

Curriculum Vitae

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Name **Robert B. Jacobson, Ph.D.**
Research Hydrologist
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Education **Ph.D.** – September 1985 -- **The Johns Hopkins University**, Whiting School of Engineering, Department of Geography and Environmental Engineering. Dr. M.G. Wolman, major advisor. Dissertation title: “*Spatial and temporal distributions of slope processes in the upper Buffalo Creek drainage basin, Marion County, West Virginia*”.

B.A. – June 1979 -- **Carleton College**, Northfield, Minnesota. *Magna cum laude* with Department honors, in Geology.

Recent Professional Experience

1997 – present **Research Hydrologist and Principal Investigator, River Corridor Habitat Dynamics.** U.S. Geological Survey, Biological Resources Discipline, Columbia, Missouri. I supervise a team of hydrologists and geomorphologists and collaborate with a team of ecologists, hydrologists, and geographers engaged in interdisciplinary river research. General research objectives are to quantify relations among physical river processes, habitat availability, and biotic responses. Emphasis is placed on relating quantitative understanding of fundamental fluvial processes to the practice of river rehabilitation. Focus is on gravel-bed streams of the Ozark Plateaus and the highly engineered Lower Missouri River. The effort also involves extensive collaboration with scientists and students at several research universities, consultation with State and Federal resource management agencies, and public outreach. Responsibilities include design and implementation of the research program, supervision of staff, and securing operational funds.

Work Experience

1989 – 1997 **Research Hydrologist, Project Chief**, Missouri District, U.S. Geological Survey, Rolla, Missouri. Research in surficial processes, emphasis on sediment routing through watersheds, formation and maintenance of aquatic habitat

1983 - 1989 **Research Geologist**, Branch of Eastern Regional Geology, U.S. Geological Survey, Reston, Virginia. Research in surficial processes, emphasis on neotectonics, paleoseismology, Quaternary climate change, landslide and flood hazards, Coastal Plain, Piedmont, and Appalachian mountains.

Professional Registration

- Missouri Registered Professional Geologist

Professional Society Membership, Assignments

- Member Geological Society of America, American Geophysical Union, Ecological Society of America
- Member, AGU , Erosion and Sedimentation Committee, 1991 – 1996.
- Member, ESA Visions Committee, 2003 to present

Other Professional Assignments, Contributions

- Member, Platte River Recovery Program, Independent Science Assessment Committee, 2009 – present.
- Associate Editor, *Water Resources Research*, 2001 - 2005
- Adjunct Associate Professor, Geography Department, University of Missouri
- Research associate, School of Natural Resources, University of Missouri
- Member, Missouri River Federal Interagency Roundtable, Adaptive Management Sub-committee
- Member, Applied Geomorphology Consortium, 2002 - 2004
- Technical Consultant to Fish and Wildlife Service: Amended Biological Opinion (December 2003); Hydrology of New Madrid Floodway Project; Evaluation of Flow Alternatives on the Lower Missouri River Habitats and Endangered Species.
- Technical Consultant to U.S. Army Corps of Engineers: Expert panel for the “Restructured Navigation Study, Upper Mississippi and Illinois River”
- Extramural proposal reviewer, National Science Foundation
- Extramural manuscript reviewer, *Water Resources Research*, *Geological Society of America Bulletin*, *Earth Surfaces Processes and Landforms*, *Annals of the Association of American Geographers*

Peer-reviewed Publications:

- Poff, N. L., B. D. Richter, A. H. Arthington, S. E. Bunn, R. J. Naiman, E. Kendy, M. Acreman, C. Apse, B. Bledsoe, M. C. Freeman, J. A. Henriksen, R. B. Jacobson, J. G. Kennen, D. M. Merritt, J. H. O'Keefe, J. D. Olden, K. Rogers, R. E. Tharme, and A. Warner. 2009. The ecological limits of hydrologic alteration (ELOHA): a new framework for developing regional environmental flow standards. *Freshwater Biology*.
- Jacobson, R. B., H. E. Johnson, III, and B. J. Dietsch. in press. Hydrodynamic simulations of physical aquatic habitat availability for pallid sturgeon in the Lower Missouri River, at Yankton, South Dakota, Kenslers Bend, Nebraska, Little Sioux, Iowa, and Miami, Missouri, 2006-07. 2008-xxx, U.S. Geological Survey, Reston, VA.
- Reuter, J. M., R. B. Jacobson, C. M. Elliott, H. E. Johnson, III, and A. J. DeLonay. 2008. Hydraulic and substrate maps of reaches used by sturgeon (Genus *Scaphirhynchus*) in the Lower Missouri River, 2005–07. U.S. Geological Survey, Reston, Va.
- Elliott, C. M., J. M. Reuter, and R. B. Jacobson. in press. Channel morphodynamics in four reaches of the Lower Missouri River, 2006-07. 2007-, U.S. Geological Survey
- Jacobson, R.B., Blevins, D.W., and Bitner, C.J., in press, Sediment regime constraints on river restoration – An example from the Lower Missouri River, in James, A., Rathburn, S., and Wittecar, R., eds., *Management and Restoration of Fluvial Systems with Broad Historical Changes and Human Impacts.*: Denver, Colo., Geological Society of America, p. 42.
- Jacobson, R.B., and Galat, D.L., 2008, Design of a naturalized hydrograph on the Lower Missouri River: *Ecohydrology*, v. 1, no. 2, p. 81-104.
- Jacobson, R.B., 2008, Analysis of pulsed flow modification alternatives, Lower Missouri River, 2005: U.S. Geological Survey Open-File Report 2008-1113, 14 p. <http://pubs.usgs.gov/of/2008/1113>.
- Jacobson, R.B., Chojnacki, K.A., and Reuter, J.M., 2007, Land capability potential index (LCPI) for the Lower Missouri River valley: U.S. Geological Survey Scientific Investigations Report 2007-5256, 19 p. <http://pubs.usgs.gov/sir/2007/5256/>
- Wildhaber, M.L., DeLonay, A.J., Papoulias, D.M., Galat, D.L., Jacobson, R.B., Simpkins, D.G., Braaten, P.J., Korschgen, C.E., and Mac, M.J., 2007, A Conceptual Life-History Model for Pallid and Shovelnose Sturgeon: U.S. Geological Survey Circular 1315, 19 p. <http://pubs.er.usgs.gov/usgspubs/cir/cir1315>
- Jacobson, R.B., Johnson, H.E., Reuter, J.M., and Elliott, C.M., 2007, The roles of physical habitat in reproduction and survival of pallid sturgeon and shovelnose sturgeon in the Lower Missouri River, 2005-06, in Korschgen, C., ed., *Factors affecting the reproduction, recruitment, habitat, and population dynamics of Pallid Sturgeon and Shovelnose Sturgeon in the Missouri River:*

- U.S. Geological Survey Open-File Report 2007-1262, p. 143-212.
<http://pubs.usgs.gov/of/2007/1262/pdf/OF2007-1262.pdf>
- Gaeuman, D., and Jacobson, R.B., 2007, Field assessment of alternative bedload transport estimators: *Journal of Hydraulic Engineering*, v. 133, no. 12, p. 1319-1328.
- , 2007, Quantifying fluid and bed dynamics for characterizing benthic physical habitat in large rivers: *Journal of Applied Ichthyology*, v. 27, p. 35-364
- Lastrup, M.S., Jacobson, R.B., and Simpkins, D.G., 2007, Distribution of potential spawning habitat for sturgeon in the Lower Missouri River: U.S. Geological Survey Open-File Report 2007-1192, 26 p. <http://pubs.usgs.gov/of/2007/1192/>
- Elliott, C.M., and Jacobson, R.B., 2006, Geomorphic Classification and Assessment of Channel Dynamics in the Missouri National Recreational River, South Dakota and Nebraska: U.S. Geological Survey Scientific Investigations Report 2006-5313, 66 p.
<http://pubs.usgs.gov/sir/2006/5086/>
- Elliott, C.M., Jacobson, R.B., and Chojnacki, K.A., 2006, Hydroacoustic mapping to define sedimentation rates and characterize lentic habitats in DeSoto Lake, DeSoto National Wildlife Refuge: U.S. Geological Survey, Open-File Report 2006-1254, 28 p. <http://pubs.usgs.gov/of/2006/1254/>
- Jacobson, R.B., editor, 2006, Science to support adaptive habitat management, Overton Bottoms North Unit, Big Muddy Fish and Wildlife Refuge, Missouri: U.S. Geological Survey Scientific Investigations Report 2006-5086, 116 p. <http://pubs.usgs.gov/sir/2006/5086/>
- Jacobson, R.B., 2006, Introduction: Science to support adaptive habitat management, Overton Bottoms North Unit, Big Muddy Fish and Wildlife Refuge, Missouri, in, Jacobson, R.B., editor, Science to support adaptive habitat management, Overton Bottoms North Unit, Big Muddy Fish and Wildlife Refuge, Missouri: U.S. Geological Survey Scientific Investigations Report.2006-5086, p. 3-16.
<http://pubs.usgs.gov/sir/2006/5086/>
- Faust, T.M., Jacobson, R.B., and Pallardy, S.G., 2006, Cottonwood (*Populus deltoides*) growth response to hydrologic alteration, Overton Bottoms North, Missouri River flood plain, in, Jacobson, R.B., editor, Science to support adaptive habitat management, Overton Bottoms North Unit, Big Muddy Fish and Wildlife Refuge, Missouri: U.S. Geological Survey Scientific Investigations Report, p. 93-106.
<http://pubs.usgs.gov/sir/2006/5086/>
- Finn, C. A., and Jacobson, R.B., 2006, Summary: Implications of scientific investigations for the adaptive management of the Overton Bottoms North Unit, Big Muddy Fish and Wildlife Refuge, Missouri,: in, Jacobson, R.B., editor, Science to support adaptive habitat management, Overton Bottoms North Unit, Big Muddy Fish and Wildlife Refuge, Missouri: U.S. Geological Survey Scientific Investigations Report, 2006-5086, p. 107- 113. <http://pubs.usgs.gov/sir/2006/5086/>
- Johnson, H.E., Jacobson, R.B., and Delonay, A.J., 2006, Hydroecological modeling of the Lower Missouri River: Proceedings, Third Federal Interagency Hydrologic Modeling Conference, 2006.
- Jacobson, R.B., and Galat, D. L., 2006, Flow and form in rehabilitation of large-river ecosystems – an example from the Lower Missouri River : *Geomorphology*, doi:10.1016/j.geomorph.2006.01.014, 21 p.
- Gaeuman, D., and Jacobson, R.B., 2006, Acoustic bed velocity and bed load dynamics in a large sand bed river: *J. Geophys. Res.*, v. 111, F02005, doi:10.1029/2005JF000411, 14 p.
- Doyle, M.W., Stanley, E.H., Strayer, D.L., Jacobson, R.B., and Schmidt, J.C., 2005, Effective discharge analysis of ecological processes in streams: *Water Resources Research*, v. 41, W11411, doi:10.1029/2005WR004222, 16 p.
- Gaeuman, D. and Jacobson, R.B., 2005, Aquatic habitat mapping with an acoustic Doppler current profiler: considerations for data quality: U. S. Geological Survey Open-File Report 2005-1163, 20 p. Online at: <http://www.cerc.usgs.gov/pubs/center/pdfDocs/ADCPmapping.pdf>
- Palmer, M., Bernhardt, E., Chornesky, E., Collins, S., Dobson, A., Duke, C. Gold, B., Jacobson, R., Kingsland, S., Kranz, R., Mappin, M., Martinez, M. L., Micheli, F., Morse, J., Pace, M., Pascual, M., Palumbi, S., Reichman, O.J., Simons, A., Townsend, A., and Turner, M., 2005, Ecological science and sustainability for the 21st century: *Frontiers in Ecology and the Environment*, v. 3, p. 4-11.
- Jacobson, R.B., Elliott, C.M., and Johnson, H.E., 2004, Assessment of shallow-water habitat availability in modified dike structures, Lower Missouri River, 2004: U.S. Geological Survey Open-File Report 2004-1409, 62 p. On CD-ROM or online at: <http://www.cerc.usgs.gov/pubs/center/pdfDocs/OFR-2004-1409.pdf>

- Jacobson, R.B., 2004, Watershed Sustainability: Downstream Effects of Timber Harvest in the Ozarks of Missouri, in, Flader, S.J., ed., *Toward Sustainability for Missouri Forests*, USDA Forest Service North Central Research Station, General Technical Publication NC-239, p. 106-128.
- Jacobson, R.B. and Kelly, B.P., 2004, Hydrology, in, Chapman, D. C., Ehrhardt, E.A., Fairchild, J.F., Jacobson, R. B., Kelly, B.P., Mabee, W.R., Poulton, B.C., and Sappington, L.C., *Ecological Dynamics of Wetlands at Lisbon Bottom, Big Muddy National Fish and Wildlife Refuge, Missouri*: U.S. Geological Survey Open-File Report 2004-1036, p. 13-36. Online at: <http://infolink.cr.usgs.gov/Science/Lisbon/index.htm>
- Jacobson, R.B., Johnson, H.E., Reuter, J.M., and Wright, M. P., 2004, Physical aquatic habitat assessment data, Ozark Plateaus, Missouri and Arkansas: U.S. Geological Survey Data Series Report DS-94, available online at <http://www.cerc.usgs.gov/pubs/ozarks/DSR-2004-0094.htm>.
- Palmer, M., Bernhardt, E., Chornesky, E., Collins, S., Dobson, A., Duke, C. Gold, B., Jacobson, R., Kingsland, S., Kranz, R., Mappin, M., Martinez, M. L., Micheli, F., Morse, J., Pace, M., Pascual, M., Palumbi, S., Reichman, O.J., Simons, A., Townsend, A., and Turner, M., 2004, *Ecology for a crowded Planet*: Science, v. 304, p. 1251-1252.
- Jacobson, R.B., Johnson, H.E., Lastrup, M.S., D'Urso, G.J., and Reuter, J.M., 2004, Physical habitat dynamics in four side-channel chutes, Lower Missouri River: U.S. Geological Survey Open-File Report 2004-1071, 60 p, On CD-ROM or online at: http://infolink.cr.usgs.gov/RSB/USGS_OFR_2004-1071/index.htm
- Elliott, C.M., Jacobson, R.B., and DeLonay, A.J., 2004, Physical aquatic habitat assessment, Fort Randall segment of the Missouri river, Nebraska and south Dakota: U.S. Geological Survey Open-File Report 2004-1060 80 p. On CD-ROM or online at: http://infolink.cr.usgs.gov/RSB/USGS_OFR_2004-1060/index.htm
- Jacobson, R.B., O'Connor, J.E., Oguchi, T, 2003, Surficial geologic tools in fluvial geomorphology, *in*, Kondolf, G.M. and Piegay, H., eds., *Tools in Fluvial Geomorphology*: New York, Wiley Interscience. P. 25-57.
- Jacobson, R.B., 2003, Geomorphic effects in levee-break complexes and implications for flood damage assessment, in Wilson, D. A., and Criss, R. E., eds., *Rivers, floods, and water quality in the St. Louis region*: Missouri Botanical Gardens Press, p. 135-148.
- Jacobson, R.B., and Heuser, J.L., 2002, Visualization of flow alternatives, Lower Missouri River, U.S. Geological Survey Open-file Report 02-122, Online at: <http://www.cerc.usgs.gov/rss/visualize/visualize.htm>.
- Jacobson, R.B., Lastrup, M.L., and Reuter, J.M., 2002, Habitat assessment, Missouri River at Hermann, Missouri: U.S. Geological Survey Open-file Report 02-32, 22 p., 181 oversize maps. On CD-ROM or online at: http://www.cerc.usgs.gov/pubs/Moriver/herm_hab.htm.
- Jacobson, R.B. and Lastrup, M.L., 2002, Habitat assessment for pallid sturgeon overwintering surveys, Lower Missouri River: U.S. Geological Survey Online report: http://www.cerc.usgs.gov/pubs/center/pdfDocs/micra_whole.pdf,
- Reuter, J.M., Jacobson, R.B., and Elliott, C.M., 2002, Physical stream habitat dynamics in Lower Bear Creek, Northern Arkansas: U.S. Geological Survey Biological Sciences Report, USGS/BRD/BSR-2002-0002, 113 p. On CD-ROM or online at: http://www.cerc.usgs.gov/pubs/center/pdfDocs/BSR_2003_0002.pdf.
- Panfil, M.S., and Jacobson, R.B., 2001, Relations among geology, physiography, land use, and stream habitat conditions in the Buffalo and Current River systems, Missouri and Arkansas: U.S. Geological Survey Biological Sciences Report, USGS/BRD/BSR-2001-0005, 111 p. On CD-ROM or online at: <http://www.cerc.usgs.gov/pubs/center/pdfDocs/bsr2001-0005.pdf>.
- Jacobson, R.B. Lastrup, M.L., and Chapman, M.D., 2001, Fluvial processes and passive rehabilitation of the Lisbon Bottom side-channel chute, Lower Missouri River, in, Dorava, J.M., Montgomery, D.L., Fitzpatrick, F.A., and Palcsak, B.B., eds., *Fluvial Processes and Physical Habitat*, American Geophysical Union Water Science and Application Series, v. 4, p. 199-216.
- Jacobson, R.B., Femmer, S. R., and McKenney, R.A., 2001, Land-use Changes and the Physical Habitat of Streams: U.S. Geological Survey Circular 1175, 63 p. Online at: <http://water.usgs.gov/pubs/circ/circ1175>.
- Panfil, M.S. and Jacobson, R.B., 2000, Hydraulic modeling of in-channel habitats in the Ozark Highlands of Missouri: Assessment of physical habitat sensitivity to environmental change: U.S. Geological Survey Online report: <http://www.cerc.usgs.gov/rss/rfmodel>.

- Jacobson, R. B., Lastrup, M.S., Ehrhardt, E., Niebur, C, Arvidson, R., 1999, Physical setting of Lisbon Bottom in the Big Muddy National Fish and Wildlife Refuge, in, Humburg, D.D. and Burke, V.J., eds., Initial biotic survey of Lisbon Bottoms, Big Muddy National Fish and Wildlife Refuge, U.S.G.S. Biological Sciences Report USGS/BRD/BSR-2000-0001, p. 1-20, Online at: <http://www.cerc.usgs.gov/pubs/center/pdfDocs/Lisbon.pdf>.
- Jacobson, R.B. and Gran, K.B., 1999, Gravel routing from widespread, low-intensity landscape disturbance, Current River Basin, Missouri: *Earth Surface Processes and Landforms*, v. 24, 897-917.
- Rabeni, C. F., and Jacobson, R.B., 1999, Warmwater streams, in, Kohler, C.C. and Hubert, W.A., *Inland Fisheries Management in North America: Bethesda, Maryland, American Fisheries Society*, p. 505-525.
- Jacobson, R.B. and Pugh, A.L., 1997, Riparian vegetation controls on the spatial pattern of stream-channel instability, Little Piney Creek, Missouri: U.S. Geological Survey Water-Supply Paper 2494, 33 p. 1 plate.
- Jacobson, R.B. and Primm, A.T., 1997, Historical land-use changes and potential effects on stream disturbance in the Ozark Plateaus, Missouri: U.S. Geological Survey Water-Supply Paper 2484, 85 p.
- Schalk, G.K., and Jacobson, R.B., 1997, Scour and sedimentation at six levee-break sites in Missouri from the 1993 Missouri River flood: U.S. Geological Survey Water-Resources Investigations Report 97-4110, 72 p.
- Jacobson, R.B., and Oberg, K.A., 1997, Geomorphic changes of the Mississippi River flood plain at Miller City, Illinois, as a result of the flood of 1993: U.S. Geological Survey Circular 1120-J, 22 p.
- McKenney, R. and Jacobson, R.B., 1996, Erosion and deposition at the riffle-pool scale in gravel-bed streams of the Ozark Plateaus, Missouri and Arkansas, U.S. Geological Survey Open-file Report, 96-655A, 171 p.
- Jacobson, R.B., 1995, Spatial controls on patterns of land-use induced stream disturbance at the drainage-basin scale--an example from gravel-bed streams of the Ozark Plateaus, Missouri: Costa, J.E., Miller, A.J., Potter, K.W., and Wilcock, P.R., eds., *American Geophysical Union Geophysical Monograph 89, The Wolman Volume*, p. 219-239.
- McKenney, Rose, Jacobson, R.B., and Wertheimer, R.C., 1995, Woody vegetation and channel morphogenesis in low-gradient, gravel-bed streams in the Ozarks Region, Missouri and Arkansas: *Geomorphology*, v. 13, p. 175-198.
- Oberg, K.A., and Jacobson, R.B., 1994, The Miller City levee break and incipient meander cutoff: *Hydraulic Engineering 94, Proceeding of the 1994 Conference, American Society of Civil Engineers*, p. 623-627.
- Rabeni, C. F., and Jacobson, R.B., 1993b, Geomorphic and hydraulic controls on the abundance and distribution of centrarchids in streams in of the Ozarks Region, U.S.A.: *Polskie Archiwum Hydrobiologii*, v. 40, p. 87-99.
- Rabeni, C.F., and Jacobson, R.B., 1993a, The relation of fluvial geomorphology to fish habitat restoration in low gradient streams, Ozark Plateaus, U.S.A., *Freshwater Biology*, v. 29., p. 211-220.
- Jacobson, R.B., editor, 1993, Geomorphic studies of the storm and flood of November 3-5, 1985, in the upper Potomac and Cheat River Basins in West Virginia and Virginia: U.S. Geological Survey Bulletin 1981, 5 chapters, 186 p. 3 plates.
- Jacobson, R.B., 1993, Introduction: geomorphic studies of the storm and flood of November 3-5, 1985, in the upper Potomac and Cheat River Basins in West Virginia and Virginia: in, Jacobson, R.B., editor, 1993, *Geomorphic studies of the storm and flood of November 3-5, 1985, in the upper Potomac and Cheat River Basins in West Virginia and Virginia: U.S. Geological Survey Bulletin 1981, Chapter A*, p. A1-A3.
- Colucci, S. J., Jacobson, R.B., Greco, Steven, 1993, Meteorology of the storm of November 3-5, 1985, in West Virginia and Virginia, in, Jacobson, R.B., editor, 1993, *Geomorphic studies of the storm and flood of November 3-5, 1985, in the upper Potomac and Cheat River Basins in West Virginia and Virginia: U.S. Geological Survey Bulletin 1981, Chapter B*, p. B1 - 31.
- Jacobson, R.B., McGeehin, J.P., Cron, E.D., Carr, C.E., Harper, J.M., and Howard, A.D., 1993, Landslides triggered by the storm of November 3-5, 1985, Wills Mountain Anticline, West Virginia and Virginia: in, Jacobson, R.B., editor, 1993, *Geomorphic studies of the storm and flood of November 3-5, 1985, in the upper Potomac and Cheat River Basins in West Virginia and Virginia: U.S. Geological Survey Bulletin 1981, Chapter C*, p. C1-C33.
- Jacobson, R.B., and Pugh, A.L., 1992, Effects of land use and climate shifts on channel instability, Ozark

- Plateaus, Missouri, U.S.A.: Proceedings of the Workshop on the Effects of Global Climate Change on Hydrology and Water Resources at the Catchment Scale, Japan-U.S. Committee on Hydrology, Water Resources and Global Climate Change, p. 423-444.
- Jacobson, R.B., 1990, Reconnaissance surficial geology of the mountainous parts of Loudoun County, Virginia: U.S. Geological Survey Open-file Report 90-205, 16 map sheets, 1:2400 scale.
- 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 the fluvial setting of the New Madrid seismic zone: U.S. Geological Survey Professional Paper 1504, 44 p.
- Jacobson, R.B., Linton, R.C., and Rubin, Meyer, 1989, Alluvial stratigraphy of the Potomac River valley bottom near Petersburg and Moorefield, West Virginia: U.S. Geological Survey Open-file Report 89-485, 27 p., 14 plates.
- Jacobson, R.B., Miller, A.J., and Smith, J.A., 1989, The role of catastrophic events in central Appalachian landscape evolution: *Geomorphology*, v. 2, p. 257-284.
- Pavich, M.J., Jacobson, R.B., and Newell, W.L., 1989, IGC field trip T218: Geomorphology, neotectonics, and process studies in the Rappahannock River Basin, Virginia: American Geophysical Union, International Geological Congress Guidebook Series, 26 p.
- Jacobson, R.B., Cron, E.D., and McGeehin, J.P., 1989, Slope movements triggered by heavy rainfall, November 3-5, 1985, in Virginia and West Virginia, in, Schultz, A.P., and Jibson, R.W., eds., Landslides of eastern North America: Geological Society of America Special Paper 236, p. 1-14.
- Hamel, J. V., and Jacobson, R. B., 1988, Archeo-geological investigation of a Monongahela River terrace, Pennsylvania, U.S.A., in Marinos, P. G., and Koukis, G. C., eds., *The Engineering Geology of Ancient Works, Monuments and Historical Sites*: Rotterdam, Balkema, Proceedings International Association of Engineering Geologists Symposium, September 1988: p. 1163-1171.
- Jacobson, R. B., Elston, D. P., and Heaton, J. W., 1988, Stratigraphy and magnetic polarity of the high terrace remnants, upper Ohio and Monongahela Rivers: *Quaternary Research*, v. 29, p. 216-232.
- Jacobson, R. B., 1987, Pedological studies at Gray's Landing terrace, Fayette County, Pennsylvania: U.S. Geological Survey Open-file Report 87-128, 44 p
- Clark, G. M., Jacobson, R. B., Kite, J. S., and Linton, R. C., 1987, Storm-induced catastrophic flooding and related phenomena in Virginia and West Virginia, November, 1985, in Mayer, L. and Nash, D., eds., *Catastrophic Flooding*, proceedings of the 18th annual Geomorphology Symposium: New York, Allen and Unwin, p. 355-380.
- Obermeier, S. F., Weems, R. E., and Jacobson, R. B., 1987, Earthquake-induced liquefaction features in the coastal South Carolina region: U.S. Geological Survey Open-file Report 97-504, 18 p.
- Jacobson, R. B., and Pomeroy, J.S., 1987, Slope failures in the Appalachian Plateau, in, Mills, H.H., ed., *Appalachian mountains and plateaus*, in Graf, W.L., ed., *Geomorphic systems of North America*: Boulder, CO, Geological Society of America, Centennial Special Volume 2, p. 21-29.
- Jacobson, R. B., McGeehin, J. P., and Cron, E. D., 1987, Hillslope processes and surficial geology, Wills Mountain anticline, West Virginia and Virginia, in, Kite, J. S., ed., *Research on the late Cenozoic of the Potomac Highlands*: Southeastern Friends of the Pleistocene Guidebook series, vol. 1, West Virginia Geologic and Economic Survey Open-file Report OF-88-2, p. 31-55.
- Jacobson, R. B., Cron, E. D., and McGeehin, J. P., 1987, Preliminary results from a study of natural slope failures triggered by the storm of November 3-5, 1985, Germany Valley, West Virginia and Virginia, in, Schultz, A. P. and Southworth, C. S., eds., *Landslides of Eastern North America*: U.S. Geological Survey Circular 1008, p. 11-16.
- Jacobson, R. B., and Coleman, D.J., 1986, Stratigraphy and recent evolution of Maryland Piedmont flood plains: *American Journal of Science*, v. 286, p. 617-637.
- Jacobson, R. B., 1986, Genesis and distribution of colluvium, Buffalo Creek Area, Marion County, West Virginia: *Transportation Research Record*, Transportation Research Board, v. 1089, p. 63-67.
- Jacobson, R.B., 1986, Surficial stratigraphy and pedology of the Warfield Site and artifact disturbance by frost heave, in, Kavanagh, M., Hurry, S., Jacobson, R. B., and Dinnel, K., 1986, *Archeological investigations at the Warfield Site*, Prince Georges County, Maryland: Maryland Geological Survey, Archeology Division, File report number 196, 69 p.
- Weems, R. E., Obermeier, S. F., Pavich, M. J., Gohn, G. S., Rubin, M., Phipps, R. L., and Jacobson, R. B., 1986, Evidence for three moderate to large prehistoric Holocene earthquakes near Charleston, S. C., in,

- Proceedings of the third U.S. National Conference on Earthquake Engineering, August 24-28, 1986, Charleston, South Carolina: El Cerrito, Ca., Earthquake Engineering Institute, vol. 1, p. 1-13.
- Obermeier, S. F., Jacobson, R. B., Powars, D. S., Weems, R. E., Hallbick, D. C., Gohn, G. S., and Markewich, H. W., 1986 Holocene and late Pleistocene(?) earthquake-induced sand blows in coastal South Carolina, in, Proceedings of the third U. S. National Conference on Earthquake Engineering, August 24-28, 1986, Charleston, South Carolina: El Cerrito, Ca., Earthquake Engineering Institute, vol. 1, p. 192-208.
- Obermeier, S. F., Jacobson, R. B., Weems, R. E., and Gohn, G. S., 1986, Holocene and late Pleistocene(?) earthquake-induced sandblows in coastal South Carolina: Earthquake Notes, vol. 57., no. 1, p. 17.
- Jacobson, R. B., 1983, Stratigraphy and pedology of Painters Mills and Gwynns Falls sites, in, Kavanagh, M., Phase II archeological investigation of the Painters Mills (18BA106) and the Gwynns Falls site (18BA112), Northwest expressway, Baltimore County, Maryland: Division of Archeology, Maryland Geological Survey, File Report #181, p. 30-45
- Jacobson, R. B., 1983, Stratigraphy and pedology of the Howard-McHenry site 18BA100, in, Hurry, S., and Kavanagh, M., Intensive archeological investigations at the Howard-McHenry site, a nineteenth century mill/tenancy: Division of Archeology, Maryland Geological Survey, File report #182, p. I-1 - I-11.