

RESUME Ronald W. Falta, Jr.

PERSONAL DATA

Professor
Department of Environmental Engineering and Earth Science
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EDUCATION

Ph.D., Mineral Engineering, 1990, *University of California, Berkeley*
MS., Civil Engineering, 1984, *Auburn University*
BS., Civil Engineering, 1982, *Auburn University*

PROFESSIONAL EXPERIENCE

Clemson University, 1999- , Professor of Geology and Environmental Engineering and Science
1995-1999 Associate Professor of Geology and Environmental Systems Engineering
1992-1995, Assistant Professor of Geology and Environmental Systems Engineering
Lawrence Berkeley National Laboratory, 1990-1991, Post Doctoral Researcher, Earth Sciences Division

CONSULTING EXPERIENCE

Synterra Corp., Greenville, SC (2014-present). Expert support and development of groundwater flow and transport models for simulating closure and remediation at 14 coal ash basin sites in North Carolina, and one in South Carolina.
U.S. Department of Energy through Savannah River Nuclear Solutions, LLC, Aiken, SC (2019-present). Technical assistance support for the Hanford, WA Cumulative Impact Evaluation groundwater modeling project.
Hunton Andrews Kurth LLP, Charlotte, NC, (2019). Litigation support related to coal ash basin closure and remediation in North Carolina.

Duke Energy Business Services, Charlotte, NC, (2019). Litigation support related to coal ash basin contamination of groundwater in North Carolina.

U.S. Department of Energy through Navarro Research & Engineering, Grand Junction, CO (2018). Participate in groundwater modeling and geochemistry group modeling summit related to uranium mill tailings sites.

Electric Power Research Institute, Charlotte, NC (2017). Teach workshop on groundwater modeling for coal ash basin sites.

Regenesis, San Clemente, CA (2016). Groundwater modeling support.

Navarro Research and Engineering, Inc., Oak Ridge, TN (2016). Design of a thermal remediation system for site remediation.

Honeywell International, Inc., Morris Plains, NJ, (2016). Analysis of thermal remediation designs for site remediation.

ERM-West, Inc., Pasadena, CA, (2013-2015). Design and analysis of a steam injection treatability study for the DOE Paducah Gaseous Diffusion Plant, KY.

Kestrel Horizons, LLC, Greenville, SC (2014). Expert review of monitoring plans at the Pinewood Hazardous waste landfill.

ERM-UK, Ltd., Manchester, England (2014). Numerical modeling of a thermal remediation project.

Best Best & Krieger, Walnut Creek, CA, (2013-2015). Expert review of groundwater modeling efforts for the Rialto Colton Basin, CA.

Aiken Bridges Florence, SC (2012-2013). Expert for plaintiffs in a suit related to groundwater contamination by chlorinated solvents in South Carolina, John H. Nance, and JDS Development of Myrtle Beach, Inc. vs AVX Corporation, State of South Carolina Civil Action No.: 2008-CP-26-0436.

Kelahr, Connell & Connor, P.C., Surfside Beach, SC, (2011-2013). Expert for plaintiffs in a class action suit related to groundwater contamination by chlorinated solvents in South Carolina, Clint A. Chestnut, et al. v. AVX Corporation, State of South Carolina, Civil Action No.: 2007-CP-26-7459.

LATA Kentucky, Kevil, KY, (2012-2013). Numerical modeling of thermal remediation of chlorinated solvents at the DOE Paducah Gaseous Diffusion Plant, KY.

ERM-Southeast Raleigh, NC, (2011-2012). Numerical modeling of thermal remediation projects at sites contaminated with chlorinated solvents and fuels.

Best Best & Krieger, Walnut Creek, CA, (2011-2012). Expert for plaintiffs in a suit related to groundwater contamination by perchlorate in California, City of Colton v. APE-West, et al., United States District Court Case Nos. ED CV 09-01864 PSG (SSx); CV 09-6630 PSG (SSx), CV 09-06632 PSG (SSx), CV 09-07501 PSG (SSx), CV 09-07508 PSG (SSx), and CV 10-00824 PSG (SSx).

Stratus Consulting, Boulder, CO (2004-2010) Expert for the United States in a lawsuit involving hydrocarbon contamination of a Department of Defense facility in Philadelphia, PA, U.S. vs. Sunoco, Inc., et al., Civil Action Number 05-6336; 90-11-3-07721.

Motley Rice LLC, Mt. Pleasant SC, (2006-2010) Expert for plaintiffs in case involving groundwater contamination by chlorinated solvents in Florida, Laura A. Ward et al., vs. Lockheed Martin Corporation, Florida Civil Action No. 2005-CA-4707.

GSI Environmental, Inc., Houston, TX (2009-2010) Develop and teach engineering short courses on REMChlor (funded by US DOE)

S.M. Stoller Corp., Grand Junction, CO, (2008) Assist in multiphase flow model testing for natural gas recovery.

Santarella and Eckert, LLC, Littleton, CO, and *Richard Wern Lawyers*, North Charleston, SC, (2007-2008) Expert for defense in a civil case involving damages from limestone quarrying and mine dewatering in South Carolina, Giant Cement Company v. Margaret Ann P. Westbury, State of South Carolina Case No. 2006-CP-18-0506.

Vandeventer Black, LLP, Norfolk, VA, (2005-2006) Expert support for dispute between petroleum terminal company and oil company in South Carolina

Nuclear Regulatory Commission, Rockville, MD, (2004-2006), Assist in development of a strategy for groundwater sampling at nuclear sites; teach workshops.

Speights and Runyan, Hampton, SC, (2004), Expert support in case involving leaking underground storage tanks in Alabama.

Daniel B. Stephens and Associates, Albuquerque, NM, (2004) Numerical modeling of vadose zone chemical transport.

Motley Rice LLC, Mt. Pleasant, SC, (2001-2004) Expert support in a case involving groundwater contamination by chlorinated solvents in South Carolina.

Speights and Runyan, Hampton, SC, (2001-2003) Expert for plaintiffs in a class action lawsuit related to leaking underground tanks at gasoline stations in South Carolina, Mary Louise Fairey, et al. v The Exxon Corporation, et al., State of South Carolina Civil Action No. 94-CP-38-118.

Conestoga-Rovers and Associates, Waterloo, Ontario, Canada, (2003) Analysis of multiphase flow and transport simulations at a Superfund site in Arizona

Environmental Protection Agency, Washington, DC, (2001-2003) Participation in an expert panel report on DNAPL remediation.

Ness, Motley, Loadholt, Richardson, and Poole (now Richardson, Patrick, Westbrook and Brickman), Mt. Pleasant, SC, (2001-2002) Expert for plaintiffs in a class action lawsuit involving impacts resulting from dewatering of a limestone quarry in South Carolina, Moses Brown et al. vs Martin-

Marietta Materials, Inc, United States District Court, District of South Carolina, Civil Action No. 2:00-0793-18.

The Technical Research Center of Finland (VTT), Espoo, Finland, (2002) Short Course Organizer and Instructor, Subsurface Multiphase Fluid Flow and Remediation Modeling,

Idaho National Engineering and Environmental Laboratory, Idaho Falls, ID, (2002), Numerical model development for simulating gas flow in the vadose zone due to barometric pressure fluctuations.

The Proctor and Gamble Company, Cincinnati, OH, (2001-2002) Numerical model development and analysis of nonisothermal, compositional multiphase flow processes; presentation of a short course.

Purdue University, West Lafayette, IN, (2001) Numerical simulations of DNAPL source zone remediation.

Harding Lawson Associates, Denver, CO, (1998-1999) Simulation of multiphase flow contaminant transport in the vadose zone.

Dames and Moore, Santa Ana, CA, (1997-2000) Simulation of multiphase flow contaminant transport in the vadose zone.

Camp Dresser and McKee, Charlotte, NC, (1996-1997) Evaluation of groundwater resources in the Florence, SC area.

Hydrogeologic, Inc., Herndon, VA, (1992-1993), Development and verification of numerical models for compositional multiphase contaminant transport under nonisothermal conditions.

Paul A. Witherspoon, Inc., Berkeley, CA, (1991). Numerical modeling of a seasonal natural gas storage project in Illinois.

Erler and Kalinowski, Inc., San Mateo, CA, (1990-1991). Analysis of vadose zone chemical transport at a site in California.

Paul A. Witherspoon, Inc., Berkeley, CA, (1987-1991). Consultant for litigation support in connection with groundwater pollution problems at the Rocky Mountain Arsenal in Colorado, the Royal Hardage Superfund Site in Oklahoma, the McColl Superfund Site in California, the Stringfellow Superfund Site in California, and a site in Montana.

Civil Engineering Department, University of California, Berkeley, Berkeley, CA, (1986). Development of a procedure for optimizing the design of air stripping systems for the removal of organic compounds from contaminated groundwater.

PROFESSIONAL ACTIVITIES

2019 Web-based seminar for the SERDP/ESTCP program, "REMChlor-MD Groundwater Transport and Remediation Model for Sites with Matrix

- Diffusion, presented to more than 500 people on February 7, 2019, <https://serdp-estcp.org/Tools-and-Training/Webinar-Series/02-07-2019>
- 2018 Session chair and Panelist, *The International Conference on Remediation of Chlorinated and Recalcitrant Compounds Conference*, Palm Springs, CA.
- 2016 Web-based seminar for the SERDP/ESTCP program, “Long Term Monitoring Issues at Chlorinated Solvent Sites”, presented to more than 1000 people on April 21, <https://www.serdp-estcp.org/Tools-and-Training/Webinar-Series/04-21-2016>
- 2012 Web-based short course instructor, "Practical Models to Support Remediation Strategy Decision Making", EPA Office of Superfund Remediation and Technology Innovation, http://www.clu-in.org/conf/tio/gwmodel5_110712/
- 2011 Short course instructor, “Thermal Treatment Technologies, Lessons Learned”, *SERDP/ESTCP Partners in Environmental Technology Technical Symposium & Workshop*, Washington, DC
- 2011 Short course instructor, “Practical Models Supporting Remediation of Chlorinated Solvents Training Course”, Seattle, WA
- 2011 Short course instructor, “Practical Models Supporting Remediation of Chlorinated Solvents Training Course”, Atlanta, GA
- 2010 Short course instructor, “Practical Models Supporting Remediation of Chlorinated Solvents Training Course”, Kansas City, MO
- 2010 Session chair, *The International Conference on Remediation of Chlorinated and Recalcitrant Compounds Conference*, Monterey, CA
- 2010 Short course instructor, “Practical Models Supporting Remediation of Chlorinated Solvents Training Course”, *The International Conference on Remediation of Chlorinated and Recalcitrant Compounds Conference*, Monterey, CA
- 2010 Invited speaker, *Savannah River National Laboratory Special Director’s Seminar*, Aiken, SC
- 2010 Short course instructor “Practical Models Supporting Remediation of Chlorinated Solvents Training Course”, Aiken, SC
- 2009 Short course instructor, “Tools for Management of Chlorinated Solvent-Contaminated Sites”, *SERDP/ESTCP Partners in Environmental Technology Technical Symposium & Workshop*, Washington, DC
- 2009 Invited speaker, *Workshop on Strategies for Site Remediation and Diagnostics, Langan Engineering and Environmental Services*, East Brunswick, NJ.
- 2009 Short course instructor, *US EPA 19th Annual National Association of Remedial Project Managers Training Conference*, Atlanta, GA
- 2008 Invited speaker, *Groundwater Resources Association of California, Emerging Contaminants 2008*, San Jose, CA
- 2008 Short course instructor, *US Environmental Protection Agency*, Amherst, MA

- 2008 Invited speaker, *20th Annual National Tanks Conference and Expo*, US EPA, Atlanta, GA
- 2008 Invited speaker, *Southeastern In Situ Soil and Groundwater Remediation Conference*, Raleigh, NC
- 2008 Invited speaker, *Beazer East* environmental management meeting, Las Vegas, NV
- 2007 Keynote speaker, *Groundwater Quality 2007: Securing Groundwater Quality in Urban Environments*, Fremantle, Australia
- 2007 Invited speaker, *New England Interstate Water Pollution Control Commission* workshop, Atlanta, GA
- 2007 Short course instructor, *US Environmental Protection Agency*, Crystal City, VA.
- 2006 Invited speaker, *North Carolina Association of Groundwater Professionals*, Southern Pines, NC
- 2006 Short course instructor (twice), *Nuclear Regulatory Commission*, Rockville, MD
- 2006 Invited speaker, *Auburn University*, Auburn, AL
- 2005 Invited speaker, *Purdue University*, West Lafayette, IN
- 2005 Invited speaker, *The Fletcher Group*, Greenville, SC
- 2005 Invited speaker, *US Environmental Protection Agency*, Office of Solid Waste and Emergency Response / Office of Research and Development, Arlington, VA
- 2005 Invited speaker, *US Environmental Protection Agency*, Region 4 UST States Managers Meeting, Clemson, SC
- 2005 Invited speaker, *Tennessee Department of Environmental Control*, Nashville, TN
- 2004 Invited speaker, *US Environmental Protection Agency*, Region 3 States Leaking Underground Storage Tanks Technical Conference, Rocky Gap, MD.
- 2004 Member, Board of Examiners for Ph.D. thesis at the *Indian Institute of Technology*
- 2004 Session Chair, *US Department of Energy Office of Science* Conference on Numerical Modeling in the Geosciences, Gaithersburg, MD
- 2004 Invited speaker, *University of Oklahoma*, Norman, OK
- 2004 Invited speaker, *Santa Clara Valley Water District*, San Jose, CA
- 2003 Invited speaker, *South Carolina Department of Health and Environmental Control*, Columbia, SC
- 2003 Invited speaker, *US Environmental Protection Agency*, Region 4, Atlanta, GA
- 2003 Invited speaker, *Nuclear Regulatory Commission*, Rockville, MD
- 2003 Panelist and invited speaker, *Department of Energy* Workshop on Reactive Transport Modeling, Carmel Valley, CA
- 2002 Short Course Instructor, Contaminant Transport and Remediation, *Technical University of Delft*, Netherlands

- 2002 Co-Chair, Contaminant Fate and Transport working group, Strategic Planning Workshop for the new *Department of Energy Division of Environmental Remediation Sciences, Office of Science*, Washington, DC
- 2002 MS thesis examiner, *University of Newcastle*, Australia
- 2002 Workshop speaker, *Petroleum Technology Transfer Council* Workshop on Methods of Reservoir Characterization with Application to Heavy Oil Sands, Bakersfield, CA
- 2002 External Ph.D. Dissertation Committee Member, *University of South Carolina*
- 2001 Visiting Research Scholar, Department of Geological Engineering and Sciences, *Michigan Technological University*, Houghton, MI (while on sabbatical Fall, 2001)
- 2001 Short Course Organizer and Instructor, Multiphase Heat and Mass Transfer Simulation, *The Proctor and Gamble Company*, Mathematical Simulation Group, Cincinnati, OH
- 2001 Short Course Instructor, Subsurface Multiphase Fluid Flow and Remediation Modeling, *Colorado School of Mines*, Golden, CO
- 2001-2006 Member, *Department of Energy, Office of Basic Energy Sciences* Earth Sciences Council
- 2001 Invited Speaker and Panelist, *Environmental Protection Agency* Workshop on Hazardous Waste Source Remediation, Dallas, TX
- 2001 Invited Speaker, *Department of Energy Savannah River Site*
- 2001 Invited Speaker, *North Carolina Association of Engineering Geologists*, Raleigh, NC
- 2000 Press Conference with the United States Under Secretary of Energy, Washington, DC
- 2000 Short Course Instructor, Contaminant Source Zone Remediation, Taipei, Taiwan
- 2000 Short Course Instructor, Multiphase Flow Modeling, *Universitaet Braunschweig*, Germany
- 2000 Invited Speaker, *Purdue University*, West Lafayette, IN
- 2000 MS thesis advisor, *Universitaet Stuttgart*, Germany
- 1999 Co-Chair of *Department of Energy* Workshop on Remediation of Contaminants in the Vadose Zone, Seattle, WA
- 1999 Short Course Instructor, Subsurface Multiphase Fluid Flow and Remediation Modeling, *Colorado School of Mines*, Golden, CO
- 1999 Invited Speaker, *Colorado School of Mines*, Golden, CO
- 1998 Co-Chair of *Department of Energy* Workshop on Vadose Zone Characterization at Lawrence Berkeley National Laboratory, Berkeley, CA
- 1998 Invited Speaker, *Department of Energy Savannah River Site*
- 1998 Co-Chair of *Department of Energy* Workshop on Numerical Simulation of Fluid Flow and Chemical Transport in the Vadose Zone, Las Vegas, NV
- 1998 External Dissertation Committee Member, *Universitaet Stuttgart*, Germany
- 1998 Invited Speaker, *Lawrence Berkeley National Laboratory*, Berkeley, CA

- 1997 Visiting Scientist, Institut fur Wasserbau, Lehrstuhl fur Hydraulik und Grundwasser, *Universitaet Stuttgart*, Stuttgart, Germany, September-October.
- 1997 Invited Speaker, *Universitaet Tubingen*, Germany
- 1997 Invited Speaker, *Universitaet Braunschweig*, Germany
- 1997 Invited Speaker, *Ruhr Universitaet*, Germany;
- 1997 Invited Speaker, the *University of Strasburg*, France
- 1997 Invited Speaker; *Swiss Federal Institute of Technology*, Zurich, Switzerland
- 1997 Invited Speaker, *Environmental Protection Agency R.S. Kerr Laboratory*, Ada, OK
- 1997 Invited Speaker, *South Carolina University Research and Education Foundation* Advisory Board
- 1997 External Ph.D. Dissertation Committee Member, *Queens University*, Canada
- 1996 External Dissertation Committee Member, *Michigan Technological University*, Houghton, MI
- 1995 Session Chair, *American Chemical Society*, Emerging Technologies in Hazardous Waste Management VII Symposium, Atlanta, GA
- 1995 Invited Speaker, *Lawrence Berkeley National Laboratory*, Berkeley, CA
- 1995 Engineering Short Course Instructor, Hazardous Waste Remediation *Charleston Naval Shipyard*
- 1995 Invited Speaker, *Central Savannah River Geological Society*
- 1994 Engineering Short Course Instructor, Hazardous Waste Remediation, *Charleston Naval Shipyard*
- 1994 Invited Speaker, *Michigan Technological University*, Houghton, MI
- 1993 Invited Speaker, *Lawrence Berkeley National Laboratory*, Berkeley, CA
- 1993 Invited Speaker, *University of South Carolina*
- 1993-1996 Member of the *South Carolina Water Resources Research Institute* Review Committee
- 1992 Invited Speaker, *Department of Energy Savannah River Site*

PUBLICATIONS

Books and Monographs

Looney, B.B., and R.W. Falta, editors, 2000, Vadose Zone Science and Technology Solutions, *Battelle Press*, Columbus, OH, 1540 p.

Refereed Journal Publications

Farhat, S.K., D.T. Adamson, A. Gavaskar, S.W. Lee, R.W. Falta, and C.J. Newell, 2020, Impact of vertical discretization in numerical modeling of matrix diffusion in contaminated groundwater, accepted for publication, *Groundwater Monitoring & Remediation*.

- Barajas-Rodriguez, F.J., L.C. Murdoch, R.W. Falta, and D.L. Freedman, 2019, Simulation of in situ biodegradation of 1,4-dioxane under metabolic and cometabolic conditions, *Journal of Contaminant Hydrology*, V. 223, 103464.
- Muskus, N., and R.W. Falta, 2018, Semi-analytical method for matrix diffusion in heterogeneous and fractured systems with parent-daughter reactions, *Journal of Contaminant Hydrology*, V. 218, p. 94-109.
- Falta, R.W., and W. Wang, 2017, A semi-analytical method for simulating matrix diffusion in numerical transport models, *Journal of Contaminant Hydrology*, V. 197, p. 39-49.
- Hall, R., L. Murdoch, R. Falta, B. Looney, and B. Riha, 2016, Evaluation of liquid aerosol transport through porous media, *Journal of Contaminant Hydrology*, 190, p. 15-28.
- Chen, F., R.W. Falta, and L.C. Murdoch, 2015, Numerical analysis of thermal remediation in 3-D field-scale fractured geologic media, *Groundwater*, Vol. 53, No. 4, July-August, 2015 (pages 572-587).
- Murdoch, L.C., S. Xie, R.W. Falta, and C. Ruprecht, 2015, Effects of increased upward flux of dissolved salts caused by CO₂ storage or other factors, *Journal of Hydrology*, Volume 527, August, 2015, p. 776-787.
- Hodges, R.A., C. Cooper, and R. Falta, 2015, Modeling of flow and transport induced by production of hydrofracture-stimulated gas wells near the Rulison nuclear test, *Transport in Porous Media*, Vol. 108, No. 1, p. 23-42.
- Ruprecht, C.M., R. Falta, L.C. Murdoch, R. Pini, and S.M. Benson, 2014, Hysteretic trapping and relative permeability of CO₂ in sandstone at reservoir conditions, *International Journal of Greenhouse Gas Control*, 27(2014) 15-27.
- Liu, X., L.C. Murdoch, R.W. Falta, and T. Tan, 2014, Experimental characterization of CVOC removal from fractured clay during boiling, *International Journal of Heat and Mass Transfer*, vol. 70, p. 764-778.
- Falta, R.W., L. Zuo, and S.M. Benson, 2013, Migration of exsolved CO₂ following depressurization of saturated brines, *Greenhouse Gas Science and Technology*, 3:1-13 DOI: 10.1002/ghg.1379, 2013.
- Liu, X., T. Tan, R.W. Falta, and L.C. Murdoch, 2013, Experimental method for characterizing CVOC removal from fractured clays during boiling, *Journal of Contaminant Hydrology*, V. 152, p. 44-59.
- Zuo, L., C. Zhang, R.W. Falta, and S.M. Benson, 2013, Micromodel investigations of CO₂ exsolution from carbonated water in sedimentary rocks, *Advances in Water Resources*, vol. 53, p. 188-197.
- Yu, R., H.S. Peethambaram, R.W. Falta., M.F. Verce, J.K. Henderson, C.E. Bagwell, R.L. Brigmon, and D.L. Freedman. 2013. Kinetics of 1,2-Dichloroethane and

- 1,2-Dibromoethane Biodegradation in Anaerobic Enrichment Cultures. *Appl. Environ. Microbiol.*, 79(4), 1359-1367 (2013). doi: 10.1128/AEM.02163-12
- Chen, F., R.W. Falta, and L.C. Murdoch, 2012, Numerical Analysis of Contaminant Removal from Fractured Rock by Boiling, *Journal of Contaminant Hydrology* 134-135, p. 12-21.
- Liang, H., R.W. Falta, J.K. Henderson, and S. Shoemaker, 2012, Probabilistic Simulation of Source and Plume Remediation for a Site Contaminated by Trichloroethylene, *Ground Water Monitoring and Remediation* Vol. 32, No. 1, p. 131-141.
- Chen, F., D.L. Freedman, R.W. Falta, and L.C. Murdoch, 2012, Henry's Law Constants of Chlorinated Solvents at Elevated Temperatures, *Chemosphere*, Vol. 86, No. 2, p. 156-165.
- Zuo, L., S. Krevor, R.W. Falta, and S.M. Benson, 2012, An Experimental Study of CO₂ Exsolution and Relative Permeability Measurements during CO₂ Saturated Water Depressurization, *Transport in Porous Media*, Vol. 91, Issue 2, p. 459-478.
- McCray, J.E., G.R. Tick, J.W. Jawitz, M.L. Brusseau, J.S. Gierke, M.L. Brusseau, R.W. Falta, R. Knox, D. Sabatini, M.D. Annable, J. Harwell, and A.L. Wood, 2011, Remediation of NAPL Source-Zones: Lessons Learned from Field Studies at Hill and Dover AFB, *Ground Water* Vol. 49, No. 5, p. 727-744.
- Chen, F., X. Liu, R.W. Falta, and L.C. Murdoch, 2010, Experimental Demonstration of Contaminant Removal from Fractured Rock by Boiling, *Environmental Science and Technology* 44, 6437-6442.
- Baston, D.P., R.W. Falta, and B.H. Kueper, 2010, Numerical Modeling of Thermal Conductive Heating in Fractured Bedrock, *Ground Water* 48(6), 836-843.
- Henderson, J.K., R.W. Falta, and D.L. Freedman, 2009, Simulation of the Effect of Remediation on EDB and 1,2-DCA Plumes at Sites Contaminated by Leaded Gasoline, *Journal of Contaminant Hydrology*, Vol. 108, 29-45.
- Falta, R.W., 2008, Methodology for Comparing Source and Plume Remediation Alternatives, *Ground Water*, Vol. 46, No. 2, 272-285.
- Parker, J.C., and R.W. Falta, 2008, Comparison of Alternative Upscaled Model Formulations for Simulating DNAPL Source Dissolution and Biodecay, *Advances in Water Resources*, Vol. 31, 1325-1332.
- Henderson, J.K., D. Freedman, R.W. Falta, T. Kuder, and J.T. Wilson, 2008, Anaerobic Biodegradation of Ethylene Dibromide and 1,2-Dichloroethane in the Presence of Fuel Hydrocarbons, *Environmental Science and Technology*, Vol. 42, No. 3, 864-870.
- Hodges, R.A., and R.W. Falta, 2008, Vertical Confinement of Injected Steam in the Vadose Zone Using Cold Air Injection, *Vadose Zone Journal*, Vol. 7, No. 2, 732-740.

- VanAntwerp, D., R.W. Falta, and J.S. Gierke, 2008, Numerical Simulation of Field Scale Contaminant Mass Transfer During Air Sparging, *Vadose Zone Journal*, Vol. 7, No. 1, 294-304.
- Liang, H., and R.W. Falta, 2008, Modeling Field-Scale Cosolvent Flooding for DNAPL Source Zone Remediation, *Journal of Contaminant Hydrology* Vol. 96, 1-16.
- Basu, N.B., P.S.C. Rao, R.W. Falta, M.D. Annable, J.W. Jawitz, and K. Hatfield, 2008, Temporal Evolution of DNAPL Source and Contaminant Flux Distribution: Impacts of Source Mass Depletion, *Journal of Contaminant Hydrology*, Vol. 95, 93-109.
- Falta, R.W., N. Bulsara, J.K. Henderson, and R.A. Mayer, 2005, Leaded-Gasoline Additives Still Contaminate Groundwater, *Environmental Science and Technology*, Vol. 39, No. 18.
- Falta, R.W., P.S.C. Rao, and N. Basu, 2005, Assessing the Impacts of Partial Mass Depletion in DNAPL Source Zones: I. Analytical Modeling of Source Strength Functions and Plume Response, *Journal of Contaminant Hydrology*, Vol. 78, 259-280.
- Falta, R.W., N. Basu, and P.S.C. Rao, 2005, Assessing the Impacts of Partial Mass Depletion in DNAPL Source Zones: II. Coupling Source Strength Functions to Plume Evolution, *Journal of Contaminant Hydrology*, Vol. 79, 45-66.
- Falta, R.W., 2004, The Potential for Groundwater Contamination by the Gasoline Lead Scavengers Ethylene Dibromide and 1,2-Dichloroethane, *Ground Water Monitoring and Remediation* Vol. 24, No. 3, p. 76-87.
- Hodges, R.A., R. Falta, and L. Stewart, 2004, Controlling steam flood migration using air injection wells, *Environmental Geosciences*, Vol. 11, No. 4, p. 221-238.
- Falta, R.W., 2003, Modeling Subgridblock Scale DNAPL Pool Dissolution using a Dual Domain Approach, *Water Resources Research*, Vol. 39, No. 12, SBH 18-1-8.
- Ochs, S.O., R.A. Hodges, R.W. Falta, T.F. Kmetz, J.J. Kupar, N.N. Brown, and D.L. Parkinson, 2003, Predicted Heating Patterns During Steam Flooding of Coastal Plain Sediments at the Savannah River Site, *Environmental and Engineering Geoscience*, Vol. 9, No. 1, 51-69.
- Rossabi, J., and R.W. Falta, 2002, Analytical Solution for Subsurface Gas Flow to a Vadose Zone Well Induced by Barometric Pressure Fluctuations, *Ground Water* Vol. 40, No. 1, January.
- Roeder, E., and R.W. Falta, 2001, Modeling Unstable Alcohol Flooding of DNAPL-Contaminated Columns, *Advances in Water Resources*, 24 (7), pp. 803-819.
- Roeder, E., R.W. Falta, C.M. Lee, and J.T. Coates, 2001, DNAPL to LNAPL Transitions During Horizontal Cosolvent Flooding, *Ground Water Monitoring and Remediation*, Winter.

- Ladaa, T. I.; C.M. Lee; J.T. Coates; and R.W. Falta, 2001, Cosolvent Effects of Alcohols on the Henry's Law Constant and Aqueous Solubility of Tetrachloroethylene (PCE). *Chemosphere*, 44(5):1137-1143.
- Falta, R.W., 2000, Numerical Modeling of Kinetic Interphase Mass Transfer During Air Sparging Using a Dual-Media Approach,, *Water Resources Research*, Vol. 36, No 12, December.
- Falta, R.W., C.M. Lee, S.E. Brame, E. Roeder, J.T. Coates, and C. Wright, 1999, Field Test of High Molecular Weight Alcohol Flushing for Subsurface NAPL Remediation, *Water Resources Research*, Vol. 35, No. 7, July.
- Falta, R.W., 1998, Using Phase Diagrams to Predict the Performance of Cosolvent Floods for NAPL Remediation, *Ground Water Monitoring and Remediation*, Vol. 18, No. 3, Summer.
- Lee, C.M., S.L. Meyers, C.L. Wright, J. T. Coates, P.A. Haskell, and R.W. Falta, 1998, NAPL Compositional Changes Influence Partitioning Coefficients, *Environmental Science and Technology*, Vol. 32, No. 22, November.
- McCray, J.E. and R.W. Falta, 1997, Numerical Simulations of Air Sparging for Subsurface NAPL Remediation, *Ground Water* Vol. 35, No. 1.
- Hein, G.L., N.J. Hutzler, J.S. Gierke, and R.W. Falta, 1997, Three-Dimensional Experimental Testing of a Two-Phase Flow-Modeling Approach to Air Sparging, *Ground Water Monitoring and Remediation*, Vol. 17, No. 3.
- Falta, R.W., 1996, A Program for Analyzing Transient and Steady-State Soil Gas Pump Tests, *Ground Water*, Vol. 34, No. 4.
- McCray, J.E. and R.W. Falta, 1996, Determining the Air Sparging Radius of Influence, *Journal of Contaminant Hydrology*, Vol. 24.
- Falta, R.W., 1995, Analytical Solutions for Gas Flow Due to Gas Injection and Extraction from Horizontal Wells, *Ground Water*, Vol. 33, No. 2, March-April.
- Panday, S., P.A. Forsyth, R.W. Falta, Y.S. Wu, and P.S. Huyakorn, 1995, Considerations for Robust Compositional Simulations of Subsurface NAPL Contamination and Remediation, *Water Resources Research* Vol. 31, No. 5, May.
- Seely, G.E., R.W. Falta, and J.R. Hunt, 1994, Buoyant Advection of Gases in Unsaturated Soil, *ASCE Journal of Environmental Engineering*, Vol 120, No. 5, September-October.
- Falta, R.W., K. Pruess, and D.A. Chesnut, 1993, Modeling Advective Contaminant Transport During Soil Vapor Extraction, *Ground Water* , Vol. 31, No. 6, November-December.
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HONORS AND AWARDS

- 1987 Second place award for the best paper of 1986 in the Journal *Ground Water*
- 1984 University of California Jane Lewis Fellowship
- 1981 Chi Epsilon Civil Engineering Honorary Society

SPONSORED RESEARCH

- 2020-2023 Thermal In-Situ Sustainable Remediation (TISRSM) to Enhance Biotic and Abiotic Reactions and Accelerate Remediation Timeframes, Arcadis, through the Environmental Security Technology Certification Program ESTCP ER20-B2-5028, Principal Investigator (100%), \$361,924.
- 2019-2022 Incorporating Matrix Diffusion in the New MODFLOW Flow and Transport Model for Unstructured Grids, Environmental Security Technology Certification Program ESTCP ER19-5028, Principal Investigator (100%), \$857,213.
- 2019-2020 Evaluation of Hydraulic Source Isolation at the Barra Mansa Site and the Area P DuPont Camacari Site; Sponsored by DuPont, Principal Investigator (100%), \$158,327.
- 2015-2019 Estimating Mobile-Immobile Mass Transfer Parameters using Direct Push Tools, Solutions-IES through the Strategic Environmental Research and Development Program SERDP 15 ER01-015, Principal Investigator (100%), \$266,034.
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- 2017-2018 Inhibitory and Synergistic Effects in Mixtures of Contaminants, and Evaluation of Hydraulic Source Isolation at the Area P DuPont Camacari Site; Sponsored by DuPont, Co-Investigator (50%), \$143,976.
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- 2014-2017 Radionuclide Waste Disposal: Development of Multi-Scale Experimental and Modeling Capabilities, US Department of Energy, Co-Investigator, (5%), \$5,250,000
- 2010-2016 Subsurface Thermal Energy Storage for Improved Heating and Air Conditioning Efficiency, Environmental Security Testing and Certification Program, ESTCP SI-1013, Principal Investigator (60%), \$991,018
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- 2003-2006 Impacts of DNAPL Source Zone Treatment: Modeling Assessment of the Benefits of Partial Source Removal, United States Environmental Protection Agency, Principal Investigator (100%), \$353,910.
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- 2000-2001 Three-Dimensional Simulation of Multi-Phase Flow and Transport Processes for Evaluation of Soil Vapor Extraction Units 782-3M, -4M, and -7M, Westinghouse Savannah River Company, Principal Investigator, \$101,565.
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- 1994-1997 Field Evaluation of Cosolvent-Enhanced In-Situ Remediation, United States Environmental Protection Agency, Principal Investigator, \$406,004.
- 1993-1994 Development and Evaluation of Remediation Alternatives for Subsurface NAPL Contamination, Westinghouse Savannah River Company, Principal Investigator, \$253,519.
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- 1992 Savannah River Site Integrated Demonstration Project Analysis and Evaluation Technical Support, Lawrence Berkeley Laboratory, University of California, Principal Investigator, \$37,214.

Graduate Student Advisees

- Present Kien Pham, Field determination of matrix diffusion simulation parameters, PhD
- Present Eric Cheek, Field and numerical modeling analysis of aquifer thermal energy storage at Ft. Benning, GA, MS
- Present Adam Ornelles, Solar powered thermal remediation, MS
- Present Marcus Guarnieri, non-thesis
- 2019 Wesley Prater, Modeling matrix diffusion at field sites, MS

- 2018 Thomas Spain, Thermal remediation of mercury contamination, MS
- 2018 Yoel Gebrai, Hydraulic isolation of contaminant source zones, MS
- 2018 Brian Hardin, non-thesis.
- 2017 Noelia Muskus, Modeling contaminant matrix diffusion using a semi-analytical approach, MS
- 2015 Alexandra-Selene Jarvis, Feasibility of using compressed air storage for energy storage in the southeast, MS
- 2015 Wenwen Wang, Semi-analytical method for simulating matrix diffusion in clay aquitards, MS
- 2014 Catherine Ruprecht, Comparison of dissolved and supercritical CO₂ injection schemes for CO₂ sequestration, Ph.D.
- 2014 Zheng, Qi, High temperature aquifer thermal energy storage for electricity production, MS
- 2014 Jill Branby, non-thesis, MS.
- 2013 Laura Daniels, Simulation of aerobic degradation of dissolved chlorinated solvents in large groundwater plumes MS.
- 2011 Kirk Ellison, CO₂ exolution from saturated brines during depressurization, MS.
- 2011 Chris Patterson, Nonwetting phase trapping during NAPL transport and CO₂ sequestration, MS.
- 2011 Chen, F., Contaminant mass transfer during boiling in fractured rocks, Ph.D.
- 2009 Liang, H., Probabilistic optimization of groundwater source and plume remediation, Ph.D
- 2008 Tyre, S., Simulation of non-classical groundwater transport using analytical source-plume models, MS
- 2008 Henderson, J., Biodegradation and transport of EDB in groundwater, Ph.D.
- 2007 Hodges, R.A., Injection of Noncondensable Gases for the Pneumatic Control of Shallow Environmental Steam Flood Operations, Ph.D.
- 2006 Richard Mayer, Analysis of EDB contamination at retail gasoline service stations, MS
- 2006 VanAntwerp, D., Numerical simulation of air sparging and steam flooding operations for source zone remediation
- 2005 Liang, H., Modeling Assessment of the Benefit of DNAPL Source Zone Remediation, MS.

- 2004 Bulsara, N., Analysis of underground storage tank sites in South Carolina for EDB contamination, MS.
- 2003 Schweninger, H., Laboratory analysis of cosolvent flooding designs for DNAPL remediation, MS.
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- 2001 Melshimer, K.E., In-Situ Measurement of Soil Thermal Conductivity, MS
- 2000 Hornberger, J.P., Laboratory Studies of Cosolvent Flooding for the Removal of DNAPLs, MS
- 2000 Micolet, D., Hydraulic Design of Cosolvent Flooding Systems for NAPL Remediation, MS
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- 1998 Zitsch, K.H., Steam Flooding Simulations of DNAPL Removal from the Subsurface, MS
- 1998 Martin, J.D., Quantitative Analysis of Nonaqueous Phase Liquid Trapping Using Etched Glass Micromodels, MS
- 1998 Roeder, E., Phase Density Modifications for the Remediation of DNAPLs by Cosolvent Flooding Utilizing Separate Phase Mobilization, Ph.D.
- 1997 Price, S.W., Selection of a Cosolvent Flooding Solution for Removal of a Multicomponent LNAPL at Operable Unit One, Hill Air Force Base, Utah, MS
- 1996 Larson, A.G., Numerical Simulation of Field Air Sparging Operations, MS
- 1994 McCray, J.E., Numerical Analyses of Air Sparging for Subsurface Remediation, MS
- 1994 James, A.L., Optimization of Soil Vapor Extraction Well Design, MS
- 1993 Brame, S.E., Development of a Numerical Simulator for the In-Situ Remediation of Dense Non-Aqueous Phase Liquids by Alcohol Flooding, MS

TEACHING

Subsurface Remediation Modeling, Clemson University GEOL/EES 8090. A graduate course on nonisothermal, compositional multiphase flow and transport of organic chemicals in the subsurface with an emphasis on integral finite difference numerical simulation techniques. Taught 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2001,

2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2013, 2014, 2016, 2017, 2018, 2020

Groundwater Modeling, Clemson University GEOL/EES 8080. A graduate course on finite difference and integral finite difference methods for simulating groundwater flow and chemical transport. Taught 1993, 1995, 1996, 1998, 2000, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019

Analytical Methods in Hydrogeology, Clemson University GEOL/EES 810. A graduate course on applied mathematical methods of analysis for solving partial differential equations in hydrogeology. Taught Fall Semester 1992, 1994, 1997, 1999, Spring 2003.

Engineering Geology, Clemson University GEOL 320. An undergraduate course on engineering mechanics and analyses applied to geological problems. Taught Spring Semester 1996, 1997, 2000, 2002

Geoanalysis II, Geoanalysis II Lab, Clemson University GEOL 212, 212L. Undergraduate Geology course in applied mathematics, covering advanced calculus, ordinary differential equations, and Visual Basic computer programming. Taught Spring Semester 2008, 2009

Special Topics in Geology, Clemson University GEOL 100, Seminar series for freshman Geology majors and nonmajors, Fall, 1998.

Hydrogeology Graduate Seminar, Clemson University GEOL 851, Seminar series for graduate Hydrogeology majors, Fall, 1995, Spring 1996, 2002, 2004.

UNIVERSITY AND PUBLIC SERVICE

Committees

Department: Chairman, Tenure and Promotion Committee (2007-)
Member, Tenure and Promotion Committee (2003-)
Chairman, Faculty Search Committee (2007)
Chairman, Curriculum Committee (1993-1995)
Chairman, Faculty Search Committee (1996)
Chair, Faculty Search Committee (1995)
Member, Advisory Committee (1996-1999)
Member, Faculty Search Committee (1995-1996)

College: Member, Deans Search Committee (2013)
Member, Deans Advisory Committee (2004-2005)
Member, Curriculum Committee (1993-1995)
Member, By-Laws Committee (1995)
Member, Computer Committee (1996-1999)

University: Grievance Committee (2018-2021)
Faculty Senator (2016-2019)

Member, Search Committee for Vice Provost (1996)

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