MATTHEW M. CRAWFORD

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EDUCATION

Ph.D. University of Kentucky 2018
Dissertation: *Hydrologic monitoring and 2-D electrical resistivity imaging for joint geophysical and geotechnical characterization of shallow colluvial landslides*

M.S. Eastern Kentucky University 2001
Thesis: *Geologic mapping and metamorphic petrology of part of the Eastern Piedmont Goochland terrane, Virginia: Evidence for a northward continuation of the Goochland granulite terrane*

B.A. Hanover College 1996

EMPLOYMENT

Geologist III Kentucky Geological Survey, Lexington, Ky. 11/2006 – present
- Member of the KGS Geologic Mapping Section from 2006 to 2011
- Landslide susceptibility and risk assessment
- Using LiDAR-derived data sets for landslide inventory, characterization, and susceptibility modeling
- Landslide hazard outreach and communication
- Monitoring field conditions that contribute to slope failure
- Investigating geotechnical and geophysical characteristics of landslides
- Earthquake and karst hazard communication

Geologist II Kentucky Geological Survey, Lexington, Ky. 4/2001 – 11/2006
- Digitized Kentucky's 7.5-minute (1:24,000) geologic quadrangle maps
- Compiled geologic maps for publication and use in the KGS geologic map service

Internship Kentucky Geological Survey, Lexington, Ky. Summer 2000
- Digitized Kentucky's 7.5-minute (1:24,000) geologic quadrangle maps
- Assisted with studies of ground-water geochemistry, coal geology, and energy

Geologist Minera Orvana Ltda./Orvana Res. Corp., Santiago, Chile 4/1996 – 5/1997
- Performed topographic and geophysical surveying as part of a gold exploration team
- Geologic mapping and stratigraphic analysis of bedrock and unconsolidated deposits

COURSES TAUGHT

Adjunct Instructor General Geology (GEL113) Georgetown College F2004 – S2011

Authorized Environmental Systems Research Institute (ESRI) instructor

- Taught Introduction to ArcGIS classes, 2004-2010. Conducted 2-3 classes per year teaching the basics of ArcGIS to a variety of GIS users

AWARDS

2017 **Certificate of Meritorious Service,** from the Geological Society of America Environmental and Engineering Geology Division for efforts made on behalf of the Division.

2008 **Poster Contest Winner**, *Geology of Mammoth Cave National Park, Kentucky,* Kentucky GIS Conference, Lexington, Ky.

GRANTS (awarded)

2017 FEMA Pre-Disaster Mitigation Grant Program, *Multi-Jurisdictional Hazard Mitigation Plan for Landslides for the Big Sandy Area Development District,* **$400, 000**

2014 Terracon Foundation, *Hydrologic Monitoring and Geophysical Characterization of Landslides*, **$2,500**

2010 U.S. Geological Survey, *Inventory Mapping and Characterization of Landslides Using LiDAR: Kenton and Campbell Counties, Kentucky*, **$15,000**

2007 National Park Service, *Derivative Geologic Map for Mammoth Cave National Park,* **$2,500**

PROFESSIONAL SERVICE AND AFFILIATIONS

- Current Member of the Geological Society of America (GSA)
- Current Member of the American Geophysical Union (AGU)
- Current Member of Kentucky Association of Mitigation Managers
- Past-Chair, Geological Society of America Environmental & Engineering Geology Division
- Committee Member, Geohazards in Transportation in the Appalachian Region
- Manuscript reviews for *Journal of Applied Geophysics, Bulletin of Engineering Geology and the Environment, Landslides, Engineering Geology, Environmental and Engineering Geoscience, Reviews in Geophysics, Quarterly Journal of Engineering Geology and Hydrogeology*

- Professional meeting sessions organized or chaired:

  Advances in Geophysical Methods for Characterizing and Monitoring Landslide Hazards (oral and poster) American Geophysical Union 2019 Fall Meeting, with Sebastian Uhlemann (Lawrence Berkeley National Laboratory) and Jim Whiteley (British Geological Survey)

  Landslide Inventories, Hazard Assessments, and Risk Reduction (oral), Geological Society of America 2019 Annual Meeting, with Stephen Slaughter (U.S. Geological Survey)

  Advances in Landslide Science to Assess Landslide Hazards and Risk (oral and poster), American Geophysical Union 2018 Fall Meeting, with Ben A. Leshchinsky (Oregon St. University), Jonathan W. Godt (U.S. Geological Survey), and Ching Hung (Nat. Cheng Kung University, Taiwan)

  Communicating Geologic Hazard and Risk: Sharing Successes, Failures, and Lessons Learned, Geological Society of America 2018 Annual Meeting with Stephen L. Slaughter and William J. Burns

  Landslide Inventories, Databases, Hazard Maps, Risk Analysis, and Beyond (poster), Geological Society of America 2017 Annual Meeting, with Stephen L. Slaughter and William J. Burns

  Advances in Data Collection and Delivery for Geohazards: Reaching Out to Stakeholders (oral), Geological Society of America 2016 Annual Meeting, with John Wall, Norman Levine, and Douglas C. Curl

  Landslide, Subsidence, and Debris Flow Hazards: Integrating Engineering Geology Research and Communication Solutions (oral), Geological Society of America 2015 Annual Meeting, with William J. Burns, Lynn M. Highland, and Francis K. Rengers

  Environmental and Engineering Geology (oral and poster), Geological Society of America 2014 Annual Meeting, with William J. Burns and Chester F. Watts

  Landslide Inventories, Data, Dissemination, and Risk Reduction (oral), Geological Society of America 2013 Annual Meeting, with William J. Burns and Lynn M. Highland

PUBLICATIONS

Peer-reviewed Journals

Crawford, M.M., Dortch, J.M., Koch, H.J., Killen, A.A., Zhu, J., Zhu, Y., Bryson, L.S., and Haneberg, W.C., Using landslide-inventory for a combined bagged-trees and logistic regression approach to landslide susceptibility in eastern Kentucky, *Landslides*, [submitted, in review].

Mirus, B.B., Jones, E., Baum, R.L., Godt, J.W., Slaughter, S., **Crawford, M.M.**, Lancaster, J., Stanley, T., Kirschbaum, D., Burns, W.J., Schmitt, R., Lindsey, K.O., McCoy, K., Landslides across the United States: Occurrence, susceptibility, and data limitations, *Landslides*, [accepted].

Crawford, M.M., Bryson, L.S., Woolery, E.W., and Wang, Z., 2019, Long-term monitoring using soil-water relationships and electrical data to estimate suction stress, *Engineering Geology*, v. 251, p. 146–157.

Crawford, M.M., Bryson, L.S., Woolery, E.W., and Wang, Z., 2018, Using 2-D electrical resistivity imaging for joint geophysical and geotechnical characterization of shallow landslides, *Journal of Applied Geophysics*, v. 157, p. 37–46.

Crawford, M.M., and Bryson, L.S., 2018, Assessment of active landslides using field electrical measurements, *Engineering Geology*, v. 233, p. 146–159.

Crawford, M.M., Carpenter, Wang, Z., and Carpenter, N.S., 2016, Earthquake and Landslide Hazard Assessment, Communication, and Mitigation in Kentucky, In: *Geoscience for the Public Good and Global Development: Toward a Sustainable Future*, Wessel G. and Greenburg, J., (eds.), Geological Society of America Special Paper 520, p. 359–369.

Crawford, M.M., Zhu, J., and Webb, S.E., 2015, Geologic, geotechnical, and geophysical investigation of a shallow landslide, eastern Kentucky, *Environmental & Engineering Geoscience*, v. 21, no. 3, p. 181–195.

Crawford, M.M., 2014, Inventory mapping and characterization of landslides using LiDAR: Kenton and Campbell Counties, Kentucky, Soller, D.R., ed., 2014, Digital Mapping Techniques '11–12 Workshop Proceedings: *U.S. Geological Survey Open-File Report* 2014–1167, 134 p.

Zhu, J., Taylor, T.P., Currens, J.C., and **Crawford, M.M**., 2014, Improved karst sinkhole mapping in Kentucky using LiDAR techniques: a pilot study in Floyds Fork Watershed, *Journal of Cave and Karst Studies*, v. 76, no. 3, p. 207–216.

Crawford, M.M., and Andrews, W.M., Jr., 2012, Assessing the early stages of landslide inventory, Soller, D.R., ed., 2012, Digital Mapping Techniques '10—Workshop Proceedings, Sacramento, California, May 16–19, 2010: *U.S. Geological Survey Open-File Report* 2012–1171, 170 p.

Fei, S., **Crawford, M**., and Schibig, J., 2010, Assisting natural resource management in Mammoth Cave National Park using geospatial technology, In: Hoalst-Pullen, N., and Patterson, M.W., (eds.), *Geospatial technologies in environmental management*: New York, Springer, p. 49–61.

Weisenfluh, G.A., Curl, D.C., and **Crawford, M.M**., 2005, The Kentucky Geological Survey's online geologic map and information system, Soller, D.R., (ed.), 2005, Digital Mapping Techniques '05– Workshop Proceedings: *U.S. Geological Survey Open-File Report* 2005–1428, 268 p.

Conference Papers

Chapella, H., Haneberg, W.C., **Crawford, M.M.**, and Shakoor, A., 2018, Landslide inventory and susceptibility models, Prestonsburg 7.5-min quadrangle, Kentucky, USA., In: Shakoor A., Cato, K. (eds.) IAEG/AEG Annual Meeting Proceedings, San Francisco, California, 2018–Volume 1.d https://doi.org/10.1007/978-3-319-93124-1_26.

Crawford, M. M., and Bryson, L.S., 2017, Geophysical and geotechnical field correlations for active landslides in Kentucky, In: De Graff, J.V., and Shakoor, A. (eds.), *Landslides: Putting Experience, Knowledge, and Emerging Technologies into Practice*, Proceedings of the 3rd North American Symposium on Landslides, Roanoke, Virginia, USA, Association of Environmental and Engineering Geologists Special Publication 27, p. 851–858.

Crawford, M.M., and Bryson L.S., 2016, Field observations of an active landslide in Kentucky, 1st International Conference on Natural Hazards and Infrastructure, Chania, Greece, June 28-30, 10 p.

Crawford, M. M., 2012, Understanding landslides in Kentucky: Tools and methods to further landslide hazard research. In: Eberhardt, E.; Froese, C.; Turner, K.A.; and Leroueil, S. (eds.), *Landslides and Engineered Slopes*, Proceedings of the 11th International and 2nd North American Symposium on Landslides, Banff, Alberta, Canada, Vol. 1, p. 467–472.

Kentucky Geological Survey Publications

Crawford, M.M., Bryson, L.S., Wang, Z., and Woolery, E.W., 2020, Geologic characterization, hydrologic monitoring, and soil-water relationships for landslides in Kentucky, Kentucky Geological Survey, Report of Investigations 11, Series 13, 27 p.

Crawford, M.M. and Bryson, L.S., 2017, Field investigation of an active landslide in Kentucky: A framework to correlate electrical data and shear strength, Kentucky Geological Survey, Report of Investigations 1, Series 13, 22 p.
Overfield, B.L., Carey, D.I., Weisenfluh, G.A., Wang, R., and **Crawford, M.M.**, 2015, The geologic context of landslide and rockfall maintenance costs in Kentucky, Kentucky Geological Survey, Report of Investigations 34, Series 12, 54 p.

Crawford, M.M., Zhu, J., and Webb, S.E., 2015, Geologic, geotechnical, and geophysical investigation of a shallow landslide, eastern Kentucky, Kentucky Geological Survey, Report of Investigations 29, Series 12, 39 p.

Crawford, M.M., 2014, Kentucky Geological Survey landslide inventory: From design to application, Kentucky Geological Survey Information Circular 31, Series 12, 18 p.

Potter, P.E., Bowers, M., Maynard, J.B., **Crawford, M.M.**, Weisenfluh, G.A., and Agnello, T., 2013, Landslides and your property: Indiana Geological Survey, 1 sheet.

Li, Q., Woolery, E.W., **Crawford, M.M.**, and Vance, D.M., 2013, Seismic velocity database for the New Madrid Seismic Zone and its vicinity, Kentucky Geological Survey, IC_27_12, 15 p.

Crawford, M.M., 2012, Using LiDAR to map landslides in Kenton and Campbell Counties, Kentucky: Kentucky Geological Survey Series XII, Report of Investigations 24, 12 p.

Andrews Jr., W.M., **Crawford, M.M.**, and Hickman, J.B., 2002, The Impact of Geology on the Culture and History of Central Kentucky, In: Ettensohn, F.R. and Smath, M.L., (Eds.), Guidebook for geology field trips in Kentucky and adjacent areas (2002 joint meeting of the North-Central Section and Southeastern Section of the Geological Society of America, Lexington, Ky.): Lexington, University of Kentucky, p. 108–128.

Maps

Crawford, M.M., 2011, Geology of Cumberland Gap National Historical Park, Kentucky Geological Survey, MCS_199_12.

Sparks, T.N., Solis, M.P., **Crawford, M.M.**, Greb, S.F., and Anderson, W.H., 2011, Geologic map of the Evansville and West Frankfort 30 x 60 minute quadrangles, western Kentucky, Kentucky Geological Survey, Geologic Map 29, Series 12.

Crawford, M.M., 2010, Geologic map of the Elizabethtown 30 x 60 minute quadrangle: central Kentucky. Kentucky Geological Survey, Geologic Map 23, Series 12.

Crawford, M.M., 2009, Geologic map of the Tell City and Jasper 30 x 60 minute quadrangles: western Kentucky. Kentucky Geological Survey, Geologic Map 18, Series 12.

Crawford, M.M., Olson, R.A., Toomey, R.S., III, and Scoggins, L.J., 2008, Geology of Mammoth Cave National Park, Kentucky, Kentucky Geological Survey, MCS_186_12.

Thompson, M.F., Plauche, S.T, and **Crawford, M.M.**, 2007, Geologic map of the Beaver Dam 30 x 60 minute quadrangle, western Kentucky, Kentucky Geological Survey, Geologic Map 15, Series 12.

Crawford, M.M., 2006, Geologic map of the Madisonville 30 x 60 minute quadrangle: western Kentucky. Kentucky Geological Survey, Geologic Map 12, Series 12.

Crawford, M.M., Beck, E.G., and Williams, D.A., 2005, Generalized geologic map for land-use planning: Hopkins County, Kentucky. Kentucky Geological Survey, MCS_91_12.

Crawford, M.M., 2005, Geologic map of the Hopkinsville 30 x 60 minute quadrangle: western Kentucky. Kentucky Geological Survey, Geologic Map 10, Series 12.

22 Digitally Vectorized Geologic Quadrangles, Kentucky Geological Survey, 2001-2007.

> Example citation: **Crawford, M.M.**, 2002, Spatial database of the Garfield quadrangle, Breckinridge County, Kentucky. Kentucky Geological Survey, ser. 12, Digitally Vectorized Geologic Quadrangle Data DVGQ-1278. Adapted from Amos, D.H., 1976, Geologic map of the Garfield quadrangle, Breckinridge County, Kentucky: U.S. Geological Survey Geologic Quadrangle Map GQ-1278, scale 1:24,000.

6 Surficial Geologic Map Kentucky Geological Survey Contract Reports

> Example citation: **Crawford, M.M.**, and Murphy, M.L., Quaternary geologic map of the Quicksand 7.5-minute quadrangle, Kentucky, Kentucky Geological Survey Contract Report 33, Series 12, scale 1:24,000, 1 sheet.

Conference Abstracts

Crawford, M.M., Koch, H.J., Dortch, J.M., and Killen, A.A., 2019, Preliminary landslide mapping and hazard assessment results for Magoffin County, Kentucky, Geological Society of America Abstracts with Programs, vol. 51, no. 5, doi: 10.1130/abs/2019AM-339185

Crawford, M.M., Koch, H.J., Dortch, J.M., Killen, A.A., and Haneberg, W.C., 2019, Comparison of LiDAR based landslide hazard assessments for eastern Kentucky, American Geophysical Union Fall Meeting, NH43B-07.

Crawford, M.M., Haneberg, W.C., Wang, Z., and Lynch, M.J., 2018, Landslide and earthquake hazard assessment and communication in Kentucky, Geological Society of America Abstracts with Programs, vol. 50, no. 6, doi: 10.1130/abs/2018AM-319188

Crawford, M.M., Bryson, L.S., Woolery, E.W., and Wang, Z., 2018, Long-term landslide monitoring using soil-water relationships and electrical resistivity tomography to estimate suction stress and shear strength, American Geophysical Union Fall Meeting, NH14A-06.

Crawford, M.M., 2017, Using electrical resistivity to assess landslides: Examples from Kentucky and Pennsylvania, Geological Society of America Abstracts with Programs, vol. 49, no. 6, doi: 10.1130/abs/2017AM-303959

Crawford, M.M., and Bryson, L.S., 2016, Geophysical and geotechnical field correlations of the Doe Run landslide, northern Kentucky, Geological Society of America Abstracts with Programs, vol. 48, no. 7, doi: 10.1130/abs/2016AM-281392

Crawford, M.M., Zhu, J., and Webb, S., 2014, Geologic, geotechnical, and geophysical investigation of a shallow landslide, eastern Kentucky, Geological Society of America Abstracts with Programs, vol. 46, no. 6, p. 714

Crawford, M.M., 2013, Monitoring and characterization of the Meadowview landslide, Boyd County, Kentucky, Geological Society of America Abstracts with Programs, vol. 45, no. 7, p. 642

Crawford, M.M., Olson, R.A., Toomey, R.S., and Scoggins, L.J., 2008, A new resource for the geology of Mammoth Cave National Park, Geological Society of America Abstracts with Programs, v. 40, No. 5, p. 67.

Crawford, M.M., and Andrews, Jr., W.M., 2008, Surficial geologic mapping in Eastern Kentucky: applications and questions, Geological Society of America Abstracts with Programs, v. 40, No. 4, p. 5.

Crawford, M.M., and Andrews Jr., W.M., 2008, The Kentucky Geological Survey's landslide initiative, Geological Society of America Abstracts with Programs, v. 40, No. 6, p. 174.

Crawford, M.M., and Andrews Jr., W.M., 2007, Using GIS to analyze and strengthen delivery of derivative geologic maps: three examples from the Kentucky Geological Survey, Geological Society of America Abstracts with Programs, v. 39, No. 2, p. 31.

Andrews Jr., W.M., **Crawford, M.M.**, and Kiefer, J.D., 2007, Landslide mapping in Eastern Kentucky, Geological Society of America Abstracts with Programs, v. 39, No. 2, p. 26.

Andrews Jr., W.M., **Crawford, M.M.**, 2007, Geological mapping and integrated data delivery for landslide assessment in Kentucky, Geological Society of America Abstracts with Programs, v. 39, No. 6, p. 135.

Crawford, M.M., Olson, R.A., Toomey, R.S., and Scoggins, L.J., 2007, Derivative geologic map of Mammoth Cave National Park: a joint project between the National Park Service and the Kentucky Geological Survey, Geological Society of America Abstracts with Programs, v. 39, No. 6, p. 376.

Currens, J.C., **Crawford, M.M.**, and Paylor, R.L., 2005, Karst potential and development indices: tools for mapping karst using GIS, Geological Society of America Abstracts with Programs, vol. 37, no. 2, pg. 48.

Carey, D.I., Beck, E.G., **Crawford, M.M.**, Davidson, B.O., Greb, S.F., Noger, M.C., Smath, R.A., and Williams, D.A., 2005, Land-use planning maps: soils and geology, Geological Society of America Abstracts with Programs, vol. 37, no. 7, p. 541.

Crawford, M.M., 2004, Digital geologic data and a new karst potential index map: A work in progress, Geological Society of America Abstracts with Programs, v. 36, No. 2, p. 137.

Weisenfluh, G.A., Curl, D.C., **Crawford, M.M.**, 2004, Delivering Kentucky geologic map information on the web, Geological Society of America Abstracts with Programs, vol. 36, No. 5, p. 440.

OTHER ACTIVITIES

- Entry-level experience with MATLAB
- Entry-level experience with statistical software program JMP
- Teach class lectures and electrical resistivity demos for UK EES Fundamental Geophysics (EES 550)

- Experience in conducting triaxial compression (CU) tests using Trautwein-GeoTac Triaxial Loading System and associated TruePath software
- Proficient in electrical resistivity surveying using the AGI SuperSting
- Proficient in GIS software ArcGIS 10.x (ESRI)
- Proficient in modeling and visualization software Quick Terrain Modeler (Applied Imagery)

SELECTED PRESENTATIONS

Comparison of LiDAR based landslide hazard assessments for eastern Kentucky, American Geophysical Union Fall Meeting, San Francisco, CA, 12/12/2019

Addressing landslides in Kentucky: A state perspective, Congressional Hazards Caucus, Hazards Caucus Alliance 2019 Briefing Series, Landslide science: nationwide risk reduction applications, Washington, D.C., 6/7/2019

Geologic hazard assessment at KGS: Research, project updates, and LiDAR, Kentucky Association of Mitigation Managers annual conference, Kentucky Dam Village State Park, 9/18/2019

Long-Term Landslide Monitoring Using Soil-Water Relationships and Electrical-Resistivity Tomography to Estimate Suction Stress and Shear Strength, American Geophysical Union Fall Meeting, Washington, D.C., 12/10/2018

Landslide and earthquake hazard assessment and communication in Kentucky, Geological Society of America Annual Meeting, Indianapolis, IN, 11/6/2018

Landslides in Kentucky: Tools and Methodologies to Further Hazard Assessment Kentucky Association of Mitigation Managers Regional Training, Jenny Wiley State Park, KY, 5/23/2018

Geologic Hazards in Kentucky: Tools and Methodologies to Further Hazard Assessment Kentucky Association of Mitigation Managers Regional Training, Calvert City, KY, 5/10/2018

Using Electrical Resistivity to Assess Landslides: Examples From Kentucky and Pennsylvania, Geological Society of America Annual Meeting, Seattle, WA, 10/23/2017

Landslides, in Kentucky: Mapping Modeling, & Collaboration, Kentucky Association of Mitigation Managers annual conference, Kentucky Dam Village State Park, 8/30/2017

Geo-electrical and Geotechnical Field Correlations for Active Landslides in Kentucky, North American Symposium on Landslides, Roanoke, VA, 6/8/2017

Electrical resistivity imaging of a multiple rockslide, Pittsburgh, PA, KGS Annual Seminar, poster, 5/19/2017

Research, Data Dissemination, and Service on Geologic Hazards at the KGS, for the Kentucky Association of Mitigation Managers regional training meeting, Grayson, KY., 4/25/2017

Research, Data Delivery, and Hazard Assessment at the Kentucky Geological Survey, Kentucky Association of Mitigation Managers (KAMM) Conference, Kentucky Dam Village State Park, 8/23/2016

Landslide Hazards, Kentucky Energy and Environment Cabinet/Dept. of Environmental Protection's GIS day, Frankfort, KY., 11/18/2015

The Kentucky Geological Survey Landslide Program: From Inventory to Targeted Research, Geological Society of America's annual meeting, Baltimore, MD, 11/2/2015

The Kentucky Geological Survey: A Geologic Hazard Management Overview, Kentucky Association of Mitigation Managers (KAMM) conference, Lake Cumberland, KY, 8/24/2015

The Kentucky Geological Survey Landslide Program: An Overview, Geohazards in Transportation in the Appalachian Region forum, Huntington, WV, 8/6/2015

Landslides in Kentucky: Inventory, Data Delivery, and Collaboration, Association of Environmental and Engineering Geologists professional landslide forum, Seattle, WA, 2/26/2015

Geologic, geotechnical, and geophysical investigation of a shallow landslide, eastern Kentucky (poster), Geological Society of America Annual Meeting, Vancouver, BC, Canada, 10/22/2014

Landslides in Kentucky, Kentucky Association of Mitigation Managers Annual Conference, Lake Barkley State Resort Park, Cadiz, KY, 9/10/2014

Landslides in Kentucky, Kentucky Emergency Management Quarterly Director's Meeting, Burlington, KY, 7/10/2014

Discovering Landforms, Kentucky Geological Survey Annual Meeting, Lexington, KY, 5/16/2014

Electrical Resistivity From A Geohazards and Engineering Perspective, Kentucky Geotechnical Engineering Group, Frankfort, KY, 4/16/2014

Using LiDAR to Map Landslides in Kenton and Campbell Counties, Kentucky, Kentucky GIS Conference, Louisville, KY, 9/27/2012

Monitoring and Characterization of the Meadowview Landslide, Boyd County, Kentucky: Preliminary Results, Geological Society of America Meeting, Denver, CO, 10/29/2013

Understanding landslides in Kentucky: Tools and methods to further landslide hazard research, International and N. American Symposium on Landslides, Banff, AB, Canada, 6/3-8/2012

Using LiDAR to map landslides in Kenton and Campbell Counties, Ky., Kentucky Transportation Cabinet GIS Conference, 3/29/2012

Geologic hazards in Kentucky, KY Emergency Management and Lexington-Fayette County Urban Government hazard mitigation meeting, Lexington, KY, 3/21/2012

Inventory mapping and characterization of landslides using LiDAR: Kenton and Campbell Counties, Geological Society of America Annual Meeting, Minneapolis, MN, 10/10/2011

LiDAR Technology Applied to Surficial Geologic Mapping and Landslide Research, KGS Annual Meeting, Lexington, KY, 5/14/2010

Surficial Geologic Mapping Applied to Landslide Research, KY Association of Mapping Professionals (KAMP) Geospatial Summit, Frankfort, KY, 9/9-10/2009

Surficial geologic mapping in eastern Kentucky: applications and questions; SE Section Geological Society of America Meeting, Charlotte, NC, 4/10/2008