

Curriculum Vitae - Patrick M. Colgan

Associate Professor of Geology
Department of Geology
Grand Valley State University
Allendale, MI 49401

Phone: (616) 331-3201
FAX: (616) 331-3740
colganp@gvsu.edu
<http://www.gvsu.edu/geology/>

- Biographical** born: 1962, Kansas
 married: Kelly Heid, 1990
- Education** University of Missouri - Kansas City, B.S. Geology w/honors (1990)
 The University of Kansas, M.S. Geology w/honors (1992)
 University of Wisconsin-Madison, Ph.D. Geology (1996)
- Professional Experience** Associate Professor, Grand Valley State University, (2006 – present)
 Assistant Professor, Grand Valley State University (2003-2006)
 Assistant Professor, Northeastern University (1996 – 2003)
 Visiting Assistant Research Professor, UW-Madison (1999)
 Visiting Assistant Research Professor, UW-Madison (1998)
 Research Assistant, UW-Madison (1995 – 1996)
 Teaching Assistant, UW-Madison (1992 – 1995)
 Teaching Assistant, University of Kansas (1990 – 1992)
 Field Geologist, Alpha-Omega Geotech. Inc. (1988 – 1992)
- Professional Affiliations** American Association for the Advancement of Science, American
 Geophysical Union, International Glaciological Society, Society of
 Vertebrate Paleontologists, Geological Society of America, Sigma Xi,
 Kansas Academy of Science, Michigan Academy of Science.
- Research Interests** Glacial and periglacial geomorphology, glaciology, paleoclimatology,
 ice sheet modeling, cosmogenic radionuclide exposure dating,
 paleomagnetism, geologic mapping, GIS, and remote sensing.
- Teaching Interests** Geomorphology, glacial and Quaternary history, paleoclimatology,
 engineering geology.
- Graduate Advisors** David M. Mickelson (Ph.D. advisor at the University of Wisconsin)
 Wakefield Dort Jr. (M.S. advisor at the University of Kansas)
- M.S. Thesis** *Stratigraphy, Sedimentology, and Paleomagnetism of Pre-Illinoian
 Glacial Deposits near Kansas City, Kansas and Kansas City, Missouri*
- Ph.D. Thesis** *The Green Bay and Des Moines lobes of the Laurentide ice sheet:
 Evidence for stable and unstable glacier dynamics*

Past Research Collaborators

Paul R. Bierman (Department of Geology, University of Vermont)
 Marc W. Caffee (Department of Physics, PrimeLab, Purdue University)
 Paul M. Cutler (The National Academies)
 Daniel R. Douglass (Department of Earth and Environmental Sciences, Northeastern University)
 Darrell Kauffman (Department of Geology, Northern Arizona State University)
 Douglas R. MacAyeal (Geophysical Sciences, University of Chicago)
 David M. Mickelson (Department of Geology & Geophysics, Univ. of Wisconsin – Madison)
 Jeffrey S. Munroe (Department of Geology, Middlebury College)
 William A. Newman (Department of Earth and Environmental Sciences, Northeastern University)
 Zhou ShangZhe (Department of Geography, South China Normal University)
 Brad Singer (Department of Geology & Geophysics, University of Wisconsin – Madison)
 Kent Syverson (Department of Geology, University of Wisconsin – Eau Claire)
 Cornelia Winguth (Department of Geology & Geophysics, University of Wisconsin – Madison)
 Xu LiuBing (Department of Geography, South China Normal University)

Awards and Honors

2006 – Promotion to Associate Professor with tenure, Grand Valley State University
 2001 – Aspiration Teaching Award, Northeastern University
 1996 – Best Student Paper Award, University of Wisconsin, Department of Geology & Geophysics
 1992 – Masters Thesis Honors, University of Kansas
 1991 – D. A. McGee Scholarship – University of Kansas
 1990 – D. A. McGee Scholarship – University of Kansas
 1990 – Outstanding Undergraduate Award, University of Missouri-Kansas City
 1989 – Golden Key Academic Honorary Society

Peer Reviewer for

Boreas
 Geology
 GSA Bulletin
 Journal of Great Lakes Research
 National Science Foundation
 Quaternary International
 Quaternary Research
 Quaternary Science Reviews

List of Research Funding

External Research Grants

2009 – NASA, *Earth System Sciences Workshop (Teacher Training)*. Michigan Space Grant Program. This grant provides matching funding for a 3-day K-8 teacher training workshop during the summer of 2009. Total grant is for \$3,000.

2005 - **United States Geological Survey**, *Quaternary Geologic Mapping of the Sullivan, Michigan 7.5' minute Quadrangle*. EDMAP grant for funds to map the Quaternary geology of one quadrangle in Muskegon County, Michigan. The total grant was for ~\$10,000. This project trained undergraduate major Chris Tort in field mapping techniques as well as map the geology of the Muskegon area during the summer of 2005 (grant period: May 1, 2005 to April 30, 2006).

2004 – **Purdue Rare Isotope Measurement Laboratory**, Purdue University, *Testing the hypothesis of an extensive Marine Isotope Stage 3 glacial advance in Tibet with an improved cosmogenic radionuclide chronology*. This grant obtained funds to carry out analyses of rock samples from Tibet for cosmogenic isotope ¹⁰Be exposure dating. Grant was for \$8600. (grant period: August 1 ,2004 to July 31, 2005).

2004 – **United States Geological Survey**, *Quaternary Geologic Mapping of the Muskegon East and Muskegon West 7.5' minute Quadrangles*. EDMAP grant for funds to map the surface geology of two quadrangles in Muskegon County. The total grant was for \$12,958. This project trained undergraduate major Jon Stark in field mapping techniques as well as map the geology of the Muskegon area during the summer of 2004 (grant period: May 1, 2004 to April 30, 2005).

2004 – NASA, *Glacier Change in the Tanggula Shan of the Tibetan Plateau region of Western China*. Michigan Space Grant Seed Grant Program. This project uses remote sensing and field work to estimate glacier retreat in China. The total grant was for ~\$10,500 (grant period: May 1, 2004 to April 30, 2005).

2002 – **National Science Foundation**, INT-0209993, *Planning Visit to China: Collaborative Study of the Extent of Late Pleistocene Glaciation on the Eastern Qinghai-Xizang Plateau, China*. Co-PI with Jeffrey Munroe of Middlebury College. Award was for \$11,592 (grant period: April 1, 2002 to March 31, 2003).

1998 – **National Science Foundation**, EAR-9814975, *Collaborative Research: Determining transient physical conditions under the southern Laurentide ice sheet using geologic information and numerical modeling*, Co-PI with David M. Mickelson, Paul M. Cutler (both of University of Wisconsin), and Doug MacAyeal (University of Chicago). Grant was \$46,200 over three years. (grant period: 1-1-1999 to 1-1-2002).

1998 – **Institute for Rock Magnetism**, University of Minnesota, *Paleomagnetism of Boston Harbor till*. Visiting Fellow Travel Grant. Grant was for \$500. (grant period: 9-14-98 to 9-20-98).

1996 – **National Science Foundation**, EAR-9627798, *Reconstruction of the Green Bay, Lake Michigan, and Des Moines lobes, 21-11,000 BP: Ice surface profiles, sediment associations, and deglaciation chronology*, with David M. Mickelson (University of Wisconsin). Award was for \$138,000 (grant period: 8-1-96 to 1-1-99).

1996 – **United States Geological Survey – Data Grant Award**, *Using satellite imagery and digital elevation models to map glacial landform regions*. Award was for \$4200 in data products. (grant period: 8-1-96 to 8-1-97).

Internal Grants

2002 – Faculty Development Grant, Department of the Provost, Northeastern University, *Chinese-American Collaboration into the Extent of Glaciers in the Qinghai-Xizang (Tibetan) Plateau Region of Western China*. Grant was for \$1900.

2000 – Center for Experiential Education Scholarship (CEA-Way Project) – *Age of microfossils in the drumlin till of Boston Harbor*. Was a proposal for an undergraduate research project. Grant was for \$1000.

1998- Center for Experiential Education Scholarship (CEA-Way Project) – *Environmental History of Walden Pond, Massachusetts*. Was a proposal for an undergraduate research project. Grant was for \$500.

1998 – Research and Development Grant, Department of the Provost, Northeastern University, *Geological history of Boston Harbor National Park*, Award was for \$8990 (grant period: 7-1-98 to 7-1-99). Most of this money was used to buy a single laboratory device used to determine magnetic properties of sediment.

Publications in Reverse Chronological Order

(bold items are peer-reviewed journal articles, book chapter or a geologic map)

2010

Syverson, K.M., and Colgan, P.M., in prep, The Quaternary of Wisconsin: A review of stratigraphy and glaciation history, in Ehlers, J. (ed.), *Quaternary Glaciations - Extent and Chronology, Part IV - A Closer Look*, Elsevier, 1000 p.

Colgan, P.M. & Zdan, S. in prep, Sedimentary origin and geotechnical properties of subglacial till underlying Grand Valley State University, Allendale, Michigan. *Michigan Academician*.

2009

Colgan, P.M., 2009, West Antarctica and the threat of a sea level rise disaster. *Interchange*, v. , no. , p.

Colgan, P.M., 2009, Glacial Erratics, in Gornitz, Vivian (ed.), *Encyclopedia of Paleoclimatology and Ancient Environments*, Springer, Dordrecht, The Netherlands, p. 354.

Colgan, P.M., 2009, Holocene Alluvial Fill in a Small Tributary of the Grand River, Ottawa County, Michigan. *Michigan Academician*, v. 39, no. 2, p. 48.

2008

Colgan, P.M., 2008. Evidence of subglacial and glaciolacustrine deposition on Grand Valley State University Campus. *Michigan Academician*, v. 38, no. 4, p. 57.

Colgan, P.M., 2008, Field relationships between Lake Michigan lobe end moraines and Glacial Lake Chicago sediments in southern Muskegon County, Michigan. *Michigan Academician*, v. 37, no. 4, p. 60.

Mulligan, R. and P.M. Colgan, 2008, Sedimentation rates in ravines on Grand Valley State University campus, Allendale, Michigan. *Michigan Academician*, v. 37, no. 4, p. 60.

2007

Zhou, S., Xu, L., Colgan, P.M., Mickelson, D.M., Wang, X., Wang, J., and Zhong, W., 2007, Cosmogenic ¹⁰Be exposure dating of Guixiang and Baiyu Glaciations. *Chinese Science Bulletin*, v. 52, no. 10, p. 1387-1393.

Wang, X., Zhou, S., Wang J., Colgan, P.M., and Munroe, J.S., 2007, Glacial geology of the Tannugula Shan region, Tibet, *Journal of Glaciology and Geocryology*, v. 29, no.1, p. 149-154.

Colgan, P. M., 2007. A Snowball Earth: A Winter's Tale. *Interchange*, v.14, no.1, p. 5-6.

2006

Colgan, P.M., Munroe, J.S., and Zhou, S., 2006, Cosmogenic radionuclide evidence for the limited extent of last glacial maximum glaciers in the Tanggula Shan of the central Tibetan Plateau. *Quaternary Research*, v. 65 (1), p. 336-339.

Colgan, P.M., Zhou, S., Xu, L., Douglass, D., Refsnider, K., Mickelson, D.M., and Munroe, J.S., 2006, Cosmogenic radionuclide ¹⁰Be exposure ages for two glacial advances in the Boduizangbu and Palongzangbu valley of southeastern Tibet. *Geological Society of America Abstracts with Programs*, v. 38, no. 7, p. 71.

Colgan, P.M., 2006, Evidence of glacier recession. In Elias, S. (ed.), *Encyclopedia of Quaternary Sciences*. Elsevier, p. 798-808.

Colgan, P.M. and Tort, C., 2006, *Quaternary Geology of the Sullivan 7.5 minute Quadrangle, Michigan*. Open File Report, Michigan Department of Environmental Quality, Map scale 1:24,000.

2005

Colgan, P.M. and Stark, J.M., 2005, *Quaternary Geology of the Muskegon East and Muskegon West 7.5 minute Quadrangle*. Open File Report, Michigan Department of Environmental Quality, Map Scale 1:24,000.

2004

Winguth, C., Mickelson, D.M., Colgan, P.M., and Laabs, B.J.C., 2004, Modeling the deglaciation of the Green Bay Lobe of the southern Laurentide Ice Sheet: *Boreas*, v. 33, p. 34-47.

Syverson, K.M., and Colgan, P.M., 2004, The Quaternary of Wisconsin: A review of stratigraphy and glaciation history, in Ehlers, J. (ed.), *The Glacial Stratigraphy of the northern U.S.*, Elsevier, p. 289-305.

Colgan, P.M., Munroe, J., Zhou, S., 2004, Evidence for multiple glaciations of the Tanggula Shan of the central Tibetan Plateau, *Geological Society of America Abstracts with Programs*, v. 36, no. 5, p. 498.

Stark, J.M., and Colgan, P.M., 2004, Quaternary mapping of the Muskegon East and Muskegon West 7.5 minute quadrangles. *Geological Society of America Abstracts with Programs*, v. 36, no. 5, p. 583.

2003

Colgan, P.M., Mickelson, D.M., and Cutler, P.M., 2003, Ice-Marginal Terrestrial Landsystems: Southern Laurentide Ice Sheet, in Evans, D.A. and Rea, B.R., (eds.), *Glacial Landsystems*, Edwin Arnold, London, p. 111-142.

Mickelson, D.M., and Colgan, P.M., 2003, The southern Laurentide Ice Sheet in the United States, in Gillespie, A.R., and Porter, S., eds., *Quaternary History of the United States*, International Quaternary Association (INQUA) Special Volume for 2003 International Meeting in Reno, Nevada, p. 1-16.

Patterson, C. J., Hansel, A. K., Mickelson, D. M., Quade, D. J., Bettis E. A.III, Colgan, P. M., McKay, E. D., and Stumpf, A. J., 2003, Contrasting glacial landscapes created by ice lobes of the southern Laurentide Ice Sheet: in Easterbrook, D.J., (ed.), *Quaternary Geology of the United States INQUA 2003 Field Guide Volume*. p. 135-154.

Munroe, J., Colgan, P.M., and Zhou, S., 2003, Past and present glacier extent in the Tanggula Shan of the Qinghai-Tibet Plateau, *XVI INQUA Congress Programs with Abstracts*, p. 169.

2002

Colgan, P.M., Bierman, P.R., Mickelson, D.M., and Caffee, M., 2002, Variation in glacial erosion near the southern margin of the Laurentide Ice Sheet, south-central Wisconsin, USA: implications for cosmogenic dating of glacial terrains: *Bulletin of the Geological Society of America*, v. 114, p. 1581-1591.

Bierman, P.R., Caffee, M.W., Davis, P.T., Marsella, K., Pavich, M., Colgan, P.M., Mickelson, D.M. and Larsen, J., 2002, Rates and Timing of Earth Surface Processes from In-Situ-Produced cosmogenic Be-10, in Grew, E.S., (ed.), *Beryllium: Mineralogy, Petrology, and Geochemistry: Reviews in Mineralogy*, v. 50, p. 147-196.

Cutler, P.M., Colgan, P.M., and Mickelson, D.M., 2002, Sedimentologic evidence for outburst floods from the Laurentide ice sheet margin in Wisconsin, U.S.A: implications for tunnel-channel formation, in Fisher, T., Clague, J., and Teller, J. (eds.), *The role of outburst floods and glacial meltwater in subglacial and proglacial landform genesis: Quaternary International*, v. 90, p. 23-40.

Colgan, P.M., 2002, *Glacial Landforms of the Southern Green Bay Lobe Region, Wisconsin: Wisconsin Geological and Natural History Survey, Miscellaneous Map Series, scale 1:250,000.*

Laabs, B.J.C., Winguth, C., Mickelson, D.M., Colgan, P.M., and Darter, J.R., 2002, Two-dimensional numerical modeling of an Ontario Lobe flow line during the Last Glacial Maximum: *Geological Society of America Abstracts with Programs*, v. 34. no. 6, p. 505.

Laabs, B.J., Mickelson, D.M., Colgan, P.M., Winguth, C., Darter, J.R., and Cutler, P.M., 2002. Regional Geologic Data and Numerical Modeling of the Southern Laurentide Ice Sheet: Problems and Promise: *Abstracts with Programs, North-Central Section and Southeastern Section, Geological Society of America Joint Annual Meeting*, vol. 34, no. 2., p. A-43.

Bauder, Andreas, Mickelson, D.M., Marshall, S.J., and Colgan, P.M., 2002, Numerical modelling investigations of the conditions under the Southern Laurentide ice sheet: *EOS*.

2001

Cutler, P.M., Mickelson, D.M., Colgan, P.M., MacAyeal, D.R., and Parizek, B., 2001, Influence of the Great Lakes on the dynamics of the Laurentide ice sheet: numerical experiments. *Geology*, v. 29, no. 11, p. 1039–1042.

Colgan, P.M., and Rosen, P.S., 2001, Quaternary History of the Boston Harbor Islands, Massachusetts, in Bailey, R.H., and West, D.R., (eds), *Geological Society of America, 2001 Meeting in Boston, U.S.A., Field Trip Guidebook*, p. I-1-20.

LaBlanc, K.J., Cutler, P.M., Mickelson, D.M., and Colgan, P.M., 2001, Sediment fluxes of the Lake Michigan and the Green Bay lobes of the Laurentide ice sheet: *Geological Society of America Abstracts with Programs*, v. 33, no. 7, p. A-20.

Mickelson, D.M., Cutler, P.M., and Colgan, P.M., 2001, Southern Laurentide Ice Sheet drumlin and flat till plain landform assemblages and the distribution of permafrost: field observations and model results: INQUA Commission on Glaciation, 6th International Drumlin Symposium, Torun, Poland, Abstracts of Posters and Papers, p. 19-20.

Orton, A., and Colgan, P.M., 2001, Microfossils in the drumlin till of Boston Harbor, Massachusetts: *Geological Society of America Abstract with Programs, Northeastern Section Meeting*, v. 33, no. 1, p. A-65.

LaBlanc, K.J., Cutler, P.M., Mickelson, D.M., and Colgan, P.M., 2001, A GIS-based study of sediment transport rates in the Lake Michigan Lobe of the Laurentide Ice Sheet: *Geological Society of America Abstract with Programs, Northcentral Section Meeting*, v. 33., no. 4, p. A-47.

2000

Cutler, P.M., MacAyeal, D.R., Mickelson, D.M., Parizek, B., and Colgan, P.M., 2000, A numerical investigation of ice-flow permafrost interaction around the southern the Laurentide ice sheet: *Journal of Glaciology*, v. 46(153), p. 311-325.

Cutler, P. M. Clayton, Lee, Mickelson, D.M., Colgan, P.M., and Attig, J.W., 2000, Tunnel Channels and Associated Fan Deposits in Wisconsin, U.S.A.: Insights into the Plumbing of the Southern Laurentide Ice Sheet, in Russell, A.J. and Marren, P.M., eds., *International Symposium on Modern and Ancient Ice-Marginal Landscapes*, Keele University, England, p. 19-20.

Colgan, P.M., Cutler, P.M., Mickelson, D.M., and LaBlanc, K.J., 2000, Glacial landform-sediment assemblages along the southern margin of the Laurentide Ice Sheet: implications for ice-lobe behavior and subglacial conditions: *Geological Society of America Abstracts with Programs*, v. 32, no. 7, p. A-20.

Cutler, P.M., Colgan, P.M., Mickelson, D.M., and MacAyeal, D.R., 2000, Influence of the Great Lakes on the mass balance of the southern Laurentide Ice sheet: *Geological Society of America Abstracts with Programs*, v. 32, no. 7, p. A-330.

LaBlanc, K.J., Cutler, P.M., Mickelson, D.M., and Colgan, P.M., 2000, Mapping Glacial Landforms from Digital Elevation Models Using Geographic Information Systems: *Geological Society of America Abstracts with Programs*, v. 32, no. 4. p A-22.

1999

Colgan, P.M., 1999, Early middle Pleistocene Glaciation (780,000 to 610,000 B.P.) of the Kansas City area, northwestern Missouri, USA: *Boreas*, v. 28(4), p. 477-489.

Colgan, P.M., 1999, A reconstruction of the Green Bay Lobe, Wisconsin, USA from 26,000 to 13,000 radiocarbon years B.P., in Mickelson, D.M. and Attig, J.A., eds., *Glacial Processes Past and Present: Geological Society of America Special Paper 337*, p. 137-150.

Socha, B.J., Colgan, P.M., and Mickelson, D. M., 1999, Estimates of ice surface slopes of the Green Bay Lobe 13,000-11,000 radiocarbon years B.P., in Mickelson, D.M. and Attig, J.A., eds., *Glacial Processes Past and Present: Geological Society of America Special Paper 337*, p. 151-158.

Cutler, P.M., Mickelson, D.M., Colgan, P.M., and D.R. MacAyeal, 1999, Geomorphic evidence and model support for the build-up of subglacial water behind a frozen margin of the Southern Laurentide Ice Sheet: *EOS, Transactions, American Geophysical Union*, v. 80, no. 46, p. F348.

Cutler, P.M., Mickelson, D.M., MacAyeal, D.R., and Colgan, P.M., 1999, Permafrost around the southern Laurentide Ice Sheet: its influence on ice dynamics, landform genesis and water drainage: *Geological Society of America Abstracts with Programs*, v. 31, no. 7, p. 204.

Mickelson, D.M., Colgan, P.M., Cutler, P.M., and Principato, 1999, Use of traditional geologic maps to constrain landform genesis and paleoglaciological modeling of the Southern Laurentide Ice Sheet: *Geological Society of America, Northcentral Section Meeting, Abstracts with Programs*, v. 31, no. 5, p. 60.

Colgan, P.M., and Newman, W.A., 1999, Amino-acid evidence for the age of the lower till in Boston Harbor, Massachusetts: *Geological Society of American, Northeast Section Meeting*, v. 31, no. 2, p. 10.

Velasco, D., Colgan, P.M., and Lundin, S., 1999, Paleomagnetism and rock magnetic properties of tills exposed in Boston Harbor, Massachusetts: *Geological Society of American, Northeast Section Meeting Abstracts and Programs*, v. 31, no. 2, p. 75.

1998

Colgan, P.M., 1998, Paleomagnetism of pre-Illinoian till near Kansas City, Kansas: *Transactions of the Kansas Academy of Science*, v. 101(1-2), p. 25-34.

Colgan, P.M., 1998, Rock magnetic properties and paleomagnetism of tills from Boston Harbor, Massachusetts: *The IRM Quarterly*, v. 8(4), p. 6-7.

Bierman, P.R., Davis, P.T., Marsella, K., Colgan, P.M., Mickelson, D.M., Larsen, P., and Caffee, M., 1998, What do glaciers take away? What do they leave behind? *Geological Society of America, Abstracts with Programs*, 1998 Toronto Meeting, v. 30, no. 7, p. 299.

Colgan, P.M., Mickelson, D.M., Bierman, P.R., and Caffee, M., 1998, Cosmogenic 10-Be and 26-Al evidence for an early deglaciation of the Green Bay lobe, before 15,500 calendar years BP: *Geological Society of America, Abstracts with Programs*, 1998 Toronto Meeting, v. 30, no. 7, p. 135.

Cutler, P.M., MacAyeal, D.R., Colgan, P.M., and Mickelson, D.M., 1998, A numerical investigation of factors influencing the occurrence of millennial scale oscillations of the southern Laurentide Ice Sheet: *Geological Society of America, Abstracts with Programs*, v. 30, no. 7, p. 112.

Colgan, P.M. and Principato, S., 1998, Distribution of glacial landforms and sediments in Wisconsin, and

the upper Peninsula of Michigan: an application of GIS to glacial geology: *Geological Society of America Northcentral Section Meeting*, v. 30, no. 8, p. A-12.

Cutler, P.M., Mickelson, D.M., and Colgan, P.M., 1998, Esker characteristics in NE Wisconsin as indicators of ice surface slope on the post-Twocreekan Green Bay lobe: *Geological Society of America, Abstracts with Programs*, v. 30, no. 8, p. 12.

Colgan, P.M., and Pavlich, M., 1998, A virtual geological field trip to Iceland: a web-based field trip for an introductory physical geology course: *Geological Society of America, Abstracts with Program*, v. 30, p. 11.

1997

Colgan, P.M. and Mickelson, D.M., 1997, Genesis of streamlined landforms of the Green Bay Lobe, Wisconsin USA. *Sedimentary Geology*, v. 111, p. 14-25.

Colgan, P.M., Mickelson, D.M., Clayton, L., and Attig, J.W., 1997, Glacial geomorphology and glaciology of the Green Bay Lobe during the last deglaciation, southeastern Wisconsin, in Mudrey, M., (ed.), *Guide to Field Trips in Wisconsin and Adjacent Areas of Minnesota*, 31st Annual Meeting of the North-Central Section, Geological Society of America, Madison, Wisconsin, p. 73-83.

Socha, B.J., Jackson, B., Colgan, P.M., and Mickelson, D.M., 1997, Estimates of ice surface slopes of the Green Bay Lobe 13-11 k BP: *Geological Society of America Abstracts and Programs, North-Central Section Meeting*, v. 29, no. 4, p. 73.

Colgan, P.M., 1997, Offset and looped moraines associated with a retreating Green Bay Lobe: Evidence of an unstable terminus: *Geological Society of America Abstracts and Programs, North-Central Section Meeting*, v. 29, no. 4, p. 23.

1996

Colgan, P.M., 1996, *The Green Bay and Des Moines Lobes of the Laurentide Ice Sheet: Evidence for Stable and Unstable Glacier Dynamics 18,000 to 12,000 B.P.*: Ph.D. Thesis, University of Wisconsin, Madison, 274 p.

Colgan, P.M., 1996, Origin and significance of small ridges and aligned hummocks in the Great Lakes and Western Prairie Region: *Geological Society of America Abstracts and Programs, North-Central Section Meeting*, v. 28, no. 6, p.33.

1995

Mickelson, D.M. and Colgan, P.M., 1995, Glaciers: Ancient Sculptors of the Earth: *World & I*, v. 10, p. 202-207.

Colgan, P.M., and Mickelson, D.M., 1995, Flow history and genesis of streamlined landforms of the Green Bay lobe: *International Quaternary Union for Quaternary Research XIV International Congress Abstracts, Berlin*, p. 51.

Colgan, P.M. and Mickelson, D.M., 1995, Paleoglaciology of the Green Bay Lobe 18-13 ka: model data

derived from regional landform mapping: *Joint meeting of the Canadian Quaternary Association and the Canadian Geomorphology Research Group, Programme, Abstracts, and Field Guides*, St John's Newfoundland, p.CA8.

1994

Colgan, P.M., 1994, Changing ice surface form of the Green Bay lobe 18-13 ka: *Geological Society of America Abstracts and Programs*, v. 26, no. 7, p 306.

1992

Colgan, P.M., 1992, *Stratigraphy, Sedimentology, and Paleomagnetism of Pre-Illinoian Glacial Deposits Near Kansas City, Kansas and Kansas City, Missouri*: M.S. Thesis, University of Kansas, Lawrence, 201 p.