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Education

1984-1988 Ph.D., Hydrogeology with a minor in Civil and Environmental Engineering, University of Wisconsin-Madison, Wisconsin.
1983-1984 Postgraduate work in Geology and Applied Mathematics, Chengdu University of Technology, China.
1979-1983 B.S., Geology, Chengdu University of Technology (formerly Chengdu College of Geology), China.

Employment History

2002-present Professor, Department of Geological Sciences, University of Alabama.
1997-2002 Associate Professor, Department of Geological Sciences, University of Alabama.
1993-1997 Assistant Professor, Department of Geological Sciences, University of Alabama.
1988-1993 Senior Hydrogeologist, S.S. Papadopulos & Associates, Inc., Bethesda, Maryland.

Professional Experience

2006-present Visiting Professor and Founding Director, PKU Center for Water Research, Peking University, China.
2001 Visiting Fellow, University of Sheffield, United Kingdom.
2000 Visiting Associate Professor, Stanford University.
2000 Visiting Scientist, U.S. Geological Survey, Menlo Park.
1995 Visiting Fellow, Australian Nuclear Science & Technology Organization.
1991 Assistant Professional Lecturer, George Washington University.

Awards and Honors

2009 **Birdsall-Dreiss Distinguished Lecturer**, Geological Society of America.
2006 **Research Award for Outstanding Overseas Chinese-Born Scientists**, National Natural Science Foundation of China.
2005 **Oliver Lectureship in Hydrogeology**, Jackson School of Geosciences, University of Texas-Austin.
2004 **S.S. Papadopulos & Associates (SSPA) Faculty Fellow**, College of Arts and Sciences, University of Alabama.
1999 **Fellow**, Geological Society of America.
1998 **John Hem Excellence in Science and Engineering Award** for outstanding contributions to the understanding of ground water, National Ground Water Association.

Principal Publications and Computer Software

Zheng, C. and G.D. Bennett, 2009, *Applied Contaminant Transport Modeling, Chinese Edition*, Higher Education Press, Beijing, China in collaboration with John Wiley & Sons, New York.

Zheng, C., and G.D. Bennett, 2002, *Applied Contaminant Transport Modeling Second Edition*, John Wiley & Sons, New York, 621 pp. (http://www.mt3d.org/bookinfo.htm).

Zheng, C., and G.D. Bennett, 1995, *Applied Contaminant Transport Modeling: Theory and Practice*, Van Nostrand Reinhold (now John Wiley & Sons), New York, 440 pp.

Zheng, C., and P.P. Wang, 1999, *MT3DMS: A Modular 3-D Multi-species Transport Model for Simulation of Advection, Dispersion and Chemical Reactions of Contaminants in Groundwater Systems; Documentation and User's Guide*, Contract Report SERDP-99-1, U.S. Army Engineer Research and Development Center, Vicksburg, MS, 169 pp. (http://hydro.geo.ua.edu/mt3d).

Zheng, C., 1990, *MT3D: A Modular 3-D Transport Model for Simulation of Advection, Dispersion and Chemical Reactions of Contaminants in Groundwater Systems*, Report to the United States Environmental Protection Agency, 170 pp. (http://www.epa.gov/ada/csmos.html).

Primary Research Interests

- Field, laboratory, and theoretical studies of the effects of aquifer heterogeneities and preferential flow paths on contaminant transport processes
- Hydrogeology and sustainable water resource management at watershed scales
- Integrative study of ecology and hydrology in arid and semi-arid environments
- Coupling of physical transport processes with biological and geochemical reactions for modeling of contaminant transport and remediation

Major Committees and Editorial Boards

2009-present	Blue Ribbon Panel on "Challenges and Opportunities in the Hydrologic Sciences", National Academies and National Research Council, Washington, D.C.
2007-present	President-elect and President, International Commission on Groundwater, International Association of Hydrologic Sciences (IAHS)
2007-present	Editorial Board, *Journal of Hydrology*
2005-present	Committee on Hydrologic Science, National Academies and National Research Council, Washington, D.C.
1998-present	Associate Editor and Software Column Editor (2002-), Journal *Ground Water*, National Ground Water Association
2005-2007	Treasurer, Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI), Washington, D.C.
2004-2008	Science and Technology Center Site Review Team, National Science Foundation
2003-2007	Associate Editor, *Hydrogeology Journal*, International Association of Hydrogeologists (IAH) and Geological Society of America (GSA)
2003-2004	Chair-elect and Chair, International Professionals for the Advancement of Chinese Earth Sciences (IPACES)

Selected Professional Activities (since 2000)

2009-2017	Expert Panel, Major National Research Programme "An Integrative Study of Hydrology and Ecology in the Hei River Basin", National Natural Science Foundation of China.
2009	International Advisory Committee, HydroPredict 2010 International Conference on Eco-hydrology, Prague, Czech Republic.
2009	Keynote Speaker, NovCARE International Conference on Aquifer Characterization, Leipzig, Germany.
2009	Luncheon Speaker, California Biannual Groundwater Conference, Sacramento, CA.
2009	Keynote Speaker, Ground Water Summit, Tucson, Arizona.

2009	International Advisory Committee, "Groundwater Quality 2010" International Conference, Zurich, Australia.
2009	Organizing Committee, "ModelCARE 2009" International Conference, Wuhan, China.
2008	Organizing Committee, "MODFLOW and More 2008" International Conference, Golden, Colorado.
2008	Invited Speaker, 33rd International Geological Congress, Oslo, Norway.
2007	Panel of Experts for *New York Times* on water and environmental issues in China.
2007	International Advisory Committee, "ModelCARE 2007" International Conference, Copenhagen, Denmark.
2007	International Advisory Panel, "Groundwater Quality 2007", Fremantle, Western Australia.
2007	International Advisory Committee, "Water Down Under 2008", Adelaide, South Australia.
2006	Organizing Committee, International Conference "*MODFLOW and More 2006*," Colorado School of Mines, Golden, Colorado.
2006	Panelist, Research Grant Review Panel for Environmental Remediation Programs, Department of Energy, Washington, D.C.
2006	Invited Speaker, Special session on "Innovations in field characterization of physical and chemical heterogeneities," GSA Annual Meeting, Philadelphia.
2006	Invited Seminar Speaker, Department of Hydrology and Water Resources, University of Arizona.
2006	Seminar Speaker, University of Tubingen, Germany.
2006	Seminar Speaker, University of Sheffield, U.K.
2005	Keynote Speaker, 2005 Conference on Ground Water Remediation, National Ground Water Association (NGWA).
2005	Panelist, EPRI Arsenic Modeling Workshop, Tampa, Florida.
2005	Invited Speaker, Special session on "Field-scale characterization of hydraulic properties," AGU Fall Meeting, San Francisco.
2005	Co-Chair, Working Group on Challenges and Opportunities in Chinese Groundwater Science, National Natural Science Foundation of China.
2005	Co-instructor, 1st Geochemical and Reactive Transport Modeling Course, Australia Center for Groundwater Studies, Brisbane, Australia.
2005	Invited Lecturer, School of Chemistry, Physics and Earth Sciences, Flinders University of South Australia, Adelaide, Australia.
2005	Invited Lecturer, Australia Contaminated Land Consultant Association, Victoria, Australia.
2005	Invited Lecturer, Research Center for Deep Geological Environment, AIST, Tsukuba, Japan.
2005	Invited Lecturer, Research and Development Center, Nippon-Koei Co., Tokyo, Japan.
2004	Scientific Advisory Committee, International conference on *Finite-Element Models, MODFLOW, and More 2004*, Karlovy Vary, Czech Republic.
2004	Co-instructor, Short course on *Groundwater Flow and Contaminant Transport Modeling with Introduction to Data Assessment, Sensitivity Analysis, Model Calibration and Uncertainty Evaluation*, Charles University, Czech Republic.
2004	Chair, Organizing Committee, International symposium on *Earth, Environment, and Human Impacts*, IPACES 2004 Annual Meeting and Workshops, Chengdu, China.
2004	NSF IGERT Program "GIScience" Advisory Board, State University of New York at Buffalo.

2004	Visiting Research Professor, Chinese Academy of Sciences.
2003	Organizing Committee, International Conference on *MODFLOW and More 2003*, Colorado School of Mines, Golden, Colorado.
2003	Invited Seminar Speaker, Department of Earth Sciences, University of Hong Kong.
2002	Review Panelist, Global Water Cycle Research Program, National Science Foundation.
2002	Invited Speaker, Special session on *Use Ground-Water Models to Guide Field Data Collection*, AGU 2002 Fall Meeting, San Francisco.
2002-2004	Standing Committee on Hydrologic Information Systems, Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI).
2002	Peer Reviewer, Assessment of Long-Term Sustainability of Monitored Natural Attenuation of Chlorinated Solvents, The Strategic Environmental Research and Development Program (SERDP), DOD/EPA/DOE.
2002	Invited Seminar Speaker, Institute of Applied Geology, University of Tübingen, Germany.
2001-2003	Instructor, Short course on *Reactive Transport Modeling*, University of Sheffield, Sheffield, U.K.
2001	Scientific Advisory Committee and Keynote Speaker, *GQ-2001*: *3rd International Conference on Groundwater Quality*, University of Sheffield, UK.
2001	Invited Seminar Speaker, Department of Geological Sciences, University of Tennessee, Knoxville, TN.
2001	Invited Lecturer, *Earth Science Symposium*, Peking University, China.
2001	Organizing Committee and Keynote Speaker, *MODFLOW 2001 and Other Modeling Odysseys – An International Conference on Groundwater Modeling*, Colorado School of Mines.
2000	Invited Speaker, *International Symposium on Groundwater Contamination*, sponsored by Japanese Association of Groundwater Hydrology, Tokyo, Japan.
2000	Lecturer, Short course on *Mass Transport in Groundwater*, Freiberg University of Mining and Technology, Freiberg, Germany.
2000	Invited Speaker, Western Pacific Geophysics Meeting, Tokyo, Japan.

Professional Affiliations

American Geophysical Union since 1985
National Ground Water Association since 1988
Geological Society of America since 1991
International Association of Hydrologic Sciences (IAHS)

Teaching

(1) Hydrogeology
(2) Introduction to Groundwater Modeling
(3) Concepts and Models in Contaminant Hydrogeology
(4) Hydrogeologic Field Methods
(5) Geostatistics
(6) Coupled Geochemical and Transport Modeling
(7) Groundwater Management

Publications

Raffensperger, J.F., J. Lin, and C. Zheng, Planning a smart market for groundwater: a case study from Shaanxi, China, in review for *J Water Resour. Planning and Management.*

Qin, H., A. Sun, J. Liu, and C. Zheng, System dynamic modeling of water supplies and demands in the North China Plain, in review for *J Water Resour. Planning and Management.*

Yang, Y., J. Wu, and C. Zheng, A niched Pareto tabu search for multi-objective optimal design of groundwater remediation systems, in review for *Water Resources Research*.

Wang, P., C. Zheng, and S.M. Gorelick, A Multivariate Markovian arrival process for modeling contaminant transport through Porous Media, in review for *Water Resources Research*.

Bianchi, M., C. Zheng, C. Wilson, G. Tick, G. Liu, S.M. Gorelick, A field investigation of spatial connectivity in a highly heterogeneous aquifer, in review for *Water Resources Research*.

Bianchi, M., C. Zheng, G. R. Tick, S. M. Gorelick, A new forced-gradient tracer experiment to investigate the importance of small-scale heterogeneity on solute transport at the Macrodispersion Experiment (MADE) site, in review for *Ground Water*.

Ma, R., C. Zheng, H. Prommer, J. Greskowiak, C. Liu, J. Zachara, and M. Rockhold, A Field-scale reactive transport model for U(VI) migration influenced by coupled multi-rate mass transfer and surface complexation reactions, in revision for *Water Resources Research*.

Ma, R., C. Zheng, Effects of density and viscosity in modeling heat as a groundwater tracer, in press for *Ground Water*.

Greskowiak, J., H. Prommer, C. Liu, V.E.A. Post, R. Ma, C. Zheng, J.M. Zachara, Comparison of parameter sensitivities between a laboratory and field scale model of uranium transport in a dual-domain, distributed-rate reactive system, in review for *Water Resources Research*.

Liu, J., G. Cao, and C. Zheng, 2009, Sustainability of groundwater resources in the North China Plain, in *Sustaining Groundwater Resources*, J.A.A. Jones, ed., Springer, New York.

Zheng, C., M. Bianchi, and S.M. Gorelick, 2009, Lessons learned from 25 years of research at the MADE site, in press for *Ground Water*.

Liu, G., C. Zheng, G.R. Tick, and S.M. Gorelick, 2009, Understanding transport processes in highly heterogeneous porous media: Analysis of a new tracer test at the MADE site, in press for *Water Resources Research*.

Zheng, C. and others, 2009, Challenges and Opportunities in Chinese Groundwater Science, Science Press, Beijing, China, 200 pp.

Zheng, C., 2009, Recent developments and future directions for MT3DMS and related transport codes, *Ground Water*, 47(5), doi: 10.1111/j.1745-6584.2009.00602.x.

Bianchi, M. and C. Zheng, 2009, SGeMS: a free and versatile tool for three-dimensional geostatistical applications, *Ground Water*, 47(1), doi: 10.1111/j.1745-6584.2008.00522.x.

Zheng, C. and X. Feng, eds., 2008, *Environmental Geosciences*, Higher Education Press, Beijing, China, p. 254.

Wu, J. and C. Zheng, 2008, Advances in optimal design of contaminant monitoring network design, in *Environmental Geosciences*, C. Zheng and X. Feng, eds., p. 189-222, Higher Education Press, Beijing, China.

Liu, J., C. Zheng, L. Zheng, and Y. Lei, 2008, Ground water sustainability: Methodology and application to the North China Plain, Ground Water, 46(6), doi: 10.1111/j.1745-6584.2008.00486.x.

Zheng, C., 2008, Zhang Hongren and the introduction of transient flow theory to China, *Ground Water*, 46(2):341-343.

Lin, J., J.B. Snodsmith, C. Zheng, and J. Wu, 2008, A modeling study of seawater intrusion in Alabama Gulf Coast, USA, *Environmental Geology*, 54, DOI 10.1007/s00254-008-1288-y.

Bianchi, M., C. Zheng, G. Tick, S.M. Gorelick, 2008, Evaluation of Fickian and non-Fickian models for solute transport in porous media containing decimeter-scale preferential flow paths, in *Calibration and Reliability in Groundwater Modelling: Credibility of Modelling*, IAHS Publ. 320.

Guan, J., F.J. Molz, Q. Zhou, H.H. Liu and C. Zheng, 2008, Behavior of the mass transfer coefficient during the MADE-2 experiment: New insights, *Water Resour. Res*., 44, W02423, doi:10.1029/2007WR006120.

Liu, J., K. Rich, and C. Zheng, 2008, Sustainability analysis of groundwater resources in a coastal aquifer, Alabama, *Environmental Geology*, 54(1):43-52.

Liu, G., C. Zheng, and S.M. Gorelick, 2007, Evaluation of the applicability of the dual-domain mass transfer model in porous media containing connected high-conductivity channels, *Water Resources Research*, 43, W12407, doi:10.1029/2007WR005965.

Spiessl, S.M, H. Prommer, T. Licha, M. Sauter, and C. Zheng, 2007, A process-based reactive hybrid transport model for coupled discrete conduit-continuum systems, *J. Hydrol.*, 347:23-34.

Bowling, J.C., A.B. Rodriguez, D.L. Harry, and C. Zheng, 2007, Integrated geophysical and geological investigation of a heterogeneous fluvial aquifer in Columbus, Mississippi, *Journal of Applied Geophysics*, 62 (2007): 58–73.

He, K., L. Zheng, S. Dong, L. Tang, J. Wu, and C. Zheng, 2007, PGO: a parallel computing platform for global optimization based on genetic algorithm, *Computers and Geosciences*, 33: 357–366.

Kendy, E., J. Wang, D. J. Molden, C. Zheng, C. Liu, and T.S. Steenhuis, 2007, Can urbanization solve inter-sector water conflicts? Insight from a case study in Hebei Province, North China Plain, *Water Policy*, vol. 9, Supplement 1:75–93.

Promma, K., C. Zheng, and P. Asnachinda, 2007, Groundwater and surface-water interactions in a confined alluvial aquifer between two rivers: effects of groundwater flow dynamics on high iron anomaly, *Hydrogeology Journal*, 15: 495–513, DOI 10.1007/s10040-006-0110-8.

Lin, J., J Wu, and C. Zheng, 2007, MF2K-GWM: A Ground water management modeling tool based on MODFLOW-2000, *Ground Water*, 45(2):122-124.

Lin, J., C. Zheng, J. Wu, and C.C. Calvin, 2007, Groundwater simulation-optimization model based on genetic algortihm under variable density conditions, *Chinese Journal of Water Resources*, 38(10): 1236-1244.

Zheng, C., E. Poeter, M.C. Hill, and J. Doherty, 2006, Understanding through modeling, *Ground Water*, 44: 769-770. doi: 10.1111/j.1745-6584.2006.00270.x.

Zheng, C., 2006, Accounting for aquifer heterogeneity in solute transport modeling: a case study from the macrodispersion experiment (MADE) site in Columbus, Mississippi, in *Handbook of Groundwater Engineering, 2nd edition*, Delleur, J.W., ed., CRC Press.

Becker, D., B. Minsker, R. Greenwald, Y. Zhang, K. Harre, K. Yager, C. Zheng, and R. Peralta, 2006, Reducing long-term remedial costs by transport modeling optimization, *Ground Water*, 44(6): 864–875.

Molz, F.J., C. Zheng, S.M. Gorelick, and C. Harvey, 2006, Discussion of "Investigating the Macrodispersion Experiment (MADE) site in Columbus, Mississippi, using a three-dimensional inverse flow and transport model" by H.C. Barlebo, M.C. Hill, and D. Rosbjerg, *Water Resources Research*, 42, W06603, doi:10.1029/2005WR004265.

Bowling, J.C., C. Zheng, A.B. Rodriguez, and D.L. Harry, 2006, Geophysical constraints on contaminant transport modeling in a heterogeneous fluvial aquifer, *J Contam. Hydrol*., 85:72–88, doi:10.1016/j.jconhyd.2006.01.006.

Zheng, C., J. Lin, and D.R. Maidment, 2006, Internet data sources for groundwater modeling, *Ground Water*, 44(2):136-138, doi: 10.1111/j.1745-6584.2006.00196.x.

Wu, J., C. Zheng, C.C. Chien, and L. Zheng, 2006, A comparative study of Monte Carlo simple genetic algorithm and noisy genetic algorithm for cost-effective sampling network design under uncertainty, *Advances in Water Resources*, 29:899–911, doi:10.1016/j.advwatres.2005.08.005.

Gorelick, S. M., G. Liu, and C. Zheng, 2005, Quantifying mass transfer in permeable media containing conductive dendritic networks, *Geophysical Research Letters*, 32, L18402, doi:10.1029/2005GL023512.

Bowling, J.C., A.B. Rodriguez, D.L. Harry, and C. Zheng, 2005, Delineating alluvial aquifer heterogeneity using resistivity and GPR data, *Ground Water*, 43(6):890–903.

Wang, P.P., C. Zheng, and S. M. Gorelick, 2005, A general solution approach to advective-dispersive transport with multirate mass transfer, *Advances in Water Resources*, 28:33-42.

Wang, P.P., and C. Zheng, 2005, Contaminant transport models under random sources, *Ground Water*, 43(3): 423-433.

Wu, J., C. Zheng, and C. C. Chien, 2005, Cost-effective sampling network design for contaminant plume monitoring under general hydrogeological conditions, *J. Contaminant Hydrology*, 77: 41–65, doi:10.1016/j.jconhyd.2004.11.006.

Lu, G., C. Zheng, and A. Wolfsberg, 2005, Effect of uncertain hydraulic conductivity on the fate and transport of BTEX compounds at a field site, *J. Environmental Engineering*, v. 131, no. 5, 767-776.

Zheng, C., 2004, Model Viewer: a three-dimensional visualization tool for ground water modelers (software review), *Ground Water*, 42(2): 164-166.

Liu, G., C. Zheng, and S. M. Gorelick, 2004, Limits of applicability of the advection-dispersion model in aquifers containing high-conductivity channels, *Water Resources Research*, v.40:W08308, doi:10.1029/2003WR002735.

Wu, J., and C. Zheng, 2004, Contaminant monitoring network design: recent advances and future directions, *Advance in Earth Sciences* (in Chinese), 19(3):429-436.

Lu, G., and C. Zheng, 2004, Natural attenuation of fuel hydrocarbon contaminants: Correlation of biodegradation with hydraulic conductivity in a field case study, *Advance in Earth Sciences* (in Chinese), 19(3):403-408.

Wu, J., and C. Zheng, 2004, A general simulation-optimization approach for groundwater sampling network design, in *Proc. International Symposium on Water Resources and the Urban Environment*, China University of Geosciences-Wuhan, China.

Poeter, E., C. Zheng, M. C. Hill, and J. Doherty, eds., 2003, *Proceedings of "MODFLOW and More 2003" International Conference (Volumes I and II)*, Colorado School of Mines, Golden, Colorado.

Zheng, C., and S.M. Gorelick, 2003, Analysis of the effect of decimeter-scale preferential flow paths on solute transport, *Ground Water*, 41(2): 142-155.

Prommer, H., D.A. Barry, and C. Zheng, 2003, A MODFLOW/MT3DMS based multicomponent reactive transport model, *Ground Water*, 41(2): 247-257.

Huang, W.E., S. Oswald, D.N. Lerner, C.C. Smith, and C. Zheng, 2003, Dissolved oxygen imaging in a porous medium to investigate biodegradation in a plume with limited electron acceptor supply, *Environ. Sci. Tech*, 37(9): 1905-1911.

Xie, X., J.J. Jiao, Z. Tang, and C. Zheng, 2003, Evolution of abnormally low pressure and its implications for the hydrocarbon system in the southeast uplift zone of Songliao basin, China, *AAPG Bulletin*, 87(1), 99–119.

Chien, C.C., M.A. Medina, Jr., G.F. Pinder, D.R. Reible, B.E. Sleep, C. Zheng, eds., 2003, *Contaminated Ground Water and Sediment: Modeling for Management and Remediation*, Lewis Publishers, FL, 288 p.

Hill, M.C., E. Poeter, C. Zheng, and J. Doherty, 2003, Editorial: MODFLOW-2001 and other modeling odysseys, *Ground Water*, 41(2):113-113.

Hill, M.C., E. Poeter, C. Zheng, and J. Doherty, eds., 2003, MODFLOW-2001 and Other Modeling Odysseys, A special theme issue of *Ground Water*, 41(1):113-288.

Zheng, C., and G.D. Bennett, 2002, *Applied Contaminant Transport Modeling 2nd edition*, John Wiley & Sons, New York, 621 pp.

Barry, D.A., H. Prommer, C.T. Miller, P. Engesgaard, A. Brun, and C. Zheng, 2002, Modeling the fate of oxidisable organic contaminants in groundwater, *Advances in Water Resources* (25th anniversary edition), 25(8-12): 945–983.

Zheng C., and P.P. Wang, 2002, A field demonstration of the simulation-optimization approach for remediation system design, *Ground Water*, 40(3): 258-265.

Zheng, C., 2002, TopoDrive and ParticleFlow: Simple tools for learning ground water modeling (software review), *Ground Water*, 40(3):222-223.

Spiessl, S. M., M. Sauter, C. Zheng, and G. Liu, 2002, Comparison of two numerical methods for advection in a pipe network coupled to a continuum transport model, in *Calibration and Reliability in Groundwater Modelling: A Few Steps Closer to Reality*, IAHS Publ. 277:60-68, International Association of Hydrological Sciences.

Spiessl, S.M., H. Prommer, M. Sauter, and C. Zheng, 2002, Numerical simulation of uranium transport in flooded underground mines. In *Uranium in the Aquatic Environment*, Merkel, B.J., B. Planer-Friedrich, and C. Wolkersdorfer, eds., Springer Berlin, p. 273-282.

Spiessl, S.M., M. Sauter, H.S. Viswanathan, and C. Zheng, 2002, Simulation of dissolved uranium release from flooded underground mines under equilibrium conditions, in *Uranium Deposits: From Their Genesis to Their Environmental Aspects*, Kribek, B. and J. Zeman, eds., p. 167-170.

Julian, H.E., J.M. Boggs, C. Zheng, and C.E. Feehley, 2001, Numerical simulation of a natural gradient tracer experiment for the Natural Attenuation Study: flow and physical transport, *Ground Water*, 39(4): 534-545.

Zheng, C., and P.P. Wang, 2001, Application of evolutionary algorithms for remediation system design optimization on the Massachusetts Military Reservation, In *Proc. 2001 World Environmental and Water Resources Congress*, Orlando, FL.

Seo, S., E.P. Poeter, C. Zheng, and O. Poeter, eds., 2001, *Proceedings of "MODFLOW 2001" International Conference (Volumes I and II)*, Colorado School of Mines, Golden, Colorado.

Wang, P.P., C. Zheng, D.T. Feinstein, 2001, A positivity preserving scheme for modeling advection-dominated solute transport, In *Proc. MODFLOW 2001 International Conference*, Colorado School of Mines, Golden, Colorado.

Liu, G., P.P. Wang, and C. Zheng, 2001, An explicit mass-conservative TVD scheme for solute transport modeling, In *Proc. MODFLOW 2001 International Conference*, Colorado School of Mines, Golden, Colorado.

Zheng, C., and S.M. Gorelick, 2001, Effect of decimeter-scale preferential flow paths on solute transport: implications for groundwater remediation, In *Groundwater Quality: Natural and Enhanced Restoration of Groundwater Pollution*, Thornton, S.F. and .E. Oswald, eds., IAHS Publ. 275:463-469, International Association of Hydrological Sciences.

Sun, M. and C. Zheng, 2000, Calibration of 3-D groundwater model using hydrogeological parameter zones, In *Computational Methods in Water Resources*, *Proc. XIII International Conference on Computational Methods in Water Resources*, Alberta, Canada.

Feehley C.E., C. Zheng, and F.J. Molz, 2000, A dual-domain mass transfer approach for modeling solute transport in heterogeneous porous media, application to the MADE site, *Water Resources Research*, 36(9): 2501-2515.

Ouyang, Y. and C. Zheng, 2000, Surficial processes and CO_2 flux in soil ecosystem, *Journal of Hydrology*, 234: 54-70.

Lu, G., C. Zheng, R.J. Donahoe and W.B. Lyons, 2000, Controlling Processes in a $CaCO_3$ precipitating Stream in Huanglong Natural Scenic District, Sichuan, China, *Journal of Hydrology*, 230(1-2).

Wang, P.P. and C. Zheng, 1999, Contaminant transport modeling under random sources, in *Calibration and Reliability in Groundwater Modeling, Copying with Uncertainty*, Stauffer, F. W. Kinzelbach, K. Kovar, and E. Hoehn, eds., IAHS Publ. 265:317-323, International Association of Hydrological Sciences.

Ouyang, Y. and C. Zheng, 1999, Density-driven transport of dissolved chemicals through unsaturated soil, *Soil Science*, 164(6): 376-390.

Zheng, C., and P.P. Wang, 1999, An integrated global and local optimization approach for remediation system design, *Water Resources Research*, 35(1): 137-146.
Lu, G., T.P. Clement, C. Zheng, and T.H. Wiedemeier, 1999, Natural attenuation of BTEX compounds, model development and field-scale application, *Ground Water*, 37(5): 707-717.
Sun, M. and C. Zheng, 1999, Long-term groundwater management by a MODFLOW based dynamic optimization tool, *Journal of American Water Resources Association*, 35(1): 99-111.
Hunt, R. and C. Zheng, 1999, Debating complexity in modeling, *EOS , Transactions, American Geophysical Union*, 80(3): 29.
Zheng, C., C.E. Feehley, P.P. Wang, and M.S. Dortch, 1998, The ULTIMATE scheme for modeling three-dimensional multicomponent transport in heterogeneous aquifers, in *Proc. MODFLOW'98 International Conference*, Poeter, E.P., C. Zheng, and M.C. Hill, ed., Colorado School of Mines, Golden, CO.
Poeter, E.P., C. Zheng, and M.C. Hill, eds., 1998, *Proceedings of "MODFLOW'98" International Conference on Groundwater Modeling (Volumes I and II)*, Colorado School of Mines, Golden, Colorado.
Zheng, C., P.P. Wang, C.C. Chien, and K.P. Garon, 1998, New advances in combining simulation and optimization for solving groundwater management problems, in *Proc. MODFLOW'98 International Conference*, Poeter, E.P., C. Zheng, and M.C. Hill, eds., Colorado School of Mines, Golden, CO.
Guerin, M. and C. Zheng, 1998, GMT3D – Coupling multicomponent, three-dimensional transport with geochemistry, , in *Proc. MODFLOW'98 International Conference*, Poeter, E.P., C. Zheng, and M.C. Hill, eds., Colorado School of Mines, Golden, CO.
Clement, T.P., Y. Sun, and C. Zheng, RT3D (v.20), 1998, A MODFLOW family reactive transport simulator, in *Proc. MODFLOW'98 International Conference*, Poeter, E.P., C. Zheng, and M.C. Hill, eds., Colorado School of Mines, Golden, CO.
Neville, C.J., M.J. Riley, and C. Zheng, Implicit modeling of low permeability features: an appraisal for solute transport, in *Proc. MODFLOW'98 International Conference*, Poeter, E.P., C. Zheng, and M.C. Hill, eds., Colorado School of Mines, Golden, CO.
Wang, M. and C. Zheng, 1998, Application of genetic algorithms and simulated annealing in groundwater management: formulation and comparison, *Journal of American Water Resources Association*, 34(3): 519-530.
Jiao, J.J. and C. Zheng, 1998, Abnormal fluid pressures caused by erosion and subsidence of sedimentary basins, *Journal of Hydrology*, 204: 124-137.
Zheng, C. and J.J. Jiao, 1998, Numerical simulation of tracer tests in a heterogeneous aquifer, *Journal of Environmental Engineering*, 124(6): 510-516.
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Invited and Keynote Presentations

I have given more than 100 invited presentations or keynote speeches at numerous institutions and international conferences throughout the world over the past 10 years, including among others, University of Wisconsin-Madison, Auburn University, University of Arizona, Pennsylvania State University, University of Pennsylvania, Tufts University, Johns Hopkins University, Massachusetts Institute of Technology, Louisiana State University, University of Tennessee, Yale University, Columbia University, University of California-Davis, University of Nevada-Reno, University of Kansas, Michigan State University, University of Colorado, Colorado School of Mines, Stanford University, Ohio State University, New Mexico Institute of Mining and Technology, Sandia National Lab, Los Alamos National Lab, University of Texas-Austin, University of California-Los Angeles, Syracuse University, U.S. Geological Society, University of Minnesota, Oregon State University, Wright State University, University of Washington, Florida State University, University of Montana, Swiss Federal Institute of Technology, Polytechnique Fédérale de Lausanne, Peking University, Nanjing University, Zhejiang University, University of Sheffield, University of Copenhagen, Demark Technical University, University of Tubingen, Helmholtz Centre for Environmental Research – UFZ, Freiburg University of Mining and Technology, University of Hong Kong, National Central University – Taiwan, Japan Geological Survey, Flinders University – Australia, CSIRO Water and Land, American Geophysical Union, Geological Society of America, National Ground Water Association, International Association of Hydrologic Sciences, Western Pacific Geophysical Meeting, International Geological Congress.

Funded Research Projects

1. Collaborative Research: High-resolution dynamic characterization of transport pathways: providing new Insights into subsurface processes, National Science Foundation, 2008-11, PI.
2. Optimal management of coastal aquifers against seawater intrusion, Baldwin County, Alabama, NOAA through the state of Alabama, 2008-09, PI.
3. With John Zachara (PI) and 17 co-PIs, Multi-scale mass transfer processes controlling natural attenuation and engineered remediation: An Integrated Field Challenge (IFC) focused on Hanford's 300 Area uranium plume, Department of Energy, 2006-2011, co-PI.
4. A Coupled surface water-groundwater model for understanding hydrologic processes and water quality evolution in the North China Plain (NCP), Ministry of Science and Technology of China, 2007-2012, PI (through Peking University).
5. Spatial distribution of groundwater ages in a large sedimentary basin: Numerical simulation and application, National Natural Science Foundation of China, 2007-09, PI (through Peking University).
6. Collaborative Research: Solute transport in aquifers containing connected high-conductivity networks: theory founded on laboratory and field data, National Science Foundation, 2006-09, Principal Investigator (PI).
7. Development of modeling methods and tools for predicting coupled reactive transport processes in porous media at multiple scales, Department of Energy, 2006-09, PI of subaward to Alabama.
8. Discrete fracture network models for risk assessment of carbon sequestration in coal, Department of Energy, 2005-08, PI of subaward to Alabama.
9. Sustainable groundwater management of coastal aquifers in Baldwin County, Alabama, NOAA through the state of Alabama, 2005-07, PI.
10. Reliability considerations in groundwater remediation system and monitoring network design, DuPont Company, 2005-06, PI.
11. With Li Zheng (Chinese Academy of Sciences), Sustainable groundwater management in the North China Plain, Chinese Academy of Sciences, 2004-06, Collaborator.
12. Development of information infrastructure for hydrological sciences, National Science Foundation, 2004-05, PI of subaward to Alabama.
13. Groundwater study of Ft. Morgan Peninsula, Baldwin County, NOAA through the state of Alabama, 2004-05, PI.
14. Further development of the MT3DMS contaminant transport model for linkage with the Army Risk Assessment Modeling System, Army Engineer Research and Development Center, 2003-04, PI.
15. Further development of the ModGA code for contaminant source identification, DuPont Company, 2003-04. PI.
16. Acquisition of geophysical field equipment for earth science research and teaching at the University of Alabama, NSF, 2002-2004, Co-PI.
17. With Jimmy Jiao (University of Hong Kong), Modification of regional groundwater regimes by large-scale land reclamation, Research Grants Council of Hong Kong, 2002-2005, Co-PI.
18. Collaborative Research: A systematic study of solute transport influenced by preferential flow paths at the decimeter and smaller scales, NSF, 2001-2005, PI. Field demonstration of transport optimization modeling for reducing the costs of groundwater pump-and-treat systems, Department of Defense Environmental Security Technology Certification Program (ESTCP), 2000-2003, PI.

20. Further development of the ModGA code for monitoring network design optimization, DuPont Company, 2002-2003. PI.
21. With Amy Ward (Project Director, University of Alabama) and 17 others at University of Alabama and University of New Mexico, Integrated Graduate Education Research Training (IGERT) Program in Freshwater Sciences, NSF, 1999-2004, co-investigator and leader of the solute transport research theme.
22. With Jimmy Jiao (University of Hong Kong), Origin and evolution of abnormal fluid pressures in the Shiwu area in northeastern China, Research Grants Council of Hong Kong, 1999-2002, Co-PI.
23. Multi-fractal scaling of hydraulic conductivity distributions and the effect on plume-scale contaminant transport, National Science Foundation, 1997-2000, PI of subaward to Alabama.
24. Subsurface site characterization via a computer-aided tool, Gulf Coast Hazardous Substance Research Center, US EPA, 1998-00, Co-PI.
25. Development and application of a multicomponent solute transport simulator for the Department of Defense Groundwater Modeling System (GMS), US Army Engineer Research and Development Center, 1996-2000, PI.
26. Incorporation of variably saturated flow and contaminant transport in the groundwater flow and transport optimization model ModGA, DuPont Chemical, 1998-99, PI.
27. Modeling biologically reactive contaminant transport and natural attenuation, Pacific Northwest National Laboratory, Department of Energy, 1997-98, PI.
28. A global optimization approach for parameter identification in contaminant transport modeling, U.S. Environmental Protection Agency, 1995-97, PI.
29. Development of a simulation-optimization model for groundwater management and remediation designs, DuPont Company, 1995-98, PI.
30. Parameter identification using genetic algorithms, DuPont Company, 1995-96, PI.
31. Simulation of reactive tracer transport in a strongly heterogeneous aquifer, Cray Research, Inc., 1995-96, PI.
32. Augmentation of optimal policy selections to groundwater contaminant transport model MT3D (Phases I and II), USGS through Alabama Water Resources Research Institute, 1994-1995, Co-PI.
33. Development of an advanced contaminant fate and transport simulator for Cray supercomputers, Cray Research, Inc., 1994-1995, PI.
34. An investigation of underpressured geological formations for disposal of hazardous wastes, State of Alabama through UA School of Mines and Energy Development, 1994-95, PI.
35. A graduate fellowship to support Ph.D. research in hydrogeology, S.S. Papadopulos & Associates, Inc., 1994-95, PI.