Thinking*, issue no. 183, 14 September 2018.
- Syverson, K.M.**, and Elliot, B.A., 2017, Comparison of Northern White Sand and Texas Sand: 6th Annual Frac Sand Supply & Logistics Conference, Houston, TX, 29 September 2017 (invited talk).
- Syverson, K.M.**, 2017, Northern White Sand versus Texas Brown Sand—Why Wisconsin sand is still important: Sand Mine Life Seminar, American Institute of Professional Geologists (AIPG), Eau Claire, WI, 12 May 2017.
- Fliflet, R., Poirier, J.M., Mahoney, J.B., and **Syverson, K.M.**, 2016, Diagenetic history of Cambrian sandstone units in western Wisconsin: Geological Society of America (GSA) Abstracts with Programs (National meeting, Denver, CO). v. 48:7, doi: 10.1130/abs/2016AM-287864.
- Syverson, K.M.**, 2015, The sand-mining boom in western Wisconsin—an overview: Geological Society of America Abstracts with Programs (North-Central meeting, Madison, WI), v. 47:5, p. 8.
- Mahoney, J.B., **Syverson, K.M.**, and Runkel, A.C., 2014, Industrial Sand Deposits in Western Wisconsin: Geology, Resource Distribution and Extraction Techniques: SME Field Trip Guidebook, 35 p.
- Syverson, K.M.**, 2013, Water resource impacts associated with the sand-mining boom in western Wisconsin: a comparison between agricultural activities and sand processing: *GSA Abstracts with Programs*, v. 45:4, p. 69.
- Syverson, K.M.**, and Colgan, P.M., 2011, The Quaternary of Wisconsin: An updated review of stratigraphy, glacial history, and landforms, in Ehlers, J., Gibbard, P.L., and Hughes, P.D., eds., *Quaternary Glaciations -- Extent and Chronology, Part IV – a closer look*: Amsterdam, Elsevier Publishing, p. 537-552. (Invited paper.)
- Syverson, K.M.**, Clayton, L., Attig, J.W., and Mickelson, D.M., eds., 2011, Lexicon of Pleistocene Stratigraphic Units of Wisconsin: *WGNHS Technical Report 1*, 180 p. <https://wgnhs.uwex.edu/pubs/tr001/>

THESES

- Syverson, K.M.**, 1992, Glacial geology of the southeastern Burroughs Glacier, Glacier Bay National Park and Preserve, Alaska [*Ph.D. thesis*]: Madison, University of Wisconsin, 212 p.
- Syverson, K.M.**, 1988, The glacial geology of the Kettle Interlobate Moraine region, Washington County, Wisconsin [*M.S. thesis*]: Madison, University of Wisconsin, 123 p.

SELECTED GRANTS AND AWARDS

- University of Wisconsin System Economic Development Incentive Grant (\$451,317, 2013-2015). Title: *The Responsible Mining Initiative: Building an Educated STEM Workforce for the Natural Resource Industry*.
- UW-Eau Claire Excellence in Teaching Award (2012), selected with input from UW-Eau Claire alumni.
- Wisconsin Geological and Natural History Survey grant (\$10,900, 2009 to 2010). Hired as lead technical editor for the “*Lexicon of Pleistocene Stratigraphic Units of Wisconsin*” (WGNHS Technical Report 1).
- Maine Geological Survey grants, four summers (2002, 2004, 2007, 2009), supported student-faculty glacial geology research projects in Maine (\$46,600).
- Wisconsin Geological and Natural History Survey (\$51,038) and Chippewa County Land Conservation Department (\$12,000, both grants May 1998 to August 2001). Title: *Glacial geology of western Wisconsin*. Supported mapping research in Chippewa County.
- University of Wisconsin-Madison Department of Geology and Geophysics teaching assistant merit awards:
Stanley A. Tyler Award for outstanding teaching asst., introductory level courses (1987-88)
Thomas E. Berg Award for outstanding teaching asst., intermediate level courses (1989-90)
- National Geographic Society grant (\$21,020, 1989-1991). *Sedimentary environments and landform development around the rapidly wasting Burroughs Glacier, Glacier Bay, Alaska*. Co-author Dr. David M. Mickelson.
- University of Minnesota-Duluth Geology Department *Outstanding Senior Award* (1986)
- Tied with one other student for top score at Wasatch-Uinta Field Camp, Park City, UT (1985)
- Chemical Rubber Company Freshman Chemistry Award*, University of Minnesota-Duluth (1982-83)
- Best Actor Award*, Barnum (MN) High School (1982)

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