Stanford

Rosemary Knight

The George L. Harrington Professor, Professor of Geophysics and Senior Fellow at the Woods Institute for the Environment

Bio

BIO

I am working with my research group to find innovative ways of using geophysical methods to understand the hydrologic processes occurring in the top kilometer of Earth. In 1985 I coined a term to describe this work, “hydrogeophysics” - a sub-discipline that has grown dramatically over the past 30 years. A current focus of my group is the integration of geophysical imaging with remote sensing data for the evaluation and management of groundwater resources; this research is being done in partnerships with groundwater managers in the western U.S. Using laboratory and field experiments, and computer modeling, we are developing new methods for acquiring, processing, and interpreting geophysical data; and discovering new links between our geophysical images, and hydrologic properties and processes

ACADEMIC APPOINTMENTS

- Professor, Geophysics
- Senior Fellow, Stanford Woods Institute for the Environment
- Affiliate, Stanford Woods Institute for the Environment

ADMINISTRATIVE APPOINTMENTS

- Senior Fellow Stanford Institute for the Environment, Stanford University, (2005- present)
- Professor Geophysics, Stanford University, (2000- present)
- Professor, University of British Columbia, (1998-2000)
- Associate Professor, University of British Columbia, (1993-1998)
- Assistant Professor, University of British Columbia, (1988-1993)
- NSERC University Research Fellow, University of British Columbia, (1987-1988)
- Acting Assistant Professor Geophysics, Stanford University, (1984-1987)

HONORS AND AWARDS

- Gold Medal in Geological Sciences, Queen's University (1976)
- NSERC University Research Fellowship, Natural Sciences and Engineering Resources Council (1987)
- Distinguished Speaker Award, Society of Professional Well Log Analysts (1991)
- Best Paper Award, MGLS/KEGS Symposium, "Borehole Geophysics for Minerals, Geotechnical...", Toronto, MGLS/KEGS (1991)
- Teaching Excellence Award, University of British Columbia (1992)
- Distinguished Lecturer, Canadian Geophysical Union (1995)
- Best Paper Award Honorable Mention, Society of Exploration Geophysicists (1996)

- Killam Research Prize for research excellence, University of British Columbia (1996)
- Charles McDowell Medal, for excellence in pure and applied research, University of British Columbia (1996)
- Distinguished Lecturer, Society of Exploration Geophysicists (1998)
- Frank Frischknecht Award, Society of Exploration Geophysicists Near Surface Section (2002)
- Life Membership Award, Society of Exploration Geophysicists (2009)
- Honorary Life Membership Award, Society of Exploration Geophysicists, Near-Surface Geophysics Section (2012)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Invited Conference Keynote Speaker: Measuring K, Monitoring Head: Addressing a Growing Need for Characterization and Monitoring of Groundwater Aquifers, Novel Methods for Subsurface Characterization and Monitoring, Lawrence Kansas (2015 - 2015)
- Invited Conference Keynote: Advancing Geophysical Methods for Groundwater Evaluation and Management, Australian Society of Exploration Geophysicists (2015 - 2015)
- Organizing Committee, Workshop on Magnetic Resonance of the Subsurface, Aarhus, Denmark, June 2015 (2014 - 2015)
- Classes Without Quizzes, Stanford Reunion Weekend: Our Freshwater Future, Stanford Alumni Association (2014 - 2014)
- Invited Presentation: Electrical Resistivity Imaging of Saltwater and Freshwater Along the Coast of Monterey Bay, American Geophysical Union (2014 - 2014)
- Presentations at Stanford Connects, Monterey, CA, Stanford Alumni Association (2014 - 2014)
- Scientific Advisor, HyGEM Project: Integrating geophysics, geology, and hydrology for improved groundwater and environmental management, Aarhus University (2013 - present)
- Member, Undergraduate Advisory Committee, Stanford University (2013 - 2015)
- Special Co-Editor for issue on Magnetic Resonance of the Subsurface, Near-Surface Geophysics Journal (2012 - 2014)
- Invited Presentation: The Center for Groundwater Evaluation and Management - Developing Partnerships, Society of Exploration Geophysicists Annual Convention (2012 - 2012)
- Member (elected) Faculty Senate, Stanford University (2011 - 2013)
- Chair (elected) Faculty Senate, Stanford University (2011 - 2012)
- Chair, Organizing Committee, SEG-AGU Hydrogeophysics Workshop, Boise ID, July, Society of Economic Geologists and American Geophysical Union (2011 - 2012)
- Member, Undergraduate Advisory Committee, Stanford University (2011 - 2012)
- Co-organizer, Session Chair, The Use of Geophysical Methods for Evidence-Based Groundwater Management, Charleston, S.C., April 10-14, Symposium for the Application of Geophysics to Environmental and Engineering Problems (2011 - 2011)
- Invited Presentation, Annual Convention, Nuclear Magnetic Resonance: From Pore-Scale Physics to Field-Scale Hydrogeophysics, Society of Exploration Geophysicists (2011 - 2011)
- Invited Presentation: The Sensitivity of Dielectric and NMR Measurements to Sorption at the Solid/Water Interface, American Geophysical Union: (2011 - 2011)
- Member, DARE Fellowship Advisory Committee, Office of Graduate Education, Stanford University (2011 - 2011)
- Chair, Dept of Energy Earth Sciences Council, Stanford University (2010 - 2012)
- Earth Sciences Council, School of Earth Sciences, Stanford University (2010 - 2012)
- Seminar Co-ordinator, Department of Geophysics, Stanford University (2010 - 2011)
- Coursework Advisory Committee, Stanford University (2009 - 2011)
- Invited Presentation & Panel Discussion: SEG Forum, Managing Our Groundwater Resources, Society of Exploration Geophysicists (2009 - 2009)
- Invited Presentation: The Use Of Geophysical Methods To Characterize Hydrogeologic Systems Across Multiple Scales, American Geophysical Union Joint Assembly (2009 - 2009)
- Invited Presentation: The Use of Geophysical Methods for Groundwater Evaluation and Management, University of Texas at Austin, Jackson School of Geosciences (2009 - 2009)
- The Use of Geophysical Methods for Hydrogeologic Applications, B.C. Geophysical Society (2009 - 2009)
- Faculty Lead, Shared Field Measurement Facility, School of Earth Sciences, Stanford University (2008 - 2011)

- Future Focus Task Force Member, American Geophysical Union (2008 - 2009)
- Co-Organizer (with P Kitanidis): Uncommon Dialogue: Comprehensive Studies of Aquifer Depletion and Desalinization, Woods Institute for the Environment, Dec. 4-5, Stanford University (2008 - 2008)
- Invited Presentation: I-Earth – Introduction to Planet Earth, Boston, MA, American Association for the Advancement of Science (2008 - 2008)
- Faculty Lead (with R. Luthy), Freshwater Initiative, Woods Institute for the Environment, Stanford University (2007 - 2009)
- Co-Organizer (with R. Luthy), The Water Seminar, Woods Institute for the Environment, Stanford University (2007 - 2008)
- Invited Keynote Speaker: The Development of Geophysical Methods for Hydrogeologic Applications, Bicentennial Conference, London, England, 10-12 September, The Geological Society of London (2007 - 2007)
- Invited Presentation, Annual Meeting: Integration of Remote Sensing, Hydrologic, and Geophysical Data to Determine the Time-Varying Behavior of a Hydrogeologic System, Geological Society of America (2007 - 2007)
- Invited Presentation: Workshop on Three-dimensional Geologic Mapping for Groundwater Applications, Annual Meeting, Denver, Colorado: The Use of Ground-Penetrating Radar Data in the Development of Facies-Based Hydrogeologic Models, Geological Society of America (2007 - 2007)
- Speaker, Arthur Walker Seminar Series (Spring), Stanford University (2007 - 2007)
- Faculty Lead, Introduction to Planet Earth, Stanford-wide educational initiative, Stanford University (2006 - present)
- Steering Committee, Stanford K-12 Initiative, Stanford University (2006 - 2010)
- Co-Organizer Research Workshop on Hydrogeophysics, July, Vancouver Canada, Hydrogeophysics Research Group (2006 - 2006)
- Co-organizer, Session Chair, Watershed Geophysics, Seattle, WA, April 2-6, Symposium for the Application of Geophysics to Environmental and Engineering Problems (2006 - 2006)
- Invited Lecture, The Support Volume of Geophysical Measurement: How and Why to Define It, American Geophysical Union: (2006 - 2006)
- Invited Union Lecture, Near-Surface Geophysics: Advancing Earth Sciences Through Advances in Imaging, American Geophysical Union: (2006 - 2006)
- Invited lecture, Annual Meeting, Philadelphia: Characterizing Hydrogeologic Heterogeneity Using Geophysical Methods: From Laboratory-Scale Observations to Field-Scale Applications, Geological Society of America (2006 - 2006)
- Invited lecture, Near-Surface Geophysics: Electromagnetic Experiments in the Laboratory and Into the Field, U.C. Berkeley (2006 - 2006)
- Invited presentation, Ground Water Expo, Las Vegas NV, Dec 5-8, Hydrogeophysics Overview: The Use of Geophysics in Groundwater Evaluation and Management, National Ground Water Association (2006 - 2006)
- Chair, Department of Geophysics, Stanford University (2005 - 2008)
- Chairperson, Near-Surface Geophysics Focus Group, American Geophysical Union (2005 - 2008)
- Faculty Lead, Stanford Syllabus Project, Stanford University (2005 - 2008)
- SAGE ((Summer) | of Applied Geophysical Experience) Advisory Committee, Summer of Applied Geophysical Experience (SAGE) (2005 - 2007)
- Invited Lecture: An Emerging Role for Geophysics in the Evaluation and Management of Water Resources, Sandia National Lab Geosciences Distinguished Lecture Series (2005 - 2005)
- Invited lecture, An Emerging Role for Geophysics in Watershed Scale Hydrology, American Geophysical Union: (2005 - 2005)
- Invited lecture, Dept of Earth, Atmosphere and Planetary Sciences: Using Ground Penetrating Radar to Quantify Spatial Variation in Water Content, MIT (2005 - 2005)
- Invited lecture: The Use of Geophysical Methods for Quantifying the Spatial Distribution in Water Content, Oregon State University, Corvallis (2005 - 2005)
- Steering Committee of the Instrumentation Working Group of the future National Center for Hydrologic Synthesis (NCHS), National Center for Hydrologic Synthesis (NCHS) (2005 - 2005)
- Member, University Budget Group, Stanford University (2004 - present)
- Area 1 (Intro to the Humanities) Governance Board member, Stanford University (2004 - 2006)
- Chair, University Committee on Undergraduate Standards and Policy (C-USP), Stanford University (2004 - 2006)
- Associate Editor, Water Resources Research (2004 - 2005)
- Undergraduate Advisory Committee Member, Stanford University (2004 - 2005)
- Academic Review Committee, Hydrology and Water Resources, University of Arizona (2004 - 2004)
- Invited lecture: Groundwater Geophysics - Finding New Ways to See Into the Earth., Engineers without Frontiers (2004 - 2004)

- Member, Geophysics Dept. Review Committee, Lawrence Berkeley National Lab (2004 - 2004)
- Director, Hydrologic Measurement Facility for Geophysics, NSF-supported Consortium of Universities for the Advancement of Hydrologic Sciences, National Science Foundation (2003 - 2008)
- Chair, School of Earth Sciences Sub-Committee on Academic Programs, Stanford University (2003 - 2004)
- Invited Plenary Speaker: Inland Northwest Research Alliance Subsurface Science Symposium, Salt Lake City, Utah: Geophysical Images of the Near-Surface -- What are We Really Seeing?, Inland Northwest Research Alliance (2003 - 2003)
- Invited lecture: The Use of Ground Penetrating Radar for Near-Surface Studies, California State University, San Diego (2003 - 2003)
- Invited speaker,Physics Department: Environmental Geophysics, Stanford University (2003 - 2003)
- Organizer DOE Workshop: Geophysical Images of the Near-Surface: What are we really measuring?; Dec 4-7, Berkeley, CA, Department of Energy (2003 - 2003)
- Public Lecture: Geophysical Images of Water, New Ways to See into the Earth; Dept. of Earth and Ocean Sciences Lecture: The Use of Ground Penetrating Radar for the Development of Hydrogeologic Models; Dept. of Physics Lecture: Nuclear Magnetic Resonance for Environmental Applications, Visiting Scholar, University of Victoria (2003 - 2003)
- Member (elected), Academic Senate, Stanford University (2002 - 2006)
- Associate Chair for Undergraduate Programs, Geophysics Dept., Stanford University (2002 - 2005)
- C-USP Liason to Area 1 (Intro to the Humanities) Governance Board member, Stanford University (2002 - 2004)
- Co-organizer Near-Surface Geophysics Sessions, AGU-CGU-SEG Assembly, Montreal, AGU-CGU-SEG Assembly (2002 - 2004)
- Committee Founder, Inter-Society Committee for the Advancement of Near-Surface Geophysics, to promote and advance the science of near-surface geophysics, Inter-Society Committee for the Advancement of Near-Surface Geophysics (2002 - 2004)
- Member, School of Earth Sciences Diversity Committee, Stanford University (2002 - 2004)
- Member, University Committee on Undergraduate Standards and Policy (C-USP), Stanford University (2002 - 2004)
- Keynote speaker: From the Laboratory to the Field: Spatial Heterogeneity in Geophysical Data, Inland Northwest Research Alliance Subsurface Science Symposium, Boise Idaho, Inland Northwest Research Alliance Subsurface Science Symposium (2002 - 2002)
- Member, Dept of Energy Earth Sciences Council, Stanford University (2001 - 2012)
- Sexual Harrassment Officer, School of Earth Sciences, Stanford University (2001 - 2003)
- Member, Computer Committee, School of Earth Sciences, Stanford Unversity (2001 - 2002)
- Vice-President, Society of Exploration Geophysicists (2001 - 2002)
- Invited presentation: The Use of Ground Penetrating Radar Data for the Development of Hydrogeologic Models, , December, American Geophysical Union (2001 - 2001)
- Invited speaker, Workshop on Subsurface Flow and Transport Phenomena, The use of ground penetrating radar data to quantify the scale-dependent spatial heterogeneity of the subsurface, Technical University of Delft, Holland: (2000 - 2000)
- Organizing Committee for Gordon Conference: Transport in Permeable Media, August, Gordon Conference (2000 - 2000)
- Visiting Advisory Committee, Dept. of Geophysics, Colorado School of Mines (1999 - 2005)
- Member of Dean's Advisory Committee for Faculty of Science, University of British Columbia (1999 - 2000)
- Faculty Advisor for Student Chapter of Environmental and Engineering Geophysical Society, University of British Columbia (1998 - 2000)
- Member of Executive Committee for Dept. of Earth and Ocean Sciences, University of British Columbia (1998 - 2000)
- Member, Space Committee, University of British Columbia (1998 - 2000)
- Chair, Appointment Committee for Lecturer, University of British Columbia (1998 - 1999)
- Distinguished Lecturer, invited to give 15 lectures, Society of Exploration Geophysicists (1998 - 1999)
- Member, Re-appointment Committee, University of British Columbia (1998 - 1999)
- Technical Organizing Committee for Annual Conference, Symposium on Applications of Geophysics to Environmental and Engineering Problems, Environmental and Engineering Geophysical Society (1998 - 1999)
- Invited speaker, Gordon Conference on Modeling of Flow in Permeable Media, New Hampshire, Gordon Conference (1998 - 1998)
- Guest editor, special issue on Near-Surface Geophysics, The Leading Edge (1997 - 1997)

- Invited speaker, Phoebe Apperson Hearst Lecture, U.C. Berkeley, Dept of Materials Science and Mineral Engineering, U.C. Berkeley (1997 - 1997)
- Member, scientific program review panel, U.S. Dept. of Energy's Environmental Management Science Program, Department of Energy (1997 - 1997)
- Editorial board, The Leading Edge (1996 - 2000)
- Member, Lithoprobe Scientific Advisory Committee (1996 - 2000)
- Member, U.S. National Research Council Committee on Non-Invasive Characterization of the Shallow Subsurface for Environmental and Engineering Applications, U.S. National Research Council (1995 - 1999)
- Keynote Speaker: 48th Conference, Vancouver: An Assessment of Geophysical Techniques for the Direct Detection of Groundwater Contaminants: A Rock Physics Perspective, Canadian Geotechnical Society (1995 - 1995)
- Keynote Speaker: BHP Workshop on Women in Science, Tucson, Arizona, BHP Billiton (1995 - 1995)
- NSERC-sponsored Canada-Mexico Workshop on the Applications of the Physics of Porous Media, PuertoVallerta, Mexico: Elastic Wave Velocities and Fluid Distribution: at the Laboratory and Reservoir Scale, NSERC (1995 - 1995)
- Distinguished Lecturer, 13 lectures given, Canadian Geophysical Union (1994 - 1995)
- Vice President of Near-Surface Geophysics Section, American Geophysical Union (1994 - 1995)
- Faculty founder and advisor of UBC student chapter of Environmental and Engineering Geophysical Society, University of British Columbia (1993 - 2000)
- Conference Steering Committee for Symposium on the Applications of Geophysics to Environmental and Engineering Problems, Environmental and Engineering Geophysical Society (1993 - 1995)
- IIMS, U. Manitoba Conference on Porous Media and the Environment: The Link Between Geophysical Data and Pore-Scale Fluid Distribution, IIMS, Univeristy of Manitoba (1993 - 1993)
- Member, Scientific Program Review Panel, U.S. Department of Energy’s Program on Basic Research, Department of Energy (1993 - 1993)
- Co-chair of Research Committee, Environmental and Engineering Geophysical Society (1992 - 1995)
- Board of Directors, Director-at-Large,, Society of Professional Well Log Analysts (1992 - 1993)
- Public Relations Committee member, Society of Professional Well Log Analysts (1992 - 1993)
- Scholarships and Grants Committee member, Society of Professional Well Log Analysts (1992 - 1993)
- Workshop Technical Committee, Workshop on the Physics of Laboratory and Borehole Rock Measurements, August, Society of Professional Well Log Analysts (1992 - 1993)
- Publications Committee member, Society of Professional Well Log Analysts (1990 - 1993)
- Member, Society of Core Analysts, Dallas, Texas, (1990 - 1990)
- Technology Committee member, Society of Professional Well Log Analysts (1989 - 1992)
- Conference on Electrical Properties, Kerrville Texas, Society of Professional Well Log Analysts (1988 - 1988)

PROFESSIONAL EDUCATION

- Ph.D., Stanford University , Geophysics (1985)
- M.S., Queen's University, Kingston, Ontario Canada , Geological Sciences (1978)
- B.S., Queen's University, Kingston, Ontario Canada , Geological Sciences (1976)

LINKS

- Environmental Geophysics: https://enviro.stanford.edu/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

I am working with my students to find ways of using geophysical methods to understand the processes occurring in the top 100 meters of Earth. With geophysical methods we can non-invasively acquire images of this near-surface region, allowing us to monitor systems and extract information that

cannot be obtained using more traditional methods of drilling and direct sampling. One of our specific interests is the use of geophysical imaging for the evaluation and management of our groundwater resources. Through lab and field experiments, and computer modeling, we are developing new methods for acquiring, processing, and interpreting geophysical data. We are also conducting the laboratory and field experiments needed to determine the link between our geophysical images and subsurface properties and processes.

Teaching

An interest of mine in teaching is ensuring that all university graduates are "geo-literate." Thus a focus of my teaching has always been the education of those who are not Earth science majors. In 2000 I developed and now teach The Water Course, where students complete projects with web posters (http://pangea.stanford.edu/GP/courses/GP104/waterscape/) that describe the source, quantity, and quality of water in their hometowns. Through this course students gain a perspective on water-related issues around the world. I am now leading an effort at Stanford, referred to as I-Earth (Introduction to Planet Earth), where our objective is to offer a set of courses that explore the intersection between natural and human systems. My ultimate goal is to have one of these courses required for all students, so that an understanding of planet Earth is recognized as essential to education in the 21st century.

Professional Activities

Chair, Stanford Faculty Senate (2011-12); Chair, US Dept of Energy Earth Science Council (2010-); Chair, Organizing Committee AGU-SEG Hydrogeophysics Workshop (2011-12); Senior Fellow, Woods Institute for the Environment (2005-present); Co-founder and Chair, Near-Surface Geophysics Focus Group, American Geophysical Union (2005-2007); Stanford Budget Group (2004-); Stanford Faculty Senate (2002-06); Chair, Stanford Committee on Undergraduate Standards and Policy (2004-06); PI, CUAHSI Hydrologic Measurement Facility-Geophysics (2005-); co-organizer, Society of Exploration Geophysicists (SEG) Research Workshop on Hydrogeophysics (2006); U.S. Dept. of Energy Earth Sciences Council (2001-); associate editor, Water Resources Research (2004); vice-president, SEG (2001-02); Frank Frischknecht Award, SEG (2002); editorial board, The Leading Edge (1996-2000); distinguished lecturer, SEG (1998); National Academy of Sciences Committee on Non-Invasive Characterization of the Shallow Subsurface for Environmental and Engineering Applications (1995-99); distinguished lecturer, Canadian Geophysical Union (1994-95); founding member, Environmental and Engineering Geophysical Society (1991)

Teaching

COURSES

2025-26

- Environmental Geophysics: GEOPHYS 385B (Aut, Win, Spr)
- Taking the Pulse of the Planet: GEOPHYS 115, GEOPHYS 231 (Aut)

2024-25

- Environmental Geophysics: GEOPHYS 385B (Aut, Win, Spr)
- Frontiers of Geophysical Research at Stanford: GEOPHYS 101, GEOPHYS 201 (Aut)
- Taking the Pulse of the Planet: GEOPHYS 115 (Win)

2023-24

- Environmental Geophysics: GEOPHYS 385B (Aut, Win, Spr)
- Near-Surface Geophysics: Imaging Groundwater Systems: GEOPHYS 190 (Spr)
- Taking the Pulse of the Planet: GEOPHYS 115 (Win)

2022-23

- Environmental Geophysics: GEOPHYS 385B (Aut, Win, Spr)

- Near-Surface Geophysics: Imaging Groundwater Systems: GEOPHYS 190 (Spr)
- Taking the Pulse of the Planet: GEOPHYS 115 (Win)

STANFORD ADVISEES

Sylvia Zhang

Postdoctoral Faculty Sponsor

Joseph Janssen

Doctoral Dissertation Advisor (AC)

Becca Prentice

Master's Program Advisor

Felix Schwer

Doctoral (Program)

Jonathan Mells, Rishudh Thakur

Publications

PUBLICATIONS

- **Evaluation of models for estimating hydraulic conductivity in glacial aquifers with NMR logging.** *Ground water*
  Kendrick, A. K., Knight, R., Johnson, C. D., Liu, G., Hart, D. J., Butler, J. J., Hunt, R. J.
  2023
- **Remote Sensing-Based Estimates of Changes in Stored Groundwater at Local Scales: Case Study for Two Groundwater Subbasins in California's Central Valley** *REMOTE SENSING*
  Ahamed, A., Knight, R., Alam, S., Morphew, M., Susskind, T.
  2023; 15 (8)
- **Airborne geophysical method images fast paths for managed recharge of California's groundwater** *ENVIRONMENTAL RESEARCH LETTERS*
  Knight, R., Steklova, K., Miltenberger, A., Kang, S., Goebel, M., Fogg, G.
  2022; 17 (12)
- **Corrigendum to "Assessing the utility of remote sensing data to accurately estimate changes in groundwater storage" [Sci. Total Environ. 807 (2022) 150635].** *The Science of the total environment*
  Ahamed, A., Knight, R., Alam, S., Pauloo, R., Melton, F.
  2022; 847: 157678
- **Development and Application of a 1D Compaction Model to Understand 65 Years of Subsidence in the San Joaquin Valley** *WATER RESOURCES RESEARCH*
  Lees, M., Knight, R., Smith, R.
  2022; 58 (6)
- **Improved Imaging of the Large-Scale Structure of a Groundwater System With Airborne Electromagnetic Data** *WATER RESOURCES RESEARCH*
  Kang, S., Knight, R., Goebel, M.
  2022; 58 (4)
- **Managed aquifer recharge site assessment with electromagnetic imaging: Identification of recharge flow paths** *VADOSE ZONE JOURNAL*
  Pepin, K., Knight, R., Goebel-Szenher, M., Kang, S.
  2022
- **The development of a machine-learning approach to construct a field-scale rock-physics transform** *GEOPHYSICS*
  Gottschalk, I., Knight, R.

2022; 87 (2): MR35-MR48

- **Constructing the resistivity-to-sediment-type transform for the interpretation of airborne electromagnetic data** *GEOPHYSICS*
  Dewar, N., Knight, R.
  2022; 87 (2): IM37-IM55
- **Apportioning deformation among depth intervals in an aquifer system using InSAR and head data** *HYDROGEOLOGY JOURNAL*
  Smith, R. G., Hashemi, H., Chen, J., Knight, R.
  2021
- **Enhancing the resolving ability of electrical resistivity tomography for imaging saltwater intrusion through improvements in inversion methods: A laboratory and numerical study** *GEOPHYSICS*
  Goebel, M., Knight, R., Kang, S.
  2021; 86 (5): WB101-WB115
- **Recharge site assessment through the integration of surface geophysics and cone penetrometer testing** *VADOSE ZONE JOURNAL*
  Goebel, M., Knight, R.
  2021
- **The effect of power lines on time-domain airborne electromagnetic data** *GEOPHYSICS*
  Kang, S., Dewar, N., Knight, R.
  2021; 86 (2): E123-E141
- **Assessing the utility of remote sensing data to accurately estimate changes in groundwater storage.** *The Science of the total environment*
  Ahamed, A., Knight, R., Alam, S., Pauloo, R., Melton, F.
  2021: 150635
- **Estimation of the top of the saturated zone from airborne electromagnetic data** *GEOPHYSICS*
  Dewar, N., Knight, R.
  2020; 85 (5): EN63–EN76
- **Using an airborne electromagnetic method to map saltwater intrusion in the northern Salinas Valley, California** *GEOPHYSICS*
  Gottschalk, I., Knight, R., Asch, T., Abraham, J., Cannia, J.
  2020; 85 (4): B119–B131
- **Assessment of NMR logging for estimating hydraulic conductivity in glacial aquifers.** *Ground water*
  Kendrick, A. K., Knight, R., Johnson, C. D., Liu, G., Knobbe, S., Hunt, R. J., Butler, J. J.
  2020
- **TOWARDS SUSTAINABLE GROUNDWATER MANAGEMENT: PREDICTING DEFORMATION SCENARIOS WITH COUPLED HYDROGEOPHYSICAL MODELS**
  Smith, R., Knight, R., IEEE
  IEEE.2020: 5061-5064
- **Quantification of Peat Thickness and Stored Carbon at the Landscape Scale in Tropical Peatlands: A Comparison of Airborne Geophysics and an Empirical Topographic Method** *JOURNAL OF GEOPHYSICAL RESEARCH-EARTH SURFACE*
  Silvestri, S., Knight, R., Viezzoli, A., Richardson, C. J., Anshari, G. Z., Dewar, N., Flanagan, N., Comas, X.
  2019
- **Mapping saltwater intrusion with an airborne electromagnetic method in the offshore coastal environment, Monterey Bay, California** *JOURNAL OF HYDROLOGY-REGIONAL STUDIES*
  Goebel, M., Knight, R., Halkjaer, M.
  2019; 23
- **Assessment of Managed Aquifer Recharge Sites Using a New Geophysical Imaging Method** *VADOSE ZONE JOURNAL*
  Behroozmand, A. A., Auken, E., Knight, R.
  2019; 18 (1)
- **Mapping Aquifer Systems with Airborne Electromagnetics in the Central Valley of California** *GROUNDWATER*
  Knight, R., Smith, R., Asch, T., Abraham, J., Cannia, J., Viezzoli, A., Fogg, G.
  2018; 56 (6): 893–908

- **Overpumping leads to California groundwater arsenic threat.** *Nature communications*
  Smith, R., Knight, R., Fendorf, S.
  2018; 9 (1): 2089
- **Mapping Aquifer Systems with Airborne Electromagnetics in the Central Valley of California.** *Ground water*
  Knight, R., Smith, R., Asch, T., Abraham, J., Cannia, J., Viezzoli, A., Fogg, G.
  2018
- **The Temporal and Spatial Variability of the Confined Aquifer Head and Storage Properties in the San Luis Valley, Colorado Inferred From Multiple InSAR Missions** *WATER RESOURCES RESEARCH*
  Chen, J., Knight, R., Zebker, H. A.
  2017; 53 (11): 9708–20
- **Bias Correction of Long-Term Satellite Monthly Precipitation Product (TRMM 3B43) over the Conterminous United States** *JOURNAL OF HYDROMETEOROLOGY*
  Hashemi, H., Nordin, M., Lakshmi, V., Huffman, G. J., Knight, R.
  2017; 18 (9): 2491–2509
- **Investigating the effect of internal gradients on static gradient nuclear magnetic resonance diffusion measurements** *GEOPHYSICS*
  Fay, E. L., Grombacher, D. J., Knight, R. J.
  2017; 82 (5): D293–D301
- **A Laboratory Study of the Link Between NMR Relaxation Data and Pore Size In Carbonate Skeletal Grains and Micrite** *PETROPHYSICS*
  El-Husseiny, A., Knight, R.
  2017; 58 (2): 116-125
- **Estimating the permanent loss of groundwater storage in the southern San Joaquin Valley, California** *WATER RESOURCES RESEARCH*
  Smith, R. G., Knight, R., Chen, J., Reeves, J. A., Zebker, H. A., Farr, T., Liu, Z.
  2017; 53 (3): 2133-2148
- **Successful Sampling Strategy Advances Laboratory Studies of NMR Logging in Unconsolidated Aquifers** *Geophysical Research Letters*
  Behroozmand, A. A., Knight, R., Müller-Petke, M., Auken, E., Barfod, A., Ferré, T., Vilhelmsen, T., Johnson, C., Christiansen, A. V.
  2017
- **Integrating Non-Colocated Well and Geophysical Data to Capture Subsurface Heterogeneity at an Aquifer Recharge and Recovery Site** *Journal of Hydrology*
  Gottschalk, I. P., Hermans, T., Knight, R., Caers, J., Cameron, D. A., Regnery, J., McCray, J. E.
  2017; 555: 407-419
- **Characterizing Heterogeneity in Infiltration Rates During Managed Aquifer Recharge** *GROUNDWATER*
  Mawer, C., Parsekian, A., Pidlisecky, A., Knight, R.
  2016; 54 (6): 818-829
- **Detecting and quantifying organic contaminants in sediments with nuclear magnetic resonance** *GEOPHYSICS*
  Fay, E. L., Knight, R. J.
  2016; 81 (6): EN87-EN97
- **The impact of pore-scale magnetic field inhomogeneity on the shape of the nuclear magnetic resonance relaxation time distribution** *GEOPHYSICS*
  Grombacher, D., Fay, E., Nordin, M., Knight, R.
  2016; 81 (5): EN43-EN55
- **Models and methods for predicting hydraulic conductivity in near-surface unconsolidated sediments using nuclear magnetic resonance** *GEOPHYSICS*
  Maurer, J., Knight, R.
  2016; 81 (5): D503-D518
- **Frequency cycling for compensation of undesired off-resonance effects in surface nuclear magnetic resonance** *GEOPHYSICS*
  Grombacher, D., Mueller-Petke, M., Knight, R.
  2016; 81 (4): WB33-WB48

- **Confined aquifer head measurements and storage properties in the San Luis Valley, Colorado, from spaceborne InSAR observations** *WATER RESOURCES RESEARCH*
  Chen, J., Knight, R., Zebker, H. A., Schreueder, W. A.
  2016; 52 (5): 3623-3636
- **Electrical Resistivity Imaging of Seawater Intrusion into the Monterey Bay Aquifer System** *GROUNDWATER*
  Pidlisecky, A., Moran, T., Hansen, B., Knight, R.
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