

Lawrence D. Lemke
Professor and Chair, Department of Earth and Atmospheric Sciences
Central Michigan University

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Education

- 9/97 – 8/03 **Ph.D. Environmental Engineering; University of Michigan - December 2003**
Dissertation: *Influence of Alternative Spatial Variability Models on Solute Transport, DNAPL Entrapment, and DNAPL Recovery in a Homogeneous, Nonuniform Sand Aquifer*
Chair: Linda M. Abriola Civil and Environmental Engineering
- 9/86 - 5/89 **M.B.A. Business Administration; University of Denver - May 1989**
- 8/83 - 5/85 **M.S. Geosciences; University of Arizona - May 1985**
Thesis: *Sedimentation and Tectonics of the Paradox Basin, Utah, Colorado, Arizona and New Mexico.*
Advisor: William R. Dickinson Geological Sciences
- 9/79 - 3/83 **B.S. Geology; Michigan State University - with high honors, March 1983**

Professional Experience

- 8/16 - present **Professor and Chair, Earth and Atmospheric Sciences, Central Michigan University**
 - Teaching, Research, Administration, and Leadership of a group of outstanding faculty in *Geology, Meteorology, and Environmental Science.*
- 8/03 – 8/16 **Associate Professor, Environmental Science Program Director, Department of Geology, Wayne State University, Detroit, MI (Promoted from Asst. Professor 8/10)**
 - Research: projects include hydrogeology, groundwater flow and contaminant transport modeling, air quality modeling, soil contamination, risk analysis, and geostatistics.
 - Instruction: developed and taught undergraduate and graduate level courses in geology and environmental science.
 - Environmental Science Program Director; appointed August, 2007.
- 6/95 - 8/97 **Exploration Geologist/Project Manager, Exxon Exploration Company, Houston, TX [now ExxonMobil Exploration Company, P.O. Box 4778, Houston, TX 77210-4778]**
 - Oil and gas exploration in western People's Republic of China and Gulf of Thailand
 - Yaha Field Development Study Project Manager:
 - directed international, interdisciplinary efforts to model geology and reservoir performance of gas/condensate fields in the Tarim Basin of western P.R.C. Annual budget: \$4 million.
- 10/92 - 6/95 **Exploitation Geologist, Esso Exploration and Production, UK, London, England**
 - North Sea new developments geology
 - reservoir development and equity negotiations
 - integrated geological/geophysical models into oil & gas field reservoir simulations.
- 6/89 - 10/92 **Production Geologist, Exxon Co., USA, New Orleans, LA**
 - Offshore Gulf of Mexico reservoir development and production geology
 - developed drilling programs for established fields and provided geologic interpretations to reservoir engineers for field development modeling.
- 8/85 - 6/89 **Petroleum Geologist, Exxon Co., USA, Denver, CO**
 - Rocky Mountain oil and gas exploration: Williston Basin, Wyoming Overthrust
 - prospect generation/oil well drilling.

Academic Awards and Honors

- 2016 Michigan Association of State Universities **Distinguished Professor of the Year Nominee**
Wayne State University
- 2014 - 2015 Wayne State University **Office of Teaching and Learning Faculty Fellow.**
- 2014 Wayne State University **College of Liberal Arts and Sciences Teaching Award**, *with special designation for mentoring undergraduate research.*
- 2013 Wayne State University **Faculty Teaching Travel Grant**, *support to attend and present at Association for Environmental Studies and Sciences Conference, Pittsburgh, PA, June, 2013.*
- 2012 Wayne State University **Career Development Chair**, *support and recognition for outstanding tenured faculty members in the early stages of their careers.*
- 2012 Wayne State University **Faculty Educational Development Travel Grant**, *support to attend and present at NSF Cutting Edge Workshop on Teaching Environmental Geology; Montana State University, June, 2012.*
- 2008 **NSF CAREER Award.** *The Faculty Early Career Development (CAREER) Program bestows the National Science Foundation's most prestigious awards in support of early career-development activities of teacher-scholars who most effectively integrate research and education within the context of the mission of their organization.*
- 2007 Appointed **Environmental Science Program Director**, Wayne State University College of Liberal Arts and Sciences. *Coordination of student major advising and Steering Committee Leadership for ten faculty members from Geology and Biological Sciences.*
- 2006 Wayne State University **Presidential Award for Excellence in Teaching**
Recognition for faculty who have made outstanding contributions to teaching. Each of the six awards for 2006 included an unrestricted grant of \$2,500 and a citation.
- 2003 University of Michigan **Walter J. Weber, Jr. Student Award for Excellence in Environmental Sciences and Engineering**, *Awarded annually to a senior EWRE Ph.D. student who most embodies excellence in research, outstanding academic achievement, and exceptional service in the field of environmental sciences and engineering.*
- 2003 MODFLOW and More 2003 Conference – **Best Student Paper Award**
Awarded by the conference organizing committee to the student paper abstract judged to have the highest technical merit.
- 2002 University of Michigan **Rackham Predoctoral Fellowship**
Awarded to a selected group of Ph.D. candidates whose academic accomplishments and doctoral research show outstanding promise.
- 2002 University of Michigan **Teaching Fellow**
Conferred upon a selected group of Ph.D. candidates who complete a month-long seminar on college teaching designed to prepare future faculty for academic careers.
- 2000 University of Michigan College of Engineering **Distinguished Achievement Award**
Awarded for outstanding academic performance in the Department of Civil & Environmental Engineering at the University of Michigan
- 1999 American Society for Engineering Education, University of Michigan Student Chapter **Outstanding Student Instructor Award - Honorable Mention**
Awarded for outstanding teaching as a graduate student instructor for CEE428 Introduction to Groundwater Hydrology
- 1979 - 1983 **National Merit Scholarship**, Michigan State University
- 1979 **Class Salutatorian**, Dwight D. Eisenhower High School, Washington, Michigan

Research Funding

- *A Workshop for Integrative and Sustainable Food, Energy, and Water in Transitioning Urban Landscapes* (Funding Source: National Science Foundation Environmental Sustainability Program, Award 1541869; PI: Carol Miller (WSU Civil & Environ. Eng.), L.D. Lemke role: Co-PI; Jul 2015 - Dec 2015; \$29K)
- *USDA NLGCA Grant: “An Integrated Approach to Ensuring Food Safety and Sustainability in Urban Agriculture in the Greater Detroit Area”* (Funding Source: U.S. Dept. of Agriculture - Capacity Building Grants for Non Land Grant Colleges of Agriculture Program; PI: Yifan Zhang, L.D. Lemke role: Co-PI; May 2015 - Apr 2018; \$293K)
- *NIEHS Small Business Innovation Research (SBIR) Grant: “Geostatistical software for space-time interpolation and uncertainty modeling”* (Funding Source: National Institute of Environmental Health Sciences; PI: Pierre Goovaerts (Biomedware, Inc.), L.D. Lemke role: Co-I; 3/2013-2/2015; \$109K)
- *WSU Perinatology Virtual Discovery Grant: “Geospatial Analyses of Air Pollution and Adverse Birth Outcomes in Detroit” Funding Source* (Funding Source: W.K. Kellogg Foundation; PI: John Reiners, Jr., L.D. Lemke role: Co-PI; Aug 2012-Feb 2014; \$125K)
- *NIEHS Small Business Innovation Research (SBIR) Grant “Geostatistical software for space-time interpolation and uncertainty modeling”* (Funding Source: National Institute of Environmental Health Sciences; PI: Pierre Goovaerts (Biomedware, Inc.), L.D. Lemke role: Co-I; 3/2013-2/2015; \$109K)
- *WSU FY2013 Graduate Research Assistant Competition “Quantifying the Risks of Soil Lead in Urban Community Gardens: Sampling to Account for Spatial Variability of Total and Bioaccessible Lead”* (Funding Source: WSU OVPR and Graduate School; PI: L.D. Lemke, Aug 2012-Aug 2013; one year support for a graduate research assistant ~\$36K)
- *INPHAASE: “Health Outcomes of Environmental Exposure to Airborne Metals: a GeoDHOC Project”* (Funding Agency: Institute for Population Studies, Health Assessment, Administration, Services and Economics; PI: Helene Krouse (WSU Nursing), L.D. Lemke role: Co-PI; Jul 2010-Jun 2012; \$75K)
- *NSF CAREER Grant: “CAREER: Integrating Research, Education, and Heterogeneity into Groundwater Models of Glaciated Urban Areas”* (Funding Agency: National Science Foundation; PI: Lawrence D. Lemke; Sept 2008 – Sept 2012, \$333K)
- *President’s Research Enhancement Program to support Clinical and Translational Science in Urban Health: “Linking Geospatial Information with Public Health Outcomes: Modeling Asthma Morbidity Across an Urban International Border”* (Funding Agency: Wayne State Univ.; PI: Linda Weglicki, L.D. Lemke role: Co-I; May 2008-October 2009; \$319K)

Research in Progress

- Investigating evidence for natural attenuation of 1,4-dioxane in the glacial aquifer system beneath Ann Arbor, Michigan (with EES doctoral student Leah Jackson)
- Spatial and temporal variability of airborne contaminants in metropolitan Detroit and Windsor (with collaborative GeoDHOC investigators at the Univ. of Windsor and Health Canada)
- Spatial variability of trace metals in urban community garden soils (with CMU undergraduate students Sadie Huggler and Bridget Bittmann).
- Correlation of spatially and temporally variable intra-urban air contaminants with adverse birth outcomes in the Detroit airshed (with John Reiners Jr. and Gianluca Sperone, Wayne State University; Lois Lamerato, Andrea Cassidy, and Charlotte Burmeister, Henry Ford Health System, Maureen Mathieu, Hutzel Women’s Hospital, Pierre Goovaerts, Biomedware Inc.)

University Research Experience

- 8/03 – present **Hydrogeology/Groundwater Contaminant Fate and Transport** – Wayne State University, Central Michigan University
Applied and theoretical studies of single- and multiphase flow and contaminant transport using alternative spatial variability models for glacial sedimentary aquifers. Application of sequence stratigraphic concepts to continental glacial aquifer systems.
Sponsors: National Science Foundation, Michigan Dept. of Environmental Quality (MDEQ), D.O.D. Strategic Environmental Research Development Program (SERDP), Wayne State Univ
- 8/08 – present **Air Pollution** – Wayne State University, Central Michigan University
Spatial and temporal modeling of airborne contaminant distributions in Detroit and Windsor urban areas. Correlation of air quality with asthma and adverse birth outcomes.
Sponsors: Institute for Population Studies, Health Assessment, Administration, Services and Economics (INPHAASE), Wayne State University, University of Windsor, W.K. Kellogg Foundation, Perinatology Virtual Discovery Grant, National Institutes of Environmental Health Sciences Small Business Innovation Research (SBIR) grant
- 8/12 – present **Soil Contamination** – Wayne State University, Central Michigan University
Characterization and risk assessment of soil lead contamination in urban community gardens, Detroit, Michigan.
Sponsors: Wayne State University, Research Internships for a Sustainable Environment with Undergraduate Participation (RISEUP) Program, US Department of Agriculture, Capacity Building Grants for Non Land Grant Colleges of Agriculture Program, Center for Urban Responses to Environmental Stressors
- 5/02 – 8/03 **Ph.D. Dissertation Research** - Director: Linda Abriola
Simulated single- and multiphase groundwater contaminant transport including micellar solubilization of entrapped and pooled DNAPL with alternative aquifer spatial variability models.
Sponsors: University of Michigan Rackham School of Graduate Studies, D.O.D. Strategic Environmental Research Development Program (SERDP).
- 1/00 – 04/02 **Graduate Student Research Assistant** - Director: Linda Abriola
Developed alternative models of spatially varying aquifer properties for the Bachman Road Site in Oscoda, Michigan. Two-dimensional DNAPL infiltration and entrapment modeling using alternative aquifer models.
Sponsors: U.S. Environmental Protection Agency, Michigan D.E.Q.
- 1/99 – 8/99 **Graduate Student Research Assistant** - Director: Linda Abriola
Performed Site characterization and groundwater modeling in support of Surfactant Enhanced Aquifer Remediation (SEAR) pilot test project.
Sponsors: Great Lakes Mid-Atlantic Center for Hazardous Substance Research, Michigan Department of Environmental Quality.

Doctoral Students Advised

Leah Jackson – *Central Michigan University Earth and Ecosystem Science Program doctoral student (August 2017-present)*

Completed M.S. Theses Directed

Joseph Cypher – *Hydrogeologic Modeling of a 1,4-Dioxane Plume in a Glacial Aquifer System; Washtenaw County, Michigan (December 2008)*

Shannon Molaroni – *Modeling Ambient Air Quality in the Detroit-Windsor Airshed (December 2010)*

Andrew Frahm – *Deterministic Hydrostratigraphic Modeling of a Glacial Aquifer System, Washtenaw County, Michigan (December 2011)*

Lauren Bugdalski – *Quantifying the Risks of Soil Lead in Urban Community Gardens: Sampling to Account for Spatial Variability* (July 2013)

Brendan O’Leary – *Spatiotemporal Variability and Influence of Intra-Urban Air Contaminant Outliers in the Detroit-Windsor Airshed* (July 2014)

Mary Carnegie – *Inference of Hydrogeological Conditions and Source History of Groundwater Contaminants Using 3-D Modeling and Human Health Risk* (April 2015)

Amanda Pruehs – *Modeling Bedrock Transmissivity; Implications for Contaminant Transport in an Overlying Glacial Aquifer* (June 2016)

Roozbeh Ravansari – *Portable X-Ray Fluorescence Measurement Viability in Organic Rich Soils: pXRF Response as a Function of Organic Matter Presence* (July 2016)

Lena Pappas – *Integration of Deterministic and Stochastic Models in a 1,4-Dioxane Contaminated Glacial Aquifer System, Washtenaw Co., Michigan* (August 2016)

Undergraduate Student Mentorship

2017-present Soil and Groundwater Contamination Research

Mentored five undergraduates in groundwater aquifer and pXRF soil analysis: Sadie Huggler, Bridget Bittmann, Kammie Hauger, Caitlin Bristol, Sean Knipp

2015-2016 NLGCA Urban Ag Soil Sampling Project

Trained and supervised eleven undergraduate research assistants for the Summer 2015 and Summer 2016 Soil and Vegetable sampling and analysis project: David Wilson, Stefan Czarnecki, Gagan Dhillon, Megan Carillo, Shajada Shaki, Ross Wine, Sara Pickard (Wayne State); Megan Arthur, Elizabeth Raduc, Rael Graham (Oakland Univ); Brett Zuener (Eastern Michigan Univ)

2015 RISEUP REU Program Undergraduate Research Mentor

Brett Zuener (Eastern Michigan University); Project: *Perceptions of Bio-physical and Socio-political Urban Agricultural Land Issues among Community Garden Managers in Southeast Michigan*

2014 RISEUP REU Program Undergraduate Research Mentor

JenAi Quan (Calvin College); Project: *Small Scale Variability of Metals in an Urban Garden*

2011-12 Undergraduate Research Supervisor

Directed and advised six undergraduate research assistants working on my NSF CAREER project involving 1,4 dioxane transport through a glacial groundwater aquifer system in Ann Arbor, Michigan: Madelyn Tucker, Laura Krzeczkowski, Steven Gougherty, Jennifer Fugaban, Arend Meijer, Eric Chodoroff.

2011 WSU Undergraduate Research Program Mentor

Lauren Bugdalski; Project: *Spatial Variation of Soil Lead in an Urban Community Garden*

2010-11 Undergraduate Research Supervisor

Directed and advised five undergraduate research assistants working on my NSF CAREER project involving 1,4 dioxane transport through a glacial groundwater aquifer system in Ann Arbor, Michigan: Karen Van Teim, Ira Adolphues, Madelyn Tucker, Laura Krzeczkowski, and Steven Gougherty.

2009 GeoDHOC Detroit Air Sampling Project

Trained and supervised thirteen undergraduate research assistants for the June 2009 deployment: Carrie Addis, Lee Copp, LeAnn Germer, Carmen Hill, Becky Jackson,

Jessica Miskena, John Niedermiller, Kristina Revels, Andrew Robinson, Joseph Swift, Joline Tripoli, Madelyn Tucker, Jane Zeggars

2009 WSU Undergraduate Research Program Mentor (2 students)

Karen Van Tiem; Project: *Linking Texture and Gamma Ray Log Response in Glacial Sediments of Southeast Michigan*

Janelle Sherman; Project: *Stratigraphic Characterization of a DNAPL Contaminated Aquifer*

2008 GeoDHOC Detroit Air Sampling Project

Trained and supervised fourteen undergraduate research assistants for the September 2008 deployment: Carrie Addis, Lee Copp, Colette Czarnecki, LeAnn Germer, Carmen Hill, Becky Jackson, Jessica Miskena, Nick Morelli, John Niedermiller, Amanda Pruehs, Joseph Swift, Madelyn Tucker, Karen Van Tiem, Jane Zeggars

2008 WSU MI-LSAMP Undergraduate Research Mentor

Ira Adolphues; Project: *Natural Gamma Radiation as a Function of Glacial Sediment Texture*

2007 WSU Undergraduate Research Program Mentor

Christopher Bobryk; Project: *Variation and Functionality of Hyporheic Zone Physical and Chemical Characteristics*

2007 WSU Undergraduate Research Program Mentor

Ira Adolphues; Project: *Investigating Mineralogy and Gamma Ray Log Response in Glacial Sediments*

2006 WSU McNair Scholars Program Mentor

Carmen Hill; Project: *Evaluating Airborne Mn, Ni, and Zn Contamination in the Detroit Metropolitan Area*

2005 WSU Undergraduate Research Program Mentor

Sandra Camilleri; Project: *Stochastic modeling of solute breakthrough curves in an unconsolidated sand aquifer*

University Teaching Experience

8/16 – pres. **Professor** - Central Michigan University:
GEL 100 Introduction to Earth Systems
GEL 240 Stratigraphy and Sedimentation
GEL 370 Structural Geology
GEL 380 Hydrogeology
GEL 420 Applied Geostatistics

1/03 – 8/16 **Associate Professor** - Wayne State University:
GEL 1000 Environmental Geology
GEL 1010 Physical Geology
GEL 3100 Environmental Systems Analysis
GEL 3300 Structural Geology (team taught)
GEL 3400 Sedimentology and Stratigraphy
GEL 5000 Geological Site Assessment
GEL 5450 Hydrogeology
GEL 6500 Economic Geology (team taught)

9/01 - 12/02 **GSI Mentor** - University of Michigan, College of Engineering
Provided training, observation, evaluation, guidance, and practical advice to 25-30 new and continuing graduate student instructors each semester.

Course or Curriculum Development (Wayne State University)

GEL 1000 – Environmental Geology: Lecture/Laboratory/Field Trip
GEL 1010 – Lecture
GEL 1010 – Lab Manual Revision
GEL 3100 – Environmental Systems Analysis: Lecture/Lab/Field Trip
GEL 3300 – Structural Geology: Lecture/Laboratory/Field Trip
GEL 3400 – Principles of Sedimentation and Stratigraphy: Lecture/Laboratory/Field Trip
GEL 4400 – 40-hour HAZWOPER Training and Certification (w/ Wally Pociask, trainer)
GEL 5000 – Geological Site Assessment: Lecture/Term Simulation
GEL 5450 – Hydrogeology: Lecture/Laboratory/Field Trip
GEL 6500 – Economic Geology: Lecture/Laboratory/Term Simulation/Field Trip

9/98 - 12/98 **Graduate Student Instructor** - University of Michigan, University of Arizona

9/99 - 12/99 CEE 428 Introduction to Groundwater Hydrology

8/84 - 5/85 GEOS 302 Principles of Stratigraphy and Sedimentation
GEOS 584 Sedimentary Basin Analysis
Laboratory preparation, instruction and grading for graduate and undergraduate students. Developed a term-long groundwater modeling project based on publicly available data from a local groundwater contamination site.

3/80 - 3/81 **Undergraduate Teaching Assistant** – Michigan State University: COM 115 Oral Communication (Communication Individual Honors Project for 3 quarters)
Taught and critiqued the elements of public speaking as part of a team of 9 undergraduate teaching assistants.

Professional Memberships and Service Activities

American Association of Petroleum Geologists, 1981-present
Geological Society of America, 1988-present
National Ground Water Association, 1999- present
American Geophysical Union, 2001-present
International Association of Hydrological Sciences, 2002- present
National Association of Geoscience Teachers, 2007-present
Association of Engineering Geologists, 2004-2010
International Association for Great Lakes Research, 2014-present

2001-present Reviewer: *Reviewed articles for*

American Association of Petroleum Geologists, Environmental Pollution, Environmental Science & Technology, Geological Society of America, Geosphere, Ground Water, Hydrogeology Journal, Integrated Environmental Assessment and Management, International Journal of Environmental Analytical Chemistry, International Journal of Environmental Research and Public Health, Journal of Contaminant Hydrology, Journal of American Water Resources Association, Mathematical Geosciences, Risk Analysis, Science of the Total Environment, Sedimentology, Stochastic Environmental Research and Risk Assessment, Waste Management, Water Resources Research, Vadose Zone Journal.

Reviewed research proposals for National Science Foundation, ACS Petroleum Research Fund, U.S. Department of Defense Strategic Environmental Research and Development Program (SERDP), WSU President's Research Enhancement Program in Sustainable Water Management and Water Technology; University of Michigan Water Center Great Lakes Restoration Program; Deutsche Forschungsgemeinschaft (DFG); and WSU Undergraduate Research Grant Program. NSF Hydrogeology Panel Review.

- 2003-2016 Hydrogeology Consultant: *Michigan Department of Environmental Quality Technical Review Committee evaluating remediation plans for the Pall Life Sciences 1,4-dioxane site in Ann Arbor, Michigan (pro bono).*
- 2004 Hydrogeology Consultant: *EPA –Sponsored Technical Outreach Services for Communities (TOSC) Hydrogeology Specialist for Pall Life Sciences 1,4-dioxane site in Ann Arbor, Michigan (pro bono).*
- 5/99 – 5/02 University of Michigan EWRE Graduate Seminar Committee Chair/Co-chair: *Led a team of graduate students who organized a distinguished lecture series of 12-14 speakers per year. Oversaw fund raising, invitations, publicity, and seminar logistics.*

Professional Consulting Activities

- 2017-present Hydrogeologic Consultant for City of Ann Arbor, Washtenaw County, Scio Township, and Huron River Watershed Council. *1,4-Dioxane Groundwater Contamination.*
- 2012 Expert Witness: MDEQ v Engineering Tube Specialties, Inc., and Myron Investments, LLC Ingham County Circuit Court File No. 11-1157-CE. *Evaluation of groundwater contamination sources and impacts in Mill Street Residential Area, Ortonville, MI.*
- 2009 Expert Witness: Milford Downtown Development Authority and Michigan Department of Environmental Quality v. J & S Company, G/CSC, LTD., and BP Products North America, Inc. File No. 07-083146-CH. *Assessment of Groundwater Contamination from Two Former Gasoline Stations in the Village of Milford, Oakland County, Michigan*
- 2008 Arbitrator: Carl. M. Schultz v. Federated Mutual Insurance Co. Case No. 07-CV-14864. *Evaluation of free product and release history in connection with remediation of environmental contamination at a site in Ortonville, Michigan.*
- 2006 Geologic Consultant: Dianor Resources, Inc. Leadbetter Diamond Project, Wawa, Ontario. *Stratigraphic and Sedimentologic Field Observations; Leadbetter Property, Chabanel Township, Ontario.*
- 2005 Hydrogeology Consultant: Hands & Associates, Inc. Project 10295. *Groundwater Flow and Contaminant Transport Modeling: Former Coe's Cleaners Site, Milford, Michigan.*
- 2005 Hydrogeology Consultant: Hands & Associates, Inc. Project No. 10295. *Monitoring Network Performance Evaluation: Former Coe's Cleaners Site, Milford, Michigan.*

Refereed Publications *denotes student coauthors

- Miller, L., X. Xu, **L.D. Lemke**, and A. Wheeler, 2019, Interannual variation of air quality across an international airshed in Detroit (USA) and Windsor (Canada): A comparison of two sampling campaigns in both cities, *Atmospheric Environment*, 198:417-426.
- Ravansari*, R. and **L.D. Lemke**, 2018, Portable X-ray fluorescence trace metal measurement in organic rich soils: pXRF response as a function of organic matter fraction, *Geoderma*, 573:55-65, <https://doi.org/10.1016/j.geoderma.2018.01.011>.
- O'Leary*, B.F., J. Reiners Jr., X. Xu, and **L.D. Lemke**, 2016, Identification and influence of spatio-temporal outliers in urban air quality measurements, *Science of the Total Environment*, 319:175-184, doi.org/10.1016/j.scitotenv.2016.08.031.
- Treemore-Spears, L.J., J. M. Grove, C. K. Harris, **L.D. Lemke**, C. J. Miller, K. Pothukuchi, Y. Zhang, and Y. L. Zhang, 2016, A workshop on transitioning cities at the food-energy-water nexus, *Journal of Environmental Studies and Sciences*, 6(1):90-103 DOI: 10.1007/s13412-016-0381-x.
- O'Leary*, B.F. and **L.D. Lemke**, 2014, Modeling Spatiotemporal Variability of Intra-Urban Air Pollutants in Detroit: A Pragmatic Approach, *Atmospheric Environment*, 94:417-427, DOI: 10.1016/j.atmosenv.2014.05.010.

- Bugdalski*, L., **L.D. Lemke**, and S.P. McElmurry, 2014, Spatial Variation of Soil Lead in an Urban Community Garden: Implications for Risk-Based Sampling, *Risk Analysis*, 34(1):17-27, published online 24 April 2013, DOI: 10.1111/risa.12053.
- Bower, P., R. Kelsey, B. Bennington, **L.D. Lemke**, J. Liddicoat, B.S. Miccio, A. Lampousis, D.M. Thompson, B.G. Seewald, A. D. Kney, T. Graham, S. Datta, 2014, Brownfield Action: Dissemination of a SENCER Model Curriculum and the Creation of a Collaborative STEM Education Network, *Science Education and Civic Engagement*, 6(1) 5-22.
- Lemke, L.D.**, L.E. Lamerato, X. Xu, J.C. Booza, J. Reiners Jr., D.M. Raymond III, P.J. Villeneuve, E. Lavigne, D. Larkin, and H.J. Krouse, 2014, Geospatial relationships of air pollution and asthma morbidity across the Detroit-Windsor international border: Study design and preliminary results, *Journal of Exposure Science and Environmental Epidemiology*, 24:346–357, pub. online 13 Nov 2013, doi:10.1038/jes.2013.78.
- Miller*, L., **L.D. Lemke**, X. Xu, S.M. Molaroni*, H. You, A. Wheeler, J. Booza, A. Grgicak-Mannion, R. Krajenta, P. Graniero, H. Krouse, L. Lamerato, D. Raymond, J. Reiners, Jr., and L. Weglicki, 2010, Intra-urban correlation and spatial variability of air toxics across an International Airshed in Detroit, MI (USA) and Windsor, ON (Canada), *Atmospheric Environment*, published online Jan 29, 2010, DOI: 10.1016/j.atmosenv.2009.12.030.
- Lemke, L.D.** and J.A. Cypher*, 2010, Postaudit evaluation of conceptual model uncertainty for a glacial aquifer groundwater flow and transport model, *Hydrogeology Journal*, published online Jan 9, 2010, DOI: 10.1007/s10040-009-0554-8.
- Cypher*, J.A. and **L. D. Lemke**, 2009, Multiple Working Transport Hypotheses in a Heterogeneous Glacial Aquifer System, *Ground Water Monitoring & Remediation*, 29(3) 105-119, doi: 10.1111/j.1745-6592.2009.01245.x.
- Christ, J.A., **L.D. Lemke**, and L.M. Abriola, 2009, Comparison of two- and three-dimensional simulations of dense non-aqueous phase liquids (DNAPL): Mass removal in nonuniform permeability fields, *Advances in Water Resources*, 32(3) 401-412, doi:10.1016/j.advwatres.2008.12.002.
- Lemke, L.D.** and A.S. Bahrou*, 2009, Partitioned multiobjective risk modeling of carcinogenic compounds in groundwater, *Stochastic Environmental Research and Risk Assessment (SERRA)*, 23(1) 27-39 – published online Oct 17, 2007, DOI: 10.1007/s00477-007-0192-4.
- Lemke, L.D.** and L.M. Abriola, 2006, Modeling dense nonaqueous phase liquid mass removal in nonuniform formations: Linking source zone architecture and system response, *Geosphere* 2(2) 74-82, DOI: 10.1130/GES00025.1.
- Abriola, L.M., C.D. Drummond, E.J. Hahn, K.F. Hayes, T.C.G. Kibbey, **L.D. Lemke**, K.D. Pennell, E.A. Petrovskis, C.A. Ramsburg, and K.M. Rathfelder, 2005, A pilot-scale demonstration of surfactant-enhanced PCE solubilization at the Bachman Road site: (1) Site characterization and test design, *Environmental Science and Technology* 39(6) 1978-1990, DOI: 10.1021/es049563r.
- Christ, J.A., **L.D. Lemke**, and L.M. Abriola, 2005, Comparison of two- and three-dimensional simulations of dense non-aqueous phase liquid (DNAPL) migration and entrapment in a nonuniform permeability field, *Water Resources Research* 41(1), W01007, doi:10.1029/2004WR003239.
- Lemke, L.D.**, L.M. Abriola, and J.R. Lang, 2004, Influence of Hydraulic Property Correlation on Predicted DNAPL Source Zone Architecture, Mass Recovery and Contaminant Flux, *Water Resources Research*. 40(12) W12417, doi: 10.1029/2004WR003061.
- Lemke, L.D.**, W.A. Barrack*, L.M. Abriola, and P. Goovaerts, 2004, Matching solute breakthrough with deterministic and stochastic aquifer models, *Ground Water* 42(6) 920-934.
- Lemke, L.D.**, L.M. Abriola, and P. Goovaerts, 2004, DNAPL source zone characterization: Influence of hydraulic property correlation on predictions of DNAPL infiltration and entrapment, *Water Resources Research*. 40(1) W01511, doi: 10.1029/2003WR001980.
- Phelan, T.J., **L.D. Lemke**, S.A. Bradford, D.M. O'Carroll, and L.M. Abriola, 2004, Influence of textural and wettability variations on predictions of DNAPL persistence and plume development in saturated porous media, *Advances in Water Resources*. 27(4) 411-427, doi: 10.1016/j.advwatres.2004.02.011.
- Lemke, L.D.**, and L.M. Abriola, 2003, Predicting DNAPL entrapment and recovery: the influence of hydraulic property correlation, *Stochastic Environmental Research and Risk Assessment*. 17(6) 408-418, doi: 10.1007/s00477-003-0162-4.

- Abriola, L.M. and **L.D. Lemke**, 2003, The influence of hydraulic property correlation on predictions of DNAPL entrapment and recovery, p. 3-9 *in*, K. Kovar and Z. Hrkal, eds., Calibration and Reliability in Groundwater Modelling: A Few Steps Closer to Reality; ModelCare 2002: 4th International Conference on Calibration and Reliability in Groundwater Modelling Proceedings; Prague, Czech Republic, 17-20 June 2002, IAHS Publication 277.
- DeCelles, P.G., **et al.**, 1987, Laramide thrust-generated alluvial-fan sedimentation, Sphinx Conglomerate, southwestern Montana, *AAPG Bulletin*. 71(2) 135-155.
- Graham, S.A., **et al.**, 1986, Provenance modeling as a technique for analyzing source terrane evolution and controls on foreland sedimentation, Special Publication of the International Association of Sedimentologists No. 8; 425-436.

Total Citations as of January 21, 2019: 399 (Web of Science), 621 (ResearchGate), 772 (Google Scholar)

Conference Proceedings

* denotes research project results with student investigators

- Lemke, L.D.**, A.L.*Frahm, and L.K. *Pappas, 2013, Hybrid deterministic and stochastic hydrostratigraphic modeling of a complex glacial aquifer system [invited presentation and extended abstract]; Three-Dimensional Geologic Mapping Workshop, Geological Society of America National Meeting, Oct 26, 2013; *Minnesota Geological Survey Open File Report*, OFR-13-2, p. 53-57.
- Lemke, L.D.**, and J.A. Cypher*, 2006, Use of Alternative Conceptual Geologic Models to Evaluate Contaminant Transport Modeling Uncertainty in a Glacial Aquifer System, in E. Poeter, M. Hill, and C. Zheng, eds., Proceedings of MODFLOW and More 2006: Managing Ground-Water Systems, Golden, CO, May 21-24, 2006, p. 41-46.
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Note: *On the Cutting Edge* review criteria include scientific accuracy; alignment of learning goals, activities and assessments; pedagogic effectiveness; robustness (usability and dependability of all resource components); and completeness of the associated Activity Sheets that provide contextual information to guide the effective use of the activity. "Exemplary" status is awarded to only 10-20% of the teaching activities in the collection. The review instrument and associated scoring rubric can be found at:

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- *Adolphues, I. R., and **L. D. Lemke**, 2007, Investigating mineralogy and gamma ray log response in glacial sediments; Abstracts with Programs - Geological Society of America *Abstracts with Programs* 39(6) p. 309.
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- *Camilleri, S. and **L. D. Lemke**, 2005, Screening stochastic aquifer realizations using advective particle tracking metrics [abstr.], *Abstracts with Programs - Geological Society of America*, 37(7), 505.
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Presentations

- Lemke, L.D.**, 2018, Deterministic Models and Stochastic Methods: Predicting 1,4-Dioxane Migration Through a Glacial Aquifer System [invited presentation], Eastern Michigan University; 20 Nov 2018.
- Lemke, L.D.**, 2018, Prediction of 1,4-Dioxane Migration through Glacial Sediments using Integrated Deterministic Models and Stochastic Methods [invited presentation], American Institute of Professional Geologists (AIPG) Michigan Section 8th Annual Workshop; Emerging Contaminants and Pathways: A New Paradigm, 13 June 2018.
- Lemke, L.D.**, 2017, 1,4-Dioxane beneath Ann Arbor, Michigan: Investigating Groundwater Contamination in a Complex Glacial Aquifer System [invited presentation], Michigan Occupational and Environmental Medicine Association (MOEMA) 92nd Annual Scientific Meeting; Petoskey, MI, 7 October 2017.
- Lemke, L.D.**, 2017, Hands-on Lecturing, Active Learning Speed Dating Workshop, Central Michigan University; 20 January 2017.
- Lemke, L.D.**, 2016, What's all the Fracas about Fracking? Probing the Controversy over Hydraulic Fracturing [invited presentation], Grand Valley State University, 11 October 2016.
- Lemke, L.D.**, 2016, 1,4-Dioxane beneath Ann Arbor, Michigan: How Conceptual Models Shape our Response to Groundwater Contamination in Glacial Aquifer Systems [invited presentation], Grand Valley State University Dept. of Geology; 11 October 2016.
- Lemke, L.D.**, 2016, 1,4-Dioxane beneath Ann Arbor, Michigan: How Conceptual Models Shape our Response to Groundwater Contamination in Glacial Aquifer Systems [invited presentation], Michigan State University Dept. of Civil and Environmental Engineering; 15 April 2016.
- Lemke, L.D.**, 2016, Variability of Lead and Other Trace Metals in Detroit Area Community Garden Soils [invited presentation], Wayne State University Detroit Lead Partnership Meeting; 29 Jan 2016.
- Lemke, L.D.**, 2015, 1,4-Dioxane beneath Ann Arbor, Michigan: How Conceptual Models Shape our Response to Groundwater Contamination in Glacial Aquifer Systems [invited presentation], Central Michigan University Dept. of Earth and Atmospheric Sciences; 24 Nov 2015.
- Lemke, L.D.**, 2015, Urban Air Quality and Health: Environmental Science meets Environmental Justice in Detroit and Windsor [invited presentation], Wayne State University Physiology Department – RISEUP Symposium; 25 June 2015.
- Lemke, L.D.**, 2015, Engaging Students in the Assessment Process [invited presentation], Wayne State University Department of Psychology - Large Lecture Discussion; 15 May 2015.
- Lemke, L.D.**, 2015, Engaging Undergraduate Students and Stimulating Departmental Change [invited pres.], Wayne State University Teaching Innovations Luncheon; 15 April 2015.

- Lemke, L.D.**, 2014, Integration of Spatial and Temporal Air Quality Measurements in Detroit, Michigan [invited presentation], USEPA/MDEQ Air Monitoring Workshop: Understanding Air Data in Detroit; USFDA office, Detroit MI, 10 Dec 2014.
- Lemke, L.D.**, 2014, Linking Urban Air Quality to Health across the Detroit-Windsor International Border [invited presentation], Center for Urban Responses to Environmental Stressors (CURES) Environmental Health Chat: Everyday Toxics and our Health; Focus Hope, Detroit MI, 19 Nov 2014.
- Lemke, L.D.**, 2014, A Cohort Model for Undergraduate Research: Measuring and Multiplying the Benefits of Undergrad Research [invited presentation], WSU Office for Teaching and Learning (OTL)/Widening Implementation & Demonstration of Evidence-Based Reforms (WIDER), 2014 Undergraduate Research and Creative Projects Week, 13 Nov 2014.
- Lemke, L.D.**, 2014, Investigating 1,4-Dioxane Migration Beneath Ann Arbor, Michigan: Glacial Stratigraphy, Geostatistics, and Contaminant Transport [invited pres.], Univ of Michigan, Dept. of Earth and Environmental Sciences, Ann Arbor, MI, 11 Nov 2014.
- Lemke, L.D.**, 2014, Urban Air Quality and Health: Environmental Science meets Environmental Justice in Detroit and Windsor [invited pres.], RISEUP Symposium, WSU, 25 June 2014.
- Lemke, L.D.**, 2014, Phase 2 Environmental Site Assessment: Adapting Brownfield Action to incorporate ASTM E1903-11 [invited presentation], Brownfield Action Seminar, Barnard College/Columbia University, New York, 19 April 2014.
- Lemke, L.D.**, 2014, Geology and Environmental Science Program Assessment [invited presentation], CLAS/OTL Setting and Advancing Program Goals Workshop, 17 April 2014.
- Lemke, L.D.**, 2014, Linking Urban Air Quality to Health across the Detroit-Windsor International Border: A Five-Year Summary of the GeoDHOC Project [invited presentation], WSU Faculty Symposium: Research/Urbanism/Excellence, 4 April 2014.
- Lemke, L.D.**, 2014, Hybrid deterministic and stochastic hydrostratigraphic modeling of a complex glacial aquifer system [invited presentation and webinar], Geological Survey of Canada / Commission géologique du Canada; Ottawa, Ontario, 14 March 2014.
- Lemke, L.D.**, 2013, GeoDHOC Air Quality and Health Investigations in Detroit and Windsor [invited pres.], Institute of Environmental Health Sciences (IEHS) / Center for Urban Responses to Environmental Stressors (CURES) Seminar Series, Eugene Applebaum College of Pharmacy, Detroit, MI, November 21, 2013.
- Lemke, L.D.**, 2013, A Cohort Model for Undergraduate Research: Measuring and Multiplying the Benefits of Undergrad Research Engagement [invited lecture], Wayne State University Office for Teaching and Learning, 2013 Undergraduate Research and Creative Projects Week, Detroit, MI November 14, 2013.
- Lemke, L.D.**, 2013, The Fracas Over Fracking: Dissecting the Controversy over Hydraulic Fracturing [invited lecture], Michigan Mineralogical Society Gem, Mineral, Fossil & Jewelry Show, Macomb County Community College, Warren, MI October 13, 2013
- Lemke, L.D.**, 2013, Groundwater Fundamentals: Know It and Show It [invited lecture], Michigan Alliance of Environmental and Outdoor Education (MAEOE) and Michigan Earth Science Teacher Association (MESTA) Conference, Belle Isle, Detroit, MI October 5, 2013.
- Lemke, L.D.**, 2013, What to expect and how to succeed at WSU: A professor's perspective and advice to incoming freshmen; [invited presentation] New Student Convocation keynote address, Wayne State University, Detroit, MI, Aug 27, 2013.
- Lemke, L.D.**, 2013, Linking urban air quality to health – undergraduate student engagement in investigations across the Detroit-Windsor international boundary; [invited pres.] Integrating Geoscience into Sustainability through Scientific Research and Learning - Association for Environmental Studies and Sciences Conference, Pittsburgh, PA, June 22, 2013.
- Lemke, L.D.**, 2013, Linking Air Pollution to Health Outcomes in Detroit and Windsor: The Importance of Collaboration and Teamwork in Science; [keynote address] 49th Annual Southeastern Michigan Junior Science and Humanities Symposium, Wayne State University, Detroit, MI, Mar 28, 2013.
- Lemke, L.D.**, 2013, What's all the Fracas about Fracking? Assessing the Risks and Benefits of Unconventional Oil and Gas Development; [invited presentation] Wayne State University Science Under the Dome Seminar Series, Department of Physics, March 1, 2013.

- Lemke, L.D.**, 2012, Urban Environmental Excursions: Designing field trips to demonstrate sustainable connections between natural and engineered systems in urban environments; [invited pres.], American Geophysical Union Fall Meeting; Teaching About Sustainability, December 7, 2012.
- Lemke, L.D.**, 2012, Careers and Research in the Physical and Life Sciences: How I became a geologist and environmental engineer, [guest lecture] ORI 950 Orientation: Charting your path, Oct 10, 2012.
- Lemke, L.D.**, 2012, What's all the frac about fracking? [invited presentation], Earth and Environmental Science Seminar Series (E²S³), Wayne State University Dept. of Geology, September 26, 2012.
- Lemke, L.D.**, 2012, The Risks and Benefits of Hydraulic Fracturing – A Pragmatic Assessment; Michigan Mineralogical Society [invited presentation], Cranbrook Institute of Science, Bloomfield Hills, MI, September 10, 2012.
- Lemke, L.D.**, 2012, Using Brownfield Action – A virtual tool for Environmental Site Assessment [invited presentation], Teaching Environmental Geology; NSF Cutting Edge Workshop, Session: Case Studies I -- Sessions introducing the *SCIENCE* that underlies the topic. Montana State Univ., June 3, 2012.
- Lemke, L.D.**, 2012, Engaging urban students and underrepresented minorities [invited pres.], Teaching Environmental Geology; NSF Cutting Edge Workshop, Session: Cross-cutting Issues in Teaching Environmental Geology I: Pedagogic Issues and Strategies. Montana State Univ., June 3, 2012.
- Lemke, L.D.**, 2012, How to Succeed and What to Expect at Wayne State: A Professor's Perspective [invited pres.], Wayne State University Freshmen Orientation –Faculty 'Lecture' to Incoming Freshmen; May 23, June 15, July 11, and July 13, 2012.
- Lemke, L.D.**, 2012, Reservoir simulation in a channelized fluvial environment: Incorporating fracture effects [guest lecture], GEL3300 Structural Geology, Wayne State University, Mar 22, 2012.
- Lemke, L.D.**, 2012, Confronting the legacy of groundwater contamination beneath Ann Arbor, Michigan: The role of groundwater models in managing a complex glacial aquifer system [invited pres.], Wayne State University Water@Wayne Seminar Series, Mar 8, 2012.
- Lemke, L.D.**, 2011, Ambient Airborne Contaminant Variability across the Detroit-Windsor International Border [inv. pres.], Univ. of Michigan Dearborn, Dept. of Natural Sciences Colloquium, Nov 11, 2011.
- Lemke, L.D.**, 2011, Contaminant Transport in Glacial Aquifer Systems: *Conceptualizing and Incorporating Heterogeneity* [guest lecture], GEL5510 Contaminant Fate and Transport, Wayne State University, Sept 13, 2011.
- Rosenberg, D., S. Trimpin, **L.D. Lemke**, M. Cote, and C. Trentacosta, 2011, NIH and NSF career award advice from WSU recipients & reviewers [panel discussion]; Wayne State University Professional and Academic Development Seminar Series, Sept 9, 2011.
- Lemke, L.D.**, 2011, GeoDHOC 2008-2009 Detroit-Windsor Air Sampling Campaigns [invited pres.], City of Detroit Reuse of Urban Sites (REUS) Committee Briefing; Michigan Department of Environmental Quality; Warren, MI, March 23, 2011.
- Lemke, L.D.**, 2011, Evolving Hydrogeologic Models for Glacial Aquifer Systems: *Conceptualizing and Incorporating Heterogeneity* [invited pres.], Western Michigan University Dept. of Earth Sciences Colloquium; March 7, 2011.
- Lemke, L.D.**, 2011, Connecting Earth Sciences and Public Welfare: Applied Research in Groundwater Quality Management [invited pres.], Indiana University-Purdue University at Indianapolis Dept. of Earth Sciences; March 3, 2011.
- Lemke, L.D.**, 2011, Ambient Air Quality in Detroit and Windsor: Sampling Across an Urban International Border [invited pres.], Michigan Department of Natural Resources and Environment, Warren, Michigan; Feb 14, 2011.
- Lemke, L.D.**, 2010, Warrior 2010: Freshman Success! [invited pres.], Wayne State University Freshmen Orientation –Faculty 'Lecture' to Incoming Freshmen; June 14 and Aug 9, 2010.
- Lemke, L.D.**, 2010, Ambient Air Quality Sampling Across an Urban International Border in Detroit and Windsor [invited pres.], Indiana University-Purdue University at Indianapolis Dept. of Earth Sciences Colloquium; April 8, 2010.
- Lemke, L.D.**, 2009, Engaging Students in the Assessment Process [invited pres.], Engaging Students in LARGE Classes, Wayne State University Nov 20, 2009.
- Lemke, L.D.**, 2009, New Orleans Before and After Katrina: A Geologist's Perspective on the Viability of the Crescent City [invited pres.], WSU Year of the Environment Seminar Series, Nov 16, 2009.

- Lemke, L.D.**, 2009, September 2008 Detroit-Windsor Air Sampling Event: Logistics and Preliminary Results [invited presentation], Michigan Department of Public Health; Lansing, MI, Sep 28, 2009.
- Lemke, L.D.**, 2009, Review of the 2008 and 2009 Detroit-Windsor Air Sampling Campaigns [invited presentation], Reuse of Urban Sites (ReUS) Committee Briefing; Detroit Department of Environmental Affairs, Detroit, MI, Apr 29, 2009.
- Lemke, L.D.**, 2009, Earth Day: Environmental Science at Wayne State University [invited pres.], Forum on Contemporary Issues in Society (FOCIS), Apr 22, 2009.
- Lemke, L.D.**, 2009, Ambient Air Quality Sampling Across an Urban International Border in Detroit and Windsor [invited lecture], Earth and Environmental Science Seminar Series, Wayne State University Dept. of Geology, Apr 22, 2009.
- Lemke, L.D.** and W.A. Lemke, 2009, Caring for the Earth: Viewing our Planet through a Spiritual Lens [seminar], Michigan Catholic Young Adult Conf., St. Scholastica Church, Detroit, MI, Mar 28, 2009.
- Lemke, L.D.**, J. Booza, A.Girgcak-Manion, 2008, Linking Geospatial Information with Public Health Outcomes: Modeling [invited presentation], North American Public Health Institute Air Quality and Public Health Forum, Windsor, ON, Nov 10, 2008.
- Lemke, L.D.**, and L. Weglicki, 2008, Overview of the September 2008 Detroit-Windsor Air Sampling Campaign. [invited pres.], Detroit Dept. of Environmental Affairs, Detroit, MI, September 24, 2008.
- Lemke, L.D.**, 2007, The Geology of New Orleans and the Louisiana Gulf Coast: Katrina's Impact on the Crescent City [invited seminar], Central Michigan University Department of Geology Seminar Series, Mt. Pleasant, MI, February 23, 2007.
- Lemke, L.D.**, 2007, Evolving Conceptual Hydrogeologic Models for Complex Glacial Aquifer Systems [invited seminar], University of Akron Department of Geology and Environmental Science Seminar Series, Akron, Ohio, January 26, 2007.
- Lemke, L.D.**, 2006, What is a Watershed? And Why Should We Care? [invited oral presentation], Integrated Michigan Environmental Program (IMEP) kickoff presentation; St. Francis Middle School, Ann Arbor, Michigan, August 29, 2006.
- Lemke, L.D.**, 2006, Katrina's Legacy: Mitigating the Short- and Long-term Vulnerability of New Orleans [invited luncheon speaker], Engineering Society of Detroit 17th Annual Solid Waste Technical Conference, Michigan State University, East Lansing, MI, April 4, 2006.
- Lemke, L.D.**, 2005, Know It and Show It: Groundwater Fundamentals for Secondary Teachers [invited lecture], Metropolitan Detroit Science Teachers Association Fall Conference, Lawrence Tech University, Southfield, MI, October 29, 2005.
- Lemke, L.D.**, 2005, Rebuilding New Orleans: Geologic Vulnerabilities of the Crescent City [invited oral presentation], Impact of Hurricane Katrina – Rebuilding New Orleans: Issues, Challenges, and Opportunities; Wayne State University, Detroit, MI, Sept. 16, 2005.
- Lemke, L.D.**, 2005, New Orleans Sustainability: Geologic Vulnerabilities of the Crescent City [invited oral pres.], CE6270 Sustainable Development Seminar; Wayne State Univ., Detroit, MI, Sep. 9, 2005.
- Lemke, L.D.**, 2005, Mixing oil and water: Reinforcing groundwater concepts through comparisons with petroleum migration, [oral], Teaching Hydrogeology in the 21st Century – NSF Cutting Edge Workshop, University of Nebraska, Lincoln, NE, July 23-28, 2005.
- Lemke, L.D.**, 2005, Spatial Correlation of Physical Aquifer Properties: Influence on DNAPL Entrapment and Recovery [invited seminar], Johns Hopkins University Center for Environmental and Applied Fluid Mechanics Seminar Series, April 15, 2005.
- Lemke, L.D.**, 2005, Evolving Conceptual Hydrogeologic Models for Complex Glacial Aquifer Systems [invited seminar], Wayne State Univ. Earth and Environmental Science Seminar Series, Feb 21, 2005.
- Lemke, L.D.**, 2004, Development of conceptual hydrogeologic models for complex glacial aquifer systems [oral] Assoc. of Engineering Geologists National Conv., Detroit, MI, Sept 26-Oct 2, 2004.
- Lemke, L.D.**, 2004, TOSC Review of PLS's "Final Feasibility Study & Proposed Response for the Unit E Plume" and "DEQ's Proposed Remedial Alternative" [invited oral presentation], Technical Outreach Services for Communities (TOSC) Public Meeting, Scio Township, MI, Aug 4, 2004.
- Lemke, L.D.**, 2004, 1,4-dioxane under Ann Arbor, Michigan: The role of environmental engineers and hydrogeologists in contaminant remediation [invited oral presentation], University of Michigan Dept. of Civil and Environmental Engineering CEE 260, Ann Arbor, MI, Apr 2, 2004.

- Lemke, L.D.**, 2004, 1,4-dioxane in Ann Arbor: Managing the E-plume [invited oral presentation], Technical Outreach Services for Communities (TOSC) Public Meeting, Ann Arbor, MI, Mar 24, 2004.
- Lemke, L.D.**, 2004, Anatomy of a contaminated aquifer system: 1,4-dioxane under Ann Arbor, Michigan; Michigan Mineralogical Society [invited oral presentation], Cranbrook Institute of Science, Bloomfield Hills, MI, Feb 9, 2004.
- Lemke, L.D.**, 2003, 1,4-Dioxane groundwater contamination at the Pall Life Sciences site, Ann Arbor, Michigan; St. Mary's Student Parish Peace and Justice Commission Educational Lecture Series [invited oral presentation], Ann Arbor, MI, Sept 8, 2003.
- Lemke, L.D.**, 2003, DNAPL source zone remediation: Chlorinated solvents in a homogeneous, nonuniform sand aquifer; *National Research Council Committee on Source Removal of Contaminants in the Subsurface* [invited oral presentation], Irvine, CA, Aug 18, 2003.
- Lemke, L.D.**, 2000, When the tail wags the dog: Monte Carlo and partitioned multiobjective risk methods for risk assessment of groundwater contamination [poster], Risk Based Decision Making in Groundwater Resources IX, United Engineering Foundation Conference, Santa Barbara, CA, Oct 15-20, 2000.
- Lemke, L.D.** and L.M. Abriola, 2000, Ground water flow and contaminant transport modeling in glacial aquifers: integration of deterministic and stochastic hydrostratigraphic approaches [poster], SEPM/IAS Research Conference: Hydrogeology of Sedimentary Aquifers, Santa Fe, NM, Sept 24-27, 2000.
- Lemke, L.D.**, E.J. Hahn, C.D. Drummond, K.M. Rathfelder, L.M. Abriola, and P. Goovaerts, 2000, Comparison of sequential Gaussian and sequential indicator geostatistical simulations using three-dimensional flow and transport models in a homogenous, non-uniform aquifer [poster]: Gordon Research Conference (Modeling Flow and Transport in Porous Media), Aug 6-10, 2000.
- Lemke, L.D.**, E.J. Hahn, C.D. Drummond, K.M. Rathfelder, L.M. Abriola, and P. Goovaerts, 2000, Comparison of sequential Gaussian and sequential indicator geostatistical simulations using three-dimensional flow and transport models in a homogenous, non-uniform aquifer [oral]: North American Council on Geostatistics, Annual Meeting, Aug 11, 2000.

UNIVERSITY SERVICE

Wayne State University Elected Positions

Academic Senate (2011 – 2016)

Wayne State University Appointed Positions

OTL Faculty Fellow (2014 – 2015)

GenEd Reform Committee (2014-2016)

Review Advisory Panel – Dept. of Urban Studies and Planning (2014)

Wayne State University Educational Initiatives

GTA Training – Interactive Lecturing Workshop Leader 2006, 2007, 2009, 2010, 2011

OTL Seminar – Invited Presentation: Team Teaching 3/2007

Academic Success Summit – Invited Oral Presentation 3/2008

Engaging Students in LARGE Classes – Invited Oral Presentation 10/2009

Freshman Orientation – Invited First “Lecture” for Incoming Freshmen 2010, 2011, 2012

New Student Convocation – Keynote Address: Academic Success 8/27/2013

Chair and Directors' Mentoring Workshop: Student Success – co-presented with Monica Brockmeyer, 11/8/2013

OTL Seminar – Invited Presentation: Undergraduate Research 11/11/2013

OVPR PAD Seminar: Building Effective Research Teams and Developing Collegiate Environments – Moderator 11/22/2013

OTL/WIDER Seminar – Invited Presentation: Undergraduate Research 11/13/2014

Provost's Innovations in Teaching Luncheon – Invited Presentation: Engaging Undergraduate Students and Stimulating Departmental Change 4/15/2015

WSU College of Liberal Arts and Sciences (CLAS)

Director – Environmental Science Program (2007 – 2016)

CLAS Promotion and Tenure Workshop: Writing an Effective Personal Statement;
Panel Discussion – April 18, 2012

CLAS Teaching Award Committee (2014-15)

College/Department Committee Membership

WSU Geology Department Committees/Responsibilities:

2003-2016	Curriculum Committee
2003-2016	Website Coordinator
2005-2016	Field Trip Policy
2008-2016	Program Review Committee
2011-2016	Selective Salary Review Committee
2011-2016	Assessment Committee

University Committee Membership

WSU Occupational Environmental Health Sciences Program Advisory Committee;
2008-2011

WSU Office for Teaching and Learning Advisory Board; 2010-2016

WSU Academic Senate Budget Committee; 2011-2016

WSU Center for Peace and Conflict Studies Science Advisory Committee; 2011-2016

WSU University General Education Reform Committee; 2014-2016

CMU Field Safety Policy Committee 2016-19

CMU Natural History Collection Committee 2016-17

CMU Provost Assessment Incentive Award Committee 2017, 2018

Professional Consultation

Pro Bono Consulting to Public Agencies, Foundations, and Professional Associations

Technical Consultant: *Michigan Department of Environmental Quality Technical Review Committee evaluating remediation plans for the Pall Life Sciences 1,4-dioxane site in Ann Arbor, Michigan;* 2003-2016.

Hydrogeology Specialist: *EPA–Sponsored Technical Outreach Services for Communities (TOSC); Pall Life Sciences 1,4-dioxane project in Ann Arbor, MI;* 2003–November 2004.

Public Presentations as an Expert in Discipline

“Groundwater Flow and 1,4-Dioxane Transport Modeling Update with Implications”
Michigan Department of Environmental Quality / Coalition for Action on Remediation of
Dioxane (CARD) Quarterly Technical Workgroup Meeting, Scio Twp, MI, May 9, 2016

“Matteson Lake Water Quality Committee Report” Twin Lakes of Matteson Association
Meeting, Matteson Township Hall, Bronson, Michigan, May 23, 2015

“The Fracas Over Fracking: Dissecting the Controversy over Hydraulic Fracturing”
Michigan Mineralogical Society Gem, Mineral, Fossil & Jewelry Show, Macomb County
Community College, Warren, MI October 13, 2013

“Groundwater Fundamental: Know It and Show It” Michigan Alliance of Environmental
and Outdoor Education (MAEOE) and Michigan Earth Science Teacher Association
(MESTA) Conference, Belle Isle, Detroit, MI October 5, 2013.

“What’s all the Fracas about Fracking? Assessing the Risks and Benefits of
Unconventional Oil and Gas Development” Wayne State University Science Under the
Dome Seminar Series, Department of Physics, March 1, 2013.

“The Risks and Benefits of Hydraulic Fracturing – A Pragmatic Assessment” Michigan Mineralogical Society, Cranbrook Institute of Science, Bloomfield Hills, MI, September 10, 2012.

“What is a Watershed and Why Should We Care? Integrated Michigan Environmental Program (IMEP) kickoff presentation; St. Francis Middle School, Ann Arbor, Michigan, August 29, 2006.

“Katrina’s Legacy: Mitigating the Short- and Long-term Vulnerability of New Orleans,” Engineering Society of Detroit 17th Annual Solid Waste Technical Conference Luncheon Speaker; Michigan State University, East Lansing, MI, April 4, 2006.

“Know It and Show It: Groundwater Fundamentals for Secondary Teachers,” Metropolitan Detroit Science Teachers Association Fall Conference, Lawrence Tech University, Southfield, MI, October 29, 2005.

“Rebuilding New Orleans: Geologic Vulnerabilities of the Crescent City,” Invited panelist for community forum: *Impact of Hurricane Katrina – Rebuilding New Orleans: Issues, Challenges, and Opportunities*; Wayne State University, Detroit, MI, Sept. 16, 2005.

Live interview concerning Washtenaw County groundwater contamination on WEMU 89.1 public radio’s “Issues of the Environment” with David Farr, Aug 11, 2004.

“1,4-dioxane in Ann Arbor: Managing the E-plume;” Technical Outreach Services for Communities (TOSC) Public Meeting, Ann Arbor, MI, Mar 24, 2004.

“TOSC Review of PLS’s ‘Final Feasibility Study & Proposed Response for the Unit E Plume’ and ‘DEQ’s Proposed Remedial Alternative’;” Technical Outreach Services for Communities (TOSC) Public Meeting, Scio Township, MI, Aug 4, 2004.

Other Professionally Related Service and Outreach Activities

Conference Session / Workshop Organization:

pXRF in the Geosciences: Applications to Environmental, Regional, and Exploration Geology; GSA National Meeting Technical Session (Sept 2016); Co-conveners: Ross Knight, Bruce Kjarsgaard, Geological Survey of Canada, Samuel Mutiti, Georgia College and State University. *The short course provided presentations on (1) best practices for sample collection, preparation, analysis, and associated typical pitfalls/problems and solutions; and (2) the application of pXRF spectrometry to environmental and exploration geochemistry. Participants gained sufficient knowledge to implement pXRF spectrometry as a cost-effective practice within a science based analytical workflow.*

Geochemical Applications of pXRF: Environmental, Exploration, and Geology; Geological Society of America National Meeting Workshop (Sept 2016); Co-conveners: Ross Knight, Bruce Kjarsgaard, Geological Survey of Canada, Samuel Mutiti, Georgia College and State University. *Significant advances in portable X-ray fluorescence spectrometry during the past decade provide a cost-effective tool for the rapid generation of geochemical data. This session assembled presentations on pXRF applications, including environmental studies, chemostratigraphy, and mineral deposit exploration.*

Environmentally Sensitive Electricity (ESE): Developing a National Strategy for Adoption of ESE; National Council for Science and the Environment National Conference Workshop, Washington D.C. (Jan 2015); Co-conveners: Carol Miller, Shawn McElmurry Wayne State University; Allison Harris, EcoWorks. *Participants in this session: (1) envisioned the national-scale adoption of ESE, (2) developed implementation procedures addressing interests of regulators, engineers, utility operators, environmentalists,*

and other stakeholders, and (3) identified potential barriers to adoption. The outcome was a collaboratively developed strategy to bring ESE to the national scale.

Advances in Glacial Sediment Characterization: Implications for Groundwater Flow and Contaminant Transport Modeling; GSA North Central Section Meeting Technical Session, Kalamazoo, MI (May 2013); Co-convenor: Remke Van Dam, Michigan State University. *This session highlights examples of innovative 2-D and 3-D mapping and modeling approaches used to address heterogeneity and uncertainty in glacial sediments.*

Recent Changes in the Biogeochemistry of the Great Lakes System (BOGLS) Workshop; Wayne State University (March, 2013); Steering Committee Member. Conveners: Mark Baskaran, WSU; John Bratton, GLERL-NOAA. *This 2 ½ day workshop brought 65 leading scientists together to define theoretical and data gaps in our understanding of pervasive changes in Great Lakes biogeochemistry due to invasive species, nutrient abatement, and climate change.*

Local-Scale Atmospheric Monitoring and Modeling for Exposure Assessment; American Geophysical Union Fall Meeting Technical Session – San Francisco, CA (December, 2010); Co-conveners: Iris Xu, University of Windsor, Rich Cook, USEPA. *This session focuses on emerging methods and challenges for sampling and modeling the spatial and temporal distribution of atmospheric contaminants in support of epidemiological studies of associated health outcomes.*

Solute Plume Conceptual Models: Processes, Prediction, and Paradigms; Geological Society of America National Meeting Technical Session (October, 2007); Co-convenor: Gary Weissmann, University of New Mexico. *This session highlighted the limitations of classical transport theory and explores innovative approaches to incorporating nonlinear transport processes or developing alternatives to the classical Gaussian paradigm for modeling groundwater contaminant plumes.*

Professional Development

National Conferences/Meetings Attended

- 2018 Geological Society of America Annual Mtg., Indianapolis, IN, Nov 4-7, 2018
- 2018 Council of Environmental Deans and Directors Summer Meeting, Chatham University, Pittsburgh PA June 26-28, 2018
- 2017 Geological Society of America Annual Mtg., Seattle, WA, Oct 22-25, 2017
- 2016 Geological Society of America Annual Mtg., Denver, CO, Sept 24-28, 2016
- 2016 16th National Conference on Science, Policy and the Environment: The Food-Energy-Water Nexus, Washington, DC, Jan 19-21, 2016
- 2015 Geological Society of America Annual Mtg., Baltimore, MD, Nov 1-4, 2015
- 2015 American Association of Colleges & Universities 2015 Network for Academic Renewal GenEd and Assessment Conference; From Mission to Action to Evidence: Empowering and Inclusive GenEd Programs, Kansas City, MO, Feb 19-21, 2015
- 2015 15th National Conference on Science, Policy and the Environment: Energy and Environment, Washington, DC, Jan 27-29, 2015
- 2014 14th National Conference on Science, Policy and the Environment: Building Climate Solutions, Washington, DC, Jan 28-30, 2014
- 2014 NSF Undergraduate Geoscience Education Summit, UT Austin, TX, Jan 9-11, 2014
- 2013 Geological Society of America Annual Mtg., Denver, CO, Oct 27-30, 2013
- 2013 Association for Environmental Studies and Sciences, AESS 2013 Conference, Linking Rural & Urban Societies & Ecologies, Pittsburgh, PA, June 19-22, 2013

- 2013 Council of Environmental Deans and Directors Summer Meeting, Pittsburgh, PA
June 17-19, 2013
- 2013 13th National Conference on Science, Policy and the Environment: Disasters and
Environment, Washington, DC, Jan 15-17, 2013
- 2012 American Geophysical Union, Fall Meeting, San Francisco, CA, Dec 3-7, 2012
- 2012 Geological Society of America Annual Mtg., Charlotte, NC, Nov 4-7, 2012
- 2012 Council of Environmental Deans and Directors Summer Meeting, Santa Clara, CA
June 18-21, 2012
- 2012 12th National Conference on Science, Policy and the Environment: Environment and
Security, Washington, DC, Jan 18-20, 2012
- 2011 Geological Society of America Annual Mtg., Minneapolis, MN, Oct 9-12, 2011
- 2011 Council of Environmental Deans and Directors Summer Meeting, Lake Champlain,
VT, June 21-23, 2011
- 2010 American Geophysical Union, Fall Meeting, San Francisco, CA, Dec 13-17, 2010
- 2010 Geological Society of America Annual Mtg., Denver, CO, Oct 31-Nov 3, 2010
- 2009 Geological Society of America Annual Mtg., Portland, OR, Oct 18-21, 2009
- 2009 Air & Waste Management Association Annual Conf., Detroit, MI, June 16-19, 2009
- 2008 American Geophysical Union, Fall Meeting, San Francisco, CA, Dec 15-19, 2008
- 2008 USEPA Brownfields 2008, Detroit, MI, May 5-7, 2008
- 2007 American Geophysical Union, Fall Meeting, San Francisco, CA, Dec 10-14, 2007
- 2007 Geological Society of America Annual Mtg., Denver, CO, Oct 28-31, 2007
- 2006 American Geophysical Union, Fall Meeting, San Francisco, CA, Dec 11-15, 2006
- 2006 Geological Society of America Annual Mtg., Philadelphia, PA, Oct 22-25, 2006
- 2006 MODFLOW and More, Colorado School of Mines, Golden, CO, May 21-24, 2006
- 2005 Geological Society of America Annual Mtg., Salt Lake City, UT, Oct 16-19, 2005
- 2004 Association of Engineering Geologists An. Mtg., Dearborn, MI, Sept. 29-Oct 1, 2004
- 2004 Geological Society of America Annual Meeting, Denver, CO, Oct 6-9, 2004
- 2003 MODFLOW and More, Colorado School of Mines, Golden, CO, Sept 17-19, 2003

Workshops Completed

- Apr. 2014 CLAS/OTL Setting and Advancing Program Goals Workshop, Wayne State University
- Apr. 2014 Baseline Training, Wayne State University
- Nov. 2014 Multiplying the Benefits of Undergraduate Research, Wayne State University
- Nov. 2013 Assessing Learning Outcomes, Wayne State University
- Nov. 2013 A Cohort Model for Undergraduate Research, Wayne State University
- Oct. 2013 Compliance Assist Training, Wayne State University (repeat)
- Apr. 2013 Compliance Assist Training, Wayne State University
- Mar. 2013 Recent Changes in the Biogeochemistry of the Great Lakes System (BOGLS),
McGregor Conference Center, Wayne State University, March 11-13, 2013
- Sept. 2012 Introduction to TravelWayne, Wayne State University
- June 2012 Teaching Environmental Geology; NSF Cutting Edge Workshop, Montana State
University, Bozeman, MT, June 2-6, 2012
- Apr. 2012 GenEd Mini-summit, Wayne State University
- Feb. 2012 Getting Started with Assessment of Student Learning, Wayne State University
- Nov. 2009 Engaging Students in Large Classes, Wayne State University
- Jan. 2009 Write Winning Revisions
- Dec. 2008 The Budgeting Process: Developing, Maintaining, & Making Appropriate
Expenditures, Wayne State University
- Sept. 2008 The NSF Review Process, Wayne State University

- Mar. 2008 Urban Students, Urban Issues: Opportunities and Challenges for Teaching Geoscience Courses; NSF Cutting Edge Workshop, Center for the Urban Environment, Brooklyn, NY, March 1-3, 2008.
- Oct. 2006 Geographic Information Systems (GIS): A tool for research, Wayne State University
- July 2006 Teaching Sedimentary Geology in the 21st Century – NSF Cutting Edge Workshop, University of Utah, Salt Lake City, UT, July 14-19, 2006.
- Feb. 2006 Blackboard: Online Assessment Strategies, Wayne State University
- Sept. 2005 Procurement Card Training, Wayne State University
- July 2005 Teaching Hydrogeology in the 21st Century – NSF Cutting Edge Workshop, University of Nebraska, Lincoln, NE, July 23-28, 2005
- Jan. 2004 Grant Writing Seminar, Wayne State University, Jan 8-9, 2004
- Sept. 2003 Basic Blackboard; Creating an Online Presence, Wayne State University

Continuing Education Courses Completed

- Sep. 2016 Geochemical Applications of pXRF: Environmental, Exploration, and Geology GSA Annual Mtg., Denver, CO, Sept 24-28, 2016
- Nov. 2014 An Introduction to Evidence-Based Undergraduate STEM Teaching. *This graduate-level MOOC explored effective teaching strategies for college and university STEM (science, technology, engineering, mathematics) classrooms.* Center for the Integration of Research, Teaching, and Learning (CIRTL), Vanderbilt University, Coursera.org.
- May 2014 Rock Core Logging for Hydrogeologic Projects. Midwest Geosciences Group, Webinar, May 19, 2014.
- Fall 2007 Nuclear Geology. Audited course taught by Dr. Mark Baskaran, Dept. of Geology, Wayne State University, Sept-Dec, 2007.
- Nov. 2007 Phase I/II Environmental Assessment and Remedial Action Training. US Dept. of Housing and Urban Development, Detroit, MI, Nov 27-28, 2007.
- Oct. 2007 Three-Dimensional Geologic Mapping for Groundwater Applications. 2007 GSA Annual Meeting Workshop, Denver, CO.
- Feb. 2009 AERMOD Air Dispersion Modeling Course, Lakes Environmental, Toronto, Ontario, Feb 5-6, 2009.
- Oct. 2005 Intro to Geographic Information Systems (GIS). ESRI two-day continuing education course, 2005 GSA Annual Meeting, Salt Lake City, UT, Oct 14-15, 2005.
- Sept. 2003 UCODE: Universal Inversion Code for Automated Inverse Modeling. Colorado School of Mines, Golden, CO, Sept 15-16, 2003.
- May 2003 Improving the Description and Characterization of Glacial Successions in Northeastern Illinois. Northern Illinois Univ. short course, Dekalb, IL, May 31, 2003.