

DEPARTMENT of BIOLOGICAL & ECOLOGICAL ENGINEERING
OREGON STATE UNIVERSITY

John S. Selker

Distinguished Professor April 2017- current

Professor - July 2000 – March 2017

Associate Professor - July 1995 - June 2000

Assistant Professor - July 1991 - June 1995

Visiting professorships: INIA Quilamapu, Chile (1998-99; 2000); EPFL, Switzerland (2005-2006); CNRS Toulouse, France (2012); ETH Zurich, Switzerland (2016-17, 2018); University of Rennes, France (2017); Delft Technical University, Netherlands (2017).

EDUCATION

Ph.D., Agricultural Engineering, Hydrology, Cornell University, Ithaca, New York, 1991.

M.S., Agricultural Engineering, Hydrology, Cornell University, Ithaca, New York, 1989.

B.A., Physics (thesis), Reed College, Portland, Oregon, 1981.

CONSULTING AND RESEARCH EXPERIENCE

Ongoing Research (8/91-present)

Professor, Oregon State University Department of Biological & Ecological Engineering. 12 mo. position: 75% research, 25% teaching. Research includes vadose zone processes, basin scale hydrologic analysis, development of distributed environmental sensing systems, hydrological instrumentation, study of colloidal transport processes, ecohydrology, evaporation from deserts. Teaching activities include the developing of four courses, and initiation and coordination of campus wide restructuring of hydrology courses and the establishment of the Water Resources Graduate Program.

Co-Director, The Trans-African Hydro-Meteorological Observatory (TAHMO.org; 2011-present)

Founded and lead a novel public-private partnership to measure and make available the observation of the sub-Saharan. Currently the largest single data source for African Weather and climate, with 500 stations reporting 12 parameters each 5 min across 20 countries. Provide all data freely to host countries and researchers, and support by selling data at the continental scale to large companies and agencies.

Co-Director, The Center for Transformative Environmental Sensing (CTEMPs.org; 2009-present)

With Dr. Scott Tyler of UNR, provide training, instruments, and technical support to scientists around the world for the application of distributed temperature sensing (DTS), unmanned aerial systems (UAS) to make critical observation of environmental processes. NSF-supported facility currently in its 4th round of funding, having contributed to the training of over 500 scientists, and over 100 peer-reviewed publications.

Principal Investigator, Openly Published Environmental Sensing laboratory (Open Sensing.org; 2016-present)

Provide novel environmental sensing solutions based on combinations of MEMs sensors, 3-D printed components, microprocessor control systems, and wireless communication to solve distributed environmental sensing problems. Currently funded under a 5-year USDA grant, the lab has hosted researchers from Germany, Switzerland, Taiwan, and Israel, and is currently opening sister OPENs labs in Ghana (KNUST), Switzerland (ETH-Univ Zurich), Minneapolis (Univ. Minn), and India (IIT).

Co-Owner, SelkerMetrics Engineering (2009-present)

Develop solutions for identification of interactions between groundwater and engineered surfaces using distributed fiber optic temperature sensing. Approximately \$250k/yr in revenue.

Post-Doctoral Research Associate, Cornell University (1/91- 6/91)

Designed and built large-scale (2 m x 1.5 m) 2-d chamber for observation of infiltration in unsaturated porous media for investigation of influence of sloping textural interfaces on infiltration.

Ph.D. Research. Rapid Transport to Groundwater: Unstable Flow (9/88-12/90)

Showed the existence of unstable flow in a broader class of environments than previously observed. Derived and experimentally verified exact analytical solutions to the governing 2nd-order non-linear PDE for flow through unsaturated media.

Electric Power Research Institute (EPRI) (89-90)

Consulting Engineer. Statistical model of failure probability of underground petroleum piping systems.

M.S. Research. Modeling Daily Precipitation and Erosion (9/87-12/88)

Developed a novel calibration procedure and derived new 1-parameter precipitation model with 3.8 times lower χ^2 error in fitting historical data than best previous single-parameter model.

Sensor Link Corp (86-87) Everett, WA

Developed analytic model for the temperature response of magnetic proximity switches used in the design the largest manufacturers in the field. Lead engineer mechanical analysis thin shell spring pressure switch.

Consultant for International Development in Africa and Asia (85-87)

Intermediate Technology Development Group (ITDG) Sri Lanka 1985-1987

German Agency for Technical Cooperation (GTZ) Kenya 1985-1986

Volunteer in Technical Assistance (VITA) Somalia 1985

UNICEF Somalia 1985

CARE Kenya 1985

Mouse Systems Corp. (84) Santa Clara, CA

Director of development of high-resolution optical mouse including VLSI opto-electronic device. 16 years later continues to be standard equipment on workstations built by SUN and available for PC's.

U.S. Dept. of Agriculture (82-83) at Oregon State University

Designer/engineer precision solid state feed-back controlled experimental chamber for diurnal study of climatic response of micro-biological systems.

Brookhaven National Laboratory / Stanford Linear Accelerator Center (SLAC) (Summers 79-80)

Designed and built ultra-highspeed ($< 10^{-9}$ s) amplifiers and computer-detector interfaces.

Professional Organizations

American Society for the Advancement of Science (Life Member)

American Geophysical Union (Life member)

Soil Science Society of America

Editorships

Associate editor, Chilean Journal of Agricultural Research (1998-Current)

Associate editor, Journal of the Soil Science Society of America – Soil Physics (1999-2002)

Associate editor, Advances in Water Resources (2000- 2014)

Associate Editor, Water Resources Research (2004- 2009)

Editor, Water Resources Research (2009-2012)

Other Service

President Elect, Hydrology Section, American Geophysical Union (AGU), 2020-2025

Member, Vadose Zone Committee, AGU. (1995-2015)

Member, Horton Medal Committee, AGU (2000-2003)

Member, Student Poster Evaluation Committee, AGU Hydrology Section (2000-2003)
Convener, Special Section on Nonlinear dynamics in Hydrology, Fall 2000 AGU meeting.
Chair, Consortium of Universities for the Advancement of Hydrologic Science Inc., Standing Committee on Instrumentation. (2001-2009)
Facilitator, NRC special committee panel on groundwater fluxes (2002)
Board of Directors (2002-2009) Consortium of Universities for Advancement of Hydrologic Sciences Inc
Director, National Hydrological Instrumentation Facility (NSF funded) (2005-2009)
Co-Director, Center for Transformative Environmental Monitoring Programs (CTEMPs) (NSF funded 2009-indefinite)

AWARDS

1992 Young Faculty Fellow, U.S. Department of Energy, \$100,000 over two-year period.
1994 Selected as member of Gamma Sigma Delta Agricultural Honor Society.
1994 State of Oregon ESP Team Award for participation in water quality programs in Lane County.
1994 OSU Search for Excellence Award, OSU Extension Service.
1997 OSU Search for Excellence Award, OSU Extension Service.
1998 Cited by Transactions of the ASAE for excellence in Editorial Review
2010 Community Service Award, Consortium of Universities for the Advancement of Hydrological Sciences Incorporated (CUAHSI)
2013 Fellow of the American Geophysical Union (0.1% of members/yr)
2013 National Ground Water Association Jim Heim Award for Science and Technology
2020 La Medalla Centenario (100-year anniversary award of the University of Concepcion, Chile)
2021 Boussinesq Lecturer, Delft, Holland. Oct 21, 2021

PUBLICATIONS

Refereed Journal Articles

1. Selker, J.S., and D.A. Haith. Calibration and Testing of Single Parameter Probability Distributions of Daily Precipitation Amounts. *Water Resour. Res.* 26 (11):2733-2740. 1990.
2. Selker, J.S., D.A. Haith and J. Reynolds. Calibration and Testing of a Daily Rainfall Erosivity Model *Trans. Amer. Soc. Ag. Eng.* 35(5):1612-1618. 1990.
3. Selker, J.S., J.-Y. Parlange, and T.S. Steenhuis. Comment on Baker, R.S. and D. Hillel, Laboratory Tests of a Theory of Fingering During Infiltration into Layered Soil *Soil Sci. Soc. Am. J.* 55:896. 1991.
4. Selker, J.S. Comment on Tensiometer Data Acquisition System for Hydrological Studies Requiring High Temporal Resolution by J.W. Nyhan and B.J. Drennon, *Soil Sci. Soc. Am. J.* 55:1803. 1991.
5. Selker, J.S., P.L. Leclercq, T.S. Steenhuis and J.-Y. Parlange. Fingering Flow in Two Dimensions Part 1: Measurement of Matric Potential. *Water Resour. Res.* 28(9):2513-2521. 1992.
6. Selker, J.S., J.-Y. Parlange, and T.S. Steenhuis. Fingering Flow in Two Dimensions Part 2: Predicting Finger Moisture Profile. *Water Resour. Res.* 28(9); 2523-2528. 1992.
7. Boll, J., J.S. Selker and T.S. Steenhuis. Fiberglass Wicks for Sampling Water and Solutes in the Vadose Zone. *Soil Sci. of Am. J.* 56:701-707. 1992.
8. Selker, J.S., T.S. Steenhuis and J.-Y. Parlange. Wetting Front Instability in Homogeneous Sandy Soils under Continuous Infiltration. *Soil Sci. Soc. of Am. J.* 56(5):1346-1350. 1992.
9. Selker, J.S., L. Graff and T.S. Steenhuis. A Non-Invasive TDR Moisture Measurement Probe. *Soil Sci. Soc. Am. J.* 57:934-936. 1993.
10. Liu, Y., B.R. Bierck, J.S. Selker, T.S. Steenhuis and J.-Y. Parlange. High Intensity X-Ray and Tensiometer Measurements in Rapidly Changing Preferential Flow Fields. *Soil Sci. Soc. Am. J.* 57:1188-1192. 1993.
11. Selker, J.S. Expressions for the Formation of Load Casts in Soft Sediment. *J. Sed. Petro.* 63(6):1149-1151. 1993.
12. Knutson, J., S.B. Lee, W.Q. Zhang, and J.S. Selker. Fiberglass Wick Preparation for use in Passive Capillary Wick Soil-Pore-Water Samplers. *Soil Sci. Soc. Am. J.* 57:1474-1476. 1993.
13. Selker, J.S. Comment on 'Comparison of Three Methods for Assessing Soil Hydraulic Properties' by

- G.B. Paige and D. Hillel. *Soil Sci.* 157:115. 1994.
14. Knutson, J.H. and J.S. Selker. Unsaturated Hydraulic Conductivities of Fiberglass Wicks and Designing Capillary Wick Pore-Water Samplers. *Soil Sci. Soc. Am. J.* 58:721-729. 1994.
 15. Steenhuis, T.S., J. Boll, G. Shalit, J.S. Selker and I.A. Merwin. A Simple Equation for Predicting Preferential Flow Solute Concentrations. *J. Environ. Qual.* 23:1058-1064. 1994.
 16. Kelly, S.F., J.S. Selker and J. Green. Short High Resolution TDR Probes to Measure Water Content in High Salinity Soils. *Soil Sci. Soc. Am. J.* 59(1):97-102. 1995.
 17. Rimmer, A., T.S. Steenhuis and J.S. Selker. One-Dimensional Model to Evaluate the Performance of Wick Samplers in Soils. *Soil Sci. Soc. Am. J.* 59:88-92. 1995.
 18. Rimmer, A., T.S. Steenhuis, J.S. Selker and G. J. Albrecht. Wick Samplers: An Evaluation of Solute Travel Times. *Soil Sci. Soc. Am. J.* 59:235-243. 1995.
 19. Schroth, M.H., J.D. Istok, S.J. Ahearn and J.S. Selker. Geometry and Position of Light Nonaqueous Phase Liquid Lenses in Water-Wetted Porous Media. *J. Contam. Hydro.* 19:269-287. 1995.
 20. Brandi-Dohrn, F.M., C. Leibundgut, R.P. Dick, and J.S. Selker. Collecting tracers in the vadose zone, Tracer Technologies for Hydrological Systems, IAHS 229, 1995.
 21. Knutson, J.H. and J.S. Selker. Fiberglass Wick Effects on Solute Travel Time and Dispersion of Application in Monitoring Vadose Zone Chemical Transport. *Soil Sci. Soc. Am. J.* 60:420-424. 1996.
 22. Brandi-Dohrn, F., R.P. Dick, M. Hess and J.S. Selker. Suction Cup Sampler Bias in Leaching Characterization of an Undisturbed Field Soil. *Water Resour. Res.* 32:1173-1182. 1996.
 23. Selker, J.S. Application of Preferential Flow Concepts to Horticultural Water Management. *Hort. Tech.* 6:107-110. 1996.
 24. Selker, J.S., T.S. Steenhuis and J.-Y. Parlange. An Engineering Approach to Fingering Vadose Pollutant Transport. *Geoderma.* 70:197-206. 1996.
 25. Schroth, M.H., S.J. Ahearn, J.S. Selker and J.D. Istok. Characterization of Miller-Similar Silica Sands for Laboratory Hydrologic Studies. *Soil Sci. Am. J.* 60:1331-1339. 1996.
 26. Brandi-Dohrn, F.M., R.P. Dick, M. Hess, and J.S. Selker. Field Evaluation of Passive Capillary Samplers. *Soil Sci. Soc. Am. J.* 60:1705-1713. 1996.
 27. Brandi-Dohrn, F.M., R.P. Dick, D.D. Hemphill and J.S. Selker. Nitrate Leaching Under a Cereal Rye Cover Crop. *J. Env. Qual.* 26:181-188. 1997.
 27. Selker, J.S. Design of Interface Shape for Protective Capillary Barriers. *Water Resour. Res.* 33:259-260. 1997.
 28. Kelly, S.F., J.L. Green, J.S. Selker. Fertilizer Ion Movement in a Protected Diffusion Zone. *J. Amer. Soc. Hort. Sci.* 122:122-128. 1997.
 29. Fry, V.A., J.S. Selker and S.M. Gorelick. Experimental Investigations for Trapping Oxygen Gas in Saturated Porous Media for In Situ Bioremediation. *Water Resour. Res.* 33:2687-2696. 1997.
 30. Boll, J., J.S. Selker, G. Shalit, and T.S. Steenhuis. Frequency Distribution of water and solute transport properties derived from pan sampler data. *Water Resour. Res.* 33: 2655-2664. 1997.
 31. Duan, J., J.S. Selker and G. Grant. Evaluation of Stochastic Daily Precipitation Models for the Pacific Northwest, West of the Cascade Range. *Journal of the American Water Resources Association*, 34(3):617-627. 1998.
 32. Schroth, M. H., J.D. Istok and J.S. Selker. Three-Phase Immiscible Fluid Movement in the Vicinity of Textural Interfaces. *Journal of Contaminant Hydrology.* 32:1-23. 1998.
 33. Selker, J.S. and M.H. Schroth. Evaluation of Hydrodynamic scaling in porous media using finger dimensions. *Water Resour. Res.* 34:1875-80. 1998.
 34. Smesrud, J.K. and J.S. Selker. Field Sampling Considerations for the Stem Nitrate Test in Peppermint. *Comm in Soil Sci. and Plant Anal.* 29:3073-3091. 1998.
 35. Schroth, M.H., J.D. Istok, J.S. Selker, M. Oostrom and M.D. White. Multifluid flow in Bedded Porous Media: Laboratory, Experimental and Numerical Simulations. *Advances in Water Resources.* 22:169-183. 1998.
 36. Selker, J.S., J. Duan, and Y.-J. Parlange. Green and Ampt infiltration into soils of variable pore size with depth. *Water Resour. Res.* 35:1685-1688. 1999.
 37. Smesrud, J.K., and J.S. Selker. Post-Harvest Water Requirements of Peppermint. *Commun. Soil Sci.*

- Plant Anal. 30:1657-166. 1999.
38. Walter, M.T., J.-S. Kim, T.S. Steenhuis, J.-Y. Parlange, A. Heilig, R.D. Braddock, J.S. Selker and J. Boll. Funneled Flow mechanisms in a sloping layered soil: Laboratory investigations. *Water Resour. Res.* 36:841-849. 2000.
 39. Louie, M.J. and J.S. Selker. Sprinkler Head Maintenance Effects on Water Application Uniformity. *ASCE J. of Irr. and Drainage.* 126:142-148. 2000.
 40. Lockington, D.A., Y.-J. Parlange, M.B. Parlange and J.S. Selker. Similarity Solutions of the Boussinesq Equation. *Adv. Water Resour.* 23:725-729. 2000.
 41. Louie, M.J., P.M. Shelby, J.S. Smesrud, L.O. Gatchell and J.S. Selker. Field evaluation of passive capillary samplers for estimating groundwater recharge. *Water Resour. Res.* 36:2407-2416. 2000.
 42. Smesrud, J.K. and J.S. Selker. An analytical solution for normal irrigation distribution parameters. *ASCE J. Irrig. and Drain. Div., ASCE.* 127(1):45-48. 2001.
 43. Chen, C., R. Sugar, R.J. Roseberg, and J.S. Selker. Effect of micro-sprinkler irrigation on pear fruit growth and post-harvest quality. *HortTechnology.* 11(1):56-61. 2001.
 44. Rupp, D.E., J.S. Selker and J. Simunek. A modification to the Bower and Rice method of slug test analysis for large-diameter, hand-dug wells. *Groundwater.* 39(2):308-314. 2001
 45. Niemet, M., J.S. Selker. A new method for quantification of liquid saturation in 2-d translucent porous media systems using light transmission. *Adv. Water Resour.* 24:651-666. 2001.
 46. Smesrud, J.K. and J.S. Selker. Effect of Soil Particle Size Contrast on Capillary Barrier Performance. *J. Geotech. and Geoenv. Eng.* 127(10):885-888. 2001.
 47. Zhang, L., J.S. Selker, A. Qu, and A.Velayudhan. Numerical estimation of multi-component adsorption isotherms in preparative chromatography: implications of experimental error. *J. Chromatography A.* 934 (1-2):13-29. 2001.
 48. Kelly, S.F. and J.S. Selker. Osmotically driven water vapor transport in unsaturated soil. *Soil Sci. Soc. Am. J.* 65:1634-1641. 2001.
 49. Uesugi, S., R. Yarwood, J.S. Selker and P.J. Bottomley. A model that uses the induction phase of *lux* gene-dependent bioluminescence in *Pseudomonas Fluorescens* HK44 to quantify cell density in translucent porous media. *J. Microbiol. Meth.* 47:315-322. 2001.
 50. Selker, J.S. Breaking the cycle of futility in Hydrosociences. *Hydrol. Process* 16:743-744. 2002.
 51. Chen, C., R.J. Roseberg, and J.S. Selker. Using micro-sprinkler irrigation to reduce leaching in a shrink/swell clay soil. *Agricultural Water Management.* 54(2):159-171. 2002.
 52. Yarwood, R.R., M.L. Rockhold, M.R. Niemet, J.S. Selker and P.J. Bottomley. Noninvasive Quantitative Measurement of Bacterial growth in Porous Media under Unsaturated Flow. *Appl. Env. Microbio.* 68(7):3597-3605. 2002.
 53. Rockhold, M.L., R.R. Yarwood, M.R. Niemet, P.J. Bottomley and J.S. Selker. Considerations for modeling bacterial-induced changes in hydraulic properties of variably saturated porous media. *Adv. Water Resour.* 25:477-495. 2002.
 54. Niemet, Michael R., M.L. Rockhold, N. Weisbrod, and J.S. Selker. Relationships between gas-liquid interfacial surface area, liquid saturation and light transmission in variably saturated porous media. *Water Resour. Res.* 38(8):10.1029. 2002.
 55. Minschew, H., J.S. Selker, D. Hemphill, and R.P. Dick. NLEAP Computer Model and Multiple Regression Prediction of Nitrate Leaching in Vegetable Systems. *HortTechnology.* 12(2):250-256. 2002.
 56. Blume, T., N. Weisbrod, and J.S. Selker. Permeability changes in layered sediments: impact of particle release. *Groundwater.* 40(5):466-474. 2002.
 57. Weisbrod, N., M.R. Niemet, and J.S. Selker. Imbibition of saline solutions into dry and pre-wetted porous media. *Advances in Water Resources.* 25:841-855. 2002.
 58. Flint, L.E., and J.S. Selker. Use of Porosity to Estimate Hydraulic Properties of Volcanic Tuffs. *Adv. Water Res.* 26(5):661-671. 2003.
 59. Deinert, M., J.-Y. Parlange, K.B. Cady, T.S. Steenhuis, and J.S. Selker. Comment on "On the Continuum-Scale Modeling of Gravity Driven Fingers in Unsaturated Porous Media: The Inadequacy of the Richards Equation with Standard Monotonic Constitutive Relations and Hysteretic Equations of State" by Eliassi and Glass. *Water Resour. Res.,* 39 (9):1263, DOI:

- 10.1029/2002WR001785. 2003.
60. Flint, L.E., A.L. Flint, and J.S. Selker. Influence of Transitional Volcanic Strata on Lateral Diversion at Yucca Mountain, Nevada. *Water Resour. Res.* 39(4) 10.1029/2002WR001503. 2003.
 61. Weisbrod, N., M.R. Niemet, and J.S. Selker. A light transmission technique for the evaluation of colloidal transport and dynamics in porous media. *Env. Sci. & Tech.* 37:3694-3700. 2003.
 62. Weisbrod, N., M.R. Niemet, T. McGinnis, and J.S. Selker. Water vapor transport in the vicinity of imbibing saline solution: homogenous and layered systems. *Water Resour. Res.* 39 (6) .1145, DOI: 10.1029/2002WR001539. 2003.
 63. Selker, J.S. A Cross-Cultural view of the fascination in soil science research: A perspective from Oregon to the Secano. *J. Soil Science and Plant Nutrition*, 3(2):13-21. 2003.
 64. Rockhold, M.L., R.R. Yarwood, and J.S. Selker. Coupled Microbial and Transport Processes in Soils, *Vadose Zone J.* 3:368-383. 2004.
 65. Selker, J.S., Review of "Modeling Variably Saturated Flow with HYDRUS-2D." *Vadose Zone J.* 3: 725. 2004.
 66. Weisbrod, N., M.R. Niemet, M.L. Rockhold, T. McGinnis, and J.S. Selker. Migration of saline solutions into variably saturated porous media. *J. Contam. Hydro.* 72:109-133. 2004.
 67. Rupp, D.E., J.M. Owens, K.L. Warren, and J.S. Selker. Analytical methods for estimating saturated hydraulic conductivity in a tile-drained field. *J of Hydro.* 289:111-127. 2004
 68. Blume, T., N. Weisbrod, and J.S. Selker. On the critical salt concentrations for particle detachment in homogeneous sand and heterogeneous Hanford sediments. *Geoderma*, 124(1-2):121-132. 2005.
 69. Rockhold, M. L., R.R. Yarwood, M.R. Niemet, P.J. Bottomley, and J.S. Selker. Experimental observations and numerical modeling of coupled microbial and transport processes in variably saturated sand. *Vadose Zone J.* 4:407-417. DOI:10.2136/vzj2004.0087. 2005.
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 71. Selker, J.S. and D.E. Rupp. An environmentally driven time integrating water sampler. *Water Resour. Res.* 41. W09201, DOI:10.1029/2005WR004040. 2005.
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 74. Rupp, D.E., K. Warren, E. Peachy and J.S. Selker. Diuron in Surface Runoff and Tile Drainage from Two Grass-Seed Fields. *J. Env. Qual.* 35:303-311. 2006.
 75. Rupp, D.E. and J.S. Selker. Information, artifacts, and noise in $dQ/dt - Q$ recession analysis. *Adv. Water Resour.* 29(2):154-160. 2006.
 76. Burns, E.R., J.Y. Parlange, J.S. Selker, and R.B. Guenther. Thermodynamic Correction for Salts in Variably Saturated Porous Media. *Transport in Porous Media.* 63(3):381-398. 2006.
 77. Parker, L.R. Yarwood, and J.S. Selker. Observations of Gas Flow in Porous Media using a Light Transmission Technique. *Water Resour. Res.*, DOI:10.1029/2005WR004080. 2006.
 78. Kizito, F., M. Dragila, M. Sène, A. Lufafa, I. Diedhiou, R.P. Dick, J.S. Selker, E. Dossa, M. Khouma, A. Badiane and S. Ndiaye. Seasonal soil water variation and root patterns between two semi-arid shrubs co-existing with Pearl millet in Senegal, West Africa. *J Arid Environ.* 67(3):436-455. 2006.
 79. Burns E. R., J.S. Selker, J.-Y. Parlange, and R.B. Guenther. Effects of sodium chloride on constitutive relations in variably saturated porous media, *Water Resour. Res.* DOI:10.1029/2005WR004060. 2006.
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 81. Ochiai, N., E. Kraft and J.S. Selker. Methods for visualization of colloid transport in pore networks. *Water Resour. Res.* DOI: 10.1029/2006WR004961. 2006.
 82. Selker, J.S., M. Niemet, N.G. McDuffie, S.M. Gorelick, and J.-Y. Parlange. The Local Geometry of

- Gas Injection into Saturated Homogeneous Porous Media. *Transport in Porous Media*. DOI: 10.1007/s11242-006-0005-0. 2006.
83. Selker, J.S., L. Thévenaz, H. Huwald, A. Mallet, W. Luxemburg, N. van de Giesen, M. Stejskal, J. Zeman, M. Westhoff, and M.B. Parlange. Distributed Fiber Optic Temperature Sensing for Hydrologic Systems. *Water Resour. Res.* DOI:10.1029/2006WR005326. 2006.
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 88. Assouline, S., J.S. Selker and J.-Y. Parlange. A simple accurate method to predict time of ponding under variable intensity rainfall. *Water Resour. Res.* DOI:10.1029/2006WR005138. 2007.
 89. Westhoff, M.C., H.H.G. Savenije, W.M.J. Luzemburg, G.S. Stelling, N.C. van de Giesen, J.S. Selker, L. Pfister, and S. Uhlenbrook. A distributed stream temperature model using high resolution temperature observations. *Hydrol. Earth Syst. Sci.*, 11, 1469-1480. 2007.
 90. Burns, E.R., M.I. Dragila, J.S. Selker, R.B. Guenther, J.-Y. Parlange and N. Weisbrod. Correction of the Buckingham–Darcy Law for flow of high strength salts in variably saturated porous media. *Ad. Water Resour* 30:469–482. 2007.
 91. Rockhold, M.L., R.R. Yarwood, M.R. Niemet, P.J. Bottomley, F.J. Brockman, and J.S. Selker. Visualization and Modeling of the Colonization Dynamics of a Bioluminescent Bacterium in Variably Saturated, Translucent Quartz Sand. *Ad. Water Resour.* 30:1593–1607. 2007.
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18. Selker, J.S., Fiber Optics for Environmental Sensing. Sensors 2pp., May 2008

Invited Talks at Institutes and Universities

1997 University of Idaho
1998 University of Concepción, Chillan, Chile
2000 Johns Hopkins University
2000 Desert Research Institute/University of Nevada Reno
2001 Washington State University
2001 University of Idaho
2002 Keynote, Annual Chilean Society of Soil Scientists Meeting, Talca, Chile
2005 University of Arizona
2005 University of Brno
2006 University of Barcelona
2006 University of Cordoba
2006 University of Bologna
2006 University of Brno
2006 Institut de Mécanique des Fluides de Toulouse, France
2006 Technical University of Delft
2006, 2007, 2008, 2009, 2017 Technical University of Madrid
2007 University of Arizona
2008 Penn State University
2009 USGS Reston VA
2010 Reed College department of physics, Portland, OR
2011 Institut de Mécanique des Fluides de Toulouse, France
2011 ETH Zurich
2012 Peking University, Beijing, China
2012 Volcani Institute, Israel
2012 NATO ARW Meeting, Dead Sea, Israel
2012 Geological Survey of Israel
2012 Institute for Lifelong Learning, Corvallis, OR
2013 University of Illinois Urbana Champaign “Ven Te Chow Lecture”
2013 University of Saskatchewan “Distinguished Scientist” Lecture
2014 University of Birmingham, England
2015 CNRS Hydrogeophysics Cargese France Summer School
2015 Geological Survey of Finland
2016 Michigan Tech
2016 ETH Zurich
2016 UC Berkeley Catchment Hydrology Symposium
2017 University of Barcelona
2017 Technical University of Madrid
2017 University of Zurich
2017 ETH Zurich
2017 Freiburg University, Germany
2017 University of Rennes, France
2017 Bayreuth University, Germany
2017 University of Delaware, Mather Lecture
2018 CNRS Hydrogeophysics Cargese France Summer School
2019 Indiana Univeristy
2020 University of Concepcion

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