

William M. Andrews Jr.

Research Geologist and Section Head (Geologic Mapping), Kentucky Geological Survey
University of Kentucky; Lexington, Kentucky
Curriculum Vitae, September 2009

Contact Information

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Education

1993, B.S., Geological Sciences, University of Kentucky, Lexington, Ky.
1993-94, graduate study, Geology, Duke University, Durham, NC.
1997, M.S., Geological Sciences, University of Kentucky, Lexington, Ky. Thesis title: "Structural control on the origin and nature of the Brassfield Formation (Lower Silurian) west of the Cincinnati Arch, Kentucky"
2004, Ph.D., Geological Sciences, University of Kentucky, Lexington, Ky. Dissertation title: "Geological controls on Plio-Pleistocene drainage evolution of the Kentucky River in central Kentucky"

Professional Registration

Kentucky Registered Professional Geologist #2262

Current Employment

Section Head, Geologic Mapping Section, Kentucky Geological Survey

Primary responsibility is oversight of Quaternary mapping and geomorphology projects for USGS StateMap grant including management and supervision of project personnel.

Other interests and activities include physiography, landforms, soils, and landscapes; fluvial erosion and geomorphology; geological and geomorphic context of archaeological sites; application of GIS technology and spatial analysis techniques to solve geological problems; impact of geology on human history and society; communicating geologic information to land-use planners and other non-geological audiences; historic mineral industries (esp. salt, iron and coal).

Past activities include coal resource assessment, coal stratigraphy and sedimentology, coal quality and petrology.

Funding/Fiscal Management

2000-2001

Coal Availability Program (U.S. Geological Survey): \$100,000, PI

2001-2002

Coal Availability Program (U.S. Geological Survey): \$50,000, PI

Geomorphic context of archaeological sites, Boone County (Kentucky Archaeological Survey): \$5,000, PI

2002-2003

Coal Availability Program (U.S. Geological Survey): \$70,000, co-PI

2003-2004

Coal Availability Program (U.S. Geological Survey): \$35,000, co-PI

Surficial Mapping project manager, StateMap Program (U.S. Geological Survey): \$8,000 (not PI)

2004-2005

Surficial Mapping Project, StateMap Program (U.S. Geological Survey): \$245,000, co-PI

2005-2006

Surficial Mapping Project, StateMap Program (U.S. Geological Survey): \$205,000, co-PI

2006-2007

Surficial Mapping Project, StateMap Program (U.S. Geological Survey): \$197,000, PI

Prototype Land-use Map for Landslides, Landslide Hazards Program (U.S. Geological Survey): \$10,400, PI
2007-2008

Surficial Mapping Project, StateMap Program (U.S. Geological Survey): \$234,000, PI
2008-2009

Surficial Mapping Project, StateMap Program (U.S. Geological Survey): \$215,000, PI
2009-2010

Surficial Mapping Project, StateMap Program (U.S. Geological Survey): \$208, 000, PI

Teaching activities

Adjunct Assistant Professor, Department of Geography, University of Kentucky (adjunct graduate faculty)

Instructor and coordinator, Review of Practical Geology, workshop for geologists preparing for professional licensure exams, 2000 to 2005.

Instructor and adjunct faculty, Georgetown College, taught General Geology course for Environmental Science majors and non-major undergraduates, 1997 to 2000.

Instructor, University of Kentucky, Environmental Geology, May 1996

Instructor, University of Kentucky, Historical Geology and lab, Spring 1995

Teaching Assistant, University of Kentucky, Physical Geology (for education majors), Fall 1995

Professional Organizations

Geological Society of America

Kentucky Society of Professional Geologists

Professional Outreach

Governor's Geographic Information Advisory Council (GIAC); Sept 2009-2013

Kentucky Emergency Management GIS response Team; in development

Publications

Reviewed Publications

Andrews, W.M. Jr., in review, Landform regions of Kentucky. Kentucky Geological Survey Map and Chart Series, 1 sheet.

Moore, D.W., Lundstrom, S.C., Counts, R.C., Martin, S.L., Andrews, Jr., W.M., Newell, W.L., Murphy, M.L., Thompson, M.F., Taylor, E.M., Kvale, E.P., and Brandt, T.R., 2009, Surficial geologic map of the Evansville, Indiana, and Henderson, Kentucky, area: U.S. Geological Survey Scientific Investigations Map 3069, scale 1:50,000, 21-p. pamphlet. [Available at URL <http://pubs.usgs.gov/sim/3069>]

Andrews, W.M., Jr., 2006, Geologic controls on Plio-Pleistocene drainage evolution of the Kentucky River in central Kentucky: Kentucky Geological Survey Thesis Series, ser. 12, n. TS 4, 216 p.

Andrews, W.M., Jr., Martin, S.L., Counts, R.C., Beck, E.G., Nuttall, B.C., Durbin, J.M., Waninger, S.E., Lutz, J.D., and Henn, K.E., 2006, Geomorphology and Quaternary Geology of the Lower Ohio River Valley—Mapping and Applications: Guidebook for Joint Field Conference of the KSPG and the Kentucky Section of the AIPG, 57 p.

Andrews, W.M. Jr, 2005, Geology and the Civil War in central Kentucky—Camp Nelson: Field Trip Guidebook, American Institute of Professional Geologists Annual Meeting, 25 p.

Andrews, W.M. Jr., 2005, Quaternary geologic map of part of the Owensboro East 7.5-minute quadrangle, western Kentucky: Kentucky Geological Survey draft geologic map, scale 1:24,000; prepared for USGS StateMap program.

Phillips, J.D., Martin, L.L., Nordberg, V.G., and Andrews, W.M., 2004, Divergent evolution in fluvio-karst landscapes of central Kentucky: Earth Surface Processes and Landforms, v. 29, p. 799-819.

Greb, S.F., Andrews, W.M., Eble, C.F., DiMichele, W., Cecil, C.B., and Hower, J.C., 2003, Desmoinesian coal beds of the Eastern Interior and surrounding basins: The largest tropical peat mires in earth history, *in* Chan, M.A., and Archer, A.W., eds., Extreme depositional environments: Mega-end members in geologic time: Geological Society of America, Special Publication 370, p. 127-150.

- Ruthven, C.L., Kiefer, J.D., Greb, S.F., and Andrews, W.M., 2003, Geologic maps and geologic issues in Kentucky; a citizen's guide: Kentucky Geological Survey, series 12, Special Publication No. 3, 27 p.
- Ehlen, J, Abrahart, R.J., and Andrews, W.M., 2003, Field artillery and terrain in the American Civil War: the Battle of Perryville, October 8, 1862: Proceedings, The International Conference On Military Geography And Geology, extended abstract with figures on CDROM.
- Andrews, W.M., Crawford, M.M., Hickman, J.B., 2002, Influence of geology on the military and cultural history of the Bluegrass Region, Kentucky, in Ettensohn, F.R., and Smath, M.L., eds., Guidebook for Geology Field Trips in Kentucky and Adjacent Areas: Geological Society of America/University of Kentucky, p. 108-128.
- Andrews, W.M., Ettensohn, F.R., Gooding, P.J., and Smath, M.L., 2002, Impact of Geology on Human History at Camp Nelson and Perryville, Central Kentucky: Kentucky Society for Professional Geologists Annual Field Trip Guidebook, September 19-21, 112 p.
- Greb, S.F., Eble, C.F., Hower, J.C., and Andrews, W.M., 2002, Multiple-bench architecture and interactions of original mire phases-Examples from the Middle Pennsylvanian of the Central Appalachian Basin, USA: International Journal of Coal Geology, v. 49, p. 147-175.
- Greb, S.F., Chesnut, D.R., Jr., Dever, G.R., Jr., Harris, D.C., Ettensohn, F.R., Mason, C.E., Andrews, W.M., Howell, P.D., Eble, C.F., Caudill, M.R., Houck, K.J., and Nelson, W.J., 2002, Pound Gap--A new reference section for Mississippian strata on Pine Mountain, central Appalachian Basin, U.S.A., in Hills, L.V., Henderson, C.M., and Bamber, E.W., eds., Carboniferous and Permian of the world: Canadian Society of Petroleum Geologists, Memoir 19, p. 696-709.
- Woods, A.J., Omernik, J.M., Martin, W.H., Pond, G.J., Andrews, W.M., Call, S.M., Comstock, J.A., and Taylor, D.D., 2002, Ecoregions of Kentucky (color poster with map, descriptive text, summary tables, and photographs), Reston VA, U.S. Geological Survey, color poster with map, (map scale 1:1,000,000).
- Weisenfluh, G.A., W.M. Andrews, and J.K. Hiatt, 2001, "Coal availability in western Kentucky," KGS Report of Investigations No 8, Series XII, 29 pp.
- Andrews, W.M., 2000, "Influence of geology on the history of central Kentucky," National Speleological Society Convention Guidebook, p. 111-125.
- Andrews, W.M., Andrews, R.E., and Hiatt, J.K., 2000, "Coal resources of the Springfield coal bed in western Kentucky," KGS Map and Chart Series 10, ser. XII, 1 sheet.
- Andrews, W.M., Greb, S.F., and Andrews, R.E., 2000, "Structure and overburden of the Springfield coal bed in western Kentucky," KGS Map and Chart Series 11, ser. XII, 1 sheet.
- Andrews, W.M., Sweet, M., and Woolery, E., 2000, Review of practical geology: Kentucky Society of Professional Geologists Workshop Course Notebook, 120 p.
- Eble, C.F., J.C. Hower, and W.M. Andrews Jr. (1999) Compositional variations in the Fire Clay Coal Bed of Eastern Kentucky: geochemistry, petrography, palynology, and paleoecology. Kentucky Geological Survey, series 11, Report of Investigations 14.
- Anderson, W.H. and G.R. Dever Jr., eds, with contributions by B.C. Nuttall, G.A. Weisenfluh, T.D. Hounshell, W.M. Andrews Jr., and J.R. Hiatt (1998) Mineral and fuel resources map of Kentucky. Kentucky Geological Survey, series 11, Map and Chart Series MCS 21, 1 sheet.
- Thacker, E.E., G.A. Weisenfluh, and W.M. Andrews Jr., 1998, Total coal thickness of the Lower Elkhorn coal in eastern Kentucky. Kentucky Geological Survey Map and Chart Series MCS 20.
- Eble, C.F., S.F. Greb, and G.R. Dever, Jr., eds. (1998) Geology of the Pound Gap Roadcut, Letcher County, Kentucky. Field Trip Guidebook for Annual Field Conference of the Kentucky Society of Professional Geologists, September 25-26, 1998. (Contributed to three field trip stops and two invited papers.)
- Hower, J.C., K.W. Kuehn, B.K. Parekh, and W.M. Andrews Jr. (1997) Maceral and microlithotype response to oil agglomeration for selected eastern Kentucky high volatile A bituminous coals. Fuel Processing Technology, v. 50, p. 185-198.
- Andrews, W.M., Hower, J.C., Eble, C.F., Ferm, J.C., Evans, S.D., Sirek, N.S., and Warrell, M.J., 1996, A depositional model for the Taylor coal bed, Martin and Johnson counties, eastern Kentucky, in Hower, J.C., and C.F. Eble, eds., Geology and Petrology of Appalachian Coals (special issue): International Journal of Coal Geology, v. 31, p. 151-167.
- Andrews, W.M., Hower, J.C., and Hiatt, J.K., 1994, Lithologic and geochemical investigations of the Fire Clay coal bed, southeastern Kentucky, in the vicinity of sandstone washouts: International Journal of Coal Geology, v. 26, p. 95-115.
- Eble, C.F., J.C. Hower, and W.M. Andrews Jr. (1994) Paleoecology of the Fire Clay coal bed in a portion of the Eastern Kentucky Coal Field. Palaeogeography, Palaeoclimatology, Palaeoecology, v. 106, p. 287-305.

Hower, J.C., W.M. Andrews Jr., G.D. Wild, C.F. Eble, F.T. Dulong, and T.L. Salter (1994) Quality of the Fire Clay coal bed, southeastern Kentucky. *Journal of Coal Quality*, v. 13, n. 1, p. 13-26.

Digital Data

- Andrews, W.M., Jr., Patton, J.A., Clark, L., Hesley, J., and Lambert, J.R., 2006, Spatial database of the Booneville quadrangle, Owsley and Lee Counties, Kentucky: Kentucky Geological Survey Digitally Vectorized Geologic Quadrangle, ser. 12, n. DVGQ 1479.
- Thompson, M.F., Toth, K.S., Mullins, J.E., and Andrews, W.M., Jr., 2006, Spatial database of the Cromwell quadrangle, Butler and Ohio Counties, Kentucky: Kentucky Geological Survey Digitally Vectorized Geologic Quadrangle, ser. 12, n. DVGQ 1250.
- Toth, K.S., Thompson M.F. and Andrews, W.M., Jr., 2006, Spatial database of the Horton quadrangle, Ohio County, Kentucky: Kentucky Geological Survey Digitally Vectorized Geologic Quadrangle, ser. 12, n. DVGQ 915.
- Andrews, W.M., Jr., Patton, J.A., Hesley, J., and Lambert, J.R., 2005, Spatial database of the Hazard South quadrangle, Kentucky: Kentucky Geological Survey Digitally Vectorized Geologic Quadrangle, ser. 12, n. DVGQ 343.
- Andrews, W.M., Jr., Patton, J.A., Hesley, J., and Lambert, J.R., 2005, Spatial database of the Noble quadrangle, Kentucky: Kentucky Geological Survey Digitally Vectorized Geologic Quadrangle, ser. 12, n. DVGQ 1476.

Dissertation

Andrews, W.M., 2004, Geological controls on Plio-Pleistocene drainage evolution of the Kentucky River in central Kentucky: University of Kentucky, PhD dissertation, 222 p. <http://www.uky.edu/ETD>

Thesis

Andrews, W.M., 1997, Structural control on the origin and nature of the Brassfield Formation (Lower Silurian) west of the Cincinnati Arch, Kentucky: University of Kentucky, M.S. thesis, 120 p.

Abstracts

- Martin, S.L., Andrews, W.M., Counts, R.C., Crawford, M.M., Sparks, T.N., Murphy, M., and Waninger, S., 2009, Geologic Mapping Section projects at the Kentucky Geological Survey (abstract): *Geological Society of America Abstracts with Programs*, v. 41, n. 1, p. 11.
- Andrews, W.M., 2008, Creating multiple technical derivatives from digital geologic maps (abstract): *Geological Society of America Abstracts with Programs*, v. 40, n. 5, p. 15.
- Andrews, W.M., Wang, Z., and Kiefer, J.D., 2008, Ground-truthed seismic hazard maps derived from detailed quaternary geologic maps in the Ohio River Valley, Western Kentucky (abstract): *Geological Society of America Abstracts with Programs*, v. 40, n. 6, p. 85.
- Crawford, M.M., and Andrews, W.M., 2008, The Kentucky Geological Survey's Landslide Initiative (abstract): *Geological Society of America Abstracts with Programs*, v. 40, n. 6, p. 174.
- Crawford, M.M., Andrews, W.M., and Murphy, M., 2008, Surficial geologic mapping in Eastern Kentucky: applications and questions (abstract): *Geological Society of America Abstracts with Programs*, v. 40, n. 4, p. 5.
- Andrews, W.M., Jr., Crawford, M.M., and Kiefer, J.D., 2007, Landslide mapping in Eastern Kentucky (abstract): *Geological Society of America Abstracts with Programs*, v. 39, n. 2, p. 26.
- Andrews, W.M., Jr., Crawford, M.M., and Weisenfluh, G.A., 2007, Geological mapping and integrated data delivery for landslide assessment in Kentucky (abstract): *Geological Society of America Abstracts with Programs*, v. 39, n. 6, p. 135.
- Crawford, M.M., and Andrews, W.M., Jr., 2007, Using GIS to analyze and strengthen delivery of derivative geologic maps—three examples from the Kentucky Geological Survey (abstract): *Geological Society of America Abstracts with Programs*, v. 39, n. 2, p. 31.
- Andrews, W.M., Jr., Martin, S.L., Counts, R.C., Crawford, M.M., and Weisenfluh, G.A., 2006, Using digital technology to collect, manage, interpret and deliver geologic mapping data in Kentucky (abstract): 6th Annual Technical Forum, *Geohazards In Transportation In The Appalachian Region*, p. 4
- Andrews, W.M., Jr., 2006, Knickpoint styles on tributary streams in the Kentucky River Valley, Central Kentucky (abstract): *Geological Society of America Abstracts with Programs*, v. 38, n. 3, p. 27.
- Andrews, W.M., Jr., and Counts, R.C., 2006, Communicating new Quaternary mapping results to nongeological end users (abstract): *Geological Society of America Abstracts with Programs*, v. 38, n. 3, p. 64.

- Andrews, W.M., Jr., Martin, S.L., Counts, R.C., Crawford, M.M., and Weisenfluh, G.A., 2006, Using digital technology to collect, manage, interpret and deliver geologic mapping data in Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 38, n. 7, p. 163.
- Thompson, M.F., Andrews, R.C., Counts, R.C., Martin, S.L., and Murphy, M.L., 2006, Quaternary facies models from new Ohio River Valley mapping in Western Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 38, n. 3, p. 76.
- Counts, R.C., and Andrews, W.M., Jr., 2006, New mapping of Late Pleistocene slackwater deposits in the Lower Ohio River Valley, Western Kentucky(abstract): Geological Society of America Abstracts with Programs, v. 38, n. 4, p. 26.
- Kiefer, J.D., and Andrews, W.M., Jr., 2006, Landslides in the Eastern Kentucky Coal Field (abstract): Geological Society of America Abstracts with Programs, v. 38, n. 7, p. 95.
- Martin, S.L., Andrews, W.M., Jr., Counts, R.C., Thompson, M.F., and Murphy, M.L., 2006, Digital techniques supporting Quaternary geologic mapping in the Ohio River Valley, Western Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 38, n. 3, p. 29.
- Andrews, W.M., Jr., 2005, Plio-Pleistocene geologic history of the Kentucky River valley in central Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 37, n. 5, p. 31.
- Andrews, W.M. Jr., 2005, Surficial geologic maps for geotechnical audiences (abstract): Proceedings, American Institute of Professional Geologists Annual Meeting, p.23.
- Counts, R.C., Andrews, W.M., Jr., and Martin, S.L., 2005, Producing digital surficial geologic maps for diverse audiences (abstract): Geological Society of America Abstracts with Programs, v. 37, n. 2, p. 48.
- Counts, R.C., Andrews, W.M., Jr., and Martin, S.L., 2005, New interpretations of Quaternary deposits in the Ohio River valley in western Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 37, n. 5, p. 31.
- Johnson, S., and Andrews, W.M., Jr., 2005, Inter-disciplinary cooperative investigations at Big Bone Lick State Park, northern Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 37, n. 5, p. 14.
- Martin, S.L., Andrews, W.M., Jr., Counts, R.C., and Thompson, M.F., 2005, Surficial geologic mapping along the Ohio River, western Kentucky – preliminary results (abstract): Geological Society of America Abstracts with Programs, v. 37, n. 5, p. 31.
- Von Mann, R.A., Andrews, W.M., Jr., Galvin, R., Brown, D., Rimmer, S.M., and Rowe, H., 2005, Developing the paleoenvironmental record from Big Bone Lick, Kentucky—mineralogical, geochemical, and isotopic constraints (abstract): Geological Society of America Abstracts with Programs, v. 37, n. 5, p. 14.
- Andrews, W.M., 2004, Migrating landform patterns through time; landscape evolution in the Kentucky River valley (abstract): Geological Society of America Abstracts with Programs, v. 36, n. 2, p. 95.
- Andrews, W.M., 2004, Kentucky's landscape and the Civil War campaigns for Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 36, n. 2, p. 76.
- Weisenfluh, G.A., and Andrews, W.M., 2004, Roadcut database for eastern Kentucky coal-bearing rocks (abstract): Geological Society of America Abstracts with Programs, v. 36, n. 2, p. 115.
- Andrews, W.M., 2003, A new physiographic map of Kentucky developed using GIS (abstract): Kentucky Academy of Science Proceedings.
- Ehlen, J, Abrahart, R.J., and Andrews, W.M., 2003, Field artillery and terrain in the American Civil War: the Battle of Perryville, October 8, 1862 (abstract): Proceedings, The International Conference On Military Geography And Geology, p. 19.
- Andrews, W.M., 2003, Pre-Wisconsin spillways along the Licking River-Kentucky River divide, central Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 35, n. 1, p. 71.
- Andrews, W.M., 2002, Using GIS to develop a new physiographic map of Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 34, n. 2, p. A-22.
- Andrews, W.M., 2002, Geology and the Battle of Perryville (abstract): Geological Society of America Abstracts with Programs, v. 34, n. 2, p. A-105.
- Overfield, B.L., and Andrews, W.M., 2002, Coal resource estimates; communicating results to the public (abstract): Geological Society of America Abstracts with Programs, v. 34, n. 2, p. A-21.
- Campbell, T.L. and Andrews, W.M., 2001, Coal thickness and stratigraphy of the Davis and Dekoven coals in western Kentucky (abstract): Geological Society of America Abstracts with Programs, v. 33, n. 2, p. A-60.
- Andrews, W.M., 2001, "Kentucky Coal resources CD-ROM (abstract): Geological Society of America Abstracts with Programs, v. 33, n. 2, p. A-61.

- Andrews, W.M., 2001, Geological context of archaeological sites, Boone County, Ky (abstract, poster): Kentucky Archaeological Society Annual Meeting, March 19 2001.
- Greb, S.F., Weisenfluh, G.A., Thacker, E.E., Andrews, W.M., and Eble, C.F., 2000, Mining geology of the Pond Creek-Lower Elkhorn coal, Pikeville Formation, Eastern Kentucky Coal Field (abstract): Lexington, Kentucky Academy of Science Annual Meeting, Geology Session Program and Abstracts, p.4.
- Andrews, W.M., 2000, An overview of coal in the Civil War (abstract): Geological Society of America Abstracts with Programs, v. 32, n. 2, p. A-3.
- Andrews, W.M. Jr., E.E. Thacker, G.A. Weisenfluh, and J.C. Hower, 1998, Coal-bed facies and coal-quality mapping: Application of a comprehensive GIS for resource analysis (abstract): Proceedings, The Society for Organic Petrology.
- Andrews, W.M. Jr. and F.R. Ettensohn, 1996, Regional and local structural controls on deposition of the Lower Silurian (Llandoveryan) Brassfield Formation west of the Cincinnati arch (abstract): The James Hall Symposium, Second International Symposium on the Silurian System, Program and Abstracts, University of Rochester, p. 25.
- Andrews, W.M., Jr., and F.R. Ettensohn, 1996, Local and regional structural controls on deposition of the Brassfield Formation west of the Cincinnati arch, Kentucky (abstract). Geological Society of America Abstracts with Programs, v. 28, n. 2, p. 2.
- Andrews, W.M., Jr., and J.C. Hower, 1996, Coal production in Perry County, Kentucky: Effects of markets, technologies, and transportation availability (abstract). Geological Society of America Abstracts with Programs, v. 28, n. 2, p. 2.
- Andrews, W.M., Jr., N.S. Sirek, M.J. Warrell, S.D. Baxter, J.C. Ferm, and J.C. Hower, 1993, Quality variation in the Taylor coal bed, Johnson and Martin Counties, Kentucky (abstract). Geological Society of America Abstracts with Programs, v. 25, n. 6, p. 139.
- Andrews, W.M., and Hower, J.C., 1992, Fire Clay coal and sandstone washouts (abstract). Geological Society of America Abstracts with Programs, v. 24, n. 7, p. 164.