

AMY ELANOR MYRBO

LacCore: National Lacustrine Core Facility
CSDCO: Continental Scientific Drilling Coordination Office
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PROFESSIONAL PREPARATION

University of Minnesota	English, minor Geology	B.A., <i>magna cum laude</i> , 1996
University of Minnesota	Geology	Ph.D. 2006
University of Minnesota	Geology	Postdoctoral Associate 2006-2008

APPOINTMENTS

2015-present	Graduate Faculty, Department of Earth Sciences, University of Minnesota
2014-present	Director of Outreach, Diversity, and Education, Continental Scientific Drilling Coordination Office (CSDCO), University of Minnesota
2009-present	Research Associate, Department of Earth Sciences (formerly Geology and Geophysics), University of Minnesota
2002-2014	Core Laboratory Manager, LacCore
2006-2008	Postdoctoral Associate, Department of Geology and Geophysics, University of Minnesota
1996-2002	Research and teaching assistant, Department of Geology and Geophysics, University of Minnesota
2000	Summer employee, US Geological Survey
1997-1998	Summer employee, US Geological Survey
1995-1996	Peer advisor, College of Liberal Arts, University of Minnesota

PRODUCTS (*UNDERGRADUATE STUDENT AUTHOR; **GRADUATE STUDENT AUTHOR)

Loeffler, S.M.** and Myrbo, A. *Flyover Country* (fc.umn.edu), NSF-funded mobile app for geoscience outreach, research, education, and citizen science. \$1.6M in NSF funding; over 170,000 downloads.

Myrbo, A., E.B. Swain, D.R. Engstrom, J. Coleman Wasik, J. Brenner, M. Dykhuizen Shore, E.B. Peters, and G. Blaha. (In review, *JGR-Biogeosciences*.) Sulfide generated by sulfate reduction is a primary controller of the occurrence of wild rice (*Zizania palustris*) in shallow aquatic ecosystems.

Myrbo, A., E.B. Swain, N.W. Johnson, D.R. Engstrom, J. Pastor, B. Dewey, P. Monson, J. Brenner, M. Dykhuizen Shore, and E.B. Peters. (In review, *JGR-Biogeosciences*.) Increase in nutrients, mercury, and methylmercury as a consequence of elevated sulfate reduction to sulfide in experimental wetland mesocosms.

Pollman, C.D., E.B. Swain, D. Bael, A. Myrbo, P. Monson, and M.D. Shore. (In review, *JGR-Biogeosciences*.) The evolution of sulfide in shallow aquatic ecosystem sediments – an analysis of the roles of sulfate, organic carbon, iron and feedback constraints using structural equation modeling.

- Myrbo, A. and McEwan R. *Tool for Microscopic Identification* (TMI; tmi.laccore.umn.edu), NSF-funded GUI database for identification of components in unconsolidated sediments for research and education.
- Pastor, J., B. Dewey, N. Johnson, E.B. Swain, P. Monson, E. Peters, and A. Myrbo. 2017. Effects of sulfate and sulfide on the life cycle of wild rice (*Zizania palustris*) in hydroponic and mesocosm experiments. *Ecological Applications* 27, 321-336
- Harrison, B.K., A. Myrbo, B.E. Flood, and J.V. Bailey, 2015. Identification of subannual patterns in microbial community signatures from individual sedimentary laminae using a freeze-coring approach. *Limnology and Oceanography* 61(2): 735-747.
- Williams, J., K.K. McLauchlan, J.R. Mueller**, E.M. Mellicant*, A. Myrbo, and I. Lascu. 2015. Ecosystem development following deglaciation: a new sedimentary record from Devils Lake, Wisconsin, USA. *Quaternary Science Reviews* 125:131-143.
- Schachtman, N.*, K.R. MacGregor, A. Myrbo, N.R. Hencir*, C.A. Riihimaki, J. Thole, and L.I. Bradtmiller 2015. Lake core record of Grinnell Glacier dynamics during the Late Pleistocene and Younger Dryas, Glacier National Park, Montana, U.S.A. *Quaternary Research* 84(1): 1-11.
- Zimmerman, S.H. and A. Myrbo. 2015. ¹⁴C in lacustrine systems. In Rink, W.J. and J.W. Thompson, eds., *Encyclopedia of Scientific Dating Methods*, Springer, p. 365-371.
- Marty, J.E.** and A. Myrbo. 2014. Radiocarbon dating suitability of aquatic plant macrofossils. *Journal of Paleolimnology* 52: 435-442. DOI 10.1007/s10933-014-9796-0
- Park Boush, L.E., A. Myrbo, and A. Michelson. 2014. A qualitative and quantitative model for climate-driven lake formation on carbonate platforms based on examples from the Bahamian archipelago. *Carbonates and Evaporites*. DOI 10.1007/s13146-014-0221-6
- Dalbotten, D., E. Ito, A. Myrbo, H. Pellerin, L. Greensky, T. Howes, A. Wold, and the *gidaa/manoomin* mentor team. 2014. NSF-OEDG Manoomin science camp: A model for engaging American Indian students in science, technology, engineering, and mathematics. *Journal of Geoscience Education* 62: 227-243.
- McLauchlan, K. K., I. Lascu, A. Myrbo, and P. R. Leavitt. 2013. Variable ecosystem response to climate change during the Holocene in northern Minnesota, USA. *Geological Society of America Bulletin*. 125(3-4): 445-452
- Myrbo, A. 2012. The carbon cycle in lakes. In Bengtsson, L., R. W. Herschy, and R. W. Fairbridge, eds., *Encyclopedia of Earth Sciences, Part 3, Encyclopedia of Lakes and Reservoirs*, Springer: p.121-125. Invited chapter.
- Lascu, I., K. MacLauchlan, A. Myrbo, and S. Banerjee, 2012. Mineral-magnetic evidence for last millennium drought conditions at the prairie-forest ecotone of northern United States. *Palaeogeography, Palaeoclimatology, Palaeoecology* 337-338: 99-107.
- Myrbo, A., M. Murphy, and V. Stanley, 2011. The Minneapolis Chain of Lakes by bicycle: Glacial history, human modifications, and paleolimnology of an urban natural environment, in Miller, J.D., Hudak, G.J., Wittkop, C., and McLaughlin, P.I., eds., *Geological Society of America Field Guide* 24: 435-437.
- MacGregor, K.R., C.A. Riihimaki, A. Myrbo, M.D. Shapley, and K. Jankowski*, 2011. Geomorphic and climatic change during the Holocene at Swiftcurrent Lake, Glacier National Park, Montana. *Quaternary Research* 75: 80-90
- Mischke, S., I. Rajabov, N. Musasteva, C. Zhang, U. Herzschuh, I. Boomer, E.T. Brown, N. Andersen, A. Myrbo, E. Ito, and M.E. Schudack, 2010. Modern Hydrology and late Holocene history of Lake Karakul, eastern Pamirs (Tajikistan): a reconnaissance study. *Palaeogeography, Palaeoclimatology, Palaeoecology* 289(1-4): 10-24.
- Myrbo, A., 2008. Sedimentary and historical context of eutrophication and remediation in urban Lake McCarrons (Roseville, Minnesota). *Lake and Reservoir Management* 24: 349-360
- Myrbo, A., and M.D. Shapley, 2006. Seasonal water-column dynamics of dissolved inorganic carbon stable isotopic compositions ($\delta^{13}\text{C}_{\text{DIC}}$) in small hardwater lakes in Minnesota and Montana. *Geochimica et Cosmochimica Acta*. 70: 2699-2714.

Johnson, T.C., M.R. Talbot, and A. Myrbo, 2001. Kerry Kelts (1947-2001). *Eos, Transactions, American Geophysical Union*, 83(9): 88

EXTERNAL FUNDING (\$9.37 MILLION SINCE 9/2009)

EAGER-GLOBE: Collaborative Research: Leveraging GLOBE student and citizen science data on the Flyover Country mobile platform for place-based, data-driven education NSF \$170,673; 2/1/17-1/31/18 (lead PI)

Collaborative Research: Leveraging domain repositories in Flyover Country, a mobile app for geoscience outreach, data discovery, and visualization; NSF Geoinformatics, \$656,698; 1/15/17-1/14/20 (lead PI)

Collaborative Research: Facility Support: National Lacustrine Core Facility (LacCore); NSF Instrumentation and Facilities; \$1,235,406; 6/1/15-2/28/19 (co-PI)

Management and operation of a Continental Scientific Drilling Coordination Office; NSF Instrumentation and Facilities; \$3,746,542; 3/1/2014-2/28/2019 (Cooperative Agreement) (co-PI)

Collaborative research: Deep Drilling of Lake Junín, Perú: Continuous Tropical Records of Glaciation, Climate Change and Magnetic Field Variations Spanning the Late Quaternary. NSF P2C2; \$39,590 (co-PI)

Flyover Country, a mobile app for geoscience outreach; NSF EAGER; \$146,910; 10/1/14-9/30/15 (lead PI with UMD undergraduate Shane Loeffler)

Two collaborative grants with National Park Service, \$5400 and \$24,400, summer 2013 (lead PI)

Enhancing Research, Training, and Synthesis in Sedimentary Record Analyses: TMI phase two (Tool for Microscopic Identification); NSF Geoinformatics; \$259,980; 10/01/12-09/30/15 (lead PI)

Wild Rice Standards Study; Minnesota Pollution Control Agency; \$339,962; 03/23/12-12/31/13 (lead PI)

Wild Rice Standards 2011 Preliminary Field Study; Minnesota Pollution Control Agency; \$176,200; 07/01/11-06/30/12 (lead PI)

University of Minnesota Interdisciplinary Informatics Seed Grant – TMI (Tool for Microscopic Identification); UMN Grant-in-Aid; \$59,404; 07/01/11-06/30/12 (lead PI)

Facility Support: National Lacustrine Core Repository and Initial Core Analysis Laboratory (LacCore); NSF Instrumentation and Facilities; \$1,445,856; 06/01/10-05/31/15 (co-PI)

Acquisition of SEM-EDX and upgrade of petrographic microscopy to enhance rapid sediment characterization at LacCore, the National Lacustrine Core Facility; NSF Instrumentation and Facilities; \$142,897; 09/15/09-08/31/11 (co-PI)

Collaborative Project: Track 2: Manoomin, investigating the past, present, and future conditions of wild rice lakes on the Fond du Lac Band of Lake Superior Chippewa Reservation; NSF OEDG (Opportunities for Enhancing Diversity in the Geosciences); \$799,642; 09/01/09-08/31/15 (co-PI)

Analyze Lake Sediment Cores from Crater Lake to Assess Deepwater Moss Growth and Climate Change; US Department of the Interior; \$10,434; 09/15/08-09/30/10 (lead PI)

SYNERGISTIC ACTIVITIES AND SERVICE

Associate Editor, *Journal of Paleolimnology* (November 2013-present)

National Science Foundation panel member, 2013 (three panels), 2014 (one panel)

Chair, Geological Society of America Limnogeology Division 2012-Oct 2014, Vice-Chair 2010-2012, and GSA Annual Meeting 2011 Minneapolis Special Events Chair

Chair, Geological Society of America North-Central Section Meeting 2020, Duluth, Minnesota

GSA Joint Technical Program Committee Representative, 2011, 2013, 2014

Advised or co-advised 34 NSF-REU summer interns in past ten years (including 15 Native American students in 2011-2014), developing projects with and mentoring these undergraduate students during 10-week sessions; co-advised 12 total Keck Program interns 2010 and 2014; numerous

research projects with other UMN and non-UMN undergraduates and one Native high school student (see below).

LacCore Tribal liaison, collaboratively developing and executing research and education/outreach projects with Tribal resource managers, educators, and students

Organizer and lead instructor, annual LacCore/CSDCO Drilling and Coring Summer Institute for graduate students and early-career researchers

Organizer and student organizing committee advisor, NSF-funded Continental Paleorecords and Processes (CPP) Seminar Series (formerly UMN-funded Quaternary Paleoecology Seminar Series) for University of Minnesota, regional paleo community, and drilling and coring community, 2015-present; secured NSF funding for this series

Lecturer and organizer for UMN ESci, Carleton, and Macalester courses using collection and analysis of lake sediment cores for class labs

Organizing committee member, social co-chair, and geochronology workshop co-leader, Sixth International Limnogeology Congress (ILIC6), Reno-Tahoe June 2015

Work with International Association for Geoscience Diversity to support UMN ESci Hydro Camp to become mobility disability accessible; also on disability accommodation at LacCore lab and drilling field sites

Research lead on NSF-OEDG-funded *Manoomin* project working with grade 5-12 and tribal college students and Reservation resource managers studying history of wild rice lakes in northern Minnesota; coadvise 2- and 10-week intern projects (2009-2014)

Laboratory manager search committee member, Department of Anthropology, University of Minnesota (2013)

Produce and develop standard operating procedures for lake sediment analysis; these are distributed freely via the LacCore website. Train several dozen students and other visitors annually in these techniques, focusing on lithological core description

UNDERGRADUATE STUDENT MENTORSHIP (63 STUDENTS, 2010-PRESENT)

Shane Loeffler, UMN-Duluth (co-advisor on Bahamas REU, summer 2012; co-advisor, Birmingham canals project, 2014; partner, Flyover Country mobile app for geoscience outreach, funded by NSF-EAGER; poster at GSA 2014; talk at GSA North-Central 2015; MS student at UMN)

Troy Zimmerman, UMN (research advisor 2015-16)

Emily Mellicant, University of Miami (co-advisor on UMN ESci REU on Pleistocene record from Devils Lake WI, summer 2012; poster at GSA 2012; MS student at Kansas State U)

Emily Diener, Macalester College (Honors Thesis committee member 2015; co-advisor on Glacier National Park Keck project, 2014-15)

Tamara Marcus, UMN (co-advisor on Bahamas REU, summer 2012; UROP spring 2014; poster at GSA North-Central 2014; Fulbright Scholar, India, 2015-16; Ph.D. student at U New Hampshire)

Heidi Anderson, Macalester College (Honors Thesis committee member 2014, Glacier National Park historic period research project, 2013-2014; poster at GSA 2013)

Nathan Schachtman, Macalester College (Honors Thesis committee member 2014, 2012-2014; posters at GSA 2012 and 2013; first-authored manuscript published in *Quaternary Research* 2015; Ph.D. student at U Oregon)

Grant Two-Bulls, Breck High School (co-advisor on pollen study of 19th century Dakota village at Lake Calhoun, 2014; undergraduate at Dartmouth)

Madison Andres, Colorado College (co-advisor on Glacier National Park Keck project, 2014-15)

Grayson Carlile, Whitman College (co-advisor on Glacier National Park Keck project, 2014-15)

Karly Clippinger, Beloit College (co-advisor on Glacier National Park Keck project, 2014-15)

Ashleigh Covarrubias, Cal State San Bernardino (co-advisor on Glacier National Park Keck project, 2014-15)

Eric Stephens, Macalester College (co-advisor on Glacier National Park Keck project, 2014-15)

Emilia Caylor, University of Houston Downtown (co-advisor on *manoomin* REU, summer 2014; poster at GSA 2014)

Ida Clarke, Black Hills State University (co-advisor on *manoomin* REU, summer 2014; poster at AGU 2014)

Jordan Hoaglund, Cosumnes River College (co-advisor on *manoomin* REU, summer 2014)

Ma'Ko'Quah Jones, Dartmouth (co-advisor on *manoomin* REU, summer 2014; poster at GSA 2014)

Jesse Kaneski, Fond du Lac Tribal and Community College (co-advisor on *manoomin* REU, summer 2014)

Ricardo Muñoz, UC Santa Cruz (co-advisor on *manoomin* REU, summer 2014; poster at AGU 2014)

Brian Demet, UMN (UROP advisor, spring 2013; poster at AGU 2013; MS student at Rice)

Stefanie Mayer, UMN (UROP advisor spring and summer 2013; directed study spring 2014; poster at GSA 2013; as of fall 2014, MS student at Cal State Fullerton)

Darren Cheah, UMN (UROP advisor summer 2013 and directed study fall 2013-spring 2014; poster at GSA 2013; MS student at Notre Dame)

Alexander Seeling, UMN (UROP advisor summer 2013; poster at GSA 2013)

Nick Spano, UMN (co-advisor on Bahamas REU, summer 2012; UROP co-advisor, spring 2013; posters at GSA 2012 and 2013; Ph.D. student at UC Berkeley)

Elaine Flynn, Western Kentucky University (co-advisor on Bahamas REU, summer 2012; posters at GSA 2012 and 2013; senior project co-advisor; MS student at Western Kentucky U)

Adrienne Warmesley, Humboldt State (co-advisor on *manoomin* REU, summer 2013)

Zachary Kisfalusi, Northwestern (co-advisor on *manoomin* REU, summer 2013)

Wayne Greensky, Itasca Community College (co-advisor on *manoomin* REU, summer 2013)

Alec Keiper, Appalachian State University (co-advisor on *manoomin* REU, summer 2013)

Zohra Roy, George Washington University (co-advisor on Bahamas REU, summer 2013; poster at GSA 2013)

Samantha Fentress, Michigan Technical University (co-advisor on Bahamas REU, summer 2013; poster at AGU)

Sarah Bender, College of Wooster (co-advisor on Bahamas REU, summer 2013; poster at GSA 2014)

Dan Miserendino, SUNY Geneseo (co-advisor on Bahamas REU, summer 2013; poster at GSA 2013)

Mary Elizabeth Conroy, University of Vermont (co-advisor on Bahamas REU, summer 2013; poster at GSA 2013)

Miranda Bernard, Princeton (co-advisor on Bahamas REU, summer 2013; poster at AGU 2013)

Asia Love Cook, Albany State University (co-advisor on Bahamas REU, summer 2013; poster at GSA 2013)

Kelsi Ustipak, UMN (UROP advisor; completed; poster at GSA 2011; Ph.D. student at UT Austin)

Michael Zazzera, UMN (UROP advisor; completed; poster at GSA 2011)

Lynda Morrison, UMN (co-advisor on *manoomin* REU, summer 2011; since deceased)

June Sayers, St. Cloud State University (co-advisor on Mille Lacs area wild rice lake senior project 2012-2013)

Margo Regier, Beloit College (co-advisor on *manoomin* REU, summer 2012; poster at GSA 2012)

Carla Moore, Lac Courte Oreilles Ojibwa Community College (co-advisor on *manoomin* REU, summer 2012)

Ann Solano, Sitting Bull College (co-advisor on *manoomin* REU, summer 2012)

Deshawn Benn, Upper Iowa University (co-advisor on *manoomin* REU, summer 2012)

Phil Defoe, University of Wisconsin-Superior (co-advisor on *manoomin* REU, summer 2012)

Carlos Rivera, St. Olaf College (reader on Fond du Lac internship, summer 2012)

Dawit Tobiaw, Minnesota State University Mankato (reader on Fond du Lac internship, summer 2012)

Tashiana Osborne, St. Cloud State University (co-advisor on Bahamas REU, summer 2012; poster at GSA 2012; directed research co-advisor)

Jessica Nester, Kent State University (co-advisor on Bahamas REU, summer 2012; poster at GSA 2012; MS student at UNC-Wilmington)

Patrick Quillen, UMN-Duluth (co-advisor on Bahamas REU, summer 2012; MS student at U Nevada Reno)
Co-advised and organized two-week *manoomin* internship on wild rice lake restoration in collaboration with Fond du Lac Resource Management with 12 students from New York, California, Puerto Rico, Wisconsin, and Minnesota, summer 2012
Matthew Weingart, Salish-Kootenai College (co-advisor on *manoomin* REU, summer 2011; poster at AISES 2011; MS student at Montana State University, fall 2015)
Shelden Misquadace, Fond du Lac Tribal and Community College (co-advisor on *manoomin* REU, summer 2011; poster at SACNAS 2011, GSA 2011; employed by Fond du Lac Resource Management Division)
Cristina Weske (née Bunch), Northeastern State University (co-advisor on *manoomin* REU, summer 2011; poster at SACNAS 2011, GSA 2011; employed by Fond du Lac Resource Management Division)
Mary Pyawasit, College of St. Scholastica (co-advisor on *manoomin* REU, summer 2011)
Misty Rose Peterson, Fond du Lac Tribal and Community College (co-advisor on *manoomin* REU, summer 2011)
Cheyenne Moore, Cloquet High School, (co-advisor on *manoomin* REU, summer 2011)
Emma Locatelli, Macalester College (honors thesis committee member; poster at GSA 2011; Ph.D. student at Yale)
Jacque Kutvirt, Macalester College (honors thesis committee member; poster at GSA 2011)
Co-advised five Keck Program undergraduates in summer 2010
Thomas Baldvins, Berry College (advisor on *manoomin* REU, summer 2010; talk at GSA 2010; Ph.D. student at U Nebraska Lincoln)
Co-advised 15 students on one-week “mini-REUs” in summer 2010 and 2011 (not included in total students provided above)
Work with numerous graduate and undergraduate students visiting LacCore and in the field
Advised seven other NSF-REU students 1997-2009

GRADUATE STUDENT MENTORSHIP

Shane Loeffler, Department of Earth Sciences, UMN; MS committee
Emily Mellicant, Department of Geography, Kansas State U; MS committee
Jammi Ladwig, Department of Anthropology, UMN; Ph.D. committee
Abigail Williams, Department of Earth Sciences, UMN; MS committee
Amanda Yourd, Department of Earth Sciences, UMN; MS committee

RECENT PRESENTATIONS (ORAL UNLESS NOTED; FOR POSTERS AND TALKS WITH STUDENT PRESENTERS PLEASE SEE “UNDERGRADUATE STUDENT MENTORSHIP” ABOVE)

“Development of a fully accessible field camp” AGU 2016 pop-up talk
“A vision for mobile geoscience in outreach, research, and citizen science,” GSA 2016 (invited)
“The consequences of sulfate reduction downstream of AMD, even when the acid has been neutralized”
Poster, GSA 2016
“The ‘Frostbiter,’ a new method for the preparation of petrographic thin sections from wet, unconsolidated lacustrine or marine sediments” GSA 2016
“Is sulfate harmful to wild rice, and why does Minnesota care so much?” UMN College of Science and Engineering 50th Reunion, May 2016 (invited)
“History from mud: using paleolimnology to understand changing lakes and landscapes” Macalester College limnology seminar April 2016 (invited)

“Is sulfate toxic to wild rice (*manoomin*, *psin*, *Zizania palustris*), and why does Minnesota care so much?” Kansas State University Geography seminar, February 2016 (invited)

“Is sulfate toxic to wild rice (*manoomin*, *psin*, *Zizania palustris*), and why does Minnesota care so much?” Osher Lifelong Learning Institute seminar series, February 2016 (invited)

“¿Son tóxicos los sulfatos para el arroz silvestre (*Zizania palustris*)? ¿Y por qué le preocupa al estado de Minnesota-EEUU?” Universidad Nacional del Centro del Perú, January 2016 (given in Spanish)

“Outreach, Diversity, and Education Supported by NSF Facilities LacCore and the Continental Scientific Drilling Coordination Office (CSDCO), University of Minnesota” AGU 2015 (invited)

“Pulling on the Long Tail with Flyover Country, a Mobile App to Expose, Visualize, Discover, and Explore Open Geoscience Data” AGU 2015 (invited)

“Biogeochemical consequences of sulfate addition to natural and experimental water bodies: wild rice, nutrients, and the potential for downcore studies” University of Minnesota Duluth Geology Department seminar, December 2015 (invited)

“Building Better Broader Impacts: public outreach, geoscience diversity, community-driven research, and STEAM education” University of Minnesota Duluth special seminar, December 2015

“Is sulfate toxic to wild rice (*manoomin*, *psin*, *Zizania palustris*), and why does Minnesota care so much?” Northern Arizona University Geoscience Department seminar, December 2015 (invited)

“Building Better Broader Impacts: public outreach, geoscience diversity, community-driven research, and STEAM education” Northern Arizona University special seminar, December 2015

“‘There needs to be a conversation, not a lecture’: Science communication, outreach, diversity, and community-driven research” Association for Women in Geoscience event, April 2015 (invited keynote)

“Radiocarbon dating and sample selection,” Minnesota Geological Survey Brownbag Series, April 2015 (invited)

“LacCore/CSDCO: Minnesota’s drilling and coring facility to the world” Wisconsin Geology and Natural History Survey, February 2015 (invited)

“Building better broader impacts,” Quaternary Paleoecology Seminar and Soft Rock Lunch, February 2015

“Mountain Lake, Presidio National Park, San Francisco: Paleoenvironment, heavy metal contamination, sedimentary record rescue, remediation, and public outreach,” AGU 2014

Three abstracts (two student first author/presenters), AGU 2014

“Environmental Hazards . . . from Core Samples,” guest lecture for University of Wisconsin Eau Claire nonmajors Environmental Hazards class, November 2014 (invited)

Six abstracts (four student first author/presenters), GSA 2014

“*Manoomin*, *psin*, *Zizania*: wild rice research with Tribal resource managers and the State of Minnesota” UMN-Duluth Large Lakes Observatory R/V Blue Heron Science Friday, September 2014 (invited)

“Finding Your Path Amidst the Mud” AISES (American Indian Science and Engineering Society) Region V Regional Conference, March 2014 (invited)

“Breaking barriers: Avant-garde approaches to flexible REU design, student recruitment, and REU implementation to maximize REU student diversity” NSF REU PIs workshop, March 2014 (poster with Diana Dalbotten and J. Elmo Rawling)

“Workforce preparation: many different ways to be a scientist” SERC InTeGrate Workshop on Broadening Access to the Earth and Environmental Sciences, February 2014 (invited)

“LacCore, local lakes, lithological description, and the future of Continental Scientific Drilling” (Minnesota Geological Survey brownbag seminar series, February 2014) (invited)

Five abstracts (four student first author/presenters), AGU 2013

“Tool for Microscopic Identification (TMI) teaches you smear slides, plant macrofossils, more” (GSA 2013)

Sixteen abstracts (11 student first author/presenters), GSA 2013

“Place-based research project design for 10-week REU and two-week ‘mini-REU’ internships using lake sediment cores” (poster, AGU, December 2012)

“Seeing through the mud: Using sediment cores to reconstruct history of urban lakes in the Twin Cities” (Geological Society of Minnesota, November 2012) (invited)

Seven total abstracts (all undergraduate first authors/presenters), GSA 2012

“Wild Rice Standards Study field survey” (MN Pollution Control Agency Wild Rice-Sulfate Citizens Advisory Board, September 2012)

TMI (poster, AMQUA, June 2012)

Manoomin (poster, AMQUA, June 2012)

“Neopaleolimnology of urban and suburban lakes in multidisciplinary geoscience education, training, and outreach” (INQUA/SERC Teachers Workshop, June 2012) (invited)

“Nanda-gikendaasowin Naawij Gaa-izhiwebakin Manoomini-zaaga’iganing: ‘Studying What Happened Out in the Rice Lakes’” (Macalester College “Enviro-Thursday” brown bag, April 2012) (invited)

“Initial results of the 2011 preliminary field survey, part of the MPCA’s review of the sulfate water-quality standard to protect wild rice waters (AKA “SO4”)” (Soft Rock Lunch, March 2012)

“Seeing through the mud: exploring the long-term history of wild rice lakes (and some other lakes too)” (Sip of Science public science lecture, March 2012)

“Carbon-oxygen isotopic covariance and phasing in an annually resolved 20th-century urban lake record of anthropogenic geochemical perturbations” (UMN Earth Sciences Department seminar, January 2012) (invited)

“Hypolimnetic dominance of epilimnetic dissolved inorganic carbon (DIC) $\delta^{13}\text{C}$ and its relationship to isotopic covariance in the sedimentary record from a meromictic urban lake (Lake McCarrons, Minnesota, USA) (poster, AGU, December 2011)

Seventeen total abstracts, GSA 2011

“Limnogeology of urban and suburban lakes in multidisciplinary geoscience education” (GSA, October 2011)

“Neopaleolimnology of urban and suburban lakes in multidisciplinary geoscience education, training, and outreach” (Water Resources Science seminar, September 2011) (invited)

Manoomin (Soft Rock Lunch, September 2011) (invited)

Manoomin (UM-Duluth Dept. of Geological Sciences, September 2011) (invited)

Bacon (Geochronology guest lecture, April 2011) (invited)

Manoomin (NCED seminar, March 2011) (invited)

LacCore and instrumental/technical innovation (PAGES Varves Working Group, March 2011)

Lake sediments in conservation (Circle of Flight conference, February 2011) (invited)

Bacon age-depth modeling (poster, AGU, December 2010)

Bacon age-depth modeling (Soft Rock Lunch, December 2010)

Manoomin (Quaternary Paleoecology seminar, Nov 2010)

Manoomin (poster, GSA, Oct 2010)

Lake McCarrons isotopic covariance (GSA, Mike Talbot session, Oct 2010; coauthor Mark Shapley)

“Using core samples from lakes to understand past ecological changes and the impacts of land use: manoomin project” (USGS-TESNAR Wetlands and Hydrogeology conference, September 2010) (invited)

“Using core samples from lakes to look in all directions” (Native American Fish & Wildlife Society (NAFWS) National Meeting June 2010) (invited)