

John S. Gierke, Ph.D., P.E.

Professor of Geological & Environmental Engineering
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Education

- 1990 Ph.D. (Environmental) Engineering, Michigan Technological University, Houghton
- 1996 M.S. Civil Engineering, Michigan Technological University, Houghton
- 1984 B.S. Civil Engineering, Michigan Technological University, Houghton

Professional Experience

Professor – August 2009 to Present
Interim Chair—August 2009—2010
Associate Professor - September 1996 to August 2009
Assistant Professor - July 1990 through August 1996
 Department of Geological and Mining Engineering and Sciences
Coordinator Strategic Faculty Hiring Initiative – October 2008 to May 2009
 Office of the Provost and Academic Affairs
 Michigan Technological University, Houghton, Michigan 49931-1295

Visiting Associate Professor – September 2005 through November 2005
 Department of Environmental Engineering & Earth Sciences
 Clemson University, Clemson, South Carolina

Visiting Associate Professor - January 1999 through December 1999
 Department of Civil and Environmental Engineering
 University of Delaware, Newark, Delaware

Summer Research Faculty Visitor - June 1991 to August 1991
 Environmental Sciences Division, Oak Ridge National Laboratory
 Oak Ridge, Tennessee 37831.

Professional Memberships

Registered Professional Engineer in the State of Michigan (Lic. No. 6201039135), Association of Environmental Engineering and Science Professors, American Geophysical Union, National Ground Water Association, American Society of Civil Engineers, Society for Mining, Metallurgy and Exploration

Curriculum Vita for **John S. Gierke**

Professional Honors and Awards

- 2012 John I. Davidson President's Award for Practical Papers, 3rd Place, for paper published in *Photogrammetric Engineering & Remote Sensing*, for complete citation see Bruning et al. 2011 in Publication List below.
- 2009 Editorial Board for *Journal of Contaminant Hydrology*
- 2007 Presidents Council State Universities of Michigan Distinguished Professor of the Year
- 2006 Graduate Faculty Mentoring Award, Michigan Technological University
- 2004 Associate Editor for *Ground Water Monitoring Remediation*, National Ground Water Association
- 2004 Editor's Citation for Excellence for Refereeing in *Water Resources Research*, American Geophysical Union
- 1992 U.S. Dept. of Energy Environmental Restoration & Waste Management Distinguished Junior Faculty Award
- 1992 Elected to full membership in Sigma Xi (The Research Society)

Professional Honors and Awards of Students Resulting from Their Research

- 2012 Aqua Terra Tech Enterprise: 3rd Place Overall, Undergraduate Expo, Michigan Technological University.
- 2011 Aqua Terra Tech Enterprise: Fellowship for Water Quality and Treatment Study, Michigan Section American Water Works Association.
- 2009 Valerie J. Fuchs, Graduate School Exceptional Scholar
- 2009 Miriam Rios-Sanchez, 1st Place Poster at World Water Day Events, Michigan Tech Center for Water & Society
- 2008 Kevin J. Endsley, Silvia Espino, & Josh Richardson, 2nd Place Undergraduate Research, Michigan Technological University Undergraduate Expo; 2nd Place World Water Day Events, Michigan Tech Center for Water & Society
- 2006 Aqua Terra Tech Enterprise: 3rd Place Poster Presentation, Undergraduate Expo, Michigan Technological University.
- 2005 Aqua Terra Tech Enterprise: 1st Place, Haested Methods National Design Competition, 2nd Place Poster Presentation, Undergraduate Expo, Michigan Technological University.
- 2004 Deborah N. Beach: Institute of Hazardous Materials Management Research Grant
- 2002 Kristi Gerber: 3rd Place Undergraduate Research Exposition, Michigan Technological University
- 2000 Darby J. Van Antwerp: 1st Place Undergraduate Research Exposition, Michigan Technological University
- 1999 Mellisa A. Le: 1st Place Undergraduate Research Exposition, Michigan Technological University
- 1999 Yingxin Gu: Best Poster, 22nd Midwest Chemistry Environmental Workshop
- 1996 Tammi L. Johnstone: Outstanding Student Presentation (Poster), Fall AGU Meeting
- 1991 Harriet Cornachione: Best Research Topic and Abstract, Midwest Symposium of Student Research in Hydrogeology.

Curriculum Vita for **John S. Gierke**

Externally Funded Research Projects (Total>\$6.5M) *Note: persons noted with * are students advised or co-advised by J.S. Gierke*

- 1) Gierke, J.S., PI/PD (formerly G.J.S. Bluth PI/PD), E.L. *Gross, co-PI, W.I. Rose, co-PI, and G.P. Waite, Remote Sensing for Hazard Mitigation and Resource Protection in Pacific Latin America Project, National Science Foundation Partnerships for International Research and Education, \$2,544,000, September 2005 – December 2012.
- 2) Tarasoff, C.A., PI/PD, and J.S. Gierke, co-PI, “Wetblade to Control Invasive Species Along Roadway Corridors,” Minnesota Department of Transportation, \$140,000, July 2009 – July 2012.
- 3) Gierke, J.S., PI/PD (formerly J.R. Mihelcic PI/PD), J.R. Mihelcic, and V.J. *Fuchs, Vertical Flow Constructed Wetlands; Nitrogen Removal and Sustainability, Water Environment Research Foundation, \$25,000, January 2008 – December 2009.
- 4) Gierke, J.S., PI/PD, P.A. Larsen, co-PI, and M.A. Raber, co-PI, Geoscience PrEP (Precollege Enterprise Program) for Seeding Diverse Interest in Geosciences by Using Apprentice Enterprises for Watershed Protection, National Science Foundation Opportunities for Enhancing Diversity in Geosciences, \$98,000, August 2005 – July 2007.
- 5) *Huntzinger, D.N., PI/PD, and J.S. Gierke, co-PI, “Carbon Dioxide Sequestration in Cement Kiln Dust,” Michigan Space Grant Consortium, \$5000, May 2006-May 2007.
- 6) Gierke, J.S., PI/PD, and P.A. Larsen, co-PI, “Field Testing of Rain Gardens,” Michigan Space Grant Consortium, \$7500, May 2006-July 2010.
- 7) Gierke, J.S., PI/PD, “Aquifer Supply Evaluation,” Keweenaw Bay Indian Community Department of Natural Resources, \$103,160, September 2000 – September 2004.
- 8) *Beach, D.N., PI/PD, and J.S. Gierke, co-PI, “Modeling of Carbon Dioxide Sequestration in Industrial Waste Materials,” Institute of Hazardous Materials Management & Michigan Hazardous Materials Management, \$12,000, May 2004 – April 2005.
- 9) *Sherman, H.M., PI/PD, and J.S. Gierke, co-PI, “Hydrogeochemical Factors Controlling the Occurrence of Elevated Uranium in Sandstone Aquifers,” Michigan Space Grant Consortium, \$10,000, May 2002-May 2004.
- 10) *Castor, M.G., PI/PD, and J.S. Gierke, co-PI, “Pilot Scale Testing of Ozone Sparging,” Michigan Space Grant Consortium, \$5,000, May 2002-May 2003.
- 11) Mayer, A.S., PI/PD, G.J.S. Bluth, co-PI, J.R. Budd, co- Investigator, J.S. Gierke, co- Investigator, J.E. Huntoon, co- Investigator, W.D. Pennington, co- Investigator, W.I. Rose, co- Investigator, and J.R. Wood, co-Investigator, “Fellowship Program for Computational Geological Science and Engineering,” Department of Education, \$609,000, September 1999 – August 2003.
- 12) Plichta, M.R., PI/PD, S. Sorby, co-PI, C. Anderson, co-Investigator, D. Lynch, co- Investigator, J.S. Gierke, co-Investigator, and P. Joyce, co-Investigator, “Redesigning Engineering Education with Active Learning and Integration Through the Engineering Enterprise,” NSF, \$749,976, October 1998 - September 2001.

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- 13) Gierke, J.S., PI/PD, N.J. Hutzler, co-PI, and D.L. Perram, Co-Investigator, "Design Guidance for Air Sparging of DNAPLs in Unconsolidated Geologic Environments," EPA/DOE/DoD Strategic Environmental Research and Development Program (SERDP), \$460,339, August 1997 - July 2001.
- 14) Rose, W.I., PI/PD, G.J.S. Bluth, co-PI, and J.S. Gierke, co-PI, "Volcanic Cloud/Atmosphere Interactions: The First Week," NSF, \$203,871, December 1997 - November 2000.
- 15) Hutzler, N.J., PI/PD, J.S. Gierke, co-PI, G.L. *Hein, Post-doc., and R.W. Falta (Clemson Univ.) "Field-Scale Model for Air Sparging Performance Assessment and Design," DOE Research Opportunities Awards (ROA), \$326,271, August 1996 –September 1999.
- 16) Hutzler, N.J., PI/PD, and J.S. Gierke, co-PI, "Design Manual for the Extraction of Contaminants from Unconsolidated Media: Air Sparging/Soil Vapor Extraction," EPA/DOE/DoD Strategic Environmental Research and Development Program, \$250,000, July 1994 - July 1997.
- 17) Shonnard, D.R., PI/PD, A.S. Mayer, co-PI, and J.S. Gierke, co-PI, "In Situ Subsurface Remediation Technologies: Integration into an Interdisciplinary Engineering Curriculum," NSF Combined Research-Curriculum Develop. Prog., \$300,000, Sept. 1995 to Aug. 1997.
- 18) Gierke, J.S., PI/PD, U.S. Department of Energy, Environmental Restoration and Waste Management Junior Faculty Award, "In Situ Mixing/Steam Stripping of Organically-Contaminated Soil," 1992-1994, \$100,000.
- 19) Gierke, J.S., PI/PD, and N.J. Hutzler, co-PI, "Pesticide Transport Under Unstable (Fingered) Flow Conditions," U.S. Department of Agriculture, 1992-1994, \$120,000.
- 20) Gierke, J.S., PI/PD, Martin Marietta Energy Systems, Inc., "Modelling and Experimental Studies of VOC Removal from Low-Permeable Soils by Steam Injection Under Physically-Mixed Conditions," \$50,307. Research Contract, 1991-1992.
- 21) Gierke, J.S., PI/PD, "Organic Chemical Interactions in Clays and Their Removal by Vapor Extraction," National Science Foundation, Research Initiation Program, 1991-1993, \$66,000.
- 22) Hand, D.W. (co-PI/PD), J.C. Crittenden (co-PI/PD), and J.S. Gierke (co-PI). "Development of a Mathematical Model to Evaluate the Operation of the Multi-filtration Unit in the Space Station's Drinking Water Treatment System," McDonnell Douglas Space Systems Company--Huntsville Division, Alabama, 1990-1991, \$173,000.
- 23) Hutzler, N.J., PI/PD, A. Maclean, co-PI, W.C. Kerfoot, co-PI, T.J. Bornhorst, co-PI, and J.S. Gierke, co-PI, "A Regional Center for Groundwater Education in Michigan at Michigan Technological University," W.K. Kellogg Foundation, Battle Creek, Michigan, 1990-1993, \$534,000.

Peer-Reviewed Publications and Manuscripts in Review and in Press *Note: Authors/co-authors noted with * are students advised or co-advised by J.S. Gierke*

- 1) *Shonsey, C.W., and J.S. Gierke, "Quantifying Available Water Supply in Rural Mali Based on Data Collected by and from Women," *Journal of Cleaner Production*, in press, <http://dx.doi.org/10.1016/j.jclepro.2012.02.013>, available online 21 February 2012.

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- 2) *Fuchs, V.J., J.S. Gierke, and J.R. Mihelcic, "Laboratory investigation of ammonium and nitrate removal in vertical flow regimes in planted and unplanted wetland columns," *Journal of Environmental Engineering*, accepted for publication, 16 May 2012.
- 3) *Bruning, J.N., J.S. Gierke, and A.L. Maclean, "An Approach to Lineament Analysis for Groundwater Exploration in Nicaragua," *Photogrammetric Engineering & Remote Sensing*, 77(5) 509-519, 2011.
- 4) *Fuchs, V.J., J.R. Mihelcic, and J.S. Gierke, "Life cycle assessment of vertical and horizontal flow constructed wetlands for wastewater treatment considering greenhouse gas emissions," *Water Research*, 45(5), 2073-2081, 2011. doi: 10.1016/j.watres.2010.12.021
- 5) McCray, J. E., Tick, G. R., Jawitz, J. W., Gierke, J. S., Brusseau, M. L., Falta, R. W., Knox, R. C., Sabatini, D. A., Annable, M. D., Harwell, J. H. and Wood, A. L., "Remediation of NAPL Source Zones: Lessons Learned from Field Studies at Hill and Dover AFB," *Ground Water*, Theme Issue: Lessons Learned from Legacy Research Sites, 49(5), 727-744, 2011. no. doi: 10.1111/j.1745-6584.2010.00783.x
- 6) *Bachmann LeFevre, N-J., D.J. Watkins, Jr., J.S. Gierke, and J. Brophy-Price "Hydrologic Performance Monitoring of an Underdrained Low-Impact-Development Stormwater Management System," *Journal of Irrigation and Drainage Engineering*, 136(5), 289-353, 2010.
- 7) *Hutchins, M. J., J. S. Gierke, and J. W. Sutherland, "Decision Making for Social Sustainability: A Life-Cycle Assessment Approach," (Refereed) Proceedings of the 2009 IEEE International Symposium on Sustainable Systems & Technology (ISSST) and 2009 IEEE International Symposium on Technology and Society (ISTAS), May 18 – 20, 2009, Tempe, AZ, on CD-ROM.
- 8) *Huntzinger, D.N., J.S. Gierke, L.L. Sutter, S.K. Kawatra, and T.C. Eisele, "Mineral Carbonation for Carbon Sequestration in Cement Kiln Dust from Waste Piles," *Journal of Hazardous Materials*, 168(1), 31-37, 2009. doi:10.1016/j.jhazmat.2009.01.122
- 9) *Huntzinger, D.N., J.S. Gierke, S.K. Kawatra, T.C. Eisele, and L.L. Sutter, "Carbon Dioxide Sequestration in Cement Kiln Dust through Mineral Carbonation," *Environmental Science & Technology*, 43(6), 1986-1992, 2009. doi:10.1021/es802910z
- 10) Gierke, J.S., "Manually Constructed and Operated Water Wells," Chapter 16 in *Field Guide in Environmental Engineering for Development Workers: Water, Sanitation, Indoor Air*, Mihelcic, J.R., E.A. Myre, L.M. Fry, B.D. Barkdoll (eds), American Society of Civil Engineers (ASCE) Press, Reston, VA, 287-317, 2009.
- 11) *Anderson, C.P., L.L. Sutter, D.N. Huntzinger, and J.S. Gierke, "Effects of Carbonation on the Mineral Composition of Cement Kiln Dust," (refereed) *Proceedings of the Twenty-Ninth Conference on Cement Microscopy*, Quebec City, PQ, Canada May 20 -24, pp. 442-471, 2007.

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- 12) *Van Antwerp, D.J., R.W. Falta, and J.S. Gierke, "Numerical Simulation of Field Scale Contaminant Mass Transfer During Air Sparging," *Vadose Zone Journal*, 7(1), 294-304, 2007. doi:10.2136/vzj2006.0126
- 13) *Sherman, H.M., J.S. Gierke, and C.P. *Anderson, "Controls on Spatial Variability of Uranium in Sandstone Aquifers," *Ground Water Monitoring & Remediation*, 27(2), 106-118, 2007. doi:10.1111/j.1745-6592.2007.00142x
- 14) *Huntzinger, D.N., M.J. *Hutchins, J.S. Gierke, and J.W. Sutherland, "Evolving Undergraduate Engineering Education for the 21st Century, Part 1: Enabling Sustainable Thinking," *International Journal of Engineering Education*, 23(2), 218-230, 2007.
- 15) Heron, G., J.S. Gierke, B. Faulkner, S. Mravik, A.L. Wood, and C.G. Enfield, "Pulsed Air Sparging in Aquifers Contaminated with Dense Non-Aqueous Phase Liquids," *Ground Water Monitoring and Remediation*, 22(4), 73-82, 2002. doi:10.1111/j.1745-6592.2002.tb00773.x
- 16) *El-Beshry, M.Z., J.S. Gierke, and P.B. Bedient, "Practical Modeling of Soil Vapor Extraction at a Jet-Fuel Spill Site," *Journal of Environmental Engineering*, 127(7), 630-638, 2001.
- 17) Gierke, J.S., "Conventional Vapor Extraction," Section 7.2.1 in CHAPTER 7. REMEDIATION OF ORGANIC CHEMICALS IN THE VADOSE ZONE by L. Murdoch, in *Vadose Zone Science and Technology Solutions*, B.B. Looney and R.W. Falta (eds.), Battelle Press, Columbus, Ohio, Volume II, pp. 951-969, 2000.
- 18) Gierke, J.S., D.L. *Sanders, and D.L. Perram, "Laboratory Studies of Aqueous Partitioning Tracer Tests for Measuring Nonaqueous Phase Liquid Volumes," *Water Environment Research*, 71(4), 465-474, 1999.
- 19) Gierke, J.S., C.L. *Wojick, and N.J. Hutzler, "Field Test of Air Sparging Coupled with Soil Vapor Extraction," Chapter 11 in *Innovative Subsurface Remediation: Field Testing of Physical, Chemical, and Characterization Technologies*, ACS Symposium Series 725, edited by M.L. Brusseau, D.A. Sabatini, J.S. Gierke, and M.D. Annable, American Chemical Society, Washington, D.C., 153-166, 1999.
- 20) Gierke, J.S., D.R. Shonnard, and A.S. Mayer, "Multidisciplinary Subsurface Remediation Courses: Fundamentals, Experiments, and Design Projects," *Journal of Engineering Education*, 555-565, 1998 Supplement.
- 21) *Wojick, C.L., N.J. Hutzler, and J.S. Gierke, "Solute Movement in an Unsaturated Sand Under Unstable (Fingered) Flow Conditions: Tracer Results," in *Shallow Groundwater Systems, ICH-18*, Chapter 16, 191-205, P. Dillon and I. Simmers, eds., AA.Balkema, Rotterdam, The Netherlands, 1998.
- 22) *Hein, G.L., J.S. Gierke, N.J. Hutzler, and R.W. Falta, "Three-Dimensional Experimental Testing of a Two-Phase Flow-Modeling Approach for Air Sparging," *Ground Water Monitoring & Remediation*, 17(3), 222-230, 1997. doi:10.1111/j.1745-6592.1997.tb00597.x

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- 23) Gierke, J.S., and S.E. Powers, "Increasing Implementation of In Situ Treatment Technologies Through Field-Scale Performance Assessments," *Water Environment Research*, 69(2), 1997. doi:10.2175/106143097X125353
- 24) Gierke, J.S., C. *Wang, O.R. West, and R.L. Siegrist, "In Situ Mixed Region Vapor Stripping in Low-Permeability Media. 3. Modeling of Field Tests," *Environmental Science & Technology*, 29(9), 2208-2216, 1995.
- 25) Siegrist, R.L., O.R. West, M.I. Morris, D.A. Pickering, D.W. Greene, C.A. Muhr, D.D. Davenport, and J.S. Gierke, "In Situ Mixed Region Vapor Stripping in Low-Permeability Media. 2. Full-Scale Field Experiments," *Environmental Science & Technology*, 29(9), 2198-2207, 1995.
- 26) West, O.R., R.L. Siegrist, J.S. Gierke, S.W. *Schmunk, A.J. Lucero, and H.L. Jennings, "In Situ Mixed Region Vapor Stripping in Low-Permeability Media. 1. Process Features and Laboratory Experiments," *Environmental Science & Technology*, 29(9), 2191-2197, 1995.
- 27) Gierke, J.S., N.J. Hutzler, and D.B. McKenzie, "Vapor Transport in Unsaturated Soil Columns: Implications for Vapor Extraction," *Water Resources Research*, 28(3), 323-336, 1992.
- 28) Gierke, J.S., N.J. Hutzler, and J.C. Crittenden, "Modeling the Movement of Volatile Organic Chemicals in Columns of Unsaturated Soil," *Water Resources Research*, 26(7), 1529-1547, 1990.
- 29) Hutzler, N.J., B.E. Murphy, and J.S. Gierke, "State of Technology Review: Soil Vapor Extraction Systems," *EPA 600/2-89-024*, 87 pp., 1989.
- 30) Hutzler, N.J., J.S. Gierke, and L.C. Krause, "Movement of Volatile Organic Chemicals in Soils," in *Reactions and Movement of Organic Chemicals in Soils*, B.L. Sawhney and K. Brown, eds., Chapter 15, 373-404, *Special Publication No. 22*, Soil Science Society of America, Madison, Wisconsin, 1989.
- 31) Hutzler, N.J., J.C. Crittenden, J.S. Gierke, and A.S. Johnson, "Transport of Organic Compounds with Saturated Groundwater Flow: Experimental Results," *Water Resources Research*, 22(3), 285-295, 1986.

Manuscripts in Preparation for Peer-Reviewed Publications, near submission Note:

*Authors/co-authors noted with * are students advised or co-advised by J.S. Gierke*

- 1) *Rios-Sanchez, M., J.S. Gierke, A.L. Maclean, "A Remote Sensing and Digital Terrain Model Approach to Identify and Characterize Fracture Patterns in the Quito, Ecuador Aquifer System" anticipated submission to the *International Journal of Remote Sensing* in September 2012.
- 2) *Rios-Sanchez, M., J.S. Gierke, A.L. Maclean, C. Mancinati, and R. Galárraga. "Influence of Topography and Tectonics on the Hydrogeology of a Mountainous Volcanic Terrain," anticipated submission to the *Hydrogeology Journal* in October 2012.
- 3) *Rios-Sanchez, M., and J.S. Gierke, "Geophysical Methods for Fracture Detection on Mountainous Volcanic Aquifers of the Plateaus Area, Quito, Ecuador," anticipated submission to the *Ground Water Journal* in November 2012.

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Publications Reviewed by an Editor, *Authors/co-authors noted with * are students advised or co-advised by J.S. Gierke*

- 1) Andrus*, A.B., K. A. Endsley*, S. Espino*, J. S. Gierke, "Mapping the Freshwater-Saltwater Interface in the Terminal Moraine of the Bering Glacier," Chapter 19 in *Bering Glacier: Interdisciplinary Studies of the Earth's Largest Temperate Surging Glacier, Special Paper 462*, R.A. Schuchman and E.G. Josberger, eds., The Geological Society of America, Boulder, Colorado, 341-350, 2010.
- 2) Gierke, J.S., Review of: *Optimal Control of Soil Venting: Mathematical Modeling and Applications*, H.H. Gerke, U. Hornung, Y. Kelanemer, M. Slodika, and S. Schumacher. Review Published in: *Automatica*, 37(5), 790-791, 2001.
- 3) *El-Beshry, M., J.S. Gierke, P.B. Bedient, "Modeling the Performance of an SVE Field Test," in *Vadose Zone Science and Technology Solutions*, B.B. Looney and R.W. Falta (eds.), (Battelle Press, Columbus, Ohio, 2000), Case Study in Chapter 7 (by L. Murdoch) of Volume II, pp. 1157-1169.
- 4) Brusseau, M.L., J.S. Gierke, and D.A. Sabatini, "Field Demonstrations of Innovative Subsurface Remediation Technologies: Introduction," Chapter 1 in *Innovative Subsurface Remediation: Field Testing of Physical, Chemical, and Characterization Technologies, ACS Symposium Series 725*, edited by M.L. Brusseau, D.A. Sabatini, J.S. Gierke, and M.D. Annable, American Chemical Society, Washington, D.C., 2-5, 1999.
- 5) Huebner, R.S., R.P. Brownell, J.S. Gierke, B.W. Behrman, S.B. Garland, M.R. Scalf, P.D. Kuhlmeier, A.C. Newby, and B.M. Thomson, "Reviewing State Groundwater Legislation and Regulation," *Water Environment and Technology*, 4(11), 51-57, 1992.
- 6) Hutzler, N.J., J.S. Gierke, and B.E. Murphy, "Vaporizing VOCs," *Civil Engineering*, 60(4), 57-60, 1990.

Presentations, Proceedings Papers (22), Posters and Abstracts for Major Professional Meetings, *Authors/co-authors noted with * are students advised or co-advised by J.S. Gierke*

- 1) *Barton, T., M. *Rios-Sanchez, C.A. MacLennan, J.S. Gierke, "Is It Still a Disaster if It is Routine? A Case Study in El Salvador," Poster Abstract for AGU 2012 Fall Meeting, San Francisco, CA, 3-7 December 2012.
- 2) *Bowman, L.J., K.B. Henquinet, J.S. Gierke, W.I. Rose, "Social Vulnerability as a Contributing Factor to Disasters in Central America: A Case Study at San Vicente Volcano, El Salvador," Abstract for AGU 2012 Fall Meeting, San Francisco, CA, 3-7 December 2012.
- 3) *Smith, D.M., T. Oommen, L.J. Bowman, J.S. Gierke, "Stability and Rainfall Susceptibility of Volcanic Slopes on the Chichontepec Volcano in Central El Salvador," 2012 AEG Annual Meeting, Salt Lake City, UT, 15-23 September 2012.
- 4) *Rios Sanchez, M., J. Gierke, T. Muñoz, O. Larrea, "Impacto de la tectónica y la topografía en la hidrogeología del sistema acuífero de Quito," Memorias XI Congreso Latinoamericano de Hidrogeología, Cartagena de Indias, Colombia, Agosto 20 al 24 de 2012.

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- 5) *Bowman, L.J., J.F. Cruz, K.B. Henquinet, J.S. Gierke, “Rainfall-Induced Landslides and Disaster Risk Reduction at San Vicente Volcano, El Salvador,” Peace Corps Connect: Minneapolis 2012, National Peace Corps Association, Minneapolis, MN, 29 June – 1 July 2012.
- 6) Gierke, J.S., “LNAPL Investigations and Recoverability: Properties and issues pertaining to characterizing and remediating LNAPL contamination,” LNAPL Work Shop June 2012 American Institute of Professional Geologists - Michigan Section, Ralph A. MacMullan Conference Center, Roscommon, MI, June 20-21, 2012.
- 7) *Rios-Sanchez, M., J.S. Gierke, T. Muñoz-Martínez, “Hydrogeological characterization of the plateaus region of the Quito aquifer system using remote sensing, digital geomorphology and geophysics,” Proceedings of the 2012 World Environmental & Water Resources Congress: Crossing Boundaries, E.D. Loucks, ed., American Society of Civil Engineers, Albuquerque, NM, May 2012, pp. 85-97.
- 8) Rose, W.I., J.J. Wellik, S.A. Carn, J.S. Gierke, and G.P. Waite, “Masters International Program in Natural Hazards: a joint program between Michigan Tech and US Peace Corps begins move to work in Indonesia,” AGU Fall Meeting, Dec 5, 2011, paper ED 14-07.
- 9) *Benjakul, R., and J.S. Gierke, “Modeling Dioxane Transport in a Heterogeneous Glacial Aquifer System (Washtenaw County, Michigan) Using Publicly Available Models and Data,” Abstract H53F-1132 Poster, presented at 2010 Fall Meeting, AGU, San Francisco, California, 13-17 December 2010.
- 10) *Rios-Sanchez, M., J.S. Gierke, and T. Muñoz-Martínez, “Lineament Mapping for Hydrogeological Characterization of Volcanic Terrains Using Products Derived from DEMs, Radar, Landsat and Aster Imagery,” Abstract H23F-1296 Poster, presented at 2010 Fall Meeting, AGU, San Francisco, California, 13-17 December 2010.
- 11) *Alonso Contés, C.A., M. *Rios-Sanchez, J.S. Gierke, “Lineament Mapping for Groundwater Exploration Using Remotely Sensed Imagery in Karst Terrains,” 2010 GSA Annual Meeting, 31 October – 3 November, Denver, Colorado.
- 12) Gierke, J.S., *Rios-Sanchez, M., "Issues Pertaining to Glacial Retreat on Water Resources," Latin America and Caribbean Capacity Building Workshop, GEOS, CONIDA, Lima, Peru, November 30 - December 4, 2009. (Invited Presentation by Gierke)
- 13) *Paterson, E.L., J.S. Gierke, C.W. *Shonsey, E.A. *Myre, and J.N. *Bruning, “Manual Aquifer Testing Methods for Groundwater Supply Development,” 2009 Portland GSA Annual Meeting, 18-21 October 2009.
- 14) Gierke, J.S., *Rios-Sanchez, M., "Use of Remote Sensing Tools to Characterize Hazards and Water Resources," Adapting to a World Without Glaciers, USAID, NSF, CONECYT, Lima, Peru, July 7 - 15, 2009. (Invited Presentation by Gierke)
- 15) *Hutchins, M.J., J.S. Gierke, and J. W. Sutherland, “Decision Making for Social Sustainability: A Life-Cycle Assessment Approach,” 2009 IEEE International Symposium on Sustainable Systems & Technology (ISSST) and 2009 IEEE International Symposium on Technology and Society (ISTAS), May 18 – 20, 2009, Tempe, AZ, also presented at the Symposium on Industrial Ecology for Young Professionals, May 17, 2009, Tempe, AZ.

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- 16) *Bruning, J.N., J.S. Gierke, and A.L. Maclean, "Digital Processing and Data Compilation Approach for Using Remotely Sensed Imagery to Identify Geological Lineaments in Hard-Rock Terrains: An Application for Groundwater Exploration in Nicaragua," American Society for Photogrammetry and Remote Sensing, 2009 Annual Conference, March 9-13, 2009 Baltimore, Maryland, USA. Full length paper to appear in the proceedings. (To be presented by Bruning)
- 17) *Gross, E. L., Gierke J S, Kome A, 2008 Monitoreo de Recursos Hidricos Subterraneos Sencillos, Barato, y Local, ¿Hay Esperanza?; Caracterizacion de los Efectos Temporales en Pozos Perforados con Bombas de Mecate en Acuíferos Fracturados Basálticos en Nicaragua XI Congreso Latinoamericano de Hidrogeología, Quito. Full length paper appeared in the Proceedings CD.
- 18) *FitzGerald, K.A., J.S. Gierke, et al., "Engaging Urban Students in Geoenvironmental Education Using Storm Water Management Techniques," 2008 Ground Water Summit, Memphis, Tennessee, March 31 - April 2, 2008. (Presented by FitzGerald)
- 19) *Fuchs, V.J., J.S. Gierke, and J.R. Mihelcic, "Hydraulic Model Comparison of Vertical Flow Regimes During Soil Clogging," Water Environment Federation's Annual Technical Exhibition and Conference (WEFTEC), Water Environment Federation, Arlington, VA, 2007. Full length paper appeared in Proceedings CD. (Presented by Fuchs)
- 20) Gierke, J.S., E.L. *Gross, E.A. *Myre, and A. Kome, "A Technologically Appropriate Method for Measuring the Specific Capacity of Rope-Pump Wells," 2008 Ground Water Summit, Memphis, Tennessee, March 31 - April 2, 2008. (Presented by Gierke)
- 21) *Gross, E.L., J.S. Gierke, and A. Kome, "Characterization of Seasonal Effects on the Specific Capacity of Rope-Pump Wells in a Fractured-Rock Aquifer in Nicaragua," 2007 Annual Water Resources Conference of the American Water Resources Association, November 12-15, 2007, Albuquerque, New Mexico. (Presented by Gross)
- 22) Bluth, G.J., Gierke J.S., *Gross E.L., Kieckhafer P.B., Rose W.I. (2006) Assessment of a merged research and education program in Pacific Latin America. Eos Trans. AGU, 87(552), Fall Meet. Suppl., Abstract ED51C-0840
- 23) Bluth, G.J.S., Gierke, J.S., *Gross, E.L., and W.I. Rose (2006) Remote sensing for volcanic hazard mitigation in Ecuador, El Salvador, Guatemala, and Nicaragua. Cities on Volcanoes 4, Quito, Ecuador, January 23-27, 2006.
- 24) Gierke, J.S., and E.L. *Gross, "Using Groundwater Exploration Projects in Developing Countries for Undergraduate Engineering Education," National Ground Water Association Ground Water Summit, 23-26 April 2006, San Antonio, Texas. (Presented by Gierke)
- 25) *Barbour, J.N., R.W. *Porritt, J.S. Gierke, and *Bendall, K.A., *Beach, D.N., Diehl, J.F., *Jankowski, K., *Lawson, G.T., *McEachin, M.J., Pennington, W.D., *Solla, C.D., and Young, C.T., "Geophysical Exploration for Ground Water in Boaco, Nicaragua," National Ground Water Association Ground Water Summit, 23-26 April 2006, San Antonio, Texas. (Presented by Barbour)
- 26) Gierke, J.S., "A Unique, Sustainable Undergraduate Educational Approach for Fostering Practical and Research Skills in Hydrogeology," Clemson Hydrogeology Symposium, 30 March 2006, Clemson, South Carolina.

Curriculum Vita for **John S. Gierke**

- 27) Bluth, G.J.S., *Gross, E.L., Gierke, J.S., and W.I. Rose, 2005 Remote sensing for hazard mitigation and resource protection in Pacific Latin America, American Geophysical Union annual meeting, San Francisco, CA.
- 28) *Sherman, H. M., J. S. Gierke, and C.P. *Anderson, "Elevated uranium in aquifers of the Jacobsville Sandstone, Upper Peninsula, Michigan, USA," Proceedings of the 2005 National Ground Water Conference on Naturally Occurring Contaminants, Radium, Radon, And Uranium; February 24-25, 2005, Charleston, South Carolina; P7-18. (Presented by Anderson)
- 29) Gierke, J.S., "Aqua Terra Tech: A Multiyear, Multidisciplinary Undergraduate Enterprise Working on Water Resources Development and Protection," Association of Environmental Engineering & Science Professors First Biennial Research and Education Conference, 23-27 July 2005, Clarkson University, Potsdam, New York. (Poster presented by Gierke)
- 30) *Beach, D.N., J.S. Gierke, and others, "Carbon Sequestration in Waste Mineral Byproducts," Fourth Annual Conference on Carbon Capture & Sequestration, 2-5 May 2005, U.S. Department of Energy, Alexandria, Virginia. (Presented by Gierke)
- 31) *Kremer, T. J., Gierke, J.S., Drelich, J., Imhoff, P. T.; Surfactant-Enhanced Air Sparging: Laboratory Evaluation of Performance, WEFTEC 2003 Conference Proceedings; October 2003; paper 16 (on CD).
- 32) *Sherman, H.M., and J.S. Gierke, "Elevated Uranium in the Aquifers of the Jacobsville Sandstone," *Eos Trans. AGU*, 84(46), Fall Meet. Supplement, Abstract H51C-1049, 2003 (presented by Sherman).
- 33) Gierke, J.S., M. Donofrio, and C. Garcia, "Development of a Wellhead Protection Program for a Native American Community," International Conference on the University as Citizen: Engaging Universities and Communities, Tampa, FL, February 21-24, 2001. Full length paper appeared in proceedings (Poster presented by Gierke).
- 34) Gierke, J.S., D.A. *Taege, D.L. Perram, and N.J. Hutzler, "Field-Scale Performance of Air Sparging for Removing a Dense Nonaqueous Phase Liquid from a Aquifer," 5th International Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe, Prague, Czech Republic, 12-14 September 2000. Full length paper appeared in proceedings (Presented by Gierke).
- 35) *Taege, D.A., J.S. Gierke, D.L. Perram, and N.J. Hutzler, "Field-Scale Study of the Performance of Air Sparging for Removing a Dense Nonaqueous Phase Liquid (Tetrachloroethylene) from a Coastal Plain Aquifer," 32nd Mid-Atlantic Industrial and Hazardous Waste Conference, J. Klduff, S. Komisar, and M. Nyman (eds.), (Technomic Publishing Co., Inc., Lancaster, Pennsylvania, 2000), pp. 125-134. (Presented by Taege)
- 36) *Stright, L.E., and J.S. Gierke, "Modeling of Oxygen Mass Transfer During Biosparging," *In Situ Bioremediation of Petroleum Hydrocarbon and Other Organic Compounds*, B.C. Alleman and A. Leeson, eds., vol. 5, no. 3, The Fifth International In Situ and On-Site Bioremediation Symposium, April 19-22, 1999, San Diego, California, 97-102. (Presented by Stright)

Curriculum Vita for **John S. Gierke**

- 37) *El-Beshry, M.Z., J.S. Gierke, and P.B. Bedient, "Application of a Multicomponent 3-Dimensional, Vapor Transport Model for Simulating Data from a Full-Scale SVE System for Removing Jet Fuel," Proceedings of the 1998 Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection, and Remediation, Conference and Exposition, 11-13 November 1998, American Petroleum Institute and National Ground Water Association, Houston, Texas, pp. 367-376, 1998. (Presented by El-Beshry)
- 38) Gierke, J.S., C.L. *Wojick, J.M. *Smith, and N.J. Hutzler, "Air Sparging Performance in a NAPL-Contaminated, Sandy-Gravel Aquifer," Groundwater Quality: Remediation and Protection, Proceedings of GQ 98, September 1998, M. Herbert and K. Kovar (eds.), IAHS Publication no. 250, IAHS Press, Oxfordshire, United Kingdom, pp. 119-124, 1998. (Presented by Gierke)
- 39) *Stright, L.E., and J.S. Gierke, "Using Moments to Aid in Model Calibration of Air Sparging Column Data," *EOS, Transactions, American Geophysical Union*, vol. 79, no. 45, 1998. (Poster Presented by Stright)
- 40) Gierke, J.S., *Wojick, C.L., and N.J. Hutzler, "A Controlled Field Evaluation of Air Sparging Performance for Remediation of a Complex Contaminant Mixture in a Sandy-Gravel Aquifer," Invited presentation at the Fifth Chemical Congress of North America, November 11-15, 1997 Cancun, Mexico.
- 41) *Wojick, C.L., J.S. Gierke, and N.J. Hutzler, "A Field Study of Air Sparging Performance," *Proceedings: 213th American Chemical Society National Meeting*, Vol. 37, No. 1, San Francisco, California, April 13-17, 1997, Washington, D.C.: American Chemical Society, pp. 229-231. (Presented by Wojick)
- 42) Gierke, J.S., and S.E. Powers, "In Situ Groundwater Treatment Technologies: Increased Implementation Through Results of Field-Scale Performance Assessments," Proceedings of WEFTEC '95, pp. 547-557, Water Environment Federation, Miami Beach, Florida, October 21-25, 1995. (Presented by Gierke)
- 43) *Johnstone, T.L., C.L.* Wojick, N.J. Hutzler, and J.S. Gierke, "Modeling Solute Transport Under Fingering Flow Conditions: a Two-Dimensional, Two-Domain Approach," Proceedings: 1995 Fall Meeting of the American Geophysical Union, San Francisco, December 11-15, abstract published in *EOS, Transactions, American Geophysical Union*, vol. 76, no. 46, pp. 195-196, 1995. (Poster Presentation by Johnstone, which was awarded an Outstanding Student Presentation)
- 44) Gierke, J.S., C.L. *Wojick, and N.J. Hutzler, "Solute Movement in an Unsaturated Sand Under Unstable (Finger) Flow Conditions: Tracer Results," Proceedings: Water Down Under 94, Adelaide, South Australia, November 21-25, 1994, The Institution of Engineers, Australia, Barton, A.C.T., Australia, Vol. 2-Part A: Groundwater Papers, pp. 87-92, 1994.
- 45) *Hein, G.L., N.J. Hutzler, and J.S. Gierke, "Quantification of the Mechanisms Controlling the Removal Rate of Volatile Contaminants by Air Sparging," Proceedings of the 1994 National Conference on Environmental Engineering, pp. n/a, American Society of Civil Engineers, Boulder, Colorado, July 11-13, 1994. (Presented by Hein)

Curriculum Vita for **John S. Gierke**

- 46) *Hein, G.L., N.J. Hutzler, J.S. Gierke, and S. *Haase, "Three Dimensional, Laboratory-Scale Air Sparging Hydrodynamics," Proceedings: 1994 Fall Meeting of the American Geophysical Union, San Francisco, December 6-10, abstract published in *EOS, Transactions, American Geophysical Union*, vol. 75, no. 44, pg. 286, 1994. (Oral Presentation by Hein)
- 47) *Carpenter, M.D., J.S. Gierke, R.L. Siegrist, and O.R. West, "Vapor Phase VOC Transport in Physically-Mixed Clay Soils," Proceedings of the 1993 NGWA Conference on Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection, and Restoration, 479-491, Houston, Texas, November 10-12, 1993. (Presented by Carpenter)
- 48) *Ebsch, J.L., and J.S. Gierke, "An Experimental Study of Intrinsic Permeability and Removal of Automobile Transmission Fluid and p-Xylene with a Clay Soil," 1993 Fall Meeting of the American Geophysical Union, San Francisco, December 5-9, abstract published in *EOS, Transactions, American Geophysical Union*, vol. 74, no. 43, pg. 289, 1993. (Presented by Ebsch)
- 49) *Wang, C., J.S. Gierke, S.W. *Schmunk, O.R. West, and R.L. Siegrist, "Modeling Volatile Organic Chemical Removal by In-Situ Soil Mixing/Hot-Gas Stripping," Poster Abstracts for the NGWA Annual Convention and Exposition: Chlorinated Volatile Organic Compounds in Ground Water, Kansas City, MO, October 17-20, *Ground Water*, 31(5), pg. 852, 1993. (Poster Presented by Wang)
- 50) Gierke, J.S., O.M. Reyes, and R.L. Siegrist, "Modeling Volatile Organic Chemical Removal by *In Situ* Soil Mixing/Steam Stripping," Proceedings of the 5th IGWMC/AGWSE Conference on Solving Ground Water Problems with Models, pp. 397-412, Dallas, Texas, February 11-13, 1992. (Presented by Gierke)
- 51) Gierke, J.S., S.W. *Schmunk, C. Wang, O.M. Reyes, and R.L. Siegrist, "*In Situ* Mixing Coupled with Steam Injection for Removing TCE from a Clay Soil," Summer Meeting of AIChE, Minneapolis, Minnesota, August 9-12, 1992.
- 52) Mitchell, R.J., A.S. Mayer, J.S. Gierke, and N.J. Hutzler, "Unsaturated Solute Transport in a Fingered Flow System," 1992 Fall Meeting of the American Geophysical Union, San Francisco, December 5-9, abstract published in *EOS, Transactions, American Geophysical Union*, vol. 73, no. 43, pg. 198, 1992. (Presented by Mitchell)
- 53) Gierke, J.S., N.J. Hutzler and D.B. McKenzie "Organic Vapor Transport in Columns of Granular and Aggregated Soils," ASA/AGU Workshop on Characterization of Transport Phenomena in the Vadose Zone, Tucson, Arizona, April 2-5, 1991.
- 54) *Cornachione, H.S., J.S. Gierke, and S.D. McDowell "Fabric Changes in Clays Permeated with Organic Liquids," Clay Minerals Society 28th Annual Meeting, Houston, Texas, October 5-10, 1991. (Presentation by Cornachione)
- 55) Gierke, J.S., N.J. Hutzler, and D.B. McKenzie, "Experimental and Model Studies of the Mechanisms Influencing Vapor Extraction Performance," Proceedings of the 1990 Conference on Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection, and Restoration, pp. 325-338, National Water Well Association/American Petroleum Institute, Houston, Texas, October 31 - November 2, 1990. (Presented by Gierke)

Curriculum Vita for **John S. Gierke**

- 56) Hutzler, N.J., and J.S. Gierke, "Validation of an Unsaturated VOC Transport Model," Proceedings of the 1988 International Conference on Environmental Engineering, American Society of Civil Engineers/Canadian Society of Civil Engineers, pp. 393-400, Vancouver, British Columbia, Canada, July 13-15, 1988. (Presented by Hutzler)
- 57) Gierke, J.S., N.J. Hutzler, and J.C. Crittenden, "Modeling the Movement of Volatile Organic Chemicals with Unsaturated Flow," Proceedings of the 1986 National Conference on Environmental Engineering, pp. 424-430, American Society of Civil Engineers, Cincinnati, Ohio, July 8-10, 1986. (Presented by Gierke)
- 58) Gierke, J.S., N.J. Hutzler, and J.C. Crittenden, "Modeling the Movement of Volatile Organic Chemicals in the Unsaturated Zone," Proceedings of Characterization and Monitoring of the Vadose (Unsaturated) Zone Conference, pp. 352-372, National Water Well Association, Denver, Colorado, November 19-21, 1985. (Presented by Gierke)

Selected University Lectures, Special Seminars, Posters, and Invited Presentations,

*Authors/co-authors noted with * are students advised or co-advised by J.S. Gierke*

- 1) *Rios-Sanchez, M., K.S. Durst, C.A. *Alonso Contés, E.L. Gross, and J.S. Gierke, "Applications of Remote Sensing for Hydrogeology," Pre-Conference Workshop in conjunction with the IX Congress on Latin American Hydrogeology, 7 July 2009, Quito, Ecuador.
- 2) *Beach, D.N., and Gierke, J.S., "Carbon Sequestration in Waste Mineral By-Products," Geology Lecture Series, 11 November 2005, Clemson University, South Carolina.
- 3) Gierke, J.S., "Effectiveness of Enhancements on Air Sparging Performance," Geology Lecture Series, 18 November 2005, Clemson University, South Carolina.
- 4) *Sherman, H.M., and J. S. Gierke, "Occurrence of Elevated Uranium Levels in Jacobsville Sandstone Aquifers," Regional Meeting of the American Institute of Mining, Metallurgical, and Petroleum Engineers, Houghton, MI, April 28, 2004 (presented by Sherman).
- 5) *Sherman, H.M., and J. S. Gierke, "Occurrence of Elevated Uranium Levels in Jacobsville Sandstone Aquifers," Invited presentation for the U.P. Heath Officials Workshop, Marquette, MI, February 25, 2004 (presented by Gierke).
- 6) Gierke, J.S., and D. N. *Beach, "Contaminated Sites: Characterization, Assessment, and Remediation," NSF Workshop on Emerging Geoenvironmental Technologies for Pollution Control and Remediation, University of Illinois—Chicago, Chicago, IL, Sept. 21-23, 2003 (Invited presentation by Gierke)
- 7) *Castor, M.G., and J. S. Gierke, "Ozone Sparging of Trichloroethylene in a Pilot-Scale Aquifer" Lecture given at the Tampere University, Tampere, Finland, February 2003 (presented by Gierke).
- 8) Gierke, J.S., "Field-Scale Performance of Air Sparging for Removing a Dense Nonaqueous Phase Liquid from a Aquifer," Lecture given at the Tampere University, Tampere, Finland, February 2003.
- 9) Gierke, J.S., "Field-Scale Performance of Air Sparging for Removing a Dense Nonaqueous Phase Liquid from a Aquifer," Lecture given at the University of Oklahoma, February 15, 2002.

Curriculum Vita for **John S. Gierke**

- 10) Gierke, J.S., "Field-Scale Performance of Air Sparging for Removing a Dense Nonaqueous Phase Liquid from a Aquifer," Lecture given at Colorado School of Mines, November 17, 2000.
- 11) Gierke, J.S., "Field-Scale Performance of Air Sparging for Removing a Dense Nonaqueous Phase Liquid from a Aquifer," Invited Lecture given at Clemson University, October 3, 2000.
- 12) Gierke, J.S., D.A. *Taeye, D.L. Perram, and N.J. Hutzler, "Field-Scale Performance of Air Sparging for Removing a Dense Nonaqueous Phase Liquid from a Aquifer," Dover National Test Site Visitor's Day, Dover Air Force Base, Delaware, 29 August 2000. (Poster presented by Gierke)
- 13) Gierke, J.S., D.L. Perram, N.J. Hutzler, D.A. *Taeye, and Mellisa A. *Le, "Partitioning Tracer Test for Delineating NAPL Contamination in an Aquifer," Dover National Test Site Visitor's Day, Dover Air Force Base, Delaware, 29 August 2000. (Poster presented by Gierke)
- 14) Gierke, J.S., "Field Testing of Air Sparging," Invited lecture at the University of Delaware, Newark, DE, March 5, 1999.
- 15) Gierke, J.S., "Field Testing of Air Sparging," Invited lecture at Drexel University, Philadelphia, PA, May 13, 1999.
- 16) Gierke, J.S., D.R. Shonnard, and A.S. Mayer, "Integration of In Situ Subsurface Remediation Research into Interdisciplinary Engineering Curricula," Invited Presentation, American Society for Engineering Education Annual Conference in Washington, D.C., June 23-26, 1996. (Presented by Gierke)
- 17) Gierke, J.S., D.R. Shonnard, and A.S. Mayer, "In Situ Subsurface Remediation Technologies: Integration into an Interdisciplinary Engineering Curricula," American Academy of Environmental Engineers (AAEE)/Association of Environmental Engineering Professors (AEEP) Environmental Engineering and Education and Practice Conference, Orono, Maine, August 3-6, 1996. (Poster presented by Gierke)
- 18) Gierke, J.S., "Air Sparging Performance Assessment," Invited Speaker, 19th Midwest Environmental Chemistry Workshop, West Lafayette, Indiana, October 12-13, 1996.
- 19) *Sanders, D.L., J.S. Gierke, and D.L. Perram, "Determination of Aqueous Partition Coefficients for Alcohol Tracers Used to Quantify Subsurface Contaminant Volumes," 19th Midwest Environmental Chemistry Workshop, West Lafayette, Indiana, October 12-13, 1996. (Presented by Sanders)
- 20) Gierke, J.S., "Soil Vapor Extraction System Configurations and Process Modeling," Invited Lecture at Rice University, Houston, Texas, September 29, 1995.
- 21) Gierke, J.S., "Soil Vapor Extraction Systems: (1) Modeling Air Flow and VOC Removal, and (2) SVE Enhancements (Steam)," Invited Lectures at a Corrective Action Workshop sponsored by the Department of Engineering Development at the University of Wisconsin--Madison, 1991-1995 (every year, sometime in Feb. or early March)

Curriculum Vita for **John S. Gierke**

- 22) Shonnard, D.R., J.S. Gierke, and A.S. Mayer, "In Situ Subsurface Remediation Technologies: Integration into an Interdisciplinary Engineering Curriculum," 1995 ASEE Meeting, Anaheim, California, June 25-28, 1995. (Poster presented by Shonnard)
- 23) Gierke, J.S., "The Removal of Volatile Organic Compounds From Clay Soils Using *In Situ* Mixing Coupled with Thermal Extraction," Invited Lecture at Michigan State University, East Lansing, Michigan, September 9, 1993.
- 24) Gierke, J.S., "Organic Chemical Interactions in Clays and Their Removal by Vapor Extraction," Second Forum on NSF Research Activities in Subsurface Systems, Ann Arbor, Michigan, Oct. 7-9, 1992.
- 25) Gierke, J.S., "Modeling the Transport of Volatile Organic Chemicals in Unsaturated Soil and Their Removal by Vapor Extraction," Invited Lecture at Lake Superior State University, Sault Ste. Marie, Michigan, February 8, 1991.
- 26) *Cornachione, H.S., J.S. Gierke, and S.D. McDowell, "Fabric Changes in Clays Permeated with Organic Liquids," by 1991 Midwest Symposium of Student Research in Hydrogeology, Northern Illinois University, October 17, 1991. (At this student conference, this student won awards for Best Research Topic and Best Abstract)

Non-Peer-Reviewed Reports, *Authors/co-authors noted with * are students advised or co-advised by J.S. Gierke*

- 1) Gierke, J.S., and C. *Wang, "Modeling Thermally Enhanced Vapor Extraction Coupled with *In Situ* Mixing for Remediation of Organically Contaminated, Fine-Grained Soils," *Final Report for Contract No. 19X-SJ598V*, 43 pp., April 1993.
- 2) Crittenden, J.C., D.W. Hand, D.L. Perram, J.S. Gierke, S. Bhuvendralingham, Gopakumar B., and R. Jayadev, "Development of a Mathematical Model to Evaluate the Operation of the Multifiltration Unit in the Space Station's Drinking Water Treatment System," Final Project Report, Submitted to McDonnell Douglas Space System Co., Huntsville, Alabama, April 1992.
- 3) Auer, M.T., J.S. Gierke, and J.M. Glime, "Acid Rain Effects Associated with Sphagnum in Low-Alkalinity Lakes: Mathematical Modeling," Final Project Report, Submitted to E. Newman, Wisconsin Public Service Corporation, Green Bay, Wisconsin, September 1989.

Professional Service

Editorships: Books

Innovative Subsurface Remediation: Field Testing of Physical, Chemical, and Characterization Technologies, ACS Symposium Series 725, edited by M.L. Brusseau, D.A. Sabatini, J.S. Gierke, and M.D. Annable, American Chemical Society, Washington, D.C., 299 pp., 1999.

Editorships: Journals

2009-2012 Editorial Board of *Journal of Contaminant Hydrology*

2003-2004 Editorial Review Board of *Ground Water Monitoring and Remediation*

Curriculum Vita for **John S. Gierke**

Book Reviews:

Gierke, J.S., *Automatica* (May 2001) (*Optimal Control of Soil Venting: Mathematical Modeling and Applications*, by H. H. Gerke, U. Hornung, Y. Kelanemer, M. Slodicka and S. Schumacher)

Sessions/Workshops Organized at Professional Meetings:

- 1) Rios-Sanchez, M., J.S. Gierke, K. Durst, C.A. Alonso, and E.L. Gross. "Workshop on Applications of Remote Sensing for Exploration and Characterization of Groundwater Resources," IX Congress on Latin American Hydrogeology, 7 July 2008, Quito, Ecuador.
- 2) Wellhead Protection Interest Group, 2004 Groundwater Exposition, National Ground Water Association, Las Vegas, NV, December 12-15, 2004.
- 3) M.L. Brusseau, D.A. Sabatini, J.S. Gierke, & M.D. Annable, "Field Scale Evaluation of Remediation Technologies," 213th American Chemical Society National Meeting, San Francisco, California, April 13-17, 1997.
- 4) S.E. Powers and J.S. Gierke, "Comprehensive Assessment of In Situ Groundwater Treatment Technologies," at WEFTEC '95 Water Environment Federation, Miami Beach, Florida, October 21-25, 1995.

Review Panels:

National Science Foundation: SBIR & CAREER (2 times)

State of Alaska Oil Spill Cleanup and Corrective Action Program

Strategic Environmental Research and Development Program

U.S. Department of Energy Environmental Management Science Program

U.S. Department of Agriculture

Journal Reviewer:

Environmental Science and Technology, Water Resources Research, Journal of Environmental Engineering, Ground Water Monitoring and Remediation, Journal of Contaminant Hydrology, Journal of Hazardous Materials, Journal of Environmental Quality, Water Resources, Journal of Soil and Sediment Contamination, Journal of Soil Contamination, Environmental Engineering Science, Soil Science Society America Journal, Journal of Engineering Education, Encyclopedia of Analytical Chemistry

Consulting Activities:

Wellhead Protection Area Delineation for the Grant Township (Copper Harbor, Michigan) Well Field, subcontractor to Traverse Engineering Services, Hancock, Michigan

Dog-Cage Dewatering Modeling to Analyze Repairing Options for the City of Holland (Michigan) Water Main Project, subcontractor to Stanley J. Vitton, Hancock, Michigan

Wellhead Protection Area Delineation for the Osceola Township (Dollar Bay, Michigan) Well Field, subcontractor to Traverse Engineering Services, Hancock, Michigan

Wellhead Protection Area Delineation for the Negaunee Township (Michigan) Well Field, subcontractor to Traverse Engineering Services, Hancock, Michigan

Curriculum Vita for **John S. Gierke**

Students Advising/Advised (*Note: PCMI = Peace Corps—Masters International*)

Current:

Ph.D. Candidate in Geological Engineering

Rios-Sanchez, Miriam

Ph.D. Student in Geology

*Bowman, Luke J.

Gochis, Emily E.

M.S. Geology

**Barton, Tyler, PCMI (El Salvador)

**Cabret, Eduardo, PCMI (The Gambia)

**Cobin, Patricia F., PCMI (served in Guatemala)

Giryn, Paula (off campus)

Houston, Jacqueline M.

*Maggio, Jarod, PCMI (served in The Philippines)

Mayer, Jordan, PCMI (on campus)

Miller, Ashley, PCMI (on campus)

Ramos, Edrick, PCMI (Guatemala)

Tubman, Stephanie C., PCMI (served in Guatemala)

Van Sickle, Jordan, PCMI (Panama)

M.S. Geological Engineering

**Smith, Daniel M., PCMI (served in El Salvador)

M.S. Environmental Engineering

Drake, Brianna I., PCMI (Panama)

**Jones, Erica, PCMI (Panama)

Moilanen, Luke, PCMI (Namibia)

Graduated/Defended:

Ph.D. Geological Engineering

Huntzinger, (Beach) Deborah N. (Assistant Professor, Northern Arizona University)

Ph.D. Geology

Sherman, Heidi M. (Part-Time Instructor University of Hawaii, Consultant)

Ph.D. Engineering (Environmental)

*Fuchs, Valerie J. (Project Engineer, Montgomery Watson Harza)

**Hein, Gretchen L. (Lecturer, Michigan Technological University)

**Wojick, C.L. (Senior Research Engineer, Michigan Technological University)

Ph.D. Student in Mechanical Engineering

**Hutchins, Margot J. (Post-Doctoral Research, University of California—Berkeley)

M.S. Geological Engineering

Aho, Robert S. (Engineer, Natural Resources Conservation Service)

Bruning, (Barbour) Jill N. (at-home mother)

Carpenter, Michael D. (Engineer, STS Consultants)

Castor, Meaghan G. (at-home mother)

Ebsch, Jeffrey L. (Engineer, U.P. Engineering and Architectural Associates)

Kremer, Theodore J. (Engineer, Malcolm Pirnie, Inc.)

Sanders, Deborah L. (Engineer, ERM-West)

Sawall, Richard H. (Engineer, Geotrans)

Curriculum Vita for **John S. Gierke**

Schmunk, Steven W. (System Administrator, Marquette Intermediate School District)

Stright, Lisa E. (Assistant Professor, University of Utah)

Wang, Congli (Engineer, consulting)

M.S. Geology

Alonso, Carla A. (Lecturer, Park University)

Anderson, Cecilia P. (Hydrogeologist, ERM)

Benjakul, Rengroj (Geological Survey of Thailand)

Fish, Randall E., (PCMI-Tanzania, Eco-Resort Manager, St. Johns)

Gross, Essa L., (PCMI-Nicaragua) (Project Coordinator, Michigan Technological University)

Gu, Yingxin (Research Scientist, U.S.G.S.)

Harrison, Elizabeth A. (Research Scientist, U.S. DOE Los Alamos)

Hegemann, Robert F., (PCMI-Honduras, Water Quality Specialist USGS)

** Keating, Gordon N. (Research Scientist, U.S. DOE Los Alamos)

** Van Antwerp, Darby J. (MS at Clemson University, currently Engineer, RMT)

M.S. Civil & Environmental Engineering

Fader, Caleb, (PCMI-Uganda, CH2M Hill)

Kucharski, Matthew J., (PCMI-Philippines)

** LeFevre (Bachmann), Nancy-Jeanne (Engineer, Emmons & Olivier Resources, Inc.)

Messersmith (Johnstone), Tammi L. (Engineer, URS Corporation)

Smith (Muraski), Jennifer M. (Engineer, Montgomery Watson)

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