Bridget R. Scanlon

Professional Summary

September 27, 2021

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Professional Preparation

Academic Background

Ph.D. Geology, University of Kentucky, 1985

M.S. Geology, University of Alabama, 1983

B.A. Mod., Geology, Trinity College, Dublin, Ireland, 1980

Professional Appointments

Adjunct Appointment to the Graduate Faculty, School of Natural Sciences, University of Nebraska, Lincoln (2004-Present)

Supervisor of graduate students

Senior Research Scientist, Bureau of Economic Geology, The University of Texas at Austin (October 1999-Present)

Impacts of climate variability/change on precipitation (ENSO, PDO etc) and water resources. Assessment of paleoclimate impacts on groundwater recharge in semiarid and arid regions. Evaluation of land-use change impacts on groundwater resources. Quantification of groundwater recharge using soil physics, environmental tracers, and numerical simulations. Evaluation of arsenic contamination related to anthropogenic and geogenic sources. Unsaturated zone nitrate profiling to link land surface processes with groundwater contamination. Monitoring and modeling analyses of evapotranspiration covers for waste containment.

Research Scientist, Bureau of Economic Geology, The University of Texas at Austin (September 1991-October 1999)

Characterization of fluid flow and solute transport in arid and semiarid systems using soil physics and environmental tracers; this work was related to potential low-level radioactive waste disposal sites and to the Pantex Plant site in Texas; numerical simulation of liquid and vapor transport in unsaturated systems for low-level radioactive waste disposal

Research Associate, Bureau of Economic Geology, The University of Texas at Austin (July 1987-August 1991)

Characterization of hydraulic and chemical attributes of the unsaturated zone related to low-level radioactive waste disposal; use of radioisotopic tracers to estimate moisture flux in desert soils; numerical simulations of liquid flow related to the INTRAVAL (International Validation of Flow and Transport) program

Hydrogeologist, S. S. Papadopoulos and Associates (February 1986-February 1987)

Hydrologic characterization of Superfund site including monitoring well installation and ground-water sampling for organics; numerical modeling of ground-water flow and transport related to water resources evaluation

Research Assistant, Geology Department, Trinity College, Dublin, Ireland (September-December 1980)

Analysis of geologic data for paleoenvironmental reconstructions

Professional Registrations and Certificates

State of Mississippi Board of Professional Geoscientists, License No. 1723

State of Texas Board of Professional Geoscientists, License No. 1645

Theses

A hydrogeological study of the Maine River Basin, Republic of Ireland: Tuscaloosa, Alabama, University of Alabama, M.S. thesis, 95 p., 1983

Dissertations

Chemical, physical, and microbiological characteristics of groundwater in wells and springs of the Inner Bluegrass Karst Region of central Kentucky: Lexington, Kentucky, University of Kentucky, Ph.D. dissertation, 216 p., 1985

Areas of Expertise

Areas of Expertise

Application of numerical models for simulating variably saturated flow and transport

Assessment of natural and anthropogenic contamination of aquifers, including arsenic and nitrate

Evaluation of the impact of climate variability and land use change on groundwater recharge

Awards

Awards and Honorary Societies

M. King Hubbard Award, 2016-Present

American Geophysical Union Hydrology Days Award, 2019-2020

Charles V. Theis Award for Groundwater, American Institute of Hydrology, 2019-2020

O. E. Meinzer Award, Geological Society of America, 2019-2020

AGU Hydrologic Sciences Award, 2018

International Association of Hydrogeologists Presidential Award, 2018

Fisher Endowed Chair in Geological Sciences, 2016-2018

National Academy of Engineering, 2016

American Geophysical Union Fellow, 2015

Publication Award, Bureau of Economic Geology (exemplary publication of scientific or economic impact), 2009

Joseph C. Walter Jr. Excellence Award, Jackson School of Geosciences, 2008

Geological Society of America Birdsall-Dreiss Distinguished Lecture Award, 2007-2008

Geological Society of America Fellow, 2005

Conservation Award, Barton Springs Edwards Aquifer Conservation District, 2000, 2004

George F. Pirtle Award, Department of Geology, University of Kentucky, 1984

Friends of International Students Award, University of Alabama, 1982-1983

Mining and Mineral Resources Research Fellowship, University of Alabama, 1982-1983

P.E. LaMoreaux and Associates Scholarship, University of Alabama, 1982

Service

University Committees

Technical Advisor, meetings of Directorate, Bureau of Economic Geology, The University of Texas at Austin, September 2014-August 2017

Member, Dean Mosher review committee, Jackson School of Geosciences, The University of Texas at Austin, February 9-June 12, 2015

External Committees Participation

External Advisory Board Member, Climate and Water Resources Changes in Mainland Southeast Asia (2018-2022), Southern University of Science and Technology (SUSTech), Mekong River, Shenzhen, China, January 1, 2018-December 31, 2022

Distinguished Visiting Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China, June 12, 2019-June 12, 2022

Managing Editor, Remote Sensing in Earth Systems Science, 2018-Present

Editorial Board Member, Environmental Research Letters, 2017-Present

Co-Chair, Groundwater and Energy, International Association of Hydrogeologists (IAH), national IAH meetings, May 1, 2016-Present

Associate Editor, Environmental Research Letters, 2012 - present

Associate Editor, Water Resources Research, 2011 - present

Co-chair, Commission on Groundwater and Climate Change, International Association of Hydrogeologists, 2011-Present

Member, Promotions Advisory Committee, Bureau of Economic Geology, 2002 - present

Member, Texas Groundwater Protection Committee, Texas Commission on Environmental Quality, 2002 - present

Member, Unsaturated Zone Hydrology Committee, American Geophysical Union, 1997 - present

Member, European Training Network for In Situ Imaging of Dynamic Processes in Heterogeneous Subsurface Environments (ENIGMA), topic: subsurface imaging, European Union, January 1, 2017-December 31, 2020

Member, Committee on Future Directions of the U.S. Geological Survey's Energy Resources Program, National Academies of Sciences, Engineering, and Medicine, Washington, DC; Denver, Colo.; California, August 1, 2017-August 31, 2018

Managing Editor, Vadose Zone Journal, Editorial Board, January 1, 2011-December 31, 2014

Member, Ph.D. Dissertation Committee, Civil, Archtectural, and Environmental Engineering, September, 2013

Member, GRACE Science Team, NASA, 2009 - 2012

Member, Ecohydrology Committee, American Geophysical Union, 2011

Co-Chair, Agrosystems and Water Resources, American Geophysical Union Annual Meeting,

San Francisco, 2010, 2010

Co-Chair, Impacts of Land Use and Climate Change on Water Resources Sustainability, Geological Society of America Annual Meeting, 2010, 2010

Member, Committee on Spatial Data Enabling USGS Strategic Science in the 21st Century, National Academy of Sciences, 2009 - 2010

Member, EPSCOR Review Team, University of New Mexico, 2009 - 2010

Co-Chair, Ecohydrology within the Context of Global Change, American Geophysical Union Annual Meeting, San Francisco,, 2009

Co-Chair, Groundwater Sustainability and Global Change, American Geophysical Union Annual Meeting, San Francisco,, 2009

Member, Committee on Integrated Observations on Hydrologic and Related Sciences, National Academy of Sciences, 2005 - 2007

Symposium Developer and Co-Chair, Impacts of Land Use/Land Cover Change on the Water Cycle Committee, American Geophysical Union Fall Program, 2005 - 2007

Associate Editor, Vadose Zone Journal, , 2001 - 2007

Co-chair, Impacts of Land Use/Land Cover Change and Climate Variability on Water Resources, 2006 American Geophysical Union Annual Meeting, San Francisco, 2006

Chair, Fall Program Committee for Hydrology, American Geophysical Union, 2005

Symposium Developer and Co-Chair, Fall Meeting, Impacts of Land Use/Land Cover Change on the Water Cycle, American Geophysical Union, 2005

Co-Leader, Development of a Proposal for a CUAHSI Hydrologic Observatory in Texas, , 2004 - 2005

Member, Review Committee, Global Estimation of Groundwater Recharge for WHYMAP, IAEA, Vienna, 2004 - 2005

Member, Committee on Unsaturated Zone Hydrology, American Geophysical Union, 1997 - 2005

Member, Joint DOE/NSF Workshop: Water: Challenges at the Intersection of Human and Natural Systems, Pacific Northwest National Laboratory, 2004

Member, National Science Foundation, Ecohydrology Vision Workshop, Albuquerque, NM, 2004

Symposium Developer and Co-Chair, Sustainable Management of Water Resources, Geological Society of America, 2004

Member, Science Planning Team for Consortium of Universities for Advancement of Hydrologic Sciences (CUAHSI), , 2003 - 2004

Member, Committee on Groundwater Research, Texas Natural Resource Conservation Commission, 2002 - 2004

Symposium Developer and Co-Chair, Assessing the Impacts of Vegetation on the Water Balance, American Geophysical Union, 2003

Associate Editor, Hydrogeology Journal, 2000 - 2003

Co-chair, Texas Groundwater Protection Committee, Research Subcommittee, Texas Commission on Environmental Quality, 2002

Member, Fluxes across Interfaces, National Academy of Sciences, 2002

Member, Long-Term Stewardship, Department of Energy, 2002

Member, Surface water groundwater interaction, LCRA/SAWS, 2002

Member, Unsaturated Zone Committee, American Geophysical Union, 2002

Workshop Facilitator, Groundwater Fluxes across Interfaces, Diffuse vs. Focused Fluxes Session, National Academy of Sciences, Wisconsin, 2002

Member, Faculty Hiring Committee, Department of Geological Sciences, The University of Texas at Austin, 2001 - 2002

Member, Surveillance and Monitoring Workgroup, Long-Term Stewardship Program, Department of Energy, 2001 - 2002

Member, Technical Advisory Group on Groundwater Modeling and Contaminant Transport, Pantex, U.S. Department of Energy, 2000 - 2002

Member, Technical Advisory Group for Water Availability Modeling, Texas Water Development Board, 2001

Referee, GroundWater, 1991 - 2001

Referee, Journal of Hydrology, 1991 - 2001

Referee, Soil Science Society of America Journal, 1991 - 2001

Referee, Water Resources Research, 1991 - 2001

Member, Committee to Develop DOE Complex-Wide Vadose Zone Science and Technology Roadmap, Department of Energy, 2000

Member, Technical Advisory Group for Water Availability Modeling for the Texas Water Development Board, , 2000

Member, Committee to Develop Global Water Cycle Plan, U.S. Global Change Research Program, 1999 - 2000

Associate Editor, American Geophysical Union, Reviews of Geophysics, 1997 - 2000

Session developer and co-chair, Measurement Techniques and Modeling of Spatial and Temporal Variability in Groundwater: Recharge in Response to Past, Present, and Future Climates, Geological Society of America, 1999

Technical Reviewer, Evaluation of Recharge Issues at the Hanford Site, Department of Energy, 1999

Member, National Academy of Sciences Committee Subsurface Contamination at DOE Complex Sites: Research Needs and Opportunities, National Academy of Sciences, 1998 - 1999

Member, Committee for Hydrogeology and Environmental Geology, SEPM (Society for Sedimentary Geologists), 1996 - 1999

Session developer and co-chair, Monitoring and Modeling of the Performance of Engineered Covers for Waste Isolation, Annual Meeting, San Francisco, American Geophysical Union, 1998

Symposium Developer and Co-Chair, Recent Advances in Tracers in Vadose Zone Hydrology, Nice, France, European Geophysical Union, 1998

Technical Reviewer, Analysis of 36Cl Results from the High-Level Nuclear Waste Site at Yucca Mountain, Department of Energy, 1997 - 1998

Associate Editor, Groundwater, Association of Ground Water Scientists and Engineers, 1995 - 1998

Session Developer and Co-Chair, Use of Noninvasive Techniques for Evaluating Parameters in Unsaturated Systems, San Francisco, American Geophysical Union, 1997

Symposium developer and Co-Chair, The Role of Preferential Flow in the Unsaturated Zone,

Denver, Geological Society of America, 1996

Symposium developer and co-chair, Unsaturated Zone Hydrology, Geological Society of America, 1996

Technical Reviewer, Analysis of Preferential Flow at Yucca Mountain, Nuclear Waste Technical Review Board, 1995

Technical Reviewer, Evaluation of Recharge Issues at the Hanford Site, Department of Energy, 1995

Member, Evaluation of Unsaturated Flow at the proposed low-level radioactive waste disposal site at Ward Valley, California, National Academy of Sciences, 1994 - 1995

Theme session developer and co-chair, Integration of Hydraulic and Geochemical Approaches in Vadose Zone Studies, Geological Society of America, 1994

Chairperson, Methods Applied to Evaluation of Recharge Rates at Low-Level and High-Level Radioactive Waste Disposal Facilities at Workshop on Chloride and 36Cl Studies in the Arid Southwest, Las Vegas, , 1993

Session Co-Chair, Quantitative Hydrogeology, Boston, Geological Society of America, 1993

Convenor, review committee, and field-trip leader, Evaluate the unsaturated zone hydrology research at the Bureau and specifically the work related to low-level radioactive waste disposal at Eagle Flat, Texas, , 1992

Member, INTRAVAL (International Validation of Flow and Transport Modeling), Program Committee, , 1990

Member, Short Course Committee, Geological Society of America, 1990

Session developer and co-chair, Hydrogeology of Arid Regions, Geological Society of America, 1990

Outreach Activities

Big, Bad Texas Storms and More: Let's Talk about Water, podcast: presented at American Geophysical Union Fall Meeting 2019, San Francisco, Calif., December 11, 2019.

EarthView Texas: using GIS to see local geology and hydrology: presented to Rio Hondo and Los Fresnos Independent School Districts, Brownsville, Texas, February 2000.

3-D Visualization of geology and use of GIS to examine geology: presented to Math and Science Tek Teams , Austin, Texas, 2000.

Teaching and Advising

University Courses Taught

Climate change and land use change impacts on groundwater resources in semiarid regions: presented at Bureau of Economic Geology seminar, Austin, Texas, November 2009.

Unsaturated zone hydrology, 3-hr-credit course, GEO 27225 and 27490: presented at Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, Fall 2009.

Unsaturated Zone Hydrology: 3-hr-credit course, GEO 27225 and 27490: presented at Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, Fall 2008.

Ground water pollution and contaminant transport: 3-hour-credit graduate course presented at the Department of Civil Engineering, The University of Texas at Austin, Austin, Texas, February March, 2005.

Vadose zone hydrology (cotaught with Dr. McCray): 3-hour-credit course, GEO 391, presented at The University of Texas at Austin, Austin, Texas, February 2004.

Modeling Barton Springs aquifer: presented to Barton Springs Edwards Aquifer Authority, Austin, Texas, October 2003.

Environmental isotope geochemistry (Co-taught with Dr. Banner): 3-hour-credit course, GEO 388H, presented at Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, February 2003, 2005.

Unsaturated zone hydrology: presented to Department of Geological Sciences field class, The University of Texas at Austin, Austin, Texas, May 2002.

Ground water pollution and contaminant transport: 3-hour-credit graduate course presented at the Department of Civil Engineering, The University of Texas at Austin, Austin, Texas, February 1998.

Unsaturated zone hydrology, organic contaminant transport, and groundwater modeling: presented to University College, Department of Civil Engineering, Cork, Ireland, February 1997.

Physical and environmental tracer data to quantify spatial and temporal variability in unsaturated flow: presented at the Summer School on European Water Resources and Climate Change Processes, University College, 1997.

Basic principles of unsaturated flow and solute transport: presented at the Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, 1992.

Basic principles of unsaturated flow and solute transport: presented to The University of Texas at Austin, Department of Geological Sciences, 1992.

Basic principles of unsaturated flow and solute transport: presented at the Department of Geological Sciences, The University of Texas at Austin, Austin, Texas, 1991.

Geology 382, Analysis of unsaturated flow related to radioactive waste disposal: presented at The University of Texas at Austin, Department of Geological Sciences, 1990.

Continuing Education Courses Taught

TOPCORP Water Issues Related to Shale Oil and Gas Extraction: presented to TOPCORP industry and regulators, presented at Penn State University, State College, Pa., August 29-31, 2016.

TOPCORP Water and Energy Extraction in the U.S. / Water and Electricity Generation in the U.S.: presented to TOPCORP regulators, Bakersfield, Calif., April 11-13, 2016.

TOPCORP: Water Issues Related to Energy Extraction in Shale Plays in the U.S.: presented to GE Oil and Gas University, Florence, Italy, February 15-18, 2016.

Groundwater Arsenic Contamination in Texas: short course presented to TCEQ, Austin, Texas, Summer 2011.

Estimating rates of groundwater recharge (co-taught with Rick Healy, USGS: presented at the GSA Annual Meeting, Houston, Texas, October 2008.

Elements of Groundwater Hydrology: short course presented to TCEQ with J. P. Nicot, Austin, Texas, Spring 2008.

Fate and Transport in the Subsurface: short course presented to TCEQ with J. P. Nicot, Austin, Texas, Spring 2008.

Groundwater Arsenic Contamination in Texas: short course presented to TCEQ with J. P. Nicot, Austin, Texas, Spring 2008.

Groundwater Geochemistry: short course presented to TCEQ with J. P. Nicot, Austin, Texas, Spring 2008.

Groundwater arsenic contamination (co-taught with Dr. Nicot): 1-day short course presented to Texas Commission on Environmental Quality (TCEQ), Austin, Texas, February 2006, 2007.

Fate and transport (with J. P. Nicot): presented to Texas Commission on Environmental Quality (TCEQ), Austin, Texas, February 2005.

Evaluation of groundwater arsenic contamination in Texas: 4-hour short course presented to TCEQ, Austin, Texas, 2005.

Groundwater-surface water interactions focusing on water quantity and water quality issues: 1-day short course presented to TCEQ, Austin, Texas, 2005.

Fate and transport (with J. P. Nicot): presented to Texas Commission on Environmental Quality (TCEQ), Austin, Texas, February 2004.

Fate and transport (with J. P. Nicot): presented to Texas Commission on Environmental Quality (TCEQ), Austin, Texas, February 2004.

Estimating rates of groundwater recharge: cotaught with Rick Healey at Geological Society of America meeting, Denver, Colorado, 2004.

Assessment of groundwater surface water interactions: presented to EPA Region 6, Dallas, Texas, October 2003.

Groundwater surface water interactions: presented to Texas Commission on Environmental Quality, Austin, Texas, August 2003.

Fate and transport (with J. P. Nicot): presented to Texas Commission on Environmental Quality (TCEQ), Austin, Texas, February 2003.

Interactions of groundwater and surface water: presented at Regional EPA Meeting at TCEQ, Austin, Texas, 2003.

Unsaturated zone hydrology: presented to Texas Natural Resources Conservation Commission, Austin, Texas, April 2002.

Techniques for quantifying groundwater recharge: Short Course: Geological Society of America Annual Meeting, Boston, Massachusetts, November 2001.

Unsaturated zone hydrology: Short Course: Texas Natural Resources Conservation Commission, Austin, Texas, August 2001.

Techniques for estimating groundwater recharge: Short Course: Texas Water Development Board, Austin, Texas, June 2001.

Geology 391, Unsaturated zone hydrology: presented to The University of Texas at Austin, Department of Geological Sciences, October 1996.

Geology 391, Unsaturated zone hydrology: presented to The University of Texas at Austin, Department of Geological Sciences, February 1995.

Geology 391, Unsaturated zone hydrology: presented to The University of Texas at Austin, Department of Geological Sciences, February 1994.

Unsaturated-flow studies related to low-level radioactive waste disposal: sponsored by the American Nuclear Society and presented to the University of Nevada, 1989.

Student Committee Supervision

Supervisor, M.S. Thesis Committee, Kelley Keese, Assessing controls on diffuse groundwater recharge using unsaturated flow modeling: The University of Texas at Austin, Department of Geological Sciences, 2005

Supervisor, Ph.D. Dissertation Committee, Brad Cey, The University of Texas at Austin, Department of Geological Sciences, in progress, 2005

Co-Supervisor, M.S. Thesis Committee, Jun Liao, Analysis of water potential data and their implications for unsaturated flow processes in an arid setting: The University of Texas at Austin,

Austin, Texas, Department of Civil and Environmental Engineering, 1994

Student Committee Participation

Ph.D. Committee, Lingcheng Li, Jackson School of Geosciences, The University of Texas at Austin, Austin, Texas, 2016

Ph.D. Committee, Marya Halubok, Jackson School of Geosciences, The University of Texas at Austin, Austin, Texas, 2016

Ph.D. Committee, Seungwon Chung, Jackson School of Geosciences, The University of Texas at Austin, Austin, Texas, 2016

Member, Ph.D. Dissertation Committee, Ibrahim Maimouna, CNRS, IRD, Hydrosciences, Montpelier, 2010

Member, Ph.D. Dissertation Committee, Wendy Robertson, The University of Texas at Austin, 2010

Member, Ph.D. Dissertation Committee, Guoliang Cao, University of Alabama, 2008

Member, Ph.D. Dissertation Committee, Jeffrey Kuhn, The University of Texas at Austin, in progress, 2007

Member, Ph.D. Dissertation Committee, John McCartney, Geotechnical analysis of performance of different types of engineered barrier: The University of Texas at Austin, Department of Geotechnical Engineering, 2007

Member, Ph.D. Dissertation Committee, Seay Nance, The University of Texas at Austin, in progress, 2007

Member, Ph.D. Dissertation Committee, Beth Gross, Geotechnical analysis of performance of different types of engineered barriers: The University of Texas at Austin, Austin, Texas, Department of Geotechnical Engineering, 2006

Member, Ph.D. Dissertation Committee, Hua Su, The University of Texas at Austin, Completed, 2006

Member, M.S. Thesis Committee, Daniel Bailey, The University of Texas at Austin, Department of Geological Sciences, in progress, 2005

Member, M.S. Thesis Committee, Kelli Warren, Hydrogeology of the Barta Brothers' Ranch: University of Nebraska, 2005

Member, MSc Thesis Committee, Johnathan Bumgardner, Estimating biozone hydraulic conductivity in wastewater soil absorption systems using inverse numerical modeling: The University of Texas at Austin, Department of Geological Sciences, 2005

Member, Ph.D. Dissertation Committee, Crystal Gene-Hua, Massachusetts Institute of Technology, in progress, 2005

Member, Ph.D. Dissertation Committee, Crystal Ng, Massachusetts Institute of Technology, Cambridge, 2005

Member, Ph.D. Dissertation Committee, Jon Goodall, A spatial temporal data model for the land surface and atmosphere: The University of Texas at Austin, Department of Civil Engineering, 2005

Member, Ph.D. Dissertation Committee, Patrick J. Mickler, Elemental and isotopic study of speleothems in Barbados: The University of Texas at Austin, Austin, Texas, 2005

Member, M.S. Thesis Committee, Amy McCole, Seasonal water usage by Juniperus ashei: assessment with stable isotopes of hydrogen and oxygen: The University of Texas at Austin, Austin, Texas, 2004

Member, Ph.D. Dissertation Committee, Ian Jones, Review of geochemical evolution of groundwater in the Pleistocene Limestone aquifer of Barbados: The University of Texas at Austin, Austin, Texas, 2002

Member, Ph.D. Dissertation Committee, Chal Creese, An uncertainty analysis for a performance assessment of a low-level radioactive waste disposal facility: The University of Texas at Austin, Austin, Texas, Department of Geotechnical Engineering, 1999

Member, Ph.D. Dissertation Committee, Chia-Nan Liu, Stability reliability of geosynthetic landfill cover systems: The University of Texas at Austin, Austin, Texas, Department of Geotechnical Engineering, 1998

Member, Ph.D. Dissertation Committee, Sung-Chi Hsu, Stability and failure mechanisms of slopes in weak rock masses: The University of Texas at Austin, Austin, Texas, Department of Geotechnical Engineering, 1998

Member, M.S. Thesis Committee, Monika Bartelmann, Spatial and temporal variability in soil moisture in a hill slope: Rattlesnake Hill, Texas: The University of Texas at Austin, Austin, Texas, 1997

Member, Ph.D. Dissertation Committee, Junnrien Lai, Mechanical behavior of Eagle Ford Shale: The University of Texas at Austin, Austin, Texas, Department of Geotechnical Engineering, 1997

Member, M.S. Thesis Committee, James Rudnicki, Hill-slope scale soil moisture variability: Rattlesnake Hill, Texas: The University of Texas at Austin, Austin, Texas, Department of Geological Sciences, 1996

Presentations

Invited Presentations

Produced Water as Water Supply: presented to Texas Alliance of Groundwater Districts, presented at 2020 Virtual Texas Groundwater Summit, September 1, 2020.

Cumulative Water Risks Related to Oil Production in the Permian Basin: presented to Society of Petroleum Engineers, webinar, June 6, 2020.

Moving Towards More Sustainable Water Management from Local to Global Scales: presented to Shell, Houston, Tex., March 10, 2020.

Water Managements Strategies Both within and outside the Oil Sector Based on Data from All Major Plays within the U.S.: presented to American Petroleum Institute, webinar, February 25, 2020.

Geologically Speaking: Higher Education's Advances in Water and Energy: presented at Permian Basin Water in Energy Conference, Midland, Tex., February 19, 2020.

Comparison of Groundwater Storage Changes from GRACE Satellites with Monitoring and Modeling of Major U.S. Aquifers: presented at 2020 Underground Injection Control Conference, San Antonio, Tex., February 17, 2020.

Role of Modeling and Satellites in Global Water Resource Assessments: presented to Yale School of Forestry and Environemental Studies, webinar, February 12, 2020.

Comparison of Groundwater Storage Changes from GRACE Satellites with Monitoring and Modeling of Major U.S. Aquifers: presented to Texas Water Development Board, Austin, Tex., January 28, 2020.

Full Life Cycle Water Evaluation and Management: presented to Shell, Houston, Tex., January 26, 2020.

Comparison of GRACE-Derived Groundwater Storage with Ground-Based Monitoring and Regional and Global Modeling in Major U.S. Aquifers: presented to Tsinghua University,

presented at Tsinghua University, Beijing, China, January 5, 2020.

Managing Produced Water in Texas: presented to Railroad Commission of Texas, Austin, Tex., December 17, 2019.

Emerging Trends: Water Use and Management Related to Energy: presented to TopCorps, The University of Texas at Austin, December 3, 2019.

Assessing the Reliability of GRACE-Derived Groundwater Storage using Ground-Based Monitoring and Regional and Global Modeling in Major U.S. Aquifers: presented to Pacific Northwest National Lab, Richland, Wash., November 25, 2019.

Portfolio of Options for Water Management in the Permian Basin: presented at Bureau of Economic Geology Tight Oil Resource Assessment Consortium Annual Meeting, Austin, Tex., November 21, 2019.

Can We Optimize Water Management in the Permian Basin to Minimize Adverse Environmental Impacts?: presented to University of Texas Permian Basin, Midland, Tex., October 25, 2019.

Assessing Water Resources at Global to Local Scales: presented to Global Institute for Water Security, presented at 2019 Distinguished Lecture Series, University of Saskatchewan, Saskatoon, Canada, October 9, 2019.

Managing Water Issues Related to Unconventional Oil and Gas Production in the U.S.: presented to International Association of Hydrogeologists, Brisbane, Qld., Australia, July 17, 2019.

Water Issues Related to Unconventional Energy Production in the U.S.: presented to Intl. Assoc. of Hydrogeologists, presented at Brisbane, Australia, July 17, 2019.

Assessing Water Resources from Global to Local Scales using GRACE Satellites, Models, and Monitoring: presented to Engineers Australia in association with Deakin University, Melbourne, Vic., Australia, July 16, 2019.

Approaches to Managing Water Issues Related to Unconventional Oil and Gas Production in the United States: presented to Engineers Australia, presented at Water Wallys, Melbourne, Australia, July 15, 2019.

Assessing Water Resources from Global to Local Scales Using GRACE Satellites, Models, and Monitoring: presented to Engineers Australia, presented at Water Wallys, Melbourne, Australia, July 15, 2019.

What Can We Learn from Increased Induced Seismicity Related to Oil and Gas Production in the U.S.?: presented to RIPED, Beijing, June 14, 2019.

Combining the Satellite Gravimetry, Land Surface Models, and In-Situ Data to Evaluate Groundwater Storage Changes in Major Aquifers in the United States: presented to Department of Hydraulic Engineering, presented at Tsinghua Univ., Beijing, June 13, 2019.

Water Issues Related to Unconventional Oil and Gas Development: presented to National Academy of Sciences, Engineering, and Medicine, presented at Workshop on Environmental Legacies and Water Considerations Related to Oil and Gas Production, Midland, Tex., May 13, 2019.

Water Issues Related to Unconventional Oil and Gas Development: presented to The National Academies of Sciences, Engineering, and Medicine Roundtable on Unconventional Hydrocarbon Development, Midland, Tex., May 13, 2019.

Water Balance in the Permian Basin: presented to Tight Oil Resource Assessment Consortium, presented at Annual Meeting, Bureau of Economic Geology, The University of Texas at Austin, May 9, 2019.

Managing Water Resources within the Context of Climate Extremes: presented to International

Association of Hydrogeologists, Dublin, Ireland, March 30, 2019.

Global to Local Water Resource Assessments: Implications for Management: presented to American Geophysical Union, presented at Colorado Hydrology Days, Fort Collins, Colo., March 28, 2019.

Impacts of Climate Variability and Human Intervention on Water Storage Changes based on GRACE Satellites in Major U.S. Aquifers: presented at Impact of Groundwater in Earth System Models Conference, Taipei, Taiwan, March 17, 2019.

Integrating Remote Sensing, Global and Regional Models, and Monitoring Data to Assess Water Storage Changes in Major Aquifers in the United States: presented to IGEM, presented at 2nd Intl. Workshop on Impact of Groundwater in Earth System Models, Taiwan, March 17, 2019.

Climate and Human Drivers of Water Storage from Satellites and Models in the U.S.: presented to Chinese Academy of Sciences, Institute of Geodesy and Geophysics, Wuhan, China, March 14, 2019.

Keynote Presentation: Water Issues in U.S. Oil and Gas Development: presented at Permian Basin Water in Energy Conference, Midland, Texas, February 20, 2019.

Water Issues Related to Unconventional Oil and Gas Development in the U.S.: presented at Permian Basin Water in Energy Conference, Midland, Tex., February 20, 2019.

Developing aquatic ecosystem science to inform environmental performance: presented to Water-Energy Regulatory Environment and Trends Session, presented at The University of Texas at Austin/Exxon Mobil 2018 Energy-Water Workshop, Austin, Tex., December 3, 2018.

Keynote Presentation: Will Water Issues Constrain Energy Production in the Permian Basin?: presented at Hart Energy Conference, Midland, Tex., November 6, 2018.

Comparison of Trends in Water Storage from Global Models and GRACE Satellite Data: presented at IAG Workshop on HydroGeodesy and 3rd Satellite Gravity and Hydrology Forum, Wuhan, China, June 28, 2018.

Applications of Remote Sensing and Models for Global Water Resource Assessments: presented to European Training Network for In Situ Imaging of Dynamic Processes in Heterogeneous Subsurface Environments, ENIGMA, Cargese Summer School, Corsica, June 21, 2018.

Global Water Resource Assessments: Comparison of Models to GRACE Satellite Data: presented to Chinese Academy of Sciences, Beijing, June 15, 2018.

Management of Produced Water Related to U.S. Oil and Gas Production: presented at International Workshop on Environmental Management in Unconventional Oil and Gas Development, Beijing, China, June 13-14, 2018.

Comparison of Global Models and GRACE Satellites for Monitoring Water Storage Trends: presented to Exxon-Mobil, presented at The University of Texas at Austin, May 15, 2018.

Global Water Resources Assessments: Models vs Satellites: presented at Daniel L. and Irma Evans Lecture, University of Washington, Seattle (https://www.ce.washington.edu/news/lecture/evans), May 3, 2018.

Global Models Underestimate Large Decadal Declining and Rising Water Storage Trends Relative to GRACE Satellite Data: presented to National Academy of Engineering, Houston, Tex., April 4, 2018.

Water Issues within Unconventional Resource Development in the Permian Basin: presented to Houston Geological Society, presented at Applied Geoscience Conference on Integrated Approaches to Unconventional Reservoir Assessment and Optimization, Houston, Tex., March 6, 2018.

How Do Global Assessments of Water Storage Trends from Models Compare with Those from GRACE Satellite Data?: presented to University of Illinois at Urbana-Champaign, March 2, 2018.

Comparison of Global Models and GRACE Satellite Water Storage Trends: presented to American Association for Advancement of Science (AAAS) Annual Meeting, Austin, Tex., February 16, 2018.

Global Hydrologic Models Underestimate Extremes in GRACE Satellite Derived Water Storage Trends: presented to Southern University of Science and Technology, SUSTech, Shenzheng, China, January 15, 2018.

Assessing Induced Seismicity Related to Produced Water Management with Increasing U.S. Tight Oil Production: presented to Research Institute of Petroleum Exploration and Development (RIPED), Beijing, China, January 8, 2018.

Assessing Potential for Reuse of Produced Water from Energy Extraction: presented to Research Institute of Petroleum Exploration and Development (RIPED), Beijing, January 8, 2018.

Managing Water Risks with Increasing Unconventional Oil Production in the U.S.: presented at Berg Hughes Research Symposium, Texas A&M University, College Station, Tex., November 1, 2017.

Water Issues Related to Unconventional Oil Production in the U.S.: presented to Pioneer Natural Resources, Irving, Tex., October 10, 2017.

Water Budget of the Permian Basin: Implications for Groundwater Quality: presented to Texas Groundwater Protection Committee, presented at Texas Commission on Environmental Quality (TCEQ), Austin, Tex., September 12, 2017.

Managing Water Risks Related to Oil and Gas Production in the Permian Basin: presented to The University of Texas at El Paso, September 11, 2017.

Produced Water Management Challenges with Recent U.S. Oil Revolution: presented to Permian Basin Petroleum Association, Midland, Tex., July 19, 2017.

Global Models Underestimate Extremes in Water Storage Trends Relative to GRACE Satellite Data: presented at Third International Conference on Remote Sensing Applicaitons, Tsinghua University, Beijing, China, June 28, 2017.

Produced Water Management Challenges with Recent U.S. Oil Revolution: presented to Peking University, Beijing, China, June 23, 2017.

Managing Water Risks Related to Increasing Unconventional Oil and Gas Production in the U.S.: presented to American Association of Petroleum Engineers, presented at AAPG Annual Meeting, Houston, Tex., April 5, 2017.

Changing Water Budget Related to Transitioning from Conventional to Unconventional Oil Production in the Permian Basin: presented to Society of Petroleum Engineers, Houston, Tex., March 29, 2017.

Global Models Underestimate Extremes in Water Storage Trends Relative to GRACE Satellite Data: presented at SUSTech University, Shenzhen, China, January 15, 2017.

Comparison of Total Water Storage Anomalies from Global Hydrologic and Land Surface Models and New GRACE Satellite Solutions: presented to Chinese Academy of Sciences, presented at Wuhan, China, January 10, 2017.

Comparison of New Grace Satellite Data for Hydrologic Applications: presented to Intl. Perspectives on Water Resources and the Environment Conference, Wuhan, China, January 6, 2017.

Water Resources Management in the U.S. Southwestern Regions: presented to Intl.

Perspectives on Water Resources and the Environment Conference, Wuhan, China, January 5, 2017.

Water and Environmental Issues Associated with Unconventional Energy Development: presented to Council for Scientific Society Presidents, presented at Energy in the Next Era: Unconventional Hydrocarbon Development, Washington, D.C., December 5, 2016.

Water Management Strategies in the U.S. and Potential Applications in India: presented to Assessments of Regional Hydrology Using Space-Borne Gravity Observvations, presented at Indo-US bilateral workshop, National Geophysical Research Institute, Hyderabad, India, November 14, 2016.

Water Used for and Produced with Oil in the Permian Basin: presented to Energy Water Initiative, presented at BP, Houston, Tex., November 9, 2016.

The Water Budget of the Permian Basin: presented to Digital H2O, presented at The New Realities of Shale Water Management: A Look Forward to 2017 and Beyond, Chicago, November 3, 2016.

Water Issues in the Bakken Shale Play: presented to Statoil, Austin, Tex., October 13, 2016.

Towards More Sustainable Management of Groundwater Resources: presented to National Academy of Engineering, Washington, D.C., October 11, 2016.

Monitoring Subsurface Water Resources in the Western U.S.: presented to Quenching a Thirsty West: Integrated Scientific Knowledge and Technological Infrastructure to Solve Water Issues in the Western United States, presented at University of Nevada-Reno and NSF Joint Workshop, Lake Tahoe, Nev., August 27, 2016.

Conjunctive Use and Managed Aquifer Recharge in Southwest U.S.: presented to Texas Alliance of Groundwater Districts, Groundwater/Surface Water Interaction, presented at Texas Groundwater Summit, San Marcos, Tex., August 23, 2016.

Hydrologic Implications of GRACE Satellite Data in the Colorado River Basin: presented to Tsinghua University, Beijing, June 29, 2016.

Global Evaluation of GRACE Data for Hydrologic Applications: presented at First Workshop on Satellite Gravity and Hydrology, Beijing, June 26, 2016.

Management of Flowback and Produced Waters: presented to National Academy of Sciences, Washington, D.C., May 20, 2016.

Water Used for and Produced with Oil in the Permian Basin: presented to Permian Basin Environmental Regulatory Seminar, presented at Permian Basin Petroleum Association, Midland College, Midland, Tex., May 12, 2016.

Food, Energy, and Water Nexus in Texas: presented to Iowa State University, Dept. of Geological and Atmospheric Sciences, Ames, Iowa, April 22, 2016.

The Future of Water: Assessing Sustainability from Space: presented at Ronald Lecture, Iowa State University, Ames, Iowa, April 22, 2016.

Groundwater Usage for Energy Extraction and Electricity Generation: presented to National Groundwater Association, Washington, D.C., February 18, 2016.

Water Initiatives in Texas: Energy, Technology, and Policy: presented to UT Energy Week, The University of Texas at Austin, Austin, Tex., February 9, 2016.

Will water scarcity in semiarid regions limit hydraulic fracturing of shale plays?: presented at Colorado School of Mines, Boulder, Colorado, February 11, 2015.

Comparison of varying agricultural intensification on water resources: comparison of the North China Plain and US High Plains: presented to Geological Society of America, presented at Annual Meeting, Vancouver, British Columbia, November 2014.

Presentations

How Severe is Water Stress in the Middle East and North Africa Region?: presented to European Geosciences Union, virtual, April 19-31, 2021.

Combining Physics-Based Modeling and Machine Learning for GRACE Satellite Data Fusion and Reconstruction: presented at American Geophysical Union meeting, December 1-17, 2020.

Global Analysis of Daily and Monthly GRACE Data for Flood Prediction: presented at American Geophysical Union meeting, online, December 1-17, 2020.

Opportunities to Invest in Groundwater-Fed Irrigation Sub-Saharan Africa--A Regional Assessment Under Alternative Energy Solutions: presented at American Geophysical Union meeting, virtual, December 1-17, 2020.

Preliminary Results from GRACE/GRACE-FO 5-Day Mascon Solutions from CSR: presented at American Geophysical Union meeting, virtual, December 1-17, 2020.

Reconstruction of GRACE Total Water Storage Through Automated Machine Learning (AutoML).: presented at American Geophysical Union meeting, virtual, December 1-17, 2020.

Relative Impacts of Climate Extremes and Irrigation Water Use on Water Storage in Major Aquifers Based on GRACE Satellite Data: presented at American Geophysical Union meeting, virtual, December 1-17, 2020.

Assessing Impacts of Climate Extremes and Human Water Use on GRACE Total Water Storage Trends in Major US Aquifers.: presented at GRACE/GRACE-FO Science Team Meeting, virtual, October 26-29, 2020.

Reconstruction of GRACE Total Water Storage Through Automated Machine Learning: presented at GRACE/GRACE-FO Science Team Meeting, October 26-29, 2020.

Assessing Detectability of Global Flood Occurrences using Daily and Monthly GRACE/GRACE-FO: presented at GRACE/GRACE-FO Science Team Meeting 2020, virtual, October 2020.

Assessing the Reliability of GRACE-Derived Groundwater Storage Using Ground-Based Monitoring and Regional and Global Modeling in Major U.S. Aquifers: presented at American Geophysical Union meeting, San Francisco, Calif., December 9-13, 2019.

Multi-Decadal Assessment of Water Storage Changes in the Tigris-Euphrates Basin Using Remote Sensing, Hydrological Models, and Monitoring Data: presented to American Geophysical Union (AGU), presented at AGU conference, San Francisco, Calif., December 9-13, 2019.

How Reliable is GRACE-Derived Groundwater Storage Changes?: presented to GRACE science team, presented at GRACE/GRACE-FO Science Team Meeting 2019, Pasadena, Calif., October 8-10, 2019.

Research Activities in Texas: Cal/Val for SMAP and Sensor Evaluations: presented to W-3188, presented at Multi-State Soil Physics Group, Riverside, Calif., January 10-11, 2019.

Update on Powell Research Group Study Integrating GRACE Satellite Data, Regional Groundwater Models, and In-Situ Data to Assess Water Storage Changes in Major Aquifers in the US, AGUFM H51M-1477: presented at American Geophysical Union meeting, Washington, D.C., December 10-14, 2018.

Will Water Issues Constrain Energy Production in the U.S.?: presented to Sinopec, presented at Petroleum Engineering, The University of Texas at Austin, November 28, 2018.

Declining Water Storage in the Middle East as Observed by GRACE, Altimetry, Hydrological Models, and In-Situ Data: presented at Geological Society of America meeting, Indianapolis, Ind., November 4-7, 2018.

Challenges in Texas Water Management for All Sectors: presented to UT OLLI SAGE, presented at The University of Texas at Austin, November 5, 2018.

Will Water Issues Constrain Energy Production in the U.S.?: presented to Tight Oil Resource Assessment (TORA) consortium Annual Meeting, Bureau of Economic Geology, The University of Texas at Austin, October 29, 2018.

Groundwater Studies in the High Plains Aquifer: presented to Texas legislative group, presented at Bureau of Economic Geology, The University of Texas at Austin, May 24, 2018.

Assessing Relative Importance of Climate Variability and Human Intervention in Global Water Resources: presented at The Robert Dickinson Symposium on Earth System Modeling: Past, Present and Future, The University of Texas at Austin, May 14, 2018.

Comparison of Fluid Budgets in U.S. Shale Oil Plays Related to Seismicity: presented to Pioneer Natural Resources Management, Bureau of Economic Geology, The University of Texas at Austin, March 19, 2018.

Water Budgets of U.S. Tight Oil Plays: Implications for Induced Seismicity: presented at SEG/SPE Workshop: Injection Induced Seismicity, Dallas, Tex., November 5, 2017.

ManagingTradeoffs in Water and Energy Space: presented to Sener Group, Energy Secretariat, Mexico, Mexico City, August 23, 2017.

Produced Water Management Challenges with Recent U.S. Oil Revolution: presented to Peking University, Beijing, June 25, 2017.

Global Models Underestimate Extremes in Water Storage Trends Relative to GRACE Satellite Data: presented to 3rd Intl. Conf. on Applications of GRACE Satellite Data, presented at Tsinghua Univ., Beijing, June 24, 2017.

Comparison of Total Water Storage Anomalies from Global Hydrologic and Land Surface Models and New GRACE Satellite Solutions: presented to Bureau of Economic Geology, Austin, Tex., January 20, 2017.

Water and Energy Issues: presented to ExxonMobil, presented at Bureau of Economic Geology, Austin, Tex., May 3, 2016.

Water and Electricity Generation, Including Sources of Water for Energy Production (webinar): presented to CUAHSI, Austin, Tex., April 2016.

Water in the Oil and Gas Cycle, Including Hydraulic Fracturing (webinar): presented to CUAHSI, Austin, Tex., March 25, 2016.

Use of GRACE Satellites to Assess Trends in Groundwater Storage Globally: presented to LBJ School of Public Affairs, The University of Texas at Austin, February 23, 2016.

Water-Energy-Land Nexus in Texas: presented to National Center for Science Education (NCSE) Food-Energy-Water Nexus Conference, Washington, D.C., January 18, 2016.

Hydrologic Implications of GRACE Satellite Data in the Colorado River Basin: presented to Bureau of Economic Geology, The University of Texas at Austin, Austin, Tex., January 7, 2016.

Will water scarcity in semiarid regions limit hydraulic fracturing of shale plays?: presented at National Groundwater Association Summit, San Antonio, Texas, March 17, 2015.

Global analysis of the role of the GRACE satellites in water resource assessments: presented to Geological Society of America, presented at annual meeting, Vancouver, British Columbia, Canada, November 2014.

Comparison of varying agricultural intensification on water resources: comparison of the North China Plain and U.S. High Plains: presented to Geological Society of America, presented at Annual Meeting, Vancouver, British Columbia, October 2014.

Global analysis of the role of the GRACE satellites in water resource assessments: presented to Geological Society of America, presented at Annual Meeting, Vancouver, British Columbia, October 2014.

How does water use for hydraulic fracturing of unconventional shale oil compare with shale gas and with conventional oil production?: presented to Geological Society of America, presented at Annual Meeting, Vancouver, British Columbia, October 2014.

Advanced techniques for monitoring groundwater: presented at San Antonio Water Systems, San Antonio, Texas, Summer 2011.

Difficulties in assessing reliability of groundwater storage changes from GRACE satellite data:: presentation to GRACE Science Team Meeting at Center for Space Research, Austin, Texas, Spring 2011.

GRACE satellite shows increasing groundwater resources in West Africa: presented at Water for Food Conference, Lincoln, Nebraska, Spring 2011.

Impact of irrigated agroecosystems on groundwater resources in the U.S. High Plains and North China Plain: poster presented at GSA Annual Meeting, Denver, Colorado, October 31-November 3 2010.

Overexploitation of water resources for irrigated agriculture: case studies in the U.S. High Plains and California Central Valley: presented at GSA Annual Meeting, Denver, Colorado, October 31-November 3 2010.

Water scarcity within the context of climate change and land use change and linkages to food production in semiarid regions: invited talk presented at GSA Annual Meeting, Denver, Colorado, October 31-November 3 2010.

Novel satellite and ground-based techniques for watershed planning: presented at World Bank Lectures, Washington, D.C., February 2010.

Approaches toward sustainable groundwater resources in the U.S. High Plains and North China Plain: presented at Luangcheng Agricultural Station, Luangcheng, China, 2010.

Comparison of irrigated agriculture in the U.S. High Plains and North China Plain: poster presented at Toward Sustainable Groundwater in Agriculture--An International Conference Linking Science and Policy, San Francisco, California, 2010.

Comparison of irrigated agriculture in the U.S. High Plains and North China Plain: presented at International Groundwater Forum 2010, Securing Groundwater in a Changing World, Beijing, China, 2010.

Evaluation of ecohydrology of semiarid environments: presented at Texas State University, San Marcos, Texas, 2010.

Impacts of agriculture on water resources: presented to USDA, Blackland Research Center, Temple, Texas, 2010.

Impacts of irrigation on water resources in the U.S. High Plains and North China Plain: presented at Tsinghua University, Beijing, China, 2010.

Probabilistic predictions of groundwater recharge under climate change scenarios in a dryland cotton region of the Southern High Plains: poster presented at Toward Sustainable Groundwater in Agriculture--An International Conference Linking Science and Policy, San Francisco, California, 2010.

Satellite and ground-based approaches for monitoring impacts of agriculture on groundwater resources: keynote address presented at Toward Sustainable Groundwater in Agriculture--An International Conference Linking Science and Policy, San Francisco, California, 2010.

Use of GRACE satellite and subsurface tracers to assess groundwater resources in semiarid

regions: presented at Columbia University, New York, New York, 2010.

Use of GRACE satellite data for water resources management: Summer Course presented at Integrated River Basin Management, Beijing, China, 2010.

Use of GRACE satellite data to monitor global groundwater resources: presented to UNESCO, Amsterdam, The Netherlands, 2010.

Climate change adaptation for semiarid regions using groundwater: presented at World Bank Lectures, Washington, D.C., September 2009.

Comparison of land use change impacts on water resources in the southwest U.S. (Texas High Plains) and the Sahel region (southwest Niger): presented at 2IE University, Ouagadougou, Burkina Faso, W. Africa, 2009.

How long will the Ogallala aquifer last?: presented to Texas Exes, The University of Texas at Austin, Austin, Texas, 2009.

Impacts of changing land use on subsurface water resources in the semiarid Southern High Plains, Texas, USA: presented at the Department of Geography and Geology, University of Copenhagen, Copenhagen, Denmark, 2009.

Impacts of cultivation on groundwater resource in semiarid regions: comparison of the southwest U.S. (Texas High Plains) and the Sahel region (southwest Niger): presented at Université Cheikh Anta Diop, Dakar, Sénégal, 2009.

Land use change impacts on water resources in the southwest U.S. relative to southwest Niger: presented at University Abdou Moumoun, Niamey, Niger, 2009.

Source and mobilization of perchlorate in groundwater in the Texas High Plains: presented to EPA, Dallas, Texas, 2009.

Integration of hydrogeology and soil science for sustainable water resources--focus on water quantity: presented at Geological Society of America Annual Meeting, Houston, Texas, October 2008.

Impacts of irrigation on water resources in the Texas High Plains: presented at the Texas Water Development Board, Austin, Texas, 2008.

Texas aquifers: presented to high school teachers, The University of Texas at Austin, Institute for Geophysics, Austin, Texas, 2008.

Perchlorate mobilization related to land use change in the Southern High Plains, USA: presented at American Geophysical Union Fall Meeting, Arlington, Virginia, December 2007.

Naturally occurring arsenic contamination in a semiarid oxidizing system, Southern High Plains aquifer, USA: presented at Geological Society of America Annual Meeting, Denver, Colorado, October 28-29, 2007.

Implications of climate variability for groundwater resources and waste disposal in semiarid regions--a look at ecological controls from annual to millennial timescales: Birdsall-Dreiss distinguished lecture presented at the Geological Society of America Annual Meeting, Denver, Colorado, October 2007.

Naturally occurring arsenic contamination in a semiarid oxidizing system, southern High Plains aquifer, USA: presented at Geological Society of America Annual Meeting, Denver, Colorado, October 2007.

Impacts of Changing Land Use on Subsurface Water Resources in Semiarid Regions
Implications of Climate Variability for Groundwater Resources and Waste Disposal in Semiarid Regions-A Look at Ecological Controls from Annual to Millennial Timescales: Birdsall Dreiss Lectures, presented at 30 universities, February 2007.

Impact of climate variability and land use/land cover change on groundwater recharge in the

Southwest U.S.: presented to Lawrence Livermore National Laboratory, Livermore, California, June 2005.

Comparison of different approaches for relating ecology and hydrology in semiarid regions: presented at American Geophysical Union Joint Assembly, New Orleans, Louisiana, May 2005.

Overview of recharge studies in the Southwest U.S.: presented at International Atomic Energy Agency, Vienna, Austria, January 2005.

Ecological controls on the water cycle in water-limited ecosystems: presented at Annual Meeting for the Society of Range Management, Fort Worth, Texas, 2005.

Potential for collaboration between University of Texas and Comision Nacional del Agua: presented to Comision Nacional del Agua, Mexico City, Mexico, 2005.

Estimating groundwater recharge in porous media aquifers in Texas: presented at Texas Groundwater 2004: Towards Sustainability: Texas State Capitol Extension, San Marcos, Texas, November 2004.

Estimating groundwater recharge in porous media aquifers in Texas: presented at Texas Groundwater 2004: Towards Sustainability: Texas State University Capitol Conference, San Marcos, Texas, November 2004.

Impact of land-use change on groundwater recharge in the southwestern United States: presented at Geological Society of America Meeting, Denver, Colorado, November 2004.

Measurement, monitoring, and modeling analyses of a proposed low-level nuclear waste facility in Texas: presented at Geological Society of America Meeting, Denver, Colorado, November 2004.

Potential advances in quantifying the water cycle in karst systems using hydrologic observatory approach: presented at Geological Society of America Meeting, Denver, Colorado, November 2004.

Ecological controls on water cycle response to climate change in semiarid regions: presented at University of Nebraska, Lincoln, Nebraska, 2004.

Ecological controls on water cycle response to climate variability in desert regions: invited lecture presented at Oregon State University, Corvallis, Oregon, 2004.

Ecological controls on water cycle response to climate variability in water limited ecosystems: presented as U.T. Department of Geological Sciences Technical Talk, Austin, Texas, 2004.

Ecological controls on water cycle response to climate variability in water limited ecosystems: presented at Pacific Northwest National Laboratory, Richland, Washington, 2004.

Evaluating climate, vegetation, and soil controls on groundwater recharge using unsaturated flow modeling: presented with K. E. Keese and R. C. Reedy at TWDB Conference on Aquifers of West Texas, San Angelo, Texas, 2004.

Evaluating the performance of ET covers for waste containment in semiarid/arid regions (with R. Reedy, K. Keese, and S. Dwyer): presented at EPA Alternative Covers Performance Conference, Denver, Colorado, 2004.

Impact of land use change from natural to agricultural ecosystems on groundwater recharge: presented at American Geophysical Union Meeting, San Francisco, California, 2004.

Impact of land use change on groundwater recharge in the Southern High Plains groundwater resources: presented at Challenges and Opportunities Meeting, Lubbock, Texas, 2004.

Role of vegetation in controlling water balance at the land atmosphere interface in water limited ecosystems: presented at Texas A&M, College Station, Texas, 2004.

UT tech talk: presented at Oregon State University, Corvallis, Oregon, 2004.

UT tech talk: presented at University of Nebraska, Lincoln, Nebraska, 2004.

Vegetational controls on water balance at the land atmosphere interface in semiarid to arid ecosystems: presented at Texas A&M University, College Station, Texas, 2004.

Estimating groundwater recharge to Texas aquifers using unsaturated zone modeling (with K. Keese and R. C. Reedy): poster presented to Austin Geological Society, Austin, Texas, February 2003.

Atmospheric and land surface measurements in a prototype hydrologic observatory (with W. Krajewski, J. Famiglietti, and C. J. Duffy): presented to American Geophysical Union, 2003.

Defining the need for augmented recharge--techniques for quantifying recharge: presented to California Groundwater Resources Association, San Jose, California, 2003.

Ecohydrological controls on the water cycle in desert systems: presented to the U.S. Geological Survey, Reston, Virginia, 2003.

Intercode comparisons for simulating the water balance of engineered covers in semiarid regions (with M. Christman, R. C. Reedy, I. Porro, J. Simunek, and G. N. Flerchinger): presented at the International Applied Phytotechnologies Conference, Chicago, Illinois, 2003.

Review of techniques for estimating groundwater recharge: presented to the Irish Geological Survey, Dublin, Ireland, 2003.

Role of vegetation in controlling water balance at the land-atmosphere interface in water limited ecosystems (with D. Levitt, M. J. Sully, K. Keese, R. C. Reedy, J. Simunek, L. Desotell, and C. Lohrstrofer): presented to American Geophysical Union, 2003.

Techniques for estimating groundwater recharge: presented at 24th Biennium Groundwater Conference and 12th Annual Meeting: Groundwater Resources Association of California, Ontario, CA, 2003.

Unsaturated zone studies related to natural systems and evapotranspiration covers: presented to Pantex AIP, Austin, Texas, October 2002.

Variations in flow and transport in thick desert vadose zones in response to paleoclimatic forcing (0-90 kyr): presented to Department of Geological Sciences, The University of Texas at Austin, October 2002.

Aquifer demonstration: presented to Cedar Creek Elementary School, Austin, Texas, May 2002.

Groundwater fluxes across interfaces: presented to National Academy of Sciences, Door County, Wisconsin, May 2002.

Comparison of various techniques for evaluating unsaturated flow in the Chihuahuan Desert of Texas: presented to the University of Arizona, Department of Hydrology, USGS, Tucson, Arizona, April 2002.

Groundwater modeling in the Barton Springs segment of the Edwards aquifer, Texas: presented to Austin Geological Society, Austin, Texas, April 2002.

Groundwater recharge in Texas: presented to Texas Water Development Board, Austin, Texas, April 2002.

Overview of unsaturated flow studies in semiarid regions: presented to Texas A&M University, College Station, Texas, March 2002.

Groundwater recharge in the Texas High Plains: presented at the Geological Society of America Annual Meeting, Denver, Colorado, 2002.

Monitoring and modeling of engineered covers: presented to the Environmental Protection Agency, Cincinnati, Ohio, 2002.

Groundwater modeling of the Barton Springs segment of the Edwards aquifer: presented at

Regional Water Planning Group Meeting, Bastrop, Texas, October 2001.

Suitability of alternative engineered covers for waste containment: presented at Texas Natural Resource Conservation Commission, Austin, Texas, September 2001.

Hydrogeology 346: presented to Jay Famiglietti's class, February 2001.

Isotope Hydrology: presented to Jay Banner's class, March and April, February 2001.

Results of unsaturated zone monitoring at the Pantex Plant: presented at U.S. Department of Energy, Pantex, Amarillo, Texas, February 2001.

Use of engineered covers for waste containment: presented at Air Force Center for Environmental Excellence, San Antonio, Texas, February 2001.

Comparison of different numerical codes for simulating unsaturated flow: presented to Department of Hydrology, University of Nevada, Reno, Nevada, December 2000.

Groundwater recharge in arid climates: assessing the errors: presented at U.S. Geological Survey National Hydrology Meeting, Reno, Nevada, November 2000.

Numerical simulations of engineered cover performance for waste Containment: presented at Department of Geological Sciences, Seminar Series, The University of Texas at Austin, Austin, Texas, October 2000.

Analysis of design, monitoring, and modeling issues related to engineered covers for waste containment: presented to U.S. Environmental Protection Agency, Cincinnati, Ohio, July 2000.

Numerical modeling and monitoring of engineered covers: workshop for educators: presented to U.S. Environmental Protection Agency, Cincinnati, Ohio, July 2000.

Evaluation of natural recharge rates for characterizing waste disposal sites in semiarid regions: presented at Natural Recharge of Groundwater Symposium, Tempe, Arizona, June 2, 2000.

Basic principles of unsaturated zone hydrology: presented to Department of Geological Sciences Field Class, The University of Texas at Austin, Austin, Texas, May 19, 2000.

EarthView Texas: using GIS to see local geology and hydrology: presented at Rio Hondo and Los Fresnos ISD, Brownsville, Texas, February 2000.

Evaluation of groundwater availability in the Barton Springs segment of the Edwards aquifer on the basis of numerical simulations: presented to Lower Colorado Water Planning Group (Region K) and to Lower Colorado River Authority, Austin, Texas, February 2000.

Techniques for quantifying recharge: Texas Water Development Board, Austin, Texas, February 2000.

Groundwater recharge in arid climates: assessing errors: presented at USGS National Meeting, Reno, Nevada, 2000.

Overview of techniques for quantifying recharge: presented at National Ground Water Association Meeting, Austin, Texas, 2000.

Overview of techniques for quantifying recharge: presented at National Groundwater Association Annual Meeting, Austin, Texas, 2000.

Results of numerical simulations of groundwater flow for the Barton Springs segment of the Edwards aquifer: presented to Lower Colorado River Authority and Regional Water Planning Group K , Austin, Texas, 2000.

Controls on unsaturated flow in semi-arid regions: presented to the U.S. Salinity Laboratory, Riverside, California, 1999.

Evaluation of unsaturated flow in arid settings: presented to the Department of Hydrology, Rehovot, Israel, 1999.

Uncertainties in estimating water fluxes and dating pore water in arid unsaturated zones: presented to the Department of Geological Sciences, The University of Texas at Austin, 1999.

Evaluation of water fluxes and ages in an arid setting: presented at Petroleum and Geosystems Engineering, The University of Texas at Austin, April 1998.

Monitoring techniques related to subsurface gas transport: presented at the University of Arizona, Maricopa Experimental Station, Phoenix, Arizona, 1998.

Use of environmental tracers to estimate water fluxes in the unsaturated zone: presented to Department of Geological Sciences, The University of Texas at Austin, 1998.

Uncertainties in estimating water fluxes and dating pore water in arid unsaturated zones: presented to the Department of Geology, The University of Texas at Dallas, November 1997.

Evaluation of focused recharge beneath playas and implications for agricultural practices: presented to the Texas Agricultural Extension Service at Lubbock, 1997.

Overview of unsaturated zone hydrologic studies related to radioactive waste disposal in Texas: presented to The University of Texas at El Paso, 1997.

Basic Principles of Unsaturated Zone Hydrology: presented to Department of Civil Engineering class on Contaminant Hydrology, March 1996.

Evaluation of Liquid and Vapor Flow in Arid Unsaturated Zones: presented to the Department of Civil Engineering Seminar Series, February 1996.

Quantification of air flow through the unsaturated zone: presented at a Review Meeting on Monitoring Issues Related to the Unsaturated Zone held by the University of Arizona and the Nuclear Regulatory Agency, Maricopa, Arizona, February 1996.

Controls on subsurface flow in an arid setting including evaluation of preferred pathways: presented at the VII Evans Workshop, "Flow and Transport through Unsaturated Fractured Rock," Phoenix, Arizona, 1995.

Issues related to Ward Valley, the proposed low-level radioactive waste disposal facility in California: presented to the Low Level Radioactive Waste Disposal Board, Austin, Texas, 1995.

Review of unsaturated zone studies in arid sites and implications for contaminant transport: presented to Department of Geological Sciences, The University of Texas at Austin, 1995.

Review of unsaturated zone studies in arid sites and implications for contaminant transport: presented to Nuclear Waste Technical Review Board, San Francisco, California, 1995.

Evidence for focused recharge beneath playas in the Southern High Plains, Texas: presented at the Playa Basin Symposium, Texas Tech University, Water Resources Center, Lubbock, Texas, 1994.

Low-level radioactive waste disposal in arid settings: Texas as an example: presented to the Board on Radioactive Waste Management, National Academy of Sciences, Los Angeles, California, 1994.

Analysis of unsaturated flow in desert soils: presented to The University of Texas at Austin, Department of Geological Sciences, 1993.

Evaluation of recharge rates using chemical tracers at low-level radioactive waste disposal sites in the Chihuahuan Desert, Texas: presented at Workshop on Chloride and 36Cl Studies in the Arid Southwest, Las Vegas, Nevada, 1993.

Long-term simulation of nonisothermal liquid and vapor flow in desert soils: case study Chihuahuan Desert, West Texas: presented at Southwest Research Institute, 1993.

Results of numerical simulations of nonisothermal liquid and vapor flow in arid systems: presented at Princeton University, Department of Civil Engineering, 1993.

Evaluation of moisture flux in semiarid soils: presented to The University of Nevada at Reno, Department of Geology, Reno, Nevada, 1992.

Numerical simulations of unsaturated flow in semiarid systems: presented to The University of Arizona at Tucson, Department of Hydrology, Tucson, Arizona, 1992.

Preferential flow in fissured sediments related to site characterization of a low-level radioactive waste disposal facility in Texas: presented at the INTRAVAL workshop, Las Cruces, New Mexico, 1992.

Comparison of chemical and hydraulic approaches in evaluation of moisture flux in desert soils: presented at the U.S. Geological Survey, Denver, Colorado, 1991.

Importance of vapor transport in unsaturated flow in arid systems: a case study in the Chihuahuan Desert of Texas: presented at the University of Nevada, Las Vegas, 1991.

Bomb chlorine-36 analysis in the characterization of unsaturated flow at a proposed radioactive waste disposal facility, Chihuahuan Desert, Texas: presented at the Accelerator Mass Spectrometry Conference, Paris, France, 1990.

Comparison of physical and chemical approaches to evaluation of moisture flux in desert soils: presented at the University of California, Davis, Department of Land, Air, and Water Research, 1990.

Analysis of unsaturated flow in the Chihuahuan Desert, West Texas: presented to the University of Rochester, Department of Geological Sciences, Rochester, New York, 1989.

Summary of unsaturated-zone studies in the Chihuahuan Desert related to low-level radioactive waste disposal: presented to the Texas Low-Level waste disposal Authority, Board of Directors, Austin, Texas, 1989.

Physical controls on hydrochemical variability in a karst aquifer: presented to The University of Texas at Austin, Department of Geological Sciences, hydrogeology seminar, Austin, Texas, 1987.

Activities of a Professional Nature

Professional Societies

American Geophysical Union

Geological Society of America (Fellow)

International Association of Hydrogeologists

National Academy of Engineering (Member)

National Groundwater Association

Funding

Research Support

Principal Investigator: Integrating GRACE Satellite and Ground-Based Estimates of Groundwater Storage Changes, U.S. Geological Survey and National Science Foundation (October 1, 2016-December 31, 2020; $165,000).

Researcher: Services to Conduct a Statewide Survey of Aquifer Suitability for Aquifer Storage adn Recovery Projects or Aquifer Recharge Projects, Texas Water Development Board (January 1-December 2020; $50,000).

Principal Investigator: Groundwater Fluoride in Texas Aquifers, Texas Commission on Environmental Quality (September 1, 2019-August 31, 2020; $75,000).

Senior Personnel: Graduate Student Education: Reducing Energy Barriers for Novel Water Supply Use in Sustainable Agriculture, NSF Research Traineeship (September 2018-August

2020; $3,000,000).

Principal Investigator: Geospatial Water Risk Assessment and Management: Permian Basin Case Study, Exxon Mobil (March 15, 2017-June 30, 2020; $525,804).

Principal Investigator: Produced Water Reuse, Exxon Mobil Upstream Research (February 1, 2017-December 31, 2019; $579,474).

Principal Investigator: To minimize adverse impacts on aquatic species habitats by optimizing water management for shale oil extraction in Trans Pecos, Texas, Mitchell Foundation (September 1, 2018-August 31, 2019; $126,000).

Principal Investigator: Update on Groundwater Arsenic Levels in Major and Minor Aquifers in Texas, Texas Commission on Environmental Quality (TCEQ) (September 1, 2018-August 31, 2019; $75,000).

Principal Investigator: Evaluation of Arsenic Contamination in Texas, Texas Commission on Environmental Quality (September 1, 2017-August 31, 2018; $75,000).

Principal Investigator: Water Demand for Five Major U.S. Unconventional Reservoirs Relative to Water Supplies, Alfred P. Sloan Foundation (September 1, 2015-August 31, 2018; $530,060).

Principal Investigator: Mapping Fresh, Brackish, and Saline Groundwater, Texas Water Development Board (August 24, 2015-March 1, 2018; $561,446).

Principal Investigator: Groundwater Nitrate Contamination in Texas, Texas Commission on Environmental Quality (September 1, 2016-August 31, 2017; $75,000).

Principal Investigator: Assessing Availability and Impacts of Shale Energy Extraction on Water Resources: Case Study in the Permian Basin, Mitchell Foundation (April 15, 2016-August 31, 2017; $200,000).

Principal Investigator: Evaluation of Brackish Groundwater Zones in Support of House Bill 30, Texas Water Development Board (October 1, 2015-August 31, 2017; $180,000).

Principal Investigator: Statement of Knowledge on Water Issues Related to the Permian Basin, University of Texas Energy Institute (July 1-December 2016; $100,000).

Principal Investigator: Assessment of groundwater fluoride contamination in the Texas High Plains Aquifer, Texas Commission of Environmental Quality (September 1, 2014-August 31, 2015; $70,000).

Principal Investigator: Carbon dioxide injection into shallow sedimentary aquifer systems to assess potential degradation of groundwater quality at geological carbon sequestration sites, Water Research Foundation AWWA (May 2010 - May 2013, $318,000).

Co-PI: Groundwater Nitrogen Source Identification and Remediation in the Texas High Plains and Rolling Plains Regions, Texas State Soil and Water Conservation Board (November 2009 - October 2012, $751,000).

Principal Investigator: Impact of droughts related to climate change on water resources in the High Plains aquifer, Bureau of Reclamation Climate WaterSMART (August 2010 - August 2012, $193,000).

Principal Investigator: Edwards aquifer water balance study, EPA through Texas Commission on Environmental Quality (October 2010 - August 2011, $70,000).

Principal Investigator: Effects of natural water quality on groundwater quantity, Texas Water Development Board (October 2010 - August 2011, $250,000).

Principal Investigator: Sources and remediation of naturally occurring arsenic and fluoride in groundwater in the Gulf Coast and High Plains aquifers, Texas, EPA through Texas Commission on Environmental Quality (October 2010 - August 2011, $465,000).

Principal Investigator: Application of GRACE satellite data for hydrologic modeling in sub-Saharan Africa and South Asia, International Food Policy Research Institute (May 2010 - August 2011, $20,000).

Principal Investigator: Evaluation of Groundwater Resource Availability in the Carrizo Wilcox Aquifer, Texas, Texas Commission of Environmental Quality (September 2009 - August 2011, $500,000).

Principal Investigator: Groundwater Recharge Estimation in the Texas Gulf Coast, Texas Water Development Board (September 2009 - August 2011).

Co-Principal Investigator: Scaling MODIS Evapotranspiration Monitoring Using Ground-based Measurements in a Semiarid Region, NASA (July 2009 - June 2011, $200,000).

Co-Principal Investigator: Application of GRACE Water Storage for Water Resources Management: Case Study, High Plains Aquifer, U.S. NASA (May 2008 - May 2011, $463,000).

Co-Principal Investigator: Application of GRACE Water Storage for Water Resources Management: Case Study, High Plains Aquifer, US, NASA (May 2008 - May 2011, $463,000).

Co-PI: Recharge Estimation in the Texas Gulf Coast Aquifer, Texas Water Development Board (2009 - 2011, $350,000).

Co-PI: Scaling MODIS Evapotranspiration Monitoring Using Ground-Based and Airborne Measurements in a Semiarid Region, NASA (2009 - 2011, $200,000).

Co-Principal Investigator, Groundwater Nitrogen Source Identification and Remediation in the Texas High Plains and Rolling Plains Regions, Texas State Soil and Water Conservation Board, 2009-2011, $751,000

Co-Principal Investigator: Groundwater Nitrogen Source Identification and Remediation in the Texas High Plains and Rolling Plains Regions, Texas State Soil and Water Conservation Board (2009 - 2011, $751,000).

Principal Investigator: Potential Degradation of Groundwater Quality at Geological Carbon Sequestration Sites, American Water Works Association (2009 - 2011, $318,000).

Co-PI: Evaluation of Naturally Occurring Contaminants in Texas Aquifers, Texas Commission on Environmental Quality (September 2009 - August 2010, $453,000).

Principal Investigator: Analysis of Arsenic Contamination in the Gulf Coast Aquifer, Texas Commission on Environmental Quality (TCEQ) (September 2009 - August 2010, $70,000).

Principal Investigator: Assessment of In Situ Treatment of Arsenic in the High Plains and Gulf Coast Aquifers, Texas Commission on Environmental Quality (TCEQ) (September 2009 - August 2010, $461,000).

Principal Investigator: Evaluation of Volcanic Sources of Groundwater Arsenic in the Texas Gulf Coast Aquifers, Texas Commission on Environmental Quality (TCEQ) (September 2008 - August 2009, $70,000).

Principal Investigator: Impacts of Land Use on Naturally Occurring Contaminants in Texas Aquifers, Texas Commission on Environmental Quality (TCEQ) (September 2008 - August 2009, $367,000).

Principal Investigator: Groundwater Recharge Estimation Using Soil Physics and Environmental Tracers in the Central High Plains, Panhandle Regional Planning Commission (June 2007 - August 2009, $356,000).

Principal Investigator: Impacts of Land Management on Groundwater Resources, U.S. DOE (October 2007 - September 2008, $98,000).

Principal Investigator: Ogallala Aquifer Irrigation Integration Study, U.S. Bureau of Reclamation (July 2007 - September 2008, $150,00).

Principal Investigator: Assessment of Geogenic Sources of Groundwater Arsenic Contamination in the Texas Gulf Coast, Texas Commission on Environmental Quality (TCEQ) (September 2007 - August 2008, $70,000).

Principal Investigator: Evaluation of Naturally Occurring Contaminants (Arsenic, Fluoride, Perchlorate) on Groundwater Quality in Texas, Texas Commission on Environmental Quality (TCEQ) (September 2007 - August 2008, $425,000).

Principal Investigator: Short Courses on Groundwater Arsenic Contamination, Fate and Transport of Contaminants, Elements of Groundwater Hydrology, and Groundwater Geochemistry, Texas Commission on Environmental Quality (TCEQ) (September 2007 - August 2008, $50,000).

Principal Investigator: Quantification of Impacts of Agricultural Land Use Management (Conventional Tillage, No Tillage, and Deep Ploughing) on Groundwater Resources, DOE (October 2006 - September 2007, $98,000).

Principal Investigator: Evaluation of Arsenic Contamination in the Southern High Plains in Texas, Texas Commission on Environmental Quality (TCEQ) (September 2006 - August 2007, $330,000).

Principal Investigator: Groundwater Recharge to the Dockum Aquifer, Subcontractor to INTERA (September 2006 - August 2007, $8,000).

Principal Investigator: Short courses on Groundwater Arsenic Contamination and Fate and Transport of Contaminants, TCEQ (August 2006 - August 2007, $25,000).

Co-Principal Investigator: Development of an Integrated Superconducting Gravity Sensor System for Subsurface Water Storage, NSF (October 2005 - September 2006, $349,416).

Principal Investigator: Assessment of Evapotranspiration in Irrigated Agriculture, DOE Pantex Plant (October 2005 - September 2006, $98,000).

Principal Investigator: Fate and Transport Short Course, Texas Commission on Environmental Quality (September 2005 - August 2006, $22,000).

Principal Investigator: Evaluation of Denitrification in Texas Aquifers, Texas Commission on Environmental Quality (September 2004 - August 2006, $150,000).

Principal Investigator: Evaluation of Groundwater Arsenic Contamination in New Mexico, USPHS Indian Health
USPHS Indian Health Service (September 2005 - May 2006, $70,000).

Principal Investigator: Evaluation of Recharge and Evapotranspiration Related to Waste Containment, DOE Pantex Plant (October 2000 - September 2005, $457,000).

Principal Investigator: Evaluation of Groundwater Contamination Related to Noncompliant Public Water Systems in Brazoria, Ector, Hickory, and Midland Counties in Texas, Texas Commission on Environmental Quality (September 2004 - August 2005, $157,000).

Principal Investigator: Evaluation of the Impact of Land Use/Land Cover Changes on Groundwater Recharge in the High Plains Aquifer, Bureau of Reclamation (2005, $95,000).

Principal Investigator: Assessment of nitrate contamination in the Seymour aquifer in Texas, TCEQ (2004 - 2005, $500,000).

Principal Investigator: Evaluation of arsenic in groundwater in Texas, EPA through TCEQ (2004 - 2005, $400,000).

Principal Investigator: Groundwater surface water interactions in Texas, EPA through TCEQ (2004 - 2005, $200,000).

Principal Investigator: Monitoring and Modeling the Performance of Evapotranspiration Covers for Waste Containment, EPA (October 2002 - September 2003, $75,000).

Principal Investigator: Evaluation of nonpoint source contamination from nitrate using logistic regression analysis, Texas Commission on Environmental Quality (2003, $60,000).

Principal Investigator: Quantification of groundwater recharge in Texas using modeling and field measurements, Texas Commission on Environmental Quality (2002 - 2003, $285,000).

Principal Investigator: Monitoring and Modeling the Performance of Evapotranspiration Covers for Waste Containment, EPA (October 2001 - September 2002, $250,000).

Principal Investigator: Monitoring and Modeling the Performance of Evapotranspiration Covers for Waste Containment, EPA (October 2000 - September 2001, $225,000).

Principal Investigator: Groundwater recharge in Texas, Texas Water Development Board (2000 - 2001, $103,000).

Principal Investigator: Monitoring and Modeling the Performance of Evapotranspiration Covers for Waste Containment, EPA (October 1999 - September 2000, $150,000).

Principal Investigator: Evaluation of electromagnetic induction as a noninvasive technique for monitoring water movement into and beneath waste disposal facilities, EPRI (1999 - 2000, $35,000).

Principal Investigator: Development of a monitoring station for estimating interplaya recharge, DOE (1998 - 1999, $50,000).

Co-Principal Investigator: Geologic and hydrologic studies of the Eagle Flat area, Texas Low-Level Radioactive Waste Disposal Authority (1997 - 1998, $451,000).

Principal Investigator: Development of a monitoring station for estimating interplaya recharge, DOE (1997 - 1998, $60,000).

Principal Investigator: Evaluation of monitoring programs for engineered barriers for waste disposal, DOE (1997 - 1998, $120,000).

Principal Investigator: Implementation of test plan, for Ward Valley recharge studies Department of Health Services, California (1997 - 1998, $260,000).

Co-Principal Investigator: Geologic and hydrologic studies of the Eagle Flat area, Texas Low-Level Radioactive Waste Disposal Authority (1996 - 1997, $850,000).

Principal Investigator: Development of a monitoring station for estimating interplaya recharge, DOE (1996 - 1997, $134,000).

Co-Principal Investigator: Geologic and hydrologic studies of the Eagle Flat area, Texas Low-Level Radioactive Waste Disposal Authority (1995 - 1996, $100,000).

Principal Investigator: Studies to optimize the monitoring system of a trench and engineered barrier in an arid setting, Idaho National Engineering Laboratory, National Low-Level Radioactive Waste Program, U.S. Department of Energy (1995, $100,000).

Co-Principal Investigator: Geologic and hydrologic studies of the Eagle Flat area, Texas Low-Level Radioactive Waste Disposal Authority (1994 - 1995, $730,000).

Principal Investigator: Application of electromagnetic methods and bomb pulse tracers to evaluate flow in fissured sediments, Idaho National Engineering Laboratory, National Low-Level Waste Disposal Program, U.S. Department of Energy (1994 - 1995, $90,000).

Researcher: Geologic and hydrologic site characterization of the Pantex Plant, U.S. Department of Energy (1990 - 1995, $7,405,000).

Researcher: Low-level radioactive waste, Eagle Flat, Texas Low-Level Radioactive Waste Disposal Authority (1993 - 1994, $2,438,917).

Researcher: Low-level radioactive waste, Eagle Flat, Texas Low-Level Radioactive Waste Disposal Authority (1992 - 1993).

Researcher: Low-level radioactive waste, Eagle Flat, Texas Low-Level Radioactive Waste Disposal Authority (1991 - 1992, $290,729).

Publications

Peer Reviewed Authored Books

Scanlon, B. R., 2018, (with nine co-authors), Future directions for the U.S. Geological Survey's Energy Resources Program: Washington, DC, National Academies Press, 168 p., http://doi.org/10.17226/25141.

Peer Reviewed Journal Articles

Mehrnegar, N., Jones, O., Singer, M. B., Maike Schumacher, Jagdhuber, T., Scanlon, B. R., Rateb, A., and Forootan, E., 2021, Exploring groundwater and soil water storage changes across the CONUS at 12.5 km resolution by a Bayesian integration of GRACE data into W3RA: Science of The Total Environment, v. 758, no. 143579, 16 p., http://doi.org/10.1016/j.scitotenv.2020.143579.

Rateb, A., Scanlon, B. R., and Kuo, C.-Y., 2021, Multi-decadal assessment of water budget and hydrological extremes in the Tigris-Euphrates Basin using satellites, modeling, and in-situ data: Science of The Total Environment, v. 76, no. 144337, 11 p., http://doi.org/10.1016/j.scitotenv.2020.144337.

Sun, A. Y., Scanlon, B. R., Save, H., and Rateb, A., 2021, Reconstruction of GRACE total water storage through automated machine learning: Water Resources Research, v. 57, no. 2, article no. e2020WR028666, 20 p., http://doi.org/10.1029/2020WR028666.

Caldwell, T. G., Wolaver, B. D., Bongiovanni, T., Pierre, J. P., Robertson, S., Abolt, C., and Scanlon, B. R., 2020, Spring discharge and thermal regime of a groundwater dependent ecosystem in an arid karst environment: Journal of Hydrology, v. 587, no. 124947, 14 p., http://doi.org/10.1016/j.jhydrol.2020.124947.

Chen, J., Tapley, B., Rodell, M., Seo, K.-W., Wilson, C., Scanlon, B. R., and Pokhrel, Y., 2020, Basin-scale river runoff estimation from GRACE gravity satellites, climate models, and in situ observations: a case study in the Amazon Basin: Water Resources Research, v. 56, no. 10, article no. e2020WR028032, 21 p., http://doi.org/10.1029/2020wr028032.

Long, D., Yang, W., Scanlon, B. R., Zhao, J., Liu, D., Burek, P., Pan, Y., You, L., and Wada, Y., 2020, South-to-North Water Diversion stabilizing Beijing's groundwater levels: Nature Communications, v. 11, no. 3665, 10 p., http://doi.org/10.1038/s41467-020-17428-6.

Mrad, A., Katul, G. G., Levia, D. F., Guswa, A. J., Boyer, E. W., 19 others, and Scanlon, B. R., 2020, Peak grain forecasts for the US High Plains amid withering waters: Proceedings of the National Academy of Sciences, v. 117, no. 42, p. 26145-26150, http://doi.org/10.1073/pnas.2008383117.

Nicot, J.-P., Darvari, R., Eichhubl, P., Scanlon, B. R., Elliott, B. A., Bryndzia, T. L., Gale, J. F. W., and Fall, A., 2020, Origin of low salinity, high volume produced waters in the Wolfcamp Shale (Permian), Delaware Basin, USA: Applied Geochemistry, v. 122, no. 104771, 18 p., http://doi.org/10.1016/j.apgeochem.2020.104771.

Rateb, A., Scanlon, B. R., Pool, D. R., Sun, A., Zhang, Z., Chen, J., Clark, B., Faunt, C. C., Haugh, C. J., Hill, M., and nine others, 2020, Comparison of groundwater storage changes from GRACE satellites with monitoring and modeling of major U.S. aquifers: Water Resources Research, v. 56, no. 12, article no. e2020WR027556, 19 p., http://doi.org/10.1029/2020WR027556.

Scanlon, B. R., Ikonnikova, S., Yang, Q., and Reedy, R. C., 2020, Will water issues constrain oil and gas production in the United States?: Environmental Science and Technology, v. 54, no. 6, p. 3510-3519, http://doi.org/10.1021/acs.est.9b06390.

Scanlon, B. R., Reedy, R. C., Xu, P., Engle, M., Nicot, J. P., Yoxtheimer, D., Yang, Q., and Ikonnikova, S., 2020, Can we beneficially reuse produced water from oil and gas extraction in the U.S.?: Science of the Total Environment, v. 717, no. 137085, 12 p., http://doi.org/10.1016/j.scitotenv.2020.137085.

Xie, H., Longuevergne, L., Ringler, C., and Scanlon, B. R., 2020, Integrating groundwater irrigation into hydrological simulation of India: case of improving model representation of anthropogenic water use impact using GRACE: Journal of Hydrology: Regional Studies, v. 29, no. 100681, 17 p., http://doi.org/10.1016/j.ejrh.2020.100681.

Bhanja, S. N., Mukherjee, A., Rangarajan, R., Scanlon, B. R., Malakar, P., and Verma, S., 2019, Long-term groundwater recharge rates across India by in situ measurements: Hydrology and Earth System Sciences, v. 23, no. 2, p. 711-722, http://doi.org/10.5194/hess-23-711-2019.

Caldwell, T. G., Bongiovanni, T., Cosh, M. H., Jackson, T. J., Colliander, A., Abolt, C. J., Casteel, R., Larson, T., Scanlon, B. R., and Young, M. H., 2019, The Texas Soil Observation Network: a comprehensive soil moisture dataset for remote sensing and land surface model validation: Vadose Zone Journal, v. 18, no. 1, 20 p., http://doi.org/10.2136/vzj2019.04.0034.

Cuthbert, M. O., Taylor, R. G., Favreau, G., Todd, M. C., Shamsudduha, M., Villholth, K. G., MacDonald, A. M., Scanlon, B. R., and 24 others, 2019, Observed controls on resilience of groundwater to climate variability in sub-Saharan Africa: Nature, v. 572, p. 230-234, http://doi.org/10.1038/s41586-019-1441-7.

Dillon, P., Stuyfzand, P., Grischek, T., Lluria, M., Pyne, R. D. G., Jain, R. C., Bear, J., Schwarz, J., Wang, W., Fernandez, E., Stefan, C., Pettenati, M., van der Gun, J., Sprenger, C., Massman, G., Scanlon, B. R., and 15 other co-authors, 2019, Sixty years of global progress in managed aquifer recharge: Hydrogeology Journal, v. 27, no. 1, p. 1-30, http://doi.org/10.1007/s10040-018-1841-z.

Hernández-Espriú, A., Wolaver, B. D., Arciniega-Esparza, S., Scanlon, B. R., Young, M. H., Nicot, J.-P., Macías-Medrano, S., and Breña-Naranjo, J. A., 2019, A screening approach to improve water management practices in undeveloped shale plays, with application to the transboundary Eagle Ford Formation in northeast Mexico: Journal of Environmental Management, v. 236, p. 146-162, http://doi.org/10.1016/j.jenvman.2018.11.123.

Lemons, C. R., McDaid, G., Smye, K. G., Acevedo, J. P., Hennings, P. H., Banerji, D. A., and Scanlon, B. R., 2019, Spatiotemporal and stratigraphic trends in salt-water disposal practices of the Permian Basin, Texas and New Mexico, United States: Environmental Geosciences, v. 26, no. 4, p. 107-124, http://doi.org/10.1306/eg.06201919002.

Scanlon, B. R., Weingarten, M. B., Murray, K. E., and Reedy, R. C., 2019, Managing basin-scale fluid budgets to reduce injection-induced seismicity from the recent U.S. shale oil revolution: Seismological Research Letters, v. 90, no. 1, p. 171-182, http://doi.org/10.1785/0220180223.

Scanlon, B. R., Zhang, Z., Rateb, A., Sun, A. Y., Wiese, D., Save, H., Beaudoing, H., Lo, M. H., Muller-Schmied, H., Doll, P., van Beek, R., Swenson, S., Lawrence, D., Croteau, M., and Reedy, R. C., 2019, Tracking seasonal fluctuations in land water storage using global models and GRACE satellites: Geophysical Research Letters, v. 46, p. 5254-5264, http://doi.org/10.1029/2018GL081836.

Sun, A. Y., and Scanlon, B. R., 2019, How can Big Data and machine learning benefit environment and water management: a survey of methods, applications, and future directions: Environmental Research Letters, v. 14, no. 7, article no. 073001, 28 p., http://doi.org/10.1088/1748-9326/ab1b7d.

Sun, A. Y., Scanlon, B. R., Zhang, Z., Walling, D., Bhanja, S. N., Mukherjee, A., and Zhong, Z., 2019, Combining physically-based modeling and deep learning for fusing GRACE satellite data: can we learn from mismatch?: Water Resources Research, v. 55, p. 1179-1195, http://doi.org/10.1029/2018WR023333.

Yang, Q., and Scanlon, B. R., 2019, How much water can be captured from flood flows to store in depleted aquifers for mitigating floods and droughts? A case study from Texas, US: Environmental Research Letters, v. 14, no. 054011, http://doi.org/10.1088/1748-9326/ab148e.

Chowdhury, A. H., Scanlon, B. R., Reedy, R. C., and Young, S., 2018, Fingerprinting groundwater salinity sources in the Gulf Coast Aquifer System, USA: Hydrogeology Journal, v. 26, no. 1, p. 197-213, http://doi.org/10.1007/s10040-017-1619-8.

Darvari, R., Nicot, J.-P., Scanlon, B. R., Mickler, P., and Uhlman, K., 2018, Trace element behavior in methane-rich and methane-free groundwater in north and east Texas: Groundwater, v. 56, no. 5, p. 705-718, http://doi.org/10.1111/gwat.12606.

Mukherjee, A., Fryar, A. E., Eastridge, E. M., Nally, R. S., Chakraborty, M., and Scanlon, B. R., 2018, Controls on high and low groundwater arsenic on the opposite banks of the lower reaches of River Ganges, Bengal basin, India: Science of the Total Environment, v. 645, p. 1371-1387, http://doi.org/10.1016/j.scitotenv.2018.06.376.

Rodriguez, R.d.G., Scanlon, B. R., King, C. W., Scarpare, F. V., Xavier, A. C., and Pruski, F. F., 2018, Biofuel-water-land nexus in the last agricultural frontier region of the Brazilian Cerrado: Applied Energy, v. 231, p. 1330-1345, http://doi.org/10.1016/j.apenergy.2018.09.121.

Scanlon, B. R., Zhang, Z., Save, H., Sun, A. Y., Mueller Schmied, H., van Beek, L. P. H., Wiese, D. N., Wada, Y., Long, D., Reedy, R. C., Longuevergne, L., Doell, P., and Bierkens, M. F. P., 2018, Global models underestimate large decadal declining and rising water storage trends relative to GRACE satellite data: Proceedings of the National Academy of Sciences, v. 115, no. 6, p. E1080-E1089, http://doi.org/10.1073/pnas.1704665115.

Arciniega-Esparza, S., Breña-Naranjo, J. A., Hernández-Espriú, A., Pedrozo-Acuña, A., Scanlon, B. R., Nicot, J.-P., Young, M. H., Wolaver, B. D., and Alcocer-Yamanaka, V. H., 2017, Baseflow recession analysis in a large shale play: Climate variability and anthropogenic alterations mask effects of hydraulic fracturing: Journal of Hydrology, v. 533, p. 160-171, http://doi.org/10.1016/j.jhydrol.2017.07.059.

Baumhardt, R. L., Schwartz, R. C., Jones, O. R., Scanlon, B. R., Reedy, R. C., and Marek, G. W., 2017, Long-term conventional and no-tillage effects on field hydrology and yields of a dryland crop rotation: Soil Science Society of America Journal, v. 81, no. 1, p. 200-209, http://doi.org/10.2136/sssaj2016.08.0255.

Ikonnikova, S., Male, F., Scanlon, B. R., Reedy, R. C., and McDaid, G., 2017, Projecting the water footprint associated with shale resource production: Eagle Ford Shale case study: Environmental Science and Technology, v. 51, no. 24, p. 14453-14461, http://doi.org/10.1021/acs.est.7b03150.

Liu, M. X., Xu, X. L., Xu, C. H., Sun, A. Y., Wang, K. L., Scanlon, B. R., and Zhang, L., 2017, A new drought index that considers the joint effects of climate and land surface change: Water Resources Research, v. 53, no. 3262-3278, p. 3262-3278, http://doi.org/10.1002/2016WR020178.

Long, D., Pan, Y., Zhou, J., Chen, Y., Hou, X., Hong, Y., Scanlon, B. R., and Longuevergne, L., 2017, Global analysis of spatiotemporal variability in merged total water storage changes using multiple GRACE products and global hydrological models: Remote Sensing of Environment, v. 192, p. 198-216, http://doi.org/10.1016/j.rse.2017.02.011.

Scanlon, B. R., Reedy, R. C., Male, F., and Walsh, M., 2017, Water issues related to transitioning from conventional to unconventional oil production in the Permian Basin: Environmental Science & Technology, v. 51, no. 18, p. 10903-10912, http://doi.org/10.1021/acs.est.7b02185.

Scanlon, B. R., Ruddell, B. L., Reed, P. M., Hook, R. I., Zheng, C., Tidwell, V. C., and Siebert, S., 2017, The food-energy-water nexus: transforming science for society: Water Resources Research, v. 53, no. 5, p. 3550-3556, http://doi.org/10.1002/2017WR020889.

Sun, A. Y., Scanlon, B. R., AghaKouchak, A., and Zhang, Z., 2017, Using GRACE satellite gravimetry for assessing large-scale hydrologic extremes: Remote Sensing, v. 9, no. 1287, 25 p., http://doi.org/10.3390/rs9121287.

Verdon-Kidd, D. C., Scanlon, B. R., Ren, T., and Fernando, D. N., 2017, A comparative study of historical droughts over Texas, USA and Murray-Darling Basin, Australia: factors influencing initialization and cessation: Global and Planetary Change, v. 149, p. 123-138, http://doi.org/10.1016/j.gloplacha.2017.01.001.

Winter, J. M., Lopez, J. R., Ruane, A. C., Young, C. A., Scanlon, B. R., and Rosenzweig, C., 2017, Representing water scarcity in future agricultural assessments: Anthropocene, v. 18, p. 15-26, http://doi.org/10.1016/j.ancene.2017.05.002.

Yeh, S., Ghandi, A., Scanlon, B. R., Brandt, A. R., Cai, H., Wang, M. Q., Vafi, K., and Reedy, R. C., 2017, Energy intensity and greenhouse gas emissions from oil production in the Eagle Ford Shale: Energy & Fuels, v. 31, no. 2, p. 1440-1449, http://doi.org/10.1021/acs.energyfuels.6b02916.

Cao, G., Scanlon, B. R., Han, D., and Zhang, C., 2016, Impacts of thickening unsaturated zone on groundwater recharge in the North China Plain: Journal of Hydrology, v. 537, p. 260-270, http://doi.org/10.1016/j.jhydrol.2016.03.049.

Chen, J. L., Wilson, C. R., Tapley, B. D., Scanlon, B. R., and Guntner, A., 2016, Long-term groundwater storage change in Victoria, Australia from satellite gravity and in situ observations: Global and Planetary Change, v. 139, p. 56-65, http://doi.org/10.1016/j.gloplacha.2016.01.002.

Chen, J., Famiglietti, J. S., Scanlon, B. R., and Rodell, M., 2016, Groundwater storage changes: present status from GRACE observations: Surveys in Geophysics, v. 37, no. 2, p. 397-417, http://doi.org/10.1007/s10712-015-9332-4.

Fernando, D. N., Mo, K. C., Fu, R., Pu, B., Bowerman, A. R., Scanlon, B. R., Solis, R. S., Yin, L., Mace, R. E., Mioduszewski, J., Ren, T., and Zhang, K., 2016, What caused the spring intensification and winter demise of the 2011 drought over Texas?: Climate Dynamics, v. 47, no. 9, p. 3077-3090, http://doi.org/10.1007/s00382-016-3014-x.

Long, D., Chen, X., Scanlon, B. R., Wada, Y., Hong, Y., Singh, V. P., Chen, Y., Wang, C., Han, Z., and Yang, W., 2016, Have GRACE satellites overestimated groundwater depletion in the Northwest India Aquifer?: Scientific Reports, v. 6, 11 p., http://doi.org/10.1038/srep24398.

Meixner, T., Manning, A. H., Stonestrom, D. A., Allen, D. M., Ajami, H., Blasch, K. W., Brookfield, A. E., Castro, C. L., Clark, J. F., Gochis, D. J., Flint, A. L., Neff, K. L., Niraula, R., Rodell, M., Scanlon, B. R., Singha, K., and Walvoord, M. A., 2016, Implications of projected climate change for groundwater recharge in the western United States: Journal of Hydrology, v. 534, p. 124-138, http://doi.org/10.1016/j.jhydrol.2015.12.027.

Melo, D.C.D., Scanlon, B. R., Zhang, Z., Wendland, E., and Yin, L., 2016, Reservoir storage and hydrologic responses to droughts in the Paraná River basin, south-eastern Brazil: Hydrology and Earth System Sciences, v. 20, p. 4673-4688, http://doi.org/10.5194/hess-20-4673-2016.

Scanlon, B. R., Reedy, R. C., Faunt, C. C., Pool, D., and Uhlman, K., 2016, Enhancing drought resilience with conjunctive use and managed aquifer recharge in California and Arizona: Environmental Research Letters, v. 11, no. 3, 15 p., http://doi.org/10.1088/1748-9326/11/3/035013.

Scanlon, B. R., Reedy, R. C., Male, F., and Hove, M., 2016, Managing the increasing water footprint of hydraulic fracturing in the Bakken Play, United States: Environmental Science & Technology, v. 50, no. 18, p. 10273-10281, http://doi.org/10.1021/acs.est.6b01375.

Scanlon, B. R., Zhang, Z., Save, H., Wiese, D. N., Landerer, F. W., Long, D., Longuevergne, L., and Chen, J., 2016, Global evaluation of new GRACE mascons products for hydrologic applications: Water Resources Research, v. 52, p. 9412-9429,

http://doi.org/10.1002/2016WR019494.

Scarpare, F. V., Hernandes, T.A.D., Ruiz-Correa, S. T., Picoli, M. C. A., Scanlon, B. R., Chagas, M. F., Duft, D. G., and Cardoso, T. F., 2016, Sugarcane land use and water resources assessment in the expansion area in Brazil: Journal of Cleaner Production, v. 133, p. 1318-1327, http://doi.org/10.1016/j.jclepro.2016.06.074.

Tiedeman, K., Yeh, S., Scanlon, B. R., Teter, J., and Mishra, G. S., 2016, Recent trends in water use and production for California oil production: Environmental Science & Technology, v. 50, no. 14, p. 7904-7912, http://doi.org/10.1021/acs.est.6b01240.

Xavier, A. C., King, C. W., and Scanlon, B. R., 2016, Daily gridded meteorological variables in Brazil (1980-2013): International Journal of Climatology, v. 36, no. 6, p. 2644-2659, http://doi.org/10.1002/joc.4518.

Long, D., Longuevergne, L., and Scanlon, B. R., 2015, Global analysis of approaches for deriving total water storage changes from GRACE satellites: Water Resources Research, v. 51, p. 2574-2594, http://doi.org/10.1002/2014wr016853.

Melo, D., Xavier, A. C., Bianchi, T., Oliveira, P., Scanlon, B. R., Lucas, M. C., and Wendland, E., 2015, Performance evaluation of rainfall estimates by TRMM Multi-satellite Precipitation Analysis 3B42V6 and V7 over Brazil: Journal of Geophysical Research: Atmospheres, v. 120, no. 18, p. 9426-9436, http://doi.org/10.1002/2015JD023797.

Pei, H., Scanlon, B. R., Shen, Y., Reedy, R. C., Long, D., and Liu, C., 2015, Impacts of varying agricultural intensification on crop yield and groundwater resources: comparison of the North China Plain and U.S. High Plains: Environmental Research Letters, v. 10, no. 4, 14 p., http://doi.org/10.1088/1748-9326/10/4/044013, paper 044013.

Scanlon, B. R., Zhang, Z., Reedy, R. C., Pool, D. R., Save, H., Long, D., Chen, J., Wolock, D. M., Conway, B. D., and Winester, D., 2015, Hydrologic implications of GRACE satellite data in the Colorado River Basin: Water Resources Research, v. 51, p. 9891-9903, http://doi.org/10.1002/2015WR018090.

Schwartz, R. C., Baumhardt, R. L., Scanlon, B. R., Bell, J. M., Davis, R. G., Ibragimov, N., Jones, O. R., and Reedy, R. C., 2015, Long-term changes in soil organic carbon and nitrogen under semiarid tillage and cropping practices: Soil Science Society of America Journal, v. 79, no. 6, p. 1771-1781, http://doi.org/10.2136/sssaj2015.06.0241.

Siebert, S., Kummu, M., Porkka, M., Doll, P., Ramankutty, N., and Scanlon, B. R., 2015, A global dataset of the extent of irrigated land from 1900 to 2005: Hydrology and Earth System Sciences: Discussions, no. 11, p. 13207-13258, http://doi.org/10.5194/hessd-11-13207-2014.

Ibrahim, M., Favreau, G., Scanlon, B. R., Seidel, J. L., Le Coz, M., Demarty, J., and Cappelaere, B., 2014, Long-term increase in diffuse groundwater recharge following expansion of rainfed cultivation in the Sahel, West Africa: Hydrogeology Journal, v. 22, no. 6, p. 1293-1305, http://doi.org/10.1007/s10040-014-1143-z.

Long, D., Longuevergne, L., and Scanlon, B. R., 2014, Uncertainty in evapotranspiration from land surface modeling, remote sensing, and GRACE satellites: Water Resources Research, v. 50, no. 2, p. 1131-1151, http://doi.org/10.1002/2013WR014581.

Nicot, J. -P., Scanlon, B. R., Reedy, R. C., and Costley, R., 2014, Source and fate of hydraulic fracturing water in the Barnett Shale: a historical perspective: Environmental Science & Technology, v. 48, no. 4, p. 2464-2471, http://doi.org/10.1021/es404050r.

Scanlon, B. R., Reedy, R. C., and Nicot, J.-P., 2014, Comparison of water use for hydraulic fracturing for unconventional oil and gas versus conventional oil: Environmental Science & Technology, v. 48, no. 20, p. 12386-12393, http://doi.org/10.1021/es502506v.

Scanlon, B. R., Reedy, R. C., and Nicot, J.-P., 2014, Will water scarcity in semiarid regions limit hydraulic fracturing of shale plays?: Environmental Research Letters, v. 9, 14 p.,

http://doi.org/10.1088/1748-9326/9/12/124011.

Wolaver, B. D., Cook, C. E., Sunding, D. L., Hamilton, S. F., Scanlon, B. R., Young, M. H., Xu, X., and Reedy, R. C., 2014, Potential economic impacts of environmental flows following a possible listing of endangered Texas freshwater mussels: JAWRA: Journal of the American Water Resources Association, v. 50, no. 5, p. 1081-1101.

Yang, Y., Long, D., Guan, H., Scanlon, B. R., Simmons, C., Jiang, L., and Xu, X., 2014, GRACE satellite observed hydrological controls on interannual and seasonal variability in surface greenness over mainland Australia: Journal of Geophysical Research: Biogeosciences, v. 119, no. 12, p. 2245-2260, http://doi.org/10.1002/2014JG002670.

Cao, G., Zheng, C., Scanlon, B. R., Liu, J., and Li, W., 2013, Use of flow modeling to assess sustainability of groundwater resources in the North China Plain: Water Resources Research, v. 49, p. 159-175, doi:10.1029/2012WR011899.

Crosbie, R. S., Scanlon, B. R., Mpelasoka, F. S., Reedy, R. C., Gates, John, and Zhang, L., 2013, Potential climate change effects on groundwater recharge in the High Plains Aquifer, USA: Water Resources Research, v. 49, p. 1-16, doi:10.1002/wrcr.20292.

Long, D., Scanlon, B. R., Longuevergne, L., Sun, A. Y., Fernando, D. N., and Save, H., 2013, GRACE satellite monitoring of large depletion in water storage in response to the 2011 drought in Texas: Geophysical Research Letters, v. 40, p. 3395-3401, http://doi.org/10.1002/grl.50655.

Longuevergne, Laurent, Wilson, C. R., Scanlon, B. R., and Crétaux, J. F., 2013, GRACE water storage estimates for the Middle East and other regions with significant reservoir and lake storage: Hydrology and Earth System Sciences, v. 17, p. 4817-4830, doi: 10.5194/hess-17-4817-2013.

Mickler, P., Yang, Changbing, Scanlon, B. R., Reedy, R. C., and Lu, Jiemin, 2013, Potential impacts of CO2 leakage on groundwater chemistry from laboratory batch experiments and field push-pull tests: Environmental Science & Technology, v. 47, p. 10694-10702, doi: 10.1021/es401455j.

Scanlon, B. R., Duncan, I. J., and Reedy, Robert, 2013, Drought and the water-energy nexus in Texas: Environmental Research Letters, v. 8, no. 4, doi:10.1088/1748-9326/8/4/045033.

Scanlon, B. R., Reedy, R. C., Duncan, I. J., Mullican, W. F., III, and Young, M. H., 2013, Controls on water use for thermoelectric generation: Case study Texas, U.S.: Environmental Science & Technology, v. 47, no. 19, p. 11326-11334, http://doi.org/10.1021/es4029183.

Shen, Y., Zhang, Y., Scanlon, B. R., Lei, H., Yang, D., and Yang, F., 2013, Energy/water budgets and productivity of the typical croplands irrigated with groundwater and surface water in the North China Plain: Agricultural and Forest Meteorology, v. 181, p. 133-142.

Taylor, R. G., Scanlon, B. R., Döll, P., Rodell, M., van Beek, R., Wada, Y., Longuevergne, Laurent, LeBlanc, M., Famiglietti, J., and Edmunds, M., 2013, Ground water and climate change: Nature Climate Change, v. 3, p. 322-330, doi: http://dx.doi.org/10.1038/nclimate1744.

Xu, X., Liu, W., Scanlon, B. R., Zhang, L., Zhang, L., and Pan, M., 2013, Local and global factors controlling water-energy balances within the Budyko framework: Geophysical Research Letters, v. 40, p. 6123-6129, doi: 10.1002/2013GL058324.

Xu, X., Scanlon, B. R., Schilling, K., and Sun, A. Y., 2013, Relative importance of climate and land surface changes on hydrologic changes in the U.S. Midwest since the 1930s: Implications for biofuel production: Journal of Hydrology v. 497, 110-120.

Yang, Changbing, Mickler, P., Reedy, R. C., Scanlon, B. R., Romanak, Katherine, Nicot, J. -P., Hovorka, S. D., Treviño, R. H., and Larson, T., 2013, Single-well push-pull test for assessing potential impacts of CO2 leakage on groundwater quality in a shallow Gulf Coast aquifer in Cranfield, Mississippi: International Journal of Greenhouse Gas Control, v. 18, p. 375-387.

Döll, P., Hoffmann-Dobrev, H., Portmann, F. T., Siebert, S., Eicker, A., Rodell, M., Strassberg, G., and Scanlon, B. R., 2012, Impact of water withdrawals from groundwater and surface water on continental water storage variations: Journal of Geodynamics, v. 59-60, p. 143-156.

Huang, Y., Scanlon, B. R., Nicot, J. -P., Reedy, R. C., Dutton, A. R., Kelley, V. A., and Deeds, Neil, 2012, Sources of groundwater pumpage in a layered aquifer system in the Upper Gulf Coastal Plain, USA: Hydrology Journal, v. 20, p. 783-796.

Long, D., Scanlon, B. R., Fernando, D. N., Meng, L., and Quiring, S. M., 2012, Are temperature and precipitation extremes increasing over the U.S. High Plains? Earth Interactions, v. 16, p. 1-20.

Long, D., Singh, V. P., and Scanlon, B. R., 2012, Deriving theoretical boundaries to address scale dependencies of triangle methods for evapotranspiration estimation: Journal of Geophysical Research, v. 117, D05113, doi:10.1029/2011JD017079.

Mukherjee, A., Scanlon, B. R., Fryar, A. E., Saha, D., Ghosh, A., Chowdhuri, S., and Mishra, R., 2012, Solute chemistry and arsenic fate in aquifers between the Himalayan foothills and Indian craton (including central Gangetic plain): influence of geology and geomorphology: Geochimica et Cosmochimica Acta, v. 90, p. 283-302, dx.doi.org/10.1016/j.gca.2012.05.015.

Nicot, J. -P., and Scanlon, B. R., 2012, Water use for shale-gas production in Texas, U.S.: Environmental Science and Technology, v. 46, p. 3580-3586.

Scanlon, B. R., Faunt, C. C., Longuevergne, Laurent, Reedy, R. C., Alley, W. M., McGuire, V. L., and McMahon, P. B., 2012, Groundwater depletion and sustainability of irrigation in the U.S. High Plains and Central Valley: Proceedings of the National Academy of Sciences of the United States of America, v. 109, no. 24, p. 9320-9325.

Scanlon, B. R., Longuevergne, L., and Long, D., 2012, Ground referencing GRACE satellite estimates of groundwater storage changes in the California Central Valley, USA: Water Resources Research, v. 48, doi:10.1029/2011WR011312.

Wilson, C. R., Scanlon, B. R., Sharp, J., Longuevergne, L., and Wu, H., 2012, Field test of the superconducting gravimeter as a hydrologic sensor: Ground Water, v. 50, no. 3, p. 442-449.

Xie, H., Longuevergne, L., Ringler, C., and Scanlon, B. R., 2012, Calibration and evaluation of a semi-distributed watershed model of Sub-Saharan Africa using GRACE data: Hydrology and Earth Systems Sciences, v. 16, p. 3083-3099.

Gates, J. B., Nicot, J. -P., Scanlon, B. R., and Reedy, R. C., 2011, Arsenic enrichment in unconfined sections of the southern Gulf Coast aquifer system, Texas: Applied Geochemistry, v. 26, p. 421-431.

Gates, J. B., Scanlon, B. R., Mu, X. M., and Zhang, L., 2011, Impacts of soil conservation on groundwater recharge in the semi-arid Loess Plateau, China: Hydrogeology Journal, v. 19, no. 4, p. 865-875.

Kurtzman, D., and Scanlon, B. R., 2011, Groundwater recharge through vertisols: irrigated cropland vs. natural land, Israel: Vadose Zone Journal, v. 10, no. 2, p. 662-674.

Longuevergne, Laurent, and Scanlon, B. R., 2011, Ground referencing GRACE satellite estimates of groundwater storage changes in the California Central Valley, U.S., Water Resources Research, v. 47.

Mukherjee, A., Fryar, A. E., Scanlon, B. R., Bhattacharya, P., and Bhattacharya, A., 2011, Elevated arsenic in deeper groundwater of the western Bengal basin, India: extent and controls from regional to local scale: Applied Geochemistry, v. 26, no. 4, p. 600-613.

Chen, J. L., Wilson, C. R., Tapley, B. D., Longuevergne, L., Yang, Z. L., and Scanlon, B. R., 2010, Recent La Plata basin drought conditions observed by satellite gravimetry: Journal of Geophysical Research, v. 115, D22108, doi:10.1029/2010JD014689, 12 p.

Ng, G. C., McLaughlin, D., Entekhabi, D., and Scanlon, B. R., 2010, Probabilistic analysis of the effects of climate change on groundwater recharge: Water Resources Research, v. 46, W07502, doi:10.1029/2009WR007904.

Scanlon, B. R., Gates, John, Reedy, R. C., Jackson, W. A., and Bordovsky, J. P., 2010, Effects of irrigated agroecosystems: 2. Quality of soil water and groundwater in the southern High Plains, Texas: Water Resources Research, v. 46, W09538, doi:10.1029/2009WR008428.

Scanlon, B. R., Mukherjee, A., Gates, John, Reedy, R. C., and Sinha, A. K., 2010, Groundwater recharge in natural dune systems and agricultural ecosystems in the Thar Desert Region, Rajasthan, India: Hydrogeology Journal, v. 18, no. 1, 959-972. DOI 10.1007/s10040-009-0555-7.

Scanlon, B. R., Reedy, R. C., and Gates, J. B., 2010, Effects of irrigated agroecosystems: 1. Quantity of soil water and groundwater in the southern High Plains, Texas: Water Resources Research, v. 46, W09537, doi:10/1029/2009WR008427.

Scanlon, B. R., Reedy, R. C., Gates, J. B., Gowda, P., and Marek, T. H., 2010, Impact of agroecosystems on groundwater resources in the central High Plains, USA: Agriculture, Ecosystems, & Environment, v. 139, p. 700-713.

Bronson, K. F., Malapati, A., Booker, J. D., Scanlon, B. R., Hudnall, W. H., and Schubert, A. M., 2009, Residual soil nitrate in irrigated Southern High Plains cotton fields and Ogallala groundwater nitrate: Journal of Soil and Water Conservation, v. 64, p. 98-104, DOI 10.2489/jswc.64.2.98.

Cey, B. D., Hudson, G. B., Moran, J. E., and Scanlon, B. R., 2009, Evaluation of noble gas recharge temperatures in a shallow unconfined aquifer: Ground Water, v. 47, no. 5, p. 646-659.

Ng, G. C., McLaughlin, D., Entekhabi, D., and Scanlon, B. R., 2009, Using data assimilation to identify diffuse recharge mechanisms from chemical and physical data in the unsaturated zone: Water Resources Research, v. 45, W09409, doi:10.1029/2009WR007831, 18 p.

Scanlon, B. R., Nicot, J. -P., Reedy, R. C., Kurtzman, D., Mukherjee, A., and Nordstrom, D. K., 2009, Elevated naturally occurring arsenic in a semiarid oxidizing system: Southern High Plains aquifer, Texas, USA: Applied Geochemistry, v. 24, no. 11 p. 2061-2071.

Scanlon, B. R., Stonestrom, D. A., Reedy, R. C., Leaney, F. W., Gates, J., and Cresswell, R. G., 2009, Inventories and mobilization of unsaturated zone sulfate, fluoride, and chloride related to land use change in semiarid regions, southwestern United States and Australia: Water Resources Research, v. 45, no. W00a18, http://doi.org/10.1029/2008wr006963.

Stonestrom, D. A., Scanlon, B. R., and Zhang, L., 2009, Introduction to special section on impacts of land use change on water resources: Water Resources Research, v. 45, W00A00, doi:10.1029/2009WR007937.

Strassberg, G., Scanlon, B. R., and Chambers, D., 2009, Evaluation of groundwater storage monitoring with the GRACE satellite: case study of the High Plains aquifer, central United States: Water Resources Research, v. 45, W05410, doi:10.1029/2008WR006892.

Cey, B. D., Hudson, G. B., Moran, J. E., and Scanlon, B. R., 2008, Impact of artificial recharge on dissolved noble gases in groundwater in California, USA: Environmental Science and Technology, v. 42, p. 1017-1023.

Gates, J. B., Edmunds, W. M., Ma, J., and Scanlon, B. R., 2008, Estimating groundwater recharge in a cold desert environment in northern China using chloride: Hydrogeology Journal, v. 16, p. 893-910.

Mukherjee, A., von Brömssen, Mattias, Scanlon, B. R., Bhattacharya, J. P., Fryar, A. E., Hasan, M. A., Ahmed, K. M., Chatterjee, Debashis, Jacks, Gunnar, and Sracek, Ondra, 2008, Hydrogeochemical comparison and effects of overlapping redox zones on groundwater arsenic near the Western (Bhagirathi sub-basin, India) and Eastern (Meghna sub-basin, Bangladesh)

margins of the Bengal Basin: Journal of Contaminant Hydrology, v. 99, p. 31-48.

Scanlon, B. R., Reedy, R. C., and Bronson, K. F., 2008, Impacts of land use change on nitrogen cycling archived in semiarid unsaturated zone nitrate profiles, southern High Plains, Texas: Environmental Science & Technology v. 42, no. 20, p. 7566-7572.

Scanlon, B. R., Reedy, R. C., Baumhardt, R. L., and Strassberg, Gil, 2008, Impact of deep plowing on groundwater recharge in a semiarid region: case study, High Plains, Texas: Water Resources Research, v. 44, W00A10, doi:10.1029/2008WR006991.

Scanlon, B. R., Reedy, R. C., Jackson, W. A., and Rao, B., 2008, Mobilization of naturally occurring perchlorate related to land-use change in the Southern High Plains: Environmental Science & Technology, v. 42, no. 23, p. 8648-8653.

Kurtzman, Daniel, and Scanlon, B. R., 2007, El Niño--southern oscillation and pacific decadal oscillation impacts on precipitation in the southern and central United States: evaluation of spatial distribution and predictions: Water Resources Research, v. 43, W10427, doi:10.1029/2007WR005863 [12 p.].

Rao, B., Anderson, T. A., Orris, G. J., Rainwater, K. A., Rajagopalan, S., Sandvig, R. M., Scanlon, B. R., Stonestrom, D. A., Walvoord, M. A., and Jackson, W. A., 2007, Widespread natural perchlorate in unsaturated zones of the southwest United States: Environmental Science and Technology, v. 41, 4522-4528.

Reedy, R. C., Scanlon, B. R., Nicot, J. -P., and Tachovsky, J. A., 2007, Unsaturated zone arsenic distribution and implications for groundwater contamination: Environmental Science & Technology, v. 41, no. 20, p. 6914-6919.

Scanlon, B. R., Jolly, I. M., Sophocleous, M., and Zhang, L., 2007, Global impacts of conversions from natural to agricultural ecosystems on water resources: Quantity versus quality, Water Resources Research, v. 43, W03437, doi:10.1029/2006WR005486.

Scanlon, B. R., Reedy, R. C., and Tachovsky, J. A., 2007, Semiarid unsaturated zone chloride profiles: archives of past land-use change impacts on water resources in the southern High Plains, United States, Water Resources Research, v. 43, W06423, doi:10.1029/2006WR005769.

Strassberg, Gil, Scanlon, B. R., and Rodell, M., 2007, Comparison of seasonal terrestrial water storage variations from GRACE with groundwater-level measurements from the High Plains aquifer (USA): Geophysical Research Letters, v. 34, L14402.

Newman, B. D., Wilcox, B. P., Archer, S. R., Breshears, D. D., Dahm, C. G., Duffy, C. J., McDowell, N. G., Phillips, F. M., and Scanlon, B. R., 2006, Ecohydrology of water-limited environments: a scientific vision: Water Resources Research, v. 42, W06302, doi:10.1029/2005WR004141, 2006, 15 p.

Newman, B. D., Wilcox, B., Archer, S. R., Breshears, D. D., Dahm, C. N., Duffy, C. J., McDowell, N. G., Phillips, F. M., Scanlon, B. R., and Vivoni, E. R., 2006, Ecohydrology of water-limited environments: a scientific vision: Water Resources Research, v. 42, W06302, doi: 10.1029/2005WR004141 [15 p.].

Scanlon, B. R., Keese, K. E., Flint, A. L., Flint, L. E., Gaye, C. B., Edmunds, W. M., and Simmers, Ian, 2006, Global synthesis of groundwater recharge in semiarid and arid regions: Hydrological Processes, v. 20, p. 3335-3370.

Keese, K. E., Scanlon, B. R., and Reedy, R. C., 2005, Assessing controls on diffuse groundwater recharge using unsaturated flow modeling: Water Resources Research, v. 41, no. W06010, 12 p., http://doi.org/10.1029/2004WR003841, Refereed publication.

Scanlon, B. R., Levitt, D. G., Reedy, R. C., Keese, K. E., and Sully, M. J., 2005, Ecological controls on water-cycle response to climate variability in deserts: Proceedings of the National Academy of Sciences, v. 102, no. 17, p. 6033-6038.

Scanlon, B. R., Reedy, R. C., Keese, K. E., and Dwyer, S. F., 2005, Evaluation of evapotranspirative covers for waste containment in arid and semiarid regions in the southwestern USA: Vadose Zone Journal, v. 4, p. 55-71.

Scanlon, B. R., Reedy, R. C., Stonestrom, D. A., and Prudic, D. E., 2005, Impact of land use and land cover change on groundwater recharge and quantity in the southwestern USA: Global Change Biology, v. 11, p. 1577-1593.

Reedy, R. C., and Scanlon, B. R., 2003, Soil water content monitoring using electromagnetic induction: Journal of Geotechnical and Geoenvironmental Engineering, November, p. 1028-1039, Refereed publication.

Scanlon, B. R., Keese, Kelley, Reedy, R. C., Simunek, Jirka, and Andraski, B. J., 2003, Variations in flow and transport in thick desert vadose zones in response to paleoclimatic forcing (0-90 kyr): field measurements, modeling, and uncertainties: Water Resources Research, v. 39, no. 7, 18 p.

Scanlon, B. R., Mace, R. E., Barrett, M. E., and Smith, Brian, 2003, Can we simulate regional groundwater flow in a karst system using equivalent porous media models? Case study, Barton Springs Edwards aquifer, USA: Journal of Hydrology, v. 276, p. 137-158.

Scanlon, B. R., and Cook, P. G., 2002, Preface: Theme issue on groundwater recharge: Hydrogeology Journal, v. 10, p. 3-4.

Scanlon, B. R., Christman, Marty, Reedy, R. C., Porro, Indrek, Simunek, Jirka, and Flerchinger, G. N., 2002, Intercode comparisons for simulating water balance of surficial sediments in semiarid regions: Water Resources Research, v. 38, no. 12, 16 p.

Scanlon, B. R., Healy, Rick, and Cook, P. G., 2002, Choosing appropriate techniques for quantifying groundwater recharge: Hydrogeology Journal, v. 10, p. 18-39.

Scanlon, B. R., 2000, Uncertainties in estimating water fluxes and residence times using environmental tracers in an arid unsaturated zone: Water Resources Research, v. 36, no. 2, p. 395-409.

Scanlon, B. R., 1999, Reply to "Comment on 'Field Study of Spatial Variability in Unsaturated Flow beneath and adjacent to Playas' by Bridget R. Scanlon and Richard S. Goldsmith, by W. W. Wood, p. 601": Water Resources Research, v. 35, no. 2, p. 603-604.

Scanlon, B. R., Langford, R. P., and Goldsmith, R. S., 1999, Relationship between geomorphic settings and unsaturated flow in an arid setting: Water Resources Research, v. 35, p. 983-999.

Scanlon, B. R., Paine, J. G., and Goldsmith, R. S., 1999, Evaluation of electromagnetic induction as a reconnaissance technique to characterize unsaturated flow in an arid setting: Ground Water, v. 37 no. 2, p. 296-304.

Paine, J. G., Goldsmith, R. S., and Scanlon, B. R., 1998, Electrical conductivity and gamma-ray response to clay, water, and chloride content in fissured sediments, Trans-Pecos Texas: Environmental & Engineering Geoscience, v. 4, no. 2, p. 225-239.

Scanlon, B. R., and Goldsmith, R. S., 1997, Field study of spatial variability in unsaturated flow beneath and adjacent to playas: Water Resources Research, v. 33, no. 10, p. 2239-2252.

Scanlon, B. R., Goldsmith, R. S., and Paine, J. G., 1997, Analysis of focused unsaturated flow beneath fissures in the Chihuahuan Desert, Texas, USA: Journal of Hydrology, v. 203, p. 58-78.

Scanlon, B. R., Tyler, S. W., and Wierenga, P. J., 1997, Hydrologic issues in arid, unsaturated systems and implications for contaminant transport: Reviews of Geophysics, v. 35, no. 4, p. 461-490.

Xiang, Jiannan, Scanlon, B. R., Mullican, W. F., III, and Chen, L., 1997, A multistep constant-head borehole test to determine field saturated hydraulic conductivity of layered soils: Advances in Water Resources, v. 20, no. 1, p. 45-57.

Scanlon, B. R., 1994, Water and heat fluxes in desert soils--1. Field studies: Water Resources Research, v. 30, no. 3, p. 709-719.

Scanlon, B. R., and Milly, P. C. D., 1994, Water and heat fluxes in desert soils--2. Numerical simulations: Water Resources Research, v. 30, no. 3, p. 721-733.

Scanlon, B. R., 1992, Evaluation of liquid and vapor water flow in desert soils based on chlorine 36 and tritium tracers and nonisothermal flow simulations: Water Resources Research, v. 28, no. 1, p. 285-297.

Scanlon, B. R., 1992, Moisture and solute flux along preferred pathways characterized by fissured sediments in desert soils: Journal of Contaminant Hydrology, v. 10, p. 19-46.

Scanlon, B. R., 1991, Evaluation of moisture flux from chloride data in desert soils: Journal of Hydrology, v. 128, p. 137-156.

Scanlon, B. R., 1990, Relationships between groundwater contamination and major-ion chemistry in a karst aquifer: Journal of Hydrology, v. 119, p. 271-291.

Scanlon, B. R., Richter, B. C., Wang, F. P., and Mullican, W. F., III, 1990, Analysis of unsaturated flow related to low-level radioactive waste disposal, Chihuahuan Desert, Texas, in Kreitler, C. W., and Sharp, J. M., Jr., eds., Hydrogeology of Trans-Pecos, Texas: The University of Texas at Austin, Bureau of Economic Geology, Guidebook 25, p. 105-112.

Scanlon, B. R., 1989, Physical controls on hydrochemical variability in the Inner Bluegrass Karst Region: Ground Water, v. 27, no. 5, p. 639-646.

Scanlon, B. R., and Thrailkill, J, 1987, Chemical similarities among physically distinct spring types in a karst terrane: Journal of Hydrology, v. 89, p. 259-279.

Longuevergne, Laurent, Scanlon, B. R., and Wilson, C. R., GRACE hydrological estimates for small basins: evaluating processing approaches on the High Plains aquifer, USA: Water Resources Research, v. 46, W11517, doi:10.29/2009WR008564, 15 p.

Peer Reviewed Book Chapters

Chen, J., Wilson, C. R., Famiglietti, J. S., and Scanlon, B. R., 2018, Groundwater storage monitoring from space, in Liang, S., ed., Comprehensive remote sensing: Oxford, Elsevier, v. 4, p. 295-314.

Contreras, S., Alcaraz-Segura, D., Scanlon, B. R., and Jobbagy, E. G., 2013, Chapter 13: Detecting ecosystem reliance on groundwater based on satellite-derived greenness anomalies and temporal dynamics, in Alcaraz-Segura, D., DiBella, C. M., and Straschnoy, J. V. (eds.), Earth observation of ecosystem services: Boca Raton, Florida, CRC Press-Taylor & Francis Group, p. 283-302.

Scanlon, B. R., 2010, Chapter 7. Chemical tracer methods, in Healy, R. W., Estimating groundwater recharge: Cambridge University Press, p. 136-165.

Non Peer Reviewed Authored Books

Scanlon, B. R., and Committee on Spatial Data Enabling USGS Strategic Science in the 21st Century, eds., 2012, Advancing strategic science: a spatial data infrastructure roadmap for the U.S. Geological Survey: National Research Council of the National Academies, 115 p.

National Research Council (Scanlon, B. R.), 2004, Groundwater fluxes across interfaces: Washington, D.C., The National Academies Press, 85 p.

Hornberger, G. M., Aber, J. D., Bahr, J., Bales, R. C., Beven, K. J., Foufoula-Georgiou, E., Katul, G., Kinter, J. L., III, Koster, R. D., Lettenmaier, D. P., McKnight, D., Miller, K. A., Mitchell, K., Roads, J. O., Scanlon, B. R., and Smith, E. H., 2003, A plan for a new science initiative on the global water cycle: Washington, D.C., U.S. Global Change Research Program, 118 p.

Scanlon, B. R., Goldsmith, R. S., and Langford, R. P., 2000, Relationship between arid

geomorphic settings and unsaturated zone flow: case study, Chihuahuan Desert, Texas: The University of Texas at Austin, Bureau of Economic Geology, Report of Investigations, no. 261, 133 p.

Scanlon, B. R., Goldsmith, R. S., and Mullican, W. F., III, 1997, Spatial variability in unsaturated flow beneath playa and adjacent interplaya settings and implications for contaminant transport, Southern High Plains, Texas: The University of Texas at Austin, Bureau of Economic Geology, Report of Investigations, no. 243, 56 p.

Scanlon, B. R., 1995, Ward Valley: an examination of seven issues in Earth sciences and ecology: Washington, D.C., National Academy Press, 212 p.

Scanlon, B. R., 1992, Environmental and applied tracers as indicators of liquid and vapor transport in the Chihuahuan Desert, Texas: The University of Texas at Austin, Bureau of Economic Geology, Report of Investigations, no. 207, 51 p.

Scanlon, B. R., Wang, F. P., and Richter, B. C., 1991, Field studies and numerical modeling of unsaturated flow in the Chihuahuan Desert, Texas: The University of Texas at Austin, Bureau of Economic Geology, Report of Investigations, no. 199, 56 p.

Edited Books

Mukherjee, A., Scanlon, B. R., Aureli, A., Langan, S., Guo, H., and McKenzie, A., eds., 2020, Global groundwater: source, scarcity, sustainability, security, and solutions

Hogan, J. F., Phillips, F. M., and Scanlon, B. R., eds., 2004, Groundwater recharge in a desert environment: the southwestern United States, volume 9

Non Peer Reviewed Journal Articles

Scanlon, B. R., Reedy, R. C., and Nicot, J.-P., 2015, Response to comment on "Comparison of water use for hydraulic fracturing for unconventional oil and gas versus conventional oil": Environmental Science & Technology, v. 49, no. 10, p. 6360-6361, http://doi.org/10.1021/acs.est.5b01497.

Reedy, R. C., Nicot, J. -P., Scanlon, B. R., Deeds, N. E., Kelley, V. A., and Mace, R. E., 2009, Chapter 11. Groundwater recharge in the Carrizo-Wilcox aquifer, in Aquifers of the upper coastal plains of Texas: Texas Water Development Board Report 374, p. 185-203.

Scanlon, B. R., 2009, Sustainable water resources, in Laubach, S. E., and Tinker, S. W., eds., 2009, Earth's art: celebrating the Centennial of the Bureau of Economic Geology, 1909-2009: The University of Texas at Austin, Bureau of Economic Geology, p. 128-129.

Reedy, R. C., Scanlon, B. R., and Dutton, A. R., 2003, Collection and analysis of environmental tracers for estimation of recharge rates in the GAM model of the central Carrizo-Wilcox aquifer, in Dutton, A. R., Harden, B., Nicot, J. P., and O'Rourke, D., eds., Groundwater availability model for the central part of the Carrizo-Wilcox aquifer in Texas: The University of Texas at Austin, Bureau of Economic Geology, final technical report prepared for Texas Water Development Board, under contract no. 2001-483-378, CD-ROM.

Reedy, R. C., Scanlon, B. R., Bruce, B. W., McMahon, P. B., Dennehy, K. F., and Ellett, K. M., 2003, Groundwater recharge in the Southern High Plains, in Blandford, N. T., Blazer, D. J., Calhoun, K. C., Dutton, A. R., Naing, T., Reedy, R. C., and Scanlon, B. R., eds., Groundwater availability of the southern Ogallala Aquifer in Texas and New Mexico: numerical simulations through 2050: Daniel B. Stephens and Associates, final report prepared for Texas Water Development Board, variously paginated.

Scanlon, B. R., Darling, B. K., and Mullican, W. F., III, 2001, Evaluation of groundwater recharge in basins in Trans-Pecos Texas: Texas Water Development Board Report 356, Sul Ross University, Alpine, Texas.

Scanlon, B. R., Mullican, W. F., III, Reedy, R. C., and Angle, E. S., 1997, Prototype engineered

barrier designs for low-level radioactive waste disposal in Texas, in Reynolds, T. D., and Morris, R. C., eds., Proceedings, Landfill Capping in the Semi-Arid West: Problems, Perspectives, and Solutions: Environmental Science and Research Foundation, p. 231-242.

Scanlon, B. R., 1996, Unsaturated-zone characterization for low-level radioactive waste disposal in Texas: Geotimes, August, p. 22-25.

Scanlon, B. R., Goldsmith, R. S., Hovorka, S. D., Mullican, W. F., III, and Xiang, Jiannan, 1994, Evidence for focused recharge beneath playas in the Southern High Plains, Texas, in Urban, L. V., and Wyatt, A. W., eds., Proceedings, Playa Basin Symposium: Texas Tech University, Water Resources Center, p. 87-95.

Scanlon, B. R., Mullican, W. F., III, and Goldsmith, R. S., 1993, Unsaturated flow studies at the proposed Texas low-level radioactive waste repository, Texas, in Proceedings, Fifteenth Annual U.S. Department of Energy Low-Level Radioactive Waste Management Conference: Idaho National Engineering Laboratory, EG&G Idaho, Inc., National Low-Level Waste Management Program, Performance Management Track--Site Characterization, PAPER-12.PMT prepared for the U.S. Department of Energy, work performed under DOE contract no. DE-AC07-76ID01570, CONF-931207, Disk 1.

Scanlon, B. R., 1991, Unsaturated flow studies at the proposed Texas low-level radioactive waste repository: West Texas Geological Society Bulletin, v. 30, no. 6, p. 5-13.

Scanlon, B. R., Kubik, P. W., Sharma, R., Richter, B. C., and Gove, H. E., 1990, Bomb chlorine-36 analysis in the characterization of unsaturated flow at a proposed radioactive waste disposal facility, Chihuahuan Desert, Texas: Nuclear Instruments and Methods in Physics Research, v. 52, nos. 3 and 4, p. 489-492.

Scanlon, B. R., Richter, B. C., Wang, F. P., and Mullican, W. F., III, 1990, Analysis of unsaturated flow related to low-level radioactive waste disposal, Chihuahuan Desert, Texas, in "Focus '89" Conference on Nuclear Waste Isolation in the Unsaturated Zone: American Nuclear Society, p. 351-358.

Non Peer Reviewed Book Chapters

Keese, K. E., Scanlon, B. R., and Reedy, R. C., 2004, Controls on groundwater recharge using unsaturated flow modeling, in Mace, R. E., Angle, E. S., and Mullican, W. F., III, eds., Aquifers of West Texas: San Angelo, Texas, Texas Water Development Board, Report 360, p. 269-291.

Phillips, F. M., Hogan, J. F., and Scanlon, B. R., 2004, Introduction and overview, in Hogan, J. F., Phillips, F. M., and Scanlon, B. R., eds., Groundwater recharge in a desert environment: the southwestern United States: Washington, D.C., American Geophysical Union, Water Science and Applications Series, v. 9, p. 1-14.

Scanlon, B. R., 2004, Evaluation of methods of estimating recharge in semiarid and arid regions in the southwestern U.S., in Hogan, J. F., Phillips, F. M., and Scanlon, B. R., eds., Groundwater recharge in a desert environment: the southwestern United States: Washington, D.C., American Geophysical Union, Water Science and Applications Series, v. 9, p. 235-254.

Walvoord, M. A., and Scanlon, B. R., 2004, Hydrologic processes in deep vadose zones in interdrainage and environments, in Hogan, J. F., Phillips, F. M., and Scanlon, B. R., eds., Groundwater recharge in a desert environment: the southwestern United States: Washington, D. C., American Geophysical Union, Water Science and Applications Series, v. 9, p. 15-28.

Andraski, B. J., and Scanlon, B. R., 2002, Chapter 3. Thermocouple psychrometry, in Dane, J. H., and Topp, G. C., eds., Methods of soil analysis, part 4, physical methods: Soil Science Society of America, Inc., no. 5, p. 609-642.

Andraski, B. J., Scanlon, B. R., and Bilskie, J., 2002, Chapter 3. Miscellaneous methods for measuring matric or water potential, in Dane, J. H., and Topp, G. C., eds., Methods of soil analysis, part 4, physical methods: Soil Science Society of America, Inc., no. 5, p. 643-670.

Scanlon, B. R., Nicot, J. -P., and Massman, J. M., 2002, Chapter 8. Soil gas movement in unsaturated systems, in Warrick, A. W., ed.: Boca Raton, CRC Press, p. 297-341.

Scanlon, B. R., Darling, B. K., and Mullican, W. F., III, 2001, Chapter 3, Evaluation of groundwater recharge in basins in Trans-Pecos Texas, in Mace, R. E., Mullican, W. F., III, and Angle, E. S., eds., Aquifers of West Texas: Texas Water Development Board, Report 356, p. 26-40.

Scanlon, B. R., Nicot, J. -P., and Massman, J. M., 1999, Soil gas movement in unsaturated systems, in Sumner, M. E., ed., Handbook of soil science: Boca Raton, CRC Press, p. A277-A319.

Tyler, S. W., Scanlon, B. R., Gee, G. W., and Allison, G. B., 1999, Chapter 13. Water and solute transport in arid vadose zones: innovations in measurement and analysis, in Parlange, M. B., and Hopmans, J. W., eds., Vadose zone hydrology, cutting across disciplines: New York, Oxford, University Press, p. 334-373.

Scanlon, B. R., Mullican, W. F., III, and Goldsmith, R. S., 1994, Methodology and preliminary results of unsaturated flow studies for a proposed Texas low-level radioactive waste repository, in Toxic substances and the hydrologic sciences: American Institute of Hydrology, p. 497-506.

Contract Reports

Reedy, R. C., and Scanlon, B. R., 2018, Assessing cumulative water risks from shale oil production: Permian Basin Case Study: Contract Report prepared for Texas Commission on Environmental Quality, 94 p.

Reedy, R. C., and Scanlon, B. R., 2018, Assessment of arsenic in groundwater and water supply systems in Texas: Final Contract Report prepared for Texas Commission on Environmental Quality, 49 p.

Scanlon, B. R., Reedy, R. C., Mirabolghasemi, M., Engle, M. A., and Ikonnikova, S., 2018, Assessing potential for reuse of produced water from energy extraction: Contract Report prepared for Exxon-Mobil, 92 p.

Hamlin, H. S., Scanlon, B. R., Reedy, R. C., Banerji, D., Young, S. C., Jigmond, M., and Harding, J. H., 2017, Fresh, Brackish, and Saline Groundwater Resources in the Carrizo-Wilcox, Queen City and Sparta Aquifers in Groundwater Management Area 13--Location, Quantification, Producibility, and Impacts: Bureau of Economic Geology, Contract Report prepared for Texas Water Development Board, 388 p.

Reedy, R. C., and Scanlon, B. R., 2017, Evaluation of Groundwater Nitrate Contamination in Aquifers in Texas: Bureau of Economic Geology, Contract Report prepared for Texas Commission on Environmental Quality, 41 p.

Scanlon, B. R., Reedy, R. C., Mirabolghasemi, M., Engle, M. A., and Ikonnikova, S., 2017, Assessing potential for reuse of produced water from energy extraction: Bureau of Economic Geology, Contract Report prepared for ExxonMobil, 92 p.

Hamlin, H. S., Scanlon, B. R., Reedy, R. C., Young, S. C., and Jigmond, M., 2016, Fresh, Brackish, and Saline Groundwater Resources in the Carrizo-Wilcox Aquifer in Groundwater Management Area 13--Location, Quantification, Producibility, and Impacts: Bureau of Economic Geology, Contract Report prepared for Texas Water Development Board, 224 p.

Hosseini, S. A., Nicot, J.-P., Darvari, R., Costley, R., Lu, J., Sava, D., Goudarzi, A., Mickler, P., Banerji, D., Uhlman, K., Walden, S., Hentz, T. F., Hamlin, H. S., Ganjdanesh, R., Sun, A. Y., Hovorka, S. D., and Scanlon, B. R., 2016, Pressure management and plume control strategies through a brine extraction storage test at the Devine Test Site in Texas, Phase I: Bureau of Economic Geology, The University of Texas at Austin, Topical Report prepared for DOE NETL, under contract no. DE-FE0026137, 157 p.

Ambrose, W. A., Smith, D. C., Cutright, B. L., Scanlon, B. R., Reedy, R. C., Elliott, B. A., Paine,

J. G., Foss, M. M., Tremblay, T. A., Wolaver, B. D., Loucks, R. G., Frébourg, G., Hentz, T. F., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., E. L. Frost, III, Hamlin, H. S., Nance, H. S., Duncan, I. J., Hammes, U., Rogers, H., Clift, S. J., Sivil, J. E., Zhang, T., Reed, R. M., Baumgardner, R. W., Jr., Eastwood, R., Breton, C., Rowe, H. D., Carr, D. L., Dunlap, D. B., Gale, J. F. W., and Peng, S., 2014, State of Texas Advanced Resource Recovery (STARR) progress report: Bureau of Economic Geology, Biennium prepared for Texas State Comptroller of Public Accounts, 90 p.

Wolaver, B. D., Cook, C. E., Sunding, D. L., Hamilton, S. F., Scanlon, B. R., Young, M. H., and Xu, X., 2012, Potential economic impacts of environmental flows for central Texas freshwater mussels: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Texas Comptroller of Public Account, variously paginated.

Reedy, R. C., Scanlon, B. R., Walden, Steven, and Strassberg, Gil, 2011, Naturally occurring groundwater contamination in Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Water Development Board, variously paginated..

Scanlon, B. R., Reedy, R. C., Strassberg, Gil, Huang, Y., and Senay, G., 2011, Estimation of groundwater recharge to the Gulf Coast aquifer in Texas, USA: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Water Development Board, 33 p.

Sheffer, N. A., and Scanlon, B. R., 2011, Edwards aquifer water balance study: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Commission on Environmental Quality, 23 p.

Sheffer, N. A., Reedy, R. C., and Scanlon, B. R., 2011, Push-pull experiments to evaluate in situ arsenic remediation in the Ogallala aquifer--Year 2: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Texas Commission on Environmental Quality, 28 p.

Nicot, J. -P., Scanlon, B. R., Yang, C., and Gates, John, 2010, Geological and geographical attributes of the South Texas Uranium Province: The University of Texas at Austin, Bureau of Economic Geology, contract report prepared for the Texas Commission on Environmental Quality, 156 p.

Sheffer, N. A., Reedy, R. C., and Scanlon, B. R., 2010, Push-pull experiments to evaluate in situ arsenic remediation in the Ogallala aquifer: The University of Texas at Austin, Bureau of Economic Geology, report prepared for Texas Commission on Environmental Quality, 20 p.

Sheffer, N. A., Scanlon, B. R., and Reedy, R. C., 2010, Evaluation of elevated arsenic levels in the Gulf Coast aquifer: The University of Texas at Austin, Bureau of Economic Geology, report prepared for Texas Commission on Environmental Quality, under contract no. 582-8-75374-117, 20 p.

Chaudhary, K., Scanlon, B. R., Sheffer, N. A., and Walden, Steven, 2009, Review of the state of the art: groundwater under the direct influence of surface water programs: The University of Texas at Austin, Bureau of Economic Geology, final contract report prepared for the Texas Commission on Environmental Quality, 33 p.

Gates, John, Nicot, J. -P., Scanlon, B. R., and Reedy, R. C., 2009, Evaluation of elevated arsenic levels in the Gulf Coast aquifer: The University of Texas at Austin, Bureau of Economic Geology, report prepared for Texas Commission on Environmental Quality, under Contract No. 582-8-75374, 22 p. + tables and figures.

Reedy, R. C., Sheffer, N. A., Gates, J. B., and Scanlon, B. R., 2009, Sampling to assess stratification of groundwater chemistry for compliance strata in the Gulf Coast aquifer system: The University of Texas at Austin, Bureau of Economic Geology, report prepared for Texas Commission on Environmental Quality, 20 p.

Scanlon, B. R., Reedy, R. C., Sheffer, N. A., and Gates, John, 2009, Evaluation of sources and

mobilization of contaminants in Texas with reference to public water systems: The University of Texas at Austin, Bureau of Economic Geology, final contract report prepared for the Texas Commission on Environmental Quality, 36 p.

Sheffer, N. A., and Scanlon, B. R., 2009, Geochemical characterization of areas of similar groundwater chemistry for grouping regional pilot treatment studies: The University of Texas at Austin, Bureau of Economic Geology, final contract report prepared for the Texas Commission on Environmental Quality, 45 9..

Gates, John, Nicot, J. -P., Scanlon, B. R., and Reedy, R. C., 2008, Evaluation of elevated arsenic levels in the Gulf Coast aquifer: The University of Texas at Austin, Bureau of Economic Geology, report prepared for Texas Commission on Environmental Quality, under Contract No. 263404-22, 21 p. + tables and figs.

Reedy, R. C., Davidson, S., Crowell, A., Gates, John, Akasheh, O. Z., and Scanlon, B. R., 2008, Groundwater recharge in the Central High Plains: Roberts and Hemphill Counties: The University of Texas at Austin, Bureau of Economic Geology, contract report prepared for the Panhandle Water Planning Group, 68 p.

Reedy, R. C., Scanlon, B. R., and Tachovsky, J. A., 2007, Analysis of nitrate contamination in groundwater in Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Commission on Environmental Quality.

Reedy, R. C., Kurtzman, D. J., Tachovsky, J. A., and Scanlon, B. R., 2006, Development and field evaluation of an aquifer stratification testing program system: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Commission on Environmental Quality, 26 p.

Reedy, R. C., Kurtzman, Daniel, Tachovsky, J. A., and Scanlon, B. R., 2006, Development and field evaluation of a stratified aquifer sampler system: The University of Texas at Austin, Bureau of Economic Geology, final contract report prepared for the Texas Commission on Environmental Quality, 26 p.

Tachovsky, J. A., Reedy, R. C., Kurtzman, D. J., and Scanlon, B. R., 2006, Reconnaissance study of groundwater recharge in the central High Plains of Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Panhandle Groundwater Conservation District, 28 p.

Hovorka, S. D., Holtz, M. H., Smyth, R. C., Nuñez-Lopez, Vanessa, Kim, E. M., Breton, Caroline, Scanlon, B. R., and Reedy, R. C., 2005, Southeast regional carbon sequestration partnership: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for the U.S. Department of Energy, under DOE award number DE-FC26-03NT41980, 40 p.

Reedy, R. C., Scanlon, B. R., and Hill, C. M., 2005, Assessment of groundwater contamination, in situ treatment, and disposal of treatment residuals in the vicinity of Lubbock, Texas: The University of Texas at Austin, Bureau of Economic Geology, final contract report prepared for the Texas Commission on Environmental Quality, variously paginated.

Scanlon, B. R., Keese, K. E., Bonal, Nedra, Deeds, Neil, Kelley, V. A., and Litvak, M., 2005, Evapotranspiration estimates with emphasis on groundwater evapotranspiration in Texas: The University of Texas at Austin, Bureau of Economic Geology, contract report prepared for the Texas Water Development Board, variably paginated.

Scanlon, B. R., Nicot, J. -P., Reedy, R. C., Tachovsky, J. A., Nance, H. S., Smyth, R. C., Keese, Kelley, Ashburn, R. E., and Christian, Lance, 2005, Evaluation of arsenic contamination in Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Commission on Environmental Quality, under umbrella contract no. 582-4-56385 and work order no. UT-08-5-70828, 167 p.

Scanlon, B. R., Reedy, R. C., Keese, K. E., Tossell, R., Dwyer, J., and Schroth, B., 2005,

Assessment of groundwater contamination, in situ treatment, and disposal of treatment residuals in the vicinity of Lubbock, Texas: The University of Texas at Austin, Bureau of Economic Geology, report prepared for Texas Commission on Environmental Quality, 110 p. + apps. & tables.

Scanlon, B. R., Tachovsky, J. A., Reedy, R. C., Nicot, J. -P., Keese, K. E., Slade, R. M., Merwade, V., Howard, T., Wells, G. L., Mullins, G. J., and Ortiz, D. M., 2005, Groundwater-surface water interactions in Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Commission on Environmental Quality, under contract no. 7 UT-07 70830, 240 p.

Scanlon, B. R., Tachovsky, J. A., Reedy, Robert, Nicot, J. -P., Keese, Kelley, Merwade, Venkatesh, Howard, M. T., Mullins, G. J., Wells, G. L., and Ortiz, D. M., 2005, Groundwater-surface water interactions in Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for TCEQ GWSW, 240 p.

Blandford, N. T., Blazer, D. J., Calhoun, K. C., Dutton, A. R., Naing, T., Reedy, R. C., and Scanlon, B. R., 2003, Groundwater availability of the southern Ogallala Aquifer in Texas and New Mexico: numerical simulations through 2050: Daniel B. Stephens and Associates, final report prepared for Texas Water Development Board, variously paginated.

Scanlon, B. R., Reedy, R. C., and Keese, K. E., 2003, Estimation of groundwater recharge in Texas related to aquifer vulnerability to contamination: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Commission on Environmental Quality, 125 p.

Scanlon, B. R., Reedy, R. C., and Kier, K. S., 2003, Evaluation of nitrate contamination in major porous media aquifers in Texas: The University of Texas at Austin, final report prepared for Texas Commission on Environmental Quality, 48 p.

Calhoun, K. C., Blandford, T. N., Ankeny, M. D., Scanlon, B. R., and Reedy, R. C., 2002, Identification of geographic areas in Texas suitable for groundwater banking: Daniel B. Stephens & Associates and The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Water Development Board, 164 p. + apps.

Scanlon, B. R., 2002, Groundwater recharge in Texas: The University of Texas at Austin, Bureau of Economic Geology, final contract report prepared for the Texas Commission on Environmental Quality, 62 p.

Scanlon, B. R., Dutton, A. R., and Sophocleous, Marios, 2002, Groundwater recharge in Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Texas Water Development Board, 62 p. + figs., tables, attachment.

Scanlon, B. R., Mace, R. E., Smith, Brian, Hovorka, S. D., Dutton, A. R., and Reedy, R. C., 2002, Groundwater availability of the Barton Springs segment of the Edwards aquifer, Texas--numerical simulations through 2050: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for the Lower Colorado River Authority, under contract no. UTA99-0, 36 p. + figs., tables, attachment.

Reedy, R. C., and Scanlon, B. R., 2000, Evaluation of electromagnetic induction as a noninvasive technique for monitoring water movement into and beneath waste disposal facilities: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for EPRI, 7 p. + figs.

Scanlon, B. R., Angle, E. S., Christian, Brent, Pi, Jonathan, Martinez, Kris, Reedy, R. C., Boghici, Radu, and Petrossian, Rima, 2000, Evaluation of recharge beneath NRCS reservoirs in Hale County, Brazos River Basin: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Water Development Board, 71 p.

Scanlon, B. R., Mace, R. E., Dutton, A. R., and Reedy, R. C., 2000, Predictions of groundwater levels and spring flow in response to future pumpage and potential future droughts in the Barton

Springs segment of the Edwards aquifer: The University of Texas at Austin, Bureau of Economic Geology, contract report prepared for the Lower Colorado River Authority, under contract no. UTA99-0196, 42 p.

Scanlon, B. R., Reedy, R. C., and Liang, Jinhuo, 1999, Recharge monitoring in an interplaya setting: Amarillo National Resource Center for Plutonium, report prepared with the support of the U.S. Department of Energy (DOE), Cooperative Agreement No. DE-FC04-95AL85832, Report No. ANRCP-1999-14, 15 p.

Young, M. H., Wierenga, P. J., Warrick, A. W., Hofmann, L. L., Musil, S. A., Yao, M., Mai, C. J., Zou, Z., and Scanlon, B. R., 1999, Results of field studies at the Maricopa Environmental Monitoring Site, Arizona: University of Arizona, Department of Soil, Water, and Environmental Science, and The University of Texas at Austin, Bureau of Economic Geology, report, prepared for Division of Risk Analysis and Applications, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, D.C., NRC Job Code W615, NUREG/CR-5694, 260 p p.

Scanlon, B. R., Angle, E. S., Liang, Jinhuo, and Reedy, R. C., 1998, Estimation of gas permeabilities for the Maricopa Site, Arizona: The University of Texas at Austin, Bureau of Economic Geology, final contract report prepared for the University of Arizona, Tucson, Arizona, 10 p. + tables and figs.

Scanlon, B. R., Reedy, R. C., Liang, Jinhuo, and Angle, E. S., 1998, Evaluation of unsaturated flow in an interplaya setting based on soil physical and environmental tracer data: The University of Texas at Austin, Bureau of Economic Geology, milestone report prepared for U.S. Department of Energy, Pantex, unpaginated.

Scanlon, B. R., Reedy, R. C., Liang, Jinhuo, and Angle, E. S., 1998, Results of drilling and installation of monitoring equipment: The University of Texas at Austin, Bureau of Economic Geology, technical report prepared for U.S. Department of Energy, Pantex Plant, unpaginated.

Young, M. H., Wierenga, P. J., Warrick, A. W., Hofmann, L. L., Musil, S. A., Scanlon, B. R., and Nicholson, T. J., 1997, Field testing plan for unsaturated zone monitoring and field studies: University of Arizona, Department of Soil, Water and Environmental Science, and The University of Texas at Austin, Bureau of Economic Geology, contract report, prepared for U.S. Nuclear Regulatory Commission, under contract no. NUREG/CR-6462, 49 p.

Scanlon, B. R., Goldsmith, R. S., and Mullican, W. F., III, 1996, Spatial variability in subsurface flow through the unsaturated zone in the vicinity of the Pantex Plant, Southern High Plains, Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for U.S. Department of Energy, under grant no. DE-FG04-90AL65847, 132 p.

Gustavson, T. C., Bebout, D. G., Bennett, P. C., Fish, E. B., Fryar, A. E., Hovorka, S. D., Hua, H.-P., Kirschenmann, Kyle, Laun, Scot, Minehardt, T. J., Mullican, W. F., III, Nicot, J. -P., Paine, J. G., Pezzolesi, T. P., Rainwater, Ken, Ramsey, Heyward, Reeduer, Alan, Romanak, K. D., Scanlon, B. R., Thompson, David, Xiang, Jiannan, and Zartman, R. E., 1995, Summary hydrogeologic assessment, U.S. Department of Energy Pantex Plant, Carson County, Texas: The University of Texas at Austin, Bureau of Economic Geology, milestone report prepared for U.S. Department of Energy, 98 p.

Paine, J. G., Goldsmith, R. S., and Scanlon, B. R., 1995, Electrical conductivity and gamma ray response to clay, water, and chloride content in fissured sediments, Trans-Pecos Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for U.S. Department of Energy, National Low-Level Radioactive Waste Management Program, Assistant Secretary for Environmental Management under DOE Idaho Operations Office, under Contract No. DE-AC07-95ID 13223 and Interagency Contract No.94-0304, 52 p., variously paginated.

Dutton, A. R., Collins, E. W., Hovorka, S. D., Mace, R. E., Scanlon, B. R., and Xiang, Jiannan, 1994, Occurrence and movement of ground water in Austin Chalk and Eagle Ford and Ozan Formations at the Superconducting Super Collider (SSC) site, Ellis County, Texas: The

University of Texas at Austin, Bureau of Economic Geology, topical report prepared for the Texas National Research Laboratory Commission, under contract no. IAC(92-93)-0301, 393 p.

Scanlon, B. R., and Goldsmith, R. S., 1993, Evaluation of subsurface flow in fissured sediments in the Chihuahuan Desert, Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for the U.S. Department of Energy, National Low-Level Radioactive Waste Management Program, Assistant Secretary for Environmental Management, under DOE Idaho Operations Office Contract No. DE-AC07-95ID 13223 and Interagency Contract No. 94-0304, variously paginated [60 p.].

Scanlon, B. R., Xiang, Jiannan, and Goldsmith, R. S., 1993, Unsaturated zone studies at the proposed low-level radioactive waste disposal facility, Eagle Flat Basin, Texas: The University of Texas at Austin, Bureau of Economic Geology, final report prepared for Texas Low-Level Radioactive Waste Disposal Authority, under interagency contract no. IAC(92-93)-0910, 208 p.

Xiang, Jiannan, Hovorka, S. D., Goldsmith, R. S., and Scanlon, B. R., 1993, Evaluation of preferential flow in playa settings near the Pantex Plant: The University of Texas at Austin, Bureau of Economic Geology, milestone report prepared for the U.S. Department of Energy, 11 p.

Raney, J. A., Collins, E. W., Darling, B. K., Garner, L. E., Jackson, M. L. W., Langford, R. P., Paine, J. G., Richter, Bernd, Scanlon, B. R., Seni, S. J., Standen, A. R., Wermund, E. G., Jr., and Xiang, Jiannan, 1992, Eagle Flat Project, Hudspeth County, Texas: The University of Texas at Austin, Bureau of Economic Geology, progress report prepared for the Texas Low-Level Radioactive Waste Disposal Authority, under interagency contract no. IAC(92-93)-0910, 83 p.

Xiang, Jiannan, and Scanlon, B. R., 1992, Eagle Flat Project, Hudspeth County, Texas: The University of Texas at Austin, Bureau of Economic Geology, progress report prepared for the Texas Low-Level Radioactive Waste Disposal Authority, under interagency contract no. IAC(92-93)-0910, 83 p.

Scanlon, B. R., and Richter, B. C., 1990, Analysis of unsaturated flow based on chemical tracers (chloride, 36Cl, 3H, and bromide) and comparison with physical data, Chihuahuan Desert, Texas: The University of Texas at Austin, Bureau of Economic Geology, report prepared for the Texas Low-Level Radioactive Waste Disposal Authority, under interagency contract no. IAC(90-91)-0268, 58 p.

Scanlon, B. R., Wang, F. P., and Richter, B. C., 1990, Analysis of unsaturated flow based on physical data related to low-level radioactive waste disposal, Chihuahuan Desert, Texas: The University of Texas at Austin, Bureau of Economic Geology, report prepared for the Texas Low-Level Radioactive Waste Disposal Authority, under interagency contract no. IAC(90-91)-0268, 102 p.

Scanlon, B. R., Wang, F. P., and Richter, B. C., 1989, Methodology and preliminary results of unsaturated flow study for a proposed low-level radioactive waste disposal facility, Texas: The University of Texas at Austin, Bureau of Economic Geology, contract report prepared for Texas Low-Level Radioactive Waste Disposal Authority, under interagency contract no. IAC(88-89)-0932, 28 p.

Thrailkill, J, Dinger, J. S., Scanlon, B. R., and Kipp, J. A., 1985, Drainage determination: report for the Boone National Guard Center, Franklin County, Kentucky, 24 p.

McClure, J. E., Helm, H. H., and Scanlon, B. R., 1984, Groundwater resource investigation: G. R. W. Engineers, Lexington, Kentucky, report prepared for Keeneland Association, 15 p.

Published Reports

Ambrose, W. A., Rogers, H., Smith, D. C., Scanlon, B. R., Paine, J. G., Nicot, J.-P., Young, M. H., Loucks, R. G., Hentz, T. F., Reed, R. M., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Flaig, P. P., Zhang, J., Hattori, K., Roberts, A., Zeng, H., DeJarnett, B. B., Radjef, E., Periwal, P., Peng, S., Duncan, I. J., Ren, B., Jensen, J., Male, F., Dommisse, R., Eastwood, R., Carr, D. L., Zhang, T.,

Ko, L., Larson, T., Lawton, T., Covault, J., Sylvester, Z., Goodman, E., Calle, A., Smye, K. G., Pelletier, I., Dunlap, D. B., Lambert, J., and Sivil, J. E., 2021, State of Texas Advanced Resource Recovery (STARR) 2018-2020 biennium report: The University of Texas at Austin, Bureau of Economic Geology44 p.

Ambrose, W. A., Smith, D. C., Young, M. H., Scanlon, B. R., Reedy, R. C., Collins, E. W., Elliott, B. A., Wolaver, B. D., Paine, J. G., Hentz, T. F., Frébourg, G., Loucks, R. G., Reed, R. M., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., Duncan, I. J., Rogers, H., Clift, S. J., Foss, M. M., Sivil, J. E., Zhang, T., Baumgardner, R. W., Jr., Eastwood, R., Breton, C., Brooks, D. L., Rowe, H. D., Carr, D. L., Dunlap, D. B., Gale, J. F. W., He, Y., Ko, L., Phelps, R., and Peng, S., 2016, State of Texas Advanced Resource Recovery (STARR) progress report: Bureau of Economic Geology, Biennium prepared for Texas State Comptroller of Public Accounts: 82 p.

Ambrose, W. A., Smith, D. C., Cutright, B. L., Scanlon, B. R., Reedy, R. C., Elliott, B. A., Paine, J. G., Foss, M. M., Tremblay, T. A., Wolaver, B. D., Loucks, R. G., Frébourg, G., Hentz, T. F., Ogiesoba, O. C., Olariu, M. I., Fu, Q., Zeng, H., Frost, E. L., III, Hamlin, H. S., Nance, H. S., Duncan, I. J., Hammes, U., Rogers, H., III, Clift, S. J., Sivil, J. E., Zhang, X., Reed, R. M., Baumgardner, R. W., Jr., Eastwood, R, Breton, C., Brooks, D. L., Rowe, H. D., Carr, D. L., Dunlap, D. B., Gale, J. F. W., and Peng, S., 2014, State of Texas Advanced Resource Recovery progress report and CD-ROM: Bureau of Economic Geology, The University of Texas at Austin,90 p.

Delaune, P., Scanlon, B. R., and Reedy, R. C., 2014, Groundwater nitrogen source identification and remediation in the Texas High Plains and Rolling Plains regions: Report prepared for the Texas State Soil and Water Conservation Board, Texas Water Resources Institute Technical Report, 78 p.

Yang, C., Mickler, P., and Scanlon, B. R., 2013, Groundwater degradation from carbon dioxide at geological carbon sequestration sites: Water Research Foundation, Web Report, no. 4265, 127 p.

Ewing, J., Jones, T. L., Yan, T., Vreugdenhil, A. M., Fryar, D. G., Pickens, J. F., Gordon, K., Nicot, J. -P., Scanlon, B. R., Ashworth, J. B., and Beach, J., 2008, Groundwater availability model for the Dockum aquifer: Intera Inc., Texas Water Development Board.

Baumgardner, R. W., Jr., and Scanlon, B. R., 1992, Surface fissures in the Hueco Bolson and adjacent basins, West Texas: The University of Texas at Austin, Bureau of Economic Geology, Geological Circular, no. 92-2, 40 p.

Scanlon, B. R., 1985, Hydrogeology of the Maine River Basin, County Kerry: Geological Survey of Ireland, Report Series, no. 85/1, 35 p.

Thrailkill, J, Wiseman, R. F., and Scanlon, B. R., 1985, Investigation of pollution in a karst aquifer utilizing optical brightener: University of Kentucky, Water Resources Research Institute, Research Report, no. 158, 39 p.

Computer Applications and Internet

Scanlon, B. R., 2001, Recharge rates for the major aquifers in Texas: The University of Texas at Austin, Bureau of Economic Geology, http://www.twdb.state.tx.us.

Scanlon, B. R., Goldsmith, R. S., and Dutton, A. R., 2001, Conceptual model of groundwater recharge to the major aquifers in Texas: The University of Texas at Austin, Bureau of Economic Geology, http://www.twdb.state.tx.us.

Published Abstracts

Rateb, A., Scanlon, B. R., Müller Schmied, H., and Hasan, E., 2021, How severe is water stress in the Middle East and North Africa region? (abs.): European Geophysical Union General Assembly 2021, 2 p., http://doi.org/10.5194/egusphere-egu21-13724.

Scanlon, B. R., Rateb, A., and Xie, H., 2021, Assessing water availability for development in

Africa using GRACE satellites (abs.): European Geosciences Union General Assembly 2021, 1 p., http://doi.org/10.5194/egusphere-egu21-16344.

Fakhreddine, S., Scanlon, B. R., Nicot, J.-P., and Young, M. H., 2020, Assessing groundwater quality impacts of capturing high magnitude flows for managed aquifer recharge (abs.): AGU Fall Meeting 2020, no. H043-08.

Scanlon, B. R., Rateb, A., Pool, D. R., and Sun, A. Y., 2020, Relative impacts of climate extremes and irrigation water use on water storage in major aquifers based on GRACE satellite data (abs.): AGU Fall Meeting 2020, no. h079-08.

Scanlon, B. R., Reedy, R. C., Yang, Q., and Fakhreddine, S., 2020, How safe are United States public water supply systems? (abs.): AGU Fall Meeting 2017, no. H105-01.

Reedy, R. C., Scanlon, B. R., Xu, P., and Ikonnikova, S., 2019, Optimizing reuse of produced water from oil and gas extraction in the U.S. (abs.): AGU Fall meeting 2018, Washington, DC, Abstract H21I-1753.

Scanlon, B. R., 2019, Impacts of climate versus human intervention on water storage changes based on GRACE satellites in major U.S. aquifers (abs.): American Geophysical Union Fall Meeting 2019, abs. no. H43M-2235, 1 p.

Scanlon, B. R., and Zhang, Z., 2019, Assessing the reliability of global models using comparisons with GRACE satellite data (abs.): Geological Society of America Abstracts with Programs, v. 51, no. 5, abs. no. 149-1, 1 p., http://doi.org/10.1130/abs/2019AM-336140.

Scanlon, B. R., Yang, Q., Ikonnikova, S., and Reedy, R., 2019, Managing water issues related to unconventional oil and gas production in the U.S. (abs.): Geological Society of America Abstracts with Programs, v. 51, no. 5, abs. no. 175-7, 1 p., http://doi.org/10.1130/abs/2019AM-334113.

Wendt, D. E., Van Loon, A., Scanlon, B. R., and Hannah, D. M., 2019, Managed Aquifer Recharge as a drought mitigation strategy for the California Central Valley (abs.): American Geophysical Union Fall Meeting 2019, abs. no. H23H-11, 1 p.

Yang, Q., and Scanlon, B. R., 2019, Challenges with using flood water for managed aquifer recharge for sustainable water resources management in Texas (abs.): American Geophysical Union Fall Meeting 2019, abs. no. H11L-1660, 1 p.

Banerji, D. A., Scanlon, B. R., Rushforth, R., and Fulton, J., 2018, Comparison of the water footprints of California and Texas (abs.): Fall Meeting, AGU, Washington, D.C., 10-14 December.

Ikonnikova, S., Reedy, R. C., Hamlin, H. S., Lemons, C. R., and Scanlon, B. R., 2018, Evaluating cumulative water risks from shale oil production: Permian Basin case study (abs.): AGU Fall meeting 2018, Washington, DC, Abstract H21I-1754.

Pool, D. R., and Scanlon, B. R., 2017, Simulation of space-based (GRACE) gravity variations caused by storage changes in large confined and unconfined aquifers (abs.): H13L-05 presented at 2017 AGU Fall Meeting, New Orleans, La., 11-15 Dec.

Reedy, R. C., Murray, K. E., Weingarten, M., and Scanlon, B. R., 2017, Assessing produced water management issues with increasing U.S. tight oil production (abs.): H51L-07 presented at 2017 Fall Meeting, AGU, New Orleans, La., 11-15 Dec., Invited.

Reedy, R. C., Scanlon, B. R., Male, F., and Walsh, M., 2017, Water issues associated with increasing unconventional oil production in the Permian Basin (abs.): H53A-1422 presented at 2017 Fall Meeting, AGU, New Orleans, La., 11-15 Dec.

Scanlon, B. R., 2017, Comparison of decadal water storage trends from global hydrological models and GRACE satellite data, Invited (abs.): H52F-01 presented at 2017 Fall Meeting, AGU, New Orleans, La., 11-15 Dec.

Scanlon, B. R., 2017, Comparison of land water storage changes from global hydrologic and land surface models with output from new GRACE satellite solutions (abs.): Geological Society of America Abstracts with Programs, v. 49, no. 6, http://doi.org/10.1130/abs/2017AM-306050.

Scanlon, B. R., 2017, Groundwater storage variations in the North China Plain using multiple space geodetic observations (abs.): G53B-04 presented at 2017 AGU Fall Meeting, New Orleans, La., 11-15 Dec.

Scanlon, B. R., Faunt, C. C., Pool, D. R., and Reedy, R. C., 2017, Evaluating impacts of land use/land cover change on water resources in semiarid regions (invited) (abs.): H42H-05 presented at 2017 Fall Meeting, AGU, New Orleans, La., 11-15 Dec.

Scanlon, B. R., Reedy, R. C., Weingarten, M., and Murray, K. E., 2017, How can we manage produced water associated with unconventional oil to reduce potential hazards? (abs.): Geological Society of America Abstracts with Programs, v. 49, no. 6, http://doi.org/10.1130/abs/2017AM-305953.

Scanlon, B. R., Reedy, R. C., Weingarten, M., and Murray, K. E., 2017, Review of water risks related to unconventional oil production in the U.S. (abs.): 44th Annual Congress of the Intl. Assoc. of Hydrogeologists: Groundwater Heritage and Sustainability in Dubrovnik, Croatia, 25 - 29 Sept.

Zhang, Z., and Scanlon, B. R., 2017, Preliminary results from Powell Research Group on integrating GRACE satellite and ground-based estimates of groundwater storage changes (abs.): H11B-1163 presented at 2017 AGU Fall Meeting, New Orleans, La., 11-15 Dec.

Nicot, J.-P., Scanlon, B. R., and Reedy, R. C., 2016, Spatiotemporal variability in hydraulic fracturing water use and water produced with shale gas in the U.S. (abs.): AGU Fall Meeting, no. H24E-02.

Reedy, R. C., Scanlon, B. R., and Walsh, M., 2016, Optimizing water management for collocated conventional and unconventional reservoirs (abs.): AGU Fall Meeting, no. H31A-1337.

Save, H., Zhang, Z., Scanlon, B. R., Wiese, D. N., Landerer, F. W., Long, D., Longuevergne, L., and Chen, J. L., 2016, Global assessment of new GRACE Mascons solutions for hydrologic applications (abs.): AGU Fall Meeting, no. H51I-1649.

Scanlon, B. R., and Reedy, R. C., 2016, The water footprint of oil and gas production using hydraulic fracturing from unconventional reservoirs in the U.S. (abs.): International Association. of Hydrogeology, Montpellier, France, no. 2551.

Scanlon, B. R., Scarpare, F. V., Ruiz-Correa, S. T., Hernandes, T. A. D., Picoli, C. A., and Bonomi, A., 2016, Water sustainabilty assessment in Brazilian sugarcane expansion area (abs.): AGU Fall Meeting, no. GC51B-1142.

Scanlon, B. R., Zhang, Z., Save, H., Long, D., and Longuevergne, L., 2016, Application of a new GRACE product for assessing long-term trends in water storage in aquifers globally (abs.): International Association of Hydrogeology, Montpellier, France, no. 2555.

Scanlon, B. R., Zhang, Z., Sun, A. Y., Save, H., Schmied, H. M., Wada, Y., Doll, P. M., and Eisner, S., 2016, Comparison of total water storage anomalies from global hydrologic and land surface models and new GRACE satellite solutions (abs.): AGU Fall Meeting, no. H51P-04.

Zhang, Z., Faunt, C. C., Scanlon, B. R., Save, H., Wiese, D. N., Dettinger, M. D., Longuevergne, L., and Margulis, S. W., 2016, Assessing drought impacts on water storage changes from new GRACE Mascons solutions and regional groundwater modeling in the Central Valley of California (abs.): AGU Fall Meeting, no. H53C-1720.

Bhanja, S., Mukherjee, A., Wada, Y., Scanlon, B. R., Taylor, R. E., Rodell, M., and Malakar, P., 2015, Present-day groundwater recharge estimation in parts of the Indian sub-continent (abs.): AGU Fall Meeting, December 2015, San Francisco, CA, GC33C-1292.

Long, D., Scanlon, B. R., Longuevergne, L., and Chen, X., 2015, Global analysis of approaches for deriving total water storage changes from GRACE satellites and implications for groundwater storage change estimation (abs.): AGU Fall Meeting, December 2015, San Francisco, CA, H44F-06, 1 p.

Melo, D. D., Scanlon, B. R., Yin, L., and Wendland, E., 2015, Drought impacts on reservoir storage and hydro-electricity production in southeastern Brazil (abs.): AGU Fall Meeting, December 2015, San Francisco, CA, H43B-1485, 1 p.

Moore, S., Paine, J. G., Caudle, T., Costley, R., Flaig, P. P., Frébourg, G., and Scanlon, B. R., 2015, The approach and success of the GeoFORCE program at the Jackson School of Geosciences for closing the diversity gap in geosciences (abs.): Geological Society of America Abstracts with Programs, v. 47, no. 7, p. 108.

Nicot, J.-P., and Scanlon, B. R., 2015, Water demand of the energy industry in Texas and impact on aquifers (abs.): Geological Society of America Abstracts with Programs, v. 47, no. 7, p. 691.

Nicot, J.-P., Scanlon, B. R., Mullican, III, W. F., and Young, M. H., 2015, Hydraulic fracturing and regulations in Texas (abs.): Geological Society of America Abstracts with Programs, v. 47, no. 7, p. 603.

Reedy, R. C., Scanlon, B. R., and Nicot, J.-P., 2015, Comparison of water demand for hydraulic fracturing relative to energy production in major U.S. shale oil plays (abs.): AGU Fall Meeting, December 2015, San Francisco, Calif., H31E-1459, 1 p.

Scanlon, B. R., Reedy, R. C., Faunt, C. C., Pool, D., and Uhlman, K., 2015, Can we mitigate climate extremes using managed aquifer recharge: case studies California Central Valley and South Central Arizona, USA (abs.): AGU Fall Meeting-Invited, December 2015, San Francisco, CA, H12G-02.

Scanlon, B. R., Reedy, R. C., Ikonnikova, S., and Nicot, J.-P., 2015, Is water scarcity an issue for hydraulic fracturing in semiarid regions? (abs.): Geological Society of America Abstracts with Programs, v. 47, no. 7, p. 692.

Scanlon, B. R., Reedy, R. C., Nicot, J.-P., and Uhlman, K., 2015, Will water scarcity in semiarid regions limit hydraulic fracturing of shale plays? (abs.): NGWA Groundwater Summit, March 2015, San Antonio, Tex., 1 p.

Scanlon, B. R., Zhang, Z., Save, H., and Reedy, R. C., 2015, Role of soils in hydrologic response to climate extremes and land use change (abs.): AGU Fall Meeting-Invited, December 2015, San Francisco, CA, U32A-02, 1 p.

Young, M. H., Nicot, J.-P., and Scanlon, B. R., 2015, Agua/Tierra/Energía Nexus en Texas (abs.), presented at the V Convencion Cubana de Ciencias de la Tierra, Habana, Cuba.

Young, M. H., Nicot, J.-P., Scanlon, B. R., and Pierre, J.P., 2015, Water/Land/Energy Nexus for Unconventional Energy in Texas (abs.): , presented at the UCOWR/NIWR/CUAHSI Conference, Las Vegas, NV.

Zhang, Z., Save, H., Faunt, C. C., Scanlon, B. R., and Dettinger, M. D., 2015, Assessing drought impacts on water storage using GRACE satellites and regional groundwater modeling in the Central Valley of California (abs.): AGU Fall Meeting, December 2015, San Francisco, CA, H21B-1355, 1 p.

Caldwell, T., Scanlon, B. R., Young, M. H., and Yang, L. Z., 2014, Linking soil water storage to long-term outlooks of water supply anomalies in Texas (abs.): presented at the GSA National Meetings, Vancouver, Canada.

Caldwell, T., Young, M. H., and Scanlon, B. R., 2014, Linking soil moisture to water resources in the Texas Hill Country (abs.): presented at the SSSA National Meetings, Long Beach, California (invited).

Libra, J. M., King, C., Xavier, A., and Scanlon, B. R., 2014, Biofuel expansion and water resources in the Ivinhema basin (abs.): American Geophysical Union Fall Meeting H23I-1003.

Long, D., and Scanlon, B. R., 2014, Global analysis of the role of the GRACE satellites in water resource assessments (abs.): Geological Society of America Abstracts with Programs.

Long, D., Scanlon, B. R., and Chen, J., 2014, Groundwater storage depletion in the Northwest India Aquifer using forward modeling and GRACE satellites (abs.): American Geophysical Union Fall Meeting, San Francisco, California, GC11D-0591.

Nicot, J. -P., Mickler, P., Hildenbrand, Z. L., Larson, T., Darvari, R., Uhlman, K., Smyth, R. C., and Scanlon, B. R., 2014, Preliminary results of dissolved methane sampling in the footprint of Texas shale plays (abs.): Geological Society of America Abstracts with Programs, v. 46, no. 6, p. 692.

Nicot, J. -P., Mickler, P., Hildenbrand, Z., Larson, T., Darvari, R., Uhlman, K., Smyth, R. C., and Scanlon, B. R., 2014, Screening for dissolved methane in groundwater across Texas shale plays (abs.): 2014 American Geophysical Union Fall Meeting, San Francisco, California, December 15-19, 2014, no. H23C-0895.

Pe, H., Scanlon, B. R., and Shen, Y., 2014, Comparison of varying agricultural intensification on water resources: comparison of the North China Plain and U.S. High Plains (abs.): Geological Society of America Abstracts with Programs, v. 46, no. 6, paper no. 338-2.

Reedy, R. C., Scanlon, B. R., Nicot, J.-P., and Uhlman, K., 2014, Drought resilience of water supplies for shale gas extraction and related power generation in Texas (abs.): American Geophysical Union Fall Meeting, San Francisco, California, GC13b-0630.

Scanlon, B. R., 2014, How does water use for hydraulic fracturing of unconventional shale oil compare with shale gas and with conventional oil production? (abs.): GSA Annual Meeting, Vancouver, British Columbia.

Scanlon, B. R., Pe, H., and Shen, Y., 2014, Comparison of water and nutrient cycles in the North China Plain and U.S. High Plains related to climate forcing (abs.): American Geophysical Union Fall Meeting, San Francisco, California, H21D-0760.

Scanlon, B. R., Reedy, R. C., and Nicot, J. -P., 2014, How does water use for hydraulic fracturing of unconventional shale oil compare with shale gas and with conventional oil production? (abs.): Geological Society of America Abstracts with Programs, v. 46, no. 6, p. 477.

Wolaver, B. D., Cook, C., Scanlon, B. R., Young, M. H., and Xu, X., 2014, Hydrologic characterization of Texas freshwater mussel habitat (abs.): presented at the 3rd Annual Texas Freshwater Mussel Symposium and Workshop, Kerrville, Texas.

Young, M. H., Nicot, J. -P., Scanlon, B. R., and Pierre, J.P., 2014, Water/land/energy nexus in Texas (abs.): presented at the SSSA National Meetings, Long Beach, California.

Caldwell, T. G., Scanlon, B. R., Long, D., and Young, M. H., 2013, Soil moisture from ground-based networks and the North American Land Data Assimilation System Phase 2 Model: are the right values somewhere in between? (abs.): presented at the AGU Fall Meeting, San Francisco, California.

Goncalves, L., Mattos, J. G., Scarpare, F. V., Scanlon, B. R., Galdos, M. V., and Long, D., 2013, Use of South American Land Data Assimilation System (SALDAS) to assess impacts of biofuel expansion on water resources in Brazil (Abstract H53J-04): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Long, D., Scanlon, B. R., and Longuevergne, Laurent, 2013, Hydrological response to the 2011 drought in Texas using land surface modeling, remote sensing, and GRACE (Abstract H51E-1237): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Longuevergne, Laurent, Scanlon, B. R., Wilson, C. R., and Long, D., 2013, Towards a global

GRACE basin-scale database (Abstract H51E-1235): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Mattos, J. G., Goncalves, L., Herdies, D. L., dos Santos, A. F., and Scanlon, B. R., 2013, Spatial variability of drought for continental South America (Abstract H51E-1239): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Nicot, J. -P., and Scanlon, B. R., 2013, Water sources and disposal related to hydraulic fracturing in the Barnett Shale: a historical perspective (Abstract H53B-1422): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Pei, H., Shen, Y., Scanlon, B. R., Long, D., Reedy, R. C., and Strassberg, Gil, 2013, Comparison of agricultural production and fertilizer consumption in the North China Plain (NCP) and the U.S. High Plains (HP) (Abstract H41A-1218): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Reedy, R. C., and Scanlon, B. R., 2013, Temporal evolution of water use for thermoelectric generation (Abstract H11J-1275): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Scanlon, B. R., Duncan, I. J., and Reedy, R. C., 2013, Drought vulnerability of thermoelectric generation using Texas as a case study (Abstract H11J-1276): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Scanlon, B. R., Faunt, C. C., Longuevergne, Laurent, Reedy, R. C., and Long, D., 2013, Spatiotemporal variability in groundwater depletion using GRACE satellite and modeling approaches (Invited Abstract H13O-01): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Sun, A. Y., Scanlon, B. R., and Uhlman, K., 2013, Enabling water quality management decision support and public outreach using cloud-computing services (Abstract IN53A-1551): AGU Fall Meeting, San Francisco, Calif., 9-13 Dec.

Wolaver, B. D., Cook, C., Sunding, D. L., Hamilton, S. F., Scanlon, B. R., Young, M. H., and Xu, X., 2013, Potential economic impacts of instream flows for Central Texas freshwater mussels (abs.): presented at the National Ground Water Association (NGWA) Groundwater Summit, San Antonio, Texas.

Ziolkowska, B., Scanlon, B. R., and Young, M. H., 2013, Perspectives and challenges for water desalination--a socio-economic multi-regional analysis and a case study for Texas (abs.): presented at the AGU Fall Meeting, San Francisco, California, no. H51U-02.

Döll, P., Hoffmann-Dobrev, H., Portmann, F. T., Siebert, S., Eicker, A., Rodell, M., Strassberg, Gil, and Scanlon, B. R., 2012, Impact of water withdrawals from groundwater and surface water on continental water storage variations: Journal of Geodynamics, v. 59-60, p. 143-156, doi:10.1016/j.jog.2011.05.001.

Fernando, D. N., Fu, R., Scanlon, B. R., Solis, H., Mace, R. E., Yin, A., Bowerman, A. R., and Mioduszewski, J., 2012, Improving drought predictability for application to water resources management in Texas (abs.): Fall AGU 2012, H32C-08, Control ID: 1499697.

Long, D., Singh, V. P., and Scanlon, B. R., 2012, Deriving theoretical boundaries to address scale dependencies of triangle models for evapotranspiration estimation (abs., translated from English): Journal of Geophysical Research-Atmospheres v. 117, D0I 5113 10.1029/2011jd017079 (in English).

Mickler, P., Yang, Changbing, Lu, Jiemin, Reedy, R. C., and Scanlon, B. R., 2012, Low temperature-pressure batch experiments and field push-pull tests: assessing potential effects of an unintended CO2 release from CCUS projects on groundwater chemistry (abs.), in AGU Fall Meeting, December 3-7, San Francisco.

Reedy, R. C., Scanlon, B. R., Duncan, I. J., Young, M. H., and Wolaver, B. D., 2012, Energy reliability related to water availability under climate extremes in Texas (abs.): presented at the Fall AGU Meeting, San Francisco, California, no. GC21C-0989, Control ID: 1502225.

Scanlon, B. R., 2012, Past land use change impacts on water resources as analogs proposed bioenergy crops (abs.), in Energy Biosciences Institute Workshop, Chicago, June.

Scanlon, B. R., and Reedy, R. C., 2012, Comparison of chloride mass balance and baseflow index approaches to recharge estimation in the Texas Gulf Coast Aquifer, USA (abs.): GSA Annual Meeting, Theme Session on Estimation Techniques and Controls on Natural and Artificial Recharge.

Scanlon, B. R., Cook, C., Fernando, D. N., and LeBlanc, M., 2012, Controls on extreme droughts and adaptation strategies in semiarid regions (abs.): Fall AGU 2012, GC11B, Control ID: 1495709.

Scanlon, B. R., Longuevergne, Laurent, Faunt, C. C., Hanson, R. T., and Reedy, R. C., 2012, Buffering capacity of groundwater for droughts: Examples from US High Plains and Central Valley (abs.): International Association of Hydrogeologists, Annual Meeting, Niagara Falls, Canada.

Wolaver, B. D., Cook, C., Scanlon, B. R., and Young, M., 2012, A hydrologic-characterization approach for Texas aquatic-species studies (ext. abs.): Gulf Coast Association of Geological Societies Transactions, v. 62, p. 645-652.

Yang, Changbing, Mickler, P., Reedy, R. C., and Scanlon, B. R., 2012, Assessing Potential Impacts of CO2 Leakage on Shallow Groundwater Quality in the SECARB Phase III Early Test site Using Single-well Push-Pull Tests, 2012 AGU fall meeting, Dec. 3 to 7, 2012, San Francisco, CA, USA (abs. and oral presentation).

Yang, Changbing, Tu, K., Porras, A., Broussard, B., Sun, A. Y., Nicot, J. -P., and Scanlon, B. R., 2012, Sensitivity analysis of radonuclide downward migration for a low-level radioactive wast repository: an analytical approach for performance assessment (abs.): Gulf Coast Association of Geological Societies Transactions, v. 62, p. 817.

Fernando, D. N., Scanlon, B. R., and Fu, R., 2011, Drought in the High Plains: deciphering the role of spring climatic conditions on summer precipitation (abs.), in American Geophysical Union Fall Meeting, San Francisco, Abstract GC31A-1006.

Long, D., Singh, V. P., and Scanlon, B. R., 2011, Deriving theoretical boundaries to address domain and resolution dependencies of triangle models for evapotranspiration estimation (abs.), in American Geophysical Union Fall Meeting, San Francisco, Abstract H33A-1287.

Longuevergne, Laurent, Scanlon, B. R., and Wilson, C. R., 2011, GRACE data for hydrology: where can we push interpretation? (abs.), in American Geophysical Union Fall Meeting, San Francisco, Abstract G33A-0972.

Reedy, R. C., Longuevergne, Laurent, Flint, A. L., Flint, L. E., and Scanlon, B. R., 2011, Using GRACE satellites to monitor water depletion in the Tigris Euphrates River Basins (abs.), in American Geophysical Union Fall Meeting, San Francisco, Abstract H11D-1085.

Scanlon, B. R., Schilling, K., Young, M. H., Duncan, I. J., and Gerbens-Leenes, P. W., 2011, Impacts of past land use changes on water resources: an analog for assessing effects of proposed bioenergy crops (abs.): presented at the Fall AGU Meeting, San Francisco, California, no. H11M-06.

Strassberg, Gil, Scanlon, B. R., Longuevergne, Laurent, Wilson, C. R., Sun, A. Y., and Long, D., 2011, Difficulties in assessing reliability of groundwater storage changes from GRACE satellite data (abs.), in American Geophysical Union Fall Meeting, San Francisco, Abstract H14B-05.

Sun, A. Y., Yang, C., Porras, A., Tu, K., Broussard, B., Scanlon, B. R., Nicot, J. -P., and Council, L., 2011, Performance assessment of a low-level radioactive waste disposal facility in Texas (abs.), in AGU Meeting, San Francisco, December 5-9, Abstract #H531-1528.

Young, M. H., Nicot, J. -P., Scanlon, B. R., and Paine, J. G., 2011, Water-related research activities being conducted by the Bureau of Economic Geology, UT-Austin (abs.): Texas Water

Conservation Association, Austin, Texas.

Anker, Y., Sheffer, N. A., Scanlon, B. R., Gimburg, A., and Morin, E., 2010, Modeling integrated cave drip recharge data using DReAM (Dalily Recharge Assessment Model) in a dry eastern Mediterranean area, Sif Cave, Israel (abs.), in GSA Denver Annual Meeting, October 31-November 3, poster no. H23E-1250.

Eastridge, E. M., Hatch, R., Mukherjee, A., Fryar, A. E., and Scanlon, B. R., 2010, Arsenic speciation in aquifer sediments, West Bengal, India (abs.), in GSA Denver Annual Meeting, October 31-November 3, paper no. 178-12.

Gates, John, Mu, X. M., and Scanlon, B. R., 2010, Evaluating the effect of tree plantations on unsaturated zone flow with a paired profile matric potential monitoring study, Loess Plateau, China (abs.), in GSA Denver Annual Meeting, October 31-November 3, paper no. 56-4.

Jayanthi, H., Gowda, P., Scanlon, B. R., Howell, T. A., and Paul, G., 2010, Evaluation of SEBS for deriving land surface energy fluxes with MODIS data in a semiarid region (abs.), in GSA Denver Annual Meeting, October 31-November 3, poster no. H31B-0995.

Kurtzman, D., and Scanlon, B. R., 2010, Comparison of groundwater recharge uner irrigated cropland versus natural land in clayey soils under Mediterranean climate in Israel (abs.), in GSA Denver Annual Meeting, October 31-November 3, no. H51G-05.

Longuevergne, L., Scanlon, B. R., and Wilson, C. R., 2010, Turning GRACE into a tool for water management (abs.), in GSA Denver Annual Meeting, October 31-November 3, poster no. G43B-05.

Ng, G. C., McLaughlin, D., Entekhabi, D., and Scanlon, B. R., 2010, Probabilistic predictions of groundwater recharge under rain-fed cropland in the Southern High Plains (abs.), in GSA Denver Annual Meeting, October 31-November 3, paper no. H-4.

Reedy, R. C., and Scanlon, B. R., 2010, Agroecosystem impacts on water quality (abs.), in GSA Denver Annual Meeting, October 31-November 3, poster no. H51B-0881.

Scanlon, B. R., Longuevergne, L., Cao, G., Shen, Y., Gates, J. B., Reedy, R. C., and Zheng, C., 2010, Impact of irrigated agroecosystems on groundwater resources in the U.S. High Plains and North China Plain (abs.), in GSA Denver Annual Meeting, October 31-November 3, poster no. H53A-0993.

Scanlon, B. R., Longuevergne, L., Hanson, R. T., Brush, C. F., McMahon, P. B., and Reedy, R. C., 2010, Overexploitation of water resources for irrigated agriculture: case studies in the U.S. high plains and California Central Valley (abs.), in GSA Denver Annual Meeting, October 31-November 3, paper no. 56-3.

Scanlon, B. R., Longuevergne, Laurent, Favreau, G., Zheng, C., Cao, G., and Shen, Y., 2010, Water scarcity within the context of climate change and land use change and linkages to food production in semiarid regions (abs.), in GSA Denver Annual Meeting, October 31-November 3, no. ED13B-02.

Sheffer, M., Scanlon, B. R., Reedy, R. C., Nicot, J. -P., Yang, Changbing, and Stollenwerk, K. G., 2010, Evaluation of in situ arsenic mitigation with Fe(II) using push-pull tests in the Ogallala aquifer (abs.), in AGU San Francisco Annual Meeting, December 13-17, poster no. H41H-1192.

Yang, C., Romanak, K., Hovorka, S. D., Reedy, R. C., Treviño, R. H., and Scanlon, B. R., 2010, Monitoring and modeling CO2 dynamics in the vadose zone near an abandoned historic oil well: implications for detecting CO2 leakage at geological CO2 sequestration sites (abs.), in GSA Denver Annual Meeting, October 31-November 3, poster no. H33E-1202.

Yang, Changbing, Romanak, Katherine, Hovorka, S. D., Reedy, R. C., Treviño, R. H., and Scanlon, B. R., 2010, Monitoring and modeling CO2 dynamics in the vadose zone near an abandoned historic oil well: implications for detecting CO2 leakage at geological CO2 sequestration sites (abs.), in AGU Fall Meeting, San Francisco, December 13-17.

Contreras-López, S., Gowda, P., Scanlon, B. R., Jobbagy, E. G., Alcarez-Segura, D., and Reedy, R. C., 2009, A satellite-based approach to evaluate the impact of land use change on recharge rates in the Southern High Plains (abs.), in Fall American Geophysical Union Annual Meeting abstracts, abstract no. H33D-0897.

Gates, J. B., Nicot, J. -P., Reedy, R. C., and Scanlon, B. R., 2009, Contamination by arsenate in oxidizing groundwater, southern Gulf Coast aquifer system, Texas (abs.): Eos, v. 90, no. 52, Fall Meeting Supplement, Abstract H51I-0890.

Gowda, P., Howell, A., Hartogensis, O., Basu, S., and Scanlon, B. R., 2009, Effect of scintillometer height on structure parameter of the refractive index of air measurements (abs.), in Fall American Geophysical Union Annual Meeting abstracts, abstract no. H43J-06.

Longuevergne, Laurent, Scanlon, B. R., and Wilson, C. R., 2009, Analysis of GRACE processing for increased reliability on basin-scale water storage variations: application to the High Plains aquifer, USA (abs.), in Fall American Geophysical Union Annual Meeting abstracts, abstract no. G43A-0720.

Reedy, R. C., Favreau, G., Gates, John, Mukherjee, A., Scanlon, B. R., and Zheng, C., 2009, Sustainable water resources in semiarid agroecosystems (abs.), in Fall American Geophysical Union Annual Meeting abstracts, abstract no. H11D-0819.

Scanlon, B. R., Reedy, R. C., and Gates, John, 2009, Land use change impacts on water, salt, and nutrient cycles: case study semiarid Southern High Plains, Texas, USA (invited) (abs.), in Fall American Geophysical Union Annual Meeting abstracts, abstract no. H34C-07.

Scanlon, B. R., Reedy, R. C., and Gates, John, 2009, Unsaturated zone records of past impacts of land-use change on water resources in semiarid regions (invited) (abs.), in Fall American Geophysical Union Annual Meeting abstracts, abstract no. H52A-01.

Akasheh, O. Z., Neale, C. M. U., Gowda, P., Scanlon, B. R., and Howell, T. A., 2008, Estimating shortwave solar radiation using net radiation and meteorological measurements (abs.), in AGU Fall Meeting, December 15-19, San Francisco, CA, CD-ROM.

Favreau, G., and Scanlon, B. R., 2008, Impact of land clearing and irrigation on groundwater recharge in the Lake Chad Basin, Africa (abs.): Geological Society of America Abstracts with Programs, v. 40.

Gates, J. B., Nicot, J. -P., and Scanlon, B. R., 2008, Spatial distribution of arsenic in the Texas gulf coastal aquifer system and inferences regarding hydrogeochemical controls (abs.): Eos, v. 89, no. 53, Fall Meeting Supplement, Abstract H41E-925.

Gates, John, Scanlon, B. R., and Xingman, M., 2008, Impacts of soil conservation measures on vadose zone drainage in the Loess Plateau, China (abs.): Geological Society of America, Abstracts with Programs, abstract 62-14.

Gowda, P., Howell, A., Scanlon, B. R., and French, V. L., 2008, Comparison of estimated surface energy fluxes using METRIC and two-source algorithms for advective conditions (abs.), in Joint GSA-SSSA Annual Meeting, abstract 535-2.

Mukherjee, A., and Scanlon, B. R., 2008, An investigation in cause of high and low dissolved arsenic in the sonar Bangla aquifer in the eastern and western bank of the River Bhagirathi-Hoogly, West Bengal, India (abs.): Geological Society of America Abstracts with Programs, abstract 327-14.

Olyphant, J., and Scanlon, B. R., 2008, Unsaturated zone profiles linking land surface applications and groundwater nitrate contamination: case studies Seymour aquifers, Texas (abs.): Geological Society of America Abstracts with Programs, abstract 67-7.

Reedy, R. C., and Scanlon, B. R., 2008, Impacts of land use change on unsaturated zone nitrate cycling in the Southern High Plains, USA (abs.): Geological Society of America Abstracts with Programs, abstract 67-6.

Reedy, R. C., Scanlon, B. R., and Gates, J. B., 2008, Groundwater depletion versus soil salinization in irrigated agriculture in semiarid southern High Plains, Texas (abs.): Eos, v. 89, no. 53, Fall Meeting Supplement, Abstract H11G-0853.

Reedy, R. C., Scanlon, B. R., and Strassberg, Gil, 2008, Perclorate unsaturated zone nitrate beneath natural and agricultural ecosystems in a semiarid region, Southern High Plains (abs.): Eos, v. 88, no. 52, Abstract H41C-0650.

Scanlon, B. R., Nicot, J. -P., Reedy, R. C., Kurtzman, D., and Mukherjee, A., 2008, Naturally occurring arsenic contamination in a semiarid oxidizing system, Southern High Plains aquifer, USA (abs.): Geological Society of America Abstracts with Programs, v. 39, no. 6, p. 518.

Scanlon, B. R., Reedy, R. C., Jackson, W. A., and Rao, B., 2008, Scanlon, B. R., Reedy, R. C., Jackson, W. A., and Rao, B., 2008, Perchlorate mobilization related to land use change in the Southern High Plains, USA (abs.): Eos, v. 88, no. 52, Abstract H33E-1692.

Scanlon, B. R., Stonestrom, D. A., and Gowda, P., 2008, Integration of hydrogeology and soil science for sustainable water resources--focus on water quantity (abs.): Geological Society of America, Abstracts with Programs, 82-6.

Scanlon, B. R., Stonestrom, D. A., Reedy, R. C., and Gates, J. B., 2008, Impacts of climate variability and change on water quality (abs.): Eos, v. 89, no. 53, Fall Meeting Supplement, Abstract H13J-01.

Stonestrom, D. A., and Scanlon, B. R., 2008, Integration of hydrogeology and soil science for sustainable water resources--focus on water quality (abs.): Geological Society of America Abstracts with Programs, abstract 82-7.

Gowda, P., Howell, B., Scanlon, B. R., Copeland, K., and Bush, K., 2007, Preliminary evaluation of sensible heat flux measurements from a large aperture scintillometer using lysimetric data (abs.): EOS, v. 88, Fall Meeting Supplement, abstract H21H-0826.

Mukherjee, A., Scanlon, B. R., Chaudhary, S., Mishra, R., Ghosh, A., Fryar, A. E., and Ramanathan, A., 2007, Regional hydrochemical study of groundwater arsenic contamination along transects from the Himalayan alluvial deposits to the Indian shield, central Gangetic Basin, India (abs.): Geological Society of America Abstracts with Programs, v. 39, p. 519.

Nicot, J. -P., Scanlon, B. R., and Reedy, R. C., 2007, Natural arsenic mobilization by counterion effect, Ogallala aquifer, Southern High Plains, Texas, USA (abs.): Eos, v. 88, no. 52, Abstract H11E-0821.

Reedy, R. C., Scanlon, B. R., Tachovsky, J. A., and Kurtzman, Daniel, 2007, Degradation of water quality related to mobilization of salts Caused by land-use change (abs.): Eos, v. 87, no. 52, Fall Meeting Supplement, Abstract H13B-1383.

Scanlon, B. R., 2007, Birdsall-Dreiss distinguished lecture: implications of climate variability for groundwater resources and waste disposal in semiarid regions--a look at ecological controls from annual to millennial timescales (abs.): Geological Society of America Abstracts with Programs, v. 39, p. 432.

Stonestrom, D. A., Constantz, J. E., Ferre, T. P. A., Flint, A. L., Flint, L. E., Leake, S. A., Prudic, D. E., Scanlon, B. R., and Walvoord, M. A., 2007, Assessing ground-water recharge in the arid and semi-arid southwestern United States (abs.): Geological Society of America Abstracts with Programs, v. 39, p. 191.

Strassberg, Gil, Scanlon, B. R., and Chambers, D., 2007, Comparison of terrestrial water storage variations from GRACE with in-situ soil moisture and groundwater level measurements in semiarid irrigated systems: case study High Plains Aquifer, USA (abs.): EOS, v. 88, Fall Meeting Supplement, abstract H31A-0125.

Wilson, C. R., Wu, H., Scanlon, B. R., and Sharp, J., 2007, Taking the superconducting gravimeter to the field for hydrologic and other investigations (abs.): EOS, v. 88, Fall Meeting

Supplement, abstract H11A-0150.

Kurtzman, Daniel, and Scanlon, B. R., 2006, ENSO and PDO impacts on precipitation in southern and central US: spatial distribution and predictions validity (abs.): Eos, v. 87, no. 52), Fall Meeting Supplement, Abstract H13B-1394.

Ng, G. C., Entekhabi, D., McClaughlin, D., and Scanlon, B. R., 2006, Assimilation of chemical and physical measurements for estimation of recharge rates (abs.): Eos, v. 87, no. 52, Fall Meeting Supplement, Abstract H21I-04.

Rao, B., Stonestrom, D. A., Anderson, T. A., Orris, G. J., Rajagopalan, S., Sandvig, R. M., Scanlon, B. R., Walvoord, M. A., and Jackson, W. A., 2006, A reservoir of natural perchlorate in unsaturated zones of arid and semi-arid regions, southwestern USA (abs.): Eos, v. 87, no. 52, Fall Meeting Supplement, Abstract H12D-06.

Scanlon, B. R., and Reedy, R. C., 2006, Ecohydrological controls on groundwater recharge in semiarid regions (abs.), in Abstract book of the 2006 Ground Water Summit: National Ground Water Association, p. 90.

Scanlon, B. R., Nicot, J. -P., Reedy, R. C., Tachovsky, J. A., Nance, H. S., and Smyth, R. C., 2006, Evaluation of arsenic contamination in the Southern High Plains (abs.): Austin Geological Society Bulletin, v. 2, p. 13-14.

Scanlon, B. R., Reedy, R. C., and Tachovsky, J. A., 2006, Impacts of land-use changes on water resources archived in unsaturated zone tracer profiles, Southern High Plains, USA (abs): Eos, v. 87, no.52, Fall Meeting Supplement, Abstract H12D-04.

Strassberg, Gil, Scanlon, B. R., Niu, G., Yang, Z. L., and Rodell, M., 2006, Comparison of seasonal water storage variations with terrestrial water storage from the gravity recovery and climate experiment (GRACE) over the High Plains aquife (abs.): Eos, v. 87, no. 52, Fall Meeting Supplement, Abstract H34D-06.

Reedy, R. C., Scanlon, B. R., Jackson, A., Tachovsky, A., Nance, S., and Balaji, R., 2005, Potential mobilization of arsenic and other solutes in the vadose zone through land use change in the Southern High Plains, USA (abs.): EOS Transactions of the American Geophysical Union, v. 86, no. 52, Fall Meeting Supplement, Abstract H41D-0443.

Saito, H., Simunek, Jirka, Scanlon, B. R., and Reedy, R. C., 2005, Numerical analysis of coupled water, vapor, and heat transport in the vadose zone using HYDRUS (abs.): EOS Transactions of the American Geophysical Union, v. 86, no. 52, Fall Meeting Supplement, Abstract H21B-1337.

Scanlon, B. R., Reedy, R. C., and Keese, K. E., 2005, Comparison of different approaches for relating ecology and hydrology in semiarid regions (abs.): EOS Transactions of the American Geophysical Union, v. 86, no. 18, Joint Assembly Supplement, Abstract H22A-02.

Scanlon, B. R., Reedy, R. C., and Keese, K. E., 2005, Ecological controls on the water cycle in water-limited ecosystems (abs.), in Emerging issues in rangeland ecohydrology: Annual Meeting for the Society of Range Management, Fort Worth, Texas.

Scanlon, B. R., Reedy, R. C., Tachovsky, A., and Nance, S., 2005, Impacts of the shift from natural to agricultural ecosystems archived in unsaturated and saturated zone systems in the Southern High Plains (abs.): EOS Transactions of the American Geophysical Union, v. 86, no. 52, Fall Meeting Supplement, Abstract H431-05.

Scanlon, B. R., Reedy, R. C., Tachovsky, J. A., and Nance, H. S., 2005, Integration of physical and chemical data to assess impacts of changes from natural to agricultural ecosystems on subsurface flow and transport in semiarid regions (abs.): EOS Transactions of the American Geophysical Union, v. 86, no. 52, Fall Meeting Supplement, Abstract H34C-02 INVITED.

Stonestrom, D. A., Constantz, J. E., Ferre, T. P. A., Flint, A. L., Flint, L. E., Leake, S. A., Prudic, D. E., Walvoord, M. A., and Scanlon, B. R., 2005, Assessing ground-water recharge in the

desert southwest (abs.), in Geological Society of America, Cordilleran Section, San Jose, California, April 20-May 1.

Bailey, D. M., McCray, J. E., Scanlon, B. R., Reedy, R. C., and Lowe, K. S., 2004, Methods comparison of field parameter quantification of unsaturated flow at an existing wastewater infiltration system: Mines Park, Golden, Colorado (abs.): Geological Society of America Abstracts with Programs: v. 36, no. 5, p. 466.

Cey, B. D., Hudson, G. B., and Scanlon, B. R., 2004, Dissolved noble gases and excess air in California groundwaters (abs.): Geological Society of America Abstracts with Programs: v. 36, no. 5, p. 470.

Keese, K. E., Scanlon, B. R., and Reedy, R. C., 2004, Evaluation of unsaturated-flow modeling with online data for estimating diffuse groundwater recharge (abs.): Geological Society of America Abstracts with Programs: v. 36, no. 5, p. 572.

Keese, K. E., Scanlon, B. R., and Reedy, R. C., 2004, Sensitivity of groundwater recharge to variations of climate, soils, and vegetation based on unsaturated-flow modeling (abs.): EOS, v. 85, no. 47, Abstract H31D-0447.

Reedy, R. C., and Scanlon, B. R., 2004, Impact of land use change on groundwater recharge in the Southern High Plains groundwater resources (abs.), in Challenges and Opportunities, Lubbock, Texas.

Scanlon, B. R., 2004, Measurement, monitoring, and modeling analyses of a proposed low-level nuclear waste facility in Texas (abs.): Geological Society of America Abstracts with Programs, v. 36, no. 5, p. 537.

Scanlon, B. R., Musgrove, M., Sansom, A., Xie, H., Sharp, J. M., and Yang, Z. L., 2004, Potential advances in quantifying the water cycle in karst systems using hydrologic observatory approach (abs.): Geological Society of America Abstracts with Programs, v. 36, no. 5, p. 537.

Scanlon, B. R., Reedy, R. C., and Stonestrom, D. A., 2004, Impact of land use change from natural to agricultural ecosystems on groundwater recharge (abs.): Eos, v. 85, no. 47, Abstract H21F-1100.

Scanlon, B. R., Reedy, R. C., and Stonestrom, D. A., 2004, Impact of land-use change on groundwater recharge in the southwestern United States (abs.): Geological Society of America Abstracts with Programs: v. 36, no. 5, p. 390.

Scanlon, B. R., Reedy, R. C., Keese, K. E., and Dwyer, S. F., 2004, Monitoring versus modeling ET covers for performance evaluation (abs.), in EPA Conference on Alternative Landfill Cover Assessment, Denver.

Band, L., Reckhow, K., Famiglietti, J., Genereux, D. P., Helly, J., Hooper, R., Krajewski, W., McKnight, D., Ogden, F., Scanlon, B., and Shabman, L., 2003, Implementing a network of hydrologic observatories (abs.): Eos, v. 84, no. 47, Abstract 121-06.

Keese, K., Scanlon, B. R., and Reedy, R. C., 2003, Evaluating climate, vegetation, and soil controls on groundwater recharge using unsaturated flow modeling (abs.): Eos, v. 84, no. 47, Abstract H32c-0583.

Reckhow, K., Scanlon, B., and Shabman, L., 2003, Surface water, groundwater, and social science measurements in a prototype hydrologic observatory (abs.): Eos, v. 84, no. 47, Abstract H121-03.

Reedy, R. C., and Scanlon, B. R., 2003, Assessing the impact of land use on groundwater recharge in the Southern High Plains (abs.): Eos, v. 84, no. 47, Abstract H32C-0582.

Scanlon, B. R., 2003, Defining the need for augmented recharge--techniques for quantifying recharge (abs.), in California--technical and policy challenges: California Groundwater Resources Association, San Jose.

Scanlon, B. R., 2003, Techniques for estimating groundwater recharge (abs.), in Role of groundwater in integrated water management: Proceedings, 24th Biennium Groundwater Conference and 12th Annual Meeting: Groundwater Resources Association of California, Ontario, CA.

Scanlon, B. R., Christman, M., Reedy, R. C., Porro, I., Simunek, J., and Flerchinger, G. N., 2003, Intercode comparisons for simulating the water balance of engineered covers in semiarid regions (abs.), in Proceedings, International Applied Phytotechnologies Conference, Chicago.

Scanlon, B. R., Krajewski, W., Famiglietti, J., and Duffy, C. J., 2003, Atmospheric and land surface measurements in a prototype hydrologic observatory (abs.): Eos, v. 84, no. 47, Abstract h121-04 (invited).

Scanlon, B. R., Levitt, D., Sully, M. J., Keese, K. E., Simunek, Jirka, Reedy, R. C., Desotell, L., and Lohrstrofer, C., 2003, Role of vegetation in controlling water balance at the land-atmosphere interface in water limited ecosystems (abs.): Eos, v. 84, no. 47, Abstract H42M-06.

Smith, B., and Scanlon, B. R., 2003, Applications and limitations of numerical modeling of karst aquifers, in Proceedings, International Conference on Karst Hydrology and Ecosystems, Bowling Green, Kentucky, USA, June 3-6, p. 28.

Bruce, B. W., Dennehy, K. F., Ellett, K. M., Gurdak, J. J., McMahon, P. B., Reedy, R. C., Scanlon, B. R., and Sophocleous, M. A., 2002, Evaluation of recharge fluxes to the High Plains Aquifer, Colorado, Kansas, Texas, and Nebraska (abs.): Geological Society of America, http://gsa.confex.com/gsa/2002AM/finalprogram/abstract45707.htm.

Reedy, R. C., and Scanlon, B. R., 2002, Comparison of different approaches for estimating recharge in the High Plains Aquifer, Texas (abs.): Eos, v. 83, no. 47, Abstract H61B-0777.

Reedy, R. C., and Scanlon, B. R., 2002, Long-term water balance monitoring of engineered covers for waste containment (ext. abs.), in 2001 International Containment and Remediation Technology Conference, Orlando, Florida, Institute for International Cooperative Environmental Research, Florida State University, Paper ID. No. 073, http://www.iicer.fsu.edu, 3 p.

Scanlon, B. R., Christman, Marty, Reedy, R. C., and Gross, Beth, 2002, Intercode comparisons for simulating water balance in an engineered cover (ext. abs.), in 2001 International Containment and Remediation Technology Conference, Orlando, Florida, Institute for International Cooperative Environmental Research, Florida State University, Paper ID. No. 148, http://www.iicer.fsu.edu, 3 p.

Scanlon, B. R., Reedy, R. C., and Dutton, A. R., 2002, Groundwater recharge in the Texas High Plains (abs.): Geological Society of America, http://gsa.confex.com/gsa/2002AM/finalprogram/abstract40284.htm.

Scanlon, B. R., Christman, Marty, Simunek, Jirka, and Reedy, R. C., 2001, Intercode comparisons for simulating water balance of near-surface soils (abs.), in Eos, v. 82, no. 47, Fall Meeting Supplement, American Geophysical Union, Abstract H12F-10.

Scanlon, B. R., Mace, R. E., and Barrett, M. E., 2001, Comparison of distributed and lumped approaches to simulating water flow in a karst aquifer (abs.): Geological Society of America Abstracts with Programs, v. 33, no. 6, p. A-411.

Scanlon, B. R., 2000, Overview of techniques for quantifying recharge (abs.), in National Groundwater Association Annual Meeting, Austin, Texas.

Scanlon, B. R., 1999, Techniques for quantifying unsaturated flow in semiarid and arid regions (abs.): Geological Society of America Abstracts with Programs, v. 31, no. 7, p. A-88.

Scanlon, B. R., Reedy, R. C., and Liang, Jinhuo, 1999, Monitoring unsaturated flow processes related to the Texas low-level radioactive waste-disposal site (abs.): in AAPG Annual Convention official program: American Association of Petroleum Geologists, v. 8, p. A123.

Reedy, R. C., Scanlon, B. R., Liang, Jinhuo, and Angle, E. S., 1998, Design, installation, and monitoring of restrictive and capillary barriers at a site in the Chihuahuan Desert, Texas (abs.): Eos (Supplement), v. 79, no. 45, p. I-382.

Scanlon, B. R., 1998, Uncertainties in estimating water fluxes and dating pore water in an arid unsaturated system (abs.): Annales Geophysicae, v. 16, supplement II, p. C 480.

Scanlon, B. R., 1997, Physical and environmental tracer data to quantify spatial and temporal variability in unsaturated flow (abs.), in European water resources and climate change processes: summer school: Cork, Ireland, University College, p. 19-20.

Scanlon, B. R., Goldsmith, R. S., and Paine, J. G., 1997, Evaluation of electromagnetic induction as a reconnaissance technique for characterizing unsaturated flow in an arid setting (abs.): Eos: v. 78, p. 46, p. F295.

Scanlon, B. R., and Goldsmith, R. S., 1996, Importance of spatial variability in unsaturated flow for contaminant transport beneath and adjacent to playas (abs.): Geological Society of America Abstracts with Programs, v. 28, no. 7, p. A-77.

Scanlon, B. R., Goldsmith, R. S., and Mullican, W. F., III, 1996, Monitoring and performance testing of prototype engineered barrier for low-level radioactive waste disposal in an arid setting (abs.): Geological Society of America, South-Central Section, Abstracts with Programs, v. 28, no. 1, p. 62.

Scanlon, B. R., Wierenga, P. J., Young, M. H., and Goldsmith, R. S., 1996, Piston-like versus preferential flow in unsaturated porous media in an arid setting (abs.): Geological Society of America Abstracts with Programs, v. 28, p. A-417.

Scanlon, B. R., Goldsmith, R. S., Langford, R. P., and Paine, J. G., 1995, Geomorphic controls on subsurface flow in an arid setting (abs.): Eos (supplement), v. 76, no. 46, p. F235.

Fryar, A. E., Romanak, K. D., Macko, S. A., Bennett, P. C., Mullican, W. F., III, and Scanlon, B. R., 1994, Stable isotopic evidence for denitrification in the Southern High Plains of Texas (abs.): Geological Society of America Abstracts with Programs, v. 26, no. 7, p. 118.

Scanlon, B. R., 1994, Integration of hydraulic and hydrochemical data to obtain a comprehensive understanding of unsaturated zone processes in arid systems (abs.): Geological Society of America Abstracts with Programs, v. 26, no. 7, p. A-389.

Scanlon, B. R., Mullican, W. F., III, and Goldsmith, R. S., 1994, Unsaturated flow studies at the proposed Texas low-level radioactive waste repository, Texas (abs.), in Proceedings, 15th Annual U.S. DOE Low-Level Radioactive Management Conference: U.S. Department of Energy, unpaginated.

Scanlon, B. R., Xiang, Jiannan, Goldsmith, R. S., Mullican, W. F., III, and Hovorka, S. D., 1994, Unsaturated zone studies to evaluate subsurface water movement in the vicinity of the Pantex Plant, Amarillo, Texas (abs.), in Nash, D. J., ed., From the far corners to the Four Corners: Proceedings, 70th Annual Meeting of the Southwestern and Rocky Mountain Division, American Association for the Advancement of Science: American Association for the Advancement of Science, Southwestern and Rocky Mountain Division, Program and Abstracts, v. 34, no. 1, p. 22.

Gustavson, T. C., Hovorka, S. D., Mullican, W. F., III, Scanlon, B. R., and Xiang, Jiannan, 1993, Stratigraphic controls on preferred pathways for recharge to the Ogallala aquifer, Texas and New Mexico (abs.): Eos, v. 74, no. 43, p. 273.

Scanlon, B. R., and Goldsmith, R. S., 1993, Spatial variability in subsurface water movement in the Chihuahuan Desert, Texas (abs.): Eos, v. 74, no. 43, p. 307-308.

Scanlon, B. R., Goldsmith, R. S., and Mullican, W. F., III, 1993, Evidence for focused recharge beneath playas in a semiarid site in the Southern High Plains, Texas (abs.): Geological Society of America Abstracts with Programs, v. 25, no. 6, p. A-441.

Scanlon, B. R., 1992, Application of a coupled moisture and heat flow model near the soil-atmosphere boundary (abs.): Eos (Supplement), v. 73, no. 43, p. 232.

Scanlon, B. R., 1992, Preferential flow in fissured sediments in desert soils related to radioactive waste disposal (abs.): Geological Society of America Abstracts with Programs, v. 24, no. 7, p. A200.

Scanlon, B. R., 1991, Comparison of chemical and hydraulic approaches in evaluation of moisture flux in semiarid systems (abs.), in Agronomy abstracts: 1991 annual meetings: American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, p. 23.

Scanlon, B. R., 1991, Evaluation of liquid and vapor water flow in desert soils based on chlorine-36 and tritium tracers and nonisothermal flow simulations (abs.): Geophysical Abstracts in Press, v. 1, no. 10, p. 6.

Scanlon, B. R., 1990, Relative importance of liquid and vapor transport in arid soils (abs.): Eos, v. 71, no. 43, p. 1718.

Scanlon, B. R., and Richter, B. C., 1990, Environmental tracers as indicators of unsaturated flow: comparison with hydraulic data (abs.): Geological Society of America Abstracts with Programs, v. 22, no. 7, p. A53-A54.

Scanlon, B. R., and Wierenga, P. J., 1990, Numerical simulations of unsaturated flow related to radioactive waste disposal (abs.): Agronomy Abstracts, p. 218.

Scanlon, B. R., and Wang, D. L., 1989, Difficulties in evaluating Darcy's Law in an unsaturated system, Chihuahuan Desert, West Texas (abs.): Geological Society of America, Abstracts with Programs, v. 21, no. 6, p. A323.

Mullican, W. F., III, Kreitler, C. W., Scanlon, B. R., Fisher, R. S., and Capuano, Regina, 1988, Hydrologic investigations at a proposed low-level radioactive waste disposal site in Trans-Pecos Texas (abs.): Geological Society of America, Abstracts with Programs, v. 20, no. 7, p. A172.

Scanlon, B. R., Mullican, W. F., III, Richter, B. C., and Kreitler, C. W., 1988, Preliminary results of unsaturated flow studies at a proposed low-level radioactive waste disposal site in Trans-Pecos Texas (abs.): Eos, v. 69, no. 44, p. 831.

Scanlon, B. R., 1987, Physical controls on hydrochemical variability in a karst aquifer (abs.): Geological Society of America, Abstracts with Programs, v. 19, no. 7, p. 831.

Scanlon, B. R., and Thrailkill, J, 1986, Chemical similarities between physically distinct spring types in a karst terrane: Geological Society of America, Abstracts with Programs, v. 18, no. 3, p. 264..

Scanlon, B. R., 1984, Controls of different groundwater level fluctuations in Carboniferous reef and argillaceous limestones, Maine River Basin, Southwest Ireland: Geological Society of America, Abstracts with Programs, v. 16, no. 3, p. 192.

Published Datasets

Scanlon, B. R., Reedy, R. C., Xu, P., Engle, M., Nicot, J.-P., Yoxtheimer, D., Yang, Q., and Ikonnikova, S., 2020, Datasets associated with investigating the potential for beneficial reuse of produced water from oil and gas extraction outside of the energy sector: Data in Brief, v. 30, no. 105406, 4 p., http://doi.org/10.1016/j.dib.2020.105406.