

SARAH M. PRINCIPATO
Curriculum Vitae

Address: Department of Environmental Studies
Campus Box 2455
Gettysburg College
300 N. Washington St.
Gettysburg, PA 17325 USA
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Education: Ph.D. Geology, University of Colorado, Boulder, CO (2003)
Dissertation: "The Late Quaternary History of Eastern Vestfiridir, NW Iceland" *advisor: John T. Andrews*
M.S. Geology, University of Wisconsin, Madison, WI, (1999)
Thesis: "The Quaternary Geology of Northern Sheboygan County, Wisconsin" *advisor: David M. Mickelson*
A.B. *magna cum laude* with high honor in Geology, Mount Holyoke College, South Hadley, MA, (1997)
Thesis: "Application of Calcite-Dolomite Thermometry: Southern Grenville Province, Bancroft, Ontario" *advisor: Steve Dunn*

Positions: Gettysburg College, Department of Environmental Studies
Associate Professor, 2009- present
Chair of Environmental Studies, 2009 – 2012; Acting Chair, Spring 2015
Assistant Professor, 2003 - 2009
University of Colorado, Boulder
Research Assistant, Institute of Arctic and Alpine Research, 2000-2003
Teaching Assistant, Department of Geological Sciences, 1999-2001
Scientific Crew Member, R/V *Marion Dufresne*, 1999
University of Wisconsin-Madison
Teaching Assistant, 1997-1999
Research Assistant, 1997-1998
Mount Holyoke College
Teaching Assistant, 1995-1997
Research Assistant, summers of 1995-1996

Courses Taught:

Earth System Science; Natural Catastrophes and Geologic Hazards; Glaciers and Records of Climate Change; Geologic Disasters and Global Change; Geomorphology; Environmental Studies Senior Seminar: Impacts of Climate Change; First Year Seminar- Geology of National Parks; Physical Geology;

Environmental Geology; Introduction to Field Methods; and Statistics for
Geology and Geography Majors

Grants Received

Gettysburg College, Research and Professional Development Grant, 2012 (\$1135)
Gettysburg College, Research and Professional Development Grant, 2012 (\$5000)
Gettysburg College, Mellon Grant for Recently Tenured Faculty, 2009 (\$5000)
Gettysburg College, Globalizing Faculty-Student Research, 2009 (\$2850)
Gettysburg College, Mellon Grant for Recently Tenured Faculty, 2008 (\$2500)
Gettysburg College, Research and Professional Development Grant, 2007 (\$4950)
Gettysburg College, Research and Professional Development Grant, 2006b (\$2500)
Gettysburg College, Research and Professional Development Grant, 2006a (\$2650)
Gettysburg College, Research and Professional Development Grant, 2004 (\$7890)
Gettysburg College, Research and Professional Development Grant, 2003 (\$8200)
Geological Society of America, Graduate Student Research Grant (\$2500)
Sigma Xi Grants in Aid of Research (\$800)
Bill Hiss Travel Grants, University of Colorado, amount varies
UW-Madison, Department of Geology and Geophysics Research Grant (\$1000)

Honors: Thompson Award for Distinguished Teaching, Gettysburg College, 2009
Faculty Appreciation Award, Student-Athlete Advisory Committee, Gettysburg
College, 2009
Waldrop Award, Dept. of Geological Sciences, Univ. of Colorado, 2002
Women's Forum of Colorado Foundation, Inc., Scholarship Grant, 2001
Association for Women Geoscientists Graduate Student Award, 2001
University Fellowship from the Graduate School, Univ. of CO, Boulder, 1999
Barry M. Goldwater Scholarship, 1996-1997

Memberships: American Association for the Advancement of Science, 2012- present
American Geophysical Union, 2002- present
Association for Women Geoscientists, 2001-present
Geological Society of America, 1999-present
Sigma Xi, Member, 1997-present
Phi Beta Kappa Society, Member, 1996-present;

Governance:

2014 Marine Ecologist Search Committee, tenure track
2013-2014 Visiting Marine Ecologist Search Committee
2013 Environmental Studies Administrative Assistant Search Committee
2012 Environmental Scientist Search Committee
2011 – present Faculty Advisor to Alpha Delta Phi
2010 – present Eisenhower Institute- College Advisory Council

2010 – 2011 Ad Hoc Committee on Course Credit
 2010 – 2011 Environmental Scientist Search Committee
 2010; 2007; 2006 Sexual Assault Prevention Facilitator
 2009 – 2010 Johnson Center for Creative Teaching, Advisory Board Member
 2009 Alumni College Instructor
 2009 Green Reading Series, Book Discussion Facilitator
 2007 - 2008 Environmental Studies, Humanities Search Committee
 2007 - 2009 Faculty Development Committee
 2007 Faculty Council
 2006 - 2007 Enhanced Learning Spaces Committee
 2005 - present Duke Marine Lab, MSEC representative for Gettysburg College
 2005 - 2007 Interdisciplinary Studies Committee
 2005 - 2006 Environmental Scientist Search Committee
 2004 - 2008 Library Liaison
 2004 - 2009 Faculty Advisor to GECCO, Gettysburg Environmental Concerns
 Organization
 2004 - 2007 Technical Advisory Committee
 2003 - 2004 Environmental Studies GIS Search Committee

Reviews:

National Science Foundation, Proposal Reviewer
 National Science Foundation, Geomorphology and Land Use
 Dynamics Panel, panel reviewer of proposals
 Natural Environment Research Council, UK; proposal reviewer
Arctic, Antarctic, and Alpine Research; manuscript reviewer
Earth Surface Processes and Landforms, manuscript reviewer
Geomorphology, manuscript reviewer
Journal of Quaternary Science, manuscript reviewer
Quaternary Science Reviews; manuscript reviewer
Shore and Beach; manuscript reviewer

Invited Seminars:

“Using GIS to understand glacial history: Case studies from Northwest
 Iceland”, University of Delaware, October 2, 2014
 “One Year In with Obama: Is Real Change Still on the Agenda for
 America?” Democracy for America Panel Feb. 3, 2010
 “Gettysburg 350: International Day of Climate Action”, October, 2009
 “Lessons for a changing climate”, Gettysburg College, Fall Honors Day
 Address, October 2009
 “How icy was Iceland: Climate change since the Last Glacial Maximum”
 Frederick Community College, Oct. 2007
 “Glaciers in Iceland: the glacial history of Vestfirðir, NW Iceland”,
 Amherst College, 5-College Iceland Symposium, March 2006
 “The Science of Tsunami”, Gettysburg College, Jan. 2005

“How icy was Iceland? Climate change since the Last Glacial Maximum”
Dickinson College, Oct. 2004

Mentoring:

Gettysburg College:

- Alyson Hampsch, “Testing evidence for fast ice flow in North Iceland”
Alexis Moyer, “Reconstructing ice flow in Northern Iceland using streamlined Landforms”
Jessica Lee, “Using GIS to Reconstruct Paleo Equilibrium-line Altitudes from Cirques in Northwest Iceland”
Nikita LaCruz – Chemistry/ES Senior Project co-advised with Professor Joe Gryzbowski, “Assessing the impact of industrialization on lead levels in soils on the Gettysburg College Campus: A chemical and spatial analysis
Christina Jasion, Alexis Moyer, Cole Rossiter, Elizabeth Rouillard, Rebecca Taormina, & Brian Wooldredge, “Physical Weathering at Devil’s Den, Gettysburg National Military Park, PA”
Brittany Jones*, “Geomorphic evidence for fast ice flow south of Hunafloi, North Iceland” *Goldwater Scholar; * NOAA Hollings Scholarship Recipient; Field Research Assistant in Iceland and Laboratory Research Assistant
Mitchell Jones, “Geomorphic evidence for fast ice flow south of Hunafloi, North Iceland” Field Research Assistant in Iceland
Gregory Baron and Brittany Jones, “Loss on Ignition and Humification of peat deposits near Penobscot Maine”
Andrew Reed*, “Holocene record of climate change from peat deposits in Maine”
* Goldwater Honorable Mention
Julie Markus*, “Loss on ignition study for peat samples from Maine”
* Goldwater Scholar, partly based on research conducted in my lab
Tom Merce, “Laboratory Analyses of Peat Samples from Iceland”
Matt Shank and Ali Vissichelli, “Field Research near Machias, ME”
Tess Barton, “Holocene paleoclimate interpreted from peat deposits in northwest Iceland”
Kristin Igusky, “Characteristics of diamicton from Vestfirðir and the mainland of Iceland: Implications for Provenance”
Jeremiah Johnson, “Evaluating the spatial distribution of ice scour lakes in NW Iceland at the Last Glacial Maximum”
Alexis Melusky, “Evaluating Mineralogy of the Shank Collection”
Meghan Flynn, “Field Research in Northwest Iceland”

University of Colorado:

- Ryan Thomas, “Late Quaternary history of Hunafloi, NW Iceland”
Matt Thomas, “Quaternary history of Isafjardardjup, NW Iceland”

University of Iceland:

- Gudrun Eva Johannsdottir, Iceland Field Research Assistant
Hrafnhildur Hannesdottir, Iceland Field Research Assistant

University of Wisconsin:

Ben Laabs, BA thesis, “Lake Michigan Shoreline Bluffs” and field assistant

Broomfield High School:

Amy “High resolution magnetic susceptibility of a sediment core from the Iceland Shelf”

General:

Informal outreach/ free geological consultation for Adams County residents
Boulder County Partners Volunteer
AAUW volunteer for “*Expanding Your Horizons*”
INSTAAR Open House volunteer
High Peaks Elementary School Science Fair Judge

Publications

Papers:

(* denotes student co-author)

Spooner, I., White, H.*, and **Principato, S.**, *in prep.*, A 3500 year record of Late Holocene moisture regime from Baltzer Bog, Nova Scotia, Canada.

Principato, Sarah M., and Lee, Jessica, F.*, 2014, GIS analysis of cirques on Vestfirðir, northwest Iceland: implications for palaeoclimate. *Boreas*, vol. 43, p. 807–817.
doi: 10.1111/bor.12075

Carlson, A.E., **Principato, S.M.**, Chapel, D.M., and Mickelson, D.M, 2011, Quaternary Geology of Sheboygan County, Wisconsin: *Wisconsin Geological and Natural History Survey Bulletin 106*, 32p.

Principato, S.M., and Johnson, J.*, 2009, Using a GIS to quantify patterns of glacial erosion on northwest Iceland: Implications for independent ice sheets, *Arctic, Antarctic, and Alpine Research*, vol. 41, p. 128-137.

Quillmann, U, Andrews, J. T., Jennings, A.E., Bendle, J., Jónsdóttir, H., Kristjánisdóttir, G.B., Lloyd, J., Ólafsdóttir, S., **Principato, S.**, 2009, Radiocarbon Date List XI: Radiocarbon Dates from Marine Sediment Cores of the Iceland, Greenland, and Northeast Canadian Arctic Shelves and Nares Strait. Occasional Paper - Colorado University, Institute of Arctic and Alpine Research, v. 59, 69 pp.

Principato, S.M., 2008, Holocene glacier fluctuations and sea level changes on eastern Vestfirðir, Iceland, *Boreas*, vol. 37, p. 132–145.

J.T. Andrews, J. Hardardóttir, J. Stoner, and **S. M. Principato**, 2008, Holocene

sediment magnetic properties along a transect from Ísafjardardjúp to Djúpáll, Northwest Iceland, *Arctic, Antarctic, and Alpine Research*, vol. 40, p. 1- 15.

Principato, S.M., Geirsdottir, A., Johannsdottir, G., and Andrews, J.T., 2006, Late Quaternary glacial and deglacial history of eastern Vestfirðir, Iceland, using cosmogenic isotope (^{36}Cl) exposure ages and marine cores, *Journal of Quaternary Science*, vol. 21, no. 3, p. 271-285.

Principato, S.M., Jennings, A.E., Kristjansdottir, G.B., and Andrews, J.T., 2005, A comparison of diamicton units from the SW and N Iceland Shelf: Implications for the glacial history of Iceland, *Journal of Sedimentary Research*. vol. 75, no. 6., p. 968-983.

Carlson, A.E., Mickelson, D.M., **Principato, S.M.**, and Chapel, D.M., 2005, The genesis of the northern Kettle Moraine, Wisconsin: *Geomorphology*, vol. 67, p. 365-374.

Dunhill, G., Andrews, J.T., Kristjansdottir, G.B., Castañeda, I.S., Hagen, S., James, E., Vorren, T., Briner, J.P., Cooper, T.A., Hald, M., Jennings, A.E., **Principato, S.**, Weiner, N., Barber, D.C., Hall, F.R., Koc, N., Smith, L.M., and Williams, K., 2004, Radiocarbon date List X; Baffin Bay, Baffin Island, Iceland, Labrador Sea, and the northern North Atlantic, Occasional Paper - Colorado University, Institute of Arctic and Alpine Research, v. 56, 77pp.

Principato, S.M., 2004, X-Ray radiographs of sediment cores: a guide to analyzing diamicton. In Francus P. (ed). *Image analysis, sediments and paleoenvironments*. Kluwer Academic Publishers Dordrecht, The Netherlands, p. 165-185.

Andrews, J.T., and **Principato, S.M.**, 2002, Grain-size characteristics and provenance of ice-proximal glacial marine sediments (or why do we do grain-size analyses anyway?). In Dowdeswell, J.A. and O’Cofaigh, C. (eds). *Glacier influenced sedimentation at high latitude continental margins*, *Geological Society of London Special Publication 203*, p. 305-324.

Andrews, J.T., Geirsdottir, A., Hardardottir, J., **Principato, S.M.**, Kristjansdottir, G.B., Helgadóttir, G., Sveinsbjörnsdóttir, A., Gronvold, K, and Drexler, J., 2002, Distribution, age, and geochemistry of the Saksunarvatn ($10.18 \pm$ cal ka) ash in marine, lake, and terrestrial sediments, NW Iceland, *Journal of Quaternary Science*, vol. 17, no. 8, p. 731-745.

Abstracts/Conference Presentations:

(* denotes student co-author)

Hampsch, Alyson*, **Principato, Sarah M.**, and Emmons, Elizabeth*, 2014, Using sedimentology and GIS analysis to interpret paleo-ice flow in northern Iceland. NE Geological Society of America meeting in Lancaster, PA, March 23-25, 2014

- Spooner, Ian, White, Hilary E., **Principato, Sarah M.**, Stolze, Susann, and Hill, Nicholas, 2014, Records of late Holocene moisture regime from wetlands in Nova Scotia, Canada. NE Geological Society of America meeting in Lancaster, PA, March 23-25, 2014
- Principato, Sarah M.**, Lee, Jessica F.*, and Hampsch, Alyson*, 2013. GIS analysis of cirques on Vestfirðir, northwest Iceland: Implications for paleoclimate. Geological Society of America meeting in Denver, CO, Abstracts with Programs, vol. 45.
- Principato, Sarah M.**, Reed, Andrew*, Markus, Julie*, Baron, Gregory*, and Hampsch, Alyson*, 2013. A record of Holocene environmental change interpreted from peat in eastern Maine. NE Geological Society of America meeting in Bretton Woods, NH, March 18 - 20, 2013.
- La Cruz, Nikita* **Principato, Sarah M.**, 2013. Assessing the impact of industrialization on lead levels in soils on the Gettysburg College Campus: A Chemical and Spatial Analysis. Northeast Geological Society of America meeting in Bretton Woods, NH, vol. 45.
- Lee, Jessica F.* and **Principato, Sarah M.**, 2013. Using GIS to reconstruct paleo equilibrium-line altitudes from cirques in Northwest Iceland. Northeast Geological Society of America meeting in Bretton Woods, NH, vol. 45.
- Moyer, Alexis N* and **Principato, Sarah M.**, 2013. Using GIS and streamlined landforms to interpret paleo-ice flow in Northern Iceland. Northeast Geological Society of America meeting in Bretton Woods, NH, vol. 45.
- Lee, Jessica F.* and **Principato, Sarah M.**, 2013. Using GIS to reconstruct paleo equilibrium-line altitudes from cirques in Northwest Iceland. 43rd International Arctic Workshop Program and Abstracts, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado at Boulder, 165 pp.
- Moyer, Alexis N* and **Principato, Sarah M.**, 2013. Using GIS and streamlined landforms to interpret paleo-ice flow in Northern Iceland. 43rd International Arctic Workshop Program and Abstracts, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado at Boulder, 165 pp.
- Principato, Sarah M.**, Jasion, Christina M.*, Moyer, Alexis N.*, Rossiter, Cole D.*, Rouillard, Elizabeth G.*, Taormina, Rebecca A.*, and Wooldredge, Brian D.*, 2012, Physical Weathering at Devil's Den, Gettysburg National Military Park, PA. Geological Society of America meeting in Charlotte, NC, Abstracts with Programs, Vol. 44, No. 7, p.92.
- Principato, Sarah M.**, Jones, Brittany*, and Jones, Mitchell*, 2010, Geomorphic evidence for fast ice flow south of Hunafloi, North Iceland. Geological Society of America meeting in Denver, CO, Abstracts with Programs, vol. 42, No. 5, p. 243.

- Reed, Andrew * and **Principato, Sarah M.**, 2010. Loss-on-ignition and humification of a peat core from Quoddy Head State Park, ME. Northeast-Southeast Geological Society of America meeting in Baltimore, MD March 21-23, 2009.
- Baron, Gregory *, **Principato, Sarah M.**, and Jones, Brittany, 2010. Loss-on-ignition and humification index of peat deposits near Penobscot, ME: Implications for Holocene Climate. Northeast-Southeast Geological Society of America meeting in Baltimore, MD March 21-23, 2009.
- Principato, S.M.**, 2009, "Identifying Minerals and Meteorites: A Glacial Geologist in Environmental Studies". Geological Society of America Meeting, Portland, OR, October 2009
- Principato, S.M.** and Markus, J.T.,* 2009, Holocene environmental conditions interpreted from coastal mudflats and peat in Washington County, Maine. Northeast Geological Society of America Meeting in Portland, Maine. Abstracts with Programs, vol. 41.
- Markus, J.T.* and **Principato, S.M.**, 2009, Sedimentology and humification index of peat deposits in New York and Maine, Northeast Geological Society of America Meeting in Portland, Maine. Abstracts with Programs, vol. 41.
- Principato, S.M.**, 2007, Sedimentology and Humification of Peat Deposits on Northwest Iceland: Implications for Holocene Climate Variability, 37th International Arctic Workshop, Iceland.
- Principato, S.M.**, and Barton, T.C. *, 2006, Holocene Climate Variability Interpreted from Peat Deposits on Northwest Iceland, Geological Society of America, Abstracts with programs, vol. 38.
- Igusky, K.A. *, and **Principato, S.M.**, 2006, Characteristics of Diamicton from Vestfiridir and the mainland of Iceland: Implications for Provenance, Northeast Geological Society of America, vol. 38.
- Barton, T.C.,* and **Principato, S.M.**, 2006, Sedimentology and Humification Analyses of Peat Deposits from Northwest Iceland, Northeast Geological Society of America, vol. 38.
- Principato, S.M.**, 2005, Teaching Earth System Science to Environmental Studies Majors, Northeast Geological Society of America, GSA Abstracts with Programs, vol. 37.
- *Johnson, J. S. and **Principato, S.M.**, 2005, Evaluating the spatial distribution of ice-scour lakes on northwest Iceland, NCUR Programs and Abstracts.
- Principato, S.M.**, 2004, Holocene fluctuations of the Vestfiridir Icecap, NW Iceland. Geological Society of America, Abstracts with Programs, vol. 36.
- Principato, S.M** and Johnson, J. S. *, 2005, Geomorphic Evidence for Independent Icecaps on

- Northwest Iceland, Geological Society of America, Abstracts with Programs, vol. 37.
- *Johannsdottir, G., Geirsdottir, A., Olafsdottir, S., and **Principato, S.**, 2003, A tephra study of sediment cores and terrestrial sequences on the Vestfirðir Peninsula, NW Iceland; preliminary results. 33nd Arctic Workshop Programs and Abstracts, Tromsø, Norway.
- Principato, S.M.**, 2003, Using 36-chlorine ages and marine cores to constrain the Late Quaternary History of the Vestfirðir Peninsula, Iceland. 33nd Arctic Workshop Programs and Abstracts, Tromsø, Norway.
- Principato, S.M.**, Geirsdottir, A., Andrews, J.T., and *Johannsdottir, G., 2003, The deglacial history of eastern Vestfirðir, NW Iceland. Geological Society of America, Abstracts with Programs, vol. 35.
- Principato, S.M.**, and Geirsdottir, A., 2002, Glacial geology of the Strandir and Isafjardardjup coastlines, NW Peninsula, Iceland, 25th Nordic Geological Winter Meeting, Abstract Volume.
- Principato, S.M.**, Geirsdottir, A., and Andrews, J.T., 2002, Contrasting glacial geology of the Strandir and Isafjardardjup coastlines, NW Peninsula, Iceland, 32nd Arctic Workshop Programs and Abstracts.
- Geirsdottir, A., Andrews, J.T., Miller, G.H., Olafsdottir, S., **Principato, S.**, and Kristjansdottir, G.B., 2002, Following the Late Weichselian retreat of the NW Iceland Ice Cap from shelf to land, Geological Society of America, Abstracts with Programs, vol 34.
- Principato, S.M.**, and Geirsdottir, A., 2002, Glacial erosion patterns and moraine sequences on the Northwest Peninsula of Iceland, Geological Society of America, Abstracts with Programs, vol. 34.
- John T. Andrews, Jorunn Hardardottir, Aslaug Geirsdottir, Gudrun Helgadóttir, Joe S. Stoner, and **Sarah Principato**, 2002, Land/ocean interactions NW Iceland: sediment and sediment magnetic characteristics in the Isafjardardjup/Djupall/Blosseville Basin transect 36 to 0 cal BP. American Geophysical Union, Abstracts with Programs, Fall Meeting.
- Principato, S.M.** and Andrews, J.T., 2001, Interpreting the origin of diamicton units in marine cores from Iceland, 31st Arctic Workshop Program and Abstracts.
- Principato, S.M.**, 2001, Image analysis of five diamicton units: an approach to understanding the depositional environment of marine cores from the Iceland Shelf, Image Analysis, Sediments, and Paleoenvironments Workshop, Program and Abstracts.
- Principato, S.M.**, 2001, A multi-faceted approach to understanding the depositional environment of diamicton units from the Iceland Shelf, Geological Society of America, Abstracts with Programs, Vol. 33, No. 7

Principato, S.M., 2000, Glacial Geology of Reykjarfjordur, NW Iceland, Geological Society of America, Abstracts with Programs, Vol. 32, No. 7

Andrews, J.T. and **Principato, S.M.**, 2000, The Glacial Maximum Around Iceland: Neophytes' Impressions, EPILOGUE Meeting, Oregon Univ, Oct. 2000.

Castañeda, I. S., and **Principato, S.M.**, 2000, Sedimentological Analyses of three piston cores from Hunafloi, North Iceland Shelf, 30th International Arctic Workshop, Programs and Abstracts, Institute of Arctic and Alpine Research, Univ. of Colorado at Boulder, xvi.& 179pp.

Principato, S.M., and Mickelson, D.M., 1999, Integration of GIS in surficial and depth to bedrock mapping in northeast Wisconsin, Geological Society of America, Abstracts with Programs, vol. 31, no. 7.

*Laabs, B. J., and **Principato, S.M.**, 1999, Comparison of three techniques for measuring fabric in till in northeast Wisconsin, Geological Society of America, Abstracts with Programs, vol. 31, no. 7.

Principato, S. M., Mickelson, D.M., Socha, B., and *Laabs, B. J., 1999, Contrasting glacial record between two formations in northeastern Wisconsin: North-central Geological Society of America, Abstracts with Programs, v. 31, no. 2.

Mickelson, D. M., Colgan, Patrick, M., **Principato, S. M.** and Cutler, Paul, 1999, Use of traditional geologic maps to constrain landform genesis and paleoglaciological modeling of the southern Laurentide ice sheet: North-central Geological Society of America, Abstracts with Programs, Abstracts with Programs, v. 31, no. 2.

*Laabs, B. J. and **Principato, S. M.**, 1999, Bluff stratigraphy of the Lake Michigan shoreline in northern Sheboygan County, Wisconsin: Geological Society of America, Abstracts with Programs, v. 31, no.2.

Colgan. P.M., and **Principato, S.M.**, 1998, Distribution of glacial landforms and sediments in Wisconsin and the Upper Peninsula of Michigan, an application of GIS to glacial geology, North-central Geological Society of America, Abstracts with Programs, v. 30, 2, p11.

Principato, S.M., and Dunn, S.R., 1997, Application of calcite-dolomite thermometry, southern Grenville Province, Ontario, Northeast Geological Society of America, Abstracts with Programs, v. 29, 1, p. 74

Maps:

Carlson, A.E., **Principato, S.M.**, Chapel, D.M., and Mickelson, D.M, 2011, Quaternary Geology of Sheboygan County, Wisconsin: *Wisconsin Geological and Natural History Survey Bulletin 106*, 32p. Map of Quaternary Deposits of Sheboygan County, Wisconsin.

Principato, S.M., 1999, The Quaternary Geology of Northern Sheboygan County, WI, (7.5' quads mapped: Cleveland East, Cleveland West, School Hill, Kiel, Marytown, Ct. Cloud, Elkhart Lake, Franklin, Howards Grove, Sheboygan North submitted to the USGS EDMAP along with 1:100,000 scale map and cross sections)