10
CHAPTER 10
REFERENCES

Abdel-Rahman, A.-F.M., and Kumarapeli, P.S., 1998, Geochemistry of mantle-related intermediate rocks from the Tibbit Hill volcanic suite, Quebec Appalachians: *Mineralogical Magazine*, v. 62, no. 4, pp. 487-500.

Abdel-Rahman, A.-F.M., and Kumarapeli, P.S., 1999, Geochemistry and petrogenesis of the Tibbit Hill metavolcanic suite of the Appalachian fold belt, Quebec-Vermont: A plume-related and fractionated assemblage: *American Journal of Science*, v. 299, pp. 210-237.

Adams, J., and Basham, P., 1989, The seismicity and seismotectonics of Canada east of the Cordillera: *Geoscience Canada*, v. 16, pp. 3-16.

Adams, J., and Basham, P., 1991, The seismicity and seismotectonics of eastern Canada: in Slemmons, D.B., Engdahl, E.R., Zoback, M.D., and Blackwell, D.D. (editors), *Neotectonics of North America*, Geological Society of America, Decade Map, Volume 1.

Adams, J., Basham, P.W., and Halchuk, S., 1995, Northeastern North American earthquake potential—New challenges for seismic hazard mapping: *Current Research 1995-D*, Geological Survey of Canada, pp. 91-99.

Adams, J., and Halchuk, S., 2003, *Fourth Generation Seismic Hazard Maps of Canada: Values for over 650 Canadian Localities Intended for the 2005 National Building Code of Canada*: Geological Survey of Canada, Open File 4459, 155 pp.

Adams, J., and Simmons, D.G., 1991, *Relocation of Earthquakes in the Labrador Sea and Southern Labrador*: Geological Survey of Canada Open File 2326, 103 pp.

Adams, J., Vonk, A., Pittman, D., and Vatcher, H., 1989, *New Focal Mechanisms for Southeastern Canadian Earthquakes—Volume II*: Geological Survey of Canada Open File Report 1995, 97 pp.

Adams, J., Weichert, D.H., Halchuk, S., and Basham, P.W, 1996, *Trial Seismic Hazard Maps of Canada—1995: Final Values for Selected Canadian Cities*: Geological Survey of Canada, Open File 3283, 97 pp.

Advanced National Seismic System (ANSS), Composite Earthquake Catalog, website, http://quake.geo.berkeley.edu/cnss/, last modified August 17, 2011.

Aitken, M.J., 1990, *Science-Based Dating in Archaeology*: Longman Group, London and New York, 274 pp.

Aitken, M.J., 1998, *An Introduction to Optical Dating: The Dating of Quaternary Sediments by the Use of Photon-Stimulated Luminescence*: Oxford University Press, 280 pp.

Akaike, H., 1974, A new look at the statistical model identification: *IEEE Transactions on Automatic Control*, v. 19, no. 6, pp. 716-723.

Aki, K., 1965, Maximum likelihood estimate of *b* in the formula log $N = a – bM$ and its confidence limits: *Bulletin of the Earthquake Research Institute* [University of Tokyo], v. 43, pp. 237-239.

Aleinikoff, J.N., Zartman, R.E., Walter, M., Rankin, D.W., Lyttle, P.T., and Burton, W.C., 1995, U-Pb ages of metarhyolites of the Catoctin and Mount Rogers Formations, central and southern Appalachians: Evidence for two pulses of Iapetan rifting: *American Journal of Science*, v. 295, pp. 428-454.

Allen, J.R.L., 1982, *Sedimentary Structures: Their Character and Physical Basis*: Elsevier, Amsterdam.

Ambraseys, N.N., 1988, Engineering seismology: *Earthquake Engineering and Structural Dynamics*, v. 17, pp. 1-105.

American Association of Petroleum Geologists (AAPG), 1995a, Geological Highway Map of the Northeastern Region, AAPG Highway Map number 10: American Association of Petroleum Geologists, Tulsa, Okla.

American Association of Petroleum Geologists (AAPG), 1995b, Geological Highway Map of the Southeastern Region, AAPG Highway Map number 9: Tulsa, OK: American Association of Petroleum Geologists, Tulsa, Okla.

American Nuclear Society, 2008a, *Criteria for Investigations of Nuclear Facility Sites for Seismic Hazard Assessments*: National Standard ANSI/ANS-2.27-2008.

American Nuclear Society, 2008b, *Probabilistic Seismic Hazard Analysis*: National Standard ANSI/ANS-2.29-2008.

American Petroleum Institute, 2000, Recommended Practice for Planning, Designing, and Constructing Fixed Offshore Platforms—Working Stress Design: American Petroleum Institute Standard RP 2A-WSD, 21st Edition, 242 pp.

Amick, D., and Gelinas, R., 1991, The search for evidence of large prehistoric earthquakes along the Atlantic seaboard: *Science*, v. 251, pp. 655-658.

Amick, D., Gelinas, R., Maurath, G., Cannon, R., Moore, D., Billington, E., and Kemppinen, H., 1990, *Paleoliquefaction Features along the Atlantic Seaboard*: U.S. Nuclear Regulatory Commission, NUREG/CR-5613 RA, 146 pp.

Amick, D., Maurath, G., and Gelinas, R., 1990, Characteristics of seismically induced liquefaction sites and features located in the vicinity of the 1886 Charleston, South Carolina earthquake: *Seismological Research Letters*, v. 61, no. 2, pp. 117-130.

Amick, D.C., 1990, Paleoliquefaction Investigations Along the Atlantic Seaboard with Emphasis on the Prehistoric Earthquake Chronology of Coastal South Carolina: unpublished Ph.D. dissertation, University of South Carolina.

Ammon, C.J., Herrmann, R.B., Langston, C.A., and Benz, H., 1998, Faulting parameters of the January 16, 1994 Wyomissing Hills, Pennsylvania earthquakes: *Seismological Research Letters*, v. 69, no. 3, pp. 261-269.

Anderson, K., and Spotila, J., 2001, The relationship of geologic structure to the Giles County seismic zone in Southwest Virginia, based on fracture mapping in allochthonous Paleozoic strata [abstract]: Geological Society of America *Abstracts with Programs*, v. 33, no. 2, p. 1.

Anderson, N.L., 1997, Subsurface Structure of the Commerce English Hill and Related Faults in the Benton Hills of Southeastern Missouri: Collaborative research, University of Missouri-Rolla, Department of Geology and Geophysics, and Missouri Department of Natural Resources Division of Geology and Land Survey, U.S. Geological Survey Award No. 1434-HQ-97-GR-03038, Project Summary, 4 pp.

Anderson, T.H., and Schmidt, V.A., 1983, The evolution of middle America and the Gulf of Mexico–Caribbean Sea region during Mesozoic time: *Geological Society of America Bulletin*, v. 94, pp. 941-966.

Anderson, T.W., and Lewis, C.F.M., 1975, Acoustic profiling and coring in Lake Ontario, Lake Erie and Georgian Bay: in Geological Survey of Canada Paper 75-1, Part A, pp. 373-376.

Andrus, R., and Heidari, T., 2009, Mapping liquefaction potential of soil deposits near Charleston, SC: abstract and talk presented at the meeting of the Central and Eastern U.S. (CEUS) Earthquake Hazards Program.

Angell, M., and Hitchcock, C., 2007, A geohazard perspective of recent seismic activity in the northern Gulf of Mexico: *2007 Offshore Technology Conference Proceedings*, May, Paper No. 19035, 8 pp.

Armbruster, J.G., 2002, Updates to the NCEER91 Catalog, files obtained from http://www.ldeo.columbia.edu/~armb/HIST/.

Armbruster, J.G., Seeber, L., Barstow, N., Kim, W.Y., and Horton, S., 1994, The Jan. 1994 Wyomissing Hills earthquakes (m_{bLg} = 4.0 & 4.6) in southeastern Pennsylvania: A 2-km-long northwest-striking fault illuminated by aftershocks [abstract]: *Eos, Transactions of the American Geophysical Union*, v. 75, no. 16, p. 237.

Atekwana, E.A., 1996, Precambrian basement beneath the central Midcontinent United States as interpreted from potential field data: in van der Pluijm, B.A., and Catacosinos, P.A. (editors), *Basement and Basins of Eastern North America*, Geological Society of America Special Paper 308, pp. 33-44.

Atkinson, G., 2008, Ground-motion prediction equations for eastern North America from a referenced empirical approach: Implications for epistemic uncertainty: *Bulletin of the Seismological Society of America*, v. 98, no. 3, pp. 1304-1318.

Atkinson, G.M., 1993, Earthquake source spectra in Eastern North America: *Bulletin of the Seismological Society of America*, v. 83, no. 6, pp. 1778-1798.

Atkinson, G.M., 2004a, Empirical attenuation of ground-motion spectral amplitudes in southeastern Canada and the northeastern United States: *Bulletin of the Seismological Society of America*, v. 94, no. 3, pp. 1079-1095.

Atkinson, G.M., 2004b, Erratum to "Empirical attenuation of ground-motion spectral amplitudes in southeastern Canada and the northeastern United States": *Bulletin of the Seismological Society of America*, v. 94, no. 6, pp. 2419-2423.

Atkinson, G.M., and Boore D.M., 1987, On the m_N, M relation for eastern North American earthquakes: *Seismological Research Letters*, v. 58, no. 4, pp. 119-124.

Atkinson, G.M., and Boore, D.M., 1995, Ground-motion relations for eastern North America: *Bulletin of the Seismological Society of America*, v. 85, no. 1, pp. 17-30.

Atkinson, G.M., and Boore, D.M., 2006, Earthquake ground-motion prediction equations for eastern North America: *Bulletin of the Seismological Society of America*, v. 96, pp. 2181-2205.

Atkinson, G.M., and Hanks, T.C., 1995, A high-frequency magnitude scale: *Bulletin of the Seismological Society of America*, v. 85, pp. 825-833.

Atkinson, G.M., Kaka, S.I., Eaton, D., Bent, A., Peci, V., and Halchuk, S., 2008, A very close look at a moderate earthquake near Sudbury, Ontario: *Seismological Research Letters*, v. 78, no. 1, pp. 119-131.

Atkinson, G.M., and Wald, D., 2007, Did You Feel It? Intensity data: A surprisingly good measure of earthquake ground motion: *Seismological Research Letters*, v. 78, no. 3, pp. 362-368.

Atwater, B.F., Tuttle, M.P., Schweig, E.S., Rubin, C.M., Yamaguchi, D.K., and Hemphill-Haley, E., 2004, Earthquake recurrence inferred from paleoseismology: in Gillespie, A.R., Porter, S.C., and Atwater, B.F. (editors), *The Quaternary Period in the United States*: Developments in Quaternary Science 1, Elsevier, Amsterdam and New York, pp. 331-350.

Audemard, F., and de Santis, F., 1991, Survey of liquefaction structures induced by recent moderate earthquakes: *Bulletin of the International Association of Engineering Geology*, v. 44, pp. 5-16.

Austin, J.A., Stoffa, P.L., Phillips, J.D., Oh, J., Sawyer, D.S., Purdy, G.M., Reiter, E., and Makris, J., 1990, Crustal structure of the Southeast Georgia embayment-Carolina Trough: Preliminary results of a composite seismic image of a continental suture (?) and a volcanic passive margin: *Geology*, v. 18, pp. 1023-1027.

Autin, W.J., Burns, S.F., Miller, B.J., Saucier, R.T., and Snead, J.I., 1991, Quaternary geology of the lower Mississippi Valley: in Morrison, R.B. (editor), *Quaternary Nonglacial Geology; Conterminous United States*, Geological Society of America, The Geology of North America, v. K-2, pp. 547-582.

Axtman, T.C., 1983, Structural mechanisms and oil accumulation along the Mountain View–Wayne fault, south-central Oklahoma, Part I: *Shale Shaker*, v. 34, pp. 1-11.

Aylsworth, J.M., and Lawrence, D.E., 2003, Earthquake-induced landsliding east of Ottawa: A contribution to the Ottawa Valley Landslide Project: *Geohazards 2003, Proceedings of the 3rd Canadian Conference on Geotechnique and Natural Hazards, June 9 and 10, Edmonton, Alberta, Canada*, pp. 57-64.

Aylsworth, J.M., Lawrence, D.E., and Guertin, J., 2000, Did two massive earthquakes in the Holocene induce widespread landsliding and near-surface deformation in part of the Ottawa Valley, Canada? *Geology*, v. 28, pp. 903-906.

Baird, A.F., McKinnon, S.D., and Godin, L., 2009, Stress channelling and partitioning of seismicity in the Charlevoix seismic zone, Québec, Canada: *Geophysical Journal International*, v. 179, pp. 559-568.

Baksi, A.K., 1997, The timing of Late Cretaceous alkalic igneous activity in the northern Gulf of Mexico basin, Southeastern USA: *Geology*, v. 105, pp. 629-643.

Bakun, W.H., and Hopper, M.G., 2004a, *Catalog of Significant Historical Earthquakes in the Central United States*: U.S. Geological Survey Open-File Report 2004-1086, 142 pp.

Bakun, W.H., and Hopper, M.G., 2004b, Magnitudes and locations of the 1811-1812 New Madrid, Missouri, and the 1886 Charleston, South Carolina, earthquakes: *Bulletin of the Seismological Society of America*, v. 94, no. 1. pp. 64-75.

Bakun, W.H., Johnston, A.C., and Hopper, M.G., 2003, Estimating locations and magnitudes of earthquakes in eastern North America from modified Mercalli intensities: *Bulletin of the Seismological Society of America*, v. 93, pp. 190-202.

Bakun, W.H., and McGarr, A., 2002, Differences in attenuation among the stable continental regions: *Geophysical Research Letters*, v. 29, no. 23, pp. 2121.

Bakun, W.H., and Wentworth, C.M., 1997, Estimating earthquake location and magnitude from seismic intensity data: *Bulletin of the Seismological Society of America*, v. 87, pp. 1502-1521.

Baldwin, J.N., Barron, A.D., and Kelson, K.I., Harris, J.B., and Cashman, S.M., 2002, Preliminary paleoseismic and geophysical investigation of the North Farrenburg Lineament, Farrenburg, Missouri: Deformation associated with the New Madrid North fault? *Seismological Research Letters*, v. 73, no. 3, pp. 395-413.

Baldwin, J.N., Givler, R., Brossy, C.C., Elliot, E.T., and Harris, J.B., 2008, *Geophysical and Paleoseismic Evaluation of the Penitentiary Fault and Its Association with the Commerce Geophysical Lineament, Tamms, Southern Illinois*: U.S. Geological Survey National Earthquake Hazards Reduction Program, Final Technical Report, Award 06-HQ-GR-0138, 34 pp, plus 10 figures and one plate.

Baldwin, J.N., Harris, J.B., Van Arsdale, R.B., Givler, R., Kelson, K.I., Sexton, J.L., and Lake, M., 2005, Constraints on the location of the late Quaternary Reelfoot and New Madrid North faults in the New Madrid seismic zone, Central United States: *Seismological Research Letters*, v. 76, no. 6, pp. 772-789.

Baldwin, J.N., Witter, R.C., Vaughn, J.D., Harris, J.B., Sexton, J., Lake, M., and Forman, S.L., 2006, Geological characterization of the Idalia Hill fault zone and its structural association with the Commerce geophysical lineament, Idalia, Missouri: *Bulletin of the Seismological Society of America*, v. 96, no. 6, pp. 2281-2303.

Baranoski, M.T., 2002, Structure Contour Map on the Precambrian Unconformity Surface in Ohio and Related Basement Features: A Description to Accompany Division of Geological Survey Map PG-23: Ohio Geological Survey, 19 pp.

Baranoski, M.T., Dean, S.L., Wicks, J.L., and Brown, V.M., 2009, Unconformity-bounded seismic reflection sequences define Grenville-age rift system and foreland basins beneath the Phanerozoic in Ohio: *Geosphere*, v. 5, pp. 140-151.

Barnes, A. A., 2000, An Interdisciplinary Study of Earthquake-Induced Liquefaction Features in the New Madrid Seismic Zone, Central United States: M.S. thesis, Auburn University, Alabama, 266 pp.

Barstow, N.L., Brill, K.G., Jr., Nuttli, O.W., and Pomeroy, P.W. (editors), 1981, *Approach to Seismic Zonation for Siting Nuclear Electric Power Generating Facilities in the Eastern United States*: U.S. Nuclear Regulatory Commission Report NUREG/CR-1577, pp. 98-143.

Bartholomew, M.J., and Rich, F.J., 2007, The walls of colonial Fort Dorchester: A record of structures caused by the August 31, 1886 Charleston, South Carolina, earthquake and its subsequent earthquake history: *Southeastern Geology*, v. 44, no. 4, pp. 147-169.

Basham, P.W., Weichert, D.H., and Berry, M.J., 1979, Regional assessment of seismic risk in Eastern Canada: *Bulletin of the Seismological Society of America*, v. 69, no. 5, pp. 1567-1602.

Bauer, L.M., 2006, Studies of Historic and Prehistoric Earthquake-Induced Liquefaction Features in the Meizoseismal Area of the 1811-1812 New Madrid Earthquakes, Central United States: M.S. thesis, University of Memphis, Memphis, Tennessee, 135 pp.

BC Hydro, 2008, Seismic Source Characterization for the Probabilistic Seismic Hazard Analysis for the BC Hydro Service Area: draft report, BC Hydro and Power Authority.

Bear, G.W., Rupp, J.A., and Rudman, A.J., 1997, Seismic interpretation of the deep structure of the Wabash Valley fault system: *Seismological Research Letters*, v. 68, pp. 624-640.

Bédard, J.H., and Stevenson, R., 1999, The Caldwell Group lavas of southern Quebec: MORB-like tholeiites associated with the opening of Iapetus Ocean: *Canadian Journal of Earth Sciences*, v. 36, pp. 999-1019.

Behrendt, J.C., Hamilton, R.M., Ackermann, H.D., and Henry, V.J., 1981, Cenozoic faulting in the vicinity of the Charleston, South Carolina, 1886 earthquake: *Geology*, v. 9, no. 3, pp. 117-122.

Behrendt, J.C., Hamilton, R.M., Ackermann, H.D., Henry, V.J., and Bayer, K.C., 1983, Marine multichannel seismic-reflection evidence for Cenozoic faulting and deep crustal structure near Charleston, South Carolina: in Gohn, G.S. (editor), *Studies Related to the Charleston, South Carolina Earthquake of 1886—Tectonics and Seismicity*, U.S. Geological Survey Professional Paper 1313-J, pp. J1-J29.

Behrendt, J.C., and Yuan, A., 1987, The Helena Banks strike-slip (?) fault zone in the Charleston, South Carolina, earthquake area: results from a marine, high-resolution, multichannel, seismic-reflection survey: *Geological Society of America Bulletin*, v. 98, no. 5, pp. 591-601.

Benjamin, J.R., and Cornell, C.A., 1970, *Probability, Statistics, and Decisions for Civil Engineers*: McGraw-Hill, New York, 684 pp.

Bennison, A.P., 1978, Geological Highway Map of the Great Lakes Region, AAPG Highway Map number 11, Tulsa, OK: American Association of Petroleum Geologists.

Bennison, A.P., 1990, Geological Highway Map of the Southern Rocky Mountain Region, AAPG Highway Map number 2, Tulsa, OK: American Association of Petroleum Geologists.

Bennison, A.P., and Chenoweth, P.A., 1984, Geological Highway Map of the Northern Great Plains Region, AAPG Highway Map number 12, Tulsa, OK: American Association of Petroleum Geologists.

Bennison, A.P., and Webb, J.M., 1986, Geological Highway Map of the Midcontinent Region, AAPG Highway Map number 1, Tulsa, OK: American Association of Petroleum Geologists.

Bennison, A.P., and Webb, J.M., 1989, Geological Highway Map of the Mid-Atlantic Region, AAPG Highway Map number 4, Tulsa, OK: American Association of Petroleum Geologists.

Benson, R.N., 1992, Map of exposed and buried early Mesozoic rift basins/synrift rocks of the U.S. middle Atlantic continental margin: *Delaware Geological Society*, Miscellaneous map series no. 5, 1:1,000,000 scale.

Bent, A.L., 1992, A re-examination of the 1925 Charlevoix, Quebec earthquake: *Bulletin of the Seismological Society of America*, v. 82, pp. 2097-2113.

Bent, A.L., 1995, A complex double-couple source mechanism for the M_S 7.2 1929 Grand Banks earthquake: *Bulletin of the Seismological Society of America*, v. 85, no. 4, pp. 1003-1020.

Bent, A.L., 1996a, An improved source mechanism for the 1935 Timiskaming, Quebec, earthquake from regional waveforms: *Pure and Applied Geophysics*, v. 146, no. 1, pp. 5-20.

Bent, A.L., 1996b, Source parameters of the damaging Cornwall-Massena earthquake of 1944 from regional waveforms: *Bulletin of the Seismological Society of America*, v. 86, no. 2, pp. 489-497.

Bent, A.L., 2009, *A Moment Magnitude Catalog for the 150 Largest Eastern Canadian Earthquakes*: Geological Survey of Canada, Open-File 6080, 23 pp.

Bent, A.L., 2010, Toward a moment magnitude catalog for earthquakes hazard assessment in eastern Canada [abstract]: *Seismological Research Letters*, v. 81, p. 354.

Bent, A.L., and Cassidy, J.F., 1993, The January 1992 Franklin Lake, Northwest Territories, earthquake sequence: *Bulletin of the Seismological Society of America*, v. 83, no. 2, pp. 398-415.

Bent, A.L., Drysdale, J., and Perry, H.K.C., 2003, Focal mechanisms for Eastern Canadian earthquakes, 1994-2000: *Seismological Research Letters*, v. 74, no. 4, pp. 452-468.

Bent, A.L., and Hasegawa, H.S., 1992, Earthquakes along the northwestern boundary of the Labrador Sea: *Seismological Research Letters*, v. 63, pp. 587-602.

Bent, A.L., Lamontagne, M., Adams, J., Woodgold, C.R.D., Halchuk, S., Drysdale, J., Wetmiller, R.J., and Ma, S., 2002, The Kipawa, Quebec, "Millennium" earthquake: *Seismological Research Letters*, v. 73, no. 2, pp. 285-297.

Bent, A.L., and Perry, H.K.C., 2002, Depths of Eastern Canadian earthquakes from regional data: *Seismological Research Letters*, v. 73, no. 2, pp. 273-284.

Bergantino, R.N., and Wilde, E.M., 1998a, Geologic map of the Culbertson 30' × 60' quadrangle (bedrock emphasis), northeastern Montana: Montana Bureau of Mines and Geology Open-File Report 359, scale 1:100,000.

Bergantino, R.N., and Wilde, E.M., 1998b, Geologic map of the Wolf Point 30' × 60' quadrangle (bedrock emphasis), northeastern Montana: Montana Bureau of Mines and Geology Open-File Report 358, scale 1:100,000.

Bernreuter, D.L., Savy, J.B., Mensing, R.W., Chen, J.C., and Davis, B.C., 1989, *Seismic Hazard Characterization of 69 Nuclear Plant Sites East of the Rocky Mountains*: U.S. Nuclear Regulatory Commission, NUREG/CR-5250, Volumes 1–8, Washington, D.C., January.

Bickford, M.E., Van Schmus, W.R., and Zietz, I., 1986, Proterozoic history of the Midcontinent region of North America: *Geology*, v. 14, pp. 492-496.

Biewick, L.R.H., Hardie, J.K., Williamson, C., and Amdt, H.H., 1990, *Evaluation of Coal Resources in the Eastern Part of the Fort Peck Indian Reservation, Montana*: U.S. Geological Survey Bulletin 1869, 136 pp.

Bird, D., 2001, Shear margins: Continent-ocean transform and fracture zone boundaries: *The Leading Edge* [Association of Exploration Geophysicists], February, pp. 150-159.

Bird, D.E., Burke, K., Hall, S.A., and Casey, J.F., 2005, Gulf of Mexico tectonic history: Hotspot tracks, crustal boundaries, and early salt distribution: *AAPG Bulletin*, v. 89, no. 3, pp. 311-328.

Birkeland, P.W., 1999, *Soils and Geomorphology*, 3rd Edition: Oxford University Press, New York and Oxford, 448 pp.

Boatwright, J., 1994, Regional propagation characteristics and source parameters of earthquakes in northeastern North America: *Bulletin of the Seismological Society of America*, v. 84, no. 1, pp. 1-15.

Bollinger, G.A., 1973, Seismicity and crustal uplift in the southeastern United States: *American Journal of Science*, v. 273-A, pp. 396-408.

Bollinger, G.A., 1975, A catalog of Southern United States earthquakes—1754 through 1974: *Research Division Bulletin* 101, Virginia Polytechnic Institute and State University, 68 pp.

Bollinger, G.A., 1977, Reinterpretation of the intensity data for the 1886 Charleston, South Carolina, earthquake: in Rankin, D.W. (editor), *Studies Related to the Charleston, South Carolina, Earthquake of 1886—A Preliminary Report*, U.S. Geological Survey Professional Paper 1028, pp. 17-32.

Bollinger, G.A., 1979, Attenuation of the Lg phase and the determination of m_b in the southeastern United States: *Bulletin of the Seismological Society of America*, v. 69, no. 1, pp. 45-63.

Bollinger, G.A., 1983, Speculations on the nature of seismicity at Charleston, South Carolina: in Gohn, G.S. (editor), *Studies Related to the Charleston, South Carolina, Earthquake of 1886—Tectonics and Seismicity*, U.S. Geological Survey Professional Paper 1313-T, pp. T1-T11.

Bollinger, G.A., 1992, *Specification of Source Zones, Recurrence Rates, Focal Depths, and Maximum Magnitudes for Earthquakes Affecting the Savannah River Site in South Carolina*: U.S. Geological Survey Bulletin 2017, 57 pp.

Bollinger, G.A., and Hopper, M.G., 1971, Virginia's two largest earthquakes—December 22, 1875, and May 31, 1897: *Bulletin of the Seismological Society of America*, v. 61, pp. 1033-1039.

Bollinger, G.A., Johnston, A.C., Talwani, P., Long, L.T., Shedlock, K.M., Sibol, M.S., and Chapman, M.C., 1991, Seismicity of the southeastern United States; 1698 to 1986: in Slemmons, D.B., Engdahl, E.R., Zoback, M.D., and Blackwell, D. (editors), *Neotectonics of North America*: Geological Society of America, Decade Map Volume 1, pp. 291-308.

Bollinger, G.A., Law, R.D., Pope, M.C., Wirgart, R.H., and Whitmarsh, R.S., 1992, Geologically recent near-surface faulting in the Valley and Ridge Province: New exposures of extensional faults in alluvial deposits, Giles County, SW Virginia [abstract]: Geological Society of America *Abstracts with Programs*, v. 24, no. 7, p. 152.

Bollinger, G.A., and Sibol, M.S., 1985, Seismicity, seismic reflection studies, gravity and geology of the central Virginia seismic zone: Part 1. Seismicity: *Geological Society of America Bulletin*, v. 96, no. 1, pp. 49-57.

Bollinger, G.A., and Wheeler, R.L., 1983, The Giles County seismic zone: *Science*, v. 219, pp. 1063-1065.

Bollinger, G.A., and Wheeler, R.L., 1988, *The Giles County, Virginia, Seismogenic Zone—Seismological Results and Geological Interpretations*: U.S. Geological Survey Professional Paper 1355, 85 pp.

Bommer, J.J., and Scherbaum, F., 2008, The use and misuse of logic trees in probabilistic seismic hazard analysis: *Earthquake Spectra*, v. 24, pp. 997-1009.

Boore, D.M., and Atkinson, G.M., 1987, Stochastic prediction of ground motion and spectral response parameters at hard-rock sites in eastern North America: *Bulletin of the Seismological Society of America*, v. 77, no. 2, pp. 440-467.

Boore, D.M., and Atkinson, G.M., 1992, Source spectra for the 1988 Saguenay, Quebec, earthquakes: *Bulletin of the Seismological Society of America*, v. 82, no. 2, pp. 683-719.

Boore, D.M., Campbell, K.W., and Atkinson, G.M., 2010, Determination of stress parameters for eight well-recorded earthquakes in eastern North America: *Bulletin of the Seismological Society of America*, v. 100, no. 4, pp. 1632-1645.

Bostwick, T.K., 1984, A Re-examination of the 1949 Queen Charlotte Earthquake: M.Sc. thesis, University of British Columbia, Vancouver, Canada.

Bradshaw, B., and Watkins, J., 1994, Growth-fault evolution in offshore Texas: *Transactions of the Gulf Coast Association of Geological Societies*, v. 44, pp. 103-109.

Braile, L.W., Keller, G.R., Hinze, W.J., and Lidiak, E.G., 1982, An ancient rift complex and its relation to contemporary seismicity in the New Madrid seismic zone: *Tectonics*, v. 1, pp. 225-237.

Braile, L., Hinze, W., Sexton, J., Keller, G.R., and Lidiak, E., 1984, Tectonic development of the New Madrid Seismic Zone: in Hays, W.W., and Gori, P.L. (editors), *Proceedings of the Symposium on the New Madrid Seismic Zone*, U.S. Geological Survey Open-File Report 84-770, pp. 204-233.

Braile, L.W., Hinze, W.J., Keller, G.R., Lidiak, E.G., and Sexton, J.L., 1986, Tectonic development of the New Madrid Rift Complex, Mississippi Embayment, North America: *Tectonophysics*, v. 131, pp. 1-21.

Braile, L.W., Hinze, W.J., and Keller, G.R., 1997, New Madrid seismicity, gravity anomalies, and interpreted ancient rift structures: *Seismological Research Letters*, v. 68, no. 4, pp. 599-610.

Bramlette, K.W., Secor, D.T., and Prowell, D.C., 1982, The Belair fault: A Cenozoic reactivation structure in the eastern Piedmont: *Geological Society of America Bulletin*, v. 93, pp. 1109-1117.

Brewer, J.A., 1982, Study of southern Oklahoma aulacogen, using COCORP deep seismic-reflection profiles: in Gilbert, M.C., and Donovan, R.N. (editors), *Geology of the Eastern Wichita Mountains, Southwestern Oklahoma*, Oklahoma Geological Survey Guidebook 21, pp. 31-39.

Brewer, J.A., Brown, L.D., Steiner, D., Oliver, J.E., Kaufman, S., and Denison, R.E., 1981, Proterozoic basin in the southern Midcontinent of the United States revealed by COCORP deep seismic reflection profiling: *Geology*, v. 9, pp. 569-575.

Brewer, J.A., Good, R., Oliver, J.E., Brown, L.D., and Kaufman, S., 1983, COCORP profiling across the Southern Oklahoma aulacogen: Overthrusting of the Wichita Mountains and compression within the Anadarko Basin: *Geology*, v. 11, pp. 109-114.

Bristol, H.M., and Treworgy, J.D., 1979, *The Wabash Valley Fault System in Southeastern Illinois*: Illinois State Geological Survey, Circular 509, 19 pp.

Bronk Ramsey, C., 1995, Radiocarbon calibration and analysis of stratigraphy: The OxCal program: *Radiocarbon*, v. 37, no. 2, pp. 425-430.

Bronk Ramsey, C., 2001, Development of the radiocarbon calibration program OxCal: *Radiocarbon*, v. 43, no. 2A, pp. 355-363.

Bronk Ramsey, C., 2009, Bayesian analysis of radiocarbon dates: *Radiocarbon*, v. 51, no. 1, pp. 337-360.

Broughton, A.T., Van Arsdale, R.B., and Broughton, J.H., 2001, Liquefaction susceptibility mapping in the city of Memphis and Shelby County, Tennessee (in earthquake hazard evaluation in the central United States): *Engineering Geology*, v. 62, no. 1-3, pp. 207-222.

Brown, E.J., and Ebel, J.E., 1985, An investigation of the January 1982, Gaza, New Hampshire, aftershock sequence: *Earthquake Notes*, v. 56, no. 4, pp. 125-133.

Brown, W.J., 1900, *History of the Town of Hampton Falls, New Hampshire: From the Time of the First Settlement Within Its Borders, 1640-1900*: John B. Clark Co., Manchester, N.H., v. 1, 637 pp.

Browning, S.E., 2003, Paleoseismic Studies in the New Madrid Seismic Zone, Central United States: M.S. thesis, Auburn University, Auburn, Ala., 134 pp.

Buchner, C.A., Cox, R., Skinner, C.T., Kaplan, C., and Albertson, E.S., 2010, *Data Recovery Excavations at the Laplant I Site (23NM51), New Madrid County, Missouri*: Report to U.S. Army Corps of Engineers, Memphis District.

Budnitz, R.J., Apostolakis, G., Boore, D.M., Cluff, L.S., Coppersmith, K.J., Cornell, C.A., and Morris, P.A., 1997, *Recommendations for Probabilistic Seismic Hazard Analysis: Guidance on Uncertainty and Use of Experts*: Report NUREG/CR-6372, Lawrence Livermore National Laboratory, sponsored by the U.S. Nuclear Regulatory Commission, U.S. Department of Energy, and Electric Power Research Institute.

Buffler, R.T., Watkins, J.S., Shaub, F.J., and Worzel, J.L., 1980, Structure and early geologic history of the deep central Gulf of Mexico Basin: in Pilger, R.H. (editor), *The Origin of the Gulf of Mexico and the Early Opening of the Central North Atlantic Ocean*, Louisiana Geologic Society, Baton Rouge, La.

Buffler, R.T., and Sawyer, D.S., 1985, Distribution of crust and early history, Gulf of Mexico basin: *Transactions of the Gulf Coast Association of Geological Societies*, v. 35, pp. 333-344.

Buffler, R.T., and Thomas, W.A., 1994, Crustal structure and evolution of the southwestern margin of North America and the Gulf of Mexico basin: in Speed, R.C. (editor), *Phanerozoic Evolution of North American Continent-Ocean Transitions*: Geological Society of America, DNAG Continent-Ocean Transect Volume CRV-001, pp. 219-264.

Bunker, B.J., Ludvigson, G.A., and Witzke, B.J., 1985, *The Plum River Fault Zone and the Structural and Stratigraphic Framework of Eastern Iowa*: Iowa Geological Survey, Technical Information Series Report 13, 126 pp.

Bunker, B.J., and Witzke, B.J., 1988, Central mid-continent region sedimentary cover of the craton: in Sloss, L.L. (editor), *Sedimentary Cover—North American Craton: U.S.*, Geological Society of America, The Geology of North America, v. D-2, Plate 4.

Burke, K.B.S., 2004, Historical seismicity in the Central Highlands, Passamaquoddy Bay, and Moncton regions of New Brunswick, Canada, 1817-1961: *Seismological Research Letters,* v. 75, pp. 419-431.

Burke, K.B.S., 2009, *Historical Earthquakes Felt in New Brunswick (1764, 1811-1960)*: Sadler Geophysical and Administrative Services, Fredericton, New Brunswick, 755 pp. plus 34 pp. of appendices.

Burrell, R.D., 1997, Evaluation of Faulting Characteristics and Ground Acceleration Associated with Recent Movement along the Meers Fault, Southwestern Oklahoma: M.S. thesis, Texas A&M, College Station, Tex.

Buschbach, T.C., and Kolata, D.R., 1991, Regional setting of the Illinois Basin: in Leighton, M.W., Kolata, D.R., Oltz, D.F., and Eidel, J.J. (editors), *Interior Cratonic Basins*, AAPG Memoir 51, pp. 29-55.

Byerly, G.R., 1991, Igneous activity: in Salvador, A. (editor), *The Gulf of Mexico Basin*, Geological Society of America, The Geology of North America, v. J, ch. 6, pp. 91-108.

Calais, E., Freed, A., Van Arsdale, R., and Stein, S., 2009, Time-Variable Deformation in the New Madrid Seismic Zone: presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Calais, E., Han, J.Y., DeMets, C., and Nocquet, J.M., 2006, Deformation of the North American plate interior from a decade of continuous GPS measurements: *Journal of Geophysical Research*, v. 111, B06402, doi:10.1029/2005JB004253.

Calais, E., Mattioli, G., DeMets, C., Nocquet, J.M., Stein, S., Newman, A., and Rydelek, P., 2005, Tectonic strain in the interior of the North American Plate? *Nature*, v. 438, doi:10.1038/nature04428.

Calais, E., and Stein, S., 2009, Time-variable deformation in the New Madrid seismic zone: *Science*, v. 323, pp. 1442, doi:0.1126/science.1168122.

Campbell, K.W., 2003, Prediction of strong ground motion using the hybrid empirical method and its use in the development of ground-motion (attenuation) relations in eastern North America: *Bulletin of the Seismological Society of America*, v. 93, pp. 1012-1033.

Cannon, W.F., 1994, Closing of the Midcontinent rift—A far-field effect of Grenvillian compression: *Geology*, v. 22, pp. 155-158.

Cannon, W.F., Green, A.G., Hutchinson, D.R., and nine others, 1989, The North American Midcontinent Rift beneath Lake Superior from GLIMPCE seismic reflection profiling: *Tectonics*, v. 8, no. 2, pp. 305-332.

Cannon, W.F., Lee, M.W., Hinze, W.J., Schulz, K.J., and Green, A.G., 1991, Deep crustal structure of the Precambrian basement beneath northern Lake Michigan, midcontinent North America: *Geology*, v. 19, pp. 207-210.

Castilla, R.A., and Audemard, F.A., 2007, Sand blows as a potential tool for magnitude estimation of pre-instrumental earthquakes: *Journal of Seismology*, v. 11, pp. 473-487, doi:10.1007/s10950-007-9065-z.

Cavallini, F., and Rebez, A., 1996, Representing earthquake intensity-magnitude relationship with a nonlinear function: *Bulletin of the Seismological Society of America*, v. 86, no. 1A, pp. 73-78.

Cawood, P.A., McCausland, P.J.A., and Dunning, G.R., 2001, Opening Iapetus: Constraints from the Laurentian margin in Newfoundland: *Geological Society of America Bulletin*, v. 113, pp. 443-453.

Center for Earthquake Research and Information (CERI), New Madrid Earthquake Catalog, website, http://folkworm.ceri.memphis.edu/catalogs/html/cat_nm.html.

Cetin, H., 2003, Comment on "Known and suggested Quaternary faulting in the midcontinent United States by Russell L. Wheeler and Anthony Crone": *Engineering Geology*, v. 69, pp. 193-210.

Cetin, K.O., Seed, R.B., Kiureghian, A.D., Tokimatsu, K., Harder, Jr., L.F., Kayen, R.E., and Moss, R.E.S., 2004, Standard penetration test-based probabilistic and deterministic assessment of seismic soil liquefaction potential: *Journal of Geotechnical and Geoenvironmental Engineering*, v. 130, no. 12, pp. 1314-1340.

Champion, J., Mueller, K., Tate, A., and Guccione, M., 2001, Geometry, numerical models and revised slip rate for the Reelfoot fault and trishear fault-propagation fold, New Madrid seismic zone: *Engineering Geology*, v. 62, pp. 31-49.

Chapman, M.C., 1996, Focal mechanisms and the geometry of basement faults in the eastern Tennessee seismic zone: *Seismological Research Letters*, v. 67, no. 2, p. 35.

Chapman, M.C., and Beale, J.N., 2008, Mesozoic and Cenozoic faulting imaged at the epicenter of the 1886 Charleston, South Carolina earthquake: *Bulletin of the Seismological Society of America*, v. 98, pp. 2533-2542.

Chapman, M.C., and Beale, J.N., 2009, Results of reprocessing seismic reflection data near Summerville, SC: abstract and talk presented at the meeting of the Central and Eastern U.S. (CEUS) Earthquake Hazards Program.

Chapman, M.C., and Beale, J.N., 2010, On the geologic structure at the epicenter of the 1886 Charleston, South Carolina, earthquake: *Bulletin of the Seismological Society of America*, v. 100, no. 3, pp. 1010-1030.

Chapman, M.C., Beale, J.N., and Hole, J.A., 2007, *Attenuation in the Atlantic Coastal Plain of Virginia and Cenozoic Faulting Imaged in the Epicentral Area of the 1886 Charleston, South Carolina Earthquake, Using Data from Seismic Reflection Profiles*: Final report, U.S. Geological Survey Award Nos. 07-HQ-GR-0042 and 06-HQ-GR-0109, 34 pp.

Chapman, M.C., and Bollinger, G.A., 1984, Reliability of focal depth estimates from a small network: *Earthquake Notes*, v. 55, no. 4, pp. 16-25.

Chapman, M.C., and Krimgold, F., 1994, Seismic Hazard Assessment for Virginia: report prepared for the Virginia Department of Emergency Services and the Federal Emergency Management Agency, Virginia Tech Seismological Observatory, Blacksburg, Va., 62 pp.

Chapman, M.C., Munsey, J.W., Powell, C.A., Whisner, S.C., and Whisner, J., 2002, The eastern Tennessee seismic zone: Summary after 20 years of network monitoring: *Seismological Research Letters*, v. 73, no. 2, p. 245.

Chapman, M.C., Powell, C.A., Vlahovic, G., and Sibol, M.S., 1997, A statistical analysis of earthquake focal mechanisms and epicenter locations in the eastern Tennessee seismic zone: *Bulletin of the Seismological Society of America*, v. 87, no. 6, pp. 1522-1536.

Chapman, M.C., and Talwani, P., 2002, Seismic Hazard Mapping for Bridge and Highway Design in South Carolina: South Carolina Department of Transportation report.

Chester, J.S., and Tuttle, M.P., 2000, *Paleoseismology Study in the Cache River Valley, Southern Illinois*: Annual Project Summary submitted to the U.S. Geological Survey National Earthquake Hazards Reduction Program, Contract No. 1434-HQ-98-GR-00013 and GR-00015, 6 pp.

Chiu, J.M., Chen, K.C., Yang, Y.T. and Johnston, A., 1990, A high resolution PANDA experiment in the central New Madrid seismic zone [abstract]: Geological Society of America *Abstracts with Programs*, v. 7, no. 17.

Chiu, J.M., Johnston, A.C., and Yang, Y.T., 1992, Imaging the active faults of the central New Madrid seismic zone using PANDA array data: *Seismological Research Letters*, v. 63, no. 3, pp. 375-393.

Chiu, S.-C.C., Chiu, J.-M., and Johnston, A.C., 1997, Seismicity of the southeastern margin of Reelfoot rift, central United States: *Seismological Research Letters*, v. 68, no. 5, pp. 785-796.

Choi, J., Jin, K., Enkhbayar, D., Bayasgalan, A., and Kim, Y., 2009, Fault segmentation and slip distribution along the 1957 Gobi-Altay earthquake rupture, Mongolia [abstract]: American Geophysical Union, Fall Meeting, Abstract T33B-1910.

Christenson, G., 1990, The Florida lineament: in Kinsland, G., and Cagle, A. (editors): *Transactions of the Gulf Coast Association of Geological Societies*, v. 40, pp. 99-115.

Clendenin, C.W., Lowell, G.R., and Niewendorp, C.A., 1993, Sequencing Reelfoot extension based on relations from southeast Missouri and interpretations of the interplay between offset preexisting zones of weakness: *Tectonics*, v. 12., pp. 703-712.

Clendenin, C.W., Niewendorp, C.A., and Lowell, G.R., 1989, Reinterpretation of faulting in southeast Missouri: *Geology*, v. 17, pp. 217-220.

Coffin, J., 1845, A Sketch of the History of Newbury, Newburyport, and West Newbury, 1635–1845: S.G. Drake, Boston, Mass., 416 pp.

Coffman, J.D., Gilbert, M.C., and McConnell, D.A., 1986, An interpretation of the crustal structure of the southern Oklahoma aulacogen satisfying gravity data: in Gilbert, M.C. (editor), *Petrology of the Cambrian Wichita Mountains Igneous Suite*: Oklahoma Geological Survey, Guidebook 23, Norman, Okla.

Collier, J.W., 1998, Geophysical investigations of liquefaction features in the New Madrid seismic zone: Northeastern Arkansas and southeastern Missouri: M.S. thesis, Auburn University, Auburn, Ala., 163 pp.

Collins, E., 2004, Summary of the Balcones fault zone, central Texas: A prominent zone of Tertiary normal faults marking the western margin of the Texas coastal plain, Field Trip Guidebook, Volume 24: Austin, TX, Austin Geological Society, pp. 81-89.

Colquhoun, D.J., Woollen, I.D., Van Nieuwenhuise, D.S., Padgett, G.G., Oldham, R.W., Boylan, D.C., Bishop, J.W., and Howell, P.D., 1983, Surface and subsurface Stratigraphy, Structure and aquifers of the South Carolina coastal plain: SCDHEC Report ISBN 0-9613154-0-7, 78 pp.

Colton, R.B., 1963a, Geologic Map of the Brockton Quadrangle, Roosevelt and Richland Counties, Montana: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-362, 1 sheet, scale 1:62,5000.

Colton, R.B., 1963b, Geologic Map of the Poplar Quadrangle, Roosevelt, Richland, and McCone Counties, Montana: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-367, 1 sheet, scale 1:62,5000.

Cook, F.A., 1984, Geophysical anomalies along strike of the southern Appalachian Piedmont: *Tectonics*, v. 3, no. 1, pp. 45-61.

Cook, F.A., Albaugh, D.S., Brown, L.D., Kaufman, S., Oliver, J.E., and Hatcher R.D., Jr., 1979, Thin-skinned tectonics in the crystalline southern Appalachians: COCORP seismic reflection profiling of the Blue Ridge and Piedmont: *Geology*, v. 7, pp. 563-567.

Cook, F.A., Albaugh, D.S., Brown, L.D., Kaufman, S., Oliver, J.E., and Hatcher, R.D., Jr., 1980, The Brevard fault: A subsidiary thrust fault to the southern Appalachian sole thrust: in Wones, D.R. (editor), *Proceedings of the Caledonide Orogen Project, The Caledonides in the U.S.A.*, Department of Geological Sciences, Virginia Polytechnic Institute and State University, pp. 205-213.

Cook, F.A., Brown, L.D., Kaufman, S., Oliver, J.E., and Petersen, T.A., 1981, COCORP seismic profiling of the Appalachian orogen beneath the Coastal Plain of Georgia: *Geological Society of America Bulletin*, v. 92, no. 10, pp. 738-748.

Cook, F.A., and Oliver, J.E., 1981, The late Precambrian—Early Paleozoic continental edge in the Appalachian orogen: *American Journal of Science*, v. 281, pp. 993-1008.

Cook, F.A., and Vasudevan, K., 2003, Are there relict crustal fragments beneath the Moho? *Tectonics*, v. 22, no. 3, 1026, doi:10.1029/2001TC001341.

Cook, F.A., and Vasudevan, K., 2006, Reprocessing and enhanced interpretation of the initial COCORP Southern Appalachians traverse: *Tectonophysics*, v. 420, pp. 161-174.

Coppersmith, K.J., Bommer, J.J., Kammerer, A.M., and Ake, J., 2010, Implementation guidance for SSHAC Level 3 and 4 processes: *10th International Probabilistic Safety and Management Conference, Seattle, Wash., June 7-11*.

Cornell, C.A., and Van Marke, E.H., 1969, The major influences on seismic risk: *Proceedings of the Third World Conference on Earthquake Engineering, Santiago, Chile*, v. A-1, pp. 69-93.

Coruh, C., Bollinger, G.A., and Costain, J.K., 1988, Seismogenic structures in the Central Virginia seismic zone: *Geology*, v. 16, no. 8, pp. 748-751.

Counts, R., Van Arsdale, R., and Woolery, E., 2009b, Paleoseismic Features Within the Wabash Valley Seismic Zone in Western Kentucky: presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Counts, R.C., Durbin, J.M., and Obermeier, S.F., 2008, Seismic ground-failure features in the vicinity of the Lower Wabash and Ohio River valleys: in Counts, M.H., and Counts, R.C. (editors), *From the Cincinnati Arch to the Illinois Basin: Geological Field Excursions Along the Ohio River Valley*: Geological Society of America Field Guide 12, pp. 57-79.

Counts, R.C., Van Arsdale, R.B., and Woolery, E.W., 2009a, Investigation of Quaternary displacement on the Uniontown fault, western Kentucky [abstract]: Geological Society of America *Abstracts with Programs*, v. 41, no. 1, p. 20.

Cox, R.T., 1988, Evidence of Quaternary ground tilting associated with the Reelfoot rift zone, northeast Arkansas: *Southeastern Geology*, v. 28, no. 4, pp. 211-224.

Cox, R.T., 1994, Analysis of drainage-basin symmetry as a rapid technique to identify areas of possible Quaternary tilt-block tectonics: An example from the Mississippi Embayment: *Geological Society of America Bulletin*, v. 106, pp. 571-581.

Cox, R.T., 2002, Investigation of Seismically-Induced Liquefaction in the Southern Mississippi Embayment: U.S. Geological Survey National Earthquake Hazards Reduction Program, Final Technical Report, Award No. 01-HQGR-0052, 15 pp.

Cox, R.T., 2009, Investigations of Seismically-Induced Liquefaction in Northeast Louisiana: U.S. Geological Survey National Earthquake Hazards Reduction Program, Final Technical Report, Award No. 08-HQGR-0008.

Cox, R.T., and Van Arsdale, R.B., 1997, Hotspot origin of the Mississippi Embayment and its possible impact on contemporary seismicity: *Engineering Geology*, v. 46, pp. 201-216.

Cox, R.T., Van Arsdale, R.B., Harris, J.B., Forman, S.L., Beard, W., and Galluzzi, J., 2000, Quaternary faulting in the southern Mississippi Embayment and implications for tectonics and seismicity in an intraplate setting: *Geological Society of America Bulletin*, v. 112, no. 11, pp. 1724-1735.

Cox, R.T., Van Arsdale, R.B., and Harris, J.B., 2001, Identification of possible Quaternary deformation in the northeastern Mississippi Embayment using quantitative geomorphic analysis of drainage-basin asymmetry: *Geological Society of America Bulletin*, v. 113, pp. 615-624.

Cox, R.T., Van Arsdale, R.B., Harris, J.B., and Larsen, D., 2001, Neotectonics of the southeastern Reelfoot rift zone margin, central United States, and implications for regional strain accommodation: *Geology*, v. 29, no. 5, pp. 419-422.

Cox, R.T., Forman, S.L., Woods, J., Galluzzi, J., Hall, L., Semko, A., and McHugh, J., 2002, New data of Holocene tectonism in the southern Mississippi Embayment [abstract]: *Seismological Research Letters*, v. 73, pp. 246-247.

Cox, R.T., and Van Arsdale, R.B., 2002, The Mississippi Embayment, North America: A first order continental structure generated by the Cretaceous superplume mantle event: *Journal of Geodynamics*, v. 34, pp. 163-176, doi:10.1016/S0604-3707(02)00019-4.

Cox, R.T., Van Arsdale, R.B., and Larsen, D., 2002, Paleoseismology of the Southeastern Margin of the Reelfoot Rift in the Vicinity of Memphis, Tennessee: Final technical report, U.S. Geological Survey Award No. 02-HQ-GR-0025, 15 pp.

Cox, R.T., Harris, J.B., Hill, A.A., Forman, S.L., Gardner, C., and Csontos, R., 2004, More evidence for young tectonism along the Saline River fault zone, southern Mississippi Embayment: AGU Fall Meeting Supplement, Abstract T41F-1289, *Eos, Transactions of the American Geophysical Union*, v. 85, no. 47, p. 311.

Cox, R.T., and Larsen, D., 2004, Investigation of Seismically-Induced Liquefaction in the Southern Mississippi Embayment: National Earthquake Hazards Reduction Program, Final Technical Report No. 03HQGR0011, 19 pp.

Cox, R.T., Larsen, D., Forman, S.L., Woods, J., Morat, J., and Galluzzi, J., 2004, Preliminary assessment of sand blows in the southern Mississippi Embayment: *Bulletin of the Seismological Society of America*, v. 94, pp. 1125-1142.

Cox, R.T., Larsen, D., and Hill, A.A., 2004, More paleoliquefaction data from southeastern Arkansas: Implications for seismic hazards: Geological Society of America Joint Northeastern and Southeastern Section Meeting, Washington, D.C.

Cox, R.T., Cherryhomes, J., Harris, J.B., Larsen, D., Van Arsdale, R.B., and Forman, S.L., 2006, Paleoseismology of the southeastern Reelfoot rift in western Tennessee and implications for intraplate fault zone evolution: *Tectonics*, v. 25, TC3019, doi:10.1029/2005TC001829, 17 pp.

Cox, R.T., Hill, A.A., Larsen, D., Holzer, T., Forman, S.L., Noce, T., Gardner, C., and Morat, J., 2007, Seismotectonic implications of sand blows in the southern Mississippi embayment: *Engineering Geology*, v. 89, pp. 278-299.

Cox, R.T., and Gordon, J., 2008, Sand blows on Late Quaternary surfaces in northeast Louisiana [abstract]: Geological Society of America *Abstracts with Programs*, v. 40, no. 6, p. 151.

Cramer, C.H., Schweig, E.S., and Tuttle, M.P., 2006, The possibility of northeastward unilateral rupture for the January 23, 1812 New Madrid earthquake [abstract]: *Seismological Research Letters,* v. 77, no. 1, p. 107.

Cramer, C.H., 2001, A seismic hazard uncertainty analysis for the New Madrid seismic zone: *Engineering Geology*, v. 62, pp. 251-266.

Craven, J.A., 1995a, Paleoseismological Study in the New Madrid Seismic Zone Using Geological and Archeological Features to Constrain Ages of Liquefaction Deposits: M.S. thesis, University of Memphis, 51 pp.

Craven, J.A., 1995b, Evidence of paleoseismicity within the New Madrid seismic zone at a late Mississipian Indian occupation site in the Missouri Bootheel [abstract]: Geological Society of America *Abstracts with Programs*, 1995 Annual Meeting, p. A-394.

Crone, A.J., 1992, Structural relations and earthquake hazards of the Crittenden County fault zone, Northeastern Arkansas: *Seismological Research Letters*, v. 63, no. 3, pp. 249-262.

Crone, A.J. (compiler), 1994, Fault number 1031b, Meers fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthqakes.usgs.gov/regional/qfaults.

Crone, A.J. (compiler), 1997, Fault number 2330, Cheraw fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults, accessed July 3, 2009.

Crone, A.J., 1998a, Defining the southwestern end of the Blytheville arch, northeastern Arkansas: Delimiting a seismic source zone in the New Madrid region: *Seismological Research Letters*, v. 69, no. 4, pp. 350-358.

Crone, A.J. (compiler), 1998b, Fault number 1032, Crooked Creek fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.

Crone, A.J., De Martini, P.M., Machette, M.N., Okumura, K., and Prescott, J.R., 2003, Paleoseismicity of two historically quiescent faults in Australia: Implications for fault behavior in stable continental regions: *Bulletin of the Seismological Society of America*, v. 93, no. 5, pp. 1913-1934.

Crone, A.J., and Luza, K.V., 1990, Style and timing of Holocene surface faulting on the Meers fault, southwestern Oklahoma: *Geological Society of America Bulletin*, v. 102, pp. 1-17.

Crone, A.J., and Machette, M.N., 1995, Holocene movement on the Cheraw fault, SE Colorado—Another hazardous late Quaternary fault in the stable continental interior [abstract]: *Eos, Transactions of the American Geophysical Union*, 1995 Fall Meeting Program, v. 76, no. 46, November 7, 1995 supplement, p. F362.

Crone, A.J., Machette, M.N., and Bowman, J.R., 1997, Episodic nature of earthquake activity in stable continental regions revealed by palaeoseismicity studies of Australian and North American Quaternary faults: *Australian Journal of Earth Sciences*, v. 44, pp. 203-214.

Crone, A.J., Machette, M.N., Bradley, L., and Mahan, S.A., 1997, Late Quaternary Surface Faulting on the Cheraw Fault, Southeastern Colorado: U.S. Geological Survey Geologic Investigations Map I-2591, includes 7 pp. pamphlet.

Crone, A.J., and Schweig, E.S. (compilers), 1994, Fault number 1023, Reelfoot scarp and New Madrid seismic zone: Quaternary fault and fold database of the United States, U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults, accessed August 7, 2009.

Crone, A.J., and Wheeler, R.L., 2000, *Data for Quaternary Faults, Liquefaction Features, and Possible Tectonic Features in the Central and Eastern United States, East of the Rocky Mountain Front*: U.S. Geological Survey Open-File Report 00-0260, 342 pp.

Crough, S.T., 1981, Mesozoic hotspot epeirogeny in eastern North America: *Geology*, v. 9, pp. 2-6.

Csontos, R., and Van Arsdale, R., 2008, New Madrid seismic zone fault geometry: *Geosphere*, v. 4, no. 5, pp. 802-813.

Csontos, R., Van Arsdale, R., Cox, R., and Waldron, B., 2008, Reelfoot rift and its impact on Quaternary deformation in the central Mississippi River valley: *Geosphere*, v. 4, no. 1, pp. 145-158.

Csontos, R.M., 2007, Three-Dimensional Modeling of the Reelfoot Rift and New Madrid Seismic Zone: Ph.D. dissertation, University of Memphis, Memphis, Tenn., 92 pp.

Culotta, R.C., Pratt, T., and Oliver, J., 1990, A tale of two sutures: COCORP's deep seismic surveys of the Grenville province in the eastern U.S. midcontinent: *Geology*, v. 18, pp. 646-649.

Cumbest, R.J., Price, V., and Anderson, E.E., 1992, Gravity and magnetic modeling of the Dunbarton Basin, South Carolina: *Southeastern Geology*, v. 33, no. 1, pp. 37-51.

Curtis, B.F., 1988, Sedimentary rocks in the Denver basin: in Sloss, L.L. (editor), *Sedimentary Cover—North American Craton*, U.S. Geological Society of America, The Geology of North America, v. D-2, ch. 7, pp. 109-221.

Cushing, E.M., Boswell, E.H., and Hosman, R.L., 1964, *General Geology of the Mississippi Embayment*: USGS Professional Paper 448-B, 28 pp.

Daniels, D.L., Zietz, I., and Popenoe, P., 1983, Distribution of subsurface lower Mesozoic rocks in the southeastern United States, as interpreted from regional aeromagnetic and gravity maps: in Gohn, G.S. (editor), *Studies Related to the Charleston, South Carolina, Earthquake of 1886—Tectonics and Seismicity*, U.S. Geological Survey Professional Paper 1313-K, pp. K1-K24.

Dart, R.L., and Swolfs, H.S., 1998, Contour mapping of relic structures in the Precambrian basement of the Reelfoot rift, North American midcontinent: *Tectonics*, v. 17, no. 2, pp. 235-249.

Darton, N.H., 1950, *Configuration of the Bedrock Surface of the District of Columbia and Vicinity*: U.S. Geological Survey Professional Paper 217, 41 pp.

Davis, S.D., Pennington, W.D., and Carlson, S.M., 1989, *A Compendium of Earthquake Activity in Texas*: Geological Circular 89-3, Bureau of Economic Geology, The University of Texas at Austin, 27 pp.

Dawers, N.H., and Seeber, L., 1991, Intraplate faults revealed in crystalline bedrock in the 1983 Goodnow and 1985 Ardsley epicentral areas, New York: *Tectonophysics*, v. 186, pp. 115-131.

Dellinger, J., and Nettles, M., 2006, The 10 February 2006, magnitude 5.2 Gulf of Mexico earthquake: Insights and implications: *Society of Exploration Geophysicists*, 1 p.

Dellinger, J.A., Dewey, J.W., Blum, J., and Nettles, M., 2007, Relocating and characterizing the 10 Feb 2006 "Green Canyon" Gulf of Mexico earthquake using oil-industry data: *Eos Transactions of the American Geophysical Union*, v. 88, p. 52, Fall Meeting Supplement, Abstract S13F-01.

Dellinger, J., Ehlers, J., and Clarke, R., 2007, The Green Canyon event as recorded by the Atlantis OBS Node Survey: *Offshore Technology Conference Proceedings*, Paper 18588.

Dennis, A.J., Shervais, J.W., Mauldin, J., Maher, H.D., Jr., and Wright, J.E., 2004, Petrology and geochemistry of Neoproterozoic volcanic arc terranes beneath the Atlantic Coastal Plain, Savannah River site, South Carolina: *Geological Society of America Bulletin*, v. 116, pp. 572-593.

Dewey, J.W., and Dellinger, J.A., 2008, *Location of the Green Canyon (Offshore Southern Louisiana) Seismic Event of February 10, 2006*: U.S. Geological Survey Open-File Report 2008-1184, 30 pp.

Dewey, J.W., and Gordon, D.W., 1984, Map Showing Recomputed Hypocenters of Earthquakes in the Eastern and Central United States and Adjacent Canada, 1925–1980: U.S. Geological Survey Miscellaneous Field Studies Map MF-1699, 1 sheet, scale 1:250,000, 39 pp. pamphlet.

DeWispelare, A.R., Herren, L.T., Miklas, M.P., and Clemen, R.T., 1993, *Expert Elicitation of Future Climate in the Yucca Mountain Vicinity*: Report NRC-02-88-005, Center for Nuclear Waste Regulatory Analyses, San Antonio, Tex.

de Witt, W., and Bayer, K.C., 1986, Seismicity, seismic reflection, gravity, and geology of the Central Virginia Seismic Zone: Part 3. Gravity: Discussion and reply: *Geological Society of America Bulletin*, v. 97, Discussion, pp. 1285-1286.

Dickerson, P.W., and Muehlberger, W.R., 1994, Basins of the Big Bend segment of the Rio Grande rift, Trans-Pecos Texas: in Keller, G.R., and Cather, S.M. (editors), *Basins of the Rio Grande Rift: Structure, Stratigraphy, and Tectonic Setting*: Geologic Society of America Special Paper 291, pp. 283-297.

Dineva, S., Eaton, D., and Mereu, R., 2004, Seismicity of the southern Great Lakes: Revised earthquake hypocenters and possible tectonic controls: *Bulletin of the Seismological Society of America*, v. 94, no. 5, pp. 1902-1918.

Dionne, J.-C., 2001, Relative sea-level changes in the St. Lawrence estuary from deglaciation to present day: in Weddle, T.K., and Retelle, M.J. (editors), *Deglacial History and Relative Sea-Level Changes, Northern New England and Adjacent Canada*, Geological Society of America Special Paper 351, pp. 271-284.

Doar, W.R. III, and Willoughby, R.H., 2006, Revision of the Pleistocene Dorchester and Summerville scarps, the inland limits of the Penholoway Terrace, central South Carolina: abstract and poster presented at the 2006 annual meeting of the Southeastern Section of the Geological Society of America, available at http://www.dnr.sc.gov/geology/segsa.htm, accessed May 25, 2009.

Doig, R., 1990, 2300 yr history of seismicity from silting events in Lake Tadoussac, Charlevoix, Quebec: *Geology*, v. 18, pp. 820-823.

Doig, R., 1991, Effects of strong seismic shaking in lake sediments, and earthquake recurrence interval, Témiscaming, Quebec: *Canadian Journal of Earth Sciences*, v. 28, pp. 1349-1352.

Doig, R., 1998, 3000-year paleoseismological record from the region of the 1988 Saguenay, Quebec, earthquake: *Bulletin of the Seismological Society of America*, v. 88, pp. 1198-1203.

Dokka, R.K., Sella, G.F., and Dixon, T.H., 2006, Tectonic control of subsidence and southward displacement of southeast Louisiana with respect to stable North America: *Geophysical Research Letters*, v. 33, Paper no. 23308, 5 pp.

Dominion Nuclear North Anna, LLC, North Anna Early Site Permit Application Response to Request for Additional Information No. 3, 2004, 114 pp.

Drahovzal, J.A., 1992, The origin and evolution of the East Continent Rift Basin [abstract]: Geological Society of America *Abstracts with Programs*, v. 24, p. A-330.

Drahovzal, J.A., 1994, Basin-floor fan complexes: A new exploration strategy for the Rough Creek Graben: in Ridgley, J.L., Drahovzal, J.A., Keith, B.D., and Kolata, D.R. (editors), *Proceedings of the Illinois Basin Energy and Mineral Resources Workshop, September 12-13, 1994, Evansville, Indiana*: Kentucky Geological Survey, Open-File Report 94-12 (Illinois State Geological Survey, Open-File Report 94-4; Indiana Geological Survey, Open-File Report 94-12; U.S. Geological Survey Open-File Report 94-298), pp. 7-8.

Drahovzal, J.A., 1997, Proterozoic sequences and their implications for Precambrian and Cambrian geologic evolution of western Kentucky: Evidence from seismic-reflection data: *Seismological Research Letters*, v. 68, no. 4, pp. 553-566.

Drahovzal, J.A., 2009, Rifts in the Midcontinent: East Continent Rift Basin, Rough Creek Graben and the Rome Trough: presentation given at CEUS SSC Project Workshop #2, February 18-20, Palo Alto, Calif.

Drahovzal, J.A., Harris, D.C., Wickstrom, L.H., Walker, D., Baranoski, M.T., Keith, B., and Furer, L.C., 1992, *The East Continent Rift Basin: A New Discovery*, Ohio Geological Survey Information Circular 57, Columbus, Ohio, pp. 1-25.

Drysdale, J.A., and Cajka, M.G., 1989, Intensity distribution of the 1988 M6 Saguenay earthquake: paper presented at Seismological Society of America Eastern Section meeting, Lexington, Ky., October.

Du, W.-X., Kim, W.-Y., and Sykes, L.R., 2003, Earthquake source parameters and state of stress for the northeastern United States and southeastern Canada from analysis of regional seismograms: *Bulletin of the Seismological Society of America*, v. 93, no. 4, pp. 1633-1648.

DuBar, J.R., Ewing, T.E., Lundelius, E.L., Otvos, E.G., and Winker, C.D., 1991, Quaternary geology of the Gulf of Mexico coastal plain: in Morrison, R.B. (editor), *Quaternary Nonglacial Geology: Conterminous U.S.*, The Geological Society of America, The Geology of North America, v. K-2, pp. 583-610.

Du Berger, R., Roy, D.W., Lamontagne, M., Woussen, G., North, R.G., and Wetmiller, R.J., 1991, The Saguenay (Quebec) earthquake of November 25, 1988: Seismologic data and geologic setting: in Mareschal, J.-C. (editor), Intraplate Deformation, Neotectonics, Seismicity, and the State of Stress in Eastern North America, *Tectonophysics* (special issue), v. 186, pp. 59-74.

Dunbar, J.A., and Sawyer, D.S., 1987, Implications of continental crust extension for plate reconstruction: an example from the Gulf of Mexico: *Tectonics*, v. 6, pp. 739-755.

Duncan, R.A., 1984, Age progressive volcanism in the New England seamounts and the opening of the central Atlantic Ocean: *Journal of Geophysical Research,* v. 89, pp. 9980-9990.

Dunn, M.M., and Chapman, M.C., 2006, Fault orientation in the eastern Tennessee seismic zone: A study using the double-difference earthquake location algorithm: *Seismological Research Letters*, v. 77, no. 4, pp. 494-504.

Dunn, M., Horton, S., DeShon H., and Powell, C., 2010, High-resolution earthquake relocation in the New Madrid seismic zone: *Seismological Research Letters*, v. 81, no. 2, pp. 406-413.

Dura-Gomez, I., and Talwani, P., 2008, A revised seismotectonic framework for the Charleston, South Carolina earthquakes [abstract]: *Abstracts with Programs, American Geophysical Union Annual Fall Meeting*, S42A-06.

Dura-Gomez, I., and Talwani, P., 2009, Finding faults in the Charleston area, South Carolina: 1. Seismological data: *Seismological Research Letters*, v. 80, no. 5, pp. 883-900.

Dutton, C.E., 1889, *The Charleston Earthquake of August 31, 1886*: U.S. Geological Survey Ninth Annual Report, 1887-88, pp. 203-528.

Easton, R.M., and Carter, T.R., 1995, Geology of the Precambrian basement beneath the Paleozoic of Southwestern Ontario: in Ojakangas, R.W., Dickas, A.B., and Green, J.C. (editors), *Basement Tectonics*, v. 10, pp. 221-264.

Eaton, D.W., Dineva, S., and Mereu, R., 2006, Crustal thickness and V_P/V_S variations in the Grenville orogen (Ontario, Canada) from analysis of teleseismic receiver functions: *Tectonophysics*, v. 420, pp. 223-238.

Ebel, J.E., 1994, The $m_{LG}(F)$ magnitude scale: A proposal for its use for northeastern North America: *Seismological Research Letters*, v. 65, no. 2, pp. 157-166.

Ebel, J.E., 1996, The seventeenth century seismicity of northeastern North America: *Seismological Research Letters*, v. 67, no. 3, pp. 51-68.

Ebel, J.E., 2000, A reanalysis of the 1727 earthquake at Newbury, Massachusetts: *Seismological Research Letters*, v. 71, no. 3, pp. 364-374.

Ebel, J.E., 2001, A new look at the 1755 Cape Ann, Massachusetts earthquake [abstract]: *Eos, Transactions of the American Geophysical Union*, v. 82, p. S271.

Ebel, J.E., 2006a, The Cape Ann, Massachusetts earthquake of 1755: A 250th anniversary perspective: *Seismological Research Letters*, v. 77, no. 1, pp. 74-86.

Ebel, J.E., 2006b, Thoughts Concerning Earthquake Sources in the Northeastern U.S.: presentation given at CEUS Workshop on National Seismic Hazard Maps, May 9, Boston.

Ebel, J.E., 2009, On the magnitude of the 1663 Charlevoix, Quebec earthquake [abstract]: *Seismological Research Letters*, v. 80, no. 2, p. 343.

Ebel, J.E., Bonjer, K.-P., and Oncescu, M.C., 2000, Paleoseismicity: Seismicity evidence for past large earthquakes: *Seismological Research Letters*, v. 71, no. 2, pp. 283-294.

Ebel, J.E., and Bouck, B.R., 1988, New focal mechanisms for the New England region: Constraints on the regional stress regime: *Seismological Research Letters*, v. 59, no. 4, pp. 183-187.

Ebel, J.E., and Hart, K., 2001, Observational evidence for amplification of earthquake ground motions in Boston and vicinity: *Civil Engineering Practice*, v. 16, no. 2, pp. 5-16.

Ebel, J.E., Somerville, P.G., and McIver, J.D., 1986, A study of the source parameters of some large earthquakes of northeastern North America: *Journal of Geophysical Research*, v. 91, no. B8, pp. 8231-8247.

Eberhart-Phillips, D., Richardson, R.M., Sbar, M.L., and Herrmann, R.B., 1981, Analysis of the 4 February 1976 Chino Valley, Arizona, earthquake: *Bulletin of the Seismological Society of America*, v. 71, no. 3, pp. 787-801.

Efron, B., 1982, *The Jackknife, the Bootstrap, and Other Resampling Plans*: Society for Industrial and Applied Mathematics, Philadelphia, Penn., 92 pp.

Electric Power Research Institute (EPRI), 1988, *Seismic Hazard Methodology for the Central and Eastern United States*: 10 volumes, EPRI-NP-4726.

Electric Power Research Institute (EPRI), 1989, *Probabilistic Seismic Hazard Evaluations at Nuclear Plant Sites in the Central and Eastern United States: Resolution of the Charleston Earthquake Issue*: EPRI Technical Report EPRI NP-6395-D.

Electric Power Research Institute (EPRI), 1993, *Guidelines for Determining Design Basis Ground Motions*: EPRI TR-102293, 5 volumes.

Electric Power Research Institute (EPRI), 2004, *CEUS Ground Motion Project Final Report*: EPRI Report 1009684, December.

Electric Power Research Institute (EPRI), 2005a, *Program on Technology Innovation: Assessment of a Performance-Based Approach for Determining Seismic Ground Motions for New Plant Sites, Volume 1: Performance-Based Design Spectra*, EPRI TR-1012044, August.

Electric Power Research Institute (EPRI), 2005b. *Program on Technology Innovation: Assessment of a Performance-Based Approach for Determining Seismic Ground Motions for New Plant Sites, Volume 2: Seismic Hazard Results at 28 Sites*: EPRI TR-1012045, August.

Electric Power Research Institute (EPRI), 2006, *Program on Technology Innovation: Truncation of the Lognormal Distribution and Value of the Standard Deviation for Ground Motion Models in the Central and Eastern United States*: EPRI TR-1014381, August.

Electric Power Research Institute (EPRI), 2008a, *Assessment of Seismic Hazard at 34 U.S. Nuclear Plant Sites*: EPRI TR-1016736, August.

Electric Power Research Institute (EPRI), 2008b, *Project Plan: Central and Eastern United States Seismic Source Characterization for Nuclear Facilities*: Technical Update 1016756, June.

Ellsworth, W.L., 2003, Magnitude and Area Data for Strike Slip Earthquakes (Appendix D): in Working Group on California Earthquake Probabilities (editor), *Earthquake Probabilities in the San Francisco Bay Region: 2002-2031*, U.S. Geological Survey, Open-File Report 03-214.

Ellsworth, W.L., Matthews, M.V., Nadeau, R.M., Nishenko, S.P., Reasenberg, P.A., and Simpson, R.W., 1999, A physically-based earthquake recurrence model for estimation of long-term earthquake probabilities, *Proceedings of the Workshop on Earthquake Recurrence: State of the Art and Directions for the Future, Istituto Nazionale de Geofisica. Rome, Italy, February 22-25*.

Engdahl, E.R., and Villaseñor, A., 2002, Global seismicity—1900–1999: in Lee, W.H.K., Kanamori, H., Jennings, P.C., and Kisslinger, C. (editors), *International Handbook of Earthquake and Engineering Seismology*, International Association of Seismology and Physics of the Earth's Interior (IASPEI), pp. 665-690.

Ervin, G.P., and McGinnis, L.D., 1975, Reelfoot rift; reactivated precursor to the Mississippi embayment: *Geological Society of America Bulletin*, v. 86, pp. 1287-1295.

Ewing, T.E., 1991, Structural framework: in Salvador, A. (editor), *The Gulf of Mexico Basin*, Geological Society of America, The Geology of North America, v. J, ch. 3, pp. 31-52.

Ewing, T.E., and Lopez, R.F., 1991, Principal structural features Gulf of Mexico basin: in Salvador, A. (editor), *The Gulf of Mexico Basin*, Geological Society of America, The Geology of North America, v. J, Plate 2.

Exelon Generation Company, LLC, 2003, Early site permit (ESP) application for property co-located with existing Clinton Power Station (CPS) facility in Illinois: U.S. Nuclear Regulatory Commission document accession no. ML032721596, filed September 25.

Exelon Generation Company, LLC, 2004, Early Site Permit (ESP) Application for the Clinton ESP Site: letter to the U.S. Nuclear Regulatory Commission with responses to requests for additional information, October 11.

Faill, R.T., 1997a, A geologic history of the north-central Appalachians. Part 1. Orogenesis from the Mesoproterozoic through the Taconic orogeny: *American Journal of Science*, v. 297, pp. 551-619.

Faill, R.T., 1997b, A geologic history of the north-central Appalachians. Part 2. The Appalachian basin from the Silurian through the Carboniferous: *American Journal of Science*, v. 297, pp. 729-761.

Faill, R.T., 1998, A geologic history of the north-central Appalachians. Part 3. The Alleghany orogeny: *American Journal of Science*, v. 298, pp. 131-179.

Faill, R.T. (compiler), 2004, *Earthquake Catalog and Epicenter Map of Pennsylvania*: Pennsylvania Department of Conservation and Natural Resources.

Fakundiny, R.H., and Pomeroy, P.W., 2002, Seismic-reflection profiles of the central part of the Clarendon-Linden fault system of western New York in relation to regional seismicity: *Tectonophysics*, v. 353, pp. 173-213.

Faure, S., Tremblay, A., and Angelier, J., 1996a, Alleghenian paleostress reconstruction in the northern Appalachians: Intraplate deformation between Laurentia and Gondwana: *Geological Society of America Bulletin*, v. 108, pp. 1467-1480.

Faure, S., Tremblay, A., and Angelier, J., 1996b, State of intraplate stress and tectonism of northeastern America since Cretaceous times, with particular emphasis on the New England–Quebec igneous province: *Tectonophysics*, v. 255, pp. 111-134.

Faure, S., Tremblay, A., and Malo, M., 2004, Reconstruction of Taconian and Acadian paleostress regimes in the Quebec and northern New Brunswick Appalachians: *Canadian Journal of Earth Sciences*, v. 41, pp. 619-634.

Faure, S., Tremblay, A., Malo, M., and Angelier, J., 2006, Paleostress analysis of Atlantic crustal extension in the Quebec Appalachians: *The Journal of Geology*, v. 114, pp. 435-448.

Faust, T.H., Fujita, K., Mackey, K.G., Ruff, L.J., and Ensign, R.C., 1997, The September 2, 1994 Central Michigan earthquake: *Seismological Research Letters*, v. 68, no. 3, pp. 460-464.

Faye, R.E., and Prowell, D.C., 1982, *Effects of Late Cretaceous and Cenozoic Faulting on the Geology and Hydrology of the Coastal Plain near the Savannah River, Georgia and South Carolina*: U.S. Geological Survey Open-File Report 82-156.

Felzer, K.R., 2008, Calculating California seismicity rates: in Field, E.H., Dawson, T.E., Felzer, K.R., Frankel, A.D., Gupta, V., Jordan, T.H., Parsons, T., Petersen, M.D., Stein, R.S., Weldon II, R.J., and Wills, C.J. (editors), *The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2)*, USGS Open File Report 2007-1437.

Fenneman, N.M., and Johnson, D.W., 1946, Physiographic Divisions of the Conterminous United States: U.S. Geological Survey Water Resources Maps and GIS Data, http://water.usgs.gov/GIS/dsdl/physio.gz.

Filion, L., Quinty, F., and Bégin, C., 1991, A chronology of landslide activity in the valley of Rivierre du Gouffre, Charlevoix, Quebec: *Canadian Journal of Earth Sciences*, v. 28, pp. 103-118.

Fischer-Boyd, K., and Schumm, S.A., 1995, Geomorphic evidence of deformation in the northern part of the New Madrid seismic zone: in Shedlock, K.M., and Johnston, A.C. (editors), *Investigations of the New Madrid Seismic Zone*, U.S. Geological Survey Professional Paper 1538-R, 35 pp.

Fisk, H.N., 1944, *Geological Investigation of the Alluvial Valley of the Lower Mississippi River*: Corps of Engineers, U.S. Army, conducted for the Mississippi River Commission, Vicksburg, Miss., 170 pp.

Fletcher, J.B., and Sykes, L.R., 1977, Earthquakes related to hydraulic mining and natural seismicity in western New York State: *Journal of Geophysical Research*, v. 82, pp. 3767-3780.

Foland, K.A., Gilbert, L.A., Sebring, C.A., and Jiang-Fen, C., 1986, 40Ar/39Ar ages for plutons of the Monteregian Hills: Evidence for a single episode of Cretaceous magmatism: *Geological Society of America Bulletin*, v. 97, pp. 966-974.

Forman, S.L., Pierson, J., and Lepper, K., 2000, Luminescence geochronology: in Noller, J.S., Sowers, J.M., and Lettis, W.R. (editors), *Quaternary Geochronology: Methods and Applications*, American Geophysical Union, AGU Reference Shelf 4, pp. 157-175.

Forsyth, D.A., 1981, Characteristics of the Western Quebec seismic zone: *Canadian Journal of Earth Sciences*, v. 18, pp. 103-118.

Forsyth, D.A., Milkereit, B., Davidson, A., Hanmer, S., Hutchinson, D.R., Hinze, W.J., and Mereu, R.F., 1994, Seismic images of a tectonic subdivision of the Grenville orogen beneath Lakes Ontario and Erie: *Canadian Journal of Earth Sciences*, v. 31, pp. 229-242.

Forsyth, D.A., Milkereit, B., Zelt, C.A., White, D.J., Easton, R.M., and Hutchinson, D.R., 1994, Deep structure beneath Lake Ontario: Crustal-scale Grenville subdivisions: *Canadian Journal of Earth Sciences*, v. 31, pp. 255-270.

Forte, A.M., Mitrovica, J.X., Moucha, R., Simmons, N.A., and Grand, S.P., 2007, Descent of the ancient Farallon slab drives localized mantle flow below the New Madrid seismic zone: *Geophysical Research Letters*, v. 34, L04308, doi:10.1029/2006GL027895.

Fox, J., 2002, *An R and S-Plus Companion to Applied Regression*: Sage Publications, 328 pp.

Frankel, A., 1994, Implications of felt area-magnitude relations for earthquake scaling and the average frequency of perceptible ground motion: *Bulletin of the Seismological Society of America*, v. 84, no. 2, pp. 462-465.

Frankel, A., 1995, Mapping seismic hazard in the central and eastern United States: *Seismological Research Letters*, v. 66, no. 4, pp. 8-21.

Frankel, A., Mueller, C., Harnhard, T., Perkins, D., Leyendecker, E.V., Dickman, N., Hanson, S., and Hopper, M., 1996, *National Seismic-Hazard Maps: Documentation June 1996*: U.S. Geological Survey Open-File Report 96-532.

Frankel, A.D., Petersen, M.D., Mueller, C.S., Haller, K.M., Wheeler, R.L., Leyendecker, E.V., Wesson, R.L., Harmsen, S.C., Cramer, C.H., Perkins, D.M., and Rukstales, K.S., 2002, *Documentation for the 2002 Update of the National Seismic Hazard Maps*: U.S. Geological Survey Open-File Report 02-420, 33 pp.

Fraser, G.S., Thompson, T.A., Olyphant, G.A., Furer, L., and Bennett, S.W., 1997, Geomorphic response to tectonically-induced ground deformation in the Wabash Valley: *Seismological Research Letters*, v. 68, no. 4, pp. 662-674.

Frohlich, C., and Davis, S.D., 2002, *Texas Earthquakes*: University of Texas Press, 275 pp.

Fujita, K., and Sleep, N.H., 1991, A re-examination of the seismicity of Michigan: *Tectonophysics*, v. 186, nos. 1-2, pp. 75-106.

Fukuda, J., and Johnson, K.M., 2008, A fully Bayesian inversion for spatial distribution of fault slip with objective smoothing: *Bulletin of the Seismological Society of America*, v. 98, no.3, pp. 1128-1146.

Funck, T., Jackson, H.R., Louden, K.E., Kehler, S.A., and Wu, Y., 2004, Crustal structure of the northern Nova Scotia rifted continental margin (eastern Canada): *Journal of Geophysical Research*, v. 109, B09102, doi:10.1029/2004JB003008.

Gagliano, S.M., 2005, Effects of earthquakes, fault movements, and subsidence on the south Louisiana landscape: *Journal of the Louisiana Section of the American Society of Civil Engineers*, v. 13, no. 2, pp. 5-7, 19-22.

Gangopadhyay, A., and Sen, M., 2008, A possible mechanism for the spatial distribution of seismicity in northern Gulf of Mexico: *Geophysical Journal International*, v. 175, pp. 1141-1153.

Gangopadhyay, A., and Talwani, P., 2005, Fault intersections and intraplate seismicity in Charleston, South Carolina: Insights from a 2-D numerical model: *Current Science*, v. 88, pp. 1,609-1,616.

Gardner, J.K., and Knopoff, L., 1974, Is the sequence of earthquakes in Southern California, with aftershocks removed, Poissonian? *Bulletin of the Seismological Society of America*, v. 64, no. 5, pp. 1363-1367.

Garrity, C.P., and Soller, D.R., 2009, Database of the Geologic Map of North America—Adapted from the Map by J.C. Reed, Jr. and others (2005): U.S. Geological Survey Data Series 424, http://pubs.usgs.gov/ds/424/.

Garrote, J., Cox, R.T., Swann, C., and Ellis, M., 2006, Tectonic geomorphology of the southeastern Mississippi Embayment in northern Mississippi, USA: *Geological Society of America Bulletin*, v. 118, pp. 1160-1170.

Gassman, S., Talwani, P., and Hasek, M., 2009, Magnitudes of Charleston, South Carolina Earthquakes from In Situ Geotechnical Data: presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Gates, A.E., and Costa, R.E., 1998, Multiple reactivations of rigid basement block margins: Examples in the northern Reading Prong, USA: in Gilbert, M.C., Hogan, J.P. (editors), *Basement Tectonics 12: Central North America and Other Regions*, Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 123-153.

Gay, S.P., Jr., 2003a, The Nemaha trend—A system of compressional thrust-fold, strike-slip structural features in Kansas and Oklahoma, Part 1: *Shale Shaker*, Oklahoma City Geological Society, July/August, pp. 9-17.

Gay, S.P., Jr., 2003b, The Nemaha trend—A system of compressional thrust-fold, strike-slip structural features in Kansas and Oklahoma (Part 2, Conclusion): *Shale Shaker*, Oklahoma City Geological Society, July/August, pp. 39-49.

Gelinas, R., Cato, K., Amick, D., and Kemppinen, H., 1998, *Paleoseismic Studies in the Southeastern United States and New England*: U.S. Nuclear Regulatory Commission Report, NUREG/CR-6274.

General Bathymetric Chart of the Oceans (GEBCO), International Hydrographic Organization (IHO), Intergovernmental Oceanographic Commission (IOC), 2009, GEBCO_08 Grid, version 20091120, http://www.gebco.net.

Geomatrix Consultants, Inc., 1997, *Seismic Hazard in Southern Ontario, Final Report, Part 1: Seismic Source Models, Recurrence Models and Ground Motion Attenuation Models*: prepared for the Atomic Energy Control Board of Canada, March.

Gesch, D.B., 2007, The National Elevation Dataset: in Maune, D. (editor), Digital Elevation Model Technologies and Applications: *The DEM Users Manual*, 2nd Edition: American Society for Photogrammetry and Remote Sensing, Bethesda, Md., pp. 99-118.

Gilbert, M.C., 1982, Geologic setting of the eastern Wichita Mountains with a brief discussion of unresolved problems: in Gilbert, M.C.G., and Donovan, R.N. (editors), *Geology of the Eastern Wichita Mountains, Southwestern Oklahoma*, Oklahoma Geological Survey Guidebook 21, Norman, Okla., pp. 1-30.

Gilbert, M.C., 1983a, The Meers fault of southwestern Oklahoma: Evidence for possible strong quaternary seismicity in the midcontinent: *EOS, Transactions of the American Geophysical Union*, v. 64, abstract T21B-13, p. 313.

Gilbert, M.C., 1983b, Timing and chemistry of igneous events associated with the Southern Oklahoma Aulacogen: *Tectonophysics*, v. 94, pp. 439-455.

Givler, R., and Baldwin, J., 2009, Commerce Geophysical Lineament and Northwestern Margin of the New Madrid Seismic Zone: Summary of Recent Research in Southeastern Missouri and Southern Illinois: presentation given at CEUS SSC Project Workshop #2, February 18-20, Palo Alto, Calif.

Globensky, Y., 1987, *Geologie des Basses-Terres du Saint-Laurent*: Ministère des Richesses Naturelles, Quebec, MM 85-02, 63 pp. and map (1:250000) no. 1999.

Glover L., III, Costain, J.K., and Çoruh, C., 1995, Tectonics of the central Appalachian orogen in the vicinity of corridor E-3: With implications for the tectonics of the southern Appalachians: in E-3 Southwestern Pennsylvania to Baltimore Canyon Trough: Geological Society of America, Geology of North America, North American Continent/Ocean Transect Program, Explanatory Pamphlet for Transect 19, pp. 1-49.

Gomberg, J. and Ellis, M., 1994, Topography and tectonics of the central New Madrid seismic zone: Results of numerical experiments using a three-dimensional boundary element program: *Journal of Geophysical Research*, v. 99, no. B10, pp. 20,299–20,310.

Gomberg, J., and Wolf, L., 1999, Possible cause for an improbable earthquake—The 1997 M_w 4.9 southern Alabama earthquake and hydrocarbon recovery: *Geology*, v. 27, no. 4, pp. 367-370.

Good, R., Brown, L.D., Oliver, J.E., and Kaufman, S., 1983, COCORP deep seismic reflection traverse across the southern Oklahoma aulacogen: in Bally, A.W. (editor), *Seismic Expression of Structural Styles: A Picture and Work Atlas, Volume 3*, AAPG Studies in Geology, v. 15, pp. 3.2.2-33–3.2.2-37.

Gordon, J., and Cox, R.T., 2008, Recurrent Mesozoic and Cenozoic faulting along the southern margin of the North American craton [abstract]: Geological Society of America *Abstracts with Programs*, v. 40, no. 6, p. 151.

Gordon, M.B., Mann, P., Caceres, D., and Flores, R., 1997, Cenozoic tectonic history of the North America–Caribbean plate boundary zone in western Cuba: *Journal of Geophysical Research*, v. 102, pp. 10,055-10,082.

Gouin, P., 2001, *Historical Earthquakes Felt in Quebec: From 1534 to March 1925, as Revealed by the Local Contemporary Literature*: Guérin, Montréal, 1491 pp.

Grana, J.P., and Richardson, R.M., 1996, Tectonic stress within the New Madrid seismic zone: *Journal of Geophysical Research*, v. 101, pp. 5445-5458.

Granger, D.E., Kirchner, J.W., and Finkel, R.C., 1997, Quaternary downcutting rate of the New River, Virginia, measured from differential decay of cosmogenic ^{26}Al and ^{10}Be in cave-deposited alluvium: *Geology*, v. 25, pp. 107-110.

Grant, L.B., and Sieh, K., 1994, Paleoseismic evidence of clustered earthquakes on the San Andreas Fault in the Carrizo Plain, California: *Journal of Geophysical Research*, v. 99, no. B4, pp. 6819-6841.

Gray, G.G., Pottorf, R.J., Yurewic, D.A., Mahon, K.I., Pevear, D.R., and Chuchla, R.J., 2001, Thermal and chronological record of syn- to post-Laramide burial and exhumation, Sierra Madre Oriental, Mexico: in Bartolini, C., Buffler, R.T., and Cantu-Chapa, A. (editors), *The Western Gulf of Mexico Basin: Tectonics, Sedimentary Basins, and Petroleum Systems*: AAPG Memoir 75, pp. 159-181.

Green, R.A., 2001. Ph Energy-Based Evaluation and Remediation of Liquefiable Soils: Ph.D. dissertation, Virginia Polytechnic Institute and State University, 394 pp.

Green, R.A., Obermeier, S.F., and Olson, S.M., 2004a, The role of paleoliquefaction studies in performance-based earthquake engineering in the central-eastern United States: *Proceedings of the 13th World Conference on Earthquake Engineering, Vancouver, B.C., Canada, August 1–6, 2004*, Paper 1643.

Green, R.A., Obermeier, S.F., and Olson, S.M., 2004b, *Geotechnical Analysis of Paleoseismic Shaking Using Liquefaction Features: Part II. Field Examples*: Report UMCEE 04-08, Department of Civil and Environmental Engineering, University of Michigan, Ann Arbor, Mich., 85 pp.

Green, R.A., Obermeier, S.F., and Olson, S.M., 2005, Engineering geologic and geotechnical analysis of paleoseismic shaking using liquefaction effects: Field examples: *Engineering Geology*, v. 76, pp. 263-293.

Gresko, M.J., 1985, Analysis and Interpretation of Compressional (P Wave) and Shear (SH Wave) Reflection Seismic and Geologic Data over the Bane Dome, Giles County, Virginia: unpublished Ph.D. thesis, Virginia Polytechnic Institute and State University, Blacksburg, VA, 74 pp.

Grier, M.E., 1995, *Brittle Faulting Along the St. Lawrence Valley from Kingston to Cornwall*: prepared for the Atomic Energy Control Board, Report INFO-0578, 23 pp.

Grollimund, B.R., and Zoback, M.D., 2001, Did deglaciation trigger intraplate seismicity in the New Madrid seismic zone? *Geology*, v. 29, no. 2, pp. 175-178.

Grubbs, F.E., 1950, Sample criteria for testing outlying observations: *Annals of Mathematical Statistics*, v. 21, no. 1, pp. 27-58.

Grünthal, G., 1985, The up-dated earthquake catalogue for the German Democratic Republic and adjacent areas—Statistical data characteristics and conclusions for hazard assessment: *Proceedings of the 3rd International Symposium on the Analysis of Seismicity and Seismic Risk*, Liblice Castle, Czechoslovakia, June 17–22, pp. 19-25.]

Guccione, M.J., 2005, Late Pleistocene and Holocene paleoseismology of an intraplate seismic zone in a large alluvial valley, the New Madrid seismic zone, Central USA: *Tectonophysics*, v. 408, pp. 237-264.

Guccione, M.J., Marple, R., and Autin, W.J., 2005, Evidence for Holocene displacements on the Bootheel fault (lineament) in southeastern Missouri: Seismotectonic implications for the New Madrid region: *Geological Society of America Bulletin*, v. 117, pp. 319-333, doi:10.1130/B25435.1.

Guccione, M.J., Mueller, K., Champion, J., Shepherd, S., and Odhiambo, B., 2002, Stream response to repeated co-seismic folding, Tiptonville Dome, western Tennessee: *Geomorphology*, v. 43, pp. 313-349.

Guccione, M.J., and VanArsdale, R.B., 1995, *Origin and Age of the St. Francis Sunklands Using Drainage Patterns and Sedimentology*: Final Report submitted to the U.S. Geological Survey, Award Number 1434-93-G-2354.

Guccione, M.J., Van Arsdale, R.B., and Hehr, L.H., 2000, Origin and age of the Manila high and associated Big Lake "Sunklands," New Madrid seismic zone, northeastern Arkansas: *Geological Society of America Bulletin*, v. 112, pp. 579-590.

Gutenberg, B., and Richter, C.F., 1956, Earthquake magnitude, intensity, energy and acceleration: *Bulletin of the Seismological Society of America*, v. 46, pp. 105-145.

Hajic, E.R., and Wiant, M.D., 1997, Dating of Prehistoric Earthquake Liquefaction in Southeastern and Central Illinois: Final technical report submitted to the U.S. Geological Survey National Earthquake Hazards Reduction Program, Contract No. 1434-95-G-2599, 63 pp.

Hajic, E.R., Wiant, M.D., and Oliver, J.J., 1995, Distribution and Dating of Prehistoric Earthquake Liquefaction in Southeastern Illinois, Central U.S.: Final technical report submitted to the U.S. Geological Survey National Earthquake Hazards Reduction Program, Contract No. 1434-93-G-2359, 33 pp.

Halchuk, S., 2009, *Seismic Hazard Earthquake Epicentre File (SHEEF) Used in the Fourth Generation Seismic Hazard Maps of Canada*: Geological Survey of Canada, Open File 6208, 1 CD-ROM.

Hall, D.J., Cavanaugh, T.D., Watkins, J.S., and McMillen, 1982, The rotational origin of the Gulf of Mexico based on regional gravity data: in Watkins, J.S., and Drake, C.L. (editors), *Studies in Continental Margin Geology*, AAPG Memoir No. 34, pp. 115-126.

Hall, S.A., and Najmuddin, I.J., 1994, Constraints on the tectonic development of the Gulf of Mexico provided by magnetic anomaly data: *Journal of Geophysical Research*, v. 99, pp. 7161-7175.

Ham, W.E., Denison, R.E., and Merritt, C.A., 1964, *Basement Rocks and Structural Evolution of Southern Oklahoma*: Normal, Okla., Oklahoma Geological Survey Bulletin 95, 302 pp.

Hamburger, M.W., Rybakov, V., Lowry, A., Shen-Tu, B., and Rupp, J.A., 2002, Preliminary results from a GPS geodetic network in the southern Illinois basin: *Seismological Research Letters*, v. 73, no. 5, pp. 762-775.

Hamburger, M., Galgana, G., and Johnson, K., 2008, Geodetic observations from the region surrounding the M 5.2 Mt. Carmel, Illinois earthquake: *Eos, Transactions of the American Geophysical Union*, v. 89, no. 53, Fall Meeting Supplement, Abstract G21A-0664.

Hamburger, M., Galgana, G., and Johnson, K., 2009, Is There a Connection Between Seismicity and Deformation in the New Madrid and Wabash Valley Seismic Zones? presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Hamilton, R.M., and Zoback, M.D., 1982, Tectonic features of the New Madrid seismic zone from seismic reflection profiles: in McKeown, F.A., and Pakiser, L.C. (editors), *Investigations of the New Madrid, Missouri, Earthquake Region*, U.S. Geological Survey Professional Paper 1236, pp. 55-82.

Hamilton, R.M., Behrendt, J.C., and Ackermann, H.D., 1983, Land multichannel seismic-reflection evidence for tectonic features near Charleston, South Carolina: in Gohn, G.S. (editor), *Studies Related to the Charleston, South Carolina Earthquake of 1886—Tectonics and Seismicity*, U.S. Geologic Survey Professional Paper 1313-I, pp. I1-I18.

Hanks, T.C., Abrahamson, N.A., Boore, D.M., Coppersmith, K.J, and Knepprath, N.E., 2009, *Implementation of the SSHAC Guidelines for Level 3 and 4 PSHAs—Experience Gained from Actual Applications*: U.S. Geological Survey Open-File Report 2009-1093, 66 pp.

Hanks, T.C., and Bakun, W.H., 2002, A bilinear source-scaling model for M-log A observations of continental earthquakes: *Bulletin of the Seismological Society of America*, v. 92, pp. 1841-1846.

Hanks, T.C., and Kanamori, H., 1979, A moment magnitude scale: *Journal of Geophysical Research*, v. 84, no. B5, pp. 2348-2350.

Hansen, M.C., 1987, July 1986 Auglaize County earthquake: *Ohio Geology*, The Ohio Seismic Network, Ohio Geological Survey, Fall.

Hansen, M.C., 1993, Earthquakes and seismic risk in Ohio: *Ohio Geology*, The Ohio Seismic Network, Ohio Geological Survey, Summer.

Hansen, M.C., Larsen, G.E., Swinford, E.M., and Ruff, L.J., 2001, Seismic Spotlight Shines on Ashtabula: *Ohio Geology*, The Ohio Seismic Network, Ohio Geological Survey, No. 3.

Hanson, K.L., Swan, F.H., Wesling, J.R., and Kelson, K.I., 1997, Quaternary deformation along the Criner fault, Oklahoma: A case study for evaluating tectonic versus landslide faulting [abstract]: American Geophysical Union Spring Meeting, Baltimore, Md.

Harden, J.W., 1982, A quantitative index of soil development from field descriptions: Examples from a chronosequence in central California: *Geoderma*, v. 28, pp. 1-28.

Harden, J.W., and Taylor, E.M., 1983, A quantitative comparison of soil development in four climatic regions: *Quaternary Research*, v. 20, pp. 342-359.

Hardie, J.K., and Arndt, H.H., 1988, Geology, Structure, and Coal Beds of the Fort Union Formation in the Eastern Part of the Fort Peck Indian Reservation, Daniels, Roosevelt, and Sheridan Counties, Montana: U.S. Geological Survey Coal Investigations Map C-122-A, 1 sheet, scale 1:100,000.

Harris, J.B., and Street, R.L., 1997, Seismic investigation of near-surface geological structure in the Paduach, Kentucky, area: Application to earthquake hazards evaluation: *Engineering Geology*, v. 46, pp. 369-383.

Harrison, R., and Schultz, A., 2008, A tectonic model for the midcontinent U.S. lithosphere based on structural analyses of Mesoproterozoic through Cenozoic deformation: *Eos, Transactions of the American Geophysical Union*, v. 89, no. 53, Fall Meeting Supplement, Abstract S42A-03.

Harrison, R.W., 1997, Bedrock geologic map of the St. Louis 30 × 60 quadrangle, Missouri and Illinois, U.S. Geological Survey Miscellaneous Investigations Series Map I-2533, scale 1:100,000.

Harrison, R.W., Hoffman, D., Palmer, J.R., Vaughn, J.D., and Schultz, A., 1995, Late Quaternary deformation on the English Hill fault, southeast Missouri [abstract]: Geological Society of America *Abstracts with Programs*, v. 26, no. 6, p. A-389.

Harrison, R.W., Hoffman, D., Vaughn, J.D., Palmer, J.R., Wiscombe, C.L., McGeehin, J.P., Stephenson, W.J., Odum, J.K., Williams, R.A., and Forman, S.L., 1999, An example of neotectonism in a continental interior: Thebes Gap, Midcontinent, United States: *Tectonophysics*, v. 305, pp. 399-417.

Harrison, R.W., Palmer, J.R., Hoffman, D., Vaughn, J.D., Repetski, J.E., Frederiksen, N.O., and Forman, S.L., 2002, Geologic Map of the Scott City 7.5-Minute Quadrangle, Scott and Cape Girardeau Counties, Missouri: U.S. Geological Survey Geologic Investigation Series Map I-2744, with accompanying article.

Harrison, R.W., and Schultz, A., 1994, Strike-slip faulting at Thebes Gap, Missouri and Illinois: Implications for New Madrid tectonism: *Tectonics*, v. 13, no. 2, pp. 246-257.

Harrison, R.W., and Schultz, A., 2002, Tectonic framework of the southwestern margin of the Illinois basin and its influence on neotectonism and seismicity: *Seismological Research Letters*, v. 73, no. 5, pp. 698-731.

Harry, D.L., and Londono, J., 2004, Structure and evolution of the central Gulf of Mexico continental margin and coastal plain, southeast United States: *Geological Society of America Bulletin*, v. 116, pp. 188-199.

Hartline, C.S., 1995, Deep Structural Analysis Related to the Akron Magnetic Boundary Using Geophysical Well Logs and Potential Field Data, East Central Ohio: M.S. thesis, University of Akron, Akron, Ohio.

Harvard University Seismology, Centroid Moment Tensor Project catalog, now (since 2006) at Lamont-Doherty Earth Observatory and known as the Global CMT Project catalog.

Hatcher, R.D., Jr., Osberg, P.H., Drake, A.A., Jr., Robinson, P. and Thomas, W.A., 1990, Tectonic map of the U.S. Appalachians, Plate 1: in Hatcher, R.D. Jr., Thomas, W.A. and Viele, G.W. (editors), *The Appalachian-Ouachita Orogen in the United States*, The Geological Society of America, The Geology of North America, v. F-2.

Hatcher, R.D., Jr., Bream, B.R., and Merschat, A.J., 2007, Tectonic map of the southern and central Appalachians: A tale of three orogens and a complete Wilson Cycle: in R.D. Hatcher, Jr., M.P. Carlson, Martinez Catalan, J.R. (editors), *4-D Framework of Continental Crust, Geological Society of America Memoir*, v. 200, pp. 595-632.

Hatcher, R.D., Jr., Colquhoun, D.J., Secor, D.T., Cook, F.S., Dillon, W.P., Klitgord, K., Popenoe, P., Merschat, C.E., Wiener, L.S., Milici, R.C., Nelson, A.E., Sheridan, R.E., and Snoke, A.W., 1994, *Centennial Continent/Ocean Transect #18, E-5—Cumberland Plateau to Blake Plateau*: The Geological Society of America, two maps and text, 56 pp.

Hatcher, R.D., Jr., and Zietz, I., 1980, Tectonic implications of regional aeromagnetic and gravity data from the southern Appalachians: in Wones, D.R. (editor), *Proceedings, The Caledonides in the U.S.A.*, IGCP Project 27, Virginia Polytechnic Institute and State University Memoir 2, pp. 235-244.

Hauser, E.C., 1993, Grenville foreland thrust belt hidden beneath the eastern U.S. midcontinent: *Geology,* v. 21, pp. 61-64.

Heaman, L.M., and Kjarsgaard, B.A., 2000, Timing of eastern North American kimberlite magmatism: Continental extension of the Great Meteor hotspot track? *Earth and Planetary Science Letters*, v. 178, pp. 253-268.

Heidbach, O., Tingay, M., Barth, A., Reinecker, J., Kurfess, D., and Müller, B., 2008, The World Stress Map database release 2008, http://dc-app3-14.gfz-potsdam.de.

Heigold, P.C., 1972, *Notes on the Earthquake of September 15, 1972, in Northern Illinois*: Illinois State Geological Survey, Environmental Geology Note 59, 15 pp.

Heigold, P.C., and Kolata, D.R., 1993, Proterozoic crustal boundary in the southern part of the Illinois Basin: *Tectonophysics*, v. 217, pp. 307-319.

Heigold, P.C., and Larson, T.H., 1994, *Geophysical Investigations of Possible Recent Ground Deformation and Neotectonism in White County, Illinois*: Illinois State Geological Survey, Open File Series 1994-5, 22 pp.

Hendricks, J.D., 1988, *Bouguer Gravity of Arkansas*: U.S. Geological Survey Professional Paper 1474, 31 pp.

Herrmann, R.B., 1978, A seismological study of two Attica, New York earthquakes: *Bulletin of the Seismological Society of America*, v. 68, pp. 641-651.

Herrmann, R.B., 1979, Surface wave focal mechanisms for eastern North American earthquakes with tectonic implications: *Journal of Geophysical Research*, v. 84, no. B7, pp. 3547-3552.

Herrmann, R.B., and Ammon, C.J., 1997, Faulting parameters of earthquakes in the New Madrid, Missouri, region: *Engineering Geology*, v. 46, pp. 299-311.

Herrmann, R.B., and Canas, J.A., 1978, Focal mechanism studies in the New Madrid seismic zone: *Bulletin of the Seismological Society of America*, v. 68, pp. 1095-1102.

Herrmann, R.B., and Kijko, A., 1983, Short-period *Lg* magnitudes: Instrument, attenuation, and source effects: *Bulletin of the Seismological Society of America*, v. 73, no. 6A, pp. 1835-1850.

Herrmann, R.B., and Nuttli, O.T., 1982, Magnitude: The relation of M_L to m_{bLg}: *Bulletin of the Seismological Society of America*, v. 72, no. 2, pp. 389-397.

Herrmann, R.B., Park, S.-K., and Wang, C-Y., 1981, The Denver earthquakes of 1967-1968: *Bulletin of the Seismological Society of Amer*ica, v. 71, no. 3, pp. 731-745.

Hersi, O.S., Lavoie, D., and Nowlan, G.S., 2003, Reappraisal of the Beekmantown Group sedimentology and stratigraphy, Montréal area, southwestern Quebec: Implications for understanding the depositional evolution of the Lower-Middle Ordovician Laurentian passive margin of eastern Canada: *Canadian Journal of Earth Sciences*, v. 40, pp. 149-176.

Heyl, A.V., 1972, The 38th parallel lineament and its relation to ore deposits: *Economic Geology*, v. 67, pp. 879-894.

Hibbard, J., 2004, The Appalachian orogen: in van der Pluijm, B., and Marshak, S. (editors), *Earth Structure: An Introduction to Structural Geology and Tectonics*, W.W. Norton & Co., New York, pp. 582-592.

Hibbard, J.P., van Staal, C.R., and Rankin, D.W., 2007, A comparative analysis of pre-Silurian crustal building blocks of the northern and the southern Appalachian orogen: *American Journal of Science*, v. 307, pp. 1-22.

Hibbard, J.P., van Staal, C.R., Rankin, D.W., and Williams, H., 2006, *Lithotectonic Map of the Appalachian Orogen, Canada–United States of America*: Geological Society of Canada, map 2096A, 1:1,500,000 scale.

Higgins, M.D., and van Breemen, O., 1998, The age of the Sept Iles layered mafic intrusion, Canada: Implications for the late Neoproterozoic/Cambrian history of southeastern Canada: *The Journal of Geology*, v. 106, pp. 421-431.

Hildenbrand, T.G., 1982, Model of the southeastern margin of the Mississippi Valley graben near Memphis, Tennessee, from interpretation of truck-magnetometer data: *Geology*, v. 10, pp. 476-480.

Hildenbrand, T.G., 1985, Rift structure of the northern Mississippi Embayment from the analysis of gravity and magnetic data: *Journal of Geophysical Research*, v. 90, pp. 12,607-12,622.

Hildenbrand, T.G., and Hendricks, J.D., 1995, Geophysical setting of the Reelfoot rift and relations between rift structures and the New Madrid seismic zone: in Shedlock, K.M., and Johnston, A.C. (editors), *Investigations of the New Madrid Seismic Zone*, U.S. Geological Survey Professional Paper 1538-E, 30 pp.

Hildenbrand, T.G., and Kucks, R.P., 1992, Filtered Magnetic Anomaly Maps of Missouri, U.S. Geological Survey Geophysical Investigations Series Map GP-1000, 2 sheets, scale 1:1,000,000.

Hildenbrand, T.G., Kucks, R.P., and Sweeney, R.E., 1983, Digital Magnetic-Anomaly Map of central United States: Description of Major Features: U.S. Geological Survey Geophysical Investigations Map GP-955, scale 1:2,500,000.

Hildenbrand, T.G., McBride, J.H., and Ravat, D., 2002, The Commerce geophysical lineament and its possible relation to Mesoproterozoic igneous complexes and large earthquakes in the central Illinois basin: *Seismological Research Letters*, v. 73, no. 5, pp. 640-659.

Hildenbrand, T.G., and Ravat, D., 1997, Geophysical setting of the Wabash Valley fault system: *Seismological Research Letters*, v. 68, no. 4, pp. 567-585.

Hildenbrand, T.G., Stuart, W.D., and Talwani, P., 2001, Geologic structures related to New Madrid earthquakes near Memphis, Tennessee, based on gravity and magnetic interpretations: *Engineering Geology*, v. 62, pp. 105-121.

Himes, L., Strauder, W., and Herrmann, R.B., 1988, Indications of active faults in the New Madrid seismic zone from precise locations of hypocenters: *Seismological Research Letters*, v. 59, pp. 123-131.

Hinze, W.J., 1996, The crust of the northern U.S. craton: A search for beginnings: in van der Pluijm, B.A., and Catacosinos, P.A. (editors), *Basement and Basins of Eastern North America*, Geological Society of America Special Paper 308, pp. 187-201.

Hinze, W.J., Allen, D.J., Braile, L.W., and Mariano, J., 1997, The Midcontinent Rift System: A major Proterozoic continental rift: in Ojakangas, R.W., Dickas, A.B., and Green, J.C. (editors), *Middle Proterozoic to Cambrian Rifting, Central North America*, Geological Society of America Special Paper 312, pp. 7-35.

Hinze, W.J., and Hildenbrand, T.G., 1988, The utility of geopotential field data in seismotectonic studies in the Eastern United States: *Seismological Research Letters*, v. 59, no. 4, pp. 289-297.

Hinze, W.J., Kellogg, R.L., and O'Hara, N.W., 1975, Geophysical studies of the basement geology of southern peninsula of Michigan: *AAPG Bulletin*, v. 59, no. 9, pp. 1562-1584.

Hodych, J.P., and Cox, R.A., 2007, Ediacaran U-Pb zircon dates for the Lac Matapédia and Mt. St.-Anselme basalts of the Quebec Appalachians: Support for a long-lived mantle plume during the rifting phase of Iapetus opening: *Canadian Journal of Earth Sciences*, v. 44, pp. 565-581.

Hoehn, M.H., 1991, An Integrated Geophysical Study of the Grenville Province in the Greater Lake Erie Region: M.S. thesis, Purdue University, West Lafayette, Ind.

Holbrook, J., Autin, W.J., Rittenour, T.M., Marshak, S., and Goble, R.J., 2006, Stratigraphic evidence for millennial-scale temporal clustering of earthquakes on a continental-interior fault: Holocene Mississippi River floodplain deposits, New Madrid seismic zone, USA: *Tectonophysics*, v. 420, pp. 431-454.

Holbrook, W.S., Purdy, G.M., Sheridan, R.E., Glover III, L., Talwani, M., Ewing, J., and Hutchinson, D., 1994, Seismic structure of the U.S. Mid-Atlantic continental margin: *Journal of Geophysical Research*, v. 99, no. B9, pp. 17871-17891.

Holbrook, W.S., Reiter, E.C., Purdy, G.M., Sawyer, D., Stoffa, P.L., Austin, J.A., Oh, J., and Makris, J., 1994, Deep structure of the U.S. Atlantic continental margin, offshore South Carolina, from coincident ocean bottom and multichannel seismic data: *Journal of Geophysical Research*, v. 99, no. B5, pp. 9155-9178.

Horton, J.W., Jr., and Dicken, C.L., 2001, *Preliminary Digital Geologic Map of the Appalachian Piedmont and Blue Ridge, South Carolina Segment*: U.S. Geological Survey Open-File Report 01-298, 1:500,000 scale.

Horton, S.P., Kim, W.Y., and Withers, M., 2005, The 6 June 2003 Bardwell, Kentucky, earthquake sequence: Evidence for a locally perturbed stress field in the Mississippi embayment: *Bulletin of the Seismological Society of America*, v. 95, pp. 431-445.

Hosman, R.L., 1996, *Regional Stratigraphy and Subsurface Geology of Cenozoic Deposits, Gulf Coastal Plain, South-Central United States*: U.S. Geological Survey Professional Paper 1416-G, 35 pp.

Hough, S., Armbruster, J.G., Seeber, L., and Hough, J.F., 2000, On the modified Mercalli intensities and magnitudes of the 1811-1812 New Madrid earthquakes: *Journal of Geophysical Research*, v. 105, no. B10, pp. 23,839-23,864.

Hough, S.E., 2009, The 1811-1812 New Madrid Sequence: Mainshocks, Aftershocks, and Beyond: presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Hough, S.E., Bilham, R., Mueller, K., Stephenson, W., Williams, R., and Odum, J., 2005, Wagon loads of sand blows in White County, Illinois: *Seismological Research Letters*, v. 76, no. 3, pp. 373-386.

Hough, S.E., and Martin, S., 2002, Magnitude estimates of two large aftershocks of the 16 December 1811 New Madrid earthquake: *Bulletin of the Seismological Society of America*, v. 92, no. 8, pp. 3259-3268.

Hough, S.E., and Page, M., 2011, Toward a consistent model for strain accrual and release for the New Madrid, central United States: *Journal of Geophysical Research*, v. 116, B03311, doi:10.1029/2010JB007783.

Hough, S.E., and Seeber, L., 1991, Seismological constraints on source properties on the mb = 4.0, 1985 Ardsley, New York, earthquake: A characteristic rupture? *Journal of Geophysical Research*, v. 96, no. B11, pp. 18,183-18,195.

Howe, J.R., 1985, Tectonics, Sedimentation, and Hydrocarbon Potential of the Reelfoot Aulacogen: M.S. thesis, University of Oklahoma, Norman, Okla., 109 pp.

Howell, P.D., and van der Pluijm, B.A., 1999, Structural sequences and styles of subsidence in the Michigan basin: *Geological Society of America Bulletin*, v. 111, no. 7, pp. 974-991.

Hu, K., Gassman, S.L., and Talwani, P., 2002a, In-situ properties of soils at paleoliquefaction sites in the South Carolina Coastal Plain: *Seismological Research Letters*, v. 73, pp. 964-978.

Hu, K., Gassman, S.L., and Talwani, P., 2002b, Magnitudes of prehistoric earthquakes in the South Carolina Coastal Plain from geotechnical data: *Seismological Research Letters*, v. 73, pp. 979-991.

Hughes, S., and Luetgert, J.H., 1991, Crustal structure of the western New England Appalachians and the Adirondack Mountains: *Journal of Geophysical Research,* v. 96, pp. 16471-16,494.

Hurd, O., 2010, Stress measurement update for the Central Eastern United States, conducted as part of CEUS SSC Project, 5 pp.

Hutchinson, D.R., Grow, J.A., and Klitgord, K.D., 1983, Crustal structure beneath the southern Appalachians; nonuniqueness of gravity modeling: *Geology*, v. 11, pp. 611-615.

Hutchinson, D.R., Klitgord, K.D., and Detrick, R.S., 1986, Rift basins of the Long Island platform: *Geological Society of America Bulletin*, v. 97, pp. 688-702.

Hutchinson, D.R., Pomeroy, P.W., Wold, R.J., and Halls, H.C., 1979, A geophysical investigation concerning the continuation of the Clarendon-Linden fault across Lake Ontario: *Geology*, v. 7, pp. 206-210.

Illinois State Geological Survey (ISGS), 1995, Structural Features in Illinois - 1995 - Line Features (Axial or Flexure) of Anticlines, Synclines and Monoclines. http://www.isgs.illinois.edu/nsdihome/outmeta/IL_Struct_Feat_Clines_1995_Ln.html

Iman, R.L., and Conover, W.J., 1980, Small sample sensitivity analysis techniques for computer models, with an application to risk assessment: Communications in Statistics—Theory and Methods, v. 9, pp. 1749-1842.

International Seismological Centre (ISC), website, http://www.isc.ac.uk/.

Jackson, M.P.A., 1982, *Fault Tectonics of the East Texas Basin*: Geological Circular 82-4, Bureau of Economic Geology, University of Texas, Austin, 31 pp.

Jacobeen, F.H., 1972, *Seismic Evidence for High Angle Reverse Faulting in the Coastal Plain of Prince Georges and Charles County, Maryland*: Maryland Geological Survey Information Circular 13, 21 pp.

Jacobi, R.D., 2002, Basement faults and seismicity in the Appalachian Basin of New York State: *Tectonophysics*, v. 353, pp. 75-113.

Jacobi, R., and Fountain, J., 1993, The southern extension and reactivations of the Clarendon-Linden fault system: *Geographie physique et Quaternaire*, v. 47, no. 3, pp. 285-302.

Jacobi, R., and Fountain, J., 1996, *Determination of the Seismogenic Potential of the Clarendon-Linden Fault System in Allegany County*: Final report to New York State Energy Research and Development Agency, 2,106 pp., 31 oversize maps.

Jacobi, R.D., and Fountain, J., 2002, The character and reactivation history of the southern extension of the seismically active Clarendon-Linden Fault System, western New York State: *Tectonophysics*, v. 353, pp. 215-262.

Jacques, J.M., Price, A.D., and Bain, J.F., 2004, Digital integration of potential fields and geologic datasets for plate tectonic and basin dynamic modeling—The first step towards identifying new play concepts in the Gulf of Mexico basin: *The Leading Edge*, Association of Exploration Geophysicists, April.

James, D.E., Smith, T.J., and Steinhart, J.S., 1968, Crustal structure of the middle Atlantic states: *Journal of Geophysical Research*, v. 73, pp. 1983-2007.

Jenny, H., 1941, *Factors of Soil Formation*: McGraw-Hill, New York, 281 pp.

Jenny, H., 1961, Derivation of state factor equations of soils and ecosystems: *Soil Science Society of America Journal*, v. 25, pp. 385-388.

Joeckel, R.M., Carlson, M.P., Summerside, S.C., and Leach, J.P., 2003, Earthquake history, seismicity, and related tectonics in Nebraska: *Geological Society of America*, Paper No. 17-6, http://gsa.confex.com/gsa/2003NC/finalprogram/abstract_50624.htm, accessed August 10, 2009.

Johnston, A.C., 1994, Seismotectonic interpretations and conclusions from the stable continental region seismicity database: in Schneider, J.F. (editor), *The Earthquakes of Stable Continental Regions—Volume 1: Assessment of Large Earthquake Potential*, Electric Power Research Institute, Report TR-102261, v. 1, sect. 4, pp. 1-103.

Johnston, A.C., 1996a, Seismic moment assessment of earthquakes in stable continental regions—I. Instrumental seismicity: *Geophysical Journal International*, v. 124, pp. 381-414.

Johnston, A.C., 1996b, Seismic moment assessment of earthquakes in stable continental regions—II. Historical seismicity: *Geophysical Journal International*, v. 125, pp. 639-678.

Johnston, A.C., 1996c, Seismic moment assessment of earthquakes in stable continental regions—III. New Madrid 1811-1812, Charleston 1886, and Lisbon 1755: *Geophysical Journal International*, v. 126, pp. 314-344.

Johnston, A.C., Coppersmith, K.J., Kanter, L.R., and Cornell, C.A., 1994, *The Earthquakes of Stable Continental Regions: Final Report Submitted to Electric Power Research Institute (EPRI)*: TR-102261, 5-volume proprietary report prepared for Electric Power Research Institute, Palo Alto, California.

Johnston, A.C., and Kanter, L.R., 1990, Earthquakes in stable continental crust: *Scientific American*, v. 262, pp. 68-75.

Johnston, A.C., and Nava, S.J., 1990, Seismic-hazard assessment in the central United States: in Krinitzsky, E.L., and Slemmons, D.B., *Neotectonics in Earthquake Evaluation, Geological Society of America Reviews in Engineering Geology*, v. 8, pp. 47-58.

Johnston, A.C., Reinbold, D.J., and Brewer, S.I., 1985, Seismotectonics of the southern Appalachians: *Bulletin of the Seismological Society of America*, v. 75, pp. 291-312.

Johnston, A.C., and Schweig, E.S., 1996, The enigma of the New Madrid earthquakes of 1811-1812: *Annual Review of Earth and Planetary Sciences*, v. 24, pp. 339-384.

Jones, F.B., Long, L.T., and McKee, J.H., 1977, Study of the attenuation and azimuthal dependence of seismic-wave propagation in the southeastern United States: *Bulletin of the Seismological Society of America*, v. 67, no. 6, pp. 1503-1513.

Jones-Cecil, M., 1995, Structural controls of Holocene reactivation of the Meers fault, southwestern Oklahoma, from magnetic studies: *Geological Society of America Bulletin*, v. 107, pp. 98-112.

Kafka, A., Schlesinger-Miller, E.A., and Barstow, N.L., 1985, Earthquake activity in the greater New York City area: Magnitudes, seismicity, and geologic structures: *Bulletin of the Seismological Society of America*, v. 75, pp. 1285-1300.

Kafka, A.L., 2007, Does seismicity delineate zones where future large earthquakes are likely to occur in intraplate environments? in Stein, S., and Mazzotti, S. (editors), *Continental Intraplate Earthquakes: Science, Hazard, and Policy Issues*, Geological Society of America Special Paper 425, pp. 35-48, doi:10.1130/2007.2425(03).

Kafka, A.L., 2009, Use of Seismicity to Define Seismic Sources: Application to Eastern North America: presentation given at CEUS SSC Project Workshop #2, February 18-20, Palo Alto, Calif.

Kamo, S.L., Gower, C.F., and Krogh, T.E., 1989, Birthdate for the Iapetus Ocean? A precise U-Pb and baddeleyite age for the Long Range dykes, southeast Labrador: *Geology*, v. 17, no. 7, pp. 602-605.

Kamo, S.L., Krogh, T.E., and Kumarapeli, P.S., 1995, Age of the Grenville dyke swarm, Ontario-Quebec: Implications for the timing of Iapetan rifting: *Canadian Journal of Earth Sciences*, v. 32, pp. 273-280.

Kanamori, H., 1977, The energy release in great earthquakes, *Journal of Geophysical Research*, v. 82, pp. 2,981-2,987.

Kanter, L.R., 1994, Tectonic interpretation of stable continental crust: in Johnston, A.C., Coppersmith, K.J., Kanter, L.R., and Cornell, C.A., 1994, *The Earthquakes of Stable Continental Regions, Volume 1: Assessment of Large Earthquake Potential*, Final Report TR-102261-V1, a five-volume proprietary report prepared for Electric Power Research Institute (EPRI), Palo Alto, Calif., chapter 2, pp. 2-1–2-98.

Karlo, J.F., and Shoup, R.C., 2000, Classifications of syndepositional systems and tectonic provinces of the northern Gulf of Mexico: AAPG Search and Discovery article #30004.

Karlstrom, K.E., and Keller, G.R. (editors), 2005, *The Rocky Mountain Region—An Evolving Lithosphere: Tectonics, Geochemistry, and Geophysics*: American Geophysical Union Geophysical Monograph 154, 441 pp.

Karner, G.D., and Watts, A.B., 1983, Gravity anomalies and flexure of the lithosphere at mountain ranges: *Journal of Geophysical Research*, v. 88, pp. 10,449-10,477.

Kaufmann, R.D., and Long, L.T., 1996, Velocity structure and seismicity of southeastern Tennessee: *Journal of Geophysical Research*, v. 101, no. B4, pp. 8531-8542.

Kean, A.E., and Long, L.T., 1981, A seismic refraction line along the axis of the southern Piedmont and crustal thicknesses in the southeastern United States: *Earthquake Notes*, v. 51, no. 4, pp. 3-13.

Keen, C.E., and Potter, D.P., 1995a, The transition from a volcanic to a nonvolcanic rifted margin off eastern Canada: *Tectonics*, v. 14, no. 2, pp. 359-371.

Keen, C.E., and Potter, D.P., 1995b, Formation and evolution of the Nova Scotia rifted margin: Evidence from deep seismic reflection data: *Tectonics*, v. 14, no. 4, pp. 918-932.

Keller, G.R., 2010, An Integrated Geophysical Analysis of the MidContinent Rift System: Internal report submitted as part of the CEUS SSC Project.

Keller, G.R., Bland, A.E., and Greenberg, J.K., 1982, Evidence for a major Late Precambrian tectonic event (rifting?) in the eastern Midcontinent region, United States: *Tectonics*, v. 1, no. 2, pp. 213-223.

Keller, G.R., and Hatcher Jr., R.D., 1999, Some comparisons of the structure and evolution of the southern Appalachian-Ouachita orogen and portions of the Trans-European Suture Zone region: *Tectonophysics*, v. 314, pp. 43-68.

Keller, G.R., and Stephenson, R.A., 2007, The southern Oklahoma and Dniepr-Donets aulacogens: A comparative analysis: in Hatcher, R.D., Jr., Carlson, M.P., McBride, J.H., and Martínez Catalán, J.R. (editors), *4-D Framework of Continental Crust*: Geological Society of America Memoir 200, pp. 127-143.

Keller, M.R., Robinson, E.S., and Glover III, L., 1985, Seismicity, seismic reflection, gravity, and geology of the central Virginia seismic zone: Part 3. Gravity: *Geological Society of America Bulletin*, v. 96, pp. 1,580-1,584.

Kelson, K.I., Van Arsdale, R.B., Simpson, G.D., and Lettis, W.R., 1992, Assessment of the style and timing of surficial deformation along the Central Reelfoot scarp, Lake County, Tennessee: *Seismological Research Letters*, v. 63, no. 3, pp. 349-356.

Kelson, K.I., and Swan, F.H., 1990, Paleoseismic history of the Meers fault, southwestern Oklahoma, and its implications for evaluations of earthquake hazards in the central and eastern United States: in Weiss, A.J. (editor), *Proceedings of the Seventeenth Water Reactor Safety Information Meeting*, Nuclear Regulatory Commission, NUREG/CP-0105, pp. 341-365.

Kelson, K.I., Simpson, G.D., Van Arsdale, R.B., Harris, J.B., Haraden, C.C., and Lettis, W.R., 1996, Multiple late Holocene earthquakes along the Reelfoot fault, central New Madrid seismic zone: *Journal of Geophysical Research*, v. 101, no. B-3, pp. 6151-6170.

Kenner, S.J., 2003, Effects of driving stress and rheology on the temporal and spatial distribution of faulting within intraplate seismic zones: *Eos, Transactions of the American Geophysical Union*, v. 84, no. 46, Fall Meeting Supplemental, Abstract T21B-04.

Kenner, S.J., and Segall, P., 2000, A mechanical model for intraplate earthquakes: Application to the New Madrid seismic zone: *Science*, v. 289, pp. 2329-2332, doi:10.1126/science.289.5488.2329.

Kijko, A., 2004, Estimation of the maximum earthquake magnitude, m_{max}: *Pure and Applied Geophysics*, v. 161, pp. 1-27.

Kijko, A., and Graham, G., 1998, ‘‘Parametric-historic’’ procedure for probabilistic seismic hazard analysis: Part I: Assessment of maximum regional magnitude m_{max}: *Pure and Applied Geophysics*. v. 152, pp. 413-442.

Kijko, A., Graham, G., Singh, M., Roblin, D., and Brandt, M.B.C., 2009, Probabilistic PGA and spectral acceleration seismic hazard maps for South Africa [abstract]: Invited lecture, Workshop R1 “Earthquake Hazard,” the IASPEI General Assembly in Cape Town, January 11-16.

Kim, W.-Y., 1998, The M_L scale in eastern North America: *Bulletin of the Seismological Society of America*, v. 99, no. 4, pp. 935-951.

Kim, W.-Y., 2003, The 18 June 2002 Caborn, Indiana, earthquake: Reactivation of ancient rift in the Wabash Valley seismic zone? *Bulletin of the Seismological Society of America*, v. 93, no. 5, pp. 2201-2211.

Kim, W.-Y., and Chapman, M., 2005, The 9 December 2003 central Virginia earthquake sequence: A compound earthquake in the Central Virginia seismic zone: *Bulletin of the Seismological Society of America*, v. 95, no. 6, pp. 2428-2445.

Kim, W.-Y, Dineva, S., Ma, S., and Eaton, D., 2006, The 4 August 2004, Lake Ontario, earthquake: *Seismological Research Letters*, v. 77, no. 1, pp. 65-73.

King, P.B., and Beikman, H.M. (compilers), 1974, Geologic Map of the United States: U.S. Geological Survey, 3 sheets, scale 1:2,500,000.

King, E.R., and Zietz, I., 1978, The New York–Alabama lineament: Geophysical evidence for a major crustal break in the basement beneath the Appalachian basin: *Geology*, v. 6, pp. 312-318.

Kirkham, R.M., and Rogers, W.P., 1981, Earthquake potential in Colorado—A preliminary evaluation: *Colorado Geological Survey Bulletin 43*, 171 pp., 3 plates.

Klasner, J.S., Cannon, W.F., and Van Schmus, W.R., 1982, The pre-Keweenawan history of the southern Canadian Shield and its influence on formation of the Midcontinent Rift: in Wold, R.J., and Hinze, W.J. (editors), *Geology and Tectonics of the Lake Superior Basin*: Geological Society of America Memoir 156, pp. 27-46.

Klitgord, K.D., Hutchinson, D.R., and Schouten, H., 1988, U.S. Atlantic continental margin; Structural and tectonic framework: in Sheridan, R.E., and Grow, J.A. (editors), *The Atlantic Continental Margin, U.S.*, Geological Society of America, The Geology of North America, v. I-2, ch. 3, pp. 19-55.

Klitgord, K.D., Popenoe, P., and Schouten, H., 1984, Florida: A Jurassic transform plate boundary: *Journal of Geophysical Research*, v. 89, pp. 7753-7772.

Klose, C.D., and Seeber, L., 2007, Shallow seismicity in stable continental regions: *Seismological Research Letters*, v. 78, no. 5, pp. 554-562.

Koff, L.R., 1978, Tectonics of the Oklahoma City Uplift, Central Oklahoma: unpublished M.S. thesis, University of Oklahoma, 64 pp.

Kolata, D.R., and Hildenbrand, T.G., 1997, Structural underpinnings and neotectonics of the southern Illinois basin: An overview: *Seismological Research Letters*, v. 68, no. 4, p. 499.

Kolata, D.R., and Nelson, W.J., 1991 Tectonic history of the Illinois Basin: in Leighton, M.W., Kolata, D.R., Oltz, D.F., and Eidel, J.J. (editors), *Interior Cratonic Basins*, AAPG Memoir 51, Chapter 18, pp. 263-285.

Kolata, D.R., Buschbach, T.C., and Treworgy, J.D., 1978, *The Sandwich Fault Zone of Northern Illinois*: Illinois State Geological Survey Circular 505, 26 pp.

Krinitzsky, E.L., 1950, Geological Investigation of Faulting in the Lower Mississippi Valley: U.S. Army Corps of Engineers Waterways Experiment Station, Technical Memorandum 3-311, 50 pp.

Kuenen, P.H., 1958, Experiments in geology: *Transactions of the Geological Society of Glasgow*, v. 23, pp. 1-28.

Kulkarni, R.B., Youngs, R.R., and Coppersmith, K.J., 1984, Assessment of confidence intervals for results of seismic hazard analysis: in *Proceedings, Eighth World Conference on Earthquake Engineering, San Francisco*, v. 1, pp. 263-270.

Kumarapeli, P.S., 1985, Vestiges of Iapetan rifting in the craton west of the northern Appalachians: *Geoscience Canada*, v. 12, no. 2, pp. 54-59.

Kumarapeli, P.S., 1993, A plume-generated segment of the rifted margin of Laurentia, Southern Canadian Appalachians, seen through a completed Wilson Cycle: *Tectonophysics*, v. 29, pp. 47-55.

Kumarapeli, P.S., and Saull, V.A., 1966, The St. Lawrence valley system: A North American equivalent of the East African rift system: *Canadian Journal of Earth Sciences*, v. 3, pp. 639-658.

Kumarapeli, S., St. Seymour, K., Pintson, H., and Hasselgren, E., 1988, Volcanism on the passive margin of Laurentia: An early Paleozoic analogue of Cretaceous volcanism on the northeastern American margin: *Canadian Journal of Earth Sciences*, v. 25, pp. 1824-1833.

Kuribayashi, E., and Tatsuoka, F., 1975, Brief review of liquefaction during earthquakes in Japan: *Soils and Foundations*, v. 15, pp. 81-92.

Lamontagne, M., 1987, Seismic activity and structural features in the Charlevoix region, Québec: *Canadian Journal of Earth Sciences*, v. 24, pp. 2118-2129.

Lamontagne, M., 1999, Rheological and Geological Constraints on the Earthquake Distribution in the Charlevoix Seismic Zone: Ph.D. thesis, Carleton University, published as Geological Survey of Canada Open-File Report, D-3778, 353 pp.

Lamontagne, M., 2009, Description and analysis of the earthquake damage in the Quebec City region between 1608 and 2008: *Seismological Research Letters*, v. 80, no. 3, pp. 514-424.

Lamontagne, M., Bent, A.L., Woodgold, C.R.D., Ma, S., and Peci, V., 2004, The 16 March 1999 m_N 5.1 Côte-Nord earthquake: The largest earthquake ever recorded in the lower St. Lawrence seismic zone, Canada: *Seismological Research Letters*, v. 75, no. 2, pp. 299-316.

Lamontagne, M., Halchuk, S., Cassidy, J. F., and Rogers, G. C., 2007, *Significant Canadian Earthquakes, 1600-2006*: Geological Survey of Canada, Open-File 5539, 32 pp.

Lamontagne, M., Halchuck, S., Cassidy, J.F., and Rogers, G.C., 2008, Significant Canadian earthquakes of the period 1600-2006: *Seismological Research Letters*, v. 79, pp. 211-223.

Lamontagne, M., Hasegawa, H., Forsyth, D., Buchbinder, G., and Cajka, M., 1994, The Mont-Laurier, Quebec, earthquake of 19 October 1990 and its seismotectonic environment: *Bulletin of the Seismological Society of America*, v. 84, pp. 1506-1522.

Lamontagne, M., Keating, P., and Perreault, S., 2003, Seismotectonic characteristics of the lower St. Lawrence seismic zone, Quebec: Insights from geology, magnetics, gravity, and seismics: *Canadian Journal of Earth Sciences*, v. 40, pp. 317-336.

Lamontagne, M., Keating, P., and Toutin, T., 2000, Complex faulting confounds earthquake research in the Charlevoix seismic zone, Québec: *Eos, Transactions of the American Geophysical Union*, v. 81, pp. 26, 289, 292, 293.

Lamontagne, M., and Ranalli, G., 1996, Thermal and rheological constraints on the earthquake depth distribution in the Charlevoix, Canada, intraplate seismic zone: *Tectonophysics*, v. 257, pp. 55-69.

Lamontagne, M., and Ranalli, G., 1997, Faults and spatial clustering of earthquakes near La Malbaie, Charlevoix seismic zone, Canada: *Seismological Research Letters*, v. 68, no. 2, pp. 337-352.

Lamont-Doherty Cooperative Seismographic Network, LCSN Earthquake Catalog: http://almaty.ldgo.columbia.edu:8080/data.search.html, last updated July 22, 2011.

Langenheim, V.E., and Hildenbrand, T.G., 1997, Commerce geophysical lineament—Its source, geometry, and relation to the Reelfoot rift and New Madrid seismic zone: *Geological Society of America Bulletin*, v. 109, no. 5, pp. 580-595.

Larson, E.E., Patterson, P.E., Curtis, G., Drake, K., and Mutschler, F.E., 1985, Petrologic, paleomagnetic, and structural evidence of a Paleozoic rift system in Oklahoma, New Mexico, Colorado, and Utah: *Geological Society of America Bulletin.*, v. 96, pp. 1364-1372.

Larson, T.H., 2001, *The Earthquake of September 2, 1999, in Northern Illinois: Big Lessons from a Small Earthquake*: Illinois State Geological Survey, Environmental Geology Notes 153, 22 pp.

Larson, T.H., 2002, The earthquake of 2 September 1999 in northern Illinois: Intensities and possible neotectonism: *Seismological Research Letters*, v. 73, no. 5. pp. 732-738.

Larson, T.H., Bauer, R.A., Su, W.-J., Devera, J.A., Seid, M., Hester, N.C., Elrick, S.D., and Korose, C.P., 2009, Analysis of effects from the April 18, 2008 Illinois earthquake [abstract]: *Seismological Research Letters*, v. 80, no. 2, pp. 301-302.

LASE Study Group, 1986, Deep structure of the U.S. East Coast passive margin from large aperture seismic experiments (LASE): *Marine and Petroleum Geology*, v. 3, pp. 234-242.

Lavoie, D., Burden, E., and Lebel, D., 2003, Stratigraphic framework for the Cambrian-Ordovician rift and passive margin successions from southern Quebec to western Newfoundland: *Canadian Journal of Earth Sciences*, v. 40, pp. 177-205.

Law, K.T., 1990, Analysis of soil liquefaction during the 1988 Saguenay earthquake: *Proceedings of the 43rd Canadian Geotechnical Conference, Quebec*, v. 1, pp. 189-196.

Law, R.D., Pope, M.C., Wirgart, R.H., Bollinger, G.A., and Whitmarsh, R.S., 1992, Geologically recent near-surface folding and faulting in the Valley and Ridge province—New exposures of extensional faults in alluvial sediments, Giles County, SW Virginia [abstract]: *Seismological Research Letters*, v. 63, pp. 609-610.

Law, R.D., Pope, M.C., Wirgart, R.H., Eriksson, K.A., Carpenter, D., Robinson, E.S., and Bollinger, G.A., 1993, Geologically recent near-surface folding and faulting in the Valley and Ridge Province: New exposures of extensional faults in alluvial sediments, Giles County, SW Virginia [abstract]: *Eos, Transactions of the American Geophysical Union*, v. 74, no. 16, p. 282.

Law, R.D., Pope, M.C., Wirgart, R.H., Eriksson, K.A., Robinson, E.S., Sayer, S., Phinney, E.J., and Bollinger, G.A., 1994, Geologically recent near-surface faulting and folding in Giles County, southwest Virginia: New exposures of extensional and apparent reverse faults in alluvial sediments between Pembroke and Pearisburg: *Proceedings of the U.S. Nuclear Regulatory Commission for 1994, Twenty-First Water Reactor Safety Information Meeting, October 25-27, 1993, Bethesda, Maryland*, NUREG/CP-0133, v. 3, pp. 415-432.

Law, R.D., Robinson, E.S., Cyrnak, J.S., Sayer, S., Williams, R.T., Callis, J., and Pope, M., 1997, Geologically-recent faulting and folding of alluvial sediments near Pearisburg, Giles County, Virginia—Tectonic faulting or karst subsidence in origin? [abstract]: *Eos, Transactions of the American Geophysical Union*, v. 78, no. 17 (supplement), p. S316.

Law, R.D., Robinson, E.S., Pope, M., and Williams, R.T., 2000, Folding and faulting of Plio-Pleistocene sediments in Giles County, SW Virginia: 1) Surface data and interpretation [abstract]: Geological Society of America *Abstracts with Programs*, v. 32, no. 2, p. A-57.

Law, R.D., Robinson, E.S., Sayer, S., Cyrnak, J.S., Williams, R.T., Callis, J., and Pope, M., 1998, Geologically-recent faulting and folding of alluvial sediments near Pearisburg, Giles County, Virginia—Tectonic faulting or karst subsidence in origin? in Dennison, J.M., and Stewart, K.G. (editors), *Geologic Field Guide to Extensional Structures along the Allegheny Front in Virginia and West Virginia near the Giles County Seismic Zone: Southeastern Section*, Geological Society of America, Charleston, West Virginia, March 28-29, 1998, Guidebook, pp. 95-101.

LDRL (Luminescence Dating Research Laboratory, University of Illinois at Chicago), 2010, Luminescence Tutorial—Optically Stimulated Luminescence (OSL), website accessed June 10, 2010, http://www.uic.edu/labs/ldrl/osl.html.

Leblanc, G., 1981, A closer look at the September 16, 1732, Montreal earthquake: *Canadian Journal of Earth Sciences*, v. 18, pp. 539-550.

Leblanc, G., and Burke, K.B.S., 1985, Re-evaluation of the 1817, 1855, 1869, and 1904 Maine–New Brunswick area earthquakes: *Earthquake Notes*, v. 56, pp. 107-123.

Lehmann, E.L., 1959, *Testing Statistical Hypotheses*: John Wiley and Sons, New York, 150 pp.

Lemieux, Y., Tremblay, A., and Lavoie, D., 2003, Structural analysis of supracrustal faults in the Charlevoix area, Quebec: Relation to impact cratering and the St-Laurent fault system: *Canadian Journal of Earth Sciences*, v. 40, pp. 221-235.

Lennon, G., 1986, *Identification of a Northwest Trending Seismogenic Graben near Charleston, South Carolina*: U.S. Nuclear Regulatory Commission Report, NUREG/CR-4075, 43 pp.

Leon, E., 2003, Effect of Aging of Sediments on Paleoliquefaction Evaluation in the South Carolina Coastal Plain*:* unpublished Ph.D. dissertation, University of South Carolina, 181 pp.

Leon, E., Gassman, S.L., and Talwani, P., 2005, Effect of soil aging on assessing magnitudes and accelerations of prehistoric earthquakes: *Earthquake Spectra*, v. 21, pp. 737-759.

Leonard, M., 2010, Earthquake fault scaling: Self-consistent relating of rupture length, width, average displacement, and moment release: *Bulletin of the Seismological Society of America*, v. 100, no. 5A, pp. 1971-1988.

Lepper, K., 2007, Optically stimulated luminescence dating—An introduction: *New Mexico Geology*, v. 29, no. 4, p. 111.

Levesque, C., Locat, J., and Leroueil, S., 2006, Dating submarine mass movements triggered by earthquakes in the Upper Saguenay Fjord, Quebec, Canada: *Norwegian Journal of Geology*, v. 86, pp. 231-242.

Li, A., Forsyth, D.W., and Fischer, K.M., 2003, Shear velocity structure and azimuthal anisotropy beneath eastern North America from Rayleigh wave inversion: *Journal of Geophysical Research*, v. 108, doi:10.1029/2002JB002259.

Li, Q., Liu, M., and Stein, S., 2009, Spatiotemporal complexity of continental intraplate seismicity: Insights from geodynamic modeling and implications for seismic hazard estimation: *Bulletin of the Seismological Society of America*, v. 99, no. 1, pp. 52-60.

Li, Q., Liu, M., Zhang, Q., and Sandvol, E., 2007, Stress evolution and seismicity in the central-eastern United States: Insights from geodynamic modeling: in Stein, S., and Mazzotti, S. (editors), *Continental Intraplate Earthquakes: Science, Hazard, and Policy Issues*, Geological Society of America Special Paper 425, pp. 149-166.

Li, Y., Doll, C., and Toksoz, M.N., 1995, Source characterization and fault plane determinations for M_{bLg} = 1.2 to 4.4 earthquakes in the Charlevoix seismic zone, Quebec, Canada: *Bulletin of the Seismological Society of America*, v. 85, pp. 1604-1621.

Li, Y., Schweig, E. S., Tuttle, M. P., and Ellis, M. A., 1998, Evidence for large prehistoric earthquakes in the northern New Madrid seismic zone, central United States: *Seismological Research Letters*, v. 69, no. 3, pp. 270-276.

Liang, C., and Langston, C.A., 2009, Three-dimensional crustal structure of eastern North America extracted from ambient noise: *Journal of Geophysical Research*, v. 114, p. B03310.

Liao, T., Mayne, P.W., Tuttle, M.P., Schweig, E.S., Van Arsdale, R.B., 2002, CPT site characterization for seismic hazards in the New Madrid seismic zone: *Soil Dynamics and Earthquake Engineering*, v. 22, pp. 943-950.

Lidiak, E.G., and Hinze, W.J., 1993, Grenville province in the subsurface of eastern United States: in Rankin, D.W., Chiarenzelli, J.R., Drake, A.A., Jr., Goldsmith, R., Hall, L.M., Hinze, W.J., Isachsen, Y.W., Lidiak, E.G., McLelland, J., Mosher, S., Ratcliffe, N.M., Secor, D.T., Jr., and Whitney, P.R. (editors), Chapter 5—Proterozoic rocks east and southeast of the Grenville front: in Reed, J.C., Jr., Bickford, M.E., Houston, R.S., Link, P.K., Rankin, D.W., Sims, P.K., and Van Schmus, W.R. (editors), *Precambrian: Conterminous U.S.*, Geological Society of America, The Geology of North America, v. C-2, pp. 353-365.

Liu, L., and Zoback, M.D., 1997, Lithospheric strength and intraplate seismicity in the New Madrid seismic zone: *Tectonic*s, v. 16, no. 4, pp. 585-595.

Locat, J., 2008, Localisation et magnitude du séisme du 5 février 1663 (Québec) revues à l'aide des mouvements de terrain: in Locat, J., Perret, D., Turmel, D., Demers, D., and Leroueil, S. (editors), *Proceedings of the 4th Canadian Conference on Geohazards: From Causes to Management*, Presse de l'Université Laval, Quebec, pp. 429-444.

Lombardi, A.M., 2003, The maximum likelihood estimator of *b*-value for mainshocks: *Bulletin of the Seismological Society of America*, v. 93, no. 5, pp. 2082-2088.

Long, L.T., and Kaufmann, R.D., 1994, The velocity structure and seismotectonics of southeastern Tennessee: *Seismological Research Letters*, v. 65, no. 3/4, p. 223.

Longuépée, H., and Cousineau, P.A., 2005, Reappraisal of the Cambrian glauconite-bearing Anse Maranda Formation, Quebec Appalachians: From deep-sea turbidites to clastic shelf deposits: *Canadian Journal of Earth Sciences*, v. 42, pp. 259-272.

Lowe, D.R., 1975, Water escape structures in coarse-grained sediment: *Sedimentology*, v. 22, pp. 157-204.

Lowe, D.R., and LoPiccolo, R.D., 1974, The characteristics and origins of dish and pillar structures: *Journal of Sedimentary Petrology*, v. 44, pp. 484-501.

Luza, K.V., and Lawson, J.E., 1993, *Oklahoma Seismic Network*: U.S. Nuclear Regulatory Commission, NUREG/CR-6034, 33 pp.

Luza, K.V., Madole, R.F., and Crone, A.J., 1987a, *Investigation of the Meers Fault in Southwestern Oklahoma*: U.S. Nuclear Regulatory Commission, NUREG/CR-4937, 55 pp.

Luza, K.V., Madole, R.F., and Crone, A.J., 1987b, *Investigation of the Meers Fault, Southwestern Oklahoma*: Oklahoma Geological Society, Norman, OK, Special Publication 87-1, 75 pp.

Luzietti, E.A., Kanter, L.R., Schweig, E.S., Shedlock, K.M., and Van Arsdale, R.B., 1992, Shallow deformation along Crittenden County fault zone near the southeastern boundary of the Reelfoot rift, northeast Arkansas: *Seismological Research Letters*, v. 63, no. 3, pp. 263-275.

Lyakhovsky, V., Ben-Zion, Y., and Agnon, A., 2001, Earthquake cycle, fault zones, and seismicity patterns in a rheologically layered lithosphere: *Journal of Geophysical Research*, v. 106, no. B3, pp. 4103-4120.

Ma, S., and Atkinson, G.M., 2006, Focal depths for small to moderate earthquakes ($m_N \geq 2.8$) in western Quebec, southern Ontario, and northern New York: *Bulletin of the Seismological Society of America*, v. 96, pp. 609-623.

Ma, S., and Eaton, D.W., 2007, Western Quebec seismic zone (Canada): Clustered, midcrustal seismicity along a Mesozoic hot spot track: *Journal of Geophysical Research*, v. 112, B06305, doi:10.1029/2006JB004827.

Ma, S., Eaton, D.W., and Adams, J., 2008, Intraplate seismicity of a recently deglaciated shield terrane: A case study from northern Ontario, Canada: *Bulletin of the Seismological Society of America*, v. 98, no. 6, pp. 2828-2848.

Maceira, M., Ammon, C.J., and Herrmann, R.B., 2000, Faulting parameters of the September 25, 1998 Pymatuning, Pennsylvania earthquake: *Seismological Research Letters*, v. 71, no. 6, pp. 742-752.

Madabhushi, S., and Talwani, P., 1990, Composite fault plane solutions of recent Charleston, South Carolina, earthquakes: *Seismological Research Letters*, v. 61, no. 3-4, p. 156.

Madabhushi, S., and Talwani, P., 1993, Fault plane solutions and relocations of recent earthquakes in Middleton Place-Summerville seismic zone near Charleston, South Carolina: *Bulletin of the Seismological Society of America*, v. 83, no. 5, pp. 1442-1466.

Madole, R.F., 1986, The Meers fault: Quaternary stratigraphy and evidence for late Holocene movement: in Donovan, R.N. (editor), *The Slick Hills of Southwestern Oklahoma—Fragments of an Aulacogen*: Oklahoma Geological Society, Norman, Okla., Guidebook 24, pp. 55-67.

Madole, R.F., 1988, Stratigraphic evidence of Holocene faulting in the mid-continent: The Meers fault, southwestern Oklahoma: *Geological Society of America Bulletin*, v. 100, pp. 392-401.

Magnani, B., and McIntosh, K., 2009, Towards an Understanding of the Long-Term Deformation of the Mississippi Embayment: U.S. Geological Survey, Final Technical Report (08HQGR0089), 19 pp.

Magnani, M.B., Mitchell, L., and Waldron, B., 2009, Long-Term Deformation History in the Mississippi Embayment: The Mississippi Seismic Survey: presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Mahan, S., Counts, R., Tuttle, M., and Obermeier, S., 2009, Can OSL Be Used to Date Paleoliquefaction Events? presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Mahan, S.A. and Crone, A.J., 2006, Luminescence dating of paleoliquefaction features in the Wabash River Valley of Indiana: in Wise, R.A. (editor), *Proceedings of the 4th New World Luminescence Dating and Dosimetry Workshop, Denver, Colorado*: U.S. Geological Survey Open-File Report 2006-1351, 22 pp.

Mai, P.M., Spudich, P., and Boatwright, J., 2005, Hypocenter locations in finite-source rupture models: *Bulletin of the Seismological Society of America*, v. 95, no. 3, pp. 965-980.

Manspeizer, W., DeBoer, J., Costain, J.K., Froelich, A.J., Coruh, C., Olsen, P.E., McHone, G.J., Puffer, J.H., and Prowell, D.C., 1989, Post-Paleozoic activity: in Hatcher Jr., R.D., Thomas, W.A., and Viele, D.W. (editors), *The Appalachian-Ouachita Orogen in the United States*, Geological Society of America, The Geology of North America, v. F2, pp. 319-374.

Marple, R., and Miller, R., 2006, Association of the 1886 Charleston, South Carolina, earthquake and seismicity near Summerville with a 12º bend in the East Coast fault system and Triple-Fault Junctions: *Southeastern Geology*, v. 44, no. 3, pp. 101-127.

Marple, R., and Talwani, P., 1993, Evidence of possible tectonic upwarping along the South Carolina Coastal Plain from an examination of river morphology and elevation data: *Geology*, v. 21, pp. 651-654.

Marple, R., and Talwani, P., 2000, Evidence for a buried fault system in the Coastal Plain of the Carolinas and Virgina—Implications for neotectonics in the southeastern United States: *Geological Society of America Bulletin*, v. 112, pp. 200-220.

Marple, R.T., and Talwani, P., 2004, Proposed Shenandoah Fault and East Coast–Stafford Fault system and their implications for eastern U.S. tectonics: *Southeastern Geology*, v. 43, no. 2, pp. 57-80.

Marshak, S., and Paulsen, T., 1996, Midcontinent U.S. fault and fold zones: A legacy of Proterozoic intracratonic extensional tectonism? *Geology*, v. 24, no. 2, pp. 151-154.

Marshak, S., and Paulsen, T., 1997, Structural style, regional distribution, and seismic implications of midcontinent fault-and-fold zones, United States: *Seismological Research Letters*, v. 68, no. 4. pp. 511-520.

Martin, J.R., and Clough, G.W., 1994, Seismic parameters from liquefaction evidence: *Journal of Geotechnical Engineering*, v. 120, no. 8, pp. 1345-1361.

Marton, G., and Buffler, R.T., 1994, Jurassic reconstruction of the Gulf of Mexico basin: *International Geology Review*, v. 36, pp. 545-586.

Mateker, E.J., Phelan, M.J., and Scharon, L., 1966, Geophysical evidence for a northeast crustal lineament near St. Louis: *Eos, Transactions of the American Geophysical Union*, v. 47, p. 192.

Mateker, E.J., and Segar, R.L., 1965, Gravity investigation along the eastern flank of the Ozark uplift: *Eos, Transactions of the American Geophysical Union*, v. 46, p. 160.

Matthews, M.V., Ellsworth, W.L., and Reasenberg, P.A., 2002, A Brownian model for recurrent earthquakes: *Bulletin of the Seismological Society of America*, v. 92, pp. 2233-2250.

Matton, G., and Jebrak, M., 2009, The Cretaceous Peri-Atlantic Alkaline Pulse (PAAP): Deep mantle plume origin or shallow lithospheric break-up? *Tectonophysics*, v. 469, pp. 1-12.

Mayer, L., and Wentworth, C.M., 1983, Geomorphic differences east and west of the Stafford fault system, northeastern Virginia [abstract]: Geological Society of America *Abstracts with Programs*, v. 15, p. 56.

Mayne, P.W., 2001, Cone Penetration Testing for Seismic Hazards Evaluation in Memphis and Shelby County, Tennessee: U.S. Geological Survey, Earthquake Hazards Program, Final Report (00-HQ-GR-0025), 21 pp.

Mazzotti, S., 2009, Strain (and Stress) Constraints on Seismicity in the St. Lawrence Valley: presentation given at CEUS SSC Project Workshop #2, February 18-20, Palo Alto, Calif.

Mazzotti, S., and Adams, J., 2005, Rates and uncertainties on seismic moment and deformation rates in Eastern Canada: *Journal of Geophysical Research*, v. 110, B09301, doi:10.1029/2004JB003510.

McBride, J.H., Hatcher, R.D., Jr., Stephenson, W.J., and Hooper, R.J., 2005, Integrating seismic reflection and geological data and interpretations across and internal basement massif: The southern Appalachian Pine Mountain window, USA: *Geological Society of America Bulletin*, v. 117, no. 5/6, pp. 669-686.

McBride, J.H., Hildenbrand, T.G., Stephenson, W.J., and Potter, C.J., 2002, Interpreting the earthquake source of the Wabash Valley seismic zone (Illinois, Indiana, and Kentucky) from seismic reflection, gravity, and magnetic intensity: *Seismological Research Letters*, v. 73, no. 5, pp. 660-686.

McBride, J.H., and Kolata, D.R., 1999, Upper crust beneath the central Illinois basin, United States: *Geological Society of America Bulletin*, v. 111, no. 3, pp. 375-394.

McBride, J.H., Kolata, D.R., and Hildenbrand, T.G., 2001, Refining the target for EarthScope in the central Midcontinent [abstract]: EarthScope Workshop: Making and Breaking a Continent, Snowbird, Colo., October 10-12.

McBride, J.H., Kolata, D.R., and Hildenbrand, T.G., 2003, Geophysical constraints on understanding the origin of the Illinois basin and its underlying crust: *Tectonophysics*, v. 363, pp. 45-78.

McBride, J.H., Leetaru, H.E., Bauer, R.A., Tingey, B.E., and Schmidt, S.E.A., 2007, Deep faulting and structural reactivation beneath the southern Illinois basin: *Precambrian Research*, v. 157, pp. 289-313, doi:10.1016/j.precamres.2007.02.020.

McBride, J.H., and Nelson, K.D., 1988, Integration of COCORP deep reflection and magnetic anomaly analysis in the southeastern United States: Implications for origin of the Brunswick and East Coast magnetic anomalies: *Geological Society of America Bulletin*, v. 100, pp. 436-445.

McBride, J.H., and Nelson, W.J., 1999, Style and origin of mid-Carboniferous deformation in the Illinois Basin, USA—Ancestral Rockies deformation? *Tectonophysics*, v. 305, pp. 249-273.

McBride, J.H., Nelson, W.J., and Stephenson, W.J., 2002, Integrated geological and geophysical study of Neogene and Quaternary-age deformation in the northern Mississippi embayment: *Seismological Research Letters*, v. 73, no. 5, pp. 597-627.

McBride, J.H., Pugin, A.J.M., Nelson, W.J., Larson, T.H., Sargent, S.L., Devera, J.A., Denny, F.B., and Woolery, E.W., 2003, Variable post-Paleozoic deformation detected by seismic reflection profiling across the northwestern “prong” of New Madrid seismic zone: *Tectonophysics*, v. 368, pp. 171-191.

McBride, J.H., Sargent, M.L., and Potter, C.J., 1997, Investigating possible earthquake-related structure beneath the southern Illinois basin from seismic reflection: *Seismological Research Letters*, v. 68 no. 4, pp. 641-649.

McCartan, L., Lemon, E.M., Jr., and Weems, R.E., 1984, *Geologic Map of the Area Between Charleston and Orangeburg, South Carolina*: U.S. Geological Series Miscellaneous Investigations Series Map I-1472, 1: 250,000-scale.

McCausland, P.J.A., and Hodych, J.P., 1998, Paleomagnetism of the 550 Ma Skinner Cove volcanics of western Newfoundland and the opening of the Iapetus Ocean: *Earth and Planetary Science Letters*, v. 163, pp. 15-29.

McCausland, P.J.A., Hodych, J.P., and Dunning, G.R., 1997, Evidence from western Newfoundland for the final breakup of Rodinia? U-Pb age and paleolatitude of the Skinner Cove volcanic: *Abstract Volume*, *Geological Association of Canada 1997 Annual Meeting,* p. A-99.

McConnell, D.A., 1989, Determination of offset across the northern margin of the Wichita uplift, southwest Oklahoma: *Geological Society of America Bulletin*, v. 101, pp. 1317-1332.

McConnell, D.A., and Gilbert, M.C., 1990, Cambrian extensional tectonics and magmatism within the southern Oklahoma aulacogen: *Tectonophysics*, v. 174, pp. 147-157.

McFall, G.H., 1993, Structural elements and neotectonics of Prince Edward County, Southern Ontario: *Geographie physique et Quaternaire*, v. 47, no. 3, pp. 303-312.

McHone, J.G., 1996, Constraints on the mantle plume model for Mesozoic Alkaline intrusions in northeastern North America: *The Canadian Mineralogist*, v. 34, pp. 325-334.

McHone, J.G., 2000, Non-plume rifting during the opening of the central Atlantic Ocean: *Tectonophysics*, v. 316, pp. 287-296.

McHuron, E.J., and Rice, R.H., 1974, Tectonic evolution of the Gulf Coast: Relation to nuclear power plant site selection and design criteria [abstract]: Geological Society of America *Abstracts with Programs*, v. 6, no. 7, pp. 863-864.

McKeever, S.W.S., 2001, Optically stimulated luminescence dosimetry: *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, v. 184, no. 1-2, pp. 29-54.

McKenna, J., Stein, S., and Stein, C.A., 2007, Is the New Madrid seismic zone hotter and weaker than its surroundings? in Stein, S., and Mazzotti, S. (editors), *Continental Intraplate Earthquakes: Science, Hazard, and Policy Issues*, Geological Society of America Special Paper 425, pp. 167-175, doi:10.1130/2007.2425(12).

McKeown, F.A., Hamilton, R.M., Diehl, S.F., and Glick, E.E., 1990, Diapiric origin of the Blytheville and Pascola arches in the Reelfoot rift, east-central United States: Relation to New Madrid seismicity: *Geology*, v. 18, pp. 1158-1162.

McLaughlin, K.L., Barker, T.G., and Bennet, T.J., 1997, Evaluation of National Seismograph Network Detection Capabilities, Final Report, NUREG/CR-6448, Volume 2, MFD-TR-97-15804: Prepared for the Division of Engineering Technology Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, October.

McNulty, W.E., and Obermeier, S.F., 1997, *Liquefaction Evidence for Two Holocene Paleo-earthquakes in Central and Southwestern Illinois*: U.S. Geological Survey Open-File Report 97-435, 14 pp.

McNulty, W.E., and Obermeier, S.F., 1999, Liquefaction evidence for at least two strong Holocene paleoearthquakes in central and southwestern Illinois, USA: *Environmental and Engineering Geoscience*, v. 5, no. 2, pp. 133-146.

McPhee, J.P., 1983, Regional Gravity Analysis of the Anna, Ohio, Seismogenic Region: M.S. thesis, Purdue University, West Lafayette, Ind., 100 pp.

Mereu, R.F., Wang, D., Kuhn, O., Forsyth, D.A., Green, A.G., Morel, P., Buchbinder, G.G.R., Crossley, D., Schwarz, E., duBerger, R., Brooks, C., and Clowes, R., 1986, The 1982 COCRUST seismic experiment across the Ottawa-Bonnechere graben and Grenville Front in Ontario and Quebec: *Geophysical Journal International*, v. 84, pp. 491-514.

Metropolis, N., Rosenbluth, A.W., Rosenbluth, M.N., Teller, A.H., and Teller, E., 1953, Equation of state calculations by fast computing machines: *Journal of Chemical Physics*, v. 21, pp. 1087-1092.

Metzger, A.G., Armbruster, J.G., and Seeber, L., 2000, Documentation, Location and Size-Estimation of "New" Historical Earthquakes in the Central United States: Continuation: U.S. Geological Survey Contract No. 1434-HQ-97-GR-03064, Final Technical Report, 12 pp., 2 appendices.

Miao, Q., and Langston, C.A., 2008, Spatial distribution of earthquake energy release in the central United States from a global point of view: *Seismological Research Letters*, v. 79, pp. 33-40.

Mickus, K.L., and Keller, G.R., 1992, Lithospheric structure of the south-central United States: *Geology*, v. 20, pp. 335-338.

Mihills, R.K., and Van Arsdale, R.B., 1999, Late Wisconsin to Holocene deformation in the New Madrid seismic zone: *Bulletin of the Seismological Society of America*, v. 89, pp. 1019-1024.

Milkereit, B., Forsyth, D.A., Green, A.G., Davidson, A., Hanmer, S., Hutchinson, D.R., Hinze, W.J., and Mereu, R.F., 1992, Seismic images of a Grenvillian terrane boundary: *Geology*, v. 20, pp. 1027-1030.

Miller, A.C., and Rice, T.R., 1983, Discrete approximations of probability distributions: *Management Science*, v. 29, pp. 352-362.

Miller, R.D., Steeples, D.W., and Myers, P.B., 1990, Shallow seismic reflection survey across the Meers fault, Oklahoma: *Geological Society of America Bulletin*, v. 102, pp. 18-25.

Mills, H.H., 1985, *Descriptions of Backhoe Trenches Dug on New River Terraces Between Radford and Pearisburg, Virginia, June 1981*: U.S. Geological Survey Open File Report 85-474.

Mills, H.H., 1986, Possible differential uplift of New River terraces in southwestern Virginia: *Neotectonics*, v. 1, pp. 75-86.

Mitchell, B.J., Nuttli, O.W., Herrmann, R.B., Stauder, W., 1991, Seismotectonics of the central United States: in Slemmons, D.B., Engdahl, E.R., Zoback, M.D., and Blackwell, D.D. (editors), *Neotectonics of North America*: Geological Society of America, Decade Map Volume 1, pp. 245-260.

Mixon, R.B., and Newell, W., 1978, *The Faulted Coastal Plain Margin at Fredericksburg, Virginia*: Tenth Annual Virginia Geological Field Conference.

Moench, R.H., and Aleinikoff, J.N., 2003, Stratigraphy, geochronology, and accretionary terrane settings of two Bronson Hill arc sequences, northern New England: *Physics and Chemistry of the Earth*, v. 28, pp. 113-160; originally published in 2002 (v. 27, pp. 47-95); republished because of editorial errors.

Mooney, W.D., Andrews, M.C., Ginzburg, A., Peters, D.A., and Hamilton, R.M., 1983, Crustal structure of the northern Mississippi Embayment and a comparison with other continental rift zones: in Morgan, P., and Baker, B.H. (editors), Processes of Continental Rifting, *Tectonophysics*, v. 94, pp. 327-348.

Mooney, W.D., and Ritsema, J., 2009, Mmax and lithospheric structure in Central and Eastern North America [abstract]: *Proceedings, Meeting of Central and Eastern U.S. (CEUS) Earthquake Hazards Program, October 28-29, 2009, Memphis, TN*, U.S. Geological Survey Memphis, TN, office, p. 25.

Morgan, W.J., 1983, Hotspot tracks and the early rifting of the Atlantic: *Tectonophysics*, v. 94, pp. 123-139.

Morton, R.A., Purcell, N.A., and Patterson, R.L., 2001, *Shallow Stratigraphic Evidence of Subsidence and Faulting Induced by Hydrocarbon Production in Coastal Southeast Texas*: U.S. Geological Survey Open-File Report 01-274, 40 pp.

Moulis, A., 2002, The Development of a Moment-Magnitude Based Earthquake Catalog for the Northeastern United States: M.S. thesis, Boston College.

Mueller, C., Hopper, M., and Frankel, A., 1997, *Preparation of Earthquake Catalogs for the National Seismic Hazard Maps—Contiguous 48 States*: U.S. Geological Survey Open-File Report 97-464, 36 pp.

Mueller, K., Champion, J., Guccione, M., and Kelson, K., 1999, Fault slip rates in the modern New Madrid seismic zone: *Science*, v. 286, pp. 1135-1138.

Mueller, K., Hough, S.E., and Bilham, R., 2004, Analysing the 1811-1812 New Madrid earthquakes with recent instrumentally recorded aftershocks: *Nature*, v. 429, pp. 284-288.

Mueller, K., and Pujol, J., 2001, Three-dimensional geometry of the Reelfoot blind thrust: Implications for moment release and earthquake magnitude in the New Madrid seismic zone: *Bulletin of the Seismological Society of America*, v. 91, pp. 1563-1573.

Munsey, J.W., 2006, Identification of "New" Historic Earthquakes in the Central and Eastern United States through Online Keyword Searches: Unpublished Report of River Operations, Tennessee Valley Authority, February.

Munsey, J.W., and Bollinger, G.A., 1985, Focal mechanism analyses for Virginia earthquakes (1978-1984): *Bulletin of the Seismological Society of America*, v. 75, pp. 1,613-1,636.

Munson, P.J., and Munson, C.A., 1996, *Paleoliquefaction Evidence for Recurrent Strong Earthquakes since 20,000 yr BP in the Wabash Valley of Indiana: Final Report*: submitted to the U.S. Geological Survey, March, 137 pp.

Munson, P.J., Munson, C.A., and Pond, E.C., 1995, paleoliquefaction evidence for a strong Holocene earthquake in south-central Indiana: *Geology*, v. 23, pp. 325-328.

Munson, P.J., Obermeier, S.M., Munson, C.A., and Hajic, E.R., 1997, Liquefaction evidence for Holocene and latest Pleistocene in the southern halves of Indiana and Illinois—A preliminary overview: *Seismological Research Letters*, v. 68, no. 4, pp. 523-536.

Murphy, J.B., and Keppie, J.D., 2005, The Acadian orogeny in the northern Appalachians: *International Geology Review*, v. 47, pp. 663-687.

Murray, A.S., and Olley, J.M., 2002, Precision and accuracy in the optically stimulated luminescence dating of sedimentary quartz—An overview: *Geochronometria*, v. 21, pp. 1-16.

Murray, G.E., 1961, *Geology of the Atlantic and Gulf Coastal Province of North America*: Harper & Brothers, New York, 692 pp.

Nábělek, J., and Suárez, G., 1989, The 1983 Goodnow earthquake in the central Adirondacks, New York: Rupture of a simple, circular crack: *Bulletin of the Seismological Society of America*, v. 79, no. 6, pp. 1762-1777.

Nagihara, S., and Jones, K.O., 2005, Geothermal heat flow in the northeast margin of the Gulf of Mexico: *AAPG Bulletin*, v. 89, pp. 821-831.

NAGRA (Nationale Genossenschaft für die Lagerung radioaktiver Abfälle), 2004, *Probabilistic Seismic Hazard Analysis for Swiss Nuclear Power Plant Sites* (PEGASOS Project), Volume 1, Final Report, Wettingen, Switzerland, July 31.

National Agriculture Imagery Program (NAIP), 2006, NAIP aerial imagery: U.S. Department of Agriculture (USDA), Farm Service Agency, Aerial Photography Field Office.

National Earthquake Database (NEDB), website, http://earthquakescanada.nrcan.gc.ca/stndon/NEDB-BNDS, last modified March 17, 2011.

National Earthquake Information Center (NEIC) Preliminary Determination of Epicenters (PDE), website, http://earthquake.usgs.gov/earthquakes/eqarchives/epic/, last modified May 5, 2011.

National Earthquake Prediction Evaluation Council (NEPEC), 2011, Letter and report from the Independent Expert Panel on New Madrid Seismic Zone Earthquake Hazards to Marcia McNutt, Director of the U.S. Geological Survey: Letter dated April 18, 2011, http://earthquake.usgs.gov/aboutus/nepec/reports/NEPEC_LettertoMcNutt4-18-11.pdf, and report dated April 16, 2011, 26 pp., http://earthquake.usgs.gov/aboutus/nepec/reports/NEPEC_NMSZ_expert_panel_report.pdf.

Nelson, K.D., Arnow, J.A., McBride, J.H., Willemin, J.H., Huang, J., Zheng, L., Oliver, J.E., Brown, L.D., and Kaufman, S., 1985, New COCORP profiling in the southeastern United States—Part I: Late Paleozoic suture and Mesozoic rift basin: *Geology*, v. 13, pp. 714-718.

Nelson, K.D., McBride, J.H., Arnow, J.A., Wille, D.M., Brown, L.D., Oliver, J.E., and Kaufman, S., 1987, Results of recent COCORP profiling in the Southeastern United States: *Geophysical Journal of the Royal Astronomical Society*, v. 89, pp. 141-146.

Nelson, K.D., and Zhang, J., 1991, A COCORP deep reflection profile across the buried Reelfoot rift, south-central United States: *Tectonophysics*, v. 197, pp. 271-293.

Nelson, W.J., 1995, *Structural Features in Illinois*: Illinois State Geological Survey Bulletin 100, 144 pp.

Nelson, W.J., Denny, F.B., Devera, J.A., Follmer, L.R., and Masters, J.M., 1997, Tertiary and Quaternary tectonic faulting in southernmost Illinois: *Engineering Geology*, v. 46, pp. 235-258.

Nelson, W.J., Denny, F.B., Follmer, L.R., and Masters, J.M., 1999, Quaternary grabens in southernmost Illinois: Deformation near an active intraplate seismic zone: *Tectonophysics*, v. 305, pp. 381-397.

Nelson, W.J., and Lumm, D.K., 1987, *Structural Geology of Southeastern Illinois and Vicinity*: Illinois State Geological Survey, Department of Energy and Natural Resources, Circular 538, 70 pp.

Nettles, M., 2006, Two unusual seismic events in the Gulf of Mexico: IRIS Annual Workshop, June 8-10, 2006, Westward Look Resort, Tucson, Arizona.

Nettles, M., 2007, Analysis of the February10, 2006, Gulf of Mexico earthquake from global and regional seismic data: *2007 Offshore Technology Conference Proceedings*, paper no. 19099.

Newell, W.L., 1985, Architecture of the Rappahannock estuary—Neotectonics in Virginia: in Morisawa, M., and Hack, J.T. (editors), *Tectonic Geomorphology*, Allen and Unwin, Winchester, Mass., pp. 322-342.

Newman, A., Stein, S., Weber, J., Engeln, J., Mao, A., and Dixon, T., 1999, Slow deformation and lower seismic hazard at the New Madrid seismic zone: *Science*, v. 284, no. 5414, pp. 619-621.

Nguyen, B.V., and Herrmann, R.B., 1992, Determination of source parameters for central and eastern North American earthquakes (1982-1986): *Seismological Research Letters*, v. 63, no. 4, pp. 567-586.

NICE (Northern Interior Continental Evolution) Working Group: Holm, D.K., Anderson, R., Boerboom, T.J., Cannon, W.F., Chandler, V., Jirsa, M., Miller, J., Schneider, D.A., Schulz, K.J., and Van Schmus, W.R., 2007, Reinterpretation of Paleoproterozoic accretionary boundaries of the north-central United States based on a new aeromagnetic-geologic compilation: *Precambrian Research,* v. 157, pp. 71-79.

Nicholson, C., and Wesson, R.L., 1990, *Earthquake Hazard Associated with Deep Well Injection—A Report to the U.S. Environmental Protection Agency*: U.S. Geological Survey Bulletin 1951.

Nicholson, C., Roeloffs, E., and Wesson, R.L., 1988, The northeastern Ohio earthquake of 31 January 1986: Was it induced? *Bulletin of the Seismological Society of America*, v. 78, no. 1, pp. 188-217.

Nielsen, R.J., 1982, *Stanford Data Base for Earthquakes in the United States*: The John A. Blume Earthquake Engineering Center Report No. 58, Stanford University, 117 pp.

Niemi, T.M., Ferris, A.N., and Abers, G.A., 2004, Investigation of microearthquakes, macroseismic data, and liquefaction associated with the 1867 Wamego earthquake in eastern Kansas: *Bulletin of the Seismological Society of America*, v. 94, no. 6, pp. 2317-2329.

Noger, M.C. (compiler), 1988, *Geologic Map of Kentucky*, Sesquicentennial edition of the Kentucky Geological Survey: Kentucky Geological Survey, Series 11, 1 sheet, 1:500,000.

Noller, J.S., and Forman, S.L., 1998, Luminescence geochronology of liquefaction features near Georgetown, South Carolina: in Sowers, J.M., Noller, J.S., and Lettis, W.R. (editors), *Dating and Earthquakes: Review of Quaternary Geochronology and Its Application to Paleoseismology*: U.S. Nuclear Regulatory Commission Report, NUREG/CR-5562, pp. 4.49-4.57.

Ntzoufras, I., 2009, *Bayesian Modeling Using WinBUGS*: John Wiley and Sons.

Nunn, J.A., 1985, State of stress in the northern Gulf Coast: *Geology*, v. 13, pp. 429-432.

Nuttli, O.W., 1973, Seismic wave attenuation and magnitude relations for eastern North America: *Journal of Geophysical Research*, v. 78, pp. 876-885.

Nuttli, O.W., 1974, Magnitude-recurrence relation for central Mississippi Valley earthquakes: *Bulletin of the Seismological Society of America*, v. 64, pp. 1189-1207.

Nuttli, O.W., 1983, Catalog of Central United States earthquakes Since 1800 of mb>3.0: Saint Louis University, St, Louis, Mo.

Nuttli, O.W., Bollinger, G.A., and Griffiths, D.W., 1979, On the relation between modified Mercalli intensity and body-wave magnitude: *Bulletin of the Seismological Society of America*, v. 69, pp. 893-909.

Nuttli, O., and Brill, K., 1981, Earthquake source zones in the central United States determined from historical seismicity: in Barstow, N.L., Brill, K.G., Nuttli, O.W., and Pomeroy, P.W. (editors), Approach to seismic zonation for siting nuclear electric power generating facilities in the eastern United States, U.S. Nuclear Regulatory Commission Report NUREG/CR-1577, pp. 98-143.

Nyquist, J.E., and Wang, H.F., 1988, Flexural modeling of the Midcontinent rift: *Journal of Geophysical Research*, v. 93, no. B8, pp. 8852-8868.

Nystrom, P.G., Jr., 1996, *Earthquake Hazards Map of the South Carolina Coastal Plain*: South Carolina Geological Survey Generalized Geologic Map Series GGMS-2, scale 1:400,000.

Obermeier, S., 1996, Summary of 1995 paleoliquefaction field search in the vicinity of Perry, Ohio: Letter submitted to Dr. Andrew Murphy, U.S. Nuclear Regulatory Commission, May 23, 10 pp.

Obermeier, S., and Pond, E., 1999, Issues in using liquefaction features for paleoseismic analysis: *Seismological Research Letters*, v. 70, pp. 34-56.

Obermeier, S.F., 1989, The New Madrid Earthquakes: An Engineering-Geologic Interpretation of Relict Liquefaction Features: U.S. Geological Survey Professional Paper 1336-B, 114 pp.

Obermeier, S.F., 1995, Paleoseismic liquefaction studies—Central U.S. and Pacific Northwestern U.S.: in Jacobsen, M.L. (compiler), *National Earthquake Hazards Reduction Program Annual Project Summaries: XXXVI, Volume II*, U.S. Geological Survey Open-File Report 95-210, pp. 606-609.

Obermeier, S., 1996a, Summary of 1995 Paleoliquefaction Field Search in the Vicinity of Perry, Ohio: Letter submitted to Dr. Andrew Murphy, U.S. Nuclear Regulatory Commission, May 23, 10 pp.

Obermeier, S.F., 1996b, Using liquefaction-induced features for paleoseismic analysis: in McCalpin, J.P. (editor), *Paleoseismology*, Academic Press, ch. 7, pp. 331-396.

Obermeier, S.F., 1998, Liquefaction evidence for strong earthquakes of Holocene and latest Pleistocene ages in the states of Indiana and Illinois, USA: *Engineering Geology*, Elsevier Science, v. 50, pp. 227-254.

Obermeier, S.F., 2009, Using liquefaction-induced and other soft-sediment features for paleoseismic analysis: *International Geophysics*, v. 95, pp. 499-566.

Obermeier, S.F., and McNulty, W.E., 1998, Paleoliquefaction evidence for seismic quiescence in central Virginia during late and middle Holocene time [abstract]: *Eos, Transactions of the American Geophysical Union*, v. 79, no. 17, p. S342.

Obermeier, S.F., Bleurer, N.K., Munson, C.A., Munson, P.J., Marin, W.S., McWilliams, K.M., Tabaczynski, D.A., Odum J.K., Rubin, M., and Eggert, D.L., 1991, Evidence of strong earthquake shaking in the lower Wabash Valley from prehistoric liquefaction features: *Science*, v. 251, pp. 1061-1063.

Obermeier, S.F., Jacobson, R.B., Smoot, J.P., Weems, R.E., Gohn, G.S., Monroe, J.E., and Powars, D.S., 1990, *Earthquake-Induced Liquefaction Features in the Coastal Setting of South Carolina and in the Fluvial Setting of the New Madrid Zone*: U.S. Geological Survey Professional Paper 1504.

Obermeier, S.F., Martin, J.R., Frankel, A.D., Youd, T.L., Munson, P.J., Munson, C.A., and Pond, E.C., 1993, *Liquefaction Evidence for One or More Strong Holocene Earthquakes in the Wabash Valley of Southern Indiana and Illinois, with a Preliminary Estimate of Magnitude*: U.S. Geological Survey Professional Paper 1536, 27 pp.

Obermeier, S.F., Pond, E.C., and Olson, S.M., with contributions by Green, R.A., Stark, T.D., and Mitchell, J.K., 2001, *Paleoliquefaction Studies in Continental Settings: Geologic and Geotechnical Factors in Interpretations and Back-Analysis*: U.S. Geological Survey Open-File Report 01-29, 75 pp., http://pubs.usgs.gov/of/2001/of01-029/revision.html.

Obermeier, S.F., Weems, R.E., Jacobson, R.B., and Gohn, G.S., 1989, Liquefaction evidence for repeated Holocene earthquakes in the Coastal Region of South Carolina: *Annals of the New York Academy of Sciences*, v. 558, pp. 183-195.

O'Brien, M.J., and Lyman, R.L., 1999, *Seriation, Stratigraphy, and Index Fossils: The Backbone of Archaeological Dating*, Plenum Press, New York, 261 pp.

O'Dowd, C.R., Eaton, D., Forsyth, D., and Asmis, H.W., 2004, Structural fabric of the Central Metasedimentary Belt of southern Ontario, Canada, from deep seismic profiling: *Tectonophysics*, v. 388, pp. 145-159.

Odum, J.K., Luzietti, E.A., Stephenson, W.J., Shedlock, K.M., and Michael, J.A., 1995, High-resolution, shallow, seismic reflection surveys of the northwest Reelfoot rift boundary near Marston, Missouri: in Shedlock, K.M., and Johnston, A.C. (editors), *Investigations of the New Madrid Seismic Zone*, U.S. Geological Survey Professional Paper 1538-P, 24 pp.

Odum, J.K., Stephenson, W.J., Shedlock, K.M., and Pratt, T.L., 1998, Near-surface structural model for deformation associated with the February 7, 1812, New Madrid, Missouri, earthquake: *Geological Society of America Bulletin*, v. 110, no. 2, pp. 149-162.

Odum, J.K., Stephenson, W.J., and Williams, R.A., 2003, Variable near-surface deformation along the Commerce segment of the Commerce geophysical lineament, southeast Missouri to southern Illinois, USA: in McBride, J.H., and Stephenson, W.J. (editors), Contributions to Neotectonics and Seismic Hazard from Shallow Geophysical Imaging, *Tectonophysics* (special issue), v. 368, nos. 1-4, pp. 155-170.

Odum, J.K., Stephenson, W.J., and Williams, R.A., 2010, Multi-source, high-resolution seismic-reflection imaging of Meeman-Shelby fault and a possible tectonic model for a Joiner Ridge–Manila high stepover structure in the Upper Mississippi embayment region: *Seismological Research Letters*, v. 81, no. 4, pp. 647-663.

Odum, J.K., Stephenson, W.J., Williams, R.A., Devera, J.A., and Staub, J.R., 2002, Near-surface faulting and deformation overlying the Commerce geophysical lineament in southern Illinois: *Seismological Research Letters*, v. 73, no. 5, pp. 687-697.

Odum, J.K., Stephenson, W.J., Williams, R.A., Worley, D.M., Guccione, M.J., and Van Arsdale, R.B., 2001, High-resolution seismic-reflection imaging of shallow deformation beneath the northeast margin of the Manila high at Big Lake, Arkansas: *Engineering Geology*, v. 62, pp. 91-103.

Oh, J., Austin, J.A., Phillips, J.D., Coffin, M.F., and Stoffa, P.L., 1995, Seaward-dipping reflectors offshore the southeastern United States: Seismic evidence for extensive volcanism accompanying sequential formation of the Carolina Trough and Blake Plateau basin: *Geology*, v. 21, no. 1, pp. 9-12.

Ohio Geological Survey, Ohio Seismic Network Catalog and Maps of Ohio Earthquakes, website, http://www.dnr.state.oh.us/geosurvey/html/eqcatlog/tabid/8302/Default.aspx, last updated December 22, 2010.

Oklahoma Geological Survey, Earthquake Catalog, website, http://www.okgeosurvey1.gov/level2/okeqcat.index.html, last updated March 13, 2011.

Olsen, P.E., Froelich, A.J., Daniels, D.L., Smoot, J.P., and Gore, P.J.W., 1991, Rift basins of early Mesozoic age: in Horton, J.W., Jr., and Zullo, V.A. (editors), *The Geology of the Carolinas*, University of Tennessee Press, Knoxville, pp.142-170.

Olson, S.M., 2009, Quantifying Uncertainties in Paleoliquefaction Studies: presentation given at CEUS SSC Project Workshop #2, February 18-20, Palo Alto, Calif.

Olson, S.M., Green, R.A., and Obermeier, S.F., 2005a, Geotechnical analysis of paleoseismic shaking using liquefaction effects: A major updating: *Engineering Geology*, v. 76, pp. 235-261.

Olson, S.M., Green, R.A., and Obermeier, S.F., 2005b, Revised magnitude bound relation for the Wabash Valley seismic zone of the central United States: *Seismological Research Letters*, v. 76, no. 6, pp. 756-771.

Olson, S.M., Obermeier, S.F., and Stark, T.D., 2001, Interpretation of Penetration Resistance for Back-Analysis at Sites of Previous Liquefaction: *Seismological Research Letters*, v. 72, no. 1, pp. 46-59.

Olson, S.M., Wen, Y.K., Song, J., Johnson, C.I., and Muhammad, K., 2007, *Quantifying Uncertainties in Paleoliquefaction Studies*: Final report, USGS NEHRP Award No. 06-HQ-GR-0013, December.

Ouassaa, K., and Forsyth, D.A., 2002, Interpretation of seismic and potential field data from western New York State and Lake Ontario: *Tectonophysics*, v. 353, pp. 115-149.

Owen, H. G., 1987, Deformation processes in unconsolidated sands: *Geological Society of London Special Publications 1987*, v. 29, pp. 11-24.

Pacific Earthquake Engineering Research Center (PEER), 2010, Next Generation Attenuation Relationships for Central & Eastern US (NGA-East): http://peer.berkeley.edu/ngaeast /index.html.

Palmer, J.R., Hoffman, D., Stephenson, W.J., Odum, J.K., and Williams, R.A., 1997a, Shallow seismic reflection profiles and geological structure in the Benton Hills, southeast Missouri: *Engineering Geology*, v. 46, pp. 217-233.

Palmer, J.R., Shoemaker, M., Hoffman, D., Anderson, N.L., Vaughn, J.D., and Harrison, R.W., 1997b, Seismic evidence of Quaternary faulting in the Benton Hills area, southeast Missouri: *Seismological Research Letters*, v. 68, pp. 650-661.

Parzen, E., 1962, *Stochastic Processes*: Holden-Day, San Francisco.

Parrish, S., and Van Arsdale, R., 2004, Faulting along the southeastern margin of the Reelfoot rift in northwestern Tennessee revealed in deep seismic reflection profiles: *Seismological Research Letters*, v. 75, pp. 782-791.

Pavich, M.J., Leo, G.W., Obermeier, S.F., and Estabrook, J.R., 1989, *Investigations of the Characteristics, Origin, and Residence Time of the Upland Residual Mantle of the Piedmont of Fairfax County, VA*: U.S. Geological Survey Professional Paper 1352, 114 pp.

Pavlides, L., 1994, Continental margin deposits and the Mountain Run fault zone of Virginia: Stratigraphy and tectonics: in Drake, A.A., Jr., and Pavlides, L. (editors), *Stratigraphic Notes, 1993*: U.S. Geological Survey Bulletin 2076-B, 9 pp.

Pavlides, L., Babyarchick, A.B., Newell, W.L., and Pavich, J.J., 1983, Late Cenozoic faulting along the Mountain Run fault zone, central Virginia Piedmont [abstract]: Geological Society of America *Abstracts with Programs*, v. 15, no. 2, p. 55.

Pazzaglia, F.J., 1999, Active tectonics in a passive margin setting: in Hanson, K.L., Kelson, K.I., Angell, M.A., and Lettis, W.R., (editors), *Techniques for Identifying Faults and Determining Their Origins*, NUREG/CR-5503, pp. A-143-A-183.

Peel, F.J., 2007, The setting and possible mechanism of the 2006 Green Canyon seismic event: Offshore Technology Conference, Houston, Texas, 30 April–3 May, 2007.

Peel, F.J., Travis, C.J., and Hossack, J.R., 1995, Genetic structural provinces and salt tectonics of the Cenozoic offshore U.S. Gulf of Mexico: A preliminary analysis: in Jackson, M.P.A., Roberts, D.G., and Snelson, S. (editors), *Salt Tectonics: A Global Perspective*, American Association of Petroleum Geologists Memoir 65, pp. 153-175.

Pe-Piper, G., and Piper, D.J.W., 2004, The effects of strike-slip motion along the Cobequid-Chedabucto-southwest Grand Banks fault system on the Cretaceous-Tertiary evolution of Atlantic Canada: *Canadian Journal of Earth Sciences*, v. 41, pp. 799-808.

Perry, W.J., Jr., 1989, *Tectonic Evolution of the Anadarko Basin Region, Oklahoma*: U.S. Geological Survey Bulletin 1866-A, pp. A1-A19.

Petersen, M.D., Frankel, A.D., Harmsen, S.C., Mueller, C.S., Haller, K.M., Wheeler, R.L., Wesson, R.L., Oliver, Y.Z, Boyd, S., Perkins, D.M., Luco, N., Field, E.H., Wills, C.J., and Rukstales, K.S., 2008, *Documentation for the 2008 Update of the United States National Seismic Hazard Maps*: USGS Open-File Report 2008-1128, 128 pp.

Pierce, K.L., 1986, Dating methods: in Geophysics Study Committee, Geophysics Research Forum, National Research Council (authors), *Active Tectonics: Impact on Society*, The National Academies Press, Washington, D.C., ch. 13, pp. 195-214.

Pierre, J.-R., and Lamontagne, M., 2004, The 20 April 2002, M_w 5.0 Au Sable Forks, New York, earthquake: A supplementary source of knowledge on earthquake damage to lifelines and buildings in eastern North America: *Seismological Research Letters*, v. 75, no. 5, pp. 626-636.

Pindell, J., 1985, Alleghenian reconstruction and subsequent evolution of the Gulf of Mexico, Bahamas, and proto-Caribbean: *Tectonics*, v. 4, pp. 1-39.

Pindell, J., 1993, Regional synopsis of Gulf of Mexico and Caribbean evolution: in Pindell, J., and Perkins, B. (editors), *Mesozoic and Early Cenozoic Development of the Gulf of Mexico and Caribbean Region, A Context for Hydrocarbon Exploration*, Gulf Coast Section Society of Economic Paleontologists and Mineralogists Foundation 13th Annual Research Conference, pp. 251-271.

Pindell, J., and Dewey, J.F., 1982, Permo-Triassic reconstruction of western Pangea and the evolution of the Gulf of Mexico/Caribbean region: *Tectonics*, v. 1, pp. 179-211.

Pindell, J., and Kennan, L., 2001, Kinematic evolution of the Gulf of Mexico and Caribbean: *Petroleum Systems of Deep-Water Basins: Global and Gulf of Mexico Experience*, Proceedings of the GCSSEPM Foundation 21st Annual Research Conference, 2-5 December 2001, pp. 193-220.

Pindell, J., Kennan, L., and Barrett, S., 2000, Putting it all together again: *American Association of Petroleum Geologists Explorer*, v. 21, pp. 34-37.

Pindell, J., Kennan, L., Stanek, K.P., Maresch, W.V., and Draper, G., 2006, Foundations of Gulf of Mexico and Caribbean evolution: Eight controversies resolved: *Geologica Acta*, v. 4, pp. 303-341.

Pomeroy, P.W., Simpson, D.W., and Sbar, M.L., 1976, Earthquakes triggered by surface quarrying—The Wappingers Falls, New York sequence of June, 1974: *Bulletin of the Seismological Society of America*, v. 66, no. 3, pp. 685-700.

Pond, E.C., 1996, Seismic Parameters from the Central United States Based on Paleoliquefaction Evidence in the Wabash Valley: Ph.D. dissertation, Virginia Polytechnic Institute, Blacksburg, Virginia, 583 pp.

Pond, E.C., and Martin, J.R., II, 1996, Seismic Parameters from the Central United States Based on Paleoliquefaction Evidence in the Wabash Valley: Final Report submitted to U.S. Geological Survey.

Pond, E.C., and Martin, J.R., 1997, Estimated magnitudes and accelerations associated with prehistoric earthquakes in the Wabash Valley region of the central United States: in Kolata, D.R., and Hildenbrand, T.G. (editors), Investigations of the Illinois Basin Earthquake Region, *Seismological Research Letters*, v. 68, pp. 611-623.

Poole, W.H., Sanford, B.V., Williams, H., and Kelley, D.G., 1970, Geology of southeastern Canada: in Douglas, R.J.W. (editor), *Geology and Economic Minerals of Canada*, Geological Survey of Canada Economic Geology Report 1, pp. 228-304.

Potter, C.J., and Drahovzal, J.A., 1994, The regional configuration of the Cambrian Reelfoot–Rough Creek–Rome rift system: in Ridgley, J.L., Drahovzal, J.A., Keith, B.D., and Kolata, D.R. (editors), *Proceedings of the Illinois Basin Energy and Mineral Resource Workshop*, U.S. Geological Survey Open-File Report 94-298, pp. 34-35 (also Kentucky Geological Survey, Open-File Report 94-12; Illinois State Geological Survey, Open-File Report 94-4; and Indiana Geological Survey, Open-File Report 94-12).

Potter, C.J., Drahovzal, J.A., Sargent, M.L., and McBride, J.H., 1997, Proterozoic structure, Cambrian rifting, and younger faulting as revealed by a regional seismic reflection network in the southern Illinois Basin: *Seismological Research Letters*, v. 68, no. 4, pp. 537-552.

Potter, C.J., Goldhaber, M.B., Heigold, P.C., and Drahovzal, J.A., 1995, Structure of the Reelfoot–Rough Creek Rift System, Fluorspar Area Fault Complex, and Hicks Dome, southern Illinois and western Kentucky—New constraints from regional seismic reflection data: in Shedlock, K.M., and Johnston, A.C. (editors), *Investigations of the New Madrid Seismic Zone*, U.S. Geological Survey Professional Paper 1538-Q, 19 pp.

Powell, C.A., 2002, Three-dimensional velocity structure in the New Madrid and other SCR seismic zones: *Eos, Transactions of the American Geophysical Union*, v. 83, no. 47, Fall Meeting Supplement, Abstract S22D-04.

Powell, C.A., Bollinger, G.A., Chapman, M.C., Sibol, M.S., Johnston, A.C., and Wheeler, R.L., 1994, A seismotectonic model for the 300-kilometer-long Eastern Tennessee seismic zone: *Science*, v. 264, pp. 686-688.

Pratt, T., 2009, Insights into the Structure and Long-Term Deformation in the New Madrid Region from Seismic Reflection Profiles: presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Pratt, T., Culotta, R., Hauser, E., Nelson, D., Brown, L., Kaufman, S., Oliver, J., and Hinze, W., 1989, Major Proterozoic basement features of the eastern Midcontinent of North America revealed by recent COCORP profiling: *Geology*, v. 17, no. 6, pp. 505-509.

Pratt, T.L., Coruh, C., and Costain, J.K., 1988, A geophysical study of the Earth's crust in central Virginia: implications for Appalachian crustal structure: *Journal of Geophysical Research*, v. 93, no. B6, pp. 6,649-6,667.

Pratt, T.L., Hauser, E.C., and Nelson, K.D., 1992, Widespread buried Precambrian layered sequences in the U.S. Mid-continent: Evidence for large Proterozoic depositional basins: *AAPG Bulletin*, v. 76, no. 9, pp. 1384-1401.

Preisendorfer, R.W., 1988, *Principal Component Analysis in Meteorology and Oceanography*: Elsevier Science Ltd.

Prentice, C.S., Rizza, M., and Ritz, J.R., 2010, The Bogd and Bulnay faults of Mongolia: Slip rate and earthquake recurrence along two intracontinental strike-slip faults [abstract]: American Geophysical Union, Fall Meeting, Abstract T42A-08.

Progress Energy Carolinas, Inc., 2008, Shearon Harris Nuclear Power Plants Units 2 and 3, Docket Nos. 52-022 and 52-023, Supplement 1 to response to requests for additional information letter 030 related to basic geologic and seismic information, December 30, 2008, 66 pp.

Prowell, D.C., 1983, *Index of Faults of Cretaceous and Cenozoic Age in the Eastern United States*: U.S. Geological Survey Miscellaneous Field Studies Map MF-1269, 2 sheets, scale 1:2,500,000.

Prowell, D.C., 1988, Cretaceous and Cenozoic tectonism on the Atlantic coastal margin: in Sheridan, R.E., and Grow, J.A. (editors), *The Atlantic Continental Margin*, Geological Society of America, The Geology of North America, v. 1-2, pp. 557-564.

Prowell, D.C., and O'Connor, B.J., 1978, Belair fault zone; evidence of Tertiary fault displacement in eastern Georgia: *Geology*, v. 6, pp. 681-684.

Puffer, J.H., 2002, A late neoproterozoic eastern Laurentian superplume: Location, size, chemical composition, and environmental impact: *American Journal of Science*, v. 302, pp. 1-27.

Pujol, J., Johnston, A., Chiu, J.-M., and Yang, Y.-T., 1997, Refinement of thrust faulting models for the central New Madrid seismic zone: *Engineering Geology*, v. 46, pp. 281-298.

Pulli, J.J., and Guenette, M.J., 1981, The Chelmsford-Lowell, Massachusetts, earthquake of 23 November 1980: Depth control and fault plane solution: *Bulletin of the Seismological Society of America*, v. 71, no. 4, pp. 1369-1372.

Purser, J.L., and Van Arsdale, R.B., 1998, Structure of the Lake County uplift: New Madrid seismic zone: *Bulletin of the Seismological Society of America*, v. 88, no. 5, pp. 1204-1211.

Al-Qadhi, O., 2010, Geophysical Investigation of Paleoseismological Features in Eastern Arkansas, USA: Ph.D. dissertation, University of Arkansas at Little Rock, 277 pp.

Ramelli, A.R., and Slemmons, D.B., 1986, Neotectonic activity of the Meers fault: in Donovan, R.N. (editor), *The Slick Hills of Southwestern Oklahoma—Fragments of an Aulacogen*, Guidebook 24, Oklahoma Geological Society, Norman, Okla., pp. 45-54.

Ramelli, A.R., and Slemmons, D.B., 1990, Implications of the Meers Fault on seismic potential in the central United States: in Krinitzsky, E.L., and Slemmons, D.B. (editors), *Neotectonics in Earthquake Evaluation: Reviews in Engineering Geology*, Volume 8, Geological Society of America, pp. 59-75.

Ramelli, A.R., Slemmons, D.B., and Brocoum, S.J., 1987, *The Meers Fault: Tectonic Activity in Southwestern Oklahoma*: Washington, D.C., U.S. Nuclear Regulatory Commission, NUREG/CR-4852, 25 pp.

Ratcliffe, N.M., 1987, Basaltic rocks in the Rensselaer Plateau and Chatham slices of the Taconic allochthon: Chemistry and tectonic setting: *Geological Society of America Bulletin*, v. 99, pp. 511-528.

Ravat, D., Finn, C., Hill, P., Kucks, R., Phillips, J., Blakely, R., Bouligand, C., Sabaka, T., Elshayat, A., Aref, A., and Elawadi, E., 2009, *A Preliminary, Full Spectrum, Magnetic Anomaly Grid of the United States with Improved Long Wavelengths for Studying Continental Dynamics: A Website for Distribution of Data*: U.S. Geological Survey, Open-File Report 2009-1258, 2 pp.

Reagor, B.G., Stover, C.W., and Algermissen, S.T., 1980, Seismicity Map of the State of South Carolina: U.S. Geological Survey Miscellaneous Field Studies Map MF-1225.

Reasenberg, P., 1985, Second-order moment of central California seismicity, 1969–1982: *Journal of Geophysical Research*, v. 90, no. B7, pp. 5479-5495.

Reed, J.C., Jr., 1993, Map of the Precambrian rocks of the conterminous United States and some adjacent parts of Canada: in Reed, J.C., Jr., Bickford, M.E., Houston, R.S., Link, P.K., Rankin, D.W., Sims, P.K., and Van Schmus, W.R., (editors), *Precambrian: Conterminous U.S.*, Geological Society of America, The Geology of North America, v. C-2, Plate 1, scale 1:5,000,000.

Reimer, P.J., Baillie, M.G.L., Bard, E., Bayliss, A., Beck, J.W., Blackwell, P.G., Bronk Ramsey, C., Buck, C.E., Burr, G., Edwards, R.L., Friedrich, M., Grootes, P.M., Guilderson, T.P., Hajdas, I., Heaton, T.J., Hogg, A.G., Hughen, K.A., Kaiser, K.F., Kromer, B., McCormac, F.G., Manning, S.W., Reimer, R.W., Richards, D.A., Southon, J., Turney, C.S. M., van der Plicht, J., and Weyhenmeyer, C., 2009, IntCal09 and Marine09 radiocarbon age calibration curves, 0–50,000 years cal BP: *Radiocarbon*, v. 51, no. 4, pp. 1111-1150.

Reinbold, D.J., and Johnston, A.C., 1987, *Historical Seismicity in the Southern Appalachian Seismic Zone*: U.S. Geological Survey Open-File Report 87-433, 40 pp.

Reiter, L., 1990, *Earthquake Hazard Analysis: Issues and Insights*: Columbia University Press, New York.

René, R.M., and Stanonis, F.L., 1995, Reflection seismic profiling of the Wabash Valley fault system in the Illinois basin: in Shedlock, K.M., and Johnston, A.C. (editors), *Investigations of the New Madrid Seismic Zone*, U.S. Geological Survey Professional Paper 1538-O.

Renfro, H.B., and Feray, D.E., 1979, Geological Highway Map of Texas, H.B. Renfro Memorial Edition, Tulsa, OK: American Association of Petroleum Geologists.

Renfro, H.B., and Feray, D.E., 1997, Geological Highway Map Northern Rocky Mountain Region, AAPG Highway Map number 5, Tulsa, OK: American Association of Petroleum Geologists.

Rhea, S., 1987, Wave conversions from earthquakes and a new velocity model for the South Carolina coastal plain: *Bulletin of the Seismological Society of America*, v. 77, no. 6, pp. 2143-2151.

Rhea, S., 1995, *Seismotectonic Maps in the Vicinity of New Madrid, Missouri Database*: U.S. Geological Survey Open-File Report 95-0574, 10 pp.

Richter, C.F., 1935, An instrumental earthquake magnitude scale: *Bulletin of the Seismological Society of America*, v. 25, no. 1, pp. 1-32.

Riihimaki, C.A., Anderson, R.S., Safran, E.B., Dethier, D.P., Finkel, R.C., and Bierman, P.R., 2006, Longevity and progressive abandonment of the Rocky Flats surface, Front Range, Colorado: *Geomorphology*, v. 78, pp. 265-278.

Rimando, R.E., and Benn, K., 2005, Evolution of faulting and paleo-stress field within the Ottawa graben, Canada: *Journal of Geodynamics*, v. 39, pp. 337-360.

Robinson, E.S., Law, R.D., and Williams, R.T., 2000, Folding and faulting of Plio-Pleistocene sediments in Giles County, SW Virginia—(3) Seismic refraction, potential fields, and borehole data [abstract]: Geological Society of America *Abstracts with Programs*, v. 32, no. 2, p. 70.

Robinson, E.S., Sayer, S., and Law, R.D., 1993, A seismic refraction and electrical resistivity survey of faulted alluvial deposits in Giles County, VA [abstract]: *Eos, Transactions of the American Geophysical Union*, v. 74, no. 16, p. 282.

Rocher, M., Tremblay, A., Lavoie, D., and Campeau, A., 2003, Brittle fault evolution of the Montréal area (St Lawrence Lowlands, Canada): Rift-related structural inheritance and tectonism approached by palaeostress analysis: *Geological Magazine*, v. 140, pp. 157-172.

Rockwell, T.K., Lindvall, S., Herzberg, M., Murbach, D., Dawson, T., and Berger, G., 2000, Paleoseismology of the Johnson Valley, Kickapoo, and Homestead Valley faults: Clustering of earthquakes in the eastern California shear zone: *Bulletin of the Seismological Society of America*, v. 90, no. 5, pp. 1200-1236.

Roden-Tice, M.K., Brandt, J.A., and Tremblay, A., 2009, Apatite fission-track evidence for Late Paleozoic to Early Mesozoic unroofing and potential fault reactivation along the Saguenay River graben, Quebec [abstract]: Geological Society of America *Abstracts with Programs*, v. 41, no. 3, p. 32.

Roden-Tice, M.K., and Tice, S.J., 2005, Regional-scale mid-Jurassic to late Cretaceous unroofing from the Adirondack Mountains through central New England based on apatite fission-track and (U-Th)/He thermochronology: *The Journal of Geology,* v. 113, pp. 535-552.

Roden-Tice, M.K., Tice, S.J., and Schofield, I.S., 2000, Evidence for differential unroofing in the Adirondack Mountains, New York State, determined by apatite fission-track thermochronology: *The Journal of Geology,* v. 108, pp. 155-169.

Roden-Tice, M.K., West, D.P., Jr., Potter, J.K., Raymond, S.M., and Winch, J.L., 2009, Presence of a long-term lithospheric thermal anomaly: Evidence from apatite fission-track analysis in northern New England: *Journal of Geology*, v. 117, pp. 627-641.

Roden-Tice, M.K., and Wintsch, R.P., 2002, Early Cretaceous normal faulting in southern New England: Evidence from apatite and zircon fission-track ages: *The Journal of Geology,* v. 110, pp. 159-178.

Rogers, G.C., 1986, Seismic gaps along the Queen Charlotte fault: *Earthquake Prediction Research*, v. 4, pp. 1-11.

Rohs, C.R., and Van Schmus, V.R., 2007, Isotopic connections between basement rocks exposed in the St. Francois Mountains and the Arbuckle Mountains, southern mid-continent, North America: *International Journal of Earth Sciences*, v. 96, pp. 599-611.

Rondenay, S., Bostock, M.G., Hearn, T.M., White, D.J., Wu, H., Senechal, G., Ji, S., and Mareschal, M., 2000, Teleseismic studies of the lithosphere below the Abitibi-Grenville Lithoprobe transect: *Canadian Journal of Earth Sciences*, v. 37, pp. 415-426.

Rondot, J., 1979, *Reconnaissances Géologiques dans Charlevoix-Saguenay*: Ministère des Richesses Naturelles du Québec, Rapport DPV-682, 44 pp.

Rowan, M.G., Jackson, M.P.A., and Trudgill, B.D., 1999, Salt-related fault families and fault welds in the northern Gulf of Mexico: *AAPG Bulletin*, v. 83, no. 9, pp. 1454-1484.

Ruff, L., LaForge, R., Thorson, R., Wagner, T., and Goudaen, F., 1994, *Geophysical Investigations of the Western Ohio–Indiana Region: Final Report 1986–September 1992*: U.S. Nuclear Regulatory Commission, NUREG/CR-3145, prepared for the Division of Engineering, Office of Nuclear Regulatory Research.

Ruffman, A., and Peterson, J., 1988, *Pre-Confederation Historical Seismicity of Nova Scotia with an Examination of Selected Later Events*: Geological Survey of Canada Open File 1917, three volumes.

Russ, D.P., 1979, Late Holocene faulting and earthquake recurrence in the Reelfoot Lake area, northwestern Tennessee: *Geological Society of America Bulletin*, v. 90, no. 11, pp. 1013-1018.

Russ, D.P., 1982, *Style and Significance of Surface Deformation in the Vicinity of New Madrid, Missouri: Investigations of the New Madrid, Missouri, Earthquake Region*: U.S. Geological Survey Professional Paper 1236-H.

Russo, R.M., 2006, Earthquakes in the Gulf of Mexico: University of Florida, Department of Geological Sciences, http://www.clas.ufl.edu/users/russo/florida_eq.html.

Saint Louis University Earthquake Center, website, http://www.eas.slu.edu/Earthquake_Center/, last modified 2011.

Salvador, A., 1991a, Origin and development of the Gulf of Mexico Basin: in Salvador, A. (editor), *The Gulf of Mexico Basin*, Geological Society of America, The Geology of North America, v. J, ch. 14, pp. 389-444.

Salvador, A., 1991b, Triassic-Jurassic: in Salvador, A. (editor), *The Gulf of Mexico Basin*, Volume J, Geological Society of America, pp. 131-180.

Sandia National Laboratories (SNL), 2008, Probabilistic Volcanic Hazard Analysis Update (PVHA-U) for Yucca Mountain, Nevada: TDR-MGR-PO-000001 REV 01, Las Vegas, Nev.

Sanford, A.R., Lin, K.-W., Tsai, I.-C., and Jaksha, L.H., 2002, *Earthquake Catalogs for New Mexico and Bordering Areas: 1869–1998*: The New Mexico Bureau of Geology and Mineral Resources, Circular 210, 15 pp.

Sarwar, G., 2002, Northern Gulf of Mexico: A passive or passive active margin? AAPG Search and Discovery article #90007, AAPG Annual Meeting, 6 pp.

Saucier, R., 1991, Geoarchaeological evidence of strong prehistoric earthquakes in the New Madrid (Missouri) seismic zone: *Geology*, v. 19, pp. 296-298.

Saucier, R.T., 1977, *Effects of the New Madrid Earthquake Series in the Mississippi Alluvial Valley*: U.S. Army Corps of Engineers Waterways Experiment Station Miscellaneous Paper S-77-5.

Saucier, R.T., 1989, Evidence for episodic sand-blow activity during the 1811-12 New Madrid (Missouri) earthquake series: *Geology*, v. 17, pp. 103-106.

Saucier, R.T., 1994, *Geomorphology and Quaternary Geologic History of the Lower Mississippi*: U.S. Army Corps of Engineers Waterways Experiment Station, vols. 1 and 2, 364 pp. and 28 plates.

Saucier, R.T., and Smith, L.M., 1986, *Geomorphic Mapping and Landscape Classification of the Ouachita and Saline River Valleys, Arkansas*: Archeological Assessments, Inc., Report No. 51, Nashville, Ark.

Sawyer, D.S., Buffler, R.T., and Pilger, R.H., Jr., 1991, The crust under the Gulf of Mexico basin: in Salvador, A. (editor), *The Gulf of Mexico Basin*, Geological Society of America, The Geology of North America, v. J, ch. 4, pp. 53-72.

Scharnberger, C.K., 1990, A history of Pennsylvania earthquakes: *Scholars*, v. 1, no. 2, pp. 4-9.

Scharnberger, C.K., 1991a, The great Pennsylvania earthquake that never was: *Pennsylvania Geology*, v. 23, no. 2, pp. 3-8.

Scharnberger, C.K., 1991b, The pseudoearthquakes of 21 and 23 February, 1954, in Wilkes-Barre, Pennsylvania: *Seismological Research Letters*, v. 62, pp. 135-138.

Schlische, R.W., 1993, Anatomy and evolution of the Triassic-Jurassic continental rift system, eastern North America: *Tectonics*, v. 12, no. 4, pp. 1,026-1,042.

Schlische, R.W., 2003, Progress in Understanding the Structural Geology, Basin Evolution, and tectonic History of the Eastern North America Rift System: in LeTourneau, P.M., and Olsen, P.E. (editors), *The Great Rift Valleys of Pangea in Eastern North America—Volume 1. Tectonics, Structure, and Volcanism*: Columbia University Press, New York, pp. 21-64.

Schlische, R.W. and Olsen, P.E., 1990, Quantitative filling model for continental extensional basins with application to the early Mesozoic rifts of eastern North America: *Journal of Geology*, v. 98, pp. 135-155.

Schlische, R.W., Young, S.S., Ackerman, R.V., and Gupta, A., 1996, Geometry and scaling relations of a population of very small rift-related normal faults: *Geology*, v. 24, no. 8, pp. 683-686.

Schlupp, A., and Cisternas, A., 2007, Source history of the 1905 great Mongolian earthquake (Tsetserleg, Bulnay): *Geophysical Journal International*, v. 169, no. 3, pp. 1115-1131.

Schneider, J.A., and Mayne, P.W., 2000, *Liquefaction Response of Soils in Mid-America Evaluated by Seismic Cones Test*: Mid-America Earthquake Center Report MAE-GT-3A, 292 pp.

Schneider, J.A., Mayne, P.W., and Rix, G.J., 2001, geotechnical site characterization in the greater Memphis area using CPT, *Engineering Geology*, v. 62, no. 1-3, pp. 169-184.

Scholz, C.H., 1998, Earthquakes and friction laws: *Nature*, v. 391, pp. 37-42.

Schulte, S.M., and Mooney, W.D., 2005, An updated global earthquake catalogue for stable continental regions: Reassessing the correlation with ancient rifts: *Geophysical Journal International*, v. 161, pp. 707-721.

Schumm, S.A., and Spitz, W.J., 1996, Geological influences on the lower Mississippi River and its alluvial valley: *Engineering Geology*, v. 45, pp. 245-261.

Schwartz, D., Hecker, S., Ponti, D., Bayasgalan, A., Lund, W., and Stenner, H., 2009, 1998 USGS Expedition to Mongolia, Scientific Background and Field Plan, USGS Earthquake Hazards Program website, http://earthquake.usgs.gov/research/geology/mongolia98/.

Schwartz, D.P., and Coppersmith, K.J., 1984, Fault behavior and characteristic earthquakes: examples from the Wasatch and San Andreas fault zones: *Journal of Geophysical Research*, v. 89, no. B7, pp. 5681-5698.

Schwartz, S.Y., and Christensen, D.H., 1988, The 12 July 1986 St. Mary's Ohio earthquake and recent seismicity in the Anna, Ohio seismogenic zone: *Seismological Research Letters*, v. 59, pp. 57-62.

Schweig, E.S., and Ellis, M.A., 1992, Distributed faulting along the Bootheel lineament—Smoothing over the rough spots in the New Madrid seismic zone [abstract]: *Seismological Research Letters*, v. 63, no. 1, pp. 50.

Schweig, E.S., and Ellis, M.A., 1994, Reconciling short recurrence intervals with minor deformation in the New Madrid seismic zone: *Science*, v. 264, pp. 1308-1311.

Schweig, E.S., III, and Marple, R.T., 1991, Bootheel lineament: A possible coseismic fault of the great New Madrid earthquakes: *Geology*, v. 19, p. 1025-1028.

Schweig, E.S., and Van Arsdale, R.B., 1996, Neotectonics of the upper Mississippi embayment: *Engineering Geology*, v. 45, nos. 1-4, pp. 185-203.

Schweig, E.S., III, Shen, F., Kanter, L.R., VanArsdale, R.B., Luzietti, E.A., Shedlock, K.M., and King K.W., 1992, Shallow seismic reflection survey of the Bootheel lineament area, southeastern Missouri: *Seismological Research Letters*, v. 63, pp. 285-296.

Science Applications International Corporation(SAIC), 2002, Seismic investigation report for siting of a potential on-site CERCLA waste disposal facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky: Report prepared by SAIC Engineering, Inc., Oak Ridge, Tennessee, for Bechtel Jacobs Company and the U.S. Department of Energy Office of Environmental Management, DOE/OR/07-2038&D1, August.

Science Applications International Corporation (SAIC), 2004, Seismic Investigation Report for Siting of a Potential On-Site CERCLA Waste Disposal Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky: unpublished consultant report dated March 2004, by SAIC for U.S. Department of Energy.

Scott, G.R., 1970, *Quaternary Faulting and Potential Earthquakes in East-Central Colorado:* U.S. Geological Survey Professional Paper 700-C, pp. C11-C18.

Scott, G.R., Taylor, R.B., Epis, R.C., and Wobus, R.A., 1978, Geologic map of the Pueblo 1° × 2° quadrangle, south-central Colorado: U.S. Geological Survey Miscellaneous Geologic Investigations I-1022.

Seborowski, K.D., Williams, G., Kelleher, J.A., and Statton, C.T., 1982, Tectonic implications of recent earthquakes near Annsville, New York: *Bulletin of the Seismological Society of America*, v. 72, no. 5, pp. 1601-1609.

Seeber, L., and Armbruster, J., 1995, Seismogenesis and structure in the Lake Erie–Lake Ontario region of the U.S. from a global perspective: *Program, List of Participants and Abstracts from the Atomic Energy Control Board Workshop on Seismic Hazard Assessment in Southern Ontario, Ottawa, Ontario, June 19-21*, INFO-0604-1, pp. D5-D20.

Seeber, L., and Armbruster, J.G., 1981, The 1886 Charleston, South Carolina earthquake and the Appalachian detachment: *Journal of Geophysical Research*, v. 86, no. B9, pp. 7874-7894.

Seeber, L., and Armbruster, J.G., 1988, Seismicity along the Atlantic Seaboard of the U.S.; Intraplate neotectonics and earthquake hazard: in Sheridan, R.E., and Grow, J.A. (editors), *The Atlantic Continental Margin: U.S.*, Geological Society of America, The Geology of North America, v. I-2, ch. 30, pp. 565-582.

Seeber, L., and Armbruster, J.G., 1989, Low-displacement seismogenic faults and nonstationary seismicity in the eastern United States: *Annals of the New York Academy of Sciences*, v. 558, pp. 21-39.

Seeber, L., and Armbruster, J.G., 1991, *The NCEER-91 Earthquake Catalog: Improved Intensity-Based Magnitudes and Recurrence Relations for U.S. Earthquakes East of New Madrid*: Technical Report NCEER-91-0021, National Center for Earthquake Engineering Research, State University of New York at Buffalo.

Seeber, L., and Armbruster, J.G., 1993, Natural and induced seismicity in the Lake Erie–Lake Ontario region: Reactivation of ancient faults with little neotectonic displacement: *Géographie physique et Quaternaire*, v. 47, no. 3, pp. 363-378.

Seeber, L., Armbruster, J.G., and Kim, W.-Y., 2004, A fluid-injection-triggered earthquake sequence in Ashtabula, Ohio: Implications for seismogenesis in stable continental regions: *Bulletin of the Seismological Society of America*, v. 94, no. 1, pp. 76-87.

Seeber, L., Armbruster, J.G., Kim, W.-Y., and Barstow, N., 1998, The 1994 Cacoosing Valley earthquakes near Reading, Pennsylvania: A shallow rupture triggered by quarry unloading, *Journal of Geophysical Research*, v. 103, no. B10, pp. 24,505-24,521.

Seeber, L., and Dawers, N., 1989, Characterization of an intraplate seismogenic fault in the Manhattan Prong, Westchester, Co., N.Y.: *Seismological Research Letters*, v. 60, no. 2, pp. 71-78.

Seeber, L., Kim, W.-Y., Armbruster, J.G., Du, W.-X., Lerner-Lam, A.L., and Friberg, P., 2002, The April 20 2002 Mw = 5.0 earthquake near Au Sable Forks, Adirondacks, New York: A first glance at a new sequence: *Seismological Research Letters*, v. 73, pp. 480-489.

Seed, H.B., and Idriss, I.M., 1982, *Ground Motions and Soil Liquefaction During Earthquakes*: Earthquake Engineering Research Institute monograph, Berkeley, Calif., 134 pp.

Serpa, L.D., Setzer, T., Farmer, H., Brown, L.D., Oliver, J.E., Kaufman, S., Sharp, J., and Steeples, D.W., 1984, Structure of the southern Keeweenawan rift from COCORP surveys across the midcontinent geophysical anomaly in northeastern Kansas: *Tectonics*, v. 3, no. 3, pp. 367-384.

Sexton, J.L., and Jones, P.B., 1986, Evidence for recurrent faulting in the New Madrid seismic zone from Mimi-Sosie high-resolution reflection data: *Geophysics*, v. 51, no. 9, pp. 1760-1788.

Sexton, J.L., Braile, L.W., Hinze, W.J., and Campbell, M.J., 1986, Seismic reflection profiling studies of a buried Precambrian rift beneath the Wabash Valley fault zone: *Geophysics*, v. 51, no. 3, pp. 640-660.

Sharps, J.A., 1976, Geologic Map of the Lamar Quadrangle, Colorado and Kansas: U.S. Geological Survey Miscellaneous Geologic Investigations I-944, scale 1:250,000.

Shedlock, K.M., 1987, *Earthquakes Recorded by the South Carolina Seismic Network (1974–1986)*: U.S. Geological Survey Open-File Report No. 87-437.

Sheridan, R.E., Musser, D.L., Glover, L., Talwani, P., Ewing, J.I., Holbrook, W.S., Purdy, G.M., Hawman, R., and Smithson, S., 1993, Deep seismic reflection data of EDGE U.S. Mid-Atlantic continental-margin experiment: Implications for Appalachian sutures and Mesozoic rifting and magmatic underplating: *Geology*, v. 21, pp. 563-567.

Shoemaker. K., Hamburger, M.W., Pavlis, G.L., Horton, S.P., and Withers, M.M., 2009, Hypocentral relocations of the 2008 Mt. Carmel, Illinois aftershock sequence [abstract]: American Geophysical Union, Fall Meeting, Abstract S51B-1421.

Al-Shukri, H., Lemmer, R.E., Mahdi, H., and Connelly, J.B., 2005, Spatial and temporal characteristics of paleoseismic features in the southern terminus of the New Madrid seismic zone in eastern Arkansas: *Seismological Research Letters*, v. 76, pp. 502-511.

Al-Shukri, H., Mahdi, H., Al Kadi, O., and Tuttle, M., 2009, Spatial and Temporal Characteristic of Paleoseismic Features in the Southern Terminus of the New Madrid Seismic Zone in Eastern Arkansas: Final Technical Report Submitted to the U.S. Geological Survey under USGS External Grant No. 07HQGR0069.

Al-Shukri, H., Mahdi, H., and Tuttle, M., 2006, Three-dimensional imaging of earthquake-induced liquefaction features with ground penetrating radar near Marianna, Arkansas: *Seismological Research Letters*, v. 77, pp. 505-513.

Shumway, A.M., 2008, Focal mechanisms in the northeast New Madrid seismic zone: *Seismological Research Letters,* v. 79, no. 3, pp. 469-477.

Sibol, M.S., Bollinger, G.A., and Birch, J.B., 1987, Estimation of magnitudes in central and eastern North America using intensity and felt area: *Bulletin of the Seismological Society of America*, v. 77, no. 5, pp. 1635-1654.

Sibson, R.H., 1982, Fault zone models, heat flow, and the depth distribution of earthquakes in the continental crust of the United States: *Bulletin of the Seismological Society of America*, v. 72, no. 1, pp. 151-163.

Sibson, R.H., 1984, Roughness at the base of the seismogenic zone: Contributing factors: *Journal of Geophysical Research*, v. 89, pp. 5791-5799.

Sibson, R.H., 2007, Au-quartz mineralization near the base of the continental seismogenic zone: *Geological Society, London, Special Publications*, v. 272, no. 1, pp. 519-532.

Sibson, R.H., and Xie, G., 1998, Dip range for intracontinental reverse fault ruptures: Truth not stranger than friction? *Bulletin of the Seismological Society of America*, v. 88, no. 4, pp. 1014-1022.

Silva, W., Gregor, N., and Darragh, R., 2002, Development of regional hard rock attenuation relations for central and eastern North America: internal report from Pacific Engineering, November 1, http://www.pacificengineering.org/CEUS/Development%20of%20Regional%20Hard_ABC.pdf.

Silva, W., Wong, I., Siegel, T., Gregor, N., Darragh, R., and Lee, R., 2003, Ground motion and liquefaction simulation of the 1886 Charleston, South Carolina, earthquake: *Bulletin of the Seismological Society of America*, v. 93, no. 6, pp. 2717-2736.

Silverman, B.W., 1986, *Density Estimation for Statistics and Data Analysis*: Chapman and Hall, London, Monographs on Statistics and Applied Probability series, No. 26.

Sims, J.D., 1973, Earthquake-induced structures in sediments of Van Norman Lake, San Fernando California: *Science*, v. 182, pp. 161-163.

Sims, J.D., 1975, Determining earthquake recurrence intervals from deformational structures in young lacustrine sediments: *Tectonophysics*, v. 29, pp. 141-153.

Sims, J.D., and Garvin, C.D., 1995, Recurrent liquefaction at Soda Lake, California, induced by the 1989 Loma Prieta earthquake, and 1990 and 1991 aftershocks: Implications for paleoseismicity studies: *Bulletin of the Seismological Society of America*, v. 85, pp. 51-65.

Sims, P.K., 1990, Precambrian Basement Map of the Northern Midcontinent, U.S.A.: U.S. Geological Survey Miscellaneous Investigations Series Map I-1853A, scale 1:1,000,000, 1 sheet.

Sims, P.K., and Peterman, Z.E., 1986, Early Proterozoic Central Plains orogen: A major buried structure in the north-central United States: *Geology*, v. 14, pp. 488-491.

Sims, P.K., Card, K.D., Morey, G.B., and Peterman, Z.E., 1980, The Great Lakes tectonic zone—A major crustal structure in central North America: *Geological Society of America Bulletin*, v. 91; no. 12, pp. 690-698, doi:10.1130/0016-7606(1980)91<690:TGLTZA>2.0.CO;2.

Sims, P.K., Kisvarsanyi, E.B., and Morey, G.B., 1987, *Geology and Metallogeny of Archean and Proterozoic Basement Terranes in the Northern Midcontinent, U.S.A.—An Overview*: U.S. Geological Survey Bulletin 1815, 51 pp.

Sims, P.K., Saltus, R.W., and Anderson, E.D., 2005, *Preliminary Precambrian Basement Structure Map of the Continental United States—An Interpretation of Geologic and Aeromagnetic Data*: U.S. Geological Survey Open-File Report 2005-1029.

Sleep, N.H., 1990, Monteregian hotspot track: A long-lived mantel plume: *Journal of Geophysical Research*, v. 95, no. B13, pp. 21,983-21,990.

Smalley, R., Jr., Ellis, M.A., Paul, J., and VanArsdale, R.B., 2005, Space geodetic evidence for rapid strain rates in the New Madrid seismic zone of the central USA: *Nature*, v. 435, pp. 1088-1090, doi:10.1038/nature03642.

Smith, W.A. and Talwani, P., 1985, Preliminary interpretation of a detailed gravity survey in the Bowman and Charleston, S.C. seismogenic zones [abstract]: Geological Society of America *Abstracts with Programs*, v. 17, no. 2, p. 137.

Smith, W.E.T., 1962, Earthquakes of eastern Canada and adjacent areas: 1534–1927: *Publications of the Dominion Observatory*, v. XXVI, no. 5, pp. 271-302.

Smith, W.E.T., 1966, Earthquakes of eastern Canada and adjacent areas: 1928–1959: *Publications of the Dominion Observatory*, v. XXXII, no. 3, pp. 87-121.

Smoot, J.P., 1985, The closed-basin hypothesis and its use in facies analysis of the Newark Supergroup: in Robinson, G.R., Jr., and Froelich, A.J. (editors), *Proceedings of the Second US Geological Survey Workshop on the Early Mesozoic Basins of the Eastern U.S.*, United States Geological Survey Circular, v. 946, pp. 4-10.

Soderberg, R.K., and Keller, G.R., 1981, Geophysical evidence for a deep basin in western Kentucky: *AAPG Bulletin*, v. 65, pp. 226-234.

Soller, D.R., and Reheis, M.C. (compilers), 2004, Surficial Materials in the Conterminous United States: U.S. Geological Survey Open-File Report 03-275, scale 1:5,000,000.

Soller, D.R., Reheis, M.C., Garrity, C.P., and Van Sistine, D.R., 2009, Map Database for Surficial Materials in the Conterminous United States: U.S. Geological Survey Data Series 425, scale 1:5,000,000, http://pubs.usgs.gov/ds/425/.

Somerville, P., Collins, N., Abrahamson, N., Graves, R., and Saikia, C., 2001, *Ground Motion Attenuation Relations for the Central and Eastern United States, Final Report, June 30, 2001*: external research project funded by U.S. Geological Survey Award No. 99HQGR0098, 38 pp.

Somerville, P., Collins, N., and Graves, R., 2005, *Magnitude-Rupture Area Scaling of Large Strike-Slip Earthquakes*: USGS NEHRP Final Report, Award No. 05-HQ-GR-0004.

Somerville, P., and Saikia, C., 2000, Ground motion attenuation relations for the Central and Eastern United States: progress report to the USGS, January 28, 2000, URS Greiner Woodward Clyde, Pasadena, 10 pp.

Somerville, P.G., McLaren, J.P., Saikia, C.K., and Helmberger, D.V., 1990, The 25 November 1988 Saguenay, Quebec, earthquake: Source parameters and the attenuation of strong ground motion: *Bulletin of the Seismological Society of America*, v. 80, no. 5, pp. 1118-1143.

Sonley, E., and Atkinson, G.M., 2005, Empirical relationship between moment magnitude and Nuttli magnitude for small-magnitude earthquakes in southern Canada: *Seismological Research Letters*, v. 76, no. 6, pp. 752-755.

South Carolina Seismic Network, 2005, List of Earthquakes in Charleston Between 1974 and 2002, webpage, http://scsn.seis.sc.edu/projects/SCSN/history/html/1974_2002Eqweb.htm.

South Carolina Seismic Network, South Carolina Earthquake Catalog, website, http://www.seis.sc.edu/projects/SCSN/.

Southern Nuclear Co., 2008, Vogtle Early Site Permit Application, Revision 4, Part 2—Site Safety Analysis Report, Chapter 2, “Site Characteristics”: see Updated Charleston Seismic Source (UCSS) model in Section 2.5.2.2.2.4, U.S. Nuclear Regulatory Commission document accession no. ML081020220, March 28.

Sparlin, M.A., and Lewis, R.D., 1994, Interpretation of the magnetic anomaly over the Omaha Oil Field, Gallatin County, Illinois: *Geophysics*, v. 59, no. 7, pp. 1092-1099.

Spencer, C., Green, A., Morel-a-l’Huissier, P., and Milkereit, B, 1989, The extension of Grenville basement beneath the northern Appalachians: Results from the Quebec-Maine seismic reflection and refraction surveys: *Tectonics*, v. 8, no. 4, pp. 677-696.

Spitz, W.J., and Schumm, S.A., 1997, Tectonic geomorphology of the Mississippi Valley between Osceola, Arkansas, and Friars Point, Mississippi: *Engineering Geology*, v. 46, pp. 259-280.

Stahle, D.W., Cook, E.R., and White, J.W.C., 1985, Tree-ring dating of bald cypress and the potential for millennia-long chronologies in the Southeast: *American Antiquity*, v. 50, pp. 796-802.

Stahle, D.W., Fye, F.K., and Therrell, M.D., 2004, Interannual to decadal climate and streamflow variability estimates from tree rings: in Gillespie, A.R., Porter, S.C., and Atwater, B.F. (editors), *The Quaternary Period in the United States*, Developments in Quaternary Science Volume 1, Elsevier, Amsterdam and New York, pp. 491-504.

Stark, T.D., 2002, Interpretation of Ground Shaking from Paleoliquefaction Features, U.S. Geological Survey, Annual Technical Report.

Stark, T.J., 1997, The East Continent Rift Complex: Evidence and conclusions: in Ojakangas, R.W., Dickas, A.B., and Green, J.C. (editors), *Middle Proterozoic to Cambrian Rifting, Central North America*, Geological Society of America Special Paper 312, pp. 253-266.

Stauder, W., 1982, Present-day seismicity and identification of active faults in the New Madrid seismic zone: in Pakiser, L., and McKeown, F.A. (editors), Investigations of the New Madrid Missouri Earthquake Region: U.S. Geological Survey Professional Paper 1236-C, pp. 21-30.

Stein, S., and Newman, A., 2004, Characteristic and uncharacteristic earthquakes as possible artifacts: Applications to the New Madrid and Wabash seismic zones: *Seismological Research Letters*, v. 75, pp. 170-184.

Steltenpohl, M.G., Zietz, I., Horton, J.W., Jr., and Daniels, D.L., 2010, New York–Alabama lineament: A buried right-slip fault bordering the Appalachians and mid-continent North America: *Geology*, v. 38, no. 6, pp. 571-574.

Stephenson, W.J., Odum, J.K., Williams, R.A., Pratt, T.L., Harrison, R.W., and Hoffman, D., 1999, Deformation and Quaternary faulting in southeast Missouri across the Commerce geophysical lineament: *Bulletin of the Seismological Society of America*, v. 89, no. 1, pp. 140-155.

Stephenson, W.J., Shedlock, K.M., and Odum, J.K., 1995, Characterization of the Cottonwood Grove and Ridgely faults near Reelfoot Lake, Tennessee, from high-resolution seismic reflection data: in Shedlock, K.M., and Johnston, A.C. (editors), *Investigations of the New Madrid Seismic Zone*, U.S. Geological Survey Professional Paper 1538-I, 10 pp.

Stepp, J.C., 1972, Analysis of completeness of the earthquake sample in the Puget Sound area and its effect on statistical estimates of earthquake hazard: *Proceedings of the International Conference on Microzonation*, v. 2, pp. 897-910.

Stepp, R., and Revetta, F.A., 2008, The Au Sable Forks, NY earthquake of April 20, 2002: Geological Society of America *Abstracts with Programs*, v. 40, no. 2, p. 67.

Stevenson, D.A., and McCulloh, R.P., 2001, *Earthquakes in Louisiana*: Louisiana Geological Survey, Public Information Series No. 7, 8 pp.

Stewart, D.B., Wright, B.E., Unger, J.D., Phillips, J.D., and Hutchinson, D.R. (principal compilers), 1993, Global Geoscience Transect 8: Quebec–Maine–Gulf of Maine Transect, Southeastern Canada, Northeastern United States of America: U.S. Geological Survey Miscellaneous Investigations Series Map I-2329.

St. Julien, P., and Hubert, C., 1975, Evolution of the Taconian orogen in the Quebec Appalachians: *American Journal of Science*, v. 275-A, pp. 337-362.

Stock, C., and Smith, E., 2002, Adaptive kernel estimation and continuous probability representation of historical earthquake catalogs: *Bulletin of the Seismological Society of America*, v. 92, no. 3, pp. 904-912.

St-Onge, G., Mulder, T., Piper, D.J.W., Hillaire-Marcel, C., and Stoner, J.S., 2004, Earthquake and flood-induced turbidites in the Saguenay Fjord (Québec): A Holocene paleoseismicity record: *Quaternary Science Reviews*, v. 23, pp. 283-294.

Stover, C.W., and Coffman, J.L., 1993, *Seismicity of the United States, 1568-1989 (Revised)*: U.S. Geological Survey Professional Paper 1527, 418 pp.

Stover, C.W., Reagor, G., and Algermissen, S.T., 1984, *United States Earthquake Data File*: U.S. Geological Survey Open-File Report 84-225, 123 pp.

Street, R., 1984, Some recent *Lg* phase displacement densities and their implication with respect to the prediction of ground motion in Eastern North America: *Bulletin of the Seismological Society of America*, v. 74, no. 2, pp. 757-762.

Street, R., Bollinger, G.A., and Woolery, E., 2002, Blasting and other mining-related activities in Kentucky: A source of earthquake misidentification: *Seismological Research Letters*, v. 73, no. 5, pp. 739-750.

Street, R., and Lacroix, A., 1979, An empirical study of New England seismicity: 1727-1977, *Bulletin of the Seismological Society of America*, v. 69, no. 1, pp. 159-175.

Street, R.L., Herrmann, R.B., and Nuttli, O.W., 1975, Spectral characteristics of the Lg wave generated by Central United States earthquakes: *Geophysical Journal of the Royal Astronomical Society*, v. 41, pp. 51-63.

Street, R.L., and Turcotte, F.T., 1977, A study of northeastern North American spectral moments, magnitudes, and intensities: *Bulletin of the Seismological Society of America*, v. 67, no. 3, pp. 599-614.

St. Seymour, K., and Kumarapeli, P.S., 1995, Geochemistry of the Grenville dyke swarm: Role of plume-source mantle in magma genesis: *Contributions to Mineralogy and Petrology*, v. 120, pp. 29-41.

Stuart, W.D., Hildenbrand, T.G., and Simpson, R.W., 1997, Stressing of the New Madrid seismic zone by a lower crust detachment fault: *Journal of Geophysical Research*, v. 102, no. B12, pp. 27,623-27,633.

Stuiver, M., Long A., Kra, R.S., and Devine, J.M. (editors), 1993, Calibration 1993 issue: *Radiocarbon*, v. 35, no. 1, 244 pp.

Stuiver, M., and Pearson, G.W., 1993, High-precision bidecadal calibration of the radiocarbon time scale, AD 1950-500 BC and 2500-6000 BC: *Radiocarbon*, v. 35, no. 1, pp. 1-25.

Stuiver, M., and Reimer, P.J., 1993, Extended ^{14}C data base and revised CALIB 3.0 ^{14}C age calibration program: *Radiocarbon*, v. 35, pp. 215-230.

Stuiver, M., Reimer, P.J., and Braziunas, T.F., 1998, High-precision radiocarbon age calibration for terrestrial and marine samples: *Radiocarbon*, v. 40, no. 3, pp. 1127-1151.

Stuiver, M., Reimer, P.J., and Reimer, R.W., 2005, CALIB Radiocarbon Calibration, Version 6.0 program and documentation, http://calib.qub.ac.uk/calib/.

Su, W.J., and McBride, J.H., 1999, Final Technical Report—Study of a Potential Seismic Source Zone in South-Central Illinois: Technical Report Submitted to the U.S. Geological Survey under USGS External Grant No. 99-HQ-GR-0075.

Swan, F.H., Wesling, J.R., Hanson, K.A., Kelson, K.I., and Perman, R.C., 1993, *Draft Report: Investigation of the Quaternary Structural and Tectonic Character of the Meers Fault (Southwestern Oklahoma)*: Geomatrix Consultants, Inc., San Francisco, CA, 104 pp. plus appendices.

Swanson, M.T., 1986, Preexisting fault control for Mesozoic basin formation in eastern North America: *Geology*, v. 14, pp. 419-422.

Sykes, L.R., Armbruster, J.G., Kim, W.-K., and Seeber, L., 2008, Observations and tectonic setting of historic and instrumentally located earthquakes in the greater New York City–Philadelphia area: *Bulletin of the Seismological Society of America*, v. 98, no. 4, pp. 1696-1719.

Syvitski, J.P.M., and Schafer, C.T., 1996, Evidence for an earthquake-triggered basin collapse in Saguenay Fjord, Canada: *Sedimentary Geology*, v. 104, pp. 127-153.

Talma, A.S., and Vogel, J.C., 1993, A simplified approach to calibrating C14 dates: *Radiocarbon*, v. 35, pp. 317-322.

Talwani, M., and Abreau, V., 2000, Inferences regarding initiation of oceanic crust formation from the U.S. East Coast margin and conjugate South Atlantic margins: in Mohriak, W., and Talwani, M. (editors), *Atlantic Rifts and Continental Margins, Geophysical Monograph*, v. 115, pp. 211-233.

Talwani, M., Ewing, J., Sheridan, R.E., Holbrook, W.S., and Glover III, L., 1995, The EDGE experiment and the U.S. Coast magnetic anomaly: in Banda, E., Talwani, M., and Torne, M. (editors), *Rifted Ocean-Continent Boundaries, NATO/ARW Series Book*, v. 3, pp. 155-181.

Talwani, M., Ewing, J., Sheridan, R.E., Musser, D.L., Glover III, L., Holbrook, S., and Purdy, M., 1992, EDGE lines of the U.S. Mid-Atlantic margin and the East Coast magnetic anomaly: *Eos, Transactions of the American Geophysical Union*, v. 73, no. 14, Fall meeting supplement, pp. 490-491.

Talwani, P., 1982, An internally consistent pattern of seismicity near Charleston, South Carolina: *Geology*, v. 10, pp. 655-658.

Talwani, P., 1999, Fault geometry and earthquakes in continental interiors: *Tectonophysics*, v. 305, pp. 371-379.

Talwani, P., 2000, The Charleston earthquake cycle: *Seismological Research Letters*, v. 71, no. 1, 121 pp.

Talwani, P., 2009, The Source and Magnitude of the Charleston Earthquakes: presentation given at CEUS SSC Project Workshop #2, February 18-20, Palo Alto, Calif.

Talwani, P., Amick, D.C., and Schaeffer, W.T., 1999, *Paleoliquefaction Studies in the South Carolina Coastal Plain*: U.S. Nuclear Regulatory Commission Report NUREG/CR 6619, 109 pp.

Talwani, P., and Cox, J., 1985, Paleoseismic evidence for recurrence of earthquakes near Charleston, South Carolina: *Science*, v. 228, pp. 379-381.

Talwani, P., and Dura-Gomez, I., 2009, Finding faults in the Charleston Area, South Carolina: 2. Complementary data, *Seismological Research Letters*, v. 80, no. 5, pp. 901-919.

Talwani, P., Dura-Gomez, I., Gassman, S., Hasek, M., and Chapman, A., 2008, Studies related to the discovery of a prehistoric sandblow in the epicentral area of the 1886 Charleston SC earthquake: Trenching and geotechnical investigations: *Program and Abstracts, Eastern Section of the Seismological Society of America*, p. 50.

Talwani, P., and Katuna, M., 2004, *Macroseismic Effects of the 1886 Charleston Earthquake*: Carolina Geological Society Field Trip Guidebook, 18 pp.

Talwani, P., Rajendran, C.P., Rajendran, K., and Madabhushi, S., 1993, *Assessment of Seismic Hazard Associated with Earthquake Source in the Bluffton-Hilton Head Area*: Technical Report SCUREF Task Order 41, University of South Carolina at Columbia, 85 pp.

Talwani, P., and Schaeffer, W., 2001, Recurrence rates of large earthquakes in the South Carolina Coastal Plain based on paleoliquefaction data: *Journal of Geophysical Research*, v. 106, pp. 6621-6642.

Tanaka, A., 2004, Geothermal gradient and heat flow data in and around Japan (II): Crustal thermal structure and its relationship to seismogenic layer: *Earth, Planets Space*, v. 56, pp. 1195-1199.

Tanaka, A., and Ishikawa, Y., 2002, Temperature distribution and focal depth in the crust of the northeastern Japan: *Earth, Planets Space*, v. 54, pp. 1109-1113.

Tanaka, A., and Ito, H., 2002, Temperature at the base of the seismogenic zone and its relationship to the focal depth of the western Nagano Prefecture area: *Journal of the Seismological Society of Japan*, v. 55, pp. 1-10. (in Japanese with English abstract)

Tanaka, A., Yamano, M., Yano, Y., and Sasada, M., 2004, Geothermal gradient and heat flow data in and around Japan (I): Appraisal of heat flow from geothermal gradient data: *Earth, Planets Space*, v. 56, pp. 1191-1194.

Tarr, A.C., and Rhea, S., 1983, Seismicity near Charleston, South Carolina, March 1973 to December 1979: in Gohn, G.S. (editor), *Studies Related to the Charleston, South Carolina Earthquake of 1886—Tectonics and Seismicity*, U.S. Geological Survey Professional Paper 1313-R, pp. R1-R17.

Tarr, A.C., Talwani, P., Rhea, S., Carver, D., and Amick, D., 1981, Results of recent South Carolina seismological studies: *Bulletin of the Seismological Society of America*, v. 71, no. 6, pp. 1883-1902.

Tavakoli, B., and Pezeshk, S., 2005, Empirical-stochastic ground-motion prediction for eastern North America: *Bulletin of the Seismological Society of America*, v. 95, pp. 2283-2296.

Tavernier, S.A., and Williams, R.T., 2002, Basement faults in the East Tennessee seismic zone: Observations from the Swan Creek gas field [abstract]: Geological Society of America Joint Annual Meeting, North-Central Section and Southeastern Section, Paper no. 21-0.

Taylor, K.B., Herrmann, R.B., Hamburger, M.W., Pavlis, G.L., Johnston, A., Langer, C., and Lam, C., 1989, The southeastern Illinois earthquake of 10 June 1987: *Seismological Research Letters*, v. 60, pp. 101-110.

Taylor, S.R., and Toksöz, M.N., 1982, Measurements of interstation phase and group velocities and *Q* using Wiener filtering: *Bulletin of the Seismological Society of America*, v. 72, pp. 73-91.

Teague, A.G., Bollinger, G.A., and Johnston, A.C., 1986, Focal mechanism analyses for eastern Tennessee earthquakes (1981-1983): *Bulletin of the Seismological Society of America*, v. 76, pp. 95-109.

Texas BEG, 1997, Tectonic Map of Texas: Bureau of Economic Geology (BEG), University of Texas, Austin.

Thomas, W.A., 1976, Evolution of Ouachita-Appalachian continental margin: *Journal of Geology*, v. 84, pp. 323-342.

Thomas, W.A., 1985, The Appalachian-Ouachita connection: Paleozoic orogenic belt at the southern margin of North America: *Annual Review of Earth and Planetary Sciences*, v. 13, pp. 175-199.

Thomas, W.A., 1988, Early Mesozoic faults of the northern Gulf Coastal Plain in the context of opening of the Atlantic Ocean: in Manspeizer, W. (editor), *Triassic-Jurassic Rifting: Continental Breakup and the Origin of the Atlantic Ocean and Passive Margins*, Developments in Geotectonics series, vol. 22, Elsevier, pp. 463-476.

Thomas, W.A., 1990, Cross sections of Appalachian-Ouachita orogen beneath Gulf Coastal Plain: in Hatcher, R.D. Jr., Thomas, W.A. and Viele, G.W. (editors), *The Appalachian-Ouachita Orogen in the United States*, The Geological Society of America, The Geology of North America, v. F-2, Plates 9 and 11.

Thomas, W.A., 1991, The Appalachian-Ouachita rifted margin of southeastern North America: *Geological Society of America Bulletin*, v. 103, pp. 415-431.

Thomas, W.A., 2006, Tectonic inheritance at a continental margin [2005 GSA presidential address]: *GSA Today*, v. 16, no. 2, pp. 4-11.

Thomas, W.A., 2009, Ouachita Sub-Detachment Structures: presentation given at CEUS SSC Project Workshop #2, February 18-20, Palo Alto, Calif.

Tinti, S., and Mulargia, F., 1985, Effects of magnitude uncertainties on estimating the parameters in the Gutenberg-Richter frequency-magnitude law: *Bulletin of the Seismological Society of America*, v. 75, pp. 1681-1697.

Todd, E., and Ammon, C.J., 2007, Characteristics of recent seismic activity in the Gulf of Mexico: *Eos, Transactions of the American Geophysical Union*, 2007 Annual Fall Meeting Supplement, v. 88, no. 52, Abstract S52B-03.

Toro, G.R., Abrahamson, N.A., and Schneider, J.F., 1997, A model of strong ground motions from earthquakes in central and eastern North America—Best estimates and uncertainties: *Seismological Research Letters*, v. 68, pp. 41-57.

Toro, G.R., and McGuire, R.E., 1987, An investigation into earthquake ground motion characteristics in eastern North America: *Bulletin of the Seismological Society of America*, v. 77, pp. 468-489.

Toro, G.R., and Silva, W.J., 2001, Scenario Earthquakes for Saint Louis, MO, and Memphis, TN, and Seismic Hazard Maps for the Central United States Region Including the Effect of Site Conditions: Final Technical Report, prepared for Risk Engineering, Inc., Boulder, Colo., under USGS External Grant No. 1434-HQ-97-GR-02981.

Tréhu, A., Morel-à-l'Huissier, P., Meyer, R., and 13 others, 1991, Imaging the Midcontinent Rift beneath Lake Superior using large aperture seismic data: *Geophysical Research Letters*, v. 16, no. 4, pp. 625-628.

Trehu, A.M., Ballard, A., Dorman, L.M., Gettrust, J.F., Klitgord, K.D., and Schreiner, A., 1989, Structure of the lower crust beneath the Carolina Trough, U.S. Atlantic Margin: *Journal of Geophysical Research*, v. 94, pp. 10,585-10,600.

Tremblay, A., and Castonguay, S., 2002, Structural evolution of the Laurentian margin revisited (southern Quebec Appalachians): Implications for the Salinian orogeny and successor basins: *Geology,* v. 30, pp. 79-82.

Tremblay, A., and Lemieux, Y., 2001, *Supracrustal Faults of the St. Lawrence Rift System Between Cap-Tourmente and Baie-Saint-Paul, Quebec*: Geological Survey of Canada, Current Research 2001-D15, 21 pp.

Tremblay, A., and Pinet, N., 2005, Diachronous supracrustal extension in an intraplate setting and the origin of the Connecticut Valley—Gaspé and Merrimack troughs, northern Appalachians: *Geological Magazine,* v. 142, pp. 7-22.

Tremblay, A., Long, B., and Massé, M., 2003, Supracrustal faults of the St. Lawrence rift system, Québec: Kinematics and geometry as revealed by field mapping and marine seismic reflection data: *Tectonophysics*, v. 369, pp. 231-252.

Tremblay, A., Ruffet, G., and Castonguay, S., 2000, Acadian metamorphism in the Dunnage zone of southern Québec, Northern Appalachians: 40Ar/39Ar evidence for collision diachronism: *Geological Society of America Bulletin,* v. 112, pp. 136-46.

Trenkamp, R., and Talwani, P., n.d., GPS Derived Strain and Strain Zonation near Charleston, South Carolina: unpublished report ca. 2005.

Treworgy, J.D., 1981, *Structural Features in Illinois—A Compendium*: Illinois State Geological Survey Circular 519, 22 pp.

Trumbore, S.E., 1989, AMS ^{14}C measurements of fractionated soil organic matter: an approach to deciphering the soil carbon cycle: *Radiocarbon*, v. 31, no. 3, pp. 644-654.

Tuttle, M., 2006, Paleoseismic investigation of long-term rates of large earthquakes in the Charlevoix and proposed Rabaska site areas: Preliminary report prepared for Rabaska, Inc., October 9.

Tuttle, M., and Barstow, N., 1996, Liquefaction-related ground failure: A case study in the New Madrid seismic zone, Central United States: *Bulletin of the Seismological Society of America*, v. 86, pp. 636-645.

Tuttle, M., and Chester, J.S., 2005, Paleoseismology Study in the Cache River Valley, Southern Illinois: U.S. Geological Survey, Earthquake Hazards Program, Final Technical Report (Award No. HQ98GR00015), 14 pp.

Tuttle, M., Chester, J., Lafferty, R., Dyer-Williams, K., and Cande, B., 1999, *Paleoseismology Study Northwest of the New Madrid Seismic Zone*: U.S. Nuclear Regulatory Commission, NUREG/CR-5730, 98 pp.

Tuttle, M., Chester, J.S., Lafferty, R., Dyer-Williams, K., Haynes, M., Cande, R., and Sierzchula, M., 1998, Liquefaction features in southwestern Illinois and southeastern Missouri and their implications for paleoseismicity [abstract]: *Eos, Transactions of the American Geophysical Union*, v. 79, p. S342.

Tuttle, M., Law, T., Seeber, L., and Jacob, K., 1990, Liquefaction and ground failure in Ferland, Quebec, triggered by the 1988 Saguenay earthquake: *Canadian Geotechnical Journal*, v. 27, pp. 580-589.

Tuttle, M., and Seeber, L., 1991, Historic and prehistoric earthquake-induced liquefaction in Newbury, Massachusetts: *Geology*, v. 19, no. 6, pp. 594-597.

Tuttle, M.P., 1994, *The Liquefaction Method for Assessing Paleoseismicity*: U.S. Nuclear Regulatory Commission, NUREG/CR-6258, 38 pp.

Tuttle, M.P., 1999, Late Holocene Earthquakes and Their Implications for Earthquake Potential of the New Madrid Seismic Zone, Central United States: Ph.D. dissertation, University of Maryland, 250 pp.

Tuttle, M.P., 2000, Paleoseismological Study in the St. Louis Region: U.S. Geological Survey, Earthquake Hazards Program, Final Technical Report (99-HQ-GR-0032), 29 pp.

Tuttle, M.P., 2001, The use of liquefaction features in paleoseismology: Lessons learned in the New Madrid seismic zone, central United States: *Journal of Seismology*, v. 5, pp. 361-380.

Tuttle, M.P., 2005a, Improving the Earthquake Chronology for the St. Louis Region: U.S. Geological Survey, Earthquake Hazards Program, Annual Project Summary (05HQGR0045), 6 pp.

Tuttle, M.P., 2005b, Paleoseismological Study in the St. Louis Region: Collaborative Research: Final Technical Report, U.S. Geological Survey External Research Award No. 1434-HQ99GR0032, 29 pp.

Tuttle, M.P., 2007, Re-evaluation of Earthquake Potential and Source in the Vicinity of Newburyport, Massachusetts, U.S. Geological Survey, Earthquake Hazards Program, Final Technical Report (01HQGR0163).

Tuttle, M.P., 2008, Paleoseismological investigations at the East Site, The Gilmore/Tyronza Mitigation Project: in *Data Recovery at the Tyronza Sites, Poinsett County, Arkansas, The East Site (3P0610)*, technical report to Arkansas State Highway and Transportation Department, v. 4, pp. 259-277.

Tuttle, M.P., 2009, Re-evaluation of Earthquake Potential and Source in the Vicinity of Newburyport, Massachusetts: *U.S. Geological Survey, Earthquake Hazards Program*, Final Technical Report (03HQGR0031).

Tuttle, M.P., 2010, Search for and Study of Sand Blows at Distant Sites Resulting from Prehistoric and Historic New Madrid Earthquakes: Collaborative Research, M. Tuttle & Associates and Central Region Hazards Team, U.S. Geological Survey, Final Technical Report (02HQGR0097), 48 pp.

Tuttle, M.P., and Atkinson, G.M., 2010, Localization of large earthquakes in the Charlevoix seismic zone, Quebec, Canada, during the past 10,000 years: *Seismological Research Letters*, v. 81, pp. 140-147.

Tuttle, M.P., Collier, J., Wolf, L.W., and Lafferty, R.H., 1999, New evidence for a large earthquake in the New Madrid seismic zone between A.D. 1400 and 1670: *Geology*, v. 27, no. 9, pp. 771-774.

Tuttle, M.P., Cowie, P., and Wolf, L., 1992, Liquefaction induced by modern earthquakes as a key to paleoseismicity: A case study of the 1988 Saguenay earthquake: in Weiss, A. (editor), *Proceedings of the Nineteenth International Water Reactor Safety Information Meeting*, NUREG/CP-0119, v. 3, pp. 437-462.

Tuttle, M.P., Dyer-Williams, K., and Barstow, N.L., 2002, Paleoliquefaction study of the Clarendon-Linden fault system, western New York State: *Tectonophysics*, v. 353, pp. 263-286.

Tuttle, M.P., Hengesh, J., Tucker, K.B., Lettis, W., Deaton, S.L., and Frost, J.D., 2002, Observations and comparisons of liquefaction features and related effects induced by the Bhuj earthquake: *Earthquake Spectra*, v. 18, Supplement A, pp. 79-100.

Tuttle, M.P., Lafferty, R.H., Chester, J.S., and Haynes, M., 1996, Evidence of earthquake-induced liquefaction north of the New Madrid seismic zone, central United States: *Seismological Research Letters*, v. 67, no. 2, p. 58.

Tuttle, M.P., Lafferty, R.H., Guccione, M.J., Schweig, E.S., Lopinot, N., Cande, R.F., Dyer-Williams, K., and Haynes, M., 1996, Use of archaeology to date liquefaction features and seismic events in the New Madrid seismic zone, central United States: *Geoarchaeology: An International Journal*, v. 11, no. 6, pp. 451-480.

Tuttle, M.P., Lafferty, R.H., III, and Schweig, E.S., III, 1998, *Dating of Liquefaction Features in the New Madrid Seismic Zone and Implications for Earthquake Hazard*: U.S. Nuclear Regulatory Commission, NUREG/GR-0017, 77 pp.

Tuttle, M.P., and Schweig, E., 2004, *Search for and Study of Sand Blows at Distant Sites Resulting from Prehistoric and Historic New Madrid earthquakes:* U.S. Geological Survey, Annual Technical Report.

Tuttle, M.P., Schweig, E., III, Campbell, J., Thomas, P.M., Sims, J.D., and Lafferty, R.H., III, 2005, Evidence for New Madrid earthquakes in A.D. 300 and 2350 B.C.: *Seismological Research Letters*, v. 76, no. 4, pp. 489-501.

Tuttle, M.P., and Schweig, E.S., 1995, Archeological and pedological evidence for large earthquakes in the New Madrid seismic zone, central United States: *Geology*, v. 23, no. 3, pp. 253-256.

Tuttle, M.P., and Schweig, E.S., 1996, Recognizing and dating prehistoric liquefaction features: Lessons learned in the New Madrid seismic zone, central United States: *Journal of Geophysical Research*, v. 101, no. B3, pp. 6171-6178.

Tuttle, M.P., and Schweig, E.S., 2000, *Towards a Paleoearthquake Chronology for the New Madrid Seismic Zone*: U.S Geological Survey, Earthquake Hazards Program, Annual Project Summary (99HQGR0022), 9 pp.

Tuttle, M.P., and Schweig, E.S., 2001, *Towards a Paleoearthquake Chronology of the New Madrid Seismic Zone*: U.S. Geological Survey, Earthquake Hazards Program, Progress Report (99HQGR0022), 28 pp.

Tuttle, M.P., Schweig, E.S., and Dyer-Williams, K., 2004, Paleoseismology Study in the St. Louis region, USGS Final Technical Report.

Tuttle, M.P., Schweig, E.S., Sims, J.D., Lafferty, R.H., Wolf, L.W., and Haynes, M.I., 2002, The earthquake potential of the New Madrid seismic zone: *Bulletin of the Seismological Society of America*, v. 92, no. 6, pp. 2080-2089.

Tuttle, M.P., Seeber, L., and Bradley, L., 1987, Liquefaction of glaciomarine sediments during the 1727 earthquake in Newburyport, Massachusetts: in Jacob, K.H. (editor), *Proceedings from the Symposium on Seismic Hazards, Ground Motions, Soil-Liquefaction and Engineering Practice in Eastern North America*, NCEER Technical Report NCEER-87-0025, pp. 467-479.

Tuttle, M.P., Al-Shukri, H., and Mahdi, H., 2006, Very large earthquakes centered southwest of the New Madrid seismic zone 5,000-7,000 years ago: *Seismological Research Letters*, v. 77, pp. 755-770.

Tuttle, M.P., Sims, J.D., Dyer-Williams, K., Lafferty III, R.H., and Schweig III, E.S., 2000, Dating of Liquefaction Features in the New Madrid Seismic Zone: U.S. Nuclear Regulatory Commission, NUREG/GR-0018, 42 pp.

Tuttle, M.P., Such, R., and Seeber, L., 1989, Ground failure associated with the November 25th, 1988 Saguenay earthquake in Quebec Province, Canada: in Jacob, K. (editor), *The 1988 Saguenay Earthquake of November 25, 1988, Quebec, Canada: Strong Motion Data, Ground Failure Observations, and Preliminary Interpretations*, Buffalo, N.Y., National Center for Earthquake Engineering Research, pp. 1-23.

Tuttle, M.P., and Wolf, L.W., 2003, Towards a Paleoearthquake Chronology of the New Madrid Seismic Zone: U.S. Geological Survey, Earthquake Hazards Program, Progress Report (01-HQ-GR-0164), 38 pp.

Urgeles, R., Locat, J., Lee, H.J., and Martin, F., 2002, The Saguenay Fjord, Quebec, Canada: Integrating marine geotechnical and geophysical data for spatial seismic slope stability and hazard assessment: *Marine Geology*, v. 185, pp. 319-340.

U.S. Geological Survey (USGS), 2003, Poster of the Fort Payne, Alabama Earthquake of 29 April 2003—Magnitude 4.6: earthquake summary, http://earthquake.usgs.gov/earthquakes/eqarchives/poster/2003/20030429.php.

U.S. Geological Survey (USGS), 2005, Shuttle Radar Topography Mission (SRTM) 3 Arc Second (~90 meter) data: Earth Resources Observation and Science (EROS) Center, http://eros.usgs.gov/#Find_Data/Products_and_Data_Available/SRTM.

U.S. Geological Survey (USGS), Crustal Database, 2008, Seismic Properties of North America and the Surrounding Ocean Basins, website, http://earthquake.usgs.gov/research/structure/crust/nam.php.

U.S. Geological Survey (USGS), Did You Feel It? website, http://earthquake.usgs.gov/earthquakes/dyfi/, last modified August 3, 2011.

U.S. Geological Survey (USGS), 2010, Earthquake Database (see Section 5.2.1.1.4)

U.S. Geological Survey (USGS), [multiple dates], Quaternary Fault and Fold Database for the United States: continuously updated, http://earthquakes.usgs.gov/regional/qfaults.

U.S. Geological Survey (USGS), Routine United States Mining Seismicity catalog, website, http://earthquake.usgs.gov/earthquakes/eqarchives/mineblast/, last modified August 17, 2011.

U.S. Nuclear Regulatory Commission (NRC), 2007, *Regulatory Guide 1.208: A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion*: Office of Nuclear Regulatory Research, March.

U.S. Nuclear Regulatory Commission (NRC), 2012, Practical Implementation Guidelines for SSHAC Level 3 and 4 Hazard Studies: NUREG-2117, Office of Nuclear Regulatory Research, 138 pp.

Utsu, T., 1966, A statistical significance test of the difference in b-value between two earthquake groups: *Journal of Physics of the Earth*, v. 14, pp. 37-40.

Valentino, D.W., and Gates, A.E., 1995, Iapetan rift-related turbidite-fan deposits from the central Appalachian Piedmont: *American Journal of Science*, v. 295, pp. 78-97.

Van Arsdale, R., Bresnahan, R., McCallister, N., and Waldron, B., 2007, Upland Complex of the central Mississippi River valley: Its origin, denudation, and possible role in reactivation of the New Madrid seismic zone: in Stein, S., and Mazzotti, S. (editors), *Continental Intraplate Earthquakes: Science, Hazard, and Policy Issues*, Geological Society of America Special Paper 425, pp. 177-192, doi:10.1130/2007.2425(13).

Van Arsdale, R., Counts, R., and Woolery, E., 2009, Quaternary Displacement Along the Hovey Lake Fault of Southern Indiana and Western Kentucky: NEHRP Final report submitted to the U.S. Geological Survey, External Grant Number 07-HQ-GR-0052, 11 pp.

Van Arsdale, R., Purser, J., Stephenson, W., and Odum, J., 1998, Faulting along the southern margin of Reelfoot Lake, Tennessee: *Bulletin of the Seismological Society of America*, v. 88, no. 1, pp. 131-139.

Van Arsdale, R., Ward, C., and Cox, R., 1989, *Post-Pennsylvanian reactivation along the Washita Valley fault, Southern Oklahoma*: U.S. Nuclear Regulatory Commission report, NUREG/CR 5375, 48 pp.

Van Arsdale, R.B., 1986, Quaternary displacement on faults within the Kentucky River fault system of east-central Kentucky: *Geological Society of America Bulletin*, v. 97, no. 11, pp. 1382-1392.

Van Arsdale, R.B., 1998, *Seismic Hazards of the Upper Mississippi Embayment*: U.S. Army Corps of Engineers Waterways Experiment Station Contract Report GL-98-1, 126 pp.

Van Arsdale, R.B., 2000, Displacement history and slip rate on the Reelfoot fault of the New Madrid seismic zone: *Engineering Geology*, v. 55, no. 4, pp. 219-226.

Van Arsdale, R.B., 2009, *Adventures Through Deep Time: The Central Mississippi River Valley and Its Earthquakes*: Geological Society of America Special Paper 455, 107 pp.

Van Arsdale, R.B., Cox, R., and Harris, J., 2002, Investigation of Faulting Beneath the City of Memphis and Shelby County, Tennessee: NEHRP Final report submitted to the U.S. Geological Survey, External Grant Number 02GQGR0053, 33 pp.

Van Arsdale, R.B., Cox, R.T., Johnston, A.C., Stephenson, W.J., and Odum, J.K., 1999, Southeastern extension of the Reelfoot fault: *Seismological Research Letters*, v. 70, no. 3, pp. 348-359.

Van Arsdale, R.B., Schweig, E.S., Kanter, L.R., Williams, R.A., Shedlock, K.M., and King, K.W., 1992, Preliminary shallow seismic reflection survey of Crowley's Ridge, northeast Kansas: *Seismological Research Letters*, v. 63, no. 3, pp. 309-320.

Van Arsdale, R.B., and Sergeant, R.E., 1992, *Post-Pliocene Displacement on Faults Within the Kentucky River Fault System of East-Central Kentucky*: Kentucky Geological Survey, Series 11, Reprint 34, reprinted from U.S. Nuclear Regulatory Commission Report NUREG/CR-4685 (1987), 36 pp.

Van Arsdale, R.B., and TenBrink, R.K., 2000, Late Cretaceous and Cenozoic Geology of the New Madrid Seismic Zone: *Bulletin of the Seismological Society of America*, v. 90, no. 2, pp. 345-356, doi:10.1785/0119990088.

Van Arsdale, R.B., Williams, R.A., Schweig, E.S., Shedlock, K.M., Odum, J.K., and King, K.W., 1995, The origin of Crowley's Ridge, northeastern Arkansas: Erosional remnant or tectonic uplift? *Bulletin of the Seismological Society of America*, v. 85, no. 4, pp. 963-985.

Van Avendonk, H.J.A, Lavier, L.L., Shillington, D.J., and Manatschal, G., 2009, Extension of continental crust at the margin of the eastern Grand Banks Newfoundland: *Tectonophysics*, v. 468, no. 1-4, pp. 131-148.

Van Dyck, J., 1986, Statistical Analysis of Earthquake Catalogs: Ph.D. thesis, Massachusetts Institute of Technology, 430 pp.

van Lanen, X., and Mooney, W.D., 2007, Integrated geologic and geophysical studies of North American continental intraplate seismicity: in Stein, S., and Mazzotti, S. (editors), *Continental Intraplate Earthquakes: Science, Hazard, and Policy Issues*, Geological Society of America Special Paper 425, pp. 101-112.

Van Schmus, W.R., 1992, Tectonic setting of the Midcontinent Rift System: *Tectonophysics*, v. 213, pp. 1-15.

Van Schmus, W.R., Bickford, M.E., and Turek, A., 1996, Proterozoic geology of the east-central Midcontinent basement: in van der Pluijm, B.A., and Catacosinos, P.A. (editors), *Basement and Basins of Eastern North America*, Geological Society of America Special Paper 308, pp. 7-32.

Van Schmus, W.R., Schneider, D.A., Holm, D.K., Dodson, S., and Nelson, B.K., 2007, New insights into the southern margin of the Archean-Proterozoic boundary in the north-central United States based on U-Pb, Sm-Nd, and Ar-Ar geochronology: *Precambrian Research*, v. 157, pp. 80-105.

Vaughn, J.D., 1991, Evidence for multiple generations of seismically induced liquefaction features in the Western Lowlands, southeast Missouri [abstract]: *Seismological Research Letters*, v. 62, p. 189.

Vaughn, J.D., 1992, Active tectonics in the Western Lowlands of southeast Missouri: An initial assessment: *Missouri Department Natural Resources Special Publication No. 8*, pp. 54-59.

Vaughn, J.D., 1994, *Paleoseismological Studies in the Western Lowlands of Southeast Missouri*: Report to NEHRP Annual External Program, Contract No. 14-08-0001-G1931, 27 pp.

Vaughn, J.D., Obermeier, S.F., Hatcher, R.D., Howard, C.W., Mills, H.H., and Whisner, S.C., 2010, Evidence for one or more major late-Quaternary earthquakes and surface faulting in the East Tennessee seismic zone [abstract]: *Seismological Research Letters*, v. 81, no. 2, p. 323.

Velasco, M., Van Arsdale, R., Waldron, B., Harris, J., and Cox, R., 2005, Quaternary faulting beneath Memphis, Tennessee: *Seismological Research Letters*, v. 76, no. 5, pp. 598-614.

Veneziano, D., and Van Dyck, J., 1985, Statistical discrimination of aftershocks and their contribution to seismic hazard: in *Seismic Hazard Methodology for Nuclear Facilities in the Eastern U.S.*, Volume 2, Appendix A-4, EPRI/SOG Draft 85-1.

Viele, G.W., and Thomas, W.A., 1989, Tectonic synthesis of the Ouachita orogenic belt: in Hatcher, R.D., Jr., Thomas, W.A., and Viele, G.W. (editors), *The Appalachian-Ouachita Orogen in the United States*, Geological Society of America, The Geology of North America, v. F-2, pp. 695-728.

Virginia Tech Seismological Observatory, Southeastern United States Seismic Network (SEUSSN) bulletins and southeastern U.S. earthquake catalog, website, http://www.geol.vt.edu/outreach/vtso/anonftp/catalog/.

Vlahovic, G., Powell, C.A., Chapman, M.C., and Sibol, M.S., 1996, P and S wave velocity structure and hypocenter locations in the eastern Tennessee seismic zone: *Seismological Research Letters*, v. 67, no. 2, p. 59.

Vlahovic, G., Powell, C., Chapman, M., and Sibol, M., 1998, Joint hypocenter-velocity inversion for the Eastern Tennessee seismic zone: *Journal of Geophysical Research*, v. 103, no. B3, pp. 4879-4896.

Vogel, J.C., Fuls, A., Visser, E., and Becker, B., 1993, Pretoria calibration curve for short lived samples: *Radiocarbon*, v. 33, pp. 73-86.

Wald, D., Quitoriano, V., Dengler, L., and Dewey, J., 1999. Utilization of the Internet for rapid community intensity maps: *Seismological Research Letters*, v. 70, pp. 680-697.

Walker, M., 2005, *Quaternary Dating Methods*: John Wiley and Sons, Ltd, West Sussex, England, 286 pp.

Walker, W.M., 2006, Structural Analysis of the Criner Hills, South-Central Oklahoma: M.S. thesis, Baylor University, Waco, Tex.

Walker, J.D., and Geissman, J.W., compilers, 2009, Geologic Time Scale: Geological Society of America, doi: 10.1130/2009.CTS004R2C.

Walsh, G.J., and Aleinikoff, J.N., 1999, U-Pb zircon age of metafelsite from the Pinney Hollow Formation: Implications for the development of the Vermont Appalachians: *American Journal of Science*, v. 299, pp. 157-170.

Watkins, J.S., Bradshaw, B.E., Huh, S., Li, R., and Zhang, J., 1996, Structure and distribution of growth faults in the northern Gulf of Mexico OCS: in Jones, J., and Freed, R.L. (editors), *Structural Framework of the Gulf of Mexico*, Special Publication of the Association of Geological Societies, 45th Annual Research Conference of the Gulf Coast Section SEPM, San Antonio, Texas, October 2-4, 1996, pp. 63-77.

Watkins, J.S., and Buffler, R.T., 1996, Gulf of Mexico deepwater frontier exploration potential: in Jones, J., and Freed, R.L. (editors), *Structural Framework of the Gulf of Mexico*, Special Publication of the Association of Geological Societies, 45th Annual Research Conference of the Gulf Coast Section SEPM, San Antonio, Texas, October 2-4, 1996, pp. 79-92.

Watkins, J.S., MacRae, G., and Simmons, G., 1996, Bipolar simple-shear rifting responsible for distribution of mega-salt basins in Gulf of Mexico? in Jones, J., and Freed, R.L. (editors), *Structural Framework of the Gulf of Mexico*, Special Publication of the Association of Geological Societies, 45th Annual Research Conference of the Gulf Coast Section SEPM, San Antonio, Texas, October 2-4, 1996, pp. 297-305.

Weems, R.E., and Edwards, L.E., 2007, Post-middle Miocene origin of modern landforms in the eastern Piedmont of Virginia: *Stratigraphy*, v. 4, no. 1, pp. 35-48.

Weems, R.E., and Lewis, W.C., 2002, Structural and tectonic setting of the Charleston, South Carolina, region: Evidence from the Tertiary stratigraphic record: *Geological Society of America Bulletin*, v. 114, no. 1, pp. 24-42.

Weems, R.E., and Obermeier, S.F., 1990, The 1886 Charleston earthquake—An overview of geological studies: in *Proceedings of the U.S. Nuclear Regulatory Commission Seventeenth Water Reactor Safety Information Meeting*, NUREG/CP-0105, v. 2, pp. 289-313.

Weems, R.E., Obermeier, S.F., Pavich, M.J., Gohn, G.S., and Rubin, M., 1986, Evidence for Three Moderate to Large Prehistoric Holocene Earthquakes Near Charleston, South Carolina: in *Proceedings of the 3rd U.S. National Conference on Earthquake Engineering, Charleston, South Carolina*, v. 1, pp. 3-13.

Weichert, D.H., 1980, Estimation of the earthquake recurrence parameters for unequal observation periods for different magnitudes: *Bulletin of the Seismological Society of America*, v. 70, no. 4, pp. 1337-1346.

Wells, D.L., and Coppersmith, K.J., 1994, New empirical relationships among magnitude, rupture length, rupture width, rupture area, and surface displacement: *Bulletin of the Seismological Society of America*, v. 84, pp. 974-1,002.

Wentworth, C.M., and Mergner-Keefer, M., 1983, Regenerate faults of of small Cenozoic offset—Probable earthquake sources in the southeastern United States: in Gohn, G.S. (editor), *Studies Related to the Charleston, South Carolina, Earthquake of 1886—Tectonics and Seismicity*, U.S. Geological Survey Professional Paper 1313-S, pp. S1-S20.

Wesnousky, S.G., 2008, Displacement and geometrical characteristics of earthquake surface ruptures: Issues and implications for seismic-hazard analysis and the process of earthquake rupture: *Bulletin of the Seismological Society of America*, v. 98, no. 4, pp. 1609-1632.

Wesnousky, S.G., and Johnson, D.L., 1996, Stratigraphic, paleosol, and C-14 evidence for a large pre-1811 magnitude earthquake in the New Madrid seismic zone: *Seismological Research Letters*, v. 67, no. 2, p. 60.

Wesson, R.L., and Nicholson, C. (editors), 1986, *Studies of the January 31, 1986, Northeastern Ohio Earthquake—A Report to the U.S. Nuclear Regulatory Commission*: U.S. Geological Survey Open-File Report 86-331.

West, D.P., Jr., and Roden-Tice, M.K., 2003, Late Cretaceous reactivation of the Norumbega fault zone, Maine: Evidence from apatite fission-track ages: *Geology,* v. 31, pp. 649-652.

Weston Observatory Northeast Earthquake Catalogs, website, http://www.bc.edu/research/westonobservatory/northeast/eqcatalogs.html, last updated May 16, 2011.

Wetmiller, R.J., and Adams, J., 1990, An earthquake doublet in the Charlevoix seismic zone, Quebec: *Current Research, Part B, Geological Survey of Canada*, Paper 90-1, pp. 105-113.

Wetmiller, R.J., Adams, J., Anglin, F.M., Hasegawa, H.S., and Stevens, A.E., 1984, Aftershock sequences of the 1982 Miramichi, New Brunswick, earthquakes: *Bulletin of the Seismological Society of America*, v. 74, pp. 621-653.

Wheeler, R.L., 1995, Earthquakes and the cratonward limit of Iapetan faulting in eastern North America: *Geology*, v. 23, no. 2, pp. 105-108.

Wheeler, R.L., 1996, Relative seismic hazards of six Iapetan rifts and grabens in southeastern North America [abstract]: *Seismological Research Letters*, v. 67, no. 2, p. 60.

Wheeler, R.L., 1997, Boundary separating the seismically active Reelfoot rift from the sparsely seismic Rough Creek graben, Kentucky, and Illinois: *Seismological Research Letters*, v. 68, no. 4, pp. 586-598.

Wheeler, R.L. (compiler), 1999a, Fault number 707, Brockton-Froid fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.

Wheeler, R.L. (compiler), 1999b, Fault number 924, Gulf-margin normal faults, Texas, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults.

Wheeler, R.L., 2002, Distinguishing seismic from non-seismic soft-sediment structures: Criteria from seismic hazard analysis: in Ettensohn, F.R., Rast, N., and Brett, C.E., eds., *Ancient Seismites*, Geological Society of America Special Paper 359, pp. 1-11.

Wheeler, R.L., 2005, *Known or Suggested Quaternary Tectonic Faulting, Central and Eastern United States—New and Updated Assessments for 2005*: U.S. Geological Survey Open-File Report 2005-1336, 40 pp.

Wheeler, R.L., 2009, *Methods of Mmax Estimation East of the Rocky Mountains*: U.S. Geological Survey Open-File Report 2009-1018, 44 pp.

Wheeler, R.L., and Cramer, C.H., 2002, Updated seismic hazard in the southern Illinois basin: Geological and geophysical foundations for use in the 2002 USGS national seismic-hazard maps: *Seismological Research Letters*, v. 73, no. 5, pp. 776-791.

Wheeler, R.L., and Crone, A.J., 2001, Known and suggested Quaternary faulting in the midcontinent United States: *Engineering Geology*, v. 62, pp. 51-78.

Wheeler, R.L., and Crone, A.J., 2003, Reply to "Comment on evaluation of Meers fault, Oklahoma in 'Known and suggested Quaternary faulting in the midcontinent United States' by Russell L. Wheeler and Anthony J. Crone": *Engineering Geology*, v. 69, pp. 211-215.

Wheeler, R.L., and Frankel, A.D., 2000, Geology in the 1996 USGS seismic-hazard maps, central and eastern United States: *Seismological Research Letters*, v. 71, pp. 273-282.

Wheeler, R.L., and Johnston, A.C., 1992, Geologic implications of earthquake source parameters in central and eastern North America: *Seismological Research Letters*, v. 63, no. 4, pp. 491-505.

Wheeler, R.L., Rhea, S., and Dart, R.L., 1994, Map Showing Structure of the Mississippi Valley Graben in the Vicinity of New Madrid, Missouri: U.S. Geological Survey Miscellaneous Field Studies Map MF-2264-D.

Wheeler, R.L., Rhea, S., Diehl, S.F., Drahovzal, J.A., Bear, G.W., and Sargent, M.L., 1997, Seismotectonic Map Showing Faults, Igneous Rocks, and Geophysical and Neotectonic Features in the Vicinity of the Lower Wabash Valley, Illinois, Indiana, and Kentucky: U.S. Geological Survey Geologic Investigations Series I-2583-D, scale 1:250,000.

Whisner, S.C., Hatcher, R.D., Jr., and Munsey, J.W., 2003, Disturbed sediments in the East Tennessee seismic zone: Evidence of large prehistoric earthquakes in East Tennessee? *Southeastern Geology*, v. 42, no. 2, pp. 1-16.

White, D.J., Easton, R.M., Culshaw, N.G., Milkereit, B., Forsyth, D.A., Carr, S., Green, A.G., and Davidson, A., 1994, Seismic images of the Grenville orogen in Ontario: *Canadian Journal of Earth Sciences*, v. 31, pp. 293-307.

White, D.J., Forsyth, D.A., Asudeh, I., Carr, S.D., Wu, H., Easton, R.M., and Mereu, R.F., 2000, A seismic-based cross-section of the Grenville orogen in southern Ontario and western Quebec: *Canadian Journal of Earth Sciences*, v. 37, pp. 183-192.

White, G., 1980, Permian-Triassic continental reconstruction of the Gulf of Mexico−Caribbean area: *Nature*, v. 283, pp. 823-826.

Whitmeyer, S.J., and Karlstrom, K.E., 2007, Tectonic model for the Proterozoic growth of North America: *Geosphere*, v. 3, no. 4, pp. 220-259.

Widmann, B.L. (compiler), 1997a, Fault number 2327, Ute Pass fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults, accessed April 28, 2009.

Widmann, B.L. (compiler), 1997b, Fault number 2328, Rampart Range fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults, accessed May 5, 2009.

Widmann, B.L. (compiler), 1997c, Fault number 2329, Goodpasture fault, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, http://earthquakes.usgs.gov/regional/qfaults, accessed May 6, 2009.

Wildermuth, E., and Talwani, P., 2001, A detailed gravity survey of a pull-apart basin in northeast South Carolina [abstract]: Geological Society of America *Abstracts with Programs*, v. 33, no. 6, p. 240.

William Lettis & Associates, Inc. (WLA), 2006, Investigation of Holocene Faulting at Proposed C-746 Landfill Expansion: prepared for Kentucky Research Consortium for Energy and Environment, UK/KRCEE Doc # P17.6 2006, University of Kentucky.

Williams, D.A., 1991, *Paleozoic Geology of the Ottawa–St. Lawrence Lowland, Southern Ontario*: Ontario Geological Survey, Open File Report 5770, 292 pp.

Williams, H., 1978, Tectonic Lithofacies Map of the Appalachian Orogen, Map 1a: Memorial University of Newfoundland, St. Johns.

Williams, H., and Hatcher, R.D., Jr., 1983, Appalachian suspect terranes: in Hatcher, R.D., Jr., Williams, H., and Zietz, I. (editors), *The Tectonics and Geophysics of Mountain Chains*, Geological Society of America Memoir 158, pp. 33-53.

Williams, R.A., Luzietti, E.A., and Carver, D.L., 1995, High-resolution seismic imaging of Quaternary faulting on the Crittenden County fault zone, New Madrid seismic zone, northeastern Arkansas: *Seismological Research Letters*, v. 66, no. 3, pp. 42-57.

Williams, R.A., Stephenson, W.J., and Odum, J.K., 2009, Post-Eocene Deformation Observed in Seismic Profiles Across the Southwestern Blytheville Arch, Crowley's Ridge, and Western Reelfoot Rift Margin, Arkansas: presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Williams, R.A., Stephenson, W.J., Odum, J.K., and Worley, D.M., 2001, Seismic-reflection imaging of Tertiary faulting and related post-Eocene deformation 20 km north of Memphis, Tennessee: *Engineering Geology*, v. 62, pp. 79-90.

Williams, R.T., Robinson, E.S., and Law, R.D., 2000, Folding and faulting of Plio-Pleistocene sediments in Giles County, SW Virginia—(2) Ground-penetrating radar and seismic reflection data [abstract]: Geological Society of America *Abstracts with Programs*, v. 32 no. 2, p. 83.

Williamson, S.C., 1996, Observations on the Capability of the Criner Fault, Southern Oklahoma: M.S. thesis, Texas A&M, College Station, Tex.

Willoughby, R.H., and Nystrom, P.G., Jr., 2005, Generalized Geologic Map of South Carolina: South Carolina Geological Survey Generalized Geologic Map Series GGMS, scale 1:1,000,000.

Wintle, A.G. and Murray, A.S., 1997, The Relationship Between Quartz Thermoluminescence, Photo-Transferred Luminescence, and Optically Stimulated Luminescence: Radiation Measurements, v. 27, no. 4, pp. 611-624.

Wise, D.U., and Faill, R.T., 1998, Lancaster County seismic zone (Penna.): Reactivation of a Taconic structural feature [abstract]? Geological Society of America *Abstracts with Programs*, v. 30, no. 7, pp. A-320.

Withers, M.M., Herrmann, R.B., and Benz, H.M., 2009, Introduction and background for the April 18, 2008 Illinois earthquake [abstract]: *Seismological Research Letters*, v. 80, no. 2, p. 301.

Withjack, M.O., Schlische, R.W., and Olsen, P.E., 1998, Diachronous rifting, drifting, and inversion on the passive margin of central eastern North America: An analog for other passive margins: *AAPG Bulletin*, v. 82, no. 5A, pp. 817-835.

Withjack, M.O., Schlische, R.W., and Olsen, P.E., 2002, Rift-basin structure and its influence on sedimentary systems: in Renault, R.W., and Ashley, G.M. (editors), *Sedimentation in Continental Rifts*, SEPM (Society for Sedimentary Geology) Special Publication, no. 73, pp. 57-81.

Wolf, L.W., 2004, *Geophysical Investigations of Earthquake-Induced Liquefaction Features in the New Madrid Seismic Zone*: Earthquake Hazards Program, Final Technical Report (01HQGR0003), 36 pp.

Wolf, L.W., Collier, J., Tuttle, M., and Bodin, P., 1998, Geophysical reconnaissance of earthquake-induced liquefaction features in the New Madrid seismic zone: *Journal of Applied Geophysics*, v. 39, pp. 121-129.

Wolf, L.W., Tuttle, M.P., Browning, S., and Park, S., 2006, Geophysical surveys of earthquake-induced liquefaction deposits in the New Madrid seismic zone: *Geophysics*, v. 71, no. 6, pp. B223-230.

Wong, I., Olig, S., Dober, M., Wright, D., Nemser, E., Lageson, D., Silva, W., Stickney, M.S., Lemieux, M., and Anderson, L., 2005, *Probabilistic Earthquake Hazard Maps for the State of Montana*: Montana Bureau of Mines and Geology, Special Publication 117, 72 pp.

Woolery, E.W., 2005, Geophysical and geological evidence of neotectonic deformation along the Hovey Lake fault, lower Wabash Valley fault system, central United States: *Bulletin of the Seismological Society of America*, v. 95, no. 3, pp. 1193-1201.

Woolery, E.W., and Street, R., 2002, Quaternary fault reactivation in the Fluorspar Area fault complex of western Kentucky: Evidence from shallow SH-wave reflection profiles: *Seismological Research Letters*, v. 73, no. 5, pp. 628-639.

Woolery, E.W., Baldwin, J., Kelson, K., Hampson, S., and Givler, R., 2009, Site-Specific Fault Rupture Hazard Assessment—Fluorspar Area Fault Complex, Western Kentucky: presentation given at meeting of CEUS Earthquake Hazards Program, U.S. Geological Survey, October 28-29, Memphis, Tenn.

Working Group on California Earthquake Probabilities (Working Group), 2003, *Earthquake Probabilities in the San Francisco Bay Region: 2002-2031*: U.S. Geological Survey Open-File Report 03-214.

Wu, S., Bally, A.W., and Cramez, C., 1990, Allochthonous salt, structure and stratigraphy of the north-eastern Gulf of Mexico. Part II: Structure: *Marine and Petroleum Geology*, v. 7, no. 4, pp. 334-370.

Yang, H., Zhu, L., and Chu, R., 2009, Determination of the fault plane for the April 18, 2008 Illinois earthquake by detecting and relocating aftershocks [abstract]: *Seismological Research Letters*, v. 80, no. 2, pp. 302-303.

Youd, T.L., 1984, Geologic effects—Liquefaction and associated ground failure: U.S. Geological Survey Open-File Report 84-760, pp. 210-232.

Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J.P., Liao, S.S.C., Marcuson, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Robertson, P.K., Seed, R.B., and Stokoe, K.H., 2001, Liquefaction resistance of soils: Summary report from the 1996 NCEER and 1998 NCEER/NSF workshops on evaluation of liquefaction resistance of soils: *Journal of Geotechnical and Geoenvironmental Engineering*, v. 127, no. 4, pp. 297-313.

Youngs, R.R., and Coppersmith, K.J., 1985, Implications of fault slip rates and earthquake recurrence models to probabilistic hazard estimates: *Bulletin of the Seismological Society of America*, v. 75, pp. 939-964.

Zartman, R.E., 1977, Geochronology of some alkalic rock provinces in eastern and central United States: *Annual Review of Earth and Planetary Sciences*, v. 5, pp. 257-286.

Zelt, C.A., Forsyth, D.A., Milkereit, B., White, D.J., and Asudeh, I., 1994, Seismic structure of the Central Metasedimentary Belt, southern Grenville Province: *Canadian Journal of Earth Sciences*, v. 31, pp. 243-254.

Zhang, Q., Sandvol, E., and Liu, M., 2009a, Lithospheric velocity structure of the New Madrid Seismic Zone: A joint teleseismic and local P tomographic study: *Geophysical Research Letters*, v. 36, doi:10.1029/2009GL037687.

Zhang, Q., Sandvol, E., and Liu, M., 2009b, Tomographic *Pn* velocity and anisotropy structure in the central and eastern United States: *Bulletin of the Seismological Society of America*, v. 99, pp. 422-427.

Zoback, M.D., 2010, Update to stress map of the CEUS, conducted as part of CEUS SSC Project.

Zoback, M.D., Hamilton, R.M., Crone, A.J., Russ, D.P., McKeown, F.A., and Brockman, S.R., 1980, Recurrent intraplate tectonism in the New Madrid seismic zone: *Science*, v. 209, pp. 971-976.

Zoback, M.D., and Zoback, M.L., 1991, Tectonic stress field of North America and relative plate motions: in Slemmons, D.B., Engdahl, E.R., Zoback, M.D., and Blackwell, D.D. (editors), *Neotectonics of North America*, Geological Society of America, Decade Map Volume 1.

Zoback, M.L., 1992, Stress field constraints on intraplate seismicity in eastern North America: *Journal of Geophysical Research*, v. 97, no. B8, pp. 11,761-11,782.

Zoback, M.L., and Zoback, M.D., 1989, Tectonic stress field of the continental U.S.: in Pakiser, L.C., and Mooney, W.D. (editors), *Geophysical Framework of the Continental United States*, GSA Memoir, v. 172, pp. 523-539.