

Dr. Susan S. Hubbard

Associate Laboratory Director & Sr. Scientist
Earth and Environmental Sciences
Lawrence Berkeley National Laboratory
510-486-5266; sshubbard@lbl.gov
<http://eesa.lbl.gov/profiles/susan-hubbard/>

Professional Positions:

- Associate Laboratory Director, Berkeley Laboratory, Earth and Environmental Sciences Area: Staff of ~500, including premier Energy Geoscience and Climate & Ecosystems Science Divisions with significant research portfolios in climate science, terrestrial ecosystem science, environmental and biological system science, fundamental geoscience, and subsurface energy geosciences. 2015-Present
 - UC Berkeley, Environmental Science, Policy and Management, Adjunct Professor, 2015-Present
 - Director, Earth Sciences Division, Berkeley Lab, 2013-2015
 - Deputy Director for Programs, Earth Sciences Division, Berkeley Lab, 2010-2013.
 - Senior Geological Scientist, Berkeley Lab: Lead or co-lead of several large, multi-disciplinary, multi-institutional team projects, including PI of the DOE watershed function scientific focus area (SFA), 2010-Present
 - Associate Director, Berkeley Water Center, UC Berkeley, 2007-2011
 - Program Lead, Environmental Remediation and Water Resources Program, 2004-2010.
 - Group Lead, Environmental Geophysics, Berkeley Lab, 2003-present
 - Staff Geological Scientist, Berkeley Lab. Contributed to the development of fields now known as hydrogeophysics and biogeophysics. Applied developed methods to improve understanding of complex subsurface functioning relevant to environmental remediation, water resources, agriculture and ecosystems, 2002-2010
 - Geological Scientist, Berkeley Lab, 1998-2002
 - Geophysicist, ARCO Oil and Gas Co., 1990-1993
 - Geologist, U.S. Geological Survey, Menlo Park, CA, 1985-1987
-

Education:

- Ph.D., Civil and Env. Engineering, UC Berkeley, 1998
 - M.S., Geophysics, Virginia Tech
 - B.S., Geology, University of California, Santa Barbara
-

Advisory, Council and Editorial Positions (partial list):

- 2017-present, Advisory Board, International Soil Modeling Consortium
 - 2016-present, Advisory Board, Berkeley Superfund Center
 - 2016-present, Scientific Advisory Board, Arctic Data Center
 - 2016-present, Advisory Board, Civil and Environmental Engineering Dept, UC Berkeley
 - 2015-present, Director's Council, UC Water
 - 2015-present, Council member, CCST (California Council on Science and Technology)
 - 2015-present, Advisory Board, IDEAS (Interoperable design of extreme scale application software)
 - 2014-present, Advisory Board, Radionuclide Waste Disposal, EPSCoR Program, South Carolina
 - 2014-present, Sr Advisor, DOE Advanced Simulation Capability for Environmental Management
 - 2013, Helmholtz Association Review Committee
 - 2012, Dept of Energy Resources Engineering Review Committee, Stanford
 - 2011, Advisory Board, SmartGeo NSF IGERT, Colorado School of Mines
 - 2010-2015, BERAC -DOE Biological and Environmental Research Advisory Committee
 - 2010-2014, Associate Editor, JGR-Biosciences
 - 2010, DOE Environmental Management Technical Advisory Committee
 - 2007-2013, Co-Editor, Vadose Zone Journal
 - 2007-2010, Associate Editor, Journal of Hydrology
 - 2006, Forschungszentrum Jülich German National Laboratory Advisory Board
 - 2002-2006 Founder and First Chair, AGU Hydrogeophysics Technical Committee
 - 2001-2005, Associate Editor, Water Resources Research
-

Awards and Recognitions (partial list):

- 2017, Fellow, American Geophysical Union (AGU)
 - 2016, Hal Mooney Award, Distinguished Achievements in Near Surface Geophysics
 - 2014, Distinguished Alumni, Civil and Environmental Engineering Academy, UC Berkeley
 - 2014, Soc. for Technical Communication, Distinguished technical communication award
 - 2013, Outstanding Women @ Berkeley Lab recognition
 - 2011, Fellow, Geological Society of America (GSA)
 - 2010, Birdsall-Dreiss Distinguished Lecturer, Hydrological Sciences GSA
 - 2009, Frank Frischknecht Leadership Award, SEG Near Surface Geophysical Society
 - 2009, Top Associate Editor Award, Journal of Hydrology
 - 2008, 'Most Influential Article', SEG Leading Edge recognition
-

Service to Scientific Community & DOE (partial list):

- 2017, Organizer, Open and Transparent California Water Data Capstone Workshop, Berkeley, Nov 2017
- 2017, Co-Lead, DOE-BER Subsurface Biogeochemistry Workshop, Washington DC, May 2017
- 2017, Co-Lead, Environmental Knowledgebase Workshop, Berkeley, Jan, 2017
- 2016, Co-Chair, BES Basic Research Needs Workshop Water-Energy, Washington DC, Jan 2017
- 2015, Panel Lead, BRN-EM, Basic Research Needs for Environmental Management. Report of the Office of Science Workshop on Environmental Management, July 8-11, 2015.
- 2015, National Laboratory Engagement Day, Technical lead for DOE Subsurface Science, Washington DC
- 2015, UC-DOE Water-Energy Nexus Western US Workshop committee member: Designing water utilities of the future and the role of energy utilities
- 2014-present, UC Global Food Initiative (J. Napolitano initiative), LBNL lead
- 2014-present, Co-lead, National Subsurface DOE 'crosscut'. Involves DOE, 13 National Labs, Universities, industry and stakeholders to develop a program plan to enable adaptive control of subsurface fractures, reactions and flow, as needed to transform the use of subsurface resources for both energy production and energy waste storage.
- 2014, Session Chair, Subsurface fracture control, Rock and Fluid Physics Conference, Shell Technology Center, Amsterdam, 2014
- 2014, Conference Co-Chair, Complex Soil Systems SSSA/Bouyoucos Conference, Berkeley, 2014
- 2012, Session Chair, Geophysical Characterization of Permafrost Systems, Fall AGU, San Francisco
- 2012, Lead Author, Technology Innovation 'Virtual Laboratory' Report, Response to Dr. Bill Brinkman request to DOE-BERAC (DOE/SC-0156)
- 2010, Co-author, DOE-SC "Grand Challenges for Biological and Environmental Research: A Long Term Vision" (DOE/SC-1035, 2010)
- 2010, Co-author and workshop co-lead, DOE-BER "Complex System Science for Subsurface Fate and Transport" (DOE/SC0123, 2010)
- 2010, Contributor, DOE-EM Long-Range Deep Vadose Zone Program Plan (DOE/RL-2010-89, 2011).
- 2010, Session chair, Computational Methods in Water Res., Barcelona, June 2010,
- 2010, Session Chair, Goldschmidt conference, Session Chair Knoxville, TN, June 2010.
- 2010, Co-author, DOE-EM Scientific Opportunities to Reduce Risk in Groundwater and Soil Remediation (PNNL-18516).
- 2008, Co-organizer, Computational Methods in Water Resources Conference, San Francisco
- 2008, Co-organizer, Chapman Conference, Biogeophysics, Portland Maine

- 2006, Contributor, presenter- DOE BES Basic Research Needs for Geosciences: Facilitating 21st Century Energy Needs
- 2002-2006, Chair, AGU Hydrogeophysics Technical Committee
- 2002, Founder, AGU Hydrogeophysics Technical Committee
- 2002-2006, US representative, International Ass. Hydrological Sci. “2020 “Working Group
- 2004, Panelist, DOE BES workshop noninvasive monitoring, Houston Tx
- 2005, Panelist, DOE EM Geop. Characterization and monitoring workshop.
- 2005, Chair, Watershed Characterization Special Session, Fall AGU, San Fran.
- 2004, Chair, Hydrogeophysics Special Session, Fall AGU, San Francisco.
- 2003, Chair, Hydrogeophysics Special Session, Fall AGU, San Francisco
- 2003, Organizer, Coupled Processes DOE Workshop, Berkeley CA, LBNL
- 2003, Chair, Coupled Processes DOE Subsurface Science Session, EMSP,WA
- 2002, Co-Organizer, Hydrogeophysics Advanced Study Inst., Czech Republic
- 2000, Chair, Breakthroughs in Field Scale Bacterial Transport, Fall AGU, S.F.

Invited, Keynote and Plenary Speaking Engagements (partial list)

- American Geophysical Union, Fall Meeting, New Orleans, Dec 2017
- University of Illinois Urbana Champaign, October 2017
- California Department of Water Resources, September 2017
- American Chemical Society, Washington DC, August 2017
- UC Berkeley Civil and Environmental Engineering Seminar March 2017
- 27th Annual Intern. Conf. on Soil, Water, Energy, & Air, San Diego, CA, March 2017
- University of Southern California Distinguished Seminar, Los Angeles, CA, March 2017
- American Geophysical Union Fall Meeting, San Francisco, CA, December 2016
- France National Polytechnical Institute, Bordeaux, France, July 7, 2016
- University of Saskatchewan Saskatoon Distinguished Lecturer series, Saskatoon, Canada September 2016
- UC Merced, Oct 2016
- CUAHSI Big Data Workshop, Shepherdstown, WV, July 2016
- Geotech/Geoengineering Distinguished Lecture, UC Berkeley, CA, May 6, 2016
- KOPRI Polar Science Symposium, Plenary Speaker, Seoul Korea, May 2016
- Waterloo Distinguished ‘Watertalks’ Lecture Series, Waterloo, Ontario, Canada, February 2016
- Water Resource Sustainability Issues on Tropical Islands Conference, Hawaii, December 2015
- American Geophysical Union Fall Meeting, San Francisco, B52C-04, December 2015
- American Geophysical Union Fall Meeting, Union Session Invited San Francisco, CA, December 2015
- European Geophysical Union Invited Speaker, April 2015
- CUAHSI Big Data Bi-Annual Conference, Shepherdstown, WV, July 2014

- University of Wyoming's Department of Geology and Geophysics Distinguished Lecturer Series, November 24, 2014
- Complex Soils Systems 2014 Conference, Berkeley, CA, September 2014
- Jason Group, 'State of Stress in the Engineered Subsurface', June 2014
- US Energy Association, Research needs in Subsurface Energy Science, Arlington, VA, July 2014
- Shell Subsurface Complexity Workshop, Amsterdam, Netherlands, September 2014
- ESPM UC Berkeley Seminar Series, April 2014
- DOE Subsurface Biogeochemistry and Terrestrial Ecosystems PI Meeting, Invited Speaker, Maryland, May 2014
- AGU Invited Speaker, San Francisco, CA, December 2013
- Energy Biosciences Seminar Series, Berkeley, CA, April 15, 2013
- Keynote Presentation, Washington Hydrology Symposium, Tacoma, WA, March 2013
- Stanford Environmental Fluid Mechanics and Hydrology Colloquium, Stanford, CA, February, 2013
- AGU 2012 Invited speaker, H53F-1586 AGU, San Francisco, CA, December 2012
- AGU 2012 invited speaker, H33N-01 Fall Meeting, AGU, San Francisco, CA, December 2012.
- New Perspectives in Integrated Monitoring, Assessment and Management in the Water Sector, Water Research Horizon Conference, Berlin, Germany July 2012
- European Geophysical Union invited speaker 2012, Vienna, Austria, April 2012
- Battelle Chlorinated Conference Keynote, Monterey CA, May 2012
- DOE-BERAC Invited Presentation, 2011
- New Frontiers in Engineering Science for Sustainability, Texas A&M NSF Water Scholar Seminar, Invited, Nov 2011
- University of Nevada, Las Vegas Seminar Speaker, February 2, 2011
- Duke University Distinguished Seminar, February 23, 2011
- Advanced DOE Simulation Capability Workshop, ASCEM Overview Invited Presentation, Washington, DC, January 2011
- Rensselaer University Invited Seminar, May 4, 2011
- NSF Water Scholar Seminar Series Keynote, Texas A&M, College Station, November 2011
- University of Wisconsin, Madison Invited Seminar, September 2010
- Argonne National Laboratory Distinguished Speaker, September 2010
- Northern Illinois University, Dekalb, Seminar, September 2010
- Michigan State, East Lansing, October 2010
- Grand Valley University, Michigan, October 2010
- Groundwater Research Association Distinguished Speaker, Sacramento, CA, August 2010
- Inland Geological Society Invited Speaker, Riverside, CA, July 2010
- Keynote, Computational Methods in Water Resources Keynote Barcelona June 2010
- UC Davis Hydrological Seminar Series, June 2010
- National Groundwater Summit Keynote, Denver, CO, April 2010
- UC Berkeley Civil and Environmental Eng. Seminar Series, April 2010

- DOE ERSP Annual PI Meeting Invited Speaker, Washington, DC, March, 2010
- Distinguished Environmental Lecture, Florida International University, February 2010
- University of Florida Spring Seminar Series, February 2010
- Delaware Environmental Institute Distinguished Lecture, March 5, 2010
- UMass Environmental Lecture Series, March 9, 2010
- K. Douglas Nelson Lecture Series, Syracuse University, March 11, 2010
- Semi-Annual Dawdy Invited Lecture, Department of Geos., San Francisco State University, September 2009.
- Oregon State University Geoscience Seminar Series, January 21, 2010
- Portland Environmental Geology Seminar Series January 2010
- New Mexico Tech Hydrology Seminar, December 10, 2009
- LANL's Frontiers in Geosciences' Distinguished Colloquium, December 2009
- AGU Invited speaker, Fall 2009, San Francisco, December 15, 2009
- AGU invited speaker, Spring 2009, Toronto, Canada
- Stanford Environmental and Fluid Mechanics Seminar Series, Invited Seminar, November 2008
- Association for Env. Health and Sciences Invited platform speaker, San Diego, March 2009
- U.S.G.S. Water Research Division Seminar Series, September 2008
- Gordon Conference Invited Speaker, Flow in Porous Media, Oxford England, July 2008
- NRC Workshop on Uncertainty, sensitivity and parameter estimation for multimedia environmental modeling, July 2007
- AGU invited speaker, Fall Meeting 2007, San Francisco, CA, December 2007
- UC Davis Engineering Seminar Series, May 2007
- AGU invited speaker, Fall Meeting 2006, San Francisco, CA, December 2006
- Geological Society of America Invited Speaker, Philadelphia, PA, November 2006
- Groundwater Resources of California, Long Beach, October 2006
- Oregon State University 'World-Class Women in Water' seminar series, May 2006
- UCB Seismological Laboratory Spring 06 Seminar Series, March 2006
- Platform speaker, Computational Methods in Water Resources (CMWRC), Copenhagen, June 2006
- Invited Keynote, IWAGPR Conference, Delft, Netherlands, May 2005
- UC Merced Environmental Seminar Series, September 2004
- PGE Distinguished Shell Speaker, UT Austin, November 2004
- Waste Management Conference Keynote, 2004
- AGU 'Union Frontier' Lecture, Spring Meeting 2005, Montreal, Canada
- Keynote DOE Characterization and Monitoring Workshop, Salt Lake City, 2004
- Univ of Buffalo, UB Geology Pegrem Speaker Series, March 2004
- University of Kansas at Lawrence, Seminar Speaker, April 2004
- USGS Water Resources Seminar, Menlo Park, CA, May 2004
- Heiland Distinguished Lecturer, Colorado School of Mines, Golden, CO, February 2003
- Vadose zone characterization Series, University of Arizona at Tucson, March 2003

- NRC-180 Precision Agriculture Conference, UC Davis, February 2003
- AGU invited speaker, Spring Meeting 2002, Washington DC
- Geological Society of America invited speaker, Annual Meeting 2001, Boston, MA
- UC Berkeley Environmental Engineering Series, November 2001
- AGU invited speaker Fall Meeting 2001, San Francisco, December 2001
- IAHS Kovacs Colloquium Speaker: Groundwater Resources at Risk, Paris, France, June 2001
- AGU Invited Speaker, Spring Meeting 2001, Washington, DC
- Boise State Geology Seminar Series, Aquifer characterization, November 2000
- UC Davis Hydrology Seminar Series, December 2000

Media & Social Media

A partial list of interviews, videos and scientific highlights in popular press:

- Genome-to-Watershed Sustainable Systems Project Overview [Video](#)
- Arctic research video story, December 2014: PBS KQED 'Deep Look', [The Hidden Perils of Permafrost](#).
- Arctic research media highlight, UCB Engineering: [The underground: Studying the Arctic tundra, Innovations, February 2014 issue](#)
- Arctic research media highlight, 'Witness the Arctic' [Arcus Highlight, 2013](#)
- Arctic geophysical research media highlight, 'Imaging Permafrost' 2013 [PNAS highlight on NGEE Geophysical Efforts](#)
- Video, Susan Hubbard, 2013, [YouTube Video describing NGEE project](#)
- Video, Enhanced Microbial Hydrocarbon Recovery, [Susan Hubbard EBI video](#), 2013
- Arctic research media highlight, [Science Today, March 12, 2012](#)
- Arctic research, [NGEE field blog](#)
- Arctic research media highlight, 'Permafrost Science Heats up in the US', [Nature News Dec 19th, 2011](#)
- Precision agriculture media highlight, [Wine Enthusiast](#), 'Water into Wine', May 2009
- Video, Precision agriculture media highlight, Susan Hubbard on CNN - Next@CNN, Nov. 1, 2003 [CNN Video Clip](#) and [Text Summary](#)
- Precision agriculture media highlight, 'Radar in the Vineyard', [Wine Business Monthly](#) Volume X, No. 11, p. 35, Nov,2003.
- Precision agriculture media highlight, [California Agriculture](#) ,Vol. 58, Number 1, Jan. 2004
- Precision agriculture media highlight, [The Economist](#), Dec. 18, 2003
- Precision agriculture media highlight, 'Radar fur die Reben', [Der Spiegel](#) , Dec. 2003, Germany
- Precision agriculture media highlight, [Science News](#), May 29, 2004
- Precision agriculture media highlight, [New York Times](#) April 15, 2004
- Precision agriculture media highlight, 'Cat Scan your Soil', [California Farmer Magazine](#) Dec., 2003
- Precision agriculture media highlight, Yahoo News, April 2004

- Precision agriculture media highlight, [Vitavinicoltura](#), Oct. 2003, Chili
 - Precision agriculture media highlight, The Toronto Star, Dec., 2004
 - Precision agriculture media highlight, [The Daily Cal](#) , Berkeley, 2004
 - Precision agriculture media highlight, ‘Il buon vino? Lo sceglie il radar’, [Corriere](#), Italy, 2004
 - Precision agriculture interview and science story, TECH TV, Nov. 18th, 2003
-

Publications (partial) full list and citation metrics provided at

<http://esd.lbl.gov/about/staff/susanhubbard/publications.html>

1. Dafflon, B., Oktem, R., Peterson, J., Ulrich, C., Tran, A. P., Romanovsky, V. and Hubbard, S. S. (2017), Coincident above- and below-ground autonomous monitoring to quantify co-variability in permafrost, soil and vegetation properties in Arctic Tundra, *Journal of Geophysical Research: Biogeosciences*, doi: 10.1002/2016jg003724. ([article](#))
2. Leger, E., Dafflon, B., Soom, F., Peterson, J., Ulrich, C., and Hubbard, S. (2017), Quantification of Arctic Soil and Permafrost Properties Using Ground-Penetrating Radar and Electrical Resistivity Tomography Datasets, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, p. 1–12, doi: 10.1109/jstars.2017.2694447. ([article](#))
3. Tran, A.P., Dafflon, B., and Hubbard, S. S. (2017), Coupled Land Surface-Subsurface Hydrogeophysical Inverse Modeling to Estimate Soil Organic Content and explore associated Hydrological and Thermal Dynamics in an Arctic Tundra, *The Cryosphere Discussions*, p. 1–42, doi: 10.5194/tc-2017-1. ([article](#))
4. Dafflon, B., Leger, E., Soom, F., Ulrich, C., Peterson, J., and Hubbard, S. (2016), Quantification of Arctic soil and permafrost properties using ground penetrating radar, *2016 16th International Conference on Ground Penetrating Radar (GPR)*, doi: 10.1109/icgpr.2016.7572663. ([article](#))
5. Wainwright, H. M., Liljedahl, A. K., Dafflon, B., Ulrich, C., Peterson, J. E., and Hubbard, S. S. (2016), Mapping snow depth within a tundra ecosystem using multiscale observations and Bayesian methods, *The Cryosphere Discussions*, p. 1–56, doi: 10.5194/tc-2016-168. ([article](#))
6. Anantharaman, K., Brown, C. T., Hug, L. A., Sharon, I., Castelle, C. J., Probst, A. J., Thomas, B. C., Singh, A., Wilkins, M. J., Karaoz, U., Brodie, E. L., Williams, K. H., Hubbard, S. S. and Banfield, J. F. (2016), Thousands of microbial genomes shed light on interconnected biogeochemical processes in an aquifer system, *Nature Communications*, v. 7, p. 13219, doi: 10.1038/ncomms13219. ([article](#))
7. Arora, B., Dwivedi, D., Hubbard, S. S., Steefel, C. I., and Williams, K. H. (2016), Identifying geochemical hot moments and their controls on a contaminated river floodplain system using wavelet and entropy approaches, *Environmental Modelling & Software*, v. 85, p. 27–41, doi: 10.1016/j.envsoft.2016.08.005, 2016. ([article](#))
8. Tokunaga, T. K., Kim, Y., Conrad, M. E., Bill, M., Hobson, C., Williams, K. H., Dong, W., Wan, J., Robbins, M. J., Long, P. E., Faybishenko, B., Christensen, J. N., and Hubbard, S. S. (2016), Deep Vadose Zone Respiration Contributions to Carbon Dioxide Fluxes from a Semiarid Floodplain, *Vadose Zone Journal*, v. 15, doi: 10.2136/vzj2016.02.0014. ([article](#))

9. Tran, A. P., Dafflon, B., Kowalsky, M. B., Long, P., Tokunaga, T. K., Williams, K. H., and Hubbard, S. S. (2016), Quantifying Shallow Subsurface Water and Heat Dynamics using Coupled Hydrological-Thermal-Geophysical Inversion, *Hydrology and Earth System Sciences Discussions Hydrol. Earth Syst. Sci. Discuss.*, p. 1–39, doi: 10.5194/hess-2016-175. ([article](#))
10. Long, P. E., Williams, K. H., Hubbard, S. S. and Banfield, J. F. (2016), Microbial Metagenomics Reveals Climate-Relevant Subsurface Biogeochemical Processes, *Trends in Microbiology*, doi:10.1016/j.tim.2016.04.006. ([article](#))
11. Faybishenko, B., Hubbard, S. S., Brodie, E., Nico, P., Molz, F., Hunt, A. and Pachepsky, Y. (2016), Preface to the Special Issue of on Soil as Complex Systems, *Vadose Zone Journal*, 15(2), doi:10.2136/vzj2016.01.0005. ([article](#))
12. Newcomer, M. E., Hubbard, S. S., Fleckenstein, J. H., Maier, U., Schmidt, C., Thullner, M., Ulrich, C., Flipo, N. and Rubin, Y. (2016), Simulating bioclogging effects on dynamic riverbed permeability and infiltration, *Water Resources Research*, doi:10.1002/2015wr018351. ([article](#))
13. Tran, A. P., Dafflon, B. and Hubbard, S. S. (2016), iMatTOUGH: An open-source Matlab-based graphical user interface for pre- and post-processing of TOUGH2 and iTOUGH2 models, *Computers & Geosciences*, 89, 132–143, doi:10.1016/j.cageo.2016.02.006. ([article](#))
14. Wainwright, H. M., Orozco, A. F., Bucker, M., Dafflon, B., Chen, J., Hubbard, S. S. and Williams, K. H. (2016), Hierarchical Bayesian method for mapping biogeochemical hot spots using induced polarization imaging, *Water Resources Research*, 52(1), 533–551, doi:10.1002/2015wr017763. ([article](#))
15. Dafflon, B., Hubbard, S. S., Ulrich, C., Peterson, J. E., Wu, Y., Wainwright, H. M. and Kneafsey, T. J. (2016), Geophysical estimation of shallow permafrost distribution and properties in an ice-wedge polygon-dominated Arctic tundra region, *Geophysics*, 81(1), WA247–WA263, doi:10.1190/geo2015-0175.1. ([article](#))
16. Chen, J. S., Hubbard, S. S., Williams, K. H. and Ficklin, D. L. (2016), Estimating groundwater dynamics at a Colorado River floodplain site using historical hydrological data and climate information, *Water Resources Research*, 52(3), 1881–1898, doi:10.1002/2015wr017777. ([article](#))
17. Commer, M., Doetsch, J., Dafflon, B., Wu, Y., Daley, T. M. and Hubbard, S. S. (2016), Time-lapse 3-D electrical resistance tomography inversion for crosswell monitoring of dissolved and supercritical CO₂ flow at two field sites: Escatawpa and Cranfield, Mississippi, USA, *International Journal of Greenhouse Gas Control*, 49, 297–311, doi:10.1016/j.ijggc.2016.03.020. ([article](#))
18. Ulrich, C., Hubbard, S. S., Florsheim, J., Rosenberry, D., Borglin, S., Trotta, M. and Seymour, D. (2015) Riverbed Clogging Associated with a California Riverbank Filtration System: An Assessment of Mechanisms and Monitoring Approaches, *Journal of Hydrology*, 526 (3), 1740–1753, doi: 10.1016/j.jhydrol.2015.08.012. ([article](#))
19. Öktem, R., Dafflon, B., Peterson, J. E. and Hubbard, S. S. (2015), Monitoring Arctic landscape variation by pole and kite mounted cameras, Image Processing: Machine Vision Applications VIII, *Proc. of SPIE-IS&T Electronic Imaging*, SPIE, 9405,0940505, doi:10.1117/12.2083403. ([article](#))
20. Binley, A., Hubbard, S. S., Huisman, J. A., Revil, A., Robinson, D. A., Singha, K., and Slater, L. D. (2015), The emergence of hydrogeophysics for improved understanding of subsurface processes over multiple scales, *Water Resources Research*, v. 51, p. 3837–3866, doi: 10.1002/2015wr017016. ([article](#))

21. Newman, B. D., Throckmorton, H. M., Graham, D. E., Gu, B., Hubbard, S. S., Liang, L., Wu, Y., Heikoop, J. M., Herndon, E. M., Phelps, T. J., Wilson, C. J. and Wulfschleger, S. D. (2015), Microtopographic and depth controls on active layer chemistry in Arctic polygonal ground, *Geophysical Research Letters*, v. 42, p. 1808–1817, doi: 10.1002/2014gl062804. ([article](#))
22. Berryman, J., Kwon, T. H., Dou, S., Ajo-Franklin, J. and Hubbard, S. S. (2015), Analysis of laboratory data on ultrasonic monitoring of permeability reduction due to biopolymer formation in unconsolidated granular media, *Geophysical Prospecting*, v. 64, p. 445–455, doi: 10.1111/1365-2478.12295. ([article](#))
23. Wainwright, H. M., Dafflon, B., Smith, L. J., Hahn, M. S., Curtis, J. B., Wu, Y., Ulrich, C., Peterson, J. E., Torn, M. S. and Hubbard, S. S. (2015), Identifying multiscale zonation and assessing the relative importance of polygon geomorphology on carbon fluxes in an Arctic tundra ecosystem, *Journal of Geophysical Research: Biogeosciences*, v. 120, p. 788–808, doi: 10.1002/2014jg002799. ([article](#))
24. Wainwright, H. M., Chen, J., Sassen, D. S., and Hubbard, S. S. (2014), Bayesian hierarchical approach and geophysical data sets for estimation of reactive facies over plume scales, *Water Resources Research*, v. 50, p. 4564–4584, doi: 10.1002/2013wr013842. ([article](#))
25. Gangodagamage, C., Rowland, J. C., Hubbard, S. S., Brumby, S. P., Liljedahl, A. K., Wainwright, H., Wilson, Altmann, G. L., Dafflon, B., Peterson, J., Ulrich, C., Tweedie, C. E. and Wulfschleger, S. D. (2014), Extrapolating active layer thickness measurements across Arctic polygonal terrain using LiDAR and NDVI data sets, *Water Resources Research*, 1944-7973, doi:10.1002/2013WR014283. ([article](#))
26. Wu, Y., Surasani, V. K., Li, L. and Hubbard, S. S. (2014), Geophysical monitoring and reactive transport simulations of bioclogging processes induced by *Leuconostoc mesenteroides*, *Geophysics*, v. 79, doi: 10.1190/geo2013-0121.1. ([article](#))
27. Chen, J., Hubbard, S. S. and Williams, K. H. (2013), Data-driven approach to identify field-scale biogeochemical transitions using geochemical and geophysical data and hidden Markov models: Development and application at a uranium-contaminated aquifer, *Water Resources Research*, v. 49, p. 6412–6424, doi: 10.1002/wrcr.20524. ([article](#))
28. Surasani, V. K., Li, L., Ajo-Franklin, J. B., Hubbard, C., Hubbard, S. S. and Wu, Y. (2013), Bioclogging and Permeability Alteration by *L. mesenteroides* in a Sandstone Reservoir: A Reactive Transport Modeling Study, *Energy & Fuels*, v. 27, p. 6538–6551, doi: 10.1021/ef401446f. ([article](#))
29. Vilcáez, J., Li, L. and Hubbard, S. S. (2013), A new model for the biodegradation kinetics of oil droplets: application to the Deepwater Horizon oil spill in the Gulf of Mexico, *Geochemical Transactions*, v. 14, p. 4, doi: 10.1186/1467-4866-14-4. ([article](#))
30. Dafflon, B., Hubbard, S. S., Ulrich, C. and Peterson, J. E. (2013), Electrical Conductivity Imaging of Active Layer and Permafrost in an Arctic Ecosystem, through Advanced Inversion of Electromagnetic Induction Data, *Vadose Zone Journal*, v. 12, doi: 10.2136/vzj2012.0161. ([article](#))
31. Revil, A., Wu, Y., Karaoulis, M., Hubbard, S. S., Watson, D. B., and Eppehimer, J. D. (2013), Geochemical and geophysical responses during the infiltration of fresh water into the contaminated saprolite of the Oak Ridge Integrated Field Research Challenge site, Tennessee, *Water Resources Research*, v. 49, p. 4952–4970, doi: 10.1002/wrcr.20380. ([article](#))
32. Bea, S. A., Wainwright, H., Spycher, N., Faybishenko, B., Hubbard, S. S. and Denham, M.E. (2013), Identifying key controls on the behavior of an acidic-U(VI) plume in the Savannah River Site using

- reactive transport modeling, *Journal of Contaminant Hydrology*, v. 151, p. 34–54, doi: 10.1016/j.jconhyd.2013.04.005. ([article](#))
33. Truex, M., Johnson, T., Strickland, C., Peterson, J. and Hubbard, S.S. (2013), Monitoring Vadose Zone Desiccation with Geophysical Methods, *Vadose Zone Journal*, v. 12, doi: 10.2136/vzj2012.0147. ([article](#))
 34. Vilcáez, J., Li, L., Wu, D. and Hubbard, S. S. (2013), Reactive Transport Modeling of Induced Selective Plugging by *Leuconostoc Mesenteroides* in Carbonate Formations, *Geomicrobiology Journal*, v. 30, p. 813–828, doi: 10.1080/01490451.2013.774074. ([article](#))
 35. Revil, A., Skold, M., Karaoulis, M., Schmutz, M., Hubbard, S. S., Mehlhorn, T. L. and Watson, D. B. (2013), Hydrogeophysical investigations of the former S-3 ponds contaminant plumes, Oak Ridge Integrated Field Research Challenge site, Tennessee, *Geophysics*, v. 78, doi: 10.1190/geo2012-0177.1. ([article](#))
 36. Revil, A., Skold, M., Hubbard, S. S., Wu, Y., Watson, D. B. and Karaoulis, M. (2013), Petrophysical properties of saprolites from the Oak Ridge Integrated Field Research Challenge site, Tennessee, *Geophysics*, v. 78, doi: 10.1190/geo2012-0176.1. ([article](#))
 37. Trautz, R. C., Pugh, J. D., Varadharajan, C., Zheng, L., Bianchi, M., Nico, P. S., Spycher, N. F., Newell, D. L., Esposito, R. A., Wu, Y., Dafflon, B., Hubbard, S. S. and Birkholzer, J. T. (2013), Effect of Dissolved CO₂ on a Shallow Groundwater System: A Controlled Release Field Experiment, *Environmental Science & Technology*, v. 47, p. 298–305, doi: 10.1021/es301280t. ([article](#))
 38. Hubbard, S. S., Gangodagamage, C., Dafflon, B., Wainwright, H., Peterson, J., Gusmeroli, A., Ulrich, C., Wu, Y., Wilson, C., Rowland, J., Tweedie, C., and Wullschleger, S. D. (2012), Quantifying and relating land-surface and subsurface variability in permafrost environments using LiDAR and surface geophysical datasets, *Hydrogeology Journal*, v. 21, p. 149–169, doi: 10.1007/s10040-012-0939-y. ([article](#))
 39. Gasperikova, E., Hubbard, S. S., Watson, D. B., Baker, G. S., Peterson, J. E., Kowalsky, M. B., Smith, M., and Brooks, S. (2012), Long-term electrical resistivity monitoring of recharge-induced contaminant plume behavior, *Journal of Contaminant Hydrology*, v. 142-143, p. 33–49, doi: 10.1016/j.jconhyd.2012.09.007. ([article](#))
 40. Dafflon, B., Wu, Y., Hubbard, S. S., Birkholzer, J. T., Daley, T. M., Pugh, J. D., Peterson, J. E. and Trautz, R. C. (2013), Monitoring CO₂ Intrusion and Associated Geochemical Transformations in a Shallow Groundwater System Using Complex Electrical Methods, *Environmental Science & Technology*, v. 47, p. 314–321, doi: 10.1021/es301260e. ([article](#))
 41. Wu, Y., Hubbard, S. S., Ulrich, C., and Wullschleger, S. D. (2013), Remote Monitoring of Freeze–Thaw Transitions in Arctic Soils Using the Complex Resistivity Method, *Vadose Zone Journal*, v. 12, doi: 10.2136/vzj2012.0062. ([article](#))
 42. Meyer, J., Bethel, E. W., Horsman, J. L., Hubbard, S. S., Krishnan, H., Romosan, A., Keating, E. H., Monroe, L., Strelitz, R., Moore, P., Taylor, G., Torkian, B., Johnson, T. C. and Gorton, I. (2012), Visual Data Analysis as an Integral Part of Environmental Management, *IEEE Transactions on Visualization and Computer Graphics*, v. 18, p. 2088–2094, doi: 10.1109/tvcg.2012.278. ([article](#))
 43. Jadoon, K. Z., Weihermüller, L., Scharnagl, B., Kowalsky, M. B., Bechtold, M., Hubbard, S. S., Vereecken, H. and Lambot, S. (2012), Estimation of Soil Hydraulic Parameters in the Field by

- Integrated Hydrogeophysical Inversion of Time-Lapse Ground-Penetrating Radar Data, *Vadose Zone Journal*, v. 11, doi: 10.2136/vzj2011.0177. ([article](#))
44. Sassen, D. S., Hubbard, S. S., Bea, S. A., Chen, J., Spycher, N. and Denham, M. E. (2012), Reactive facies: An approach for parameterizing field-scale reactive transport models using geophysical methods, *Water Resources Research*, v. 48, doi: 10.1029/2011wr011047. ([article](#))
 45. Wu, Y., Hubbard, S. S. and Wellman, D. (2012), Geophysical Monitoring of Foam Used to Deliver Remediation Treatments within the Vadose Zone, *Vadose Zone Journal*, v. 11, doi: 10.2136/vzj2011.0160. ([article](#))
 46. Kowalsky, M. B., Finsterle, S., Williams, K. H., Murray, C., Commer, M., Newcomer, D., Englert, A., Steefel, C. I. and Hubbard, S. S. (2012), On parameterization of the inverse problem for estimating aquifer properties using tracer data, *Water Resources Research*, v. 48, doi: 10.1029/2011wr011203. ([article](#))
 47. Chen, J., Hubbard, S. S., Williams, K. H., Orozco, A. F. and Kemna, A. (2012), Estimating the spatiotemporal distribution of geochemical parameters associated with biostimulation using spectral induced polarization data and hierarchical Bayesian models, *Water Resources Research*, v. 48, doi: 10.1029/2011wr010992. ([article](#))
 48. Li, M., Yang, D., Chen, J. and Hubbard, S. S. (2012), Calibration of a distributed flood forecasting model with input uncertainty using a Bayesian framework, *Water Resources Research*, v. 48, doi: 10.1029/2010wr010062. ([article](#))
 49. Wan, J., Tokunaga, T. K., Dong, W., Denham, M. E. and Hubbard, S. S. (2012), Persistent Source Influences on the Trailing Edge of a Groundwater Plume, and Natural Attenuation Timeframes: The F-Area Savannah River Site, *Environmental Science & Technology*, v. 46, p. 4490–4497, doi: 10.1021/es204265q. ([article](#))
 50. Orozco, A., Williams, K. H., Long, P. E., Hubbard, S. S. and Kemna, A. (2011), Using complex resistivity imaging to infer biogeochemical processes associated with bioremediation of an uranium-contaminated aquifer, *Journal of Geophysical Research*, v. 116, doi: 10.1029/2010jg001591. ([article](#))
 51. Commer, M., Newman, G. A., Williams, K. H., and Hubbard, S. S. (2011), 3D induced-polarization data inversion for complex resistivity, *Geophysics*, v. 76, doi: 10.1190/1.3560156. ([article](#))
 52. Kowalsky, M. B., Gasperikova, E., Finsterle, S., Watson, D., Baker, G., and Hubbard, S. S. (2011), Coupled modeling of hydrogeochemical and electrical resistivity data for exploring the impact of recharge on subsurface contamination, *Water Resources Research*, v. 47, doi: 10.1029/2009wr008947. ([article](#))
 53. Williamson, M., Meza, J., Moulton, D., Gorton, I., Freshley, M., Dixon, P., Seitz, R., Steefel, C., Finsterle, S., Hubbard, S. S., Zhu, M., Gerdes, K., Patterson, R. and Collazo, Y.T. (2011), Advanced Simulation Capability For Environmental Management (Ascem): An Overview Of Initial Results, *Technology & Innovation*, v. 13, p. 175–199, doi: 10.3727/194982411x13085939956625. ([article](#))
 54. Wu, Y., Ajo-Franklin, J. B., Spycher, N., Hubbard, S. S., Zhang, G., Williams, K. H., Taylor, J., Fujita, Y., and Smith, R. (2011), Geophysical monitoring and reactive transport modeling of ureolytically-

- driven calcium carbonate precipitation: *Geochemical Transactions*, v. 12, p. 7, doi: 10.1186/1467-4866-12-7. ([article](#))
55. Scheibe, T. D., Hubbard, S. S., Onstott, T. C., and DeFlaun, M. F. (2011), Lessons Learned from Bacterial Transport Research at the South Oyster Site, *Ground Water*, v. 49, p. 745–763, doi: 10.1111/j.1745-6584.2011.00831.x. ([article](#))
 56. Li, L., Gawande, N., Kowalsky, M.B., Steefel, C.I., and Hubbard, S.S. (2011), Physicochemical Heterogeneity Controls on Uranium Bioreduction Rates at the Field Scale, *Environmental Science & Technology*, v. 45, p. 9959–9966, doi: 10.1021/es201111y. ([article](#))
 57. Zhang, Y., Hubbard, S., and Finsterle, S. (2010), Factors Governing Sustainable Groundwater Pumping near a River, *Ground Water*, v. 49, p. 432–444, doi: 10.1111/j.1745-6584.2010.00743.x. ([article](#))
 58. Chen, J., Hubbard, S. S., Gaines, D., Korneev, V., Baker, G., and Watson, D. (2010), Stochastic estimation of aquifer geometry using seismic refraction data with borehole depth constraints, *Water Resources Research*, v. 46, doi: 10.1029/2009wr008715. ([article](#))
 59. Hubbard, S.S., (2010), Environmental Geophysics for Contaminant Remediation, Chapter 10.5 in *Subsurface Sensing Technologies*.
 60. Hubbard, S.S. (2010), Understanding Vineyard Soils, *Vadose Zone Journal*, v. 9, p. 1107, doi: 10.2136/vzj2010.0084br. ([article](#))
 61. Grote, K., Anger, C., Kelly, B., Hubbard, S. S., and Rubin, Y. (2010), Characterization of Soil Water Content Variability and Soil Texture using GPR Groundwave Techniques, *Journal of Environmental & Engineering Geophysics*, v. 15, p. 93–110, doi: 10.2113/jee15.3.93. ([article](#))
 62. Williams, K. H., N'guessan, A. L., Druhan, J., Long, P. E., Hubbard, S. S., Lovley, D. R., and Banfield, J. F. (2010), Electrode voltages accompanying stimulated bioremediation of a uranium-contaminated aquifer, *Journal of Geophysical Research: Biogeosciences*, v. 115, doi: 10.1029/2009jg001142. ([article](#))
 63. Lambot, S., Pettinelli, E., Hubbard, S. S. and Slob, E. (2010), Ground Penetrating Radar in Hydrogeophysics, S., Chapter 10.4 in *Subsurface Sensing Technologies*.
 64. Hubbard, S.S., and Linde, N., Hydrogeophysics (2010), Chapter 20 in *Treatise in Water Science*, Volume 2, Ed. S. Uhlenbrook, Elsevier.
 65. Revil, A., Mendonça, C. A., Atekwana, E. A., Kulesa, B., Hubbard, S. S., and Bohlen, K. J., 2010, Understanding biogeobatteries: Where geophysics meets microbiology, *Journal of Geophysical Research*, v. 115, doi: 10.1029/2009jg001065. ([article](#))
 66. Hubbard, S. S., Peterson, J. , Wolf, J., Freese, P., Hubbard, A., and Rubin, Y. (2010), Advanced datasets guide Vineyard Development, *Practical Winery and Vineyard*. ([article](#))
 67. Li, L., Steefel, C. I., Kowalsky, M. B., Englert, A., and Hubbard, S. S. (2010), Effects of physical and geochemical heterogeneities on mineral transformation and biomass accumulation during biostimulation experiments at Rifle, Colorado, *Journal of Contaminant Hydrology*, v. 112, p. 45–63, doi: 10.1016/j.jconhyd.2009.10.006. ([article](#))
 68. Wu, Y., Hubbard, S., Williams, K. H., and Ajo-Franklin, J. (2010), On the complex conductivity signatures of calcite precipitation, *Journal of Geophysical Research: Biogeosciences*, v. 115, doi: 10.1029/2009jg001129. ([article](#))

69. Williams, K. H., Kemna, A., Wilkins, M. J., Druhan, J., Arntzen, E., N'Guessan, A. L., Long, P. E., Hubbard, S. S., and Banfield, J. F. (2009), Geophysical Monitoring of Coupled Microbial and Geochemical Processes During Stimulated Subsurface Bioremediation, *Environmental Science & Technology*, v. 43, p. 6717–6723, doi: 10.1021/es900855j. ([article](#))
70. Chen, J., Hubbard, S. S., Williams, K. H., Pride, S., Li, L., Steefel, C., and Slater, L. (2009), A state-space Bayesian framework for estimating biogeochemical transformations using time-lapse geophysical data, *Water Resources Research*, v. 45, doi: 10.1029/2008wr007698. ([article](#))
71. Englert, A., Hubbard, S. S., Williams, K. H., Li, L., and Steefel, C. I. (2009), Feedbacks Between Hydrological Heterogeneity and Bioremediation Induced Biogeochemical Transformations, *Environmental Science & Technology*, v. 43, p. 5197–5204, doi: 10.1021/es803367n. ([article](#))
72. Li, L., Steefel, C. I., Williams, K. H., Wilkins, M. J., and Hubbard, S. S. (2009), Mineral Transformation and Biomass Accumulation Associated With Uranium Bioremediation at Rifle, Colorado, *Environmental Science & Technology*, v. 43, p. 5429–5435, doi: 10.1021/es900016v. ([article](#))
73. Chen, J., Kemna, A., and Hubbard, S. S. (2008), A comparison between Gauss-Newton and Markov-chain Monte Carlo-based methods for inverting spectral induced-polarization data for Cole-Cole parameters, *Geophysics*, v. 73, doi: 10.1190/1.2976115. ([article](#))
74. Faybishenko, B., Hazen, T. C., Long, P. E., Brodie, E. L., Conrad, M. E., Hubbard, S. S., Christensen, J. N., Joyner, D., Borglin, S. E., Chakraborty, R., Williams, K. H., Peterson, J. E., Chen, J., Brown, S. T., et al. (2008), In Situ Long-Term Reductive Bioimmobilization of Cr(VI) in Groundwater Using Hydrogen Release Compound, *Environmental Science & Technology*, v. 42, p. 8478–8485, doi: 10.1021/es801383r. ([article](#))
75. Druhan, J. L., Conrad, M. E., Williams, K. H., N'Guessan, L., Long, P. E., and Hubbard, S. S. (2008), Sulfur Isotopes as Indicators of Amended Bacterial Sulfate Reduction Processes Influencing Field Scale Uranium Bioremediation, *Environmental Science & Technology*, v. 42, p. 7842–7849, doi: 10.1021/es800414s. ([article](#))
76. Hubbard, S. S. (2008), The evolution of hydrogeophysics, *The Leading Edge*, v. 27, p. 824–824, doi: 10.1190/tle27060824.1. ([article](#))
77. Hubbard, S. S., Williams, K., Conrad, M. E., Faybishenko, B., Peterson, J., Chen, J., Long, P., and Hazen, T. (2008), Geophysical Monitoring of Hydrological and Biogeochemical Transformations Associated with Cr(VI) Bioremediation, *Environmental Science & Technology*, v. 42, p. 3757–3765, doi: 10.1021/es071702s. ([article](#))
78. Lambot, S., Binley, A., Slob, E., and Hubbard, S. (2008), Ground Penetrating Radar in Hydrogeophysics, *Vadose Zone Journal*, v. 7, p. 137, doi: 10.2136/vzj2007.0180. ([article](#))
79. Personna, Y. R., Ntarlagiannis, D., Slater, L., Yee, N., O'brien, M. and Hubbard, S. (2008), Spectral induced polarization and electrodic potential monitoring of microbially mediated iron sulfide transformations, *Journal of Geophysical Research: Biogeosciences*, v. 113, doi: 10.1029/2007jg000614. ([article](#))
80. Linde, N., Tryggvason, A., Peterson, J. E. and Hubbard, S. S. (2008), Joint inversion of crosshole radar and seismic traveltimes acquired at the South Oyster Bacterial Transport Site, *Geophysics*, v. 73, doi: 10.1190/1.2937467. ([article](#))

81. Slater, L., Ntarlagiannis, D., Personna, Y. R., and Hubbard, S. S. (2007), Pore-scale spectral induced polarization signatures associated with FeS biomineral transformations, *Geophysical Research Letters*, v. 34, doi: 10.1029/2007gl031840. ([article](#))
82. Williams, K. H., Hubbard, S. S. and Banfield, J. F. (2007), Galvanic interpretation of self-potential signals associated with microbial sulfate-reduction, *Journal of Geophysical Research: Biogeosciences*, v. 112, doi: 10.1029/2007jg000440. ([article](#))
83. Snieder, R., Hubbard, S., Haney, M., Bawden, G., Hatchell, P., Revil, A. and DOE Geophysical Monitoring Working Group (2007), Advanced Noninvasive Geophysical Monitoring Techniques: Annual Review of Earth and Planetary Sciences, v. 35, p. 653–683, doi: 10.1146/annurev.earth.35.092006.145050. ([article](#))
84. Chen, J., Hubbard, S. S., Peterson, J., Williams, K., Fienen, M., Jardine, P., and Watson, D. (2006), Development of a joint hydrogeophysical inversion approach and application to a contaminated fractured aquifer, *Water Resources Research*, v. 42, doi: 10.1029/2005wr004694. ([article](#))
85. Scheibe, T. D., Fang, Y., Murray, C. J., Roden, E. E., Chen, J., Chien, Y. J., Brooks, S. C. and Hubbard, S. S. (2006), Transport and biogeochemical reaction of metals in a physically and chemically heterogeneous aquifer, *Geosphere*, v. 2, p. 220, doi: 10.1130/ges00029.1. ([article](#))
86. Hubbard, S. S., Valeo, C. and S. Uhlenbrook (2006), Hydrological Challenges: Scientific, Technological and Organizational Bottlenecks, Chapter 7, Hydrology 2020: An Integrating Science to Meet World Water Challenges, IAHS Press, UK, Publication 300, ISBN 978-901502-33-3, ISSN 0144-7815, p. 141-154.
87. Kowalsky, M. B., Chen, J. and Hubbard, S. S. (2006), Joint inversion of geophysical and hydrological data for improved subsurface characterization, *The Leading Edge*, v. 25, p. 730–734, doi: 10.1190/1.2210057. ([article](#))
88. Linde, N., Finsterle, S. and Hubbard, S. S. (2006), Inversion of tracer test data using tomographic constraints, *Water Resources Research*, v. 42, doi: 10.1029/2004wr003806. ([article](#))
89. Hubbard, S. S. and Hornberger, G. (2006), Introduction to special section on Hydrologic Synthesis, *Water Resources Research*, v. 42, doi: 10.1029/2005wr004815. ([article](#))
90. Ntarlagiannis, D., Williams, K. H., Slater, L. and Hubbard, S. S. (2005), Low-frequency electrical response to microbial induced sulfide precipitation, *Journal of Geophysical Research: Biogeosciences*, v. 110, doi: 10.1029/2005jg000024. ([article](#))
91. Kowalsky, M. B., Finsterle, S., Peterson, J., Hubbard, S. S., Rubin, Y., Majer, E., Ward, A. and Gee, G. (2005), Estimation of field-scale soil hydraulic and dielectric parameters through joint inversion of GPR and hydrological data, *Water Resources Research*, v. 41, doi: 10.1029/2005wr004237. ([article](#))
92. Williams, K. H., Ntarlagiannis, D., Slater, L. D., Dohnalkova, A., Hubbard, S. S. and Banfield, J. F. (2005), Geophysical Imaging of Stimulated Microbial Biomineralization, *Environmental Science & Technology*, v. 39, p. 7592–7600, doi: 10.1021/es0504035. ([article](#))
93. Grote, K., Hubbard, S. S., Harvey, J. and Rubin, Y. (2005), Evaluation of infiltration in layered pavements using surface GPR reflection techniques, *Journal of Applied Geophysics*, v. 57, p. 129–153, doi: 10.1016/j.jappgeo.2004.10.002. ([article](#))

94. Lunt, I., Hubbard, S. and Rubin, Y. (2005), Soil moisture content estimation using ground-penetrating radar reflection data, *Journal of Hydrology*, v. 307, p. 254–269, doi: 10.1016/j.jhydrol.2004.10.014. ([article](#))
95. Chen, J., Hubbard, S. S., Rubin, Y., Murray, C., Roden, E., and Majer, E. (2004), Geochemical characterization using geophysical data and Markov Chain Monte Carlo methods: A case study at the South Oyster bacterial transport site in Virginia, *Water Resources Research*, v. 40, doi: 10.1029/2003wr002883. ([article](#))
96. Vereecken, H., Hubbard, S. S., Binley, A., and Ferre, T. (2004), Hydrogeophysics: An Introduction from the Guest Editors, *Vadose Zone Journal*, v. 3, p. 1060–1062, doi: 10.2113/3.4.1060. ([article](#))
97. Hubbard, S. S. and Rubin, Y. (2004), The Quest for Better Wine using Geophysics, *Geotimes*, 30-34. ([short review](#))
98. Huisman, J. A., Hubbard, S. S., Redman, J. D., and Annan, A. P. (2003), Measuring Soil Water Content with Ground Penetrating Radar, *Vadose Zone Journal*, v. 2, p. 476, doi: 10.2136/vzj2003.0476. ([article](#))
99. Grote, K., Hubbard, S. S., and Rubin, Y. (2003), Field-scale estimation of volumetric water content using ground-penetrating radar ground wave techniques, *Water Resources Research*, v. 39, doi: 10.1029/2003wr002045. ([article](#))
100. Hubbard, S. S., Zhang, J., Monteiro, P. J. M., Peterson, J. E. and Rubin, Y. (2003), Experimental Detection of Reinforcing Bar Corrosion Using Nondestructive Geophysical Techniques, *ACI Materials Journal*, v. 100, doi: 10.14359/12957. ([article](#))
101. Hubbard, S. S. and Rubin, Y. (2002), Study institute assesses the state of hydrogeophysics: Eos, *Transactions American Geophysical Union*, v. 83, p. 602, doi: 10.1029/2002eo000412. ([article](#))
102. Hubbard, S. S., Grote, K. and Rubin, Y. (2002), Mapping the volumetric soil water content of a California vineyard using high-frequency GPR ground wave data, *The Leading Edge*, v. 21, p. 552–559, doi: 10.1190/1.1490641. ([article](#))
103. Grote, K., Hubbard, S. S., and Rubin, Y. (2002), GPR monitoring of volumetric water content in soils applied to highway construction and maintenance, *The Leading Edge*, v. 21, p. 482–504, doi: 10.1190/1.1481259. ([article](#))
104. Balkwill, D., Chen, J., Deflaun, M., Dobbs, F., Dong, H., Fredrickson, J., Fuller, M., Green, M., Ginn, T., Griffin, T., Holben, W., Hubbard, S. S., Johnson, W., Long, P., et al. (2001), Breakthroughs in field-scale bacterial transport: Eos, *Transactions American Geophysical Union*, v. 82, p. 417–417, doi: 10.1029/01eo00255. ([article](#))
105. Hubbard, S. S., Chen, J., Peterson, J., Majer, E. L., Williams, K. H., Swift, D. J., Mailloux, B. and Rubin, Y. (2001), Hydrogeological characterization of the south oyster bacterial transport site using geophysical data, *Water Resources Research*, v. 37, p. 2431–2456, doi: 10.1029/2001wr000279. ([article](#))
106. Chen, J., Hubbard, S. and Rubin, Y. (2001), Estimating the hydraulic conductivity at the south oyster site from geophysical tomographic data using Bayesian Techniques based on the normal linear regression model, *Water Resources Research*, v. 37, p. 1603–1613, doi: 10.1029/2000wr900392. ([article](#))
107. Johnson, P., Zhang, P., Fuller, M. E., Scheibe, T. D., Mailloux, B. J., Onstott, T. C., Deflaun, M. F., Hubbard, S. S., Radtke, J., Kovacic, W. P. and Holben, W. (2001), Ferrographic Tracking of Bacterial

- Transport in the Field at the Narrow Channel Focus Area, Oyster, VA, *Environmental Science & Technology*, v. 35, p. 182–191, doi: 10.1021/es001170e. ([article](#))
108. Hubbard, S. S. and Rubin, Y. (2000), Hydrogeological parameter estimation using geophysical data: a review of selected techniques, *Journal of Contaminant Hydrology*, v. 45, p. 3–34, doi: 10.1016/s0169-7722(00)00117-0. ([article](#))
109. Hubbard, S. S., Rubin, Y. and Majer, E. (1999), Spatial correlation structure estimation using geophysical and hydrogeological data, *Water Resources Research*, v. 35, p. 1809–1825, doi: 10.1029/1999wr900040. ([article](#))
110. Hubbard, S. S., Rubin, Y. and Majer, E.L. (1998), Estimation of hydrological parameters and their spatial Correlation structures using geophysical data, in *Groundwater Quality: Remediation and Protection*, eds. M. Herberet and K. Kovar, IAHS Publication 250, Wallingford, UK. ([article](#))
111. Hubbard, S. S., Peterson, J. E., Majer, E. L., Zawislanski, P. T., Williams, K. H., Roberts, J. and Wobber, F. (1997), Estimation of permeable pathways and water content using tomographic radar data: The Leading Edge, v. 16, p. 1623–1630, doi: 10.1190/1.1437539. ([article](#))
112. Hubbard, S. S., Rubin, Y. and Majer, E. (1997), Ground-penetrating-radar-assisted saturation and permeability estimation in bimodal systems, *Water Resources Research*, v. 33, p. 971–990, doi: 10.1029/96wr03979. ([article](#))
113. Hubbard, S. S., Çoruh, C. and Costain, J. K. (1991), Paleozoic and Grenvillian Structures in the southern Appalachians: Extended interpretation of seismic reflection data, *Tectonics*, v. 10, p. 141–170, doi: 10.1029/90tc01854. ([article](#))
114. Calzia, J. P., Hubbard, S. S., Turner, R. L., Griscom, A., Swatzky, D. L., Linne, J. M. (1988), Mineral Resources of the Jordan Craters Wilderness Study Area Malheur County, Oregon, *U.S.G.S. Open-File Report 88-572*, 11p. ([report](#))
115. Sharpless, S. and Walters, A. (1989), Data report for the 1986 San Luis Obispo, California, seismic refraction survey, *U.S.G.S. Open File Report 88-35*, 48p. ([report](#))
116. Sharpless, S. and Albers, A. (1987), A Compilation of ages of mineralization of metallic mineral deposits in the western conterminous Cordillera as determined through 1985, *U.S.G.S. Open File Report 87-165*, 28p ([report](#))
-

Books and Book Chapters

117. Hubbard, S. S. (2011), Contaminant remediation, Chapter 9.4 in *Subsurface Sensing*, Eds. A. Turk et al., ISBN: 978-0-470-13388-0, Wiley, New Jersey, USA, p.600-618.
118. Lambot, S., Pettineli, Hubbard, S. S., Slob, E. C., Bleinm, E., Post, V. E. (2011), *Hydrogeophysics*, Chapter 9.3 in *Subsurface Sensing*, Eds. A. Turk et al., ISBN 978-0-470-13388-0, Wiley, New Jersey, USA, p. 567-599.
119. Hubbard, S. S. and Linde, N. (2011), Hydrogeophysics. In: Peter Wilderer (ed.) *Treatise on Water Science*, vol. 1, pp. 401–434 Oxford: Academic Press. ([chapter](#))
120. Gaines, D., Baker, G. S., Hubbard, S. S., Watson, D., Brooks, S. and Jardine, P. (2010), 25. Detecting Perched Water Bodies Using Surface-Seismic Time-Lapse Traveltime Tomography, *Advances in*

- Near-surface Seismology and Ground-penetrating Radar*, p. 415–428, doi: 10.1190/1.9781560802259.ch25. ([chapter](#))
121. Linde, N., Chen, J., Kowalsky, J. and Hubbard, S. S., (2006), Hydrogeophysical parameter estimation approaches for field scale characterization, in *Applied Hydrogeophysics*, edited by H. Vereecken et al., chap. 2, pp. 9-44, Springer. ([book](#))
 122. Hubbard, S. and Rubin, Y., (2006), Hydrogeological Characterization Using Geophysical Methods: The Handbook of Groundwater Engineering, Second Edition, doi: 10.1201/9781420006001.ch14. ([chapter](#))

 123. Hubbard, S. S., Lunt, I., Grote, K. and Y, Rubin (2006), Vineyard soil water content: mapping small scale variability using ground penetrating radar, Chapter in Macqueen, R.W., and Meinert, L.D., (eds.), *Fine Wine and Terroir - The Geoscience Perspective: Geoscience Canada Reprint Series Number 9*, Geological Association of Canada, St. John's, Newfoundland, 247p.. ISBN 1-897095-21-X; ISSN 0821-381X. ([pdf](#))
 124. Majer, E. et al., 2005, Airborne and Surface Geophysical Method Verification: Barrier Systems for Environmental Contaminant Containment and Treatment, p. 209–285, doi: 10.1201/9781420037319.ch4. ([chapter](#))
 125. Heal, K., Valeo, C., Oki, T. and Hubbard, S. S. (2006), Intersection of Hydrology and Other Disciplines, Chapter 6, *Hydrology 2020: an integrating science to meet world water challenges*: Wallingford, UK, International Association of Hydrological Sciences. ([chapter](#))
 126. Uhlenbrook, S., Franks, Stewart, F., Heal, K., Hubbard, S. S., Karambiri, H., Oki, T. and Valeo, C. (2006), Key Messages, Recommendations and Concluding Remarks, Chapter 8, *Hydrology 2020: an integrating science to meet world water challenges*: Wallingford, UK, International Association of Hydrological Sciences.
 127. Rubin, Y., and Hubbard, S. S. (2005), Stochastic Forward and Inverse Modeling: The “Hydrogeophysical” Challenge: *Water Science and Technology Library Hydrogeophysics*, p. 487–511, doi: 10.1007/1-4020-3102-5_17. ([chapter](#))
 128. Hubbard, S. S. and Rubin, Y. (2005), Introduction to Hydrogeophysics: *Water Science and Technology Library Hydrogeophysics*, p. 3–21, doi: 10.1007/1-4020-3102-5_1. ([book](#))
 129. Faybishenko, B., Bandurranga, M., Conrad, M., Cook, P., Eddy-Dilek, C., Everett, L., Hazen, T., Hubbard, S. S., Hutter, A. R., Jordan, P., Keller, C., Leiji, F. J., Loaiciga, N., Majer, E. L., et al. (2000) Vadose Zone Characterization and Monitoring Current Technologies, Applications, and Future Developments, *in VADOSE ZONE SCIENCE AND TECHNOLOGY SOLUTIONS*, p. 133–395. ([chapter](#))
 130. Rubin, Y., Hubbard, S. S., Wilson, A. and Cushey, M. (1998), Aquifer Characterization: The Handbook of Groundwater Engineering, doi: 10.1201/9781420048582.ch10a. ([chapter](#))
-

Abstracts (selected)

1. Dou, S, J.B. Ajo-Franklin, B. Dafflon, J. Peterson, C. Ulrich, D. Dreger, S.S. Hubbard, Surface-wave imaging of inversely dispersive media: a permafrost example, SEG International Exposition and 87th Annual Meeting, Houston, Texas, September 2017
2. Banfield, J., et al., Standing on the threshold and looking forward: incorporating microbial metabolism into understanding of biogeochemistry (Invited), Plenary 'Goldschmidt Award', Paris, France, August 13-18, 2017
3. Wan, J., Tokunaga, T., Dong, W., Williams, K., Hobson, C., Kim, Y., Conrad, M., Bill, M., Long, P. and Hubbard, S., Relative Carbon Fluxes from Soil, Deep Valdose Zone and Groundwater to Atmosphere and River of a Semi-Arid Floorplain in Colorado, GSA Annual Meeting, Denver, CO, September 27, 2016
4. Wu, Y., Dafflon, B., Tran, A., Leger, E., Peterson, J., Brodie, E., Williams, K. and Hubbard, S., Investigating the Coupling of Root Zone and Hillslope Thermo-Hydro-Bio-Geo-Chemical Dynamics in a Mountainous Watershed using Multi-scale Approaches, The 3rd AGU-SEG Hydrogeophysics Workshop: Imaging the Critical Zone, Stanford, CA, July 2017
5. Peruzzo, L., Schmutz, M., Franceschi, M., Hubbard, S., Copper solution concentration influence on the spectral induced polarization signature of different soil constituents, 4th International Workshop on Induced Polarization, Aarhus, Denmark, June 6-8, 2016
6. Wainwright et al, Multi-type Multiscale Observation Platforms for Quantifying and Scaling Above and Below-ground Interactions, 2nd Asian Conference on Permafrost, ACOP 2017, Sapporo, Japan, July 2-6, 2017
7. Hubbard, S., Wainwright, H., Tran A., Leger, E., Wu, Y., Dafflon, B., Monitoring, Scaling and Predicting Interactions across Critical Zone Compartments Using Geophysical Data, The 3rd AGU-SEG Hydrogeophysics Workshop: Imaging the Critical Zone, Stanford, CA, July 2017
8. Hubbard, S., Nico, P., Jones, A., Varadharajan, C., Kosteki, R., Ramesh, R., California Water Resiliency in an Energy Constrained and Uncertain Climate Future, Invited, 254th American Chemical Society National Meeting, Washington DC, 2017
9. Wainwright, H., Steefel, C., Williams, K., Hubbard, S., Enquist, B., Steltzer, H. and Sarah, T., Mapping Drought Sensitivity of Ecosystem Functioning in Mountainous Watersheds: Spatial Heterogeneity and Geological-Geomorphological Control. American Geophysical Society Union Fall Meeting, San Francisco, December 12, 2016
10. Dafflon, B., Leger, E., Peterson, J., Ulrich, C., Soom, F., Biraud, S., Tran, A., Wainwright, H., Ajo-Franklin, J. and Hubbard, S., NS23B-08: Investigating Bedrock through Canopy Structure, Organization and Connectivity of an Arctic Watershed. American Geophysical Society Union Fall Meeting, San Francisco, December 13, 2016
11. Oktem, R., Wainwright, H., Curtis, J., Dafflon, B., Peterson, J., Ulrich, C., Hubbard, S. and Torn, M., B33C-0617: Ground-based Remote Sensing for Quantifying Subsurface and Surface Co-variability to Scale Arctic Ecosystem Functioning. American Geophysical Society Union Fall Meeting, San Francisco, December 14, 2016
12. Leger, E., Dafflon, B., Thorpe, M., Kreitinger, A., Laura, D., Haivala, J., Peterson, J., Spangler, L. and Hubbard, S., H34A-04: Monitoring CO₂ Intrusion in shallow aquifer using complex electrical methods and a novel CO₂ sensitive Lidar-based sensor. American Geophysical Society Union Fall Meeting, San Francisco, December 14, 2016

13. Tran, A., Dafflon, B. and Hubbard, S., B53G-0596: Coupled Land Surface-Subsurface Inverse Modeling to Investigate Arctic Hydrological and Thermal Dynamics and Soil Organic Content using Geophysical Data. American Geophysical Society Union Fall Meeting, San Francisco, December 16, 2016
14. Soom, F., Ulrich, C., Dafflon, B., Wu, Y., Kneafsey, T., López, R., Peterson, J. and Hubbard, S., B43C-0627: Estimating the spatial distribution of soil organic matter density and geochemical properties in a polygonal shaped Arctic Tundra using core sample analysis and X-ray computed tomography, American Geophysical Society Union Fall Meeting, San Francisco, December 15, 2016
15. Mary, B., Peruzzo, L., Boaga, J., Schmutz, M., Wu, Y., Hubbard, S. and Cassiani, G., Small scale characterization of vine plant root zone via 3D electrical resistivity tomography and Mise-à-la-Masse method: a case study in a Bordeaux Vineyard, Geophysical Research Abstracts, Vol. 19, EGU2017-Preview, 2017 EGU General Assembly 2017
16. Léger, E., Dafflon, B., Peterson, J., Ulrich, C., Soom, F., Biraud, S., Tran, A., Wainwright, H., Ajo-Franklin, J. and Hubbard, S., Investigating Bedrock Through Canopy Structure, Organization and Connectivity of an Arctic Watershed, ESS PI Meeting, Washington, DC, April 25-26, 2017
17. Dafflon, B., Tran, A., Wainwright, H., Léger, E., Curtis, J., Oktem, R., Peterson, J., Ulrich, C., Soom, F., Wu, Y., Kneafsey, T., Torn, M. and Hubbard, S., Quantifying Multi-Dimensional Relationships to Estimate Arctic Soil Properties and Ecosystem Functioning at Relevant Scales, ESS PI Meeting, Washington, DC, April 25-26, 2017
18. Matheus-Carnevali P., Williams, K., Dong, W., Hubbard, S. and Banfield, J., Genome-resolved metagenomic and geochemical analysis of East River riparian zone soils supports the 'systems within systems' approach for watershed analysis, JGI PI meeting 2017
19. Newcomer, N., Hubbard, S., Fleckenstein, J., Maier, U., Schmidt, C., Laube, G., Chen, N., Ulrich, C., Dwivedi, D., Steefel, C. and Rubin, Y., B31H-0573: Hydrological and Climate Controls on Hyporheic Contributions to River Net Ecosystem Productivity (Invited). American Geophysical Society Union Fall Meeting, San Francisco, December 14, 2016
20. Anantharaman, K., Brown, C., Hug, L., Itai, S., Castelle, C., Shelton, A., Bonet, B., Probst, A., Thomas, B., Singh, A., Wilkins, M., Williams, K., Tringe, S., Beller, H., Brodie, E., Hubbard, S. S., and Banfield, J., B11J-0567: 2500 High-quality Genomes Reveal that the Biogeochemical Cycles of C, N, S and H are Cross-linked by Metabolic Handoffs in the Terrestrial Subsurface. American Geophysical Union Fall Meeting, San Francisco, CA, December 14, 2015.
21. Molz, F., Faybishenko, B., Brodie, E., and Hubbard, S. S., H21A-1331: Complexity in Soil Systems: What Does It Mean and How Should We Proceed? American Geophysical Union Fall Meeting, San Francisco, CA, December 15, 2015.
22. Tran, A.P., Dafflon, B., Hubbard, S. S., Bisht, G., Peterson, J., Ulrich, C., Romanovsky, V., Kneafsey, T. Wu, Y., H13E-1596: Coupled Monitoring and Inverse Modeling to Investigate Surface – Subsurface Hydrological and Thermal Dynamics in the Arctic Tundra. American Geophysical Union Fall Meeting, San Francisco, CA, December 14, 2015.
23. Dafflon, B., Peterson, J., Oktem, R., Curtis, J., Ulrich, C., Torn, M., and Hubbard, S. S., B41D-0469: Estimating Soil Properties and Relationship to Landscape Properties in Arctic Tundra using Aerial Platform and Geophysical Monitoring. American Geophysical Union Fall Meeting, San Francisco, CA, December 17, 2015.
24. Wu, Y., Dafflon, B., and Hubbard, S. S., H53C-1671: Geophysical Imaging of Root Architecture and Root-soil Interaction. American Geophysical Union Fall Meeting, San Francisco, CA, December 18, 2015.
25. Ulrich, C., Dafflon, B., Wu, Y., Kneafsey, T., Lopez, R., Peterson, J., and Hubbard, S. S., C11C-0788: Lab-Scale Investigation of Multi-dimensional Relationships between Soil Intrinsic Properties to

- Improve Estimation of Soil Organic and Ice Content using Novel Core Imaging and Geophysical Techniques in Arctic Tundra. American Geophysical Union Fall Meeting, San Francisco, CA, December 14, 2015.
26. Wainright, H., Liljedal, A., Peterson, J., Dafflon, B., Ulrich, C., Gusmeroli, A., and Hubbard, S. S., C33C-0825: Multiscale Observational Platforms and Bayesian Data Integration to Estimate Snow Depth and Snow-water-equivalent over the Ice-wedge Polygonal Tundra. American Geophysical Union Fall Meeting, San Francisco, CA, December 16, 2015.
 27. Hubbard, S. S., Dafflon, B., Tran, A.P., Chen, J., and Wainwright, H., B52C-04: Quantifying Biogeochemical Responses to Hydrological Perturbations in Terrestrial Systems using Geophysical Monitoring and Inversion Schemes. American Geophysical Union Fall Meeting, San Francisco, CA, December 18, 2015.
 28. Dafflon, B., Tran, A.P., Wainright, H., Hubbard, S. S., Peterson, J., Ulrich, C., and Williams, K., H54B-02: Quantifying Subsurface Water and Heat Distribution and its Linkage with Landscape Properties in Terrestrial Environment using Hydro-Thermal-Geophysical Monitoring and Coupled Inverse Modeling. American Geophysical Union Fall Meeting, San Francisco, CA, December 18, 2015.
 29. Newcomer, M., Hubbard, S. S., Fleckenstein, J., Maier, U., Schmidt, C., Thullner, M., Ulrich, C., Flipo, N., and Rubin, Y., B54B-04: Riverbed Bioclogging and the Effects on Infiltration and Carbon Flux under Climate Variability. American Geophysical Union Fall Meeting, San Francisco, CA, December 18, 2015.
 30. Hubbard, S. S., Walck, M., Blankenship, D., Bonneville, A., Bromhal, G., Daley, T., Pawar, R., Polsky, Y., Mattson, E., and Mellors, R., H51M-1561: The DOE Subsurface (SubTER) Initiative: Revolutionizing Responsible use of the Subsurface for Energy Production and Storage. American Geophysical Union Fall Meeting, San Francisco, CA, December 18, 2015.
 31. Hubbard, S. S., Agarwal, D., Banfield, J., Beller, H., Brodie, E., Long, P., Nico, P., Steefel, C., Tokunaga, T., Williams, K. H., and the Sustainable Systems SFA 2.0 Team, B31B-0020: Genome-to-Watershed Predictive Understanding of Terrestrial Environments, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
 32. Chen, J., Hubbard, S. S., and Williams, K. H., B31B-0022: Estimating groundwater dynamics at a Colorado floodplain site using historical hydrological data and climate information, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
 33. Christensen, J. N., Shiel, A. E., Conrad, M. E., Williams, K. H., Dong, W., Tokunaga, T. K., Wan, J., Long, P. E., and Hubbard, S. S., H43N-1174: Uranium and Strontium Isotopic Study of the Hydrology of the Alluvial Aquifer at the Rifle Former U Mine Tailings Site, Colorado, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
 34. Conrad, M., Arora, B., Williams, K. H., Bill, M., Spycher, N., Steefel, C. I., Tokunaga, T. K., and Hubbard, S. S., B31B-0016: Using Concentrations and Isotopic Compositions of CO₂ to Distinguish Microbial Production of CO₂ in Unsaturated Zone Sediments in Hydrogeochemical Models, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
 35. Dafflon, B., Hubbard, S. S., Peterson, J., Ulrich, C., Oktem, R., Curtis, J. B., Tran, A. P., Wu, Y., Cable, W. and Romanovsky, V. E., FM14-C11C-0379: Estimating Arctic Tundra Soil Water Content Variability and Relationship to Landscape Properties Using Above- and Below-Ground Imaging, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
 36. Dou, S., Dreger, D. S., Peterson, J., Ulrich, C., Dafflon, B., Hubbard, S. S. and Ajo-Franklin, J. B., FM14-C53A-0288: Wavefield Inversion of Surface Waves for Delineating Seismic Structure in Saline Permafrost: A Case History from the Barrow Peninsula, AK, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.

37. Gangodagamage, C., Rowland, J. C., Hubbard, S. S., Brumby, S. P., Liljedahl, A., Wainwright, H. M., Sloan V. L., Altmann, G., Skurikhin, A., Shelef, E., Wilson, C. J., Dafflon, B., Peterson, J., Ulrich, C., Gibbs, A., Tweedie, C. E., Painter, S. L., and Wullschleger, S. D., EP31A-3517: Predicting/Extrapolating Active Layer Thickness Using Statistical Learning from Remotely-Sensed High-resolution Data in Arctic Permafrost Landscapes: Improved parameterization of Ice-wedge polygons from LiDAR/WorldView-2 derived metrics, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
38. Hubbard, S. S. and Arora, B., (Chairs), B33B: Characterizing Spatial and Temporal Variability of Hydrological and Biogeochemical Processes Across Scales I Posters, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
39. Hubbard, S. S., Agarwal, D., Banfield, J. F., Beller, H. R., Brodie, E., Long, P., Nico, P. S., Steefel, C. I., Tokunaga, T. K., Williams, K. H., and the Sustainable Systems SFA 2.0 Team, B31B-0020: Genome-to-Watershed Predictive Understanding of Terrestrial Environments, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
40. Newcomer, M. E., Hubbard, S. S., Fleckenstein, J. H., Schmidt, C., Maier, U., Thullner, M., Ulrich, C., and Rubin, Y., B31E-0055: Feedbacks Between Bioclogging and Infiltration in Losing River Systems, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
41. Tokunaga, T. K., Wan, J., Dong, W., Kim, Y., Williams, K. H., Conrad, M. E., Christensen, J. N., Bill, M., Faybishenko, B., Hobson, C., Dayvault, R., Long, P. E. and Hubbard, S. S., B44B-07: Water and Carbon Fluxes in a Semi-Arid Region Floodplain: Multiple Approaches to Constrain Estimates of Seasonal- and Depth Dependent Fluxes at Rifle, Colorado, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
42. Tran, A. P., Dafflon, B., Hubbard, S. S., Kowalsky, M. B., Tokunaga, T. K., Faybishenko, B., and Long, P. E., H54B-06: Monitoring Soil Hydraulic and Thermal Properties using Coupled Inversion of Time-lapse Temperature and Electrical Resistance Data, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
43. Ulrich, C., Hubbard, S. S., Peterson, J., Blom, K., Black, W., Delaney, C. and Mendoza, J., NA21A-3870: Geophysical Assessment of the Control of a Jetty on a Barrier Beach and Estuary System, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
44. Versteeg, R. J., Bianchi, M., and Chen, J., Hubbard, S. S., and Williams, K. H., B31B-0022: Estimating groundwater dynamics at a Colorado floodplain site using historical hydrological data and climate information, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
45. Wainwright, H. M., Hubbard, S. S., and Arora, B., (Chairs), B44B: Characterizing Spatial and Temporal Variability of Hydrological and Biogeochemical Processes Across Scales II, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
46. Wainwright, H. M., Dafflon, B., Smith, L.J., Hahn, M.S., Ulrich, C., Wu, Y., Peterson, J., Curtis, J. B., Torn, M. S., and Hubbard, S. S., FM14-B54F-07: Identifying multiscale zonation and assessing the relative importance of polygon geomorphology and polygon types on carbon fluxes in an Arctic Tundra Ecosystem, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
47. Walck, M.C., Hubbard, S. S., and Hollett, D., TH15E: DOE Crosscutting Subsurface Initiative: Adaptive Control of Subsurface Fractures and Flow, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
48. Wan, J., Dong, W., Kim, Y., Tokunaga, T. K., Bil, M., Conrad, M. E., Williams, K. H., Long, P. E., and Hubbard, S. S., B33B-0164: Subsurface Carbon Cycling Below the Root Zone, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.

49. Wu, Y., Kneafsey, T. J., Tas, N., Bill, M., Ulrich, C., and Hubbard, S. S., FM14-B410-07: Controlled Freeze-thaw Experiments to Study Biogeochemical Process and its Effects on Greenhouse Gas Release in Arctic Soil Columns, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.,
50. Versteeg, R. J., Bianchi, M., Hubbard, S. S., H13H-1210: Predictive assimilation framework to support contaminated site understanding and remediation, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2014.
51. Hubbard, S. S., Geophysical quantification of ecosystem processes across scales and system compartments, ESPM UC Berkeley seminar series, Berkeley, CA, April 2014
52. Hubbard, S. S., et al., Geophysical imaging of the Arctic Tundra: From microbes to landscapes, KQED, San Francisco, CA May 2014.
53. Hubbard, S. S., et al., Identifying ecosystem controls through joint use of above and below ground datasets, DOE SBR/PI Meeting, Potomac, MA, May 2014.
54. Banfield, J., Castelle, C., Hug, L., Wrighton, K., Sharon, I., Brown, C., Kantor, R., Singh, A., Thomas, B., Luef, B., Comolli, L., Williams, K. H., Long, P., Hubbard, S. S., Prediction of the biogeochemical roles of uncultivated bacteria and archaea in the subsurface, Goldschmidt, Sacramento, CA, June 2014.
55. Christensen, J. N., Shiel, A., Conrad, M. E., Williams, K. W., Dong, W., Tokunaga, T. K., Wan, J., Long, P. E., Hubbard, S. S., Constraints on the hydrology of a riparian site from U and Sr isotopes: The Rifle, Colorado floodplain, Goldschmidt, Sacramento, CA, June 2014.
56. Banfield, J., Castelle, C., Sharon, I., Hug, L., Brown, C., Kantor, R., Thomas, B., Singh, A., Wilkins, M., Hettich, R., Tringe, S., Williams, K. H., Brodie, E., Beller, H., Hubbard, S. S., Diversity and metabolic potential of the terrestrial subsurface microbiome and its influence on biogeochemical cycling, PI meeting SBR DOE, TES SBR PI Meeting, Potomac, MD, May 6-7, 2014.
57. Chakraborty, R., Pettenato, A., Tas, N., Hubbard, S. S., Jansson, J., Metabolic and Growth Characteristics of Novel Diverse Microbes Isolated from Deep Cores Collected from Barrow, Alaska, American Society for Microbiology Meeting, Boston , Massachusetts, May 17-20, 2014.
58. Freshley, M., Freedman, V., Hubbard, S. S., Wainwright, H., Truex, M., Eddy-Dilek, C., Scheibe, T., Moulton, D. and Marble, J., Advanced Simulation Capability for Environmental Management (ASCEM): A Toolset for Evaluation of Complex Sites, Federal Remediation Technologies Roundtable, May 2014.
59. Freshley, M., Freedman, V., Hubbard, S. S., Wainwright, H., Scheibe, T., Moulton, D., Dixon, P., and Marble, J., Advanced Simulation Capability for Environmental Management (ASCEM): A Toolset for Groundwater Protection EPRI Groundwater Protection Workshop, Savannah GA, June 24-26, 2014.
60. Freshley, M., Scheibe, T., Moulton, D., Freedman, V., Hubbard, S. S., Finsterle, S., Steefel, C., Wainwright, W., Flach, G., Seitz, R., Dixon, P., Marble, J., Advanced Simulation Capability for Environmental Management Initial User Release (14134), Waste Management, 2014.
61. Pugh, J., Birkholzer, J., Dafflon, B., Esposito, R., Hubbard, S. S., Newell, D., Nico, P., Spycher, N. Tinnacher, R., Trautz, R., Varadharajan, C., Wu, Y., Zheng, L., Effects of CO₂ Leakage into Drinking Water Aquifers: Lessons Learned from a Controlled CO₂ Release Field Test, GHGT12, Austin, 2014.
62. Hubbard, S. S., Agarwal, A., Banfield, J., Beller, H., Brodie, E., Long, P., Nico, P., Steefel, C., Tokunaga, T., Williams, K., Genome-to-Watershed Predictive Understanding of Terrestrial Biogeochemical Functioning: 'Sustainable Systems 2.0', Goldschmidt, Sacramento, CA, June 2014.
63. Newcomer, M.E., Hubbard, S. S., Fleckenstein, J., Schmidt, C., Maier, U., Thullner, M., Rubin, Y., Seasonal Dynamic Permeability Effects on the Transient Connection Status of a River, International Water Association (IWA) Conference, San Francisco, 2014.

64. Tas, N. Wang, S., Wu, Y., Smith, L., Ulrich, C., Kneafsey, T., Torn, M., Hubbard, S. S., and Jansson, J., Microbial ecology across polygon features at the NGEE-Arctic Barrow site, Complex Soil Systems Conference, Berkeley, California, September 3-5, 2014.
65. Tokunaga, T., Wan, J., Dong, W., Williams, K. H., Robbins, M. J., Kim, Y., Faybishenko, B., Conrad, M., Christensen, J., Hobson, C., Gilbert, B., Dayvault, R., Long, P. E., Hubbard, S. S., Determining water and carbon fluxes into groundwater from a semiarid floodplain vadose zone, Goldschmidt, June 2014, Sacramento, CA.
66. Wan, J., Dong, W., Tokunaga, T., Williams, K., Kim, Y., Conrad, M., Gilbert, B., Long, P., Hubbard, S. S., Carbon transport and transformation from vadose zone to groundwater, Goldschmidt, Sacramento, CA, June 2014.
67. Wullschleger, S., Hinzman, L., Hubbard, S. S., Rogers, A., Thornton, P., Wilson, C., Landscape change in a warming Arctic - Implications for carbon cycle processes and climate feedbacks at multiple scales, "Vulnerability of Arctic and Boreal Ecosystems Under a Changing Climate", Anchorage, AK, May 18-22 2014.
68. Dafflon, B., Hubbard, S. S., Wainwright, H., Wu, Y., Dou, S., Ajo-Franklin, J., Peterson, J., Ulrich, C., Gusmeroli, A., Kneafsey, T., Characterization of active layer and permafrost variability using geophysical approaches, Department of Energy TES/SBR Joint PI Meeting, Potomac, MD, May 14-15, 2013.
69. Tas, N., Torn, M., Chakraborty, R., Smith, L., Wu, Y., Ulrich, C., Kneafsey, T., Graham, D., Hubbard, S. S., Wullschleger, S., Jansson, J., Microbial ecology across polygon features at the NGEE-Arctic Barrow site, Department of Energy TES/SBR Joint PI Meeting, Potomac, MD, May 14-15, 2013.
70. Wullschleger, S., Graham, D., Liang, L., Norby, R., Thornton, P., Hubbard, S. S., Torn, M., Riley, W., Rowland, J., Wilson, C., Rogers, A., Hinzman, L., NGEE Arctic: Migrating process-rich knowledge across spatial scales to improve climate prediction, Department of Energy TES/SBR Joint PI Meeting, Potomac, MD, May 14-15, 2013.
71. Wilson, C., Hinzman, L., Wullschleger, S., Bolton, R., Busey, R., Cherry, J., Liljedahl, A., Grosse, G., Gusmeroli, A., Hubbard, S. S., Kholodov, A., Peterson, J. Romanovsky, V., Rowland, J., Wainwright, H., Young, J., Quantifying the interactions of geomorphic hydrologic and thermal processes to improve predictions of climate impacts and feedbacks in the Arctic, Department of Energy TES/SBR Joint PI Meeting, Potomac, MD, May 14-15, 2013.
72. Hinzman, L. D., Wullschleger, S. D., Wilson, C. J., Rowland, J. C., Hubbard, S. S., Torn, M. S., Riley, W. J., Graham, D. E., Liang, L., Norby, R. J., Thornton, P. E., Rogers, A., Next-Generation Ecosystem Experiment (NGEE Arctic): Opportunities for International Collaboration and Partnership, ISAR - 3 Third International Symposium on the Arctic Research, Tokyo, Japan, January 14-17, 2013.
73. Hubbard S. S., Dafflon B., Wainwright H., Tokunaga T. K., Ulrich C., Jansson J., Tildenorn M. S., Williams K. H., H41L-04: Characterizing controls on terrestrial environment functioning across scales using geophysical datasets, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
74. Agarwal, D., Pullman, S., Voytek, J., Pastorello, G., Papale, D., Biraud, S., Hubbard, S. S., Torn, M., IN33B-1536: Enabling Mobile Data and Metadata Collection and Submission in Support of AmeriFlux and NGEE Data Collection and Access, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
75. Cheng, Y., Bouskill, N., Hubbard, C., Hubbard, S. S., Surasani, V., Ajo-Franklin, J., Li, L., Rafa, S., Engelbrekton, A., Coates, J., Understanding Microbial Reservoir Souring and Desouring Processes Using Reactive Transport Modeling, B43B-0477: American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
76. Chakraborty, R., Pettenato, A., Tas, N., Hubbard, S. S., Jansson, J., B33G-0561: Isolation and characterization of novel microorganisms from deep cores collected at the Next Generation

- Ecosystem Experiment (NGEE)-Arctic site in Barrow, Alaska, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
77. Commer, M., Kowalsky, M. Dafflon, B., Wu, Y., Hubbard, S. S., NS33A-1683: Strategies for improving the resolution of electrical and electromagnetic geophysical measurements for three-dimensional inverse modeling of CO2 movement, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
 78. Dafflon B., Hubbard S. S., Ulrich C., Peterson J. E., Wu Y., Wainwright H., Gangodagamage C., Kholodov A.L., Kneafsey T., C43A-0664: Quantifying Arctic terrestrial environment behaviors using geophysical, point-scale and remote sensing data, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
 79. Dafflon B., Hubbard S. S., Ulrich, C., and Peterson J. E., Estimating arctic soil properties through advanced inversion of electromagnetic induction data (extended abstract), SEG/AGU joint workshop: Cryosphere geophysics: Understanding a changing climate with subsurface imaging, Boise, ID, January 2013.
 80. Dafflon B., Hubbard, S. S., Ulrich, C., Peterson, J. E., Wainwright, H., and Wu, Y., Estimating active layer, ice-wedge and permafrost property distributions in Arctic ecosystem using electrical conductivity imaging (Invited), SEG extended abstract, Houston, TX, September 2013.
 81. Dixon, P., Freshley, M., Schiebe, T., Moulton, D., Hubbard, S. S., Finsterle, S., Steefel, C., Advanced Simulation Capability for Environmental Management User Release and Current Plans, The Geological Society of America (GSA) Annual Meeting and Expo, Denver CO, October 27-30, 2013.
 82. Florsheim, J. L., Ulrich, C., Hubbard, S. S., Borglin, S., Rosenberry, D. O., EP33A-0873: Geomorphic field experiment to quantify grain size and biotic influence on riverbed sedimentation dynamics in a dry-season reservoir, Russian River, CA, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
 83. Gangodagamage, C., Rowland, C. J., Skurikhin, A. N., Wilson, C. J., Brumby, S. P., Painter, S. L., Gable, C. W., Bui, Q., Short, L. S., Liljedahl, A. K., Wainwright, H. M., Hubbard, S. S., Dafflon, B., Tweedie, C. E., Kumar, J., Wullschleger, S. D., B51H-0402: Spatial and Spectral Characterization, Mapping, and 3D Reconstructing of Ice-wedge Polygons Using High Resolution LiDAR Data, AGU, San Francisco, CA, December 9-13, 2013.
 84. Hinzman, L., Wullschleger, S., Hubbard, S. S., Graham, D., Wilson, C., Torn, M., Norby, R., Rogers, A., and the entire NGEE-Arctic Team, C31B-0649: Observation Platforms and Data Streams of the Arctic Next Generation Ecosystem Experiment (NGEE-Arctic), American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
 85. Jansson, J., Tas, N., Wu, Y., Ulrich, U., Kneafsey, T., Torn, M., Hubbard, S. S., Chakroborty, R., Graham, D., Wullschleger, S., B32C-04: Metagenomics reveals microbial community composition and function with depth in Arctic permafrost cores, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
 86. Hubbard, S. S., Graham, D. E., Hinzman, L. D., Liang, L., Liljedahl, A., Norby, R. J., Rogers, A., Rowland, J. C., Thornton, P. E., Torn, M. S., Riley, W. J., Wilson, C. J., Wullschleger, S. D., C33C-07: Improved Climate Prediction through a System Level Understanding of Arctic Terrestrial Ecosystems: Next Generation Ecosystem Experiments (NGEE-Arctic), American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
 87. Newcomer, M., Hubbard, S. S., Fleckenstein, J., Schmidt, C., Maier, U., Rubin, Y., H24A-07: Dynamic Permeability and Clogging Processes of Riverbank Filtration Systems, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
 88. Tas, N., Wu, Y., Smith, L., Ulrich, C., Kneafsey, T., Torn, M., Hubbard, S. S., Wullschleger, S., Jansson, J., Metagenomics and microbial community profiling across an Arctic polygon transect, Polar and Alpine Microbiology, Big Sky, MT, Sept 8-12, 2013.

89. Tas, N., Hubbard, S. S., Jansson, J., Isolation and characterization of anaerobic, fermentative and respiratory microbes from permafrost soil, in Polar and Alpine Microbiology, Big Sky, MT, September 8-12, 2013.
90. Chakraborty, R., Pettenato, A., Tas, N., Hubbard, S. S., Jansson, J., Metabolic and growth characteristics of novel diverse microbes isolated from deep cores collected at the Next Generation Ecosystem Experiment (NGEE) - Arctic site in Barrow, Alaska, in American Society for Microbiology Meeting, Boston, MA, May 17-20, 2013
91. Tokunaga, T., Wan, J., Dong, W., Williams, K. H., Robbins, M. J., Kim, Y., Faybishenko, B., Conrad, M.C., Christensen, J. N., Gilbert, B., Dayvault, R. D., Long, P. E., Hubbard, S. S., B23C-0568: Organic carbon inventory and vertical flux through the Vadose Zone into groundwater at the Rifle, Colorado River floodplain site, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
92. Ulrich, C., Hubbard, S. S., Peterson, J., Delaney, C., Blaum, K., and Black, W., H13A-1308: Geophysical Assessment of the Control of a Jetty on a Barrier Beach and Estuary System, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
93. Wainwright H., Hubbard S. S., Dafflon B., Ulrich C., Peterson J. E., Wu Y., Hahn M. S., Torn M. S., Gangodagamage C., Rowland J. C., Wilson C. J., Liljedahl A., Gusmeroli A., Wulschleger S. D., C53C-06, Characterizing subsurface controls on the Arctic ecosystem carbon cycling across scales using geophysical, in-situ and remote sensing datasets, American Geophysical Union Fall Meeting, San Francisco, CA, December 9-13, 2013.
94. Wu, Y., Kneafsey, T., Nakagawa, S., Borglin, S., Cook, P., Torn, M., Jansson, J., Hubbard, S. S., B14E-07: Freeze-thaw Laboratory Column Experiments using Arctic Permafrost Cores: Exploring Controls of Subsurface Heterogeneity on Greenhouse Gas Release, American Geophysical Union Fall Meeting, CA, December 9-13, 2013.
95. Yang, D., Li, M., Chen, J., Hubbard, S. S., H44A-04: Calibration of a distributed forecasting model with input uncertainty using a Bayesian Framework, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
96. Jansson, J., Tas, N., Brodie, e., Graham, D., Kneafsey, T., Torn, M., Wu, Y., Wulschleger, S., Hubbard, S. S., C31C-06: Horizontal and vertical profiling of microbial communities across landscape features at NGEE site, Barrow, Alaska, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
97. Wilson, C., Graham, D., Hinzman, L., Hubbard, S. S., Liang, L., Norby, R., Riley, W., Rogers, A., Rowland, J., Thornton, P., Torn, M., Wulschleger, S., C53A-0807: Scaling process studies and observations in the arctic for improved climate predictability, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
98. Surasani, V. K., Commer, M., Ajo-Franklin, J., Li, L., Hubbard, S. S., B23B-0444: Reactive transport modeling and geophysical monitoring of bioclogging at reservoir scale, 2012 Fall Meeting, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
99. Gusmeroli, A., Liljedahl, A., Peterson, J., Hubbard, S. S., C33C-0668: Effects of spatially variable snow cover on thermal regime and hydrology of an Arctic ice wedge polygon landscape identified using ground penetrating radar and LIDAR datasets, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
100. Ulrich, C., Hubbard, S. S., Florsheim, J., Rosenberry, D., Borglin, S., Zhang, Y., Seymour, D., and Trotta, M., H131-10: Quantifying Factors That Impact Riverbed Dynamic Permeability at a Riverbank Filtration Facility, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.

101. Wu, Y., Hubbard, S. S., Ulrich, C., Dafflon, B., Wulschleger, S., C13C-0640: Complex resistivity method for permafrost studies: freeze thaw transitions in the arctic soils, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
102. Dafflon, B., Hubbard, S. S., Ulrich, C., Peterson, J., Wu, Y., Chen, J. and Wulschleger, S., C22B-04: Depth imaging of active layer and permafrost variability in the Arctic using electromagnetic induction data, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
103. Wainwright, H., Hubbard, S. S., Gangodagamage, C., Dafflon, B., Ulrich, C., Wu, Y., Wilson, C., Tweedie, C., and Wulschlegger, S., B53E-0715: High resolution characterization of heterogeneous arctic tundra subsurface properties using a multiscale bayesian fusion approach with geophysical datasets, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
104. Hubbard, C., Hubbard, S. S., Wu, Y., Surasani, V., Ajo-Franklin, J., Commer, M., Dou, S., Kwon, T., Li, L., Fouke, B., and Coates, J., B23B-0447: Toward optimized bioclogging and biocementation through combining advanced geophysical monitoring and reactive transport modeling approaches, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
105. Hubbard, S. S., Grote, K. R., Freese, P., Peterson, J. E. and Rubin, Y., H53F-1586: Waves and Wine: Advanced approaches for characterizing and exploiting micro-terroir, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
106. Hubbard, S. S., Wainwright, H., Chen, J., Bea, S., Li, L. and Spycher, N., H33N-01: Quantifying physicochemical heterogeneity and critical transitions that influence plume behavior using geophysical approaches and reactive transport modeling, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
107. Wulschleger, S., Graham, D., Hinzman, L., Hubbard, S. S., Liang, L., Liljedahl, A., Norby, R., Rogers, A., Rowland, J., Thornton, P., Torn, M., Riley, W., Wilson, C., U51B-05: Improved climate prediction through a system level understanding of arctic terrestrial ecosystems, American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
108. Bea, S. A., Wainwright, H., Spycher, N., Hubbard, S. S., Davis, J., Identifying key controls on the behavior of an acidic-U (VI) Plume at the Savannah River Site using Reactive Transport Modeling, Goldschmidt, Montreal, Canada, June 24-29, 2012.
109. Brodie, E., Jansson, J., Bouskill, N., Hubbard, S. S., Torn, M., Understanding and modeling the microbial processes driving terrestrial biogeochemical cycles, TES PI meeting, Washington, DC, April 23-24, 2012.
110. Spycher, N., Bea, S. A., Wainwright, H., Mukhopadhyay, S., Christensen, J., Dong, W., Hubbard, S. S., Davis, J., Denham, M., Integrating geochemical, reactive transport, and facies-based modeling approaches at the Savannah River F-Area, Goldschmidt, Montreal, Canada, June 24-29, 2012.
111. Chen, J., Hubbard, S. S., Man Mok, C., Suribhatla, R., Kaback, D., A new software toward improved site characterization for easy integration of hydrogeological and geophysical datasets, Batelle International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 2012.
112. Hubbard, S. S., Ajo-Franklin, J., Butler-Veytia, B., Wu, Y., Gasperikova, E., Peterson, J., Kelley, R., Geophysical imaging for investigating the distribution of induced fractures and associated amendments in a TCE-contaminated aquifer, Batelle International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 2012.
113. Bendiganavale, A., Ntarlagiannis, D., Slater, L., Tyson, T. A., Hubbard, S. S., Prodan, C., Nano scale detection of metal precipitate around bacterial cell membrane using dielectric spectroscopy, 56th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication, Waikoloa, HI, May 2012.

114. Hubbard, S. S., Gangodagamage, C., Dafflon, B., Wainwright, H., Ulrich, C., Gusmeroli, A., Wu, Y., Doetsch, J., Peterson, J.E., Wilson, C., Tweedie, C., Wulschleger, S.D., Quantifying and relating subsurface and land-surface variability in permafrost environments using surface geophysical and LIDAR datasets, Geophysical Research Abstracts, Vol. 14, EGU 2012, Preview 2012, EGU General Assembly 2012. Vienna, Austria.
115. Freshley, M., Hubbard, S. S., Freedman, V., Flach, G., Gorton, I., Moulton, D., Finsterle, S., Steefel, C., Dixon, P., Advanced Simulation Capability for Environmental Management (ASCEM): Development and Demonstration, Waste Management 2012, New Forest, UK, April 4-6, 2012.
116. Freshley, M., Hubbard, S. S., Freedman, V., Flach, G., Gorton, I., Moulton, D., Finsterle, S., Steefel, C., Dixon, P., Advanced Simulation Capability for Environmental Management (ASCEM): Development and Demonstration, Waste Management Extended Abstract, SBR PI Meeting, Washington, DC, April 2012.
117. Gusmeroli, A., Hinzman, L., Hubbard, S. S., Dafflon, B., Wulschleger, S., Exploring the Alaskan cryosphere with ground penetrating radar, IARC Conference, Paris, France, March 2012.
118. Wainwright, H.M., Hubbard, S. S., Dafflon, B., Ulrich, C., Wu, Y., Gangodagamage, C., Rowland, J., Wilson, C., Tweedie, C., Wulschleger, S.D., Multiscale bayesian fusion approach using geophysical and remote sensing data for characterizing arctic tundra hydrogeochemical properties, TICOP 2012, Salekhard, Russia, June 25-29, 2012.
119. Fujita, Y., Smith, R., Ginn, T., Hubbard, S. S., Taylor, J., Henriksen, J., Gebrehiwet, t., Delwiche, M., Peterson, J., Microbially induced calcite precipitation in the subsurface, ACS Meeting, San Diego, CA, March 2012.
120. Wu, Y., Dafflon, B., Hubbard, S. S., Peterson, J., Pugh, J., Daley, T., Trautz, R., Birkholzer, J., Complex electrical method as a monitoring tool for CO₂ intrusion into shallow groundwater systems and associated geochemical transformations, 11th Annual Carbon Capture, Utilization and Sequestration Conference, Pittsburg, PA, April 2012.
121. Pugh, J., Esposito, R., Trautz, R., Birkholzer, J., Spycher, N., Hubbard, S. S., Newell, D., Assessing the impact of elevated dissolved carbon dioxide on aquifer water quality through a controlled release field test: Test Design and Implementation, Annual Conference on Carbon Capture and Sequestration, Pittsburg, PA, May 13-16, 2012.
122. Schiebe, T., Hubbard, S. S., Onstott, R., DeFlaun, M., Lessons learned from bacterial transport research at the South Oyster Site, National Groundwater Summit, Garden Grove, CA, May 2012.
123. Hubbard, S. S., Hinzman, L., Graham, D., Liang, L., Norby, R., Riley, W., Rogers, A., Rowland, J., Thornton, P., Torn, M., Wilson, C., Wulschleger, S., Next Generation Ecosystem Experiment, Quantification and prediction of coupled processes in the terrestrial Arctic system, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011. (abstract)
124. Ajo-Franklin, J., Daley, T., Butler-Veytia, B., Peterson, J., Gasprikova, E., Wu, Y., Kelly, B., Hubbard, S. S., H52C-03: The acquisition and integrated inversion of a continuous active source seismic monitoring dataset: application to shallow hydrofracture evolution (*Invited*), American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
125. Chen, J., Hubbard, S. S., Williams, K. H., H11E-0847: A Hierarchical Bayesian Model for Estimating Remediation-induced Biogeochemical Transformations Using Spectral Induced Polarization Data: Development and Application to the Contaminated DOE Rifle (CO) Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
126. Dafflon, B., Wu, Y., Hubbard, S. S., Birkholzer, J., Daley, T. M., Pugh, J. D., Peterson, J., Trautz, R. C., GC41E-02: Evaluating sensitivity of complex electrical methods for monitoring CO₂ intrusion into a shallow groundwater system and associated geochemical transformations, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.

127. Dong, W., Tokunaga, T., Miles, D., Davis, J., Hubbard, S. S., V23C-2578: Surface complexation modeling of U(VI) adsorption onto Savannah River site sediments, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
128. Fujita, Y., Taylor, J., Henriksen, J., Delwiche, M., Gebrehiwet, T., Hubbard, S. S., Spycher, N., Ginn, T., Pffiffner, S., Smith, R., H24A-06: Probing microbial activity in a perched water body located in a deep vadose zone, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
129. Istok, J., Jansik, D., Foote, M., Zhang, Z., Wu, Y., Hubbard, S. S., Mattigod, S., Zhong, L., Wellman, D., H24A-03: Foam-based delivery of amendments to immobilize metals and radionuclides in deep vadose zone environments (*Invited*), American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
130. Kelley, R., Hubbard, S. S., Ajo-Franklin, J., Butler-Veytia, B., Wu, Y., Peterson, J., Gasperikova, E., Geophysical imaging for investigating the distribution of induced fractures and associated amendments at the F.E. Warren Air Force Base, SERDP Conference, Washington, DC, December 2011.
131. Murakami-Wainwright, H., Sassen, D., Chen, J., Hubbard, S. S., H52C-06: Multiscale hydrogeophysical data assimilation for plume-scale subsurface characterization, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
132. Wiedmer, A., Hunt, J.R., Faybishenko, B., Agarwal, D., Flach, G., Whiteside, T., Bennet, P., Bagwell, L., Romosan, A., Hubbard, S. S., H531-1522: Mass balances and uncertainty in radionuclide transport at the SRS F-area seepage basins groundwater plume, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
133. Wu, Y., Hubbard, C., Hubbard, S. S., B23D-06: Complex electrical monitoring of biopolymer and iron mineral precipitation for microbial enhanced hydrocarbon recovery, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
134. Meza, J.C., Hubbard, S. S., Freshley, M. D., Gorton, I. and Moulton, J. D., Advanced Simulation Capability for Environmental Management (ASCEM): Early Site Demonstration, Waste Management Conference, Phoenix, AZ, February 27 - March 3, 2011,.
135. Skold, M., Hubbard, S. S., Karaoulis, M., Revil, A., Spycher, N., Watson, D., Wu, Y., H34B-03: Coupled interpretation of geoelectrical surveying results in environmental site investigations, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2011.
136. Fujita, Y., Smith, R. W., Ginn, T. R., Hubbard, S. S., Taylor, J. L., Henriksen, J. R., Gebrehiwet, T., Delwiche, M. E. Peterson, J. E., Microbially induced calcite precipitation in the subsurface, in Environmental Remediation Conference, San Diego, CA, 2011.
137. Gasperikova, E., Kowalsky, M. B., Hubbard, S. S., Peterson, J. E., Baker, G. S., Smith, M. Watson, D. B., Long-term Time-lapse Surface And Borehole Electrical Resistivity Monitoring of Natural Recharge-induced Contaminant Plume Behavior, 2010 SEG Annual Meeting, Denver, CO, October 17-22, 2010. doi:10.1190/1.3513670, 2010.
138. Commer, M., Newman, G. A., Williams, K. H., Hubbard, S. S., Three-dimensional inversion of EM coupling contaminated spectral induced polarization data, 2010 SEG Annual Meeting, Denver, CO, October 17-22, 2010
139. Hubbard, S. S., Loeffler, F. and Zachara, J. (chaired), DOE/SC-0123, Complex Systems Science for Subsurface Fate and Transport: Report of August 2009 Workshop. ([pdf](#))
140. Wellman, D., Mattigod, S., Hubbard, S. S., Miracle, A., Zhong, L., Foote, M. and Wu, Y., Advanced remedial methods for metals and radionuclides in vadose zone environments, International Conference on Environmental Remediation and Radioactive Waste Management, Tsukuba, Japan, October 3-7, 2010.

141. Gaines, D., Baker, G.S., Hubbard, S. S., Watson, D. and Brooks, S., Detecting perched water bodies using surface seismic time-lapse travel-time tomography, EAGE Near-Surface 2010 Conference, Zurich, Switzerland, September 2010
142. Hubbard, S. S., Toward X-Ray Vision, Invited, Paper 198-1, Geological Society of America Annual Meeting, Denver, CO, October 30-November 3, 2010.
143. Jadoon, K. Z., Kowalsky, M. B., Finsterle, S., Hubbard, S. S., Vereecken, H., Lambot, S., Coupled hydrogeophysical inversion of time-lapse off-ground GPR and hydrological data, in EGU General Assembly Conference Abstracts, Vienna, Austria, May 2010.
144. Ntarlagiannis, D., Williams, K., Slater, L., Hubbard, S. S., Wu, Y., Investigating the effect of electro-active ion concentration on induced polarization signatures arising from biomineral formation, in *Geochimica et Cosmochimica Acta*, 2010, Volume 74, Pergamon-Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford, England, 2010
145. Hubbard, S. S., Watson, D., Baker, G.S., Chen, J., Kowalsky, M., Gasperikova, E., Gaines, D.B., Smith, M. and Brooks, S., Hydrogeophysical Quantification of Plume-Scale Flow Architecture and Recharge Processes, *Geochim Cosmochim Acta* 74, A433, 2010.
146. Zhang, C., Prodan, C., Slater, L., Bendiganavale, A., Ntarlagiannis, D., Hubbard, S. S., Low-frequency dielectric spectroscopy measurements on sulfate-reducing bacteria cell suspensions, *Geochim Cosmochim Acta* 74, A1202, 2010.
147. Wu, Y., Ajo-Franklin, J., Armstrong, R. and Hubbard, S. S., Noninvasive Geophysical Imaging of Ureolytic CaCO₃ Precipitation, *Geochim Cosmochim Acta* 74, A1149, 2010.
148. Baker, G.S., Hubbard, S. S., Watson, D.B., Gasperikova, E. and Brooks, S., Time-lapse Electrical Resistivity Tomography (ERT) Monitoring of In Situ Hydrogeochemical Changes Associated with an Emulsified Vegetable Oil Injection for Bioreduction of Uranium(VI), *Geochim Cosmochim Acta* 74, A42, 2010.
149. Gaines, D.P., Baker, G.S., Hubbard, S. S., Watson, D. and Jardine, P., H13D-05: Application of Surface Time-Lapse Seismic Refraction Tomography (TLST) to Quantifying Changes in Saturation Within the Vadose Zone , American Geophysical Union Fall Meeting, San Francisco, CA, December 14-18, 2009.
150. Baker, G.S., Wu, Y., Hubbard, S. S., Wu, W., Gaines, D. P., Pratt, J., Modi, A., Watson, D. and Jardine, P., H12A-03: Surface time-lapse electrical resistivity tomography (TLERT) monitoring of an SRS injection and associated biogeochemical processes, Oak Ridge National Laboratory, Tennessee, American Geophysical Union Fall Meeting, San Francisco, CA, December 14-18, 2009.
151. Hubbard, S. S., Baker, G., Chen, J., Kowalsky, M., Gasperikova, E., Gaines, D., Modi, A., Watson, D. and Jardine, P., IA32A-01: Quantification of Flow Architecture and Recharge Processes at the Watershed Scale using Joint Hydrogeophysical Inversion Approaches, American Geophysical Union Fall Meeting, San Francisco, CA, December 14-18, 2009.
152. Gasperikova, E., Zhang, Y., and Hubbard, S. S., H42D-02: Using Self Potential and Multiphase Flow Modeling to Optimize Groundwater Pumping, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
153. Zhang, Y., Finsterle, S., Gasperikova, E. and Hubbard, S. S., Time-Dependent Riverbed Clogging and its Impact on Groundwater Pumping, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
154. Li, L., Steefel, C., Kowalsky, M. B., Englert, A.L. and Hubbard, S. S., H24B-02: Effects of Physical and Chemical Heterogeneities on Biogeochemical Processes Associated With Uranium Bioremediation at Rifle, Colorado, Invited, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
155. Chen, J., Hubbard, S. S., Korneev, V., Gaines, D., Baker, G. S. and Watson, D., H44C-06: Stochastic Inversion of Seismic Refraction Data With Borehole Depth Constraints for Watershed-scale

- Characterization of Aquifer Geometry, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
156. Gaines, D. P., Baker, G. S., Hubbard, S. S., Watson, D. B. and Jardine, P. M., NS41A-04: Enhancing Monitoring of Recharge-Related Environmental Remediation Processes Using Time-Lapse Seismic Refraction, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
 157. Jardine, P. M, Watson, D., Baker, G., Brandt, C., Brooks, S., Criddle, C., Phelps, T., Gaten, C., Gu, B., Hortia, J., Hubbard, S. S., Kelly, S., Kemner, K., Kitanidis, P., Kosta, J., Lou, J., Palumbo, T., Parker, J., Schadt, C., Spalding, B., Wu, W., Zhang, F. and Zhou, J., Oak Ridge Integrated Field Research Challenge Project: Multi-scale Investigations on the Rates and Mechanisms of Targeted Immobilization and Natural Attenuation of Metal, Radionuclide and Co-Contaminants in the Subsurface, Invited, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
 158. Wu, Y., Ajo-Franklin, J., Williams, K. H., Hubbard, S. S. and Nico, P. S., H51M-07: Multi-scale Geophysical Signatures of Biogenic Calcite and FeS Precipitation Using Rifle as a Model Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
 159. Long, P. E., Williams, K. H. , Banfield, J., Bush, R., Campbell, K., Chandler, D. P., Davis, J. A., Dayvault, R., Englert, A., Fox, P., Hettich, R. L., Holmes, D., Hubbard, S. S., Jaffe, P. R., Kerkhof, L. J., Kukkadapu, R. K., Li, L., Lipton, M., Lovley, D., Morris, S., Morrison, S., Newcomer, D., N'Guessan, L., Peacock, A., Hyun, S. P., Qafoku, N., Resch, C. T., Spane, F., Steefel, C., VerBerkmoes, N., Wilkins, M., Yabusaki, S.B., Yelton, P., H51K-01: In-situ bioreduction of uranium in an alluvial aquifer: overview of results from the Integrated Field-Scale Subsurface Research Challenge Site (IFC) at Rifle, Colorado, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
 160. Modi, A. L., Baker, G. S., Hubbard, S. S., Gasperikova, E., Gaines, D., Watson, D., Jardine, P., H51G-0947: Using High-Resolution, Surface Time-Lapse Electrical Resistivity Tomography to Characterize and Monitor Subsurface Hydrological Processes, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2008.
 161. Ajo-Franklin, J., Wu, Y., Nico, P., Hubbard, S. S., Using synchrotron Micro-CT to Monitor Microbially-Induced Calcite Precipitation on the Pore Scale, AGU Biogeophysics Chapman Conference, Portland, ME, October 13-16, 2008.
 162. Chen, J., Hubbard, S. S., Williams, K., Pride, S., Li, L. and Slater, L., A state-space Bayesian framework for estimating biogeochemical transformations using time-lapse geophysical data, AGU Biogeophysics Chapman Conference, Portland, ME, October 13-16, 2008.
 163. Hubbard, S. S., Williams, K. H., Ajo-Franklin, J., Chen, J. and Truex, M., Geophysical Signatures of Remediation Amendments, AGU Biogeophysics Chapman Conference, Portland, ME, October 13-16, 2008.
 164. Englert, A., Kowalsky, M. B., Williams, K. H. , Peterson, J. E., Long, P., and Hubbard, S. S., Field scale biostimulation: Understanding induced feedbacks between subsurface biogeochemical transformations and physical properties of the subsurface, AGU Biogeophysics Chapman Conference, Portland, ME, October 13-16, 2008.
 165. Li, L., Steefel, C. I., Kowalsky, M. B., Williams, K.H. and Hubbard, S. S., Effects of biomass accumulation and solid phase transformation on physical properties of porous media during uranium bioremediation at Rifle, CO, AGU Biogeophysics Chapman Conference, Portland, ME, October 13-16, 2008.
 166. Wu, Y., Williams, K., Ajo-Franklin, J. and Hubbard, S. S., Geophysical signatures of remediation-induced calcite precipitation, AGU Biogeophysics Chapman Conference, Portland, ME, October 13-18, 2008.

167. Kowalsky, M.B., Finsterle, S., Moridis, G., and Hubbard, S. S., Hydrogeophysical approaches with the TOUGH family of codes, Tough symposium, Berkeley, 2009.
168. Spycher, N., Zhang, G., Sengor, S., Barkouki, T., Issarangkun, M., Ginn, T., Wu, Y., Smith, R, Hubbard, S. S., Fujita, Y., Sani, R., Peyton, B., Application of TOUGHREACT V2.0 to Environmental Systems, TOUGH symposium, Berkeley, 2009.
169. Spycher, N., Weathers, T., Barkouki, T., Ginn, T., Zhang, G., Fujita, Y., Wu, Y., Ajo-Frankin, J., Hubbard, S. S. and Sengor, S., Remediation of Sr90 by induced calcite precipitation: reactive transport modeling on several fronts, ACS Meeting, Salt Lake City UT, March 22-26, 2008.
170. Wu, Y., Williams, K. H., Hubbard, S. S., Slater, L., LaBrecque, D. and Versteeg, R., Complex resistivity signatures from transformations associated with subsurface remediation - precipitates and amendments, Invited, EEGS NSGS Workshop on Induced Polarization, SEG Meeting, November 2008.
171. Hubbard, S. S., Geophysical Signatures of Biogeochemical Processes, Invited Speaker Gordon Conference, Oxford, UK, July 13-18, 2008
172. Mukhopadhyay, S., Sonnenthal, E. L., Faybishenko, B. A., and Hubbard, S. S., A reactive model for lactate stimulated hexavalent chromium reduction at Hanford 100H Site, CMWR XVII, San Francisco, CA, July 7-10, 2008.
173. Englert, A., Kowalsky, M. B., Williams, K., Peterson, J., Spane, F., Newcomer, D., Long, P. and Hubbard, S. S., Estimation of a three dimensional hydraulic conductivity field at the Rifle, CO Integrated Field Challenge Site using a Sequential Bayesian-Inverse Approach, CMWR XVII, San Francisco, CA, July 7-10, 2008.
174. Kowalsky, M., Hubbard, S. S. and D. Watson, Use of coupled hydrological-geophysical modeling framework for exploring the impact of recharge on TDS, CMWR XVII, San Francisco, CA, July 7-10, 2008.
175. Li, L., Steefel, C. I., Williams, K.H., Wilkins, M., Englert, A. L. and Hubbard, S. S., Solid phase transformation and biomass accumulation during uranium bioremediation at Rifle, CO, CMWR XVII, San Francisco, CA, July 7-10, 2008.
176. Zhang, Y., Kowalsky, M. B., Finsterle, S. and Hubbard, S. S., Impact of groundwater pumping on near-river hydrology, CMWR XVII, San Francisco, CA, July 7-10, 2008.
177. Chen, J., Hubbard, S. S., Korneev, V. and Watson, D., Development of a Sampling-based Bayesian model for Watershed scale characterization, CMWR XVII, San Francisco, CA, July 7-10, 2008
178. Watson, D. B., Spalding, B. P., Sheehan, J. R., Beard, L.P., Doll, W.E., Hubbard, S. S., Williams, K. H., Baker, G. S., Gaines, D. P. and Jardine, P. M., Innovative field investigation techniques for site characterization and monitoring field scale experiments at the Oak Ridge Field Research Center, NGWA GW summit, Memphis, TN, March 30, 2008.
179. Hubbard, S. S., Williams, K., Conrad, M., Peterson, J. E., Faybishenko, B., Afo-franklin, J., Hazen, T. and Long, P., Geophysical Monitoring of Hydrological and Biogeochemical Transformations associated with Bioremediation, Platform Presentation, Battelle recalcitrant and chlorinated compounds meeting, Monterey, CA, May 19-22, 2008.
180. Hubbard, S. S., Englert, A., Kowalsky, M., Chen, J., Peterson, J., Williams, K., NS13A-08: Exploring hydrological and biogeochemical processes associated with remedial treatments using geophysical methods, Invited, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
181. Slater, L., Ntarlagiannis, D., Personna, Y., and Hubbard, S. S., H42B-01: Pore-scale spectral induced polarization (SIP) signatures associated with FeS biominerals transformations, Invited, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.

182. Linde, N., Tryggvason, A., Hubbard, S. S. and Peterson, J., NS43A-02: Joint inversion of crosshole radar and seismic traveltimes, Invited presentation, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
183. Englert, A., Kowalsky, M., Li, L., Long, P., Hubbard, S. S., H21C-0707: Characterization of transient transport behavior during biostimulation field experiments using novel breakthrough analysis approaches, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
184. Williams, K. H., Kemna, A., Wilkins, M., Druhan, J., Arntzen, E., N'Guessan, L., Long, P., Hubbard, S. S., Banfield, J., NS11C-0694: Geophysical monitoring of microbial activity during stimulated subsurface bioremediation, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
185. Kowalsky, M. B., Hubbard, S. S., Chen, J., Peterson, J.E., Flach, G.P., H14C-01: Multiscale hydrogeophysical data integration for parameterization of transport models at Savannah River Site,
186. Long, P. E., Banfield, J., Bush, R., Cambell, K., Chandler, D. P., Davis, J. A., Dayvault, R., Druhan, J., Elifantz, H., Englert, A., Hettich, R. L., Holmes, D., Hubbard, S. S., Ecenhower, J., Jaffe, P. R., Kerkhof, L. J., Kukkadapu, R.K., Leshner, E., Lipton, M., Lovley, D., Morris, S., Morrison, S., Mouser, P., Newcomer, D., N'Guessan, L., Peacock, A., Qafoku, N., Resch, C.T., Spane, F., Spaulding, B., Steefel, C., Verbkmoes, N., Wilkins, M., Williams, K. H., Yabusaki, S. B., B24D-04: The integrated field scale subsurface research challenges site (IFC) at Rifle, Colorado: Preliminary results on microbiological, geochemical, and hydrological processes controlling iron reduction and uranium mobility, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
187. Jardine, P.M., Watson, D.B., Baker, G., Brandt, C.C., Brooks, S.C., Criddle, C.S., Gatlen, C.T., Gu, B., Horita, J., Hubbard, S. S., Kelly, S., Kemner, K., Kitanidis, P. K., Kostka, J. , Luo, J., Palumbo, A. V., Parker, J.C., Phelps, T. J., Schadt, C. W., Spalding, B. P., Wu, W. M., Zhang, F. and Zhou, J., Exploring uranium fate and transport in contaminated subsurface environments: technology transfer opportunities for Uranium mine restoration, Canadian Uranium Symposium: Fueling the Nuclear Renaissance. Vancouver, Canada, April 2-3, 2008.
188. Jardine, P. M., Watson, D.B., Baker, G., Brandt, C.C., Brooks, S. C., Criddle, C. S., Gatlen, C. T., Gu, B., Horita, J., Hubbard, S. S., Kelly, S., Kemner, K., Kitanidis, P. K., Kostka, J., Luo, J., Palumbo, A. V., Parker, J.C., Phelps, T. J., Schadt, C. W., Spalding, B. P., Wu, W. M., Zhang, F. and Zhou, J., Research Highlights and Future Directions of the Oak Ridge Integrated Field Research Challenge Project: Implications to Future EM Remedial Decisions and Strategies, ACS Annual Meeting, Philadelphia, PA, August 17-21, 2007.
189. Personna, Y.R., Ntarlagiannis, D., Slater, L., and Hubbard, S. S., NS44A-05: Geoelectrical signatures of microbial stimulated mineralization, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
190. Faybishenko, B., Long, P. E., Hazen, T. C., Hubbard, S.S., Williams, K., Peterson, J. E., Chen, J., Volkova, E. V., Newcomer, D., Resch, C. T., Cantrell, K., Conrad, M, Brodie, E., Joyner, D., Borglin, S., Chakraborty, R., H32B-03: A Conceptual Model of Coupled Biogeochemical and Hydrogeological Processes Affected by In Situ Cr(VI) Bioreduction in Groundwater at Hanford 100H Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.
191. Englert, A., Hubbard, S.S. and Williams, K., H31F-05: Hydrogeophysical field characterization at the DOE Old Rifle Site, CO, Invited Presentation, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2007.

192. Hubbard, S.S., Williams, K. and Chen, J., 2006 Characterizing Hydrogeological Properties and Monitoring Biogeochemical Processes using Geophysical Data, Invited Presentation, Groundwater Resources Association of California, Long Beach, CA, Nov. 12-14, 2007,
193. Druhan, J., Conrad, M., Williams, K. H., Steefel, C. and Hubbard, S. S., Use of Sulfur Isotopes to Identify Bacterial Sulfate Reduction Processes During In Situ Stimulated Bioremediation of a Uranium Contaminated Aquifer, Groundwater Resources of California Isotope Conference, Concord, CA, March 29, 2007.
194. Hubbard, S. S., Williams, K. H., Kemna, A., Chen, J. and Peterson, J., Use of Geophysical Methods to Investigate, Guide, and Assess Contaminant Remediation Approaches Invited Presentation for Session GSA T88, GSA Abstracts with Programs Vol. 38, No. 7, 2006.
195. Hubbard, S.S., Williams, K. and Chen, J, Characterizing Hydrogeological Properties and Monitoring Biogeochemical Processes using Geophysical Data, Invited Talk, GRAC, Long Beach, CA, Nov. 12-14, 2006
196. Chen, J., Hubbard, S.S., Hoversten, M. and Hubbard, A., A Bayesian model for inversion of geophysical seismic and electromagnetic data, Joint Statistics Meeting, Salt Lake City, UT, 2007
197. Mok, C., Lebish, C, Kayback, D., Hubbard, S. S., Chen, J. and Peterson, J., Hydrolmage - a hydrogeophysical characterization software package supporting modeling, Modelcare07, Denmark, Copenhagen, 2007
198. Hubbard, S. S., Williams, K., Chen, J., Peterson, J., Scheibe, T., Mukhopadhyay, S., Sonnenthal, E. and Steefel, C., H41G-01: Improved Understanding of Natural System Processes through Coupling of Geophysical Characterization and Numerical Modeling Approaches, American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2006.
199. Personna, Y. R., Ntarlagiannis, D., Slater, L., O'Brien, M., Hubbard, S. S. and Williams, K. H., NS41A-06: Geoelectrical Signatures of Microbial Stimulated Mineralization, American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2006.
200. Englert, A., Hubbard, S.S., et al., H43D-01: Tracer Tests and Field Monitoring of In situ Bioreduction of Cr(VI) Bioreduction at the Hanford 100H Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2006.
201. Williams, K. H., Kemna, A., Long, P., Druhan, J., Hubbard, S. S. and Banfield, J., NS21A-06: Following the Progress of Subsurface Bioremediation: Insights Gained from Field-Scale Geoelectrical Monitoring, American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2006.
202. Chen, J., Hubbard, S. S., Williams, K., Kemna, A., Slater, L. and Pride, S., H44B-04: A Stochastic Framework for Geochemical Parameter Estimation using Geophysical Methods: Development and Application, American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2006.
203. Hubbard, S. S., Chen, J., Fang, Y., Williams, K., Mukhopadhyay, S., Sonnenthal, E., McFarlane, K., Linde, N. and Scheibe, T., Improved parameterization of hydrological models and reduction of geophysical monitoring data ambiguity through joint use of geophysical and numerical modeling methods, Invited Speaker, CWMR, Copenhagen, June 19-23, 2006.
204. Faybishenko, B., Hazen, T. C., Brodie, E., Joyner, D., Borglin, S., Hanlon, J., Conrad, M., Tokunaga, T., Wan, J., Hubbard, S.S., Williams, K., Peterson, J., Firestone, M., Andersen, G., DeSantis, T., Long, P., Newcomer, D., Resch, C., Willett, A. and Koenigsberg, S., H42B-04: Evaluation of the Effectiveness of Cr(VI) Biostimulation in Groundwater at Hanford 100H Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2006.
205. Long, P. E., Newcomer, D., Resch, C., Cantrell, K., Faybishenko, B., Hazen, T., Brodie, E., Joyner, D., Borglin, S., Hanlon, J., Conrad, M., Tokunaga, T., Wan, J., Hubbard, S. S., Williams, K., Peterson, J., Firestone, M., Andersen, G., DeSantis, T., Willett, A. and Koenigsberg, S., H43D-01: Tracer Tests

- and Field Monitoring of In situ Cr(VI) Bioreduction at the Hanford 100H Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2006.
206. Brodie, E., Hazen, T., Faybishenko, B., Joyner, D., Borglin, S., Chakraborty, R., Shapland, E., Conrad, M., Tokunaga, T., Wan, J., Hubbard, S. S., Williams, K., Firestone, M., Andersen, G., DeSantis, T., Long, P. E., Newcomer, D. R. and Koenigsberg, S., High Density 16S rRNA Microarray Analysis of Long-Term Chromium Bio-Immobilization, 11th International Symposium on Microbial Ecology, Vienna, Austria, August 20-25, 2006.
 207. Williams, K., Hubbard, S. S. and MacFarlane, K., NS41A-06: Biophysical monitoring: separating the 'bio' from the 'geo', American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2006.
 208. Hubbard, S.S., Peterson, J., Chen, J., Williams, K. H., Conrad, M., Fabishenko, B., Long, P., Willett, A., Hazen, T., H44C-03: Geophysical monitoring of Cr(VI) Bioreduction at the Hanford 100H Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2005.
 209. Williams, K., Hubbard, S. S., and Banfield, J., NS51B-07: Monitoring microbial chemotaxis and sulfate reduction using the self-potential method, American Geophysical Union Fall Meeting, San Francisco, CA, December 5-9, 2005.
 210. Hubbard, S. S., Chen, J., Williams, K., Peterson, J. and Rubin, Y., Environmental and Agricultural Applications of GPR, International Workshop on Ground Penetrating Radar Invited Keynote, Delft, Netherlands, May 2-4, 2005.
 211. Williams, K. H., Ntarlagiannis, D., Long, P., Dohnalkova, A., Hubbard, S. S. and Banfield, J. F., B51F-01: Remote Sensing of Subsurface Microbial Transformations, American Geophysical Union Fall Meeting, San Francisco, CA, December 13-17, 2004.
 212. Kowalsky, M. B., Finsterle, S., Peterson, J., Hubbard, S. S., Rubin, Y., Majer, E., Ward, A. and Gee, G., H23A-1101: Estimating field-scale soil hydraulic properties and petrophysical models through joint GPR hydrological measurement inversion, American Geophysical Union Fall Meeting, San Francisco, CA, December 13-17, 2004.
 213. Kowalsky, M. B., Finsterle, S., Peterson, J., Hubbard, S. S., Rubin, Y., Majer, E., Ward, A. and Gee, G., Estimating field-scale soil hydraulic properties through joint inversion of cross-hole GPR travel times and hydrological measurements, Geological Society of America Abstracts with Programs, Vol. 36, No. 5, p. 310, 2004.
 214. Hubbard, S. S., U41A-01: Advances and Challenges in Hydrogeophysics, Invited Union Lecture, American Geophysical Union Joint Assembly, Montreal, Quebec, Canada, May 17-21, 2004.
 215. Linde, N., Finsterle, S., and Hubbard, S.S., NS13A-04: Inversion of hydrological tracer data constrained by tomographic data, American Geophysical Union Joint Assembly, Montreal, Quebec, Canada, May 17-21, 2004.
 216. Ntarlagiannis, D., Williams, K., Slater, L. and Hubbard, S. S., NS13A-02: IP response of bacterially-induced sulfide mineral precipitation, American Geophysical Union Joint Assembly, Montreal, Quebec, Canada, May 17-21, 2004.
 217. Williams, K., Hubbard, S. S., Ntarlagiannis, D. and Banfield, J., NS13A-01: Monitoring microbially-induced sulfide precipitation under dynamic flow conditions using multiple methods, American Geophysical Union Joint Assembly, Montreal, Quebec, Canada, May 17-21, 2004.
 218. Chen, J., Hubbard, S. S., Fienen, M., Watson, D. and Mehlhorn, T. L., H21F-04: Estimating hydrogeological zonation at a NABIR field research center study site using high-resolution geophysical data and Markov Chain Monte Carlo methods, American Geophysical Union Fall Meeting, San Francisco, CA, December 8-12, 2003.
 219. Lunt, I., Hubbard, S. S. and Rubin, Y., H21F-04: Soil moisture content estimation using ground-penetrating radar reflection travel time data, American Geophysical Union Fall Meeting, San Francisco, CA, December 8-12, 2003.

220. Hou, Z., Rubin, Y. and Hubbard, S. S., H31B-0464: Non-Linear, Bayesian Inversion in the Vadose zone, American Geophysical Union Fall Meeting, San Francisco, CA, December 8-12, 2003.
221. Hubbard, S. S., Pierce, L., Grote, K. and Rubin, Y., H42M-01: Assessing the relative importance of incorporating spatial and temporal variability of soil and plant parameters into local water balance models: investigations within a California Vineyard, American Geophysical Union Fall Meeting, San Francisco, CA, December 8-12, 2003.
222. K. Grote, Hubbard, S. S., Rubin, Y., H32C-0591: Influence of near-surface vegetation on the values and variability of soil water content, American Geophysical Union Fall Meeting, San Francisco, CA, December 8-12, 2003.
223. Hubbard, S. S., Grote, K., Lunt, I., Pierce, L. and Rubin, Y., Spatial and temporal variability of soil moisture content obtained using GPR data: Accuracy, resolution, and implications for precision viticulture, GSA Annual Meeting, Seattle, WA, November 2-5, 2003.
224. Hubbard, S. S., Grote, K., Lunt, I. and Rubin, Y., EAE03-A-01486: Near surface water content estimation using GPR data: investigations within California Vineyards. Geophysical Research Abstract, Vol. 5, 02403, European Geophysical Society, Nice, France, 2003.
225. Huisman, J. A., Hubbard, S. S., Redman, D. and Annan, P. A., EAE03-A-05210: Soil Water Content Measurement with Ground Penetrating Radar: A review. Geophysical Research Abstract, Vol. 5, 02403, European Geophysical Society, Nice, France, 2003.
226. Rubin, Y., Chen, J., Hou, Z., Kowalsky, M., Hubbard, S. S., Bayes, Zadeh and Shannon, and the development of structured approach to the hydrogeophysical data fusion problem, Geophysical Research Abstract, Vol. 5, 02403, European Geophysical Society, Abstract Number EAE03-A-02403, 2003.
227. Chen, J., Hubbard, S. S., Rubin, Y., Murray, C. and Majer, E., H52F-10: Geochemical Characterization Using Geophysical Data and Markov Chain Monte Carlo Methods, American Geophysical Union Fall Meeting, San Francisco, CA, December 6-10, 2002.
228. B. J. Mailloux, Devlin, S., Onstott, T. C., Sigman, D., Hall, J., Fuller, M. E., DeFlaun, M. F., Streger, S. H., Williams, K. H., Hubbard, S. S., McCarthy, J, H12C-0938: The Fate of Nitrate During Stimulation of Coastal Plain Sediments, American Geophysical Union Fall Meeting, San Francisco, CA, December 6-10, 2002.
229. Hou, Z., Rubin, Y., and Hubbard, S. S., H61A-0746: Numerical Simulation of Soil Water Content in Vadose Zone Using Constraints Provided by Geophysical Measurements, American Geophysical Union Fall Meeting, San Francisco, CA, December 6-10, 2002.
230. Rubin, Y., Chen, J., Hubbard, S. S., Kowalsky, M., Woodbury, A., H52F-05: A structured approach to Bayesian data fusion, American Geophysical Union Fall Meeting, San Francisco, CA, December 6-10, 2002.
231. Holben, W. E., Dong, H., Green, M. X., Hubbard, S. S., Kovacic, B. P., Mailloux, B. J., Majer, E. L., Murray, C. J., Onstott, T. C., Scheibe, T. D., Swift, D. J. P., and Xie, Y., Bacterial transport: Integrating aqueous and solid phase qPCR measurement of bacterial numbers with physicochemical parameters by multivariate analysis, ISSM 2002: International Symposium on Subsurface Microbiology, Copenhagen, Denmark, September 8-13, 2002.
232. Hubbard, S. S., Williams, K. H., Mailloux, B., Majer, E., H21A-02: Monitoring Microbially-induced physical property changes using geophysical data, AGU Invited Presentation, American Geophysical Union Joint Assembly Meeting, Washington, DC, May 28-31, 2002.
233. Hubbard, S. S., Grote, K., Rubin, Y. and Kowalsky, M., Mapping the water distribution in a California Winery, IAHS meeting, LBNL, March 2002.
234. Hubbard, S. S., Grote, K., Kowalsky, M., Rubin, Y. , GP11B-09: Investigating Temporal and Spatial Variations in Near Surface Water Content using GPR, Invited abstract, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2002.

235. Hubbard, S. S., Williams, K. H., Chen, J., Rubin, Y. and Majer, E., Characterization and Monitoring of the Oyster Bacterial Transport Site using Geophysical Data, GSA Annual Meeting, Boston, MA, November 1-10, 2001.
236. Grote, K., Hubbard, S. S., and Rubin, Y., H31C-0247: Soil Water Content Spatial Correlation Estimation using GPR, American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2001.
237. Grote, K., Hubbard, S. S., Lawrence, A., Harvey, J., Riemer, M. and Rubin, Y., Nondestructive Monitoring of Sub-Asphalt Water Content Using Surface Ground Penetrating Radar Techniques, 14th EEGS Symposium on the Application of Geophysics to Engineering and Environmental Problems, Denver, CO, March 4-7, 2001.
238. Hubbard, S. S., Chen, J., Maillieux, B., Majer, E., and Rubin, Y., B51C-01: Heterogeneity and bacterial transport at the Oyster, VA Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2000.
239. Murray, C., Rodin, E., Overstreet, K., Chien, Y., Chen, J. and Hubbard, S. S., B51C-11: Spatial heterogeneity of microbial iron reduction potential at the South Oyster Focus Area, Virginia, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2000.
240. Swift, D., Green, M., Chen, J., Hubbard, S. S., Majer, E., Murray, C., B52A-04: Deriving hydrofacies from Lithofacies at the Oyster Virginia Experimental Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2000.
241. Green, M., Swift, D., Chen, J., Hubbard, S. S., Majer, E. and Murray, C., H51A-08: Heterogeneity at the Narrow Channel Site, Oyster, VA: A Statistical Approach to Assess the Sedimentary Facies Prior to Correlations with Permeability and Geophysical Imaging, American Geophysical Union Joint Assembly, Washington, DC, May 30-June 3, 2000.
242. Grote, K., Hubbard, S. S., Lawrence A., Harvey, J., Riemer, M., Peterson, J. and Rubin, Y., Non-destructive Monitoring of Water Content using Surface Ground Penetrating Radar Techniques, International Conference on Application of Geophysical Technologies to Planning, Design, Construction and Maintenance of Transportation Facilities, St. Louis, MO, December 2000
243. Hubbard, A. and Hubbard, S. S., 1999, GP41C-08: Estimation of Petrophysical Relationships and Measurement Length Scales using Multi-Scaled Field, American Geophysical Union Fall Meeting, San Francisco, CA, December 1, 1999.
244. Chen, J., Rubin, Y. and Hubbard, S. S., GP31B-10, Estimating Hydraulic Conductivity at Oyster (VA) Site from Hydrological and Geophysical Data by Using Bayesian Method Based on a Normal Linear Model, American Geophysical Union Fall Meeting, San Francisco, CA, December 1, 1999.
245. Rubin, Y., Hubbard, S. S., Riemer, M., Harvey, J. and Grote, K., 1999, Calibration of Ground Penetrating Radar for Measuring Water Content using Buried Reflectors, Report for California Dept. of Transportation.
246. Hubbard, S. S., 1999, Stochastic Characterization of Hydrogeological Properties using Geophysical Data, LBNL Report #42557
247. Scheibe, T. D., Chien, Y., Ginn, T., Murray, C. and Hubbard, S. S., Heterogeneity Characterization for Field-Scale Bacterial Transport Modeling, AGU Spring Meeting, Boston, MA, June 1-4, 1999.
248. Hubbard, S. S., Rubin, Y., Majer, E., Peterson, J. and Chang, J., 1999, Log-Permeability Estimation using Multiple, Co-located Geophysical Data sets within a Bayesian Framework, AGU Spring Meeting, Boston, MA, June 1-4, 1999.
249. Pellerin, L., Gilbert, F., Hubbard, S. S., Peterson, J. and Dailey, W., Geophysical Verification of Subsurface Barriers, 11th EEGS Symposium on the Application of Geophysics to Engineering Environmental Problems, March 1998.
250. Hubbard, S. S., 1998, Stochastic Characterization of Hydrogeological Properties using Geophysical Data, Ph.D. Thesis, UC Berkeley, Dept. of Civil and Environmental Engineering.

251. Ezzedine, S., Rubin, Y. and Hubbard, S. S., Hydrological-geophysical methods for subsurface site Characterizations: case of the LLNL Superfund Site, American Geophysical Union Fall Meeting, San Francisco, CA, December 1, 1997.
252. Hubbard, S.S., Rubin, Y. and Majer, E., Estimation of hydrological parameters from spectral analysis of high-resolution geophysical data, American Geophysical Union Fall Meeting, San Francisco, CA, December 1, 1997.
253. Pellerin, L., Gilbert, F., Reichhardt, D., Daley, T., Hubbard, S. S., Majer, E. and Peterson, J., 1997, Verification of subsurface barriers using integrated geophysical techniques, SEGEEP, Denver, CO, March 19-23, 1997.
254. Peterson, J.E. and Hubbard, S.S., Monitoring emplacement of contaminant barriers using high resolution crosshole geophysical data, American Geophysical Union Fall Meeting, San Francisco, CA, December 1, 1997.
255. Rubin, Y., Hubbard, S. S., and Ezzedine, S., 1997, Conjunctive use of geophysical or tracer data with hydrogeological testing for enhanced site characterization, ASCE IAHR Conference, Paper #260, San Francisco.
256. Hubbard, S. S., Rubin, Y. and Majer, E., 1997, Ground penetrating radar-assisted saturation and permeability estimation, *EOS* 78(17), p. s153.
257. Peterson, J. E., Hubbard, S. S., Williams, K. H., Majer, E. L. and Zawislanski, P., 1997, Moisture content stimation using crosshole radar measurement, *EOS*78(17), p. s166.
258. Parsons, B. S., Swift, D., Peterson, J., Muller, A. C. and Hubbard, S. S., 1997, Reconciling facies architecture with sequence concepts in a Quaternary barrier spit complex, Virginia, USA, *EOS*77(46), p. F328.
259. Hubbard, S. S., Majer, E., Geller, J., Peterson, J. and Parsons, B., 1996, Permeability estimation using geophysical data, *EOS* 77(46), p. F220.
260. Hubbard, S. S., Coruh, C., Costain, J.K., 1990, On the origin of Crustal Seismic Reflectivity, *EOS Trans.* 71(17), p. 563.
261. Li, J., Coruh, C., Costain, J. K. and Hubbard, S. S., Regional Crustal features in the Southeastern U.S.: Interpretations from seismic reflection data, *EOS* 71(17), p. 563.
262. Hubbard, S. S., Coruh, C., Costain, J. K., 1989, Paleozoic and Grenvillian Structures in the Southern Appalachians: Interpretation from Seismic Reflection Data, *EOS Trans.* V. 70, p. 1204.
263. Hubbard, S. S., Coruh, C. and Costain, J. K., 1989, Reinterpretation of the Seismic Reflection data sets from SC, NC and GA using conventional and relative amplitude processing, *GSA Abstracts with Programs*, p. 336.
264. Coruh, C., Costain, J. K. and Hubbard, S.S., 1989, Seismic signatures of crustal extension: *GSA Abstracts with Programs*, p. 336.
265. Mooney, W., Sharpless, S. and Levander, A., 1987, Refraction-wide angel reflection profiles of crustal structure, Central California, *EOS. Trans.* 68(44), p. 1479.
266. Walter, A., and Hubbard, S. S., 1987, Crustal velocity structure of the Sur-Obispo (Franciscan) Terrane between San Simion and Santa Maria, CA, *EOS* 68(44), p. 1366.