STEVEN M. GORELICK **AUGUST 2024**

CYRUS F. TOLMAN PROFESSOR

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EDUCATION

Ph.D. Hydrology, Stanford University, 1981
M.S. Hydrology, Stanford University, 1977
B.A. New College, 1975

PROFESSIONAL EXPERIENCE

2007-present **Professor of Earth System Science (renamed 2015), Stanford University**
2010-present **Senior Fellow, Woods Institute for the Environment, Stanford University**
2005-present **Cyrus F. Tolman Professor, Stanford University**
2009 - present **Director**, Global Freshwater Initiative, Stanford University
1996-2007 **Professor, Dept. of Geological & Environmental Sciences and Dept. of Geophysics, Stanford University (*joint appointment*)**
2023 Visiting Scientist, CSIRO, Brisbane, AU (Spring-Summer)
2021-2022 Visiting Scientists, Helmholtz Centre for Environmental Research (Spring-Summer)
2019 Visiting Professor, Swiss Federal Institute of Technology ETH Zurich (Spring)
2013 Visiting Professor, Swiss Federal Institute of Technology ETH Zurich (Spring)
2012 Visiting Professor, Centre for Ecohydrology, UWA, Perth, AU (Spring)
2009 Visiting Scientist, CSIRO, Land and Water, Perth, AU (Spring-Summer)
2007 Visiting Scholar, University of Cambridge, Dept. of Zoology (Spring-Summer)
2006 Visiting Professor, Ecole Polytechnique Federale de Lausanne (EPFL), Ecological Engineering Laboratory, Switzerland (Spring-Summer)
2005 Visiting Professor, Swiss Federal Institute of Technology (ETH), Zurich (Spring)
1997 Visiting Scholar, Harvard University, Division of Engineering and Applied Sciences (Winter)
1997 Visiting Scientist, CSIRO, Perth, AU (Spring-Fall)
1993-96 **Associate Professor, Dept. of Geological and Environmental Sciences, and Dept. of Geophysics, Stanford University**
1988-93 **Associate Professor of Applied Earth Sciences, Stanford University**
Associate Professor of Geophysics, Stanford University (appt. 1991)
1981-88 Consulting Professor, Applied Earth Sciences, Stanford University
1981-88 U.S. Geological Survey, Water Resources Division
Project Chief (1982-88), Assistant GW Research Advisor (1986-88)
1977-80 Hydrologic Consultant

HONORS AND AWARDS

2023 **Fulbright Fellow - Distinguished Chair** in Science, Technology and Innovation, Australian-American Program, Brisbane, AU
2021-22 **Alexander von Humboldt Foundation Research Award, Germany**
2018 **Award,** THE Excellence in Teaching Award, School of Earth, Energy, and Environ. Sciences
2016 **Fellow,** American Association for the Advancement of Science (*AAAS*)
2015 **Best Paper of 2014**, *Environmental Research Letters (ERL)*
2014 **Distinguished Teacher,** School of Earth Sciences, Stanford
2013 **Editor's Choice Award,** AGU *Water Resources Research*
2012 **Elected Member**, US National Academy of Engineering (**NAE**)
2012 **Vice Provost Visiting Professor**, University of Western Australia, Perth
2011 **International Fellow,** Institute for Envir. Sci. and Research, ESR, New Zealand
2008 **Fulbright Fellow – Senior Scholar,** Australian-American Program
2005 **Fellow**, **John Simon Guggenheim Foundation**
1997 **Fulbright Fellow – Senior Scholar,** Australian-American Program
1990 **Fellow**, American Geophysical Union
1988 **Fellow**, Geological Society of America
2008 **Chester Keisel Memorial Lecturer**, University of Arizona
2008 **Pioneers in Groundwater,** Environmental and Water Resources Institute of the American Society of Civil Engineers (ASCE).
2006 **Award**, International Association for Mathematical Geology, Best Published Paper in *Computers and Geosciences* in 2005
2005 **Cyrus F. Tolman Professorship**, Stanford University
2004 **M. King Hubbert Award**, National Groundwater Association
1998 **Ineson Distinguished Lecturer**, Intl. Assoc. Hydrogeologists, UK & BGS
1994 **O.E. Meinzer Award**, Geological Society of America
1990 **James B. Macelwane Medal**, American Geophysical Union
1989 **Presidential Young Investigator Award**, The White House and the National Science Foundation
1987-97 **President**, International Commission on Groundwater, IAHS

ASSOCIATE EDITORSHIPS

Optimization and Engineering (1999-present)
Transport in Porous Media (2002-2004)
Hydrogeology Journal (1999-2002)
Journal of Hydrology (1990-1996)
Water Resources Research (1983-1987)

PROFESSIONAL ACTIVITIES SINCE 1990

1988-90	**Member, Geohydrology Panel,** National Research Council Committee on Solid Earth Sciences
1988-90	**Scientific Committee,** International Conference on the Scientific Basis for Water Resources Management, Beijing, China, 1990
1989	**Scientific Program Committee,** International Symposium on Groundwater Management: Quantity and Quality, Spain
1989	**Invited Presentation**, STL, Advance Education Seminar, IBM Lab
1989-90	**Co-Convenor,** Geologic Characterization of Media Heterogeneity for Improved Prediction of Subsurface Transport, AGU Special Session
1989-90	**Invited Speaker,** International Conference on Calibration and Reliability in Groundwater Modelling, The Hague, The Netherlands
1989-90	**Advisory Committee,** International Conference on Groundwater Resources Management, Bangkok, Thailand, 1990
1989-95	**Faculty Member**, EPA, Western Region Hazardous Substance Research Center, Stanford University and Oregon State University.
1990-91	**Member,** National Science Foundation Geology and Paleontology Panel
1990	**Workshop Leader,** DOE Meeting on Groundwater Monitoring Network Design
1990-91	**Groundwater Technical Advisory Committee,** CH2M HILL modelling of Santa Clara Valley, California
1991	**Invited Presentations**, University of Michigan, U.C. Berkeley, & EPA
1991-92	**Member,** National Science Foundation Continental Hydrology Panel and Hydrologic Sciences Panel
1992-1993	**Member**, AGU Water Resources Research Editor Selection Committee
1992-2009	**Member,** U.S. National Committee for IAHS
1992-1994	**Member**, AGU Horton Medal Committee
1992-93	**Scientific Advisory Committee,** International Conference on Groundwater Quality Management, Estonia
1992-93	**Advisor,** UNESCO International Hydrologic Program Planning Group
1992-94	**Member,** Battelle Labs Technical Support Group - Arid Zone VOC Integrated Demo
1992-94	**Member,** Geostatistics Experts Group & Conceptual Model Uncertainty Group, Sandia National Laboratory
1993	**Instructor**, Design of Groundwater Contaminant Capture Systems: Decision Analysis and Optimization (w/ A.Freeze, L.Smith, & J.Massmann), E-Cubed, Chicago
1993-94	**International Scientific Committee,** Assessing and Managing Health Risks from Drinking Water Contamination, Rome, Italy
1993-94	**Scientific Advisory Committee,** International Conference on Future Groundwater Resources at Risk, Helsinki, Finland
1995	**Invited Speaker,** Kovacs Colloquium, Paris, 1995

1995 **Invited Instructor**, ETH, Swiss Federal Institute of Technology, 16th International Course, Pollutant Transport and Management in Heterogeneous Aquifers, (w/ J. Wilson)

1995 **Keynote Speaker,** International Conference on Groundwater Quality: Remediation and Protection, Prague, 1995

1995-1997 **Member**, California Environmental Protection Agency Risk Assessment Advisory Committee of the Office of Environmental Health Hazard Assessment Science Advisory Board

1995-1996 **Scientific Advisory Committee**, Model Calibration and Reliability Conference, Golden, CO.

1995-1997 **Scientific Program Committee**, IAHS Scientific Assembly, Morocco.

1995-1998 **Member**, **Chair**, Meinzer Award Committee, Geological Society of America

1996 **Invited Speaker**, Geologisches Institut, Universitat Tuebingen, Germany

1997 **Visiting Scholar**, Harvard University, Division of Engineering and Applied Sciences

1997 **Visiting Scientist**, CSIRO, Perth, Australia

1997 **Visiting Professor**, University of Western Australia, Perth

1997 **Keynote Speaker**, MODSIM 97, Hobart, Tasmania.

1997 **Invited Speaker**, MIT, Harvard, University of Paris, USGS (Reston), CSIRO Perth, CSIRO Canberra, Intl. Association of Hydrogeologists Perth, Univ.of Western Australia/Envir. Dynamics Seminar, Institute of Engineers Melbourne, CSIRO Adelaide, Intl. Assoc. Hydrogeologists Sydney.

1997 **Instructor**, Aquifer Heterogeneity and Optimal Capture of Contaminants, short course, University of New South Wales, Sydney, Australia (with J.L. Wilson and L. Townley).

1997 **Invited Speaker,** 1997 International Conference on Groundwater Quality Protection : Technology and Management of NAPL Problems, Taiwan

1997-1999 **Member,** Scientific Committee, ModelCARE Conference (Joint IAHS/IAHR), Zurich, Switzerland, Sept. 1999.

1998 **External Examiner,** Ph.D. Committee, Technical University of Denmark.

1998 **Invited Speaker**, Groundwater Research Centre, Technical University of Denmark

1998 **External Juror**, Ph.D. Jury, University of Paris, France

1998-2000 **Member,** Scientific Advisory Committee, Groundwater 2000: Conference on Groundwater Research, Copenhagen, Denmark, June 2000.

1998-2000 **Chair/Consultant**, Review Panel for Groundwater Model for Hanford Site, Washington, PNNL/DOE.

1999-2000 **Member**, **National Research Council Panel** on Grand Challenges in Environmental Sciences Research.

1999 **Member**, Expert Panel to Review Minimum Flows and Water Levels Used for Regulatory Purposes in Southwest Florida.

1999-01 **Scientific Advisory Committee**, International Conference on Future Groundwater Resources at Risk, Lisbon, Portugal, 2001

2000 **Invited Lecturer**, The Johns Hopkins University

2000-2001 **Member**, Hydrogeology Program Planning Group, Ocean Drilling Program/Joint Oceanographic Institutions (JOIDES) for Deep Earth Sampling

2001-2002 **Member**, Scientific Advisory Committee, ModelCARE 2002, Prague

2001-2008 **Representative**, from Stanford University to Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI)

2001-2004 **Advisor**, Regional Aquifer Model Development, Texas Water Development Board

2002-2003 **Member,** CUAHSI Executive Director Search Committee

2002-2004 **Member,** Hydrology Section AGU Fellows Committee

2002-2010 **Advisor**, Evaluation of Demand Uncertainty in Optimal Groundwater Management in Southwest Florida, Tampa Bay Water

2002-2004 **Member**, Hydrology Section AGU Fellows Committee

2003 **Member**, CUAHSI, Audit Committee an Legal Affairs Charter Mission Review Group

2003 **Invited Lecturer**, US Geological Survey Water Resources Division Seminar Series

2003-2004 **Member**, Scientific Advisory Committee, Finite Element Modeling and Modflow Conference, Carlsbad, Czech Republic

2004 **Invited Speaker**, UC Davis Distinguished Speaker Series

2004 **Invited Speaker and Panel Discussant**, Finite Element Modeling and Modflow Conference, Carlsbad, Czech Republic

2005 **Invited Lecturer**, University of Barcelona, Swiss Federal Institute of Technology (ETH), and Swiss National Research Center for Water Pollution Control (EAWAG)

2005 **Public Lecture**, Stanford University, The End of Oil series

2006 **Invited Lecturer**, Ecole Polytechnique Federale de Lausanne (EPFL), Ecological Engineering Laboratory, Switzerland

2007 **Invited Lecturer**, University of Paris, Université Pierre et Marie CURIE

2007 **Invited Lecturer**, Cambridge Conservation Forum, University of Cambridge

2007-2008 **Member**, Scientific Advisory Committee, *HydroPredict 2008*, Prague

2008 **Invited Plenary Lecturer**, World Environmental & Energy Conference, ASCE, Hawaii

2008 **Public Lecture**, Stanford University, Troubled Waters series

2008 **Member**, Peer Review Panel, National Science Foundation, Hydrologic Sciences

2009 **Invited Lectures**, University of Western Australia, School of Environmental Systems Engineering; CSIRO, Division of Land and Water; Engineers of Western Australia; International Association of Hydrogeologists, Perth, AU; USGS, Menlo Park.

2009-2010 **Member**, Scientific Advisory Committee, *HydroPredict 2010*, Prague

2010 **Member**, Visiting Committee, Dept. of Earth Sciences, Dartmouth College

2010 – 2011	**Member**, Water Advisory Board, Natural Capital Project
2011	**Search Committee**, Hydrologist, Natural Capital Project
2011	**External Reviewer**, Doctorate of Xiang Zhao Kong, Swiss Federal Institute of Technology, ETH, Zurich
2011	**Invited Lecturer**, Environmental Science Research (ESR), New Zealand
2011	**Keynote Speaker**, River Corridor Restoration Conference – RCRC11, Monte Verità, Ascona, Switzerland
2011- **present**	**Member**, AGU Hydrology Section, Water and Society Technical Committee
2011- 2015	**Member**, Scientific Advisory Board, NIREAS International Water Center, Cyprus
2011	**Invited Lectures**, Swiss Federal Institute of Technology (ETH Zurich), École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, University of Paris – VI, California Independent Petroleum Association, Chevron Retirees Association, and Chevron Fellows meeting
2011	**Co-Organizer**, AGU Session, Assessing Global Soil Change, Impacts on Hydrological and Ecosystem Services
2011	**Co-Organizer**, AGU Session, Water and Society
2012	**Invited Lecture**, Nanyang Technological University, Earth Observatory of Singapore
2012	**Invited Lecture**, Prediction Under Change Workshop : Visionary Speaker, Boulder, Colorado
2012	**Plenary Lecturer**, 34th International Geologic Congress, Brisbane, Australia
2012	**Invited Lecture**, Centre for Ecohydrology, University of Western Australia
2012	**Invited Lecture**, CSIRO, Division of Land and Water, Perth, Australia
2012	**Invited Lecture**, Flinders University, National Groundwater Centre (NCGRT), Adelaide, Australia
2012	**Invited Lecture**, Distinguished Lecture Series, International Water Symposium, Geoscience Australia, Canberra
2012	**Invited Lecture**, Earth Resources Engineering Section, National Academy of Engineering, Washington DC
2013	**Invited Lecture**, Swiss Federal Institute of Technology, ETH, Zurich
2013	**Invited Lecture**, EAWAG, Swiss Federal Institute of Aquatic Science and Technology, Zurich
2013	**Keynote Lecturer**, Vienna Catchment Science Symposium, Austria
2013	**Invited Lecture**, International Workshop: Observation and Modeling of Ecohydrological Processes in Inland River Basins: A Vision for Transformative Science, Beijing, China
2013-15	**Member**, Stanford University, Committee on Research (C-Res)
2014	**Member**, Review Panel, National Science Foundation, Hydrologic Sciences
2014	**Invited Lecture**, Berkeley Civil and Environmental Engineering Seminar
2015	**Invited Lecture**, Stanford Center for Innovation in Global Health Symposium
2014-15	**International Advisory Board**, *MODSIM 2015*, Queensland, Australia
2015	**Invited Expert**, International Water Security Foresight Workshop, Rand Corp., Arlington, VA

2015 **Invited Lecture**, UFZ – Helmholz Centre for Environmental Research, Leipzig, Germany

2015 **Invited Lecture**, Columbia University, Dept. of Earth and Environmental Engineering

2015-16 **Member**, Scientific Advisory Committee, Groundwater Quality 2016 (GQ16), Shenzhen, China

2015-2018 **Advisory Board**, Southern University of Science and Technology, School of Engineering and Environmental Science, Shenzhen, China

2015-2018 **Chair**, Stanford University Committee on Research (C-Res)

2016 **Keynote Lecturer**, Groundwater Quality 2016, Shenzhen, China

2016-17 **Advisory Committee**, IPWE 2017, International Perspective on Water Resources and the Environment, Wuhan, China

2016 **Invited Speaker**, American Geophysical Union meeting, San Francisco, Session: International Transdisciplinary Approaches toward Resilience and Adaptation for Societal, Managed, and Natural Systems

2017 **Keynote Lecture**, HydroEco 2017, Birmingham, UK

2017 **Invited Lecture**, University of Birmingham, UK

2017 **Panelist**, Round Table Discussion, Shenzhen Environmental Forum, China

2018 **Panelist**, Day Zero: Water, Climate Change, and Governance in MENA, University of Southern California

2018 **Invited Lecture**, New Zealand Ministry for the Environment, Wellington, NZ

2018 **Invited Lecture**, Massey University, Palmerston North, NZ

2018 **Invited Lecture**, *Geoscience Australia* Distinguished Lecturer, Canberra, AU

2018 **Invited Speaker**, Symposium on Sustainable Groundwater Management: The Path Forward, San Jose, CA

2018 **Invited Speaker**, Water Systems Symposium, Stanford University, CA

2018-2023 *__Member__, Intl Advisory Board, Water and Climate in SE Asia Project

2018-present ***Chair**, Advisory Board, Southern University of Science and Technology, School of Engineering and Environ. Science, Shenzhen, China

2018-present *__Member__, Visiting Committee, MIT, Dept of Civil and Environ. Engineering

2019-present *__Member__, Advisory Board, Middle East Water Forum, Amman, Jordan

2019 **Invited Lecture**, World Bank, New Delhi, India

2019 **Invited Lecture**, ETH-Zurich, Institute of Science, Technology and Policy

2019 **Invited Lecture**, EPFL, Lausanne, Environmental Engineering Seminar Series

2020 **Citationist**, Stockholm Water Prize (winner John Cherry), (Stockholm, Sweden, virtual)

2021 **Citationist**, Stockholm Water Prize (winner Sandra Postel), (Stockholm, Sweden, virtual)

2021 **Plenary Lecturer and Discussion Panelist**, 3rd International Forum on Water Security and Sustainability, Nanjing, China (virtual)

2021 **Invited Lecture**, Disruptive Technologies for Improved Groundwater Management, Mashreq Water Knowledge Series, Lebanon (virtual)

2021 **Invited Lecture**, Development Lecture Series, Austrian Foundation for Development Research (OEFSE), Vienna, Austria (virtual)

2022 **Invited Lecture**, Institut für Physische Geographie, Goethe-Universität Frankfurt, Germany

2022 **Invited Lecture**, Helmholtz Centre for Environmental Research, Leipzig, Germany

2023 **Invited Talk**, American Geophysical Union Meeting, San Francisco, CA

2023 **Invited Lectures**, CSIRO, Brisbane, Adelaide, Canberra Australia

2023 **Invited Lecture**, Water Futures Seminar, Australia National University, Canberra, AU

2023 **Invited Lecture**, Flinders University, National Centre for Groundwater Research and Training, Adelaide, AU

2024 **Invited Lecture**, Graduate Schools of Business, Workshop on Advancing Sustainable Water Management, Stanford

2024 **Lightening Talk**, Stanford – IIT-Bombay Workshop on Sustainability, Stanford

PUBLICATIONS: WEB OF KNOWLEDGE – > CITATIONS 11,611, H=58
GOOGLE SCHOLAR – > 18,537 CITATIONS, H=73
RESEARCH GATE – > READS 82,710 AND 15,259 CITATIONS, H=68

1. Gorelick, S.M., I. Remson, and R.W. Cottle. 1979. Management model of a groundwater system with a transient pollutant source. *Water Resources Research.* vol. 15, no. 5, p. 1243-1249.

2. Remson, I. and S.M. Gorelick. 1980. Management models incorporating groundwater variables. In: D. Yaron and C.S. Tapiero, eds., *Operations Research in Agriculture and Water Resources*. North Holland Publishing Co., Amsterdam, The Netherlands, p. 333-356.

3. Remson, I., S.M. Gorelick, and J.F. Fliegner. 1980. Computer models in groundwater exploration. *Groundwater*. vol. 18, no. 5, p. 447-451.

4. Remson, I., and S.M. Gorelick. 1982. Hydrologic issues in repository siting: In: P.L. Hofmann, ed., The technology of high-level nuclear waste disposal: *Advances in the Science and Engineering of the Management of High-level Nuclear Waste.* vol. 2, p. 46-52.

5. Remson, I., and S.M. Gorelick. 1982. Optimal location and management of waste disposal facilities affecting groundwater quality. *Water Resources Bulletin*. vol. 18, no. 1, p. 43-51.

6. Gorelick, S.M. 1982. A model for managing sources of groundwater pollution. *Water Resources Research*. vol. 18, no. 4, p. 773-781.

7. Remson, I., and S.M. Gorelick. 1982. Optimal dynamic management of groundwater pollutant sources, *Water Resources Research*. vol. 18, no. 1, p. 71-76.

8. Gorelick, S.M., and S. Gustafson. 1983. Linear models for managing sources of groundwater pollution. In: *Proceedings of the Computational Techniques and Applications Conference*, Sydney, Australia.

9. Gorelick, S.M. 1983. A review of distributed parameter groundwater management modelling methods. *Water Resources Research*. vol. 19, no. 2, p. 305-319. (Reprinted by United Nations, *Water Resources Journal*, December 1985, p. 18-32)

10. Gorelick, S.M., B.J. Evans, and I. Remson. 1983. Identifying sources of ground-water pollution: An optimization approach. *Water Resources Research*. vol. 19, no. 3, p. 779-790.

11. Gorelick, S.M., C.I. Voss, P.E. Gill, W. Murray, M.A. Saunders, and M.H. Wright. 1984. Aquifer reclamation design: The use of contaminant transport simulation combined with nonlinear programming. *Water Resources Research*. vol. 20, no. 4, p. 415-427.

12. Gorelick, S.M., B.J. Evans, and I. Remson. 1984. Comment Reply to D. A. Woolhiser on "Identifying sources of groundwater pollution: An optimization approach." *Water Resources Research*. vol. 20, no. 6, p. 745.

13. Atwood, D.F., and S.M. Gorelick. 1985. Hydraulic gradient control for groundwater contaminant removal. *Journal of Hydrology*. vol. 76, no. 1, p. 85-106.

14. Atwood, D.F., and S.M. Gorelick. 1985. Optimal hydraulic containment of contaminated groundwater. *Proceedings of the National Water Well Association 5th National Symposium on Aquifer Restoration and Groundwater Monitoring*. p. 328-344.

15. Danskin, W.R., and S.M. Gorelick. 1985. A policy evaluation tool: Management of a multi-aquifer system using controlled stream recharge. *Water Resources Research*. vol. 21, no. 11, p. 1731-1747.

16. Gorelick, S.M. 1985. Book Review: Groundwater Quality, C.A. Ward, W. Giger, and P.L. McCarty, eds. *Water Resources Bulletin*. vol. 21, no. 6, p. 1060-1067.

17. Gorelick, S.M. 1985. Contaminant transport models for groundwater quality simulation. *Keynote Paper*, International Association of Hydrogeologists 18th Congress, Hydrogeology in the Service of Man. p. 238-249.

18. Lefkoff, L.J., and S.M. Gorelick. 1985. Rapid removal of groundwater contaminant plume. *In*: K.D. Schmidt, ed., *Groundwater Contamination and Reclamation*. p. 125-131.

19. Rice, W., and S.M. Gorelick. 1985. Geologic inference from flow net transmissivity determination: Three case studies. *Water Resources Bulletin.* vol. 21, no. 6, p. 919-930.

20. Gorelick, S.M., and B.J. Wagner. 1986. Evaluating strategies for groundwater contaminant plume stabilization and removal. *Selected Papers in the Hydrologic Sciences.* WSP no. 2209, p. 81-89.

21. Lefkoff, L.J., and S.M. Gorelick. 1986. AQMAN: Linear and quadratic programming matrix generator using two-dimensional ground water flow simulation for aquifer management modelling. *Water Resources Investigation* 86-4016. 164 p.

22. Solow, A.R., and S.M. Gorelick. 1986. Estimating missing streamflow values by cokriging. *Mathematical Geology.* vol. 18, no. 8, p. 785-809.

23. Umari, A.M.J. and S.M. Gorelick. 1986. The problem of complex eigensystems in the semianalytic solution for advancement of time in solute transport simulations: A new method using real arithmetic. *Water Resources Research*. vol. 22, no. 7, p. 1149-1154.

24. Wagner, B.J. and S.M. Gorelick. 1986. A statistical methodology for estimating transport parameters: Theory and applications to one-dimensional advective-dispersive systems. *Water Resources Research.* vol. 22, no. 8, p. 1301-1316.

25. Lefkoff, L.J., and S.M. Gorelick. 1986. Design and cost analysis of rapid aquifer restoration systems using flow simulation and quadratic programming. *Ground Water*. vol. 25, no. 6, p. 777-790.

26. Gorelick, S.M., ed. 1986. *Conjunctive Water Use: Understanding and Managing Surface Water-Groundwater Interactions.* International Association of Hydrologic Science Press, Publication no. 156, Wallingford, UK, 547 p.

27. Umari, A.M.J. and S.M. Gorelick. 1986. Evaluation of the matrix exponential for use in ground-water-flow and solute-transport simulations: Theoretical framework. US Geological Survey. *Water Resources Investigation.* 86-4096, 33 p.

28. Gorelick, S.M. 1987. Sensitivity analysis of optimal groundwater contaminant capture curves: Spatial variability and robust solutions. Proceedings of the National Water Well Association Conference, *Solving Ground Water Problems with Models.* p. 133-146.

29. Wagner, B.J., and S.M. Gorelick. 1986. Optimal groundwater quality management under parameter uncertainty. *Water Resources Research*. vol. 23, no. 7, p. 162-1174.

30. Gorelick, S.M. 1988. A review of groundwater management models. In: G.T. O'Mara, ed., *Efficiency in Irrigation: The Conjunctive Use of Surface and Groundwater Resources.* The World Bank, Washington, D.C., p. 103-120.

31. Gorelick, S.M. 1986. Incorporating assurance into groundwater quality management models. In: E. Custodio, A. Gurgui, and L.P. Lobo Ferreira, eds., NATO ASI Series, Mathematical and Physical Sciences. *Groundwater Flow and Quality Modelling.* vol. 224, p. 135-150.

32. Gomez-Hernandez, J., and S.M. Gorelick. 1989. Effective groundwater model parameter values: Influence of spatial variability of hydraulic conductivity, leakance and recharge. *Water Resources Research.* vol. 25, no. 3, p. 405-420.

33. Greenwald, R.M., and S.M. Gorelick. 1989. Particle travel times of contaminants incorporated into a planning model for groundwater plume capture. *Journal of Hydrology*. vol. 107, p. 73-98.

34. Wagner, B.J., and S.M. Gorelick. 1989. Reliable aquifer remediation in the presence of spatially variable hydraulic conductivity: From data to design. *Water Resources Research.* vol. 25, no. 10, p. 2221-2225.

35. Gomez-Hernandez, J. and S.M. Gorelick. 1990. Reply to comment by R. Ababou and E.F. Wood on "Effective groundwater model parameter values: Influence of spatial variability of hydraulic conductivity, leakance, and recharge." *Water Resources Research*. vol. 26, no. 8, p. 1847-1848.

36. Gorelick, S.M. 1990. Large-scale nonlinear deterministic and stochastic optimization: Formulations involving simulation of subsurface contamination. *Mathematical Programming*. vol. 48, p. 19-39.

37. Lefkoff, L.J. and S.M. Gorelick. 1990. Simulating physical processes and economic behavior in saline, irrigated agriculture: Model development. *Water Resources Research.* vol. 26, no. 8, p. 1359-1369.

38. Lefkoff, L.J., and S.M. Gorelick. 1990. Benefits of an irrigation water rental market in a saline stream-aquifer system. *Water Resources Research.* vol. 26, no. 7, p. 1371-1381.

39. van Genuchten, M. Th., S.M. Gorelick, and W. W-G. Yeh. 1990. Application of parameter estimation techniques to solute transport studies. Proceedings of the International Symposium on Water Quality Modeling of Agricultural Non-Point Sources. *Agricultural Research Service, ARS-81*, p. 731-752.

40. Gvirtzman, H., and S.M. Gorelick. 1991. Dispersion and advection in unsaturated porous media enhanced by anion exclusion. *Nature*. vol. 352, p. 793-795.

41. Gailey, R.M., A.S. Crowe, and S.M. Gorelick. 1991. Coupled process parameter estimation and prediction uncertainty using hydraulic head and concentration data. *Advances in Water Resources*. vol. 14, no. 5, p. 301-314.

42. McCarty, P.L., L. Semprini, M.E. Dolan, T.C. Harmon, C. Tiedeman, and S.M. Gorelick. 1991. In-situ methanotrophic bioremediation for contaminated groundwater at St. Joseph, Michigan. *Proceedings of the International Symposium on In-situ and On-site Bioreclamation*, San Diego, California.

43. Gvirtzman, H. and S.M. Gorelick. 1992. The concept of in-situ vapor stripping for removing VOCs from groundwater. *Transport in Porous Media*. vol. 8, no. 1, p.71-92.

44. Koltermann, C., and S.M. Gorelick. 1992. Paleoclimatic signature in terrestrial flood deposits. *Science*. vol. 256, p. 1775-1782.

45. Gailey, R.M. and S.M. Gorelick. 1993. Design of optimal, reliable plume capture schemes: Application to the Gloucester landfill groundwater contamination problem. *Ground Water.* vol. 31, no. 1, p. 107-114.

46. Gvirtzman, H. and S.M. Gorelick. 1993. Using air-lift pumping as an in-situ aquifer remediation technique. *Water Science Technology.* vol. 27, no. 7-8, p. 195-201.

47. Tiedeman, C. and S.M. Gorelick. 1993. Analysis of uncertainty in optimal groundwater contaminant capture design. *Water Resources Research.* vol. 29, no. 7, p. 2139- 2153.

48. Haggerty, R. and S.M. Gorelick. 1994. Design of multiple contaminant remediation: Sensitivity to rate-limited transport. *Water Resources Research.* vol. 30, no. 2, p. 435-446.

49. Harvey, C., R. Haggerty, and S.M. Gorelick. 1994. Aquifer Remediation: A method for estimating mass transfer rate coefficients and an evaluation of pulsed pumping. *Water Resources Research.* vol. 30, no. 7, p. 1979-1991.

50. Hyndman, D.W., J.M. Harris, and S.M. Gorelick. 1994. Coupled seismic and tracer-test inversion for aquifer property characterization. *Water Resources Research.* vol. 30, no. 7, p. 1965-1977.

51. James, B. and S.M. Gorelick. 1994. When enough is enough: The worth of monitoring data in aquifer remediation design. *Water Resources Research*. vol. 30, no. 12, p. 3499-3513.

52. Bredehoeft, J.D., E.G. Reichard, and S.M. Gorelick. 1995. If it works, don't fix it: Benefits from regional groundwater management. Chapter 7, *Groundwater Models for Resources Analysis and Management*. Edited by A.I. El-Kadi, Lewis Publishers, p. 101-121.

53. Harvey, C.R. and S.M. Gorelick. 1992. Mapping hydraulic conductivity: Sequential conditioning with measurements of solute arrival time, hydraulic head, and local conductivity. *Water Resources Research.* vol. 31, no. 7, p. 1615-1626.

54. Haggerty, R. and S.M. Gorelick. 1995. Multiple-rate mass transfer for modeling diffusion and surface reactions in heterogeneous media. *Water Resources Research.* vol. 31, no. 10, p. 2383-2400.

55. Harvey, C.R. and S.M. Gorelick. 1995. Temporal moment generating equations: Modeling transport and mass-transfer in heterogeneous aquifers. *Water Resources Research.* vol. 31, no. 8, p. 1895-1911.

56. Koltermann, C. and S.M. Gorelick. 1995. The fractional packing model for hydraulic conductivity derived from sediment mixtures. *Water Resources Research.* vol. 31, no. 12, p. 3283-3297.

57. Wilson, A. and S.M. Gorelick. 1996. The effects of pulsed pumping on land subsidence in the Santa Clara Valley, California. *Journal of Hydrology*. no. 174, p. 375-396.

58. Koltermann, C. and S.M. Gorelick. 1996. Heterogeneity in sedimentary deposits: A review of structure-imitating, process-imitating, and descriptive approaches. *Water Resources Research.* vol. 32, no. 9, p. 2617-2658.

59. Francois, O., T. Gilmore, M. Pinto and S.M. Gorelick. 1996. A physically based model for air-lift pumping. *Water Resources Research.* vol. 32, no. 8, p. 2383-2399.

60. Hyndman, D.W. and S.M. Gorelick. 1996. Estimating lithologic and transport properties in three dimensions using seismic and tracer data: The Kesterson Aquifer. *Water Resources Research*. vol. 32, no. 9, p. 2659-2670.

61. Gorelick, S.M. 1997. Incorporating uncertainty into aquifer management models. In: *Subsurface Flow and Transport*. G. Dagan and S.P. Neuman, editors, Cambridge University Press, p. 101-112.

62. Fry, V.A., J.S. Selker, and S.M. Gorelick. 1997. Experimental investigations for trapping oxygen gas in saturated porous media for in situ bioremediation. *Water Resources Research.* v. 33, no. 12, p. 2687-2696.

63. Gorelick, S.M. and M.J. Pinto. 1997. Removing VOCs from groundwater using in-well vapor stripping: Lab, field, and modeling. Proceedings of *International Conference on Groundwater Quality Protection*, Taiwan, p. 71-84.

64. Ali, R., S.M. Gorelick, and J.V. Turner. 1998. Simulation-optimization of groundwater pumping from the Gwelup borefield, Western Australia. *CSIRO Land and Water Report No. 98-15*, 44 p.

65. Haggerty, R. and S.M. Gorelick. 1998. Modeling mass transfer processes in soil columns with pore-scale heterogeneity. *Soil Science Society of America Journal*. vol. 62, no. 1, p. 62-74.

66. Pinto, M., H. Gvirtzman, and S.M. Gorelick. 1998. Aquifer remediation by in-well vapor stripping: 2. Modelling results. *Journal of Contaminant Hydrology.* vol. 29, no. 1, p. 41-58.

67. Harvey, C.H. and S.M. Gorelick. 1998. Rate-limited mass transfer or macrodispersion: Which dominates plume evolution at the Macrodispersion Experiment (MADE) site? *Water Resources Research*. vol. 36, no. 3, p. 637-650.

68. Freeze, R.A. and S.M. Gorelick. 1999. Convergence of stochastic optimization and decision analysis in the engineering design of aquifer remediation. *Ground Water*. 37(6), p. 934-954.

69. Day-Lewis, F.D., Hsieh, P.A., Shapiro, A.M., and Gorelick, S.M. 1999. Geostatistical simulation of high-transmissivity zones at the Mirror Lake Site in New Hampshire: Conditioning to hydraulic information. *In*: Morganwalp, D.W., and Buxton, H.T., eds, U.S. Geological Survey Toxic Substances Hydrology Program. vol. 3 Subsurface Contamination from Point Sources. *U.S.G.S. Resources Investigations Report 99-4018C*, p. 685-694.

70. Day-Lewis, F.D., P.A. Hsieh, and S.M. Gorelick. 2000. Identifying fracture-zone geometry using simulated annealing and hydraulic connection data. *Water Resources Research*. vol. 36, no. 7, p. 1707-1721.

71. Hyndman, D.W., J.M. Harris, and S.M. Gorelick. 2000. Inferring the relation between seismic slowness and hydraulic conductivity in heterogeneous aquifers. *Water Resources Research*. vol. 36, no. 8, p. 2121-2132

72. Goltz, M.N., R.K. Gandhi, S.M. Gorelick, G.D. Hopkins, and P.L. McCarty. 2001. Field experiments using in situ bioremediation to treat trichloroethylene (TCE)-contaminated groundwater. *In*: Proceedings of the Spring Meeting of the Korean *Groundwater and Soil Environment* Society. Hanyang University, Seoul, Korea.

73. Goltz, M.N., R.K. Gandhi, S.M. Gorelick, G.D. Hopkins, C. LeBron, P.L. McCarty, and M. Reinhard. 2001. Application of circulating wells for in situ treatment of contaminated groundwater, Proceedings of the International Symposium on *Soil and Groundwater Contamination Control Strategy.* Kyung Hee University, Seoul, Korea.

74. Day-Lewis, F.D., J.M. Harris, and S.M. Gorelick. 2002. Time-lapse inversion of crosswell radar data. *Geophysics*. vol. 67, no. 6, p. 1740-1752.

75. Zheng, C. and S.M. Gorelick. 2002. 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 S.E. Oswald, eds, *International Association of Hydrological Sciences Publication* no. 275, p. 463-469.

76. Gandhi, R.K., G.D. Hopkins, M.N. Goltz, S.M. Gorelick, P.L. McCarty. 2002. Full-scale demonstration of in situ cometabolic biodegradation of trichloroethylene in groundwater, 1: Dynamics of a recirculating well system. *Water Resources Research.* vol. 38, no. 4, p. 10-1 to 10-15.

77. Gandhi, R. K., G.D. Hopkins, M.N. Goltz, S.M. Gorelick, P.L. McCarty. 2002. Full-scale demonstration of in situ cometabolic biodegradation of trichloroethylene in groundwater, 2: comprehensive analysis of filed data using reactive transport modeling. *Water Resources Research.* vol. 38, no. 4, p. 11-1 to 11-19.

78. Ge, S., B. Bekins, J.D. Bredehoeft, K. Brown, E.E. Davis, S.M. Gorelick, P. Henry, H. Kooi, A.F. Moench, C. Ruppel, M. Sauter, E. Screaton, P.K. Swart, T. Tokunaga, C.I. Voss, F. Whitaker. 2002. Hydrogeology Program Planning Group Final Report. *Joint Oceanographic Institutions for Deep Earth Sampling Journal.* vol. 28, no. 2, p. 24-34.

79. Day-Lewis, F.D., J.W. Lane, Jr., J.M. Harris, and S.M. Gorelick. 2003. Time-lapse imaging of saline-tracer transport in fractured rock using difference-attenuation radar tomography. *Water Resources Research.* vol. *39,* no. 10, 1290. WR001722, 14 p.

80. McCarty, P.L., S.M. Gorelick, M.N. Goltz, G.D. Hopkins, and F. Eisenberg. 2003. Operation and analysis of the BEHIVS system at Edwards Air Force Base, Final Report. *Western Regional Hazardous Substance Research Center*, 148 pp.

81. Singha, K., A.M. Binley, J.W. Lane Jr., and S.M. Gorelick. 2003. Electrical imaging of tracer migration at the Massachusetts Military Reservation, Cape Cod. Symposium on the *Application of Geophysics to Engineering and Environmental Problems* (SAGEEP). Denver, Colorado, 14 p.

82. Zheng, C. and S.M. Gorelick. 2003. Analysis of solute transport in flow fields influenced by preferential flowpaths at the decimeter scale. *Ground Water.* vol. 41, no. 2, p. 142-155.

83. Ge, S., B. Bekins, J. D. Bredehoeft, K. Brown, E.E. Davis, S.M. Gorelick, P. Henry, H. Kooi, A.F. Moench, C. Ruppel, M. Sauter, E. Screaton, P.K. Swart, T. Tokunaga, C.I. Voss, and F.Whitaker. 2003. Fluid flow in sub-seafloor processes and future ocean drilling. *EOS Transactions of the American Geophysical Union*. 84(16), p. 145-152.

84. Feyen, L. and S.M. Gorelick. 2004. Reliable groundwater management in hydro-ecologically sensitive areas. *Water Resources Research*. vol. 40, W07408, 3WR0030, 14p.

85. Liu, G., C. Zheng, and S.M. Gorelick. 2004. Limits of applicability of the advection-dispersion model in aquifers containing connected high-conductivity channels. *Water Resources Research*. vol. 40, W08308, WR002735, 19 p.

86. Dror, I., B. Berkowitz, and S.M. Gorelick. 2004. Effects of air injection on flow through porous media: Observations and analyses of lab-scale processes. *Water Resources Research*. vol. 40, W09203, WRR002960, 18 p.

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

88. Martin, N. and S.M. Gorelick. 2005. Semi-analytical method for departure point determination. *International Journal of Numerical Methods in Fluids*. vol. 47, p. 121-137.

89. Feyen, L. and S.M. Gorelick. 2005. Framework to evaluate the worth of hydraulic conductivity data for optimal groundwater resources management in ecologically sensitive areas, *Water Resources Research*. vol. 41, W03019, doi:10.1029/2003WR002901, 16 p.

90. Loheide, S. and S.M. Gorelick. 2005. A High-Resolution Evapotranspiration Mapping Algorithm (ETMA) with hydroecological applications at riparian restoration sites, *Remote Sensing of Environment*. vol. 98, p. 182-200, doi:10.1016/j.rse.2005.07.003

91. Loheide, S.P. II, J.J. Butler, and S.M. Gorelick. 2005. Estimation of groundwater consumption by phreatophytes using diurnal water table fluctuations: A saturated-unsaturated flow assessment, *Water Resources Research.* vol. 41, W07030, doi:10.1029/2005WR003942, 14 p.

92. Martin, N. and S.M. Gorelick, MOD_FreeSurf2D: a MATLAB surface fluid flow model for rivers and streams. 2005. *Computers and Geosciences*. vol. 31, p. 929-946.

93. Singha, K. and S.M. Gorelick. 2005. Saline tracer visualized with electrical resistivity tomography: field scale spatial resolution and moment analysis, *Water Resources Research*. vol. 41, W05023, doi:10.1029/2004WR003460.

94. Goltz, M., R. Gandhi, S.M. Gorelick, G. Hopkins, L. Smith, B. Timmins, and P.L. McCarty. 2005. Field evaluation of in situ source reduction of trichloroethylene (TCE) in groundwater using bio-enhanced in-well vapor stripping, *Environmental Science & Technology*. vol. 39, 8963-8970

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

96. Schoups, G., C.L. Addams, and S.M. Gorelick. 2005. Multi-objective calibration of a groundwater-surface water flow model in an irrigated agricultural region: Yaqui Valley, Sonora, Mexico, *Hydrology and Earth System Sciences*. vol. 9, 549–568.

97. Day-Lewis, F., J.W. Lane, and S.M. Gorelick. 2006. Combined interpretation of radar, hydraulic, and tracer data from a fractured-rock aquifer, *Hydrogeology Journal*. vol. 14, No. 1-2, p. 1-14

98. Loheide, S.P. and S.M. Gorelick. 2006. Quantifying stream-aquifer interactions through analysis of remotely sensed thermographic profiles and in-situ temperature records, *Environmental Science & Technology*. 40, p. 3336-3341

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

100. Ronayne, M.J. and S.M. Gorelick. 2006. Effective permeability of porous media containing branching channel networks, *Physical Review E*. vol. 72, no. 2, 026035.

101. Schoups, G., C.L. Addams, J.L. Minjares, and S.M. Gorelick. 2006. Sustainable conjunctive water management in irrigated agriculture: Model formulation and application to the Yaqui Valley, Mexico, *Water Resources Research*. vol. 42, W10417, doi:10.1029/2006WR004922, 19 p.

102. Singha, K. and S.M. Gorelick. 2006. Effects of spatially variable resolution on field-scale estimates of tracer concentration from electrical inversions using Archie's law. *Geophysics*. 71(3), p. G83-G91.

103. Singha, K. and S.M. Gorelick. 2006. Hydrogeophysical tracking of 3D tracer migration: The concept and application of apparent petrophysical relations, *Water Resources Research*. vol. 42, W06422, doi:10.1029/2005WR004568.

104. Schoups, G., C. L. Addams, J. L. Minjares, and S. M. Gorelick. 2006. Reliable conjunctive use rules for sustainable irrigated agriculture and reservoir spill control, *Water Resources Research.* 42, W12406, doi:10.1029/2006WR005007.

105. Selker, J.S., M. Niemet, N. G. McDuffie, S. M. Gorelick, and J-Y. Parlange. 2007. The Geometry of gas injection into saturated homogeneous porous media, *Transport in Porous Media*. 68 (1): 107-127 May 2007 doi: 10.1007/s11242-006-0005.

106. Loheide, S. and S.M. Gorelick. 2007. Riparian hydroecology: A coupled model of the observed interactions between groundwater flow and meadow vegetation patterning, *Water Resources Research*. vol. 43, W07414, doi:10.1029/2006WR005233.

107. 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*. vol. 43, W12407, doi:10.1029/2007WR005965.

108. Moffett, K.B., S.W. Tyler, T. Torgersen, M. Menon, J. S. Selker, and S. M. Gorelick. 2008. Processes controlling the thermal regime of salt marsh channel beds, *Environmental Science and Technology*. doi:10.1021/es071309m.

109. Ronayne, M.J., S.M. Gorelick, and J. K. Caers. 2008. Identifying discrete geologic structures that produce anomalous hydraulic response: An inverse modeling approach, *Water Resources Research.* vol. 44, W08426, doi:10.1029/2007WR006635.

110. Violette, S., G. Boulicot, S. M. Gorelick. 2009. Tsunami-induced groundwater salinization in southeastern India, *Comptes Rendus Geoscience* (of the French Academy of Science). vol. 341, issue 4, 339-346.

111. Liu, G., C. Zheng, G. Tick, J.J. Butler, and S.M. Gorelick. 2010. Relative Importance of Dispersion and Rate-limited Mass Transfer in Highly Heterogeneous Porous Media: Analysis of a New Tracer Test at the MADE Site, *Water Resources Research*. vol. 46, doi:10.1029/2009WR008430.

112. Moffett, K. B., A. Wolf, J. A. Berry, and S. M. Gorelick. 2010. Salt marsh - atmosphere exchange of energy, water vapor, and carbon dioxide: effects of tidal flooding and biophysical controls, *Water Resources Research*. vol. 46, doi:10.1029/2009WR009041.

113. Srinivasan, V., S. M. Gorelick, and L. Goulder. 2010. A hydrologic-economic modeling approach for analysis of urban water supply dynamics in Chennai, India, *Water Resources Research*. vol. 46, W07540, doi:10.1029/2009WR008693.

114. Michael, H., H. Li, A. Boucher, T. Sun, J. Caers, and S.M. Gorelick. 2010. Combining geologic-process models and geostatistics for conditional simulation of 3-D subsurface heterogeneity, *Water Resources Research*. vol. 46, W05527, doi:10.1029/2009WR008414.

115. Srinivasan, V., S. M. Gorelick, and L. Goulder. 2010. Sustainable urban water supply in South India: Desalination, Efficiency Improvement, or Rainwater Harvesting?, *Water Resources Research*. vol. 46, doi:10.1029/2009WR008698.

116. Srinivasan, V., L. Goulder, and S.M. Gorelick. 2010. Factors determining informal tanker water markets in Chennai, India, *Water International*. vol. 35, no. 3, p. 254-269.

117. Ronayne, M.J., S.M. Gorelick, and C. Zheng. 2010. Geological modeling of sub-meter scale heterogeneity and its influence on tracer transport in a fluvial aquifer, *Water Resources Research.* vol. 46, W10519, doi:10.1029/2010WR009348.

118. Moffett, K. B., D. A. Robinson, and S.M. Gorelick. 2010. Relationship of salt marsh vegetation zonation to spatial patterns in soil moisture, salinity and topography, *Ecosystems*, doi: 10.1007/s10021-010-9385-7.

119. Zheng, C., M. Bianchi, and S.M. Gorelick. 2010. Lessons learned from 25 years of research at the MADE site, *Ground Water*, vol. 49, no. 5, p. 649-662, 662, doi: 10.1111/j.1745-6584.2010.00753.x.

120. Bianchi, M., C. Zheng, G. R. Tick, and S. M. Gorelick. 2011. Investigation of small-scale preferential flow with a forced-gradient tracer test, *Ground Water*, doi: 10.1111/j.1745-6584.2010.00746.x.

121. Bianchi, M., C. Zheng, C. Wilson, G. Tick, G. Liu, and S.M. Gorelick. 2011. Spatial connectivity in a highly heterogeneous aquifer: From cores to preferential pathways, *Water Resources Research, vol. 47,* doi:10.1029/2009WR008966.

122. Moffett, K.B. and S.M. Gorelick. 2012. A method to calculate heterogeneous evapotranspiration using sub-meter thermal infrared imagery coupled to a stomatal resistance submodel, *Water Resources Research*, *Volume: 48*, doi: 10.1029/2011WR010407.

123. Zoback, M.D. and S.M. Gorelick. 2012. Earthquake triggering and large-scale geologic storage of carbon dioxide, *Proc. National Academy of Sciences*, doi/10.1073/pnas.1202473109.

124. Moffett, K.B., S.M. Gorelick, R. McLaren, E. Sudicky. 2012. Salt marsh ecohydrological zonation due to heterogeneous vegetation - groundwater - surface water interactions, *Water Resources Research*, 48, doi:10.1029/2011WR010874.

125. Srinivasan, V., E. F. Lambin, S. M. Gorelick, B. H. Thompson, and S. Rozelle. 2012. The nature and causes of the global water crisis: Syndromes from meta-analysis of coupled human-water studies, *Water Resources Research*, vol. 48, W10516, doi:10.1029/2011WR011087.

126. Zoback, M.D. and S.M. Gorelick. 2012. Evidence that earthquake triggering could render long-term carbon storage unsuccessful in many regions (*Reply to comment*), *Proc. National Academy of Sciences*, doi: 10.1073/pnas.1217264109.

127. Srinivasan, V., K. Seto, R. Emerson, and S.M. Gorelick. 2012. The impact of urbanization on water vulnerability—A coupled human - environment system approach for Chennai, India, *Global Environmental Change - Human and Policy Dimensions,* vol. 23, Issue: 1, 229-235, doi:10.1016/j.gloenvcha.2012.10.002.

128. Moffett, K.B. and S.M. Gorelick. 2013. Distinguishing wetland vegetation and channel features with object-based image segmentation, *International Journal of Remote Sensing*, vol. 34, No. 4, 20 February 2013, 1332–1354, doi/10.1080/01431161.2012.718463.

129. Brandt, A., A. Millard-Ball, M. Ganser, and S.M. Gorelick. 2013. Peak oil demand: The role of fuel efficiency and alternative fuels in a global oil production decline, *Environmental Science and Technology* doi.org/10.1021/es401419t.

130. Erban, L., S. M. Gorelick, H. A. Zebker, and S. Fendorf. 2013. Release of arsenic to deep groundwater in the Mekong Delta, Vietnam, linked to pumping-induced land subsidence, *Proc. National Academy of Sciences* doi/10.1073/pnas1300503110.

131. Erban, L.E., S.M. Gorelick, and S. Fendorf. 2014. Arsenic in the multi-aquifer system of the Mekong Delta, Vietnam: Analysis of large-sale spatial trends and controlling factors, *Environmental Science and Technology*, 48(11), 6081-88.

132. Zhang, H., and S.M. Gorelick. 2014. Coupled impacts of sea-level rise and tidal marsh restoration on endangered California Clapper Rail, *Biological Conservation*, 172 p. 89-100. DOI: 10.1016/j.biocon.2014.02.016.

133. Zhang, H., K.B. Moffett, L. Windham-Myers, and S.M. Gorelick. 2014. Hydrological controls on methylmercury distribution and flux in a tidal marsh. *Environmental Science and Technology*. 48(12), 6795–6804, doi:10.1021/es500781g.

134. Moffett, K.B., J. Law, S.M. Gorelick, N. Nur, and J.K. Woods. 2014. Alameda Song Sparrow abundance related to salt marsh vegetation. *San Francisco Estuary and Watershed Science*, 12(3).

135. Erban, L.E., S.M. Gorelick, and H.A. Zebker. 2014. Groundwater extraction, land subsidence, and sea-level rise in the Mekong Delta, Vietnam. *Environmental Research Letters*, 9 (8), 084010, doi:10.1088/1748-9326/9/8/084010.

136. Padowski, J.C., and S.M. Gorelick. 2014. Global analysis of urban surface water supply vulnerability, *Environmental Research Letters*, 9 (10), 104004, doi:10.1088/1748-9326/9/10/104004 (*also see corrigendum*).

137. Ge, S., and S.M. Gorelick. 2015. Groundwater and Surface Water. In. Gerald R. North (editor-in-chief), *Encyclopedia of Atmospheric Sciences*, 2nd Edition, vol. 3, 209-216.

138. Gorelick, S.M. 2015. Water Security in Jordan: A Key to the Future of the Middle East, *Planet Policy*, Brookings Institution (*online article, not peer reviewed*).

139. Gorelick, S.M. and C. Zheng. 2015. Global change and the groundwater management challenge, *Water Resources Research*, 51, doi:10.1002/2014WR016825.

140. Rahman, K., S M. Gorelick, P.J. Dennedy-Frank, J. Yoon and B. Rajaratnam. 2015. Declining rainfall and regional variability changes in Jordan, *Water Resources Research,* DOI: 10.1002/2015WR017153.

141. Zoback, M.D. and S.M. Gorelick. 2015. To prevent earthquake triggering, pressure changes due to CO_2 injection need to be limited, *Proc. National Academy of Sciences*, Letter, doi/10.1073/pnas.1508533112.

142. Padowski, J.C., S.M. Gorelick, B. Thompson, S. Rozelle, and S. Fendorf. 2015. Assessment of human-natural system characteristics influencing global freshwater supply vulnerability, *Environmental Research Letters*, 10(10), 104014.

143. Gorelick, S.M. and J.C. Padowski, 2015. Identifying causes of freshwater vulnerability, *Planet Policy*, Brookings Institution.

144. Erban, L.E., and S.M. Gorelick. 2016. Closing the irrigation deficit in Cambodia: implications for transboundary impacts on groundwater and Mekong River flow. *Journal of Hydrology*, 535, 85-92.

145. Moffett, K.B. and S.M. Gorelick. 2016. Relating salt marsh pore water geochemistry patterns to vegetation zones and hydrologic influences, *Water Resources Research,* 52, 1-17.

146. Moffett, K.B. and S.M. Gorelick. 2016. Alternative stable states of tidal marsh vegetation and channel pattern complexity in the San Francisco Bay estuary, California, USA, *Ecohydrology,* doi: 10.1002/eco.1755.

147. Zhang, H., S.M. Gorelick, N. Avisse, and A. Tilmant, D. Rajsekhar, and J. Yoon. 2016. A new temperature-vegetation Triangle Algorithm with Variable Edges (TAVE) for satellite-based actual evapotranspiration estimation, *Remote Sensing, 8, 735; doi:10.3390/rs8090735*.

148. Muller, M. F., J. Yoon, S.M. Gorelick, N. Avisse, and A. Tilmant. 2016. Impact of the Syrian refugee crisis on land use and transboundary freshwater resources, *Proceedings National Academy of Science (PNAS),* doi: 10.1073/pnas.1614342113.

149. Yoon. J., M.F. Muller, and S.M. Gorelick. 2017. How the Syrian refugee crisis affected land use and shared transboundary freshwater resources, *Planet Policy*, Brookings Institution (online article Feb. 3, 2017).

150. Müller,M.F., M. Müller-Itten, and S.M. Gorelick. 2017. How Jordan and Saudi Arabia are avoiding a tragedy of the commons over shared groundwater, *Water Resources Research*, doi: 10.1002/2016WR020261.

151. Rajsekhar, D. and S.M. Gorelick. 2017. Increasing drought in Jordan: Climate change and cascading Syrian land-use impacts on reducing transboundary flow, *Science Advances*, vol. 3, no. 8, e1700581, doi: 10.1126/sciadv.1700581.

152. Zhang, H., S.M. Gorelick, P. V. Zimba, X. Zhang. 2017. A remote sensing method for estimating regional reservoir area and evaporative loss, *Journal of Hydrology,* 555, 213-227, doi.org/10.1016/j.jhydrol.2017.10.007.

153. Womble, P., D. Perrone, S. Jasechko, R.L. Nelson, L. F. Szeptycki, R. T. Anderson, S. M. Gorelick. 2018. Indigenous communities, groundwater opportunities: A U.S. court decision unlocks vast potential to improve sustainable freshwater management, *Science,* volume 361, issue 6401, 453-455, doi: 10.1126/science.aat6041.

154. Ward, E.M., S.M. Gorelick, 2018, Drying drives decline in muskrat population in the Peace-Athabasca delta, Canada, *Environmental Research Letters*, 13 **(**2018**)** 124026, doi.org**/**10.1088**/**1748-9326**/**aaf0ec.

155. Dennedy-Frank, P.J. and S.M. Gorelick, 2019, Insights from watershed simulations around the world: Water service programs do not materially enhance streamflow, *Global Environmental Change, vol. 58, 101938,* doi.org/10.1016/j.gloenvcha.2019.101938

156. Luby, S.P., J. Davis, R. R. Brown, S. M. Gorelick, T. H. F. Wong. 2019. Tools for Cholera control in Asia: water and sanitation, hygiene and behavior, OCV supplement in – *Vaccine*, doi.org/10.1016/j.vaccine.2019.07.084

157. Ward, E.M., K. Wysong, S.M. Gorelick, 2019, Drying landscape and interannual herbivory-driven habitat degradation control semi-aquatic mammal population dynamics, *Ecohydrology*, doi.org/10.1002/eco.2169

158. Zhang, H., S.M. Gorelick, and P. Zimba. 2020, Extracting Impervious Surface from Aerial Imagery Using Semi-Automatic Sampling and Spectral Stability. *Remote Sensing*. 12 (3) 506.

159. Mady, B., P. Lehmann, S.M. Gorelick, D. Or, Distribution of small seasonal reservoirs in semi-arid regions and associated evaporative losses. 2020, *Environmental Research Communications*, 2, 061002. https://doi.org/10.1088/2515-7620/ab92af

160. Fakhreddine, S, H. Prommer, S.M. Gorelick, J. Dadakis, S. Fendorf, 2020, Controlling arsenic mobilization during managed aquifer recharge: The role of sediment heterogeneity, *Environmental Science and Technology, 54, 14, 8728–8738*

161. Dennedy-Frank, P. J., and S. M. Gorelick, 2020, Insights on Expected Streamflow Response to Land-cover Restoration, *Journal of Hydrology, Volume 589, October 2020, 12512*

162. Lee, J-Y, R.L. Naylor, R.L, A. Jain Figueroa, and S.M. Gorelick, 2020, Water-Food-Energy Challenges in India: Political Economy of the Sugar Industry. *Environmental Research Letters,* Volume 15, Number 8, https://doi.org/10.1088/1748-9326/ab9925

163. Yoon, J, C. Klassert, P. Selby, T. Lachaut, S. Knox, N. Avisse, J. Harou, A. Tilmant, B. Klauer, D. Mustafa, K. Sigel, S. Talozi, E. Gawel, J. Medellin-Azuara, B. Bataineh, H. Zhang, S. M. Gorelick, 2021, A coupled human-natural system analysis of freshwater security under climate and population change, Proceedings of the National Academy of Sciences, 118(14) 118 (14) e2020431118; DOI: 10.1073/pnas.2020431118

164. Mao F., S. Ullah, S.M. Gorelick, D. M. Hannah, S. Krause, 2021, Increasing nutrient inputs risk an upsurge of global nitrous oxide emission from mangrove ecosystems, *ONE-EARTH*-D-20-00247R2, Volume 4, Issue 5, 742-748, https://doi.org/10.1016/j.oneear.2021.04.007

165. Ward, E., K. A. Solari, A. Varudkar, S. M. Gorelick, E. A. Hadly, 2021, Muskrats as a bellwether of a drying delta, *Communications Biology, https://doi.org/10.1038/s42003-021-02288-7 (a Nature journal)*

166. Lee, J.Y., Wang, S., Figueroa, A.J., Strey, R., Lobell, D.B., Naylor, R.L., Gorelick, S.M. Mapping Sugarcane in Central India with Smartphone Crowdsourcing. Remote Sens. 2022, 14, 703. https://doi.org/10.3390/rs14030703

167. Karutz, R., Omann, I., Gorelick, S., Klassert, C. ., Zozmann, H., Zhu, Y., Kabisch, S., Kindler, A., Figueroa, A., Wang, A., Kueblboeck, K., Grohs, H., Burek, P., Smilovic, M., & Klauer, B. (2022). Capturing Stakeholders' Challenges of the Food–Water–Energy Nexus—A Participatory Approach for Pune and the Bhima Basin, India. *Sustainability*. https://doi.org/10.3390/su14095323

168. Klauer, B., Kueblbock, K., Omann, I., Karutz, R., Klassert, C., Zhu, Y., Zozmann, H., Smilovic, M., Talozi, S., Figueroa, A.J., H. Grohs, J. Heilemann, and S.M. Gorelick, 2022, Stakeholder Workshops Informing System Modeling—Analyzing the Urban Food–Water–Energy Nexus in Amman, Jordan. Sustainability, 14, 11984. https://doi.org/10.3390/su14191198

169. Lancia, M., Yao, Y., Andrews, C. B., Wang, X., Kuang, X., Ni, J., Gorelick, S. M., Scanlon, B. R.,Wang, Y., and Zheng, C., 2022, The China groundwater crisis: a mechanistic analysis with implications for global sustainability: *Sustainable Horizons*, v. 4, no. 100042, 10 p., http://doi.org/10.1016/j.horiz.2022.100042.

170. Klassert, C., Yoon, J., Sigel, K., Klauer, B., Talozi, S., Lachaut, T., Selby, P., Knox, S., Avisse, N., Tilmant, A., J. Harou, J., Mustafa, D., Medellín-Azuara, J., Bataineh, B., Zhang, H., Gawel, E., and Gorelick, S.M. Unexpected growth of an illegal water market. *Nature Sustainability,* 2023, https://doi.org/10.1038/s41893-023-01177-7

171. Rui Ma, Kewei Chen, Charles B. Andrews, Steven P. Loheide Audrey H. Sawyer, Xue Jiang, Martin A. Briggs, Peter G. Cook, Steven M. Gorelick, Henning Prommer, Bridget R. Scanlon, Zhilin Guo, Chunmiao Zheng, 2024, Methods for Quantifying Interactions between Groundwater and Surface Water, *Annual Review of Environment and Resources*, https://doi.org/10.1146/annurev-environ-111522-104534

Books

Gorelick, S.M. 2010. ***Oil Panic and the Global Crisis : Prediction and Myths***. Wiley-Blackwell, Chichester, UK, 242 p., ISBN: 978-1-4051-9548-5

Peck, A.J., S.M. Gorelick, G. de Marsily, S. Foster, and V. Kovalevsky. 1988. ***Consequences of Spatial Variability in Aquifer Properties and Data Limitations for Groundwater Modelling Practice***. International Association of Hydrologic Science Redbook Series, Intl. Assoc. of Hydrologic Sci. Press, Publ. no. 175, 272 p.

Gorelick, S.M., R.A. Freeze, D. Donohue, and J.F. Keely. 1993. ***Groundwater Contamination: Optimal Capture and Containment***. Lewis Publishers, Chelsea, Michigan, 385 p.

PATENTED INVENTIONS

Gorelick, S.M., and H. Gvirtzman. 1993. In-situ vapor stripping for removing volatile organic compounds from groundwater, 1. *U.S. Patent* 5,180,503.

Gorelick, S.M., and H. Gvirtzman, 1995. In-situ vapor stripping for removing volatile organic compounds from groundwater, 2. *U.S. Patent* 5,389,627.

Gorelick, S.M., 2006, Methods and systems for automatically determining and collecting a monetary contribution from an instrument, *US Patent* 7,080,775.

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