



Steven Gorelick

Cyrus Fisher Tolman Professor and Senior Fellow at the Woods Institute for the Environment

Earth System Science

 Curriculum Vitae available Online

 Resume available Online

Bio

BIO

Steven M. Gorelick is the Cyrus F. Tolman Professor in the Department of Earth System Science at Stanford University (on the faculty since 1988) and a Senior Fellow at the Woods Institute for the Environment. He directs the Global Freshwater Initiative with past and active projects in India, Mexico, Vietnam, Jordan, and the US. Dr. Gorelick has published extensively in the areas of groundwater management, water security, water resources vulnerability in developing regions, optimal remediation design, hydrogeophysics, ecohydrology, groundwater solute transport processes, and global oil supply and demand. He is a member of the US National Academy of Engineering and a Fellow of the American Association for the Advancement of Science.

ACADEMIC APPOINTMENTS

- Professor, Earth System Science
- Senior Fellow, Stanford Woods Institute for the Environment

ADMINISTRATIVE APPOINTMENTS

- Cyrus F. Tolman Professorship, Stanford University, (2005- present)
- Professor, Stanford University, (1996- present)
- Associate Professor, Stanford University, (1988-1995)
- Senior Fellow, Woods Institute for the Environment, (2010-2022)
- Hydrologist, US Geological Survey, (1981-1988)
- Visiting Scientist, CSIRO, Brisbane, Australia (Spring and Summer), (2023-2023)
- Visiting Scientist, Helmholtz Centre for Environmental Research (UFZ) (Spring and Summer), (2021-2022)
- Visiting Professor, Swiss Federal Institute of Technology ETH Zurich (Spring), (2019-2019)
- Visiting Professor, Swiss Federal Institute of Technology ETH Zurich (Spring), (2013-2013)
- Visiting Professor, Centre for Ecohydrology, UWA, Perth, AU (Spring), (2012-2012)
- Visiting Scholar, University of Cambridge, Dept. of Zoology (Spring-Summer), (2007-2007)
- Visiting Professor, Ecole Polytechnique Federale de Lausanne (EPFL), Eco Engineering Lab, Switzerland (Spring-Summer), (2006-2006)
- Visiting Professor, Swiss Federal Institute of Technology ETH Zurich (Spring), (2005-2005)
- Visiting Scholar, Harvard University, Division of Engineering and Applied Sciences (Winter), (1997-1997)

HONORS AND AWARDS

- Fulbright Distinguished Chair in Science, Technology and Innovation, Fulbright Foundation - Australia-America Program, CSIRO, Brisbane, Australia (2022-23)
- Alexander von Humboldt Award, Alexander von Humboldt Foundation (2020-22)

- Elected Member, US National Academy of Engineering (2012)
- Fellow, American Association for the Advancement of Science (AAAS) (2016)
- Fellow, John Simon Guggenheim Memorial Foundation (2005)
- Fellow, American Geophysical Union (1990)
- Fellow, Geological Society of America (1988)
- The Excellence in Teaching Award, School of Earth, Energy, and Environmental Sciences, Stanford University (2018)
- Best Article of the Year, Padowski and Gorelick (2014), Environmental Research Letters, awarded (2015)
- Fulbright Senior Scholar, Fulbright Australian-American Program (2008-2009)
- James B. Macelwane Medal, American Geophysical Union (1990)
- Editor's Choice Award, Srinivasan et al. (2012), American Geophysical Union, Water Resources Research, awarded (2013)
- M. King Hubbert Science Award, National Ground Water Association (2004)
- Fulbright Senior Scholar, Fulbright Australian-American Program (1997-1998)
- O.E. Meinzer Award, Geological Society of America (1994)
- Presidential Young Investigator Award, The White House and the National Science Foundation (1989)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Visiting Committee, MIT, Department of Civil and Environmental Engineering, (2015 - present)
- Advisory Board, Sustainable Horizons (2022 - present)
- Editorial Board, Optimization and Engineering Journal (1999 - present)
- Chair, Advisory Committee,, School of Environmental Science and Engineering, Southern Univ, of Science & Tech., Shenzhen, China (2019 - 2023)
- Advisory Board, Middle East Water Forum (2019 - present)
- Invited Lecture, Australian National University (ANU), Fenner School of Environment & Society, Canberra, Australia (2023 - 2023)
- Invited Lecture, CSIRO, Water Security, Canberra, Australia (2023 - 2023)
- Invited Lecture, Flinders University NCGRT (National Centre for Groundwater Research & Training) Adelaide, Australia (2023 - 2023)
- Invited Lecture, CSIRO, Land and Water, Adelaide, Australia (2023 - 2023)
- Invited Lecture, CSIRO Water Security Seminar, Brisbane in-person and online, Australia (2023 - 2023)
- Invited Lecture, Invited Lecture, Helmholtz Centre for Environmental Research, Leipzig, Germany (2022 - 2022)
- Invited Lecture, Institut für Physische Geographie, Goethe-Universität, Frankfurt, Germany. (2022 - 2022)
- Invited Lecture (virtual), Development Lecture Series, Austrian Foundation for Development Research (OEFSE), Vienna, Austria (2021 - 2021)
- Invited Plenary Lecture (virtual), 3rd International Forum on Water Security and Sustainability, Nanjing, China (2021 - 2021)
- Invited Lecture (virtual), Disruptive Technologies for Improved Groundwater Management, Mashreq Water Knowledge Series, Lebanon (2021 - 2021)
- Invited Lectures, World Bank, India; ETH-Zurich, Inst. of Sci, Tech. and Policy; EPFL, Lausanne, Envi. Eng. Seminar (2019 - 2019)
- Invited Lecture, Geoscience Australia Distinguished Lecturer, Canberra, Australia (2018 - 2018)
- Advisory Committee, School of Environmental Science and Engineering, Southern Univ. of Science & Tech., Shenzhen, China (2015 - 2018)
- Invited Lecture, Massey University, Palmerston North, New Zealand (2018 - 2018)
- Invited Lecture, New Zealand Ministry for the Environment, Wellington, NZ (2018 - 2018)
- Chair, University Committee on Research, Stanford University (2015 - 2018)
- Invited Speaker/Panelist, Panelist, Day Zero: Water, Climate Change, and Governance in MENA, University of Southern California (2018 - 2018)
- Keynote Speaker, HydroEco 2017, Birmingham, UK (2017 - 2017)
- Invited Expert, International Water Security Foresight Workshop, Rand Corporation (2015 - 2015)

- Invited Speaker, American Geophysical Union Meeting, San Francisco (2016 - 2016)
- Keynote Lecturer, GQ16 - Intl Conference on Groundwater Quality 2016, Shenzhen, China (2016 - 2016)
- Invited Speaker, School of Geography, Earth and Environmental Sciences, University of Birmingham, UK (2017 - 2017)
- Member, Scientific Advisory Committee, Groundwater Quality 2016 (GQ16), Shenzhen, China, International Association of Hydrologic Sciences (2015 - 2016)
- Co-Convener, Water-Energy Nexus – Hydrologic Impacts and Implications of Energy Development, AGU, American Geophysical Union (2015 - 2015)
- Invited Lecture, Helmholtz Centre for Environmental Research, Leipzig, Germany (2015 - 2015)
- Invited Lecture, Stanford Global Health Research Convening (2015 - 2015)
- Panelist, TM40, Thinking Matters, A Transition to Sustainability (2014 - 2016)
- Chair, faculty candidate evaluation committee, Dept. of Environmental Earth System Science, Stanford University (2014 - 2014)
- Invited Lecture, CEE179S/279S, Issues in Environmental Engineering, Science and Sustainability (2014 - 2014)
- Invited Lecture, Environmental Engineering Seminar Series, UC Berkeley (2014 - 2014)
- Invited Lecturer, Woods Institute, Retreat, Santa Cruz, CA (2014 - 2014)
- Reivew panel member, National Science Foundation, Hydrologic Sciences Program (2014 - 2014)
- Water Panel Presentation, Global Freshwater Initiative, Woods Institute for the Environment (2014 - 2014)
- Member, Stanford University Committee on Research, Stanford University (2013 - 2015)
- Faculty candidate evaluator, Stanford in Government Fellowship program (2013 - 2014)
- Member, faculty promotion committee, Dept. of Energy Resources Engineering, Stanford University (2013 - 2014)
- Energy Resources Engineering, Faculty Promotion Committee, Stanford University (2013 - 2013)
- Invited Lecturer, ETH Zurich, EPFL, Univ. of Paris VI, CA Independent Petroleum Assoc., and Chevron Fellows Meeting (2013 - 2013)
- Invited Lecturer, ETH, Zurich and EAWAG, Dubendorf (2013 - 2013)
- Keynote Lecturer, Vienna Catchment Science Symposium, on the theme of: Socio-hydrology – a new science of people and water (2013 - 2013)
- Member, ESS/EESS Graduate Admissions Committee, Stanford University (2012 - present)
- Chair, EESS Senior Faculty Appointment Committee (joint appointment with Woods and Precourt Institutes), Stanford University (2012 - 2013)
- Member, EESS Faculty Promotion and Tenure Committee, Stanford University (2012 - 2013)
- Invited Lecturer, CSIRO Land and Water, Perth Australia (2012 - 2012)
- Invited Lecturer, Distinguished Lecture Series, International Water Symposium, Geoscience Australia, Canberra (2012 - 2012)
- Invited Lecturer, Earth Resources Engineering Section, National Academy of Engineering, Washington DC (2012 - 2012)
- Invited Lecturer, Nanyang Technological University, Earth Observatory of Singapore (2012 - 2012)
- Invited Lecturer, Flinders University, National Groundwater Centre (NCGRT), Adelaide, Australia (2012 - 2012)
- Plenary Lecturer, 34th International Geologic Congress, Brisbane, Australia (2012 - 2012)
- Member, AGU Hydrology Section, Water and Society Technical Committee (2011 - present)
- Co-Organizer, AGU Session, Water and Society. (2011 - 2011)
- Co-Organizer, AGU Session, Assessing Global Soil Change, Impacts on Hydrological and Ecosystem Services. (2011 - 2011)
- External Reviewer, Doctorate of Xiang Zhao Kong, Swiss Federal Institute of Technology, ETH, Zurich (2011 - 2011)
- Invited Speaker, ESR, New Zealand (2011 - 2011)
- Keynote Speaker, River Corridor Restoration Conference 2011, Ascona, Switzerland (2011 - 2011)
- Senior Fellow, Woods Institute for the Environment (2010 - present)
- Member, Visiting Committee, Earth Sciences, Dartmouth College (2010 - 2010)
- Director, Stanford Global Freshwater Initiative, Woods Institute/Stanford University (2009 - present)

- Chair, EESS Graduate Admissions Committee, Stanford University (2009 - 2011)
- Featured presenter, Woods Advisory Board meeting and Woods Water Salon (2009 - 2010)
- Member, Scientific Advisory Committee,, HydroPredict 2010, Prague (2009 - 2010)
- Invited Speaker, CSIRO Perth, University of Western Australia Perth, International Association of Hydrogeologists (Perth), Engineers of Western Australia, UC Merced, USGS (Menlo Park) (2009 - 2009)
- Moderator, Uncommon Dialogue, Stanford Water Resources Sustainability Initiative (2009 - 2009)
- Member, Faculty Search Committee in Energy Resources Engineering, Stanford University (2008 - 2009)
- Invited Plenary Lecturer, Pioneers in Groundwater, 6th Annual Groundwater Hydrology, Quality, and Management Symposium, ASCE, World Environmental and Water Resources Congress (2008 - 2008)
- Invited Speaker, Symposium on Water Resources Systems Analysis: The Contributions of William Yeh (2008 - 2008)
- Invited Speaker, UC Davis Hydrologic Science Seminar (2008 - 2008)
- Lecturer, Troubled Waters, School of Earth Sciences public lecture series, Stanford University (2008 - 2008)
- Panelist, NSF Hydrologic Sciences, CUAHSI Review (2008 - 2008)
- Chair, Admissions Committee, Dept. of Geological & Environmental Sciences and Dept. of Environmental Earth System Science, Stanford University (2007 - 2008)
- Member, Faculty Search Committee for a Computational Geoscientist, Stanford University (2007 - 2008)
- Member, Faculty Search Committee for an Ecohydrologist, Stanford University (2007 - 2008)
- Scientific Advisory Committee, HydroPredict '2008, Prague (2007 - 2008)
- Invited Lecturer, Cambridge Conservation Forum, University of Cambridge, UK (2007 - 2007)
- Invited Lecturer, University of Paris, Laboratory of Applied Geology (2007 - 2007)
- Chair, Promotion Evaluation Committee, Stanford University (2006 - 2007)
- Invited Lecturer, Ecole Polytechnique Federale de Lausanne (EPFL), Ecological Engineering Laboratory, Switzerland (2006 - 2006)
- Affiliated faculty, E-IPER (formerly IPER), Stanford University (2005 - present)
- Faculty Advisory Panel, Center for Computational Earth and Environmental Science, Stanford University (2005 - 2010)
- Chair, Admissions Committee, Dept. of Geological & Environmental Sciences, Stanford University (2005 - 2007)
- Stanford Representative, Consortium of Universities for Advancement of Hydrologic Sciences (2005 - 2007)
- Invited Lecturer, University of Barcelona, Swiss Federal Institute of Technology (ETH), and Swiss National Research Center for Water Pollution Control (EAWAG) (2005 - 2005)
- Paleoclimate Faculty Pre-search Committee, Stanford University (2005 - 2005)
- SES Center for Computation, Planning Committee, Stanford University (2005 - 2005)
- Member, Earth Sciences Council, School of Earth Sciences, Stanford University (2004 - present)
- Graduate Faculty, University of Alabama, Tuscaloosa (2004 - 2005)
- Invited Speaker, UC Davis Distinguished Speaker Series (2004 - 2004)
- Invited Speaker and Panel Member, Finite Element Modeling and Modflow Conference, Carlsbad, Czech Republic (2004 - 2004)
- Member, SES Computer Resources Review Committee, Stanford University (2004 - 2004)
- Member, SES Student Space and Funding Review Committee, Stanford University (2004 - 2004)
- Member, CUAHSI California Hydrologic Observatory Working Group (2003 - 2005)
- Member, Faculty Search Committee, Dept. of Geophysics, Stanford University (2003 - 2005)
- Member, Scientific Advisory Committee, Finite Element Modeling and Modflow Conference, Carlsbad, Czech Republic (2003 - 2004)
- Invited Lecturer,, US Geological Survey Water Resources Division Seminar Series (2003 - 2003)
- Member, CUAHSI, Audit Committee an Legal Affairs Charter Mission Review Group (2003 - 2003)

- Advisor, Evaluation of Demand Uncertainty in Optimal Groundwater Management in Southwest Florida, Tampa Bay Water (2002 - present)
- Member, Hydrology Section AGU Fellows Committee (2002 - 2004)
- Invited Lecturer, Water Resources Division Seminar Series, US Geological Survey (2002 - 2002)
- Member, CUAHSI Executive Director Search Committee (2002 - 2002)
- Advisor, Regional Aquifer Model Development, Texas Water Development Board (Duke/Intera) (2001 - 2004)
- Advisory Committee, UPS Foundation Grant Program (2001 - 2004)
- Representative to and Member of the Board of Directors, Consortium of Universities for the Advancement of Hydrologic Science (2001 - 2004)
- Member, Admissions Committee, Dept. of Geological & Environmental Sciences, Stanford University (2001 - 2003)
- Member, Scientific Advisory Committee, ModelCare 2002, Prague (2001 - 2002)
- Editorial Board, Transport in Porous Media (TiPM) (2000 - 2004)
- Member, Hydrogeology Program Planning Group, Ocean Drilling Program/Joint Oceanographic Institutions (JOIDES) for Deep Earth Sampling (2000 - 2002)
- Invited Lecturer, The Johns Hopkins University (2000 - 2000)
- Member, Faculty Search Committee, Dept. of Petroleum Engineering, Stanford University (2000 - 2000)
- Associate Editor, Hydrogeology Journal (1999 - 2002)
- Scientific Advisory Committee, International Conference on Future Groundwater Resources at Risk, Lisbon, Portugal (1999 - 2001)
- Member, National Research Council Committee on Grand Challenges in Environmental Sciences Research (1999 - 2000)
- Member, Expert Panel, Review of Minimum Flows and Water Levels, Southwest Florida Water Management District (1999 - 2000)
- External Academic Juror., Technical University of Denmark (1999 - 1999)
- Chair, Review Panel for Hanford Sitewide Groundwater Model, PNNL/DOE (1998 - 2000)
- Member, Scientific Advisory Committee, Groundwater 2000, Copenhagen (1998 - 2000)
- Member, Macelwane Medal Selection Committee, AGU (1998 - 1999)
- External Examiner, Ph.D. Committee, Technical University of Denmark 1998 External Juror, Ph.D. Jury, University of Paris, France (1998 - 1998)
- Invited Speaker, Groundwater Research Centre, Technical University of Denmark (1998 - 1998)
- Chair, Admissions Committee, Dept. of Geological & Environmental Sciences, Stanford University (1997 - 2000)
- Scientific Advisory Committee, Model Calibration and Reliability Conference, Zurich, Switzerland. (1997 - 1999)
- Chair, GSA Meinzer Award Committee (1997 - 1998)
- Instructor, Aquifer Heterogeneity and Optimal Capture of Contaminants, University of New South Wales, Sydney, Australia (w/ J.L. Wilson and L. Townley) (1997 - 1997)
- Invited Speaker, MIT, Harvard University, University of Paris, USGS (Reston) CSIRO (Perth), CSIRO (Canberra), CSIRO (Adelaide), University of Western Australia, Institute of Engineers (Melbourne), Intl. Association of Hydrogeologists (Sydney) (1997 - 1997)
- Invited Speaker and Panelist, International Conference on Groundwater Quality Protection: Technology and Management of NAPL Problems, Taiwan (1997 - 1997)
- Keynote Speaker, MODSIM '97, Hobart, Tasmania (1997 - 1997)
- Visiting Professor, University of Western Australia (1997 - 1997)
- Visiting Scholar, Harvard University, Division of Engineering and Applied Sciences (1997 - 1997)
- Visiting Scientist, CSIRO, Perth, Australia (1997 - 1997)
- Member, California Environmental Protection Agency Risk Assessment Advisory Committee, Office of Environmental Health Hazard Assessment Science Advisory Board (1995 - 1997)
- Member, GSA Meinzer Award Committee, Stanford University (1995 - 1997)
- Scientific Program Committee, AHS Scientific Assembly, Rabat, Morocco (1995 - 1997)
- Member, Geology Corner Space Committee, Stanford University (1994 - 1996)

- Member, Conceptual Model Uncertainty Group, Sandia National Labs, WIPP Performance Assessment Panel (1993 - 1998)
- Member, Admissions Committee, Department of Geological & Environmental Sciences, Stanford University (1993 - 1997)
- Member, Geostatistical Experts Group, Sandia Labs (1992 - 1997)
- Director, Stanford Center for Aquifer Simulation (CAS), Stanford University (1991 - present)
- Member, US National Committee for IAHS (1991 - 1997)
- Editorial Advisory Board, Associate Editor, Journal of Hydrology (1990 - 1996)
- Member, Computer Committee, School of Earth Sciences, Stanford University (1989 - 2009)
- Faculty, US EPA, Western Region Hazardous Substance Research Center, Stanford University and Oregon State University (1989 - 2001)
- Member, Urban Studies Program Committee, Stanford University (1988 - 2005)

PROFESSIONAL EDUCATION

- PhD, Stanford University , Hydrology (hydrogeology) (1981)
- MS, Stanford University , Hydrology (hydrogeology) (1977)
- BA, New College (1975)

PATENTS

- Steven M. Gorelick. "United States Patent US Patent 7,080,775 Methods and systems for automatically determining and collecting a monetary contribution from an instrument", American Cancer Society, Jul 25, 2006
- Steven M. Gorelick and Haim Gvirtzman. "United States Patent 5389267 An in-situ system for removing volatile organic compounds (VOCs) from groundwater", Leland Stanford Junior University, Feb 14, 1995
- Steven M. Gorelick and Haim Gvirtzman. "United States Patent 5180503 In-situ vapor stripping for removing volatile organic compounds from groundwater Patent number", Leland Stanford Junior University, Jan 19, 1993

LINKS

- Research Group Website: <https://pangea.stanford.edu/research/groups/hydrogeology/index.php?page=2>
- Global Freshwater Initiative: <http://globalfreshwater.stanford.edu/>
- Jordan Water Project: <https://pangea.stanford.edu/researchgroups/jordan/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

. Research : .

As a hydrogeologist and hydrologist, my research involves the study of water resources and water security with emphasis on freshwater. Using lab and field data, our aim is to develop an understanding of fundamental aspects of the transport of water and contaminants, and to investigate regional water resources systems. We have developed simulation-based planning tools to aid in sustainable agricultural and urban water management in the US, Mexico, India, and Jordan. With my colleagues, we have initiated the Global Freshwater Initiative, which studies water resources vulnerability problems throughout the world. During the past 15 years, our field investigations have focused on the interactions between groundwater and patterns of vegetation in studies of both meadow and salt-marsh ecohydrology. Scales of physical processes of interest extend from the domain of small pores to vast regional subsurface flow environments. Although driven by observations and data, we develop conceptual and quantitative models to rigorously understand physical processes, make predictions, and explore the impacts of new water management policies, such as taxes, quota, and markets. Such models enhance our understanding of groundwater flow behavior and provide the means to better manage water resources. .

. - Teaching :

. I teach courses for graduate and undergraduate students involving principles and methods used in physical and contaminant hydrogeology. In addition, I run a seminar series that exposes students to a variety of multidisciplinary topics involving hydrology. .

: - Professional Activities :

. 2021-2022 von Humboldt Fellow-Germany, 2022-23 Fulbright Fellow - Distinguished Chair in Science, Technology and Innovation, Australian-American Program, 2016 Fellow, American Association for the Advancement of Science (AAAS), 2014 Best Paper in Environmental Research Letters in 2014 (Padowski and Gorelick, (2014), 2013 Editor's Choice Award, Water Resources Research for paper Srinivasan et al., (2012), Member, US National Academy of Engineering (2012), International Fellow, Institute for Environmental Science and Research (ESR) (2011), New Zealand, Fulbright Senior Scholar (2008-09); Chester C. Keisel Memorial Lecturer, University of Arizona (2008); Best Paper Award in Computers and Geosciences, International Association for Mathematical Geology (2006); fellow, John Simon Guggenheim Memorial Foundation (2005); Stanford representative to the Consortium of Universities for Advancement of Hydrologic Sciences (2005-2008); M. King Hubbert Science Award, NGWA (2004); Ineson Distinguished Lecturer (1998); Fulbright Senior Scholar (1997); O.E. Meinzer Award, GSA (1994) James B. Macelwane medal, AGU (1990); Fellow, GSA (1988) and AGU (1990); Editorial Board, Optimization and Engineering Journal (1990-present); visiting professor, Ecole Polytechnique Federale de Lausanne (EPFL), Ecological Engineering Laboratory (2006); visiting professor, Swiss Federal Institute of Technology, jointly at the Swiss Federal Institute for Environmental Science and Technology (2005); visiting scholar, University of Cambridge, Zoology (2007); visiting scientist, CSIRO, Perth, Australia (2009); Member AGU Water and Society Technical Committee (2011-present) visiting professor, University of Western Australia Centre for Ecohydrology (2012); visiting professor, Swiss Federal Institute of Technology ETH Zurich (2013, 2019)

PROJECTS

- FUSE: Food-water-energy for Urban Sustainable Environments - Stanford University (5/1/2018 - present)
- Jordan Water Project : Integrated Analysis of Freshwater Resources Sustainability in Jordan - Stanford University (9/1/2013 - August 31, 2018)
- Scenarios for Survival of a UNESCO World Heritage Site: Combining the Distribution of Semi-aquatic Mammal Populations with Ecohydrologic Analysis - Stanford University (10/1/2016 - 9/30/2019)
- Linking Land Subsidence to Deep Arsenic Release in the Mekong Delta Aquifer System - Stanford University (7/1/2013 - 6/30/2017)
- Water Rights Rental Market for Fish Habitat Protection in Colorado - Stanford University (9/24/2012 - present)
- An integrated framework for analysis of water supply strategies in a developing city: Chennai, India. - Stanford University (9/25/1990 - 1/15/2013)

Teaching

COURSES

2023-24

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Physical Hydrogeology: CEE 260A, ESS 220 (Aut)
- Seminar in Hydrology: ESS 322B (Win)

2022-23

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Physical Hydrogeology: CEE 260A, ESS 220 (Aut)
- Seminar in Hydrology: ESS 322B (Win)

2021-22

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Physical Hydrogeology: CEE 260A, ESS 220 (Aut)
- Seminar in Hydrology: ESS 322B (Win)

2020-21

- Contaminant Hydrogeology and Reactive Transport: CEE 260C, ESS 221 (Win)
- Physical Hydrogeology: CEE 260A, ESS 220 (Aut)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Zhi Li, Philip Womble

Doctoral Dissertation Advisor (AC)

Ankun Wang

Doctoral Dissertation Co-Advisor (AC)

Ju Young Lee

Doctoral (Program)

Shikshita Bhandari, Ju Young Lee, Ankun Wang

Publications

PUBLICATIONS

- **Unexpected growth of an illegal water market** *NATURE SUSTAINABILITY*
Klassert, C., Yoon, J., Sigel, K., Klauer, B., Talozzi, S., Lachaut, T., Selby, P., Knox, S., Avisse, N., Tilmant, A., Harou, J. J., Mustafa, D., Medellin-Azuara, et al
2023
- **Muskrats as a bellwether of a drying delta.** *Communications biology*
Ward, E. M., Solari, K. A., Varudkar, A., Gorelick, S. M., Hadly, E. A.
2021; 4 (1): 750
- **A coupled human-natural system analysis of freshwater security under climate and population change** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Yoon, J., Klassert, C., Selby, P., Lachaut, T., Knox, S., Avisse, N., Harou, J., Tilmant, A., Klauer, B., Mustafa, D., Sigel, K., Talozzi, S., Gawel, et al
2021; 118 (14)
- **Water-food-energy challenges in India: political economy of the sugar industry** *ENVIRONMENTAL RESEARCH LETTERS*
Lee, J., Naylor, R. L., Figueroa, A., Gorelick, S. M.
2020; 15 (8)
- **Insights from watershed simulations around the world: Watershed service-based restoration does not significantly enhance streamflow** *Global Environmental Change*
Dennedy-Frank, J., Gorelick, S. M.
2019; 58

- **Indigenous communities, groundwater opportunities.** *Science (New York, N.Y.)*
Womble, P., Perrone, D., Jasechko, S., Nelson, R. L., Szeptycki, L. F., Anderson, R. T., Gorelick, S. M.
2018; 361 (6401): 453–55
- **Increasing drought in Jordan: Climate change and cascading Syrian land-use impacts on reducing transboundary flow.** *Science advances*
Rajsekhar, D. n., Gorelick, S. M.
2017; 3 (8): e1700581
- **Impact of the Syrian refugee crisis on land use and transboundary freshwater resources** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Mueller, M. F., Yoon, J., Gorelick, S. M., Avisse, N., Tilmant, A.
2016; 113 (52): 14932-14937
- **Global change and the groundwater management challenge** *WATER RESOURCES RESEARCH*
Gorelick, S. M., Zheng, C.
2015; 51 (5): 3031-3051
- **Assessment of human–natural system characteristics influencing global freshwater supply vulnerability** *Environmental Research Letters*
Padowski, J. C., Gorelick, S. M., Thompson, B. H., Rozelle, S., Fendorf, S.
2015; 10 (10)
- **Coupled impacts of sea-level rise and tidal marsh restoration on endangered California clapper rail** *BIOLOGICAL CONSERVATION*
Zhang, H., Gorelick, S. M.
2014; 172: 89-100
- **Release of arsenic to deep groundwater in the Mekong Delta, Vietnam, linked to pumping-induced land subsidence.** *Proceedings of the National Academy of Sciences of the United States of America*
Erban, L. E., Gorelick, S. M., Zebker, H. A., Fendorf, S.
2013; 110 (34): 13751-13756
- **Earthquake triggering and large-scale geologic storage of carbon dioxide** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Zoback, M. D., Gorelick, S. M.
2012; 109 (26): 10164-10168
- **Oil Panic and the Global Crisis: Predictions and Myths**
Gorelick, S. M.
Wiley-Blackwell Publishers.2010
- **MULTIPLE-RATE MASS-TRANSFER FOR MODELING DIFFUSION AND SURFACE-REACTIONS IN MEDIA WITH PORE-SCALE HETEROGENEITY** *WATER RESOURCES RESEARCH*
Haggerty, R., Gorelick, S. M.
1995; 31 (10): 2383-2400
- **PALEOCLIMATIC SIGNATURE IN TERRESTRIAL FLOOD DEPOSITS** *SCIENCE*
KOLTERMANN, C. E., Gorelick, S. M.
1992; 256 (5065): 1775-1782
- **Stakeholder Workshops Informing System Modeling-Analyzing the Urban Food-Water-Energy Nexus in Amman, Jordan** *SUSTAINABILITY*
Klauer, B., Kueblboeck, K., Omann, I., Karutz, R., Klassert, C., Zhu, Y., Zozmann, H., Smilovic, M., Talozzi, S., Figueroa, A., Grohs, H., Heilemann, J., Gorelick, et al
2022; 14 (19)
- **Capturing Stakeholders' Challenges of the Food-Water-Energy Nexus-A Participatory Approach for Pune and the Bhima Basin, India** *SUSTAINABILITY*
Karutz, R., Omann, I., Gorelick, S. M., Klassert, C. A., Zozmann, H., Zhu, Y., Kabisch, S., Kindler, A., Figueroa, A., Wang, A., Kublbock, K., Grohs, H., Burek, et al
2022; 14 (9)
- **Mapping Sugarcane in Central India with Smartphone Crowdsourcing** *REMOTE SENSING*
Lee, J., Wang, S., Figueroa, A., Strey, R., Lobell, D. B., Naylor, R. L., Gorelick, S. M.

2022; 14 (3)

- **Increasing nutrient inputs risk a surge of nitrous oxide emissions from global mangrove ecosystems** *ONE EARTH*
Mao, F., Ullah, S., Gorelick, S. M., Hannah, D. M., Krause, S.
2021; 4 (5): 742-748
- **A coupled human-natural system analysis of freshwater security under climate and population change.** *Proceedings of the National Academy of Sciences of the United States of America*
Yoon, J., Klassert, C., Selby, P., Lachaut, T., Knox, S., Avisse, N., Harou, J., Tilmant, A., Klauer, B., Mustafa, D., Sigel, K., Talozi, S., Gawel, et al
2021; 118 (14)
- **Insights on expected streamflow response to land-cover restoration** *JOURNAL OF HYDROLOGY*
Dennedy-Frank, P., Gorelick, S. M.
2020; 589
- **Distribution of small seasonal reservoirs in semi-arid regions and associated evaporative losses** *ENVIRONMENTAL RESEARCH COMMUNICATIONS*
Mady, B., Lehmann, P., Gorelick, S. M., Or, D.
2020; 2 (6)
- **Extracting Impervious Surface from Aerial Imagery Using Semi-Automatic Sampling and Spectral Stability** *REMOTE SENSING*
Zhang, H., Gorelick, S. M., Zimba, P.
2020; 12 (3)
- **Controlling Arsenic Mobilization during Managed Aquifer Recharge: The Role of Sediment Heterogeneity.** *Environmental science & technology*
Fakhreddine, S. n., Prommer, H. n., Gorelick, S. M., Dadakis, J. n., Fendorf, S. n.
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