Stanford



Rosemary Knight

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

Curriculum Vitae available Online

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 all forms of geophysical data - acquired using satellite, airborne, and land/water-based platforms - for groundwater science and management; 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 kilometer 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

2026-27

- Environmental Geophysics: GEOPHYS 385B (Aut, Win, Spr)
- Near-Surface Geophysics: Imaging Groundwater Systems: GEOPHYS 190 (Spr)
- Taking the Pulse of the Planet: GEOPHYS 115, GEOPHYS 231 (Win)

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)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Joseph Janssen

Doctoral Dissertation Advisor (AC)

Becca Prentice

Master's Program Advisor

Callum Hood-Cree, Felix Schwer

Doctoral (Program)

Jonathan Mells, Rishudh Thakur

Publications

PUBLICATIONS

- **A New Approach to Transforming Airborne Electromagnetic Data into Models of Sediment Type.** *Ground water*
  Prentice, R., Knight, R., Kitanidis, P.
  2026
- **From knowledge into action: The launching of the state-wide airborne electromagnetic project in California** *LEADING EDGE*
  Knight, R.
  2026; 45 (3): 148-155
- **Identifying Baseflow Source Areas Using Remotely Sensed and Ground-Based Hydrologic Data and Models** *HYDROLOGICAL PROCESSES*
  Ahamed, A., Knight, R., Janssen, J.
  2025; 39 (11)
- **Mapping sediment type at a recharge site with a towed electromagnetic system** *AGRICULTURAL WATER MANAGEMENT*
  Goebel, M., Peralta, J., Kang, S., Knight, R.
  2025; 319
- **Harnessing the Power of Geophysical Imaging to Recharge California's Groundwater** *EARTH AND SPACE SCIENCE*
  Kang, S., Goebel, M., Knight, R.
  2025; 12 (4)
- **Measurement of vadose zone water content with direct-push nuclear magnetic resonance logging** *ENVIRONMENTAL RESEARCH COMMUNICATIONS*
  Osterman, G., Knight, R.
  2025; 7 (1)
- **Quantification of record-breaking subsidence in California's San Joaquin Valley** *COMMUNICATIONS EARTH & ENVIRONMENT*
  Lees, M., Knight, R.
  2024; 5 (1)
- **Exploring the InSAR signature associated with river-sourced recharge in California's San Joaquin Valley** *ENVIRONMENTAL RESEARCH LETTERS*
  Neely, W. R., Knight, R., Kang, S., Goebel, M.
  2024; 19 (7)
- **Identifying baseflow source areas using remotely sensed and ground-based hydrologic data** *HYDROLOGICAL PROCESSES*
  Ahamed, A., Knight, R., Alam, S.
  2024; 38 (2)

- **Integrating shallow head measurements and InSAR data to quantify groundwater-storage change in San Joaquin Valley, California (USA)** *HYDROGEOLOGY JOURNAL*
  Lees, M., Knight, R.
  2023
- **Isolating the Poroelastic Response of the Groundwater System in InSAR Data From the Central Valley of California** *GEOPHYSICAL RESEARCH LETTERS*
  Kang, S., Knight, R.
  2023; 50 (9)
- **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
- **Exploring the Model Space of Airborne Electromagnetic Data to Delineate Large-Scale Structure and Heterogeneity Within an Aquifer System** *WATER RESOURCES RESEARCH*
  Kang, S., Knight, R., Greene, T., Buck, C., Fogg, G.
  2021; 57 (10)
- **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.

2016; 54 (2): 255-261

- **NMR Logging to Estimate Hydraulic Conductivity in Unconsolidated Aquifers** *GROUNDWATER*
  Knight, R., Walsh, D. O., Butler, J. J., Grunewald, E., Liu, G., Parsekian, A. D., Reboulet, E. C., Knobbe, S., Barrows, M.
  2016; 54 (1): 104-114
- **A persistent scatterer interpolation for retrieving accurate ground deformation over InSAR-decorrelated agricultural fields** *GEOPHYSICAL RESEARCH LETTERS*
  Chen, J., Zebker, H. A., Knight, R.
  2015; 42 (21): 9294-9301
- **The impact of off-resonance effects on water content estimates in surface nuclear magnetic resonance** *GEOPHYSICS*
  Grombacher, D., Knight, R.
  2015; 80 (6): E329-E342
- **Investigating internal magnetic field gradients in aquifer sediments** *GEOPHYSICS*
  Fay, E. L., Knight, R. J., Song, Y.
  2015; 80 (3): D281-D294
- **Relating relative hydraulic and electrical conductivity in the unsaturated zone** *WATER RESOURCES RESEARCH*
  Mawer, C., Knight, R., Kitanidis, P. K.
  2015; 51 (1): 599-618
- **Frequency-cycling for compensation of off-resonance effects in surface NMR** *Geophysics SUBMITTED*
  Grombacher, D., Mueller-Petke, M., Knight, R.
  2015
- **The impact of off-resonance effects on water content estimates in surface nuclear magnetic resonance** *Geophysics IN REVIEW*
  Grombacher, D., Knight, R.
  2015
- **Basin scale geophysical imaging of saltwater intrusion, Monterey County, CA** *Groundwater IN REVISION*
  Pidlisecky, A., Moran, T., Hanson, B., Knight, R.
  2015
- **Bootstrap calibration and uncertainty estimation of downhole NMR hydraulic conductivity estimates in an unconsolidated aquifer.** *Ground water*
  Parsekian, A. D., Dlubac, K., Grunewald, E., Butler, J. J., Knight, R., Walsh, D. O.
  2015; 53 (1): 111-121
- **Investigating internal magnetic field gradients in aquifer sediments** *Geophysics Re-submitted after minor revisions*
  Fay, E., Knight, R., Song, Y.
  2015
- **NMR Logging to Estimate Hydraulic Conductivity in Unconsolidated Aquifers** *Groundwater*
  Knight, R., Walsh, D., Butler, Jr., J., Grunewald, E., Liu, G., Reboulet, E., Knobbe, S., Barrows, M.
  2015
- **Basin scale geophysical imaging of saltwater intrusion, Monterey County, CA** *Groundwater, IN REVISION*
  Pidlisecky, A., Moran, T., Hanson, B., Knight, R.
  2015
- **Relating relative hydraulic and electrical conductivity in the unsaturated zone** *Water Resources Research*
  Mawer, C., Knight, R., Kitanidis, P.
  2015; 51 : 599–618
- **Imparting a phase during excitation for improved resolution in surface nuclear magnetic resonance** *GEOPHYSICS*
  Grombacher, D., Walbrecker, J. O., Knight, R.
  2014; 79 (6): E329-E339

- **Monitoring managed aquifer recharge with electrical resistivity probes** *INTERPRETATION-A JOURNAL OF SUBSURFACE CHARACTERIZATION*
  Nenna, V., Pidlisecky, A., Knight, R.
  2014; 2 (4): T155-T166
- **An Analysis of the Uncertainty in InSAR Deformation Measurements for Groundwater Applications in Agricultural Areas** *IEEE JOURNAL OF SELECTED TOPICS IN APPLIED EARTH OBSERVATIONS AND REMOTE SENSING*
  Reeves, J. A., Knight, R., Zebker, H. A.
  2014; 7 (7): 2992-3001
- **Geophysical and Hydrochemical Identification of Flow Paths with Implications for Water Quality at an ARR Site** *GROUND WATER MONITORING AND REMEDIATION*
  Parsekian, A. D., Regnery, J., Wing, A. D., Knight, R., Drewes, J. E.
  2014; 34 (3): 105-116
- **Estimating temporal changes in hydraulic head using InSAR data in the San Luis Valley, Colorado** *WATER RESOURCES RESEARCH*
  Reeves, J. A., Knight, R., Zebker, H. A., Kitanidis, P. K., Schreueder, W. A.
  2014; 50 (5): 4459-4473
- **Direct measurement of internal magnetic fields in natural sands using scanning SQUID microscopy.** *Journal of magnetic resonance*
  Walbrecker, J. O., Kalisky, B., Grombacher, D., Kirtley, J., Moler, K. A., Knight, R.
  2014; 242: 10-17
- **The impact of prepolarization on Earth's field laboratory nuclear-magnetic-resonance relaxation experiments** *GEOPHYSICS*
  Walbrecker, J. O., Knight, R., Grunewald, E.
  2014; 79 (3): EN39-EN48
- **A numerical study of the relationship between NMR relaxation and permeability in sands and gravels** *NEAR SURFACE GEOPHYSICS*
  Dlubac, K., Knight, R., Keating, K.
  2014; 12 (2): 219-230
- **Advancement and validation of surface nuclear magnetic resonance spin-echo measurements of T-2** *GEOPHYSICS*
  Grunewald, E., Knight, R., Walsh, D.
  2014; 79 (2): EN15-EN23
- **Quantifying background magnetic-field inhomogeneity for improved interpretation of free induction decay measurements** *GEOPHYSICS*
  Grombacher, D., Walbrecker, J. O., Knight, R.
  2014; 79 (1): E11-E21
- **Demonstration of a value of information metric to assess the use of geophysical data for a groundwater application** *GEOPHYSICS*
  Nenna, V., Knight, R.
  2014; 79 (1): E51-E60
- **The inversion of surface-NMR T-1 data for improved aquifer characterization** *GEOPHYSICS*
  Mueller-Petke, M., Walbrecker, J. O., Knight, R.
  2013; 78 (6): EN83-EN94
- **Calibrating a Salt Water Intrusion Model with Time-Domain Electromagnetic Data** *GROUND WATER*
  Herckenrath, D., Odlum, N., Nenna, V., Knight, R., Auken, E., Bauer-Gottwein, P.
  2013; 51 (3): 385-397
- **A methodology for quantifying the value of spatial information for dynamic Earth problems** *STOCHASTIC ENVIRONMENTAL RESEARCH AND RISK ASSESSMENT*
  Trainor-Guitton, W. J., Mukerji, T., Knight, R.
  2013; 27 (4): 969-983
- **Use of NMR logging to obtain estimates of hydraulic conductivity in the High Plains aquifer, Nebraska, USA** *WATER RESOURCES RESEARCH*
  Dlubac, K., Knight, R., Song, Y., Bachman, N., Grau, B., Cannia, J., Williams, J.
  2013; 49 (4): 1871-1886

- **Application and evaluation of electromagnetic methods for imaging saltwater intrusion in coastal aquifers: Seaside Groundwater Basin, California** *GEOPHYSICS*
  Nenna, V., Herckenrath, D., Knight, R., Odlum, N., McPhee, D.
  2013; 78 (2): B77-B88
- **Detecting unfrozen sediments below thermokarst lakes with surface nuclear magnetic resonance** *GEOPHYSICAL RESEARCH LETTERS*
  Parsekian, A. D., Grosse, G., Walbrecker, J. O., Mueller-Petke, M., Keating, K., Liu, L., Jones, B. M., Knight, R.
  2013; 40 (3): 535-540
- **Electrical Resistivity for Characterization and Infiltration Monitoring beneath a Managed Aquifer Recharge Pond** *VADOSE ZONE JOURNAL*
  Mawer, C., Kitanidis, P., Pidlisecky, A., Knight, R.
  2013; 12 (1)
- **Electrical Conductivity Probes for Studying Vadose Zone Processes: Advances in Data Acquisition and Analysis** *VADOSE ZONE JOURNAL*
  Pidlisecky, A., Cockett, A. R., Knight, R.
  2013; 12 (1)
- **Composite pulses to quantify background magnetic field inhomogeneity** *Geophysics*
  Grombacher, D., Walbrecker, J., Knight, R.
  2013
- **The effect of spatial variation in surface relaxivity on nuclear magnetic resonance relaxation rates** *GEOPHYSICS*
  Keating, K., Knight, R.
  2012; 77 (5): E365-E377
- **Field experiment provides ground truth for surface nuclear magnetic resonance measurement** *GEOPHYSICAL RESEARCH LETTERS*
  Knight, R., Grunewald, E., Irons, T., Dlubac, K., Song, Y., Bachman, H. N., Grau, B., Walsh, D., Abraham, J. D., Cannia, J.
  2012; 39
- **Nonexponential decay of the surface-NMR signal and implications for water content estimation** *GEOPHYSICS*
  Grunewald, E., Knight, R.
  2012; 77 (1): EN1-EN9
- **Conditions leading to non-exponential T2 relaxation and implications for surface NMR measurements** *Geophysics*
  Grunewald, E., Knight, R.
  2012; 77
- **Field experiment provides ground truth for surface NMR measurement** *Geophysical Research Letters*
  Knight, R., Grunewald, E., Irons, T., Dlubac., K, Song, Y., Bachman, H., Grau, B., Walsh, D., Abraham, J., Cannia, J.
  2012
- **Calibrating a saltwater intrusion model with time domain electromagnetic data** *Groundwater*
  Herckenrath, D., Odlum, N., Nenna, V., Auken, E., Knight, R., Bauer-Gottwein, P.
  2012
- **High quality InSAR data linked to seasonal change in hydraulic head for an agricultural area in the San Luis Valley, Colorado** *WATER RESOURCES RESEARCH*
  Reeves, J. A., Knight, R., Zebker, H. A., Schreueder, W. A., Agram, P. S., Lauknes, T. R.
  2011; 47
- **Application of an extended Kalman filter approach to inversion of time-lapse electrical resistivity imaging data for monitoring recharge** *WATER RESOURCES RESEARCH*
  Nenna, V., Pidlisecky, A., Knight, R.
  2011; 47
- **Informed experimental design for electrical resistivity imaging** *NEAR SURFACE GEOPHYSICS*
  Nenna, V., Pidlisecky, A., Knight, R.
  2011; 9 (5): 469-482
- **A laboratory study of NMR relaxation times in unconsolidated heterogeneous sediments** *GEOPHYSICS*

Grunewald, E., Knight, R.
2011; 76 (4): G73-G83

- **The Use of Wavelet Analysis to Derive Infiltration Rates from Time-Lapse One-Dimensional Resistivity Records** *VADOSE ZONE JOURNAL*
  Pidlisecky, A., Knight, R.
  2011; 10 (2): 697-705
- **The effect of pore size and magnetic susceptibility on the surface NMR relaxation parameter T-2*** *4th Workshop for Magnetic Resonance Sounding*
  Grunewald, E., Knight, R.
  EUROPEAN ASSOC GEOSCIENTISTS & ENGINEERS.2011: 169–78
- **Linking interferometric synthetic aperture radar data and seasonal head change for an agricultural area in the San Luis Valley, Colorado** *Water Resources Research*
  Reeves, J. A., Knight, R., Zebker, H. A., Schreüder, W. A., Agram, P. S., Lauknes, T. R.
  2011; 47
- **GEOPHYSICS AT THE INTERFACE: RESPONSE OF GEOPHYSICAL PROPERTIES TO SOLID-FLUID, FLUID-FLUID, AND SOLID-SOLID INTERFACES** *REVIEWS OF GEOPHYSICS*
  Knight, R., Pyrak-Nolte, L. J., Slater, L., Atekwana, E., Endres, A., Geller, J., Lesmes, D., Nakagawa, S., Revil, A., Sharma, M. M., Straley, C.
  2010; 48
- **A laboratory study of the effect of Fe(II)-bearing minerals on nuclear magnetic resonance (NMR) relaxation measurements** *GEOPHYSICS*
  Keating, K., Knight, R.
  2010; 75 (3): F71-F82
- **Improved interpretation of resistivity cone penetration testing logs through forward modeling and inversion** *Journal of Applied Geophysics*
  Pidlisecky, A., Knight, R., Howie, J. A.
  2010
- **Conditions leading to non-exponential decay of the surface-NMR signal and implications for water content estimation** *Society of Exploration Geophysicists Annual Convention*
  Grunewald, E. D., Knight, R.
  2010
- **An assessment of the use of the Kozeny-Carman equation to estimate permeability in anisotropic materials from** *Society of Exploration Geophysicists Annual Convention*
  Dlubac, K. I., Knight, R. J.
  2010: 2644–48
- **Conditions leading to non-exponential decay of the surface-NMR signal and implications for water content estimation** *Society of Exploration Geophysicists Annual Convention*
  Grunewald, E. D., Knight, R.
  2010
- **Estimation of the lateral correlation structure of subsurface water content from surface-based ground-penetrating radar reflection images** *WATER RESOURCES RESEARCH*
  Irving, J., Knight, R., Holliger, K.
  2009; 45
- **A laboratory study of NMR relaxation times and pore coupling in heterogeneous media** *GEOPHYSICS*
  Grunewald, E., Knight, R.
  2009; 74 (6): E215-E221
- **Hydrogeologic structure underlying a recharge pond delineated with shear-wave seismic reflection and cone penetrometer data** *NEAR SURFACE GEOPHYSICS*
  Haines, S. S., Pidlisecky, A., Knight, R.
  2009; 7 (5-6): 329-339
- **Interpreting Earth's field NMR measurements of T2 for hydrogeologic applications** *4th International Workshop on Magnetic Resonance Sounding*

Grunewald, E., Knight, R.
2009

- **Electrical resistivity imaging of the architecture of substream sediments** *WATER RESOURCES RESEARCH*
  Crook, N., Binley, A., Knight, R., Robinson, D. A., Zarnetske, J., Haggerty, R.
  2008; 44

- **FW2_5D: A MATLAB 2.5-D electrical resistivity modeling code** *COMPUTERS & GEOSCIENCES*
  Pidlisecky, A., Knight, R.
  2008; 34 (12): 1645-1654

- **A laboratory study of the effect of magnetite on NMR relaxation rates** *JOURNAL OF APPLIED GEOPHYSICS*
  Keating, K., Knight, R.
  2008; 66 (3-4): 188-196

- **Eco-Geophysical Imaging of Watershed-Scale Soil Patterns Links with Plant Community Spatial Patterns** *VADOSE ZONE JOURNAL*
  Robinson, D. A., Abdu, H., Jones, S. B., Seyfried, M., Lebron, I., Knight, R.
  2008; 7 (4): 1132-1138

- **Nuclear magnetic resonance relaxation measurements as a means of monitoring iron mineralization processes** *GEOPHYSICAL RESEARCH LETTERS*
  Keating, K., Knight, R., Tufano, K. J.
  2008; 35 (19)

- **Advancing process-based watershed hydrological research using near-surface geophysics: a vision for, and review of, electrical and magnetic geophysical methods** *HYDROLOGICAL PROCESSES*
  Robinson, D. A., Binley, A., Crook, N., Day-Lewis, F. D., Ferre, T. P., Grauch, V. J., Knight, R., Knoll, M., Lakshmi, V., Miller, R., Nyquist, J., Pellerin, L., Singha, et al
  2008; 22 (18): 3604-3635

- **Soil moisture measurement for ecological and hydrological watershed-scale observatories: A review** *VADOSE ZONE JOURNAL*
  Robinson, D. A., Campbell, C. S., Hopmans, J. W., Hornbuckle, B. K., Jones, S. B., Knight, R., Ogden, F., Selker, J., Wendroth, O.
  2008; 7 (1): 358-389

- **NMR relaxation measurements to quantify immiscible organic contaminants in sediments** *WATER RESOURCES RESEARCH*
  Bryar, T. R., Knight, R. J.
  2008; 44 (2)

- **Improving crosshole radar velocity tomograms: A new approach to incorporating high-angle traveltime data** *GEOPHYSICS*
  Irving, J. D., Knoll, M. D., Knight, R. J.
  2007; 72 (4): J31-J41

- **RESINVM3D: A 3D resistivity inversion package** *GEOPHYSICS*
  Pidlisecky, A., Haber, E., Knight, R.
  2007; 72 (2): H1-H10

- **A laboratory study to determine the effect of iron oxides on proton NMR measurements** *GEOPHYSICS*
  Keating, K., Knight, R.
  2007; 72 (1): E27-E32

- **Improving crosshole GPR travel-time tomography between closely spaced boreholes at the Boise Hydrogeophysical Research Site** *Geophysics*
  Irving, J., Knoll, M., Knight, R.
  2007; 72: J31-J41

- **A comparison of the use of radar images and neutron probe data to determine the horizontal correlation length of water content** *AGU Geophysical Monograph Series*
  Knight, R., Irving, J., Tercier, P., Freeman, G., Murray, C., Rockhold, M.
  2007; 171: 31-44

- **Numerical modeling of ground-penetrating radar in 2-D using MATLAB** *COMPUTERS & GEOSCIENCES*

Irving, J., Knight, R.
2006; 32 (9): 1247-1258

- **Texture-based classification of ground-penetrating radar images** *GEOPHYSICS*
  Moysey, S., Knight, R. J., Jol, H. M.
  2006; 71 (6): K111-K118
- **Cone-based electrical resistivity tomography** *GEOPHYSICS*
  Pidlisecky, A., Knight, R., Haber, E.
  2006; 71 (4): G157-G167
- **Numerical simulation of antenna transmission and reception for crosshole ground-penetrating radar** *GEOPHYSICS*
  Irving, J. D., Knight, R. J.
  2006; 71 (2): K37-K45
- **Relating geophysical and hydrologic properties using field-scale rock physics** *CMWR XVI-Computational Methods in Water Resources*
  Moysey, S., Knight, R. J., Singha, K.
  2006: 8 p.
- **A vision for geophysics instrumentation in watershed hydrological research** *A Report to the Consortium of Universities for the Advancement of Hydrologic Sciences, Inc.*
  Robinson, D. A., Binley, A., Crook, N., Day-Lewis, F. D., Ferre, T. A., Grauch, V. S., Knight, R., Knoll, M., Lakshmi, V., Miller, R., Nyquist, J., Pellerin, L., Singha, et al
  Advancement of Hydrologic Sciences, Inc., Washington, US.2006
- **Effect of antennas on velocity estimates obtained from crosshole GPR data** *GEOPHYSICS*
  Irving, J. D., Knight, R. J.
  2005; 70 (5): K39-K42
- **A framework for inferring field-scale rock physics relationships through numerical simulation** *GEOPHYSICAL RESEARCH LETTERS*
  Moysey, S., Singha, K., Knight, R.
  2005; 32 (8)
- **A Cone-based geophysical imaging: A new solution to a challenging problem** *The Leading Edge*
  Knight, R. J., Pidlisecky, A.
  2005
- **Accounting for the effect of antenna length to improve crosshole GPR velocity estimates** *SEG 75th Annual Meeting*
  Irving, J., Knight, R.
  2005: 2005
- **The effect of vertical measurement resolution on the correlation structure of a ground penetrating radar reflection image** *GEOPHYSICAL RESEARCH LETTERS*
  Knight, R., Tercier, P., Irving, J.
  2004; 31 (21)
- **Modeling the field-scale relationship between dielectric constant and water content in heterogeneous systems** *WATER RESOURCES RESEARCH*
  Moysey, S., Knight, R.
  2004; 40 (3)
- **An Introduction to Rock Physics for Near-Surface Applications in Near-Surface Geophysics** *Volume 1: Concepts and Fundamentals*
  Knight, R., Endres, A.
  edited by Butler, E. D.
  Society of Exploration Geophysicists.2004
- **Stochastic estimation of facies using ground penetrating radar data** *ModelCARE 2002 Conference*
  Moysey, S., Caers, J., Knight, R., Allen-King, R. M.
  SPRINGER.2003: 306–18
- **An inclusion-based model of elastic wave velocities incorporating patch-scale fluid pressure relaxation** *GEOPHYSICS*

Taylor, S. R., Knight, R. J.
2003; 68 (5): 1503-1509

- **Incorporating mechanisms of fluid pressure relaxation into inclusion-based models of elastic wave velocities** *GEOPHYSICS*
  Taylor, S. R., Knight, R. J.
  2003; 68 (4): 1173-1181
- **Removal of wavelet dispersion from ground-penetrating radar data** *GEOPHYSICS*
  Irving, J. D., Knight, R. J.
  2003; 68 (3): 960-970
- **Laboratory studies of the effect of sorbed oil on proton nuclear magnetic resonance** *GEOPHYSICS*
  Bryar, T. R., Knight, R. J.
  2003; 68 (3): 942-948
- **The construction of stochastic facies-based models conditioned to ground penetrating radar images** *Conference on Calibration and Reliability in Groundwater Modelling (ModelCARE 2002)*
  Moysey, S., Knight, R., Allen-King, R. M., Caers, J.
  INT ASSOC HYDROLOGICAL SCIENCES.2003: 395–401
- **Assessment of the Use of Cone-Based Resistivity Imaging** *Symposium on the Application of Geophysics to Engineering and Environmental Problems*
  Pidlisecky, A., Haber, E., Knight, R. J.
  2003
- **Detection limits for immiscible liquid organic contaminants using proton nuclear magnetic resonance** *Symposium on the Application of Geophysics to Engineering and Environmental Problems, San Antonio, TX,*
  Bryar, T. R., Knight, R. J.
  2003
- **Laboratory studies of the detection of sorbed oil with proton nuclear magnetic resonance** *Geophysics*
  Bryar, T. R., Knight, R. J.
  2003; 68: 942-948
- **Saturation-dependent anisotropy in borehole radar data** *Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems*
  Irving, J. D., Knight, R. J.
  2003
- **The use of ground penetrating radar for site characterization at Hanford** *Symposium on the Application of Geophysics to Engineering and Environmental Problems*
  Knight, R. J., Irving, J., Freeman, E., Tercier, P.
  2003
- **Sensitivity of nuclear magnetic resonance relaxation measurements to changing soil redox conditions** *GEOPHYSICAL RESEARCH LETTERS*
  Bryar, T. R., Knight, R. J.
  2002; 29 (24)
- **Aquifer heterogeneity from SH-wave seismic impedance inversion** *GEOPHYSICS*
  Jarvis, K. D., Knight, R. J.
  2002; 67 (5): 1548-1557
- **Aquifer heterogeneity from SH-wave seismic impedance inversion, accepted for publication** *Geophysics*
  Jarvis, K., Knight, R. J.
  2002; 67: 1548-1557
- **Effect of sorbed oil on the dielectric properties of sand and clay** *WATER RESOURCES RESEARCH*
  Li, C., Tercier, P., Knight, R.
  2001; 37 (6): 1783-1793

- **Ground penetrating radar for environmental applications** *ANNUAL REVIEW OF EARTH AND PLANETARY SCIENCES*
  Knight, R.
  2001; 29: 229-255
- **Laboratory measurements of electromagnetic wave velocity in layered sands** *Water Resources Research*
  Chan, C. Y., Knight, R. J.
  2001; 37: 1099-1105
- **The effect of adsorbed oil on the dielectric properties of sand and clay** *Water Resources Research*
  Li, C., Tercier, P., Knight, R.
  2001; 37: 1783-1793
- **A comparison of the correlation structure in GPR images of deltaic and barrier-spit depositional environments** *GEOPHYSICS*
  Tercier, P., Knight, R., Jol, H.
  2000; 65 (4): 1142-1153
- **Detecting sorbed hydrocarbons in a porous medium using proton nuclear magnetic resonance** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Daughney, C. J., Bryar, T. R., Knight, R. J.
  2000; 34 (2): 332-337
- **Estimation and correction of wavelet dispersion in GPR Data** *GPR 2000, the Eighth International Conference on Ground Penetrating Radar*
  Irving, J., Knight, R. J.
  2000: 123–29
- **Paramagnetic effects of iron(III) species on nuclear magnetic relaxation of fluid protons in porous media** *JOURNAL OF MAGNETIC RESONANCE*
  Bryar, T. R., Daughney, C. J., Knight, R. J.
  2000; 142 (1): 74-85
- **Estimation and correction of wavelet dispersion in GPR data** *8th International Conference on Ground Penetrating Radar (GPR 2000)*
  Irving, J., Knight, R.
  SPIE-INT SOC OPTICAL ENGINEERING.2000: 561–566
- **Noninvasive characterization of the shallow subsurface for environmental and engineering applications** *Seeing into the Earth*
  Knight, R. ., et al
  National Academy Press, Washington, D.C..2000: 269p
- **Near-surface VSP surveys using the seismic cone penetrometer** *Geophysics*
  Jarvis, K., Knight, R. J.
  2000; 65: 1048-1056
- **A comparison of the correlation structure in GPR images of deltaic and barrier spit depositional environments** *Geophysics*
  Tercier, P., Knight, R. J., Jol, H.
  2000; 65: 1142-1153
- **Detecting sorbed hydrocarbons in a porous medium using proton nuclear magnetic resonance** *Environmental Science and Technology*
  Daughney, C., Bryar, T., Knight, R. J.
  2000; 34: 332-337
- **Effects of paramagnetic iron (III) species on nuclear magnetic resonance relaxation of saturated sands** *Journal of Magnetic Resonance*
  Bryar, T., Daughney, C., Knight, R. J.
  2000; 142: 74-85
- **Accounting for saturation heterogeneity in obtaining estimate of water content from dielectric data** *Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP)*
  Chan, C., Knight, R. J.
  1999: 435–44
- **Geological landscape of the pre-Inca archeological site at Chavin de Huantar, Peru** *Geological Survey of Canada, Current Research*

Turner, R. W., Knight, R. J., Rick, J.
1999: 47-56

- **Geotechnical applications of VSP surveys using the seismic cone penetrometer** *12th Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP) at the Annual Meeting of the EEGS*
  Jarvis, K., Knight, R., Howie, J.
  ENVIRONMENTAL & ENGINEERING GEOPHYSICAL SOCIETY.1999: 11–20
- **Dielectric constant as a predictor of porosity in dry volcanic rocks** *Journal of Volcanology and Geophysical Research*
  Rust, A. C., Russell, J. K., Knight, R. J.
  1999; 91: 79-96
- **Determining water content and saturation from dielectric measurements in layered materials** *Water Resources Research*
  Chan, C. Y., Knight, R. J.
  1999; 35: 85-93
- **Acoustic signatures of partial saturation** *GEOPHYSICS*
  Knight, R., Dvorkin, J., Nur, A.
  1998; 63 (1): 132-138
- **Elastic wave velocities during evaporative drying** *Geophysics*
  Goertz, D., Knight, R. J.
  1998; 63: 171-183
- **Characterization of the Brookswood aquifer using ground penetrating radar** *Aquifer Delineation, Fraser Lowlands and Delta, B.C.: Mapping, Geophysics, and Groundwater Modeling*
  Rea, J., Knight , R. J.
  edited by Ricketts, B. D.
  Geological Survey of Canada.1998
- **Effects of wettability and fluid chemistry on the proton NMR T1 in sands** *Journal of Environmental and Engineering Geophysics*
  Kanters, W., Knight, R. J., Mackay, A.
  1998; 3: 197-202
- **Geostatistical analysis of ground penetrating radar data: a means of describing spatial variation in the subsurface** *Water Resources*
  Rea, J., Knight, R. J.
  1998; 34: 329-339
- **The electrical conductivity of steam-flooded, clay-bearing sands** *Geophysics*
  Butler, D., Knight, R. J.
  1998; 63: 1137-1149
- **Effects of pore structure and wettability on the electrical resistivity of partially saturated rocks--A network study** *Geophysics*
  Suman, R., Knight, R. J.
  1997; 62: 1151-1162
- **Incorporating pore geometry and fluid pressure communication into modeling the elastic behavior of porous rocks** *GEOPHYSICS*
  Endres, A. L., Knight, R. J.
  1997; 62 (1): 106-117
- **Incorporating pore geometry and fluid pressure communication into modeling the elastic behavior of porous rocks** *Geophysics*
  Endres, A. L., Knight, R. J.
  1997; 61: 106-117
- **The role of ground penetrating radar and geostatistics in reservoir description** *The Leading Edge*
  Knight, R., Tercier, P., Jol, H.
  1997; 16: 1576-1581
- **A laboratory procedure for estimating irreducible water saturation from cuttings** *The Log Analyst*
  Knight, R. J., Tercier, P., Goertz, D.

1996; 37: 18-24

- **The use of ground penetrating radar for aquifer characterization: an example from southwestern British Columbia** *Symposium for Application of Geophysics to Environmental and Engineering Problems,*
  Rea, J., Knight, R. J.
  1995: 10pp
- **Rock/water interaction in dielectric properties: Experiments with hydrophobic sandstones** *Geophysics*
  Knight, R. J., Abad, A.
  1995; 60: 431-436
- **A laboratory procedure for estimating irreducible water saturation from cuttings** *Society of Professional Well Log Analysts 36th Annual Symposium*
  Knight, R. J., Tercier, P., Goertz, D.
  1995
- **An Assessment of Geophysical Techniques for the Direct Detection of Groundwater Contaminants: A Rock Physics Perspective** *Canadian Geotechnical Society 48th Conference*
  Knight, R. J.
  1995
- **Can accurate estimates of permeability be obtained from measurements of dielectric properties?** *Symposium for the Application of Geophysics to Environmental and Engineering Problems*
  Knoll, M. D., Knight, R. J., Brown, E.
  1995
- **Continuum percolation conductivity exponents in restricted domains** *Journal of Statistical Physics*
  Berkowitz, B., Knight, R. J.
  1995; 80: 1415-1423
- **The effect of steam quality on the electrical behavior of steam-flooded sands: A laboratory study** *Geophysics*
  Butler, D. B., Knight, R. J.
  1995; 60: 998-1006
- **Dielectric and hydrogeologic properties of sand-clay mixtures** *Fifith International Conference on Ground Penetrating Radar*
  Knoll, M. D., Knight, R. J.
  1994
- **A MODEL FOR INCORPORATING SURFACE PHENOMENA INTO THE DIELECTRIC RESPONSE OF A HETEROGENEOUS MEDIUM** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*
  Endres, A. L., Knight, R. J.
  1993; 157 (2): 418-425
- **Incorporating pressure communication into models for the elastic wave velocities of porous rocks: Connecting the borehole to laboratory measurements** *SPWLA 34nd Annual Logging Symposium*
  Endres, A. L., Knight, R. J.
  1993: 1–16
- **A model for incorporating surface phenomena into the dielectric response of a heterogeneous medium** *Journal of Colloid and Interface Science*
  Endres, A. L., Knight, R. J.
  1993; 157: 418-425
- **The use of nuclear magnetic resonance for studying and detecting hydrocarbon contaminants in porous rocks** *Water Resources Research*
  Hedberg, S. A., Knight, R. J., MacKay, A. L., Whittall, K. P.
  1993; 29: 1163-1170
- **Processing ground penetrating radar to improve resolution of near-surface targets** *Symposium on the Application of Geophysics to Environmental and Engineering Problems*
  Gerlitz, K., Knoll, M. D., Cross, G. M., Luzitano, R. D., Knight, R.
  1993

- **SEISMIC AND ELECTRICAL-PROPERTIES OF SANDSTONES AT LOW SATURATIONS** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*
  Knight, R., Dvorkin, J.
  1992; 97 (B12): 17425-17432
- **A THEORETICAL TREATMENT OF THE EFFECT OF MICROSCOPIC FLUID DISTRIBUTION ON THE DIELECTRIC-PROPERTIES OF PARTIALLY SATURATED ROCKS** *GEOPHYSICAL PROSPECTING*
  Endres, A. L., Knight, R.
  1992; 40 (3): 307-324
- **A theoretical assessment of the effect of microscopic fluid distribution on the dielectric response of partially saturated rocks** *Geophysical Prospecting*
  Endres, A. L., Knight, R. J.
  1992; 40: 307-324
- **THE EFFECTS OF PORE-SCALE FLUID DISTRIBUTION ON THE PHYSICAL-PROPERTIES OF PARTIALLY SATURATED TIGHT SANDSTONES** *JOURNAL OF APPLIED PHYSICS*
  Endres, A. L., Knight, R.
  1991; 69 (2): 1091-1098
- **Hysteresis in the electrical resistivity of partially saturated sandstones** *Geophysics*
  Knight, R.
  1991; 56: 2139-2147
- **The effect of saturation history on electrical measurements**
  Knight, R. J.
  1991
- **Surface conduction at the hydrocarbon/water interface** *SPWLA 32nd Annual Logging Symposium*
  Knight, R. J., Endres, A.
  1991: 1–10
- **The characterization of pore geometry with nuclear magnetic resonance** *Canadian Well Logging Society Symposium*
  Chapman, A., Knight, R. J.
  1991
- **The effects of pore scale fluid distribution on the physical properties of partially saturated tight sandstones** *Journal of Applied Physics*
  Endres, A. L., Knight, R. J.
  1991; 69: 1091-1098
- **Characterization of a sand and gravel aquifer using ground penetrating radar, Cape Cod, Massachusetts** *USGS Toxic Substances Hydrology Technical Meeting*
  Knoll, M., Haeni, P., Knight, R. J.
  1991
- **A LABORATORY STUDY OF THE DEPENDENCE OF ELASTIC WAVE VELOCITIES ON PORE SCALE FLUID DISTRIBUTION** *GEOPHYSICAL RESEARCH LETTERS*
  Knight, R., NOLENHOEKSEMA, R.
  1990; 17 (10): 1529-1532
- **NUMERICAL MODELING OF MICROSCOPIC FLUID DISTRIBUTION IN POROUS-MEDIA** *JOURNAL OF APPLIED PHYSICS*
  Knight, R., Chapman, A., Knoll, M.
  1990; 68 (3): 994-1001
- **A NEW CONCEPT IN MODELING THE DIELECTRIC RESPONSE OF SANDSTONES - DEFINING A WETTED ROCK AND BULK WATER-SYSTEM** *GEOPHYSICS*
  Knight, R., Endres, A.
  1990; 55 (5): 586-594
- **Laboratory study of the dependence of acoustic properties on microscopic fluid distribution** *Society of Professional Well Log Analysts 31st Annual Logging Symposium*

Knight, R. J., Nolen-Hoeksema, R. A.
1990: 1–9

- **Hysteresis in the dielectric response of partially saturated sandstones: The importance of microscopic fluid distribution** *Society of Professional Well Log Analysts 31st Annual Logging Symposium*
  Endres, A., Knight, R. J.
  1990: 1–23
- **A laboratory study of the effect of pore scale fluid distribution on elastic wave velocities** *Geophysical Research Letters*
  Knight, R. J., Nolen-Hoeksema, R.
  1990; 17: 1529-1532
- **A new concept in modeling the dielectric response of sandstones: Defining a wetted rock and bulk water system** *Geophysics*
  Knight, R. J., Endres, A.
  1990; 55: 586-594
- **The effect of rock/water interaction in modelling the dielectric response of sandstones** *Society of Professional Well Log Analysts 30th Annual Logging Symposium*
  Knight, R. J., Endres, A.
  1989: 1–20
- **The effect of microscopic fluid distribution on elastic wave velocities** *The Log Analyst*
  Endres, A., Knight, R. J.
  1989; 30: 437-445
- **The effect of microscopic fluid distribution on elastic wave velocities** *30th Annual Logging Symposium*
  Endres, A., Knight, R. J.
  1989: 20
- **THE DIELECTRIC-CONSTANT OF SANDSTONES, 60 KHZ TO 4 MHZ** *GEOPHYSICS*
  Knight, R. J., Nur, A.
  1987; 52 (5): 644-654
- **Geometrical effects in the dielectric response of partially saturated sandstones** *The Log Analyst*
  Knight, R. J., Nur, A.
  1987; 28: 513-519
- **Dielectric enhancement due to the presence of thin gas pockets** *Society of Professional Well Log Analysts Twenty Seventh Annual Logging Symposium*
  Knight, R. J., Nur, A.
  1986: 1–11
- **Modeling the electrical response of sandstones with an equivalent electrical circuit** *Society of Professional Well Log Analysts Twenty Sixth Annual Logging Symposium*
  Knight, R. J., Nur, A., Raistrick, I. D.
  1985: 1–17
- **The effect of surface area to volume ratio on the dielectric response of sandstones** *The Physics and Chemistry of Composite Media, Electrochemical Society of America Proceedings*
  Knight, R. J., Nur, A.
  1985; 85: 336-345
- **The effect of level of water saturation on the dielectric constant of sandstones** *Society of Professional Well Log Analysts Twenty Fifth Annual Logging Symposium*
  Knight, R. J., Nur, A.
  1984: 1–16
- **THE USE OF COMPLEX-PLANE PLOTS IN STUDYING THE ELECTRICAL RESPONSE OF ROCKS** *JOURNAL OF GEOMAGNETISM AND GEOELECTRICITY*
  Knight, R. J.
  1983; 35 (11-1): 767-776

- **K Ar and fission track geochronometry of an Eocene thermal event in the Kettle River (West Half) Map Area, Southern British Columbia: Discussion** *Canadian Journal of Earth Sciences*
  Farrar, E., Knight, R. J.
  1975; 13: 182-183