

Scott B. Jones – Curriculum Vita

Associate Professor of Environmental Soil Physics
Dept. Plants, Soils, and Climate
Adjunct - Dept. Biological and Irrigation Engineering
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EDUCATION

Ph.D. - Soil Science (Soil Physics)	1992-1997
UTAH STATE UNIVERSITY	LOGAN, UTAH
M.S. - Agricultural & Irrigation Engineering	1990-1992
UTAH STATE UNIVERSITY	LOGAN, UTAH
B.S. - Civil Engineering	1985-1989
BRIGHAM YOUNG UNIVERSITY	PROVO, UTAH

EXPERIENCE

















Associate Professor	2008-present
DEPT. PLANTS, SOILS AND CLIMATE	UTAH STATE UNIVERSITY, LOGAN, UTAH
Assistant Professor	2004-2008
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY, LOGAN, UTAH
Adjunct Research/Assistant Professor	2004-present
DEPT. BIOLOGICAL AND IRRIGATION ENGINEERING	UTAH STATE UNIVERSITY, LOGAN, UTAH
Ecology Center Associate	2004-Present
	UTAH STATE UNIVERSITY, LOGAN, UTAH
Research Assistant Professor	2001-2004
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY, LOGAN, UTAH
Postdoctoral Associate	1999-2001
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY, LOGAN, UTAH
SPACE DYNAMICS LABORATORY	LOGAN, UTAH
Postdoctoral Associate	1997-1999
DEPT. SOIL, WATER AND ENVIRONMENTAL SCIENCES	THE VOLCANI CENTER, ISRAEL
Research Assistant	1994-1997
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY, LOGAN, UTAH
Research Assistant	1992-1994
SVET PLANT GROWTH UNIT UPGRADE	SPACE DYNAMICS LABORATORY, LOGAN, UTAH
Research Assistant	1991-1992
USDA-ARS/UTAH STATE UNIVERSITY	KIMBERLY, ID/LOGAN, UTAH
Irrigation System Designer	1984-1990
CERTIFIED COMMERCIAL DESIGNER	HARWARD IRRIGATION SYSTEMS, SPANISH FORK, UTAH

PUBLICATIONS

Scientific Journal Articles (Refereed)

(Graduate, Undergraduate student)

1. Yang, C., **S.B. Jones** and G.J. Kluitenberg. 2010. Penta-needle heat pulse probe for soil thermal conductivity, diffusivity and water flux determination. Being revised after review in *Water Resour. Res.*
2. Fan J., M. Shao, Q.J. Wang, **S.B. Jones**, K. Reichardt, X. Cheng. 2009. Toward Sustainable Soil and Water Resources Use in China's Highly Erodible Semi-arid Loess Plateau. Accepted in *Geoderma*.
3. Robinson, D.A., I. Lebron, R.J. Ryel and **S.B. Jones**. 2009. Soil Water Repellency, a Method of Soil Moisture Sequestration in Pinyon – Juniper Woodland. *Soil Sci. Soc. Am. J.* 74(2):624-634.
4. Yang, C. and **S.B. Jones**. 2009. INV-WATFLX, a code for simultaneous estimation of soil properties and planer vector water flux from penta-needle heat-pulse probes. *Computers & Geosciences*. doi:10.1016/j.cageo.2009.04.005
5. Robinson, D.A., **S.B. Jones**, J.M.Jr. Blonquist, **R. Heinse**, I. Lebron, and T.E. Doyle. 2009. The Dielectric Response of the Tropical Hawaiian Mars Soil Simulant JSC Mars-1. *Soil Sci. Soc. Am. J.* 73 (4):1113-1118.
6. Or, D., M. Tuller and **S.B. Jones**. 2009. Liquid Behavior in Partially-Saturated Porous Media under Variable Gravity. *Soil Sci. Soc. Am. J.* 73:341-350, doi:10.2136/sssaj2008.0046. ✂
7. **Abdu, H.**, D. A. Robinson, M. Seyfried, and **S. B. Jones**. 2008. Geophysical imaging of watershed subsurface patterns and prediction of soil texture and water holding capacity. *Water Resour. Res.*, 44, W00D18, doi:10.1029/2008WR007043. ✂
8. Robinson, D.A., **H. Abdu**, **S.B. Jones**, M. Seyfried, I. Lebron, and R. Knight. 2008. Eco-Geophysical Imaging of Watershed-Scale Soil Patterns Links with Plant Community Spatial Patterns. *Vadose Zone J.* 7:1132–1138, doi:10.2136/vzj2008.0101. ✂
9. Yang, C., C. Zhu, J. Samper and **S.B. Jones**. 2008. Numerical modeling of the development of a preferentially leached layer on feldspar surfaces. *Environ. Geol.* DOI 10.1007/s00254-008-1445-3. ✂
10. Robinson D.A., C.S. Campbell, J. Hopmans, B.K. Hornbuckle, **S.B. Jones**, R. Knight, F. Ogden, J. Selker, O. Wendroth. 2008. A Review of, and Vision for, Soil Moisture Measurement for Ecological and Hydrological Watershed Scale Observatories. *Vadose Zone Journal*, 7:358-389. doi:10.2136/vzj2007.0143. ✂
11. Doyle, T.E., D.A. Robinson, **S.B. Jones**, K.H. Warnick and B.L. Carruth. 2007. Modeling the permittivity of two-phase media containing monodisperse spheres: Effects of microstructure and multiple scattering. *Physical Review B* 76 (5), 054203. ✂
12. **Heinse, R.**, **S.B. Jones**, S. Steinberg, M. Tuller, and D. Or. 2007. Effects of Variable Gravity on Liquid Behavior in Particulate Porous Media: Measurements and Modeling. *Vadose Zone J.* 6:713-724, doi:10.2136/vzj2006.0105. ✂
13. **Abdu, H.** D.A. Robinson and **S. B. Jones**. 2007. Comparing Bulk Soil Electrical Conductivity Determination Using the DUALEM 1-S and EM-38DD EMI Instruments. *Soil Sci. Soc. Am. J.* 71:189-196. ✂
14. **Blonquist, J.M. Jr.**, **S.B. Jones** and D.A. Robinson. 2006. Water Conservation from Precise Irrigation Scheduling Using a Subsurface Electromagnetic Soil Moisture Sensor. *Ag. Water Management* 84:153-165. ✂

15. [Blonquist, J.M. Jr.](#), **S.B. Jones**, I. Lebron and D.A. Robinson. 2006. Micro-structural and phase configuration effects determining water content: Dielectric relationships of aggregated porous media. *Water Resour. Res.* 42(5), W05424, doi:10.1029/2005WR004418. .
16. Henry, A., J. Norton, **S.B. Jones**, J. Chard and B. Bugbee. 2006. Design and maintenance of an axenic plant culture system to facilitate optimal growth in long-term studies. *J. Environ. Qual.* 35:590-598.
17. [Turcu, V.E.](#), **S.B. Jones** and D. Or. 2005. Continuous soil CO₂ and O₂ measurements and estimation of gradient-based gaseous flux. *Vadose Zone J.* 4:1161-1169. .
18. [Blonquist, J.M. Jr.](#), **S.B. Jones** and D.A. Robinson. 2005. A time domain transmission sensor with TDR performance characteristics. *J. Hydrology* 314:235-245. .
19. **Jones, S.B.**, [J.M. Jr. Blonquist](#), D.A. Robinson, V.P. Rasmussen, and D. Or. 2005. Standardizing characterization of electromagnetic water content sensors: Part I. methodology. *Vadose Zone J.* 4:1048-1058. .
20. [Blonquist, J.M. Jr.](#), **S.B. Jones**, and D.A. Robinson. 2005. Standardizing characterization of electromagnetic water content sensors: Part II. Evaluation of seven sensing systems. *Vadose Zone J.* 4:1059-1069. .
21. **Jones, S.B.**, R.W. Mace, and D. Or. 2005. A TDR coaxial cell for manipulation and continuous monitoring of water content and electrical conductivity in variably saturated porous media. *Vadose Zone J.* 4:977-982. .
22. Robinson, D.A., **S.B. Jones**, [J.M. Jr. Blonquist](#) and S.P. Friedman. 2005. A physically derived water content/permittivity calibration model for coarse-textured, layered soils. *Soil Sci. Soc. Am. J.* 69:1372-1378. .
23. Steinberg, S., G. Kluitenberg, **S.B. Jones**, N. Daidzic, L. Reddi, M. Xiao, M. Tuller, R. Newman, D. Or and I. Alexander. 2005. Physical and hydraulic properties of baked ceramic aggregates used for plant growth medium. *J. Amer. Soc. Hort. Sci.* 130(5):767-774. .
24. Robinson, D.A., M.G. Schaap, D. Or, and **S.B. Jones**. 2005. On the Effective Measurement Frequency of TDR in Dispersive and Non-Conductive Dielectric Materials. *Water Resour. Res.* 41, W02007, doi:10.1029/2004 WR003816.. .
25. Norikane, J.H., **S.B. Jones**, S.L. Steinberg, H.G. Levine and D. Or. 2005. Porous media matric potential and water content measurements during parabolic flight. *Habitation.* 10:117-126. .
26. Wraith, J.M., D.A. Robinson, **S.B. Jones** and D. Long. 2005. Spatially characterizing apparent electrical conductivity and water content of surface soils with time domain reflectometry. *Comp. Electron. Agric.* 46(1-3):239-262. .
27. **Jones, S.B.** and D. Or. 2004. Frequency domain analysis for extending time domain reflectometry water content measurement in highly saline soils. *Soil Sci. Soc. Am. J.* 68:1568-1577. .
28. **Jones, S.B.**, D. Or. and G.E. Bingham. 2003. Gas diffusion measurement and modeling in coarse-textured porous media. *Vadose Zone J.* 2:602-610. .
29. Robinson, D.A., **S.B. Jones**, J.M. Wraith, D. Or, and S.P. Friedman. 2003. A review of advances in dielectric and electrical conductivity measurement in soils using time domain reflectometry. *Vadose Zone J.* 2:444-475. .
30. **Jones, S.B.** and D. Or. 2003. Modeled effects on permittivity measurements of water content in high surface area porous media. *Physica B* 338:284-290. .
31. Robinson, D.A., M. Schaap, **S.B. Jones**, S.P. Friedman, and C.M.K. Gardner. 2003. Considerations for improving the accuracy of permittivity measurement using TDR: Air/water calibration, effects of cable length. *Soil Sci. Soc. Am. J.* 67:62-70. .

32. **Jones, S.B.** and D. Or. 2002. Surface area, geometrical and configurational effects on permittivity of porous media. *J. Non-Crystalline Solids*, 305(1-3):247-254. ✂.
33. **Jones, S.B.**, J.M. Wraith and D. Or. 2002. Time Domain Reflectometry (TDR) Measurement Principles and Applications. *Hydrol. Process.* 16:141-153, DOI: 10.1002/hyp.513. ✂.
34. Friedman, S.P., and **S.B. Jones**. 2001. Measurements and pore network modeling of the anisotropic factor of an unsaturated porous medium. *Water Resour. Res.* 37(12): 2929-2942. ✂.
35. **Jones, S.B.**, and S.P. Friedman. 2000. Particle shape effect on the dielectric permittivity of three-phase isotropic and anisotropic porous media. *Water Resour. Res.* 36(10):2821-2834. ✂.
36. Bingham, G.E., **S.B. Jones**, D. Or, I.G. Podolskiy, M.A. Levinskikh, V.N. Sytchov, T. Ivanova, P. Kostov, S. Sapunova, I. Dandolov, D.B. Bubenheim, and G. Jahns. 2000. Microgravity effects on water supply and substrate properties in porous matrix root support systems. *Acta Astronautica.* 47(11):839-848. ✂.
37. **Jones, S.B.**, and D. Or. 1999. Microgravity effects on water flow and distribution in unsaturated porous media: analyses of flight experiments. *Water Resour. Res.* 35(4):929-942 ✂.
38. **Jones, S.B.**, and D. Or. 1999. A capillary-driven root module for plant growth in microgravity. *Adv. Space Res.* 22(10):1407-1412. ✂.
39. **Jones, S.B.**, and D. Or. 1999. Process-based selection of particulated growth media for optimal liquid and gaseous fluxes to plant roots in microgravity. *Adv. Space Res.* 22(10):1413-1418. ✂.
40. Stothoff, S.A., D. Or, D.P. Groeneveld, and **S.B. Jones**. 1999. The effect of vegetation on infiltration in shallow soils underlain by fissured bedrock. *J. Hydrology*, 218:169-190. ✂.
- Jones, S.B.**, and D. Or. 1998. Design of porous media for optimal gas and liquid fluxes to plant roots. *Soil Sci. Soc. Am. J.* 62:563-573. ✂.
41. **Jones, S.B.**, C.L. Hansen and C.W. Robbins. 1993. Chemical oxygen demand fate from cottage cheese (acid) whey applied to sodic soil. *Arid Soil Res. and Rehab.* 7:71-78. ✂.
42. **Jones, S.B.**, C.W. Robbins and C.L. Hansen. 1993. Sodic soil reclamation using cottage cheese (acid) whey. *Arid Soil Res. and Rehab.* 7:51-61. ✂.

Technical Papers (Refereed)

43. Heinse, R., **S.B. Jones**, M. Tuller, G.E. Bingham, I. Podolskiy and D. Or (2009). Providing Optimal Root Zone Fluxes: Challenges of Capillary-Driven Hysteretic Water Distributions in Microgravity. *SAE Technical Paper* no. 2009-01-2360.
44. **Jones, S.B.**, R. Heinse, B. Bugbee, D. Or and G.E. Bingham. 2009. Porous plant growth media design considerations for Lunar and Martian habitats. *SAE Technical Paper* no. 2009-01-2361.
45. **Heinse, R.**, **K.S. Lewis**, **S.B. Jones**, G. Kluitenberg, R.S. Austin, P. Shouse and G.E. Bingham. 2006. Integration of heat capacity and electrical conductivity sensors for root module water and nutrient assessment. *SAE Technical Paper* no. 2006-01-0245.
46. **Heinse, R.**, **S.D. Humphries**, R.W. Mace, **S.B. Jones**, S.L. Steinberg, M. Tuller, R. Newman, D. Or. 2005. Measurement of Porous Media Water Retention during Parabolic Flight Induced Microgravity. *SAE Technical Paper* no. 2005-01-2950. ✂.
47. **Jones, S.B.**, **R. Heinse**, G.B. Bingham and D. Or. 2005. Modeling and Design of Optimal Growth Media from Plant-Based Gas and Liquid Fluxes. *SAE Technical Paper* no. 2005-01-2949. ✂.
48. Steinberg, S.L., **S.B. Jones**, M. Xiao, L. Reddi and G. Kluitenberg, D. Or, J.I.D. Alexander, N. Daidzic, M. Tuller. 2005. Challenges to understanding fluid behavior in plant growth media under microgravity. *SAE Technical Paper* no. 2005-01-2973.

49. Norikane, J.H., **S.B. Jones**, S.L. Steinberg, H.G. Levine and D. Or. 2003. Effects of variable gravity on porous media matric potential and water content measurements. *ASAE Technical Paper* 034067. ASAE annual International meeting, Riviera Hotel, Las Vegas, NV. July 27-30, 2003.
50. **Jones, S.B.**, G.E., Bingham, T.S. Topham, D. Or, I.G. Podolskiy, and O.M. Strugov. 2003. An Automated Oxygen Diffusion Measurement System for Porous Media in Microgravity. *SAE Technical Paper* no. 2003-01-2612.
51. **Jones, S.B.**, Bingham, G.E., D. Or and R.C. Morrow. 2002. ORZS: Optimization of Root Zone Substrates for Microgravity. *SAE Technical Paper* no. 2002-01-2380.
52. Steinberg, S., N. Daidzek, **S.B. Jones**, G. Kluitenberg, D. Or, L. Reddi, I. Alexander and M. Tuller. 2002. Flow and distribution of fluid phases through porous plant growth media in microgravity. *SAE Technical Paper* no. 2002-01-2386.
53. Bingham, G.E., **S.B. Jones**, I. Podolskiy, and B.S. Yendler. 1996. Porous substrate water relations observed during the greenhouse-II flight experiment (Mir Space Station, 1995). *SAE Technical Paper* no. 961547.
54. Yendler, B.S., G.B. Bingham, **S.B. Jones** and I. Podolskiy. 1995. Moisture sensor for use in microgravity. *SAE Technical Paper* no. 951471.

Book Chapters (Refereed)

1. **Jones, S. B.** and D. Or. 2005. Thermal and Geometrical Effects on Bulk Permittivity of Porous Mixtures Containing Bound Water. In: *Electromagnetic Aquametry*. ed. K. Kupfer, Springer, Springer-Verlag, Berlin, Heidelberg. pp. 71-92.

Conference Proceedings (Refereed)

55. Robinson, D.A., **S.B. Jones** and S.P. Friedman. 2006. Modeling Structural and Thermal Effects on TDR Measurements in Granular Porous Media. Proceedings of the 3rd International Symposium and Workshop on Time Domain Reflectometry for Innovative Soils Applications. September 17-20, 2006, Purdue University.
56. **Jones, S.B.**, D.A. Robinson and S.P. Friedman. 2006. A subsurface open-ended TDR probe for on-the-go mapping of water content. Proceedings of the 3rd International Symposium and Workshop on Time Domain Reflectometry for Innovative Soils Applications. September 17-20, 2006, Purdue University.
57. Friedman, S.P., D.A. Robinson and **S.B. Jones**. 2006. Review of geometrical and interfacial factors determining the effective permittivity-volumetric water content relationships of soil and rocks. Proceedings of the 3rd International Symposium and Workshop on Time Domain Reflectometry for Innovative Soils Applications. September 17-20, 2006, Purdue University.

Technical Papers (Non-refereed)

1. **Jones, S.B.**, **R.M. Estevez** and D.A. Robinson. 2009. Novel Mobile Soil Water Content Sensing Techniques. ASABE Paper No. 097158. St. Joseph, Mich.: ASABE.
2. **Estevez, R.** and **S.B. Jones**. 2009. Frequency Domain Soil Moisture Determination Using an Open-Ended Dielectric Probe. ASABE Paper No. 097130. St. Joseph, Mich.: ASABE.

3. Fan, J., M. Shao, Q. Wang, S. Li and **S.B. Jones**. 2009. Landscape Changes and Vegetation Restoration in the Wind-Water Crisscross Region of the Loess Plateau, China. ASABE Paper No. 097022. St. Joseph, Mich.: ASABE.
4. **C. Wang**, **R. Estevez**, C.M.P. Vaz and **S.B. Jones**. 2009. Quantifying the Impact of Soil Properties on the Performance of Electromagnetic Water Content Sensors. ASABE Paper No. 096999. St. Joseph, Mich.: ASABE.

Conference Proceedings (Non-refereed)

5. **Jones, S.B.**, **R.M. Estevez** and D.A. Robinson. 2008. Frequency-Dependent Permittivity for Soil Water Content Determination. Second Workshop for Applications of Electromagnetic Techniques in Environmental Monitoring. Proceedings of Workshop II, Applications of Electromagnetic Techniques for Environmental Monitoring. August 26-27, 2008. Department of Civil Engineering – University of Taubate (UNITAU), Brasil.
6. Robinson, D.A., **S.B. Jones**, T. Doyle, J.M. Blonquist, H. Abdu, V. Urdanoz and R. Aragues. Determining Spatial Patterns, Processes and Properties of Soils using Electromagnetic Measurements. 2007. Proceedings of the International Conference on Microwaves and Optoelectronics – 2007. Aurangabad, India, Dec. 17-20.
7. **Jones, S.B.** and K. Shenai. 2007. Subsurface Measurement Needs for Ecological, Hydrological and Agricultural Applications. *Proceedings of the 50th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*. August 5-7, Montreal, CA, Invited.
8. **Blonquist Jr., J.M.**, **S.B. Jones**, and D.A. Robinson. 2005. Water Conservation from Precise Irrigation Scheduling Using a Subsurface Electromagnetic Soil Moisture Sensor. Technical Session Proceedings of the 26th Annual Irrigation Association International Irrigation Show. November 6-8, 2005, Phoenix, AZ.
9. **Jones, S.B.**, D. Or, G.E. Bingham and T.S. Topham. 2004. Automated Systems for Oxygen Diffusion Measurements in Porous Media at 1g and 0g. Proceedings of the 9th Biennial ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments “Earth & Space 2004”. March 7-10, 2004, League City/Houston, TX.
10. Steinberg, S. L., J.I.D.Alexander, D. Or, N. Daidzic, **S.B. Jones**, L. Reddi, M. Tuller, G. Kluitenberg and M. Xiao. 2004. Flow and distribution of fluid phases through porous plant growth media in microgravity. Proceedings of the 9th Biennial ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments “Earth & Space 2004”. March 7-10, 2004, League City/Houston, TX.
11. Or, D, M. Tuller and **S.B. Jones**. 2004. Liquid-gas interfacial configurations in angular pores under microgravity. Proceedings of the 9th Biennial ASCE Aerospace Division International Conference on Engineering, Construction and Operations in Challenging Environments “Earth & Space 2004”. March 7-10, 2004, League City/Houston, TX.
12. Or, D and **S.B. Jones**. 2002. Time domain reflectometry measurement of bulk permittivity of porous mixtures containing bound water. Proceedings of the Fifth International Conference on Electrical Transport and Optical Properties of Inhomogeneous Media ETOPIM6 held in the Cliff Lodge at Snowbird Ski Resort, Utah, 15-19 July 2002
13. **Jones, S.B.** and D. Or. 2002. Time domain reflectometry (TDR) applications in earth sciences. Proceedings of the IEEE Antennas and Propagation Society International Symposium, Volume 1, June 16-21, 2002 San Antonio, Texas.
14. Wraith, J.M., D. Or. and **S.B. Jones**. 2001. Dielectric properties of bound water: Application to

- porous media surface area and grain moisture determination. TDR 2001: Proceedings of the Second International Symposium and Workshop on Time Domain Reflectometry for Innovative Geotechnical Applications. Northwestern University, September 5-7, 2001, Evanston, Illinois.
15. **Jones, S.B.** and D. Or. 2001. Automated Frequency Domain Analysis for Extending TDR Measurement Range in Saline Soils. TDR 2001: Proceedings of the Second International Symposium and Workshop on Time Domain Reflectometry for Innovative Geotechnical Applications. Northwestern University, September 5-7, 2001, Evanston, Illinois.
 16. Or, D and **S.B. Jones.** 2001. Thermal and geometrical effects on bulk permittivity of porous mixtures containing bound water. Proceedings of the first workshop on application of TDR techniques in Agriculture. July 17-18, 2001. Campinas State University, Sao Paulo, Brasil.
 17. Or, D and **S.B. Jones.** 2001. Extending TDR measurement range in saline soils using frequency-domain methods. Proceedings of the first workshop on application of TDR techniques in Agriculture. July 17-18, 2001. Campinas State University, Sao Paulo, Brasil.
 18. **Jones, S.B.** and D. Or. 2001. Thermal and geometrical effects on bulk permittivity of porous mixtures containing bound water. Proceedings of the fourth International Conference on Electromagnetic Wave Interactions with Water and Moist Substances". Weimar Germany, May 13-16, 2001.
 19. **Jones, S.B.**, and S.P. Friedman. 1999. Water content and particle shape effects on the dielectric permittivity of anisotropic porous media. Third Workshop on Electromagnetic Wave Interaction with Water and Moist Substances. Holiday Inn, Athens, Georgia, April 12-13.
 20. **Jones, S.B.**, and D. Or. 1997. Microgravity effects on water flow and distribution in unsaturated porous media. Rocky Mountain NASA Space Grant Consortium Fellowship Students Symposium. Univ. of Utah, Salt Lake City, UT. June 12.
 21. **Jones, S.B.** 1996. Capillary-driven root module design for microgravity. Rocky Mountain NASA Space Grant Consortium Fellowship Students Symposium. Univ. of Utah, Salt Lake City, UT. June 12.
 22. **Jones, S.B.** 1995. Growth media for optimal liquid and gaseous fluxes to plant roots in microgravity. Rocky Mountain Space Grant Consortium Fellowship Students Symposium. Hansen Planetarium, Salt Lake City, UT. June 14.

Abstracts of Presentations

Year 2010 ()

1. **Jones, S.B.**, R. Heinse, B. Bugbee and G.E. Bingham. 2010. Porous plant growth media design considerations for Lunar and Martian habitats. 40th International Conference on Environmental Systems (ICES), Hotel Fira Palace, Barcelona, Spain, July 11 - 15.
2. Robinson, D.A., **S.B., Jones,** S.P. Friedman and T.E. Doyle. Modeling Structural Effects on the Determination of Soil Moisture using Microwave Measurements in Granular Porous Media. 2010. Rome Italy.
3. Sun, H., K. Kopp, M. Dietz, **S.B. Jones** and J. Fan. 2010. A Comprehensive Research Method to Investigate the Environmental Issues of Urban Landscapes: Water Use and Nitrogen Leaching of Urban Landscapes on Community Water Quantity and Quality. American Society for Horticultural Science Annual Meeting. Palm Desert, CA, 2-5 August 2010.

Year 2009 (9/18)

1. **Jones, S.B., C. Wang**, D.A. Robinson and M. Tuller. Exploring Soil Properties through Electromagnetic Sensor-based Complex Dielectric Permittivity. 2009. AGU Fall Meeting Abstracts, San Francisco, CA, December 14-18.
2. **Heinse, R., Jones, S.B., H. Abdu** and D.A. Robinson. Time-lapse Characterization of Soil Moisture Dynamics – A First Step towards Ecological Integrity. 2009. AGU Fall Meeting Abstracts, San Francisco, CA, December 14-18.
3. **Sakai, M., Jones, S.B.** and M. Tuller. Numerical Evaluation of Heat Pulse Technology for Estimation of Evaporation Rates from a Subsurface Drying Front. 2009. AGU Fall Meeting Abstracts, San Francisco, CA, December 14-18.
4. Berger, P.A., **R. Heinse**, M. Tuller, **S.B. Jones**. Geophysical Characterization of Inactive Mine Tailings – A First Step for Revegetation. 2009. ASA-CSSA-SSSA Annual Meeting, Pittsburgh, PA - Nov. 1-5, See Agronomy Abstracts, ASA, Madison, WI.
5. **Jones, S.B., H. Abdu, R. Heinse**, D.A. Robinson and R.J. Ryel. 2009. Identifying Soil Resource Pools within Forest Communities using Eco-Geophysics. ASA-CSSA-SSSA Annual Meeting, Pittsburgh, PA - Nov. 1-5, See Agronomy Abstracts, ASA, Madison, WI.
6. Carlisle, J, **S.B. Jones**, D.G. Tarboton, L. Hipps and J.L. Boettinger. 2009. Instrumentation Enhancement at the T.W. Daniel Experimental Forest: A Drought Management Initiative Project. Spring Runoff Conference, Eccles Conference Center, Utah State University, Logan, UT, April 2-3.
7. Fan J. and **S.B. Jones**. 2009. Limitations for Applying the Gradient-Based Soil CO₂ Efflux Method. Spring Runoff Conference, Eccles Conference Center, Utah State University, Logan, UT, April 2-3.
8. Doyle, T.E., A.T. Tew, D.A. Robinson, and **S.B. Jones**. 2009. Modeling the Dielectric Response of Aggregated Soils. Spring Runoff Conference, Eccles Conference Center, Utah State University, Logan, UT, April 2-3.
9. **Wang, C.** and **S.B. Jones**. 2009. Evaluating Soil Water Content Sensors by Simulating High Clay Content Soils with Varied Relaxation- and Electrically Conductive-Dielectric Liquids. Spring Runoff Conference, Eccles Conference Center, Utah State University, Logan, UT, April 2-3.
10. **Jones, S.B.**, I. Podolskiy, R. Heinse, S.T. Topham, V.N. Sytchev, D. Or and G.E. Bingham. 2009. Porous Media Fluid Transport in Microgravity: The ORZS Flight Experiments. Presented at the 17th International Academy of Astronautics ‘Humans in Space’ Symposium, Moscow, Russia, June 7-11.
11. **Heinse, R., S.B. Jones**, M. Tuller, G.E. Bingham, I. Podolskiy and D. Or (2009). Providing Optimal Root Zone Fluxes: Challenges of Capillary-Driven Hysteretic Water Distributions in Microgravity. 39th International Conference on Environmental Systems (ICES), Hyatt Regency, Savannah, Georgia, USA, July 12 - 16.
12. **Jones, S.B., R. Heinse**, B. Bugbee, D. Or and G.E. Bingham. Porous plant growth media design considerations for Lunar and Martian habitats. 2009. 39th International Conference on Environmental Systems (ICES), Hyatt Regency, Savannah, Georgia, USA, July 12 - 16.
13. **Jones, S.B., R.M. Estevez** and D.A. Robinson. 2008. Mobile Soil Water Content Derived from Time Domain Reflectometry and an Open-Ended Dielectric Probe. ASABE Annual

Meeting, Reno Nevada, June 21-24.

14. **Estevez, R.M.** and **S.B. Jones**. 2009. Frequency Domain Soil Moisture Determination Using an Open-Ended Dielectric Probe. ASABE Annual Meeting, Reno Nevada, June 21-24.
15. Fan, J., M. Shao, Q. Wang, S. Li and **S.B. Jones**. 2009. Landscape Changes and Vegetation Restoration in the Wind-Water Crisscross Region of the Loess Plateau, China. ASABE Annual Meeting, Reno Nevada, June 21-24.
16. **C. Wang**, **R.M. Estevez**, C.M.P. Vaz and **S.B. Jones**. 2009. Quantifying the Impact of Soil Properties on the Performance of Electromagnetic Water Content Sensors. ASABE Annual Meeting, Reno Nevada, June 21-24.

Year 2008 (20/23)

1. Berger, P.A., **R. Heinse**, **H. Abdu**, M. Tuller, **S.B. Jones**, M.G. Schaap and J.F. Artiola. 2008. Geophysical Characterization of Inactive Mine Tailings – A First Step for Economical Design of Vegetative Covers. AGU Fall Meeting Abstracts, San Francisco, CA, December 15-19.
2. **Abdu, H.**, D. A. Robinson, M. Seyfried, and **S. B. Jones**. 2008. Using Electromagnetic Induction Images of a Watershed Subsurface to Predict Soil Textural Properties. 3rd Global Workshop on Digital Soil Mapping, Eccles Conference Center, Utah State University, Sept. 30 -Oct. 3.
3. Monje, O., R.M. Wheeler, **S.B. Jones** and C.A. Mitchell. 2008. Design of Root Modules for a Lunar Salad Machine. Joint Annual Meeting of the Lunar Exploration Analysis Group (LAEG), Cape Canaveral, FL, Oct. 28-31.
4. **Jones, S.B.**, **R.M. Estevez** and D.A. Robinson. 2008. Water content determination using a portable vector network analyzer and open-ended dielectric probe. GSA-SSSA-ASA-CSSA-GCAGS-HGS 2008 Joint Annual Meeting, George R. Brown Convention Center, Houston, TX, Oct. 5-9, See Agronomy Abstracts, ASA, Madison, WI.
5. **Heinse, R.**, J. Carlisle and **S.B. Jones**. 2008. Subsurface snowmelt patterns identified using time-lapse electrical resistivity imaging. GSA-SSSA-ASA-CSSA-GCAGS-HGS 2008 Joint Annual Meeting, George R. Brown Convention Center, Houston, TX, Oct. 5-9, See Agronomy Abstracts, ASA, Madison, WI.
6. **Yang, C.B.** and **S.B. Jones**. 2008. Snowmelt Infiltration Determination using Heat Pulse Probe and Snow Lysimeter Techniques compared with an Energy Balance Model. GSA-SSSA-ASA-CSSA-GCAGS-HGS 2008 Joint Annual Meeting, George R. Brown Convention Center, Houston, TX, Oct. 5-9, See Agronomy Abstracts, ASA, Madison, WI.
7. Berger, P.A., **R. Heinse**, M. Tuller, **S.B. Jones**, M.G. Schaap and J.F. Ariola. 2008. Physical and Hydrological Characterization of Mine Tailings – A First Step for Revegetation with Native Plant Communities. GSA-SSSA-ASA-CSSA-GCAGS-HGS 2008 Joint Annual Meeting, George R. Brown Convention Center, Houston, TX, Oct. 5-9, See Agronomy Abstracts, ASA, Madison, WI.
8. **Heinse, R.**, **S.B. Jones**, D. Or, T.S. Topham, I.G. Podolskiy and G.E. Bingham. 2008. Microgravity Implications of Water Distribution on Oxygen Diffusion Pathways in Unsaturated Porous Media. GSA-SSSA-ASA-CSSA-GCAGS-HGS 2008 Joint Annual Meeting, George R. Brown Convention Center, Houston, TX, Oct. 5-9, See Agronomy Abstracts, ASA, Madison, WI.
9. Bugbee, B., J.M. Blonquist Jr., B. Doucette, and **S.B. Jones**. 2008. Improved Techniques for Long-term Continuous Measurement of Soil Respiration and Respiratory Quotient. GSA-

- SSSA-ASA-CSSA-GCAGS-HGS 2008 Joint Annual Meeting, George R. Brown Convention Center, Houston, TX, Oct. 5-9, See Agronomy Abstracts, ASA, Madison, WI.
10. **Jones, S.B.**, **R.M. Estevez** and D.A. Robinson. 2008. Frequency-Dependent Permittivity for Soil Water Content Determination. Second Workshop for Applications of Electromagnetic Techniques in Environmental Monitoring. August 26-27, 2008. Department of Civil Engineering – University of Taubate (UNITAU), Brazil.
 11. **Heinse, R.** and **S.B. Jones**. 2008. Towards Using Time-Lapse Electrical Resistivity Imaging for Improved Subsurface Snowmelt Characterization. Spring Runoff Conference, Eccles Conference Center, Utah State University, Mar. 31-Apr. 1.
 12. **Yang, C.**, **S.B. Jones** and G.J. Kluitenberg, 2008. Optimized Soil Thermal Properties and Water Flux from Penta-needle Heat Pulse Probe Measurements. Spring Runoff Conference, Eccles Conference Center, Utah State University, Mar. 31-Apr. 1.
 13. **Jones, S.B.** Critical Measurements for Understanding Critical Zone Hydrology. Spring Runoff Conference, Eccles Conference Center, Utah State University, Logan, UT, Mar. 31 – Apr. 1, 2008.
 14. **Estevez, R.**, D.A. Robinson and **S.B. Jones**. 2008. Bilinear Analysis for Soil Moisture Determination Using an Open-Ended Dielectric Probe. Spring Runoff Conference, Eccles Conference Center, Utah State University, Mar. 31-Apr. 1.
 15. Carlisle, J, J. Robinson, J. Suisse, V. Mahat, **S.B. Jones**, D.G. Tarboton, L. Hippias and J.L. Boettinger. 2008. Instrumentation and Measurement Facilities at the T.W. Daniel Experimental Forest: A Drought Management Initiative Project. Spring Runoff Conference, Eccles Conference Center, Utah State University, Mar. 31-Apr. 1.
 16. **Jones, S.B.**, D.A. Robinson, H. Abdu, R. Heinse and R. Ryel. 2008. Monitoring and Assessment of Vegetation Root-Zone Status in the T.W. Daniel Experimental Forest. Restoring the West Conference, Utah State University, Logan, UT, Sept. 16 – 18.
 17. **Abdu, H.**, D. A. Robinson, J. L. Boettinger, M. Seyfried, and **S. B. Jones**. 2008. The Use of Geophysical Imaging to Identify Subsurface Soil Textural Patterns. Spring Runoff Conference, Eccles Conference Center, Utah State University, Mar. 31-Apr. 1.
 18. **Jones, S.B.**, D.A. Robinson, **H. Abdu** and **R. Heinse**. Coupled geophysical techniques uncover soil property influence on Ecohydrology. 93rd Ecological Society of America Annual Meeting, Midwest Airlines Center, Milwaukee, Wisconsin, Aug. 3 – 8, 2008. Invited.
 19. Blonquist, J. M. Jr., **S.B. Jones** and B. Bugbee. Estimation of soil respiration: Improved techniques for measurement of soil gas. 93rd Ecological Society of America Annual Meeting, Midwest Airlines Center, Milwaukee, Wisconsin, Aug. 3 – 8, 2008.
 20. Robinson, D.A., **H. Abdu**, **S.B. Jones**, I. Lebron, R. Knight and M.P. Oatham. Applications of geophysical survey to Ecohydrology in tropical and dryland ecosystems. 93rd Ecological Society of America Annual Meeting, Midwest Airlines Center, Milwaukee, Wisconsin, Aug. 3 – 8, 2008.
 21. **Jones, S.B.**, M. Tuller and D. Or. Liquid imbibition in particulate porous media in microgravity. 37th COSPAR Scientific Assembly, Montreal, Canada, 13-20 July 2008.
 22. **Heinse, R.**, **S.B. Jones**, D. Or, M. Tuller, T.S. Topham, I.G. Podolskiy and G.E. Bingham. Challenges of Watering Plants in Space: Water Retention and Distribution---What Have we Learned? 37th COSPAR Scientific Assembly, Montreal, Canada, 13-20 July 2008.
 23. **Jones, S.B.**, **R. Heinse**, D. Or, T.S. Topham, I.G. Podolskiy and G.E. Bingham. Oxygen diffusion measurements in porous media on the ISS: One piece of the puzzle for optimal root zone performance. 37th COSPAR Scientific Assembly, Montreal, Canada, 13-20 July 2008.

Year 2007 (16/18)

1. **Jones, S.B.**, R. Heinse, J. Simunek, M. Tuller and D. Or. 2007. Numerical modeling of porous-media hydrodynamics in variable-gravity during parabolic flight. AGU Fall Meeting Abstracts, San Francisco, CA, December 10-14.
2. Robinson D.A., **H. Abdu**, **S.B. Jones**, M.S. Seyfried, I. Lebron and R. Knight. 2007. Exploring Soils and Ecohydrological Structure in Small Watersheds Using Electromagnetic Induction.. AGU Fall Meeting Abstracts, San Francisco, CA, December 10-14.
3. **Yang, C.B.** and **S.B. Jones**. 2007. 2-D water flux using a pentaprobe heat-pulse sensor: laboratory experiment and numerical evaluation. AGU Fall Meeting Abstracts, San Francisco, CA, December 10-14.
4. **Abdu, H.**, D.A. Robinson and **S.B. Jones**. 2007. Separating Water Content Changes and Soil Texture Using Electromagnetic Induction Soil Imaging. AGU Fall Meeting Abstracts, San Francisco, CA, December 10-14.
5. **Heinse, R.**, **S.B. Jones**, D. Or, T.S. Topham, I.G. Podolskiy and G.E. Bingham. 2007. Oxygen Diffusion Measurements in Unsaturated Porous Media on the International Space Station. AGU Fall Meeting Abstracts, San Francisco, CA, December 10-14.
6. **Jones, S.B.** and Krishna Shenai. 2007. Subsurface Measurement Needs for Ecological, Hydrological and Agricultural Applications. *The 50th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*. Montreal, Canada, August 5-7.
7. Robinson, D.A. and **S.B. Jones**. 2007. Mapping Soil Properties for Ecohydrological Studies in Small Semi-Arid Watersheds using Electromagnetic Induction. Presented by Jones at the AGU Joint Assembly, Acapulco, Mexico, May 22-25.
8. Robinson, D.A., **H. Abdu**, **S.B. Jones**, M. Seyfried and I. Lebron. 2007. Geophysical Mapping for Exploration of Soil Texture and Plant Community Structure. Agronomy Abstracts, ASA, Madison, WI.
9. **Abdu, H.**, **S.B. Jones** and D.A. Robinson. 2007. Soil Moisture Variation Reveals Soil Textural Features Using Electromagnetic Induction Mapping. Agronomy Abstracts, ASA, Madison, WI.
10. **Jones, S.B.**, **K.S. Lewis** and D.A. Robinson. 2007. Near-Surface Infiltration Estimation under Snowmelt using Heat-Pulse-Based Water Flux Sensors. Agronomy Abstracts, ASA, Madison, WI.
11. **Jones, S.B.**, **R. Heinse**, D. Or and G.E. Bingham. 2007. Oxygen diffusion measurements in partially saturated porous media in microgravity, Agronomy Abstracts, ASA, Madison, WI.
12. **Heinse, R.**, **S.B. Jones**, D. Or, T.S. Topham, I.G. Podolsky and G.E. Bingham, 2007. Porous Media Water Retention in Prolonged Microgravity: The ORZS Experiment. Agronomy Abstracts, ASA, Madison, WI.
13. **Heinse, R.**, **S.B. Jones**, G.E. Bingham and B. Bugbee, 2007. Optimizing Straticulate Plant-Growth Media for Improved Root Zone Performance and Management. Agronomy Abstracts, ASA, Madison, WI.
14. Robinson, D.A., I. Lebron, **S.B. Jones** and **H. Abdu**. 2007. Using Geophysics to Explore Soils and Plant Community Structure. ESA/SER Joint Meeting, August 5 - 10, 2007.
15. **Robinson, J.**, D.G. Chandler, **S.B. Jones**, D.G. Tarboton, J.L. Boettinger and L.E. Hipps. 2007. A Developing Ecohydrological Instrument Network at the T.W. Daniel Experimental Forest. Spring Runoff Conference, Utah State University, Logan, UT, April 5-6.
16. **Heinse, R.**, **S.B. Jones**, G. Bingham and B. Bugbee. 2007. Improving root zone performance:

physical and numerical modeling of a layered plant-growth medium. Spring Runoff Conference, Utah State Univ., Logan, UT, April 5-6.

17. **Jones, S.B.**, **H. Abdu**, F. Ogden and D.A. Robinson. 2007. Assessment and Monitoring of the Subsurface for Snowmelt Fate Determination in Small Semi-Arid Watersheds. Spring Runoff Conference, Utah State University, Logan, UT, April 5-6.
18. **Abdu, H.**, **S.B. Jones** and D.A. Robinson. 2007. Spring Runoff Conference, Utah State University, Logan, UT, April 5-6.

Year 2006 (23/26)

1. **Jones, S.B.** and D.A. Robinson. 2006. Heat-Pulse-Based Water Flux Probes for Near-Surface Infiltration Determination in Hydrology. AGU Fall Meeting Abstracts, San Francisco, CA, December 11-15
2. **Heinse, R.**, **S.B. Jones**, B. Bugbee and G.E. Bingham. 2006. Graduated Plant-Growth Media for Optimizing Gaseous, Liquid and Nutrient Requirements: Modeling, Design and Monitoring. AGU Fall Meeting Abstracts, San Francisco, CA, December 11-15
3. **Abdu, H.** Robinson, D.A., M. Seyfried and **S.B. Jones**. 2006. Predicting Spatial Distribution of Soil Texture with Electromagnetic Induction Mapping in Small Watersheds. AGU Fall Meeting Abstracts, San Francisco, CA, December 11-15
4. Robinson, D.A., **S.B. Jones**, **J.M. Blonquist Jr.**, **H. Abdu** and M. Seyfried. 2006. Water Content Determination in Small Watersheds: Sensors for Distributed Networks and Geophysical Approaches. AGU Fall Meeting Abstracts, San Francisco, CA, December 11-15
5. Crook, N., B. Golden-Chen, R. Knight, **H. Abdu**, D.A. Robinson, **S. Jones** and I. Lebron. 2006. Combined Geophysical Approach to Characterizing Subsurface Flow-paths in the Reynolds Creek Watershed. AGU Fall Meeting Abstracts, San Francisco, CA, December 11-15
6. Robinson, D.A., M. Seyfried, V. Urdanoz, **H. Abdu**, **S.B. Jones**, D. Chandler and R. Knight. 2005. Application of electromagnetic induction sensors for mapping the subsurface in small watersheds. Eos Trans. AGU. 86(52), Fall Meet. Suppl. H31F-1352.
7. **Jones, S.B.**, **R. Vinukollu** and J.L. Boettinger. 2006. Determining optimal sensor depth for gradient-based flux estimates using measured subsurface CO₂ concentrations. Agronomy Abstracts, ASA, Madison, WI.
8. **Abdu, H.**, D.A. Robinson and **S.B. Jones**. 2006. Modeling the dielectric permittivity of porous media using coated TDR probes. Agronomy Abstracts, ASA, Madison, WI.
9. **Heinse, R.** and **S.B. Jones**. 2006. Porous-Media Water Retention and Distribution observed in Variable Gravity during Parabolic Flight. Agronomy Abstracts, ASA, Madison, WI.
10. **Jones, S.B.** and D.A. Robinson. 2006. Sensing the Environment. *nanoUtah* 2006, Utah's Statewide Nanotechnology Conference, October 5, University of Utah, Merrill Engineering Building.
11. Robinson, D.A., **S.B. Jones**, and S.P. Friedman. 2006. Modeling Structural and Thermal Effects on TDR Measurements in Granular Porous Media. TDR 2006: 3rd International Symposium and Workshop on Time Domain Reflectometry for Innovative Soils Applications. September 17-20, 2006, Purdue University, West Lafayette, IN.
12. Friedman S.P., **S.B. Jones** and D.A. Robinson. 2006. Review of geometrical and interfacial factors determining the effective permittivity-volumetric water content relationships of soil and rocks. TDR 2006: 3rd International Symposium and Workshop on Time Domain

Reflectometry for Innovative Soils Applications. September 17-20, 2006, Purdue University, West Lafayette, IN.

13. **Jones, S.B.**, D.A. Robinson and S.P. Friedman. 2006. A subsurface open-ended TDR probe for on-the-go mapping of water content. TDR 2006: 3rd International Symposium and Workshop on Time Domain Reflectometry for Innovative Soils Applications. September 17-20, 2006, Purdue University, West Lafayette, IN.
14. **Heinse, R.**, G. Kluitenberg, P. Shouse, **K. Lewis**, G. E. Bingham and **S.B. Jones**. Integration of heat capacity and electrical conductivity sensors for root module water and nutrient assessment. SAE Technical Paper 06ICES-189. The 36th International Conference on Environmental Systems (ICES), Norfolk, VI, July 2006.
15. **Abdu, H.**, D.A. Robinson and **S.B. Jones**. 2006. Layered Soil Salinity and Moisture Effects on Electromagnetic Induction Measurements (Sounding) in a Soil Profile. Western Regional Cooperative Soil Survey (WRCSS) and Western Society of Soil Science (WSSS) conference, Park City, Utah, June 19-23.
16. **Jones, S.B.**, D.A. Robinson and S.P. Friedman. 2006. Development of Rapid TDR Measurement Capability for Mobile Water Content Mapping. Western Regional Cooperative Soil Survey (WRCSS) and Western Society of Soil Science (WSSS) conference, Park City, Utah, June 19-23.
17. **Heinse, R.**, **K. S. Lewis** and **S. B. Jones**. 2006. A Small-Scale Multifunctional Heat-Pulse Sensor for Soil Water Content and Electrical Conductivity. West Regional Cooperative Soil Survey (WRCSS) and Western Society of Soil Science (WSSS) conference, Park City, Utah, June 19-23.
18. **Vinukollu, R.**, **S.B. Jones**, and J.L. Boettinger. 2006. Development and validation of a measurement system for characterizing subsurface CO₂ concentration profiles in soil. Western Regional Cooperative Soil Survey (WRCSS) and Western Society of Soil Science (WSSS) conference, Park City, Utah, June 19-23.
19. Doyle, T.E., D.A. Robinson, **S.B. Jones**, and K.H. Warnick. 2006. Modeling the Dielectric Properties of Granular Media to Determine Water Content. Spring Runoff Conference, Utah State University, Logan, UT, March 27-28.
20. **Okwany, R.O.** and **S.B. Jones**. 2006. Water Application Rate Determination for Optimizing Salt Leaching in Structured Soils. Spring Runoff Conference, Utah State University, Logan, UT, March 27-28.
21. **Abdu, H.**, **S.B. Jones**, **S.M. Hansen** and D.A. Robinson. 2006. Modeling a Coated Coaxial Time Domain Reflectometry Probe response in High Electrical Conductivity Solutions. Spring Runoff Conference, Utah State University, Logan, UT, March 27-28.
22. **Heinse, R.**, **K.S. Lewis** and **S.B. Jones**. 2006. Water Content and Electrical Conductivity Assessment using Small-Scale Multifunctional Heat-Pulse Sensors. Spring Runoff Conference, Utah State University, Logan, UT, March 27-28.
23. **Abdu, H.**, D.A. Robinson, M.S. Seyfried and **S.B. Jones**. 2006. Predicting Spatial Distribution of Soil Texture with Electromagnetic Induction Mapping and Terrain Analysis Models in Small Watersheds. Eos Trans. AGU, 87(36), Jt. Assem. Suppl., Abstract NS23A-06.
24. Robinson, D.A., **S.B. Jones**, T. Doyle and S.P. Friedman. 2006. Water content determination in porous media using dielectric petrophysical relationships and multipole simulations. Eos Trans. AGU, 87(36), Jt. Assem. Suppl., Abstract NS31B-06.
25. **Jones, S.B.**, **R. Heinse**, D. Or, D. Poritz and G.E. Bingham. 2006. Characterization and

analysis of water retention and oxygen diffusion in plant growth media on earth: Criteria for comparison in microgravity. Habitation 2006: Conference on Habitation Research and Technology Development. Rosen Plaza Hotel, Orlando, FL, February 5-8, 2006

26. [Heinse, R.](#), K. Lewis, G. Kluitenberg, G. Bingham and **S.B. Jones**. 2006. Coupled heat capacity and electrical conductivity measurements for root zone water and nutrient assessment. Habitation 2006: Conference on Habitation Research and Technology Development. Rosen Plaza Hotel, Orlando, FL, February 5-8, 2006.

Year 2005 (10/19)

1. Robinson, D.A., M. Seyfried, V. Urdanoz, [H. Abdu](#), **S.B. Jones**, D. Chandler and R. Knight. 2005. Application of electromagnetic induction sensors for mapping the subsurface in small watersheds. Eos Trans. AGU. 86(52), Fall Meet. Suppl. H31F-1352.
2. [Abdu, H.](#), D.A. Robinson and **S.B. Jones**. 2005. Comparing Dual-Dipole Electromagnetic Induction Sensors For Measuring Soil Electrical Conductivity. INRA Environmental Subsurface Science Symposium. Big Sky Resort, Montana. September 19-21.
3. [Blonquist Jr., J.M.](#), **S.B. Jones**, and D.A. Robinson. 2005. Water Conservation from Precise Irrigation Scheduling Using a Subsurface Electromagnetic Soil Moisture Sensor. 26th Annual Irrigation Association International Irrigation Show. November 6-8, 2005, Phoenix, AZ.
4. **Jones, S.B.**, M. Tuller and D. Or. 2005. Characterizing Liquid Imbibition in Porous Media under Microgravity. Agronomy Abstracts, ASA, Madison, WI.
5. [Abdu, H.](#), D.A. Robinson and **S.B. Jones**. 2005. A Complex Permittivity Model for a Coated Coaxial TDR Probe in Saline Solutions. Agronomy Abstracts, ASA, Madison, WI.
6. [Blonquist, J.M.Jr.](#), **S.B. Jones**, and D.A. Robinson. 2005. Precise Irrigation Scheduling Using a Subsurface Electromagnetic Soil Moisture Sensor. Agronomy Abstracts, ASA, Madison, WI.
7. [Heinse, R.](#), **S.B. Jones** and D. Or. 2005. Inverse Modeling of Porous Media Unsaturated Hydraulic Properties in Microgravity. Agronomy Abstracts, ASA, Madison, WI.
8. [Blonquist, J.M.Jr.](#), R. Heinse, P. Dittthakit, R.W. Mace and **S.B. Jones**. 2005. An Instrumented Soil Column for Teaching Unsaturated Flow and Transport Processes. Agronomy Abstracts, ASA, Madison, WI.
9. Steinberg, S.L., **S.B. Jones**, M. Xiao, L. Reddi and G. Kluitenberg, D. Or, J.I.D. Alexander, N. Daidzic, M. Tuller. 2005. Challenges to understanding fluid behavior in plant growth media under microgravity, The 35th International Conference on Environmental Systems (ICES) and the 8th European Symposium on Space Environmental Control Systems (ESSECS), Villa Pamphili Hotel, Rome, Italy, 11-14 July 2005.
10. **Jones, S.B.**, [R. Heinse](#), G.B. Bingham and D. Or. 2005. Modeling and Design of Optimal Growth Media from Plant-Based Gas and Liquid Fluxes, The 35th International Conference on Environmental Systems (ICES) and the 8th European Symposium on Space Environmental Control Systems (ESSECS), Villa Pamphili Hotel, Rome, Italy, 11-14 July.
11. [Heinse, R.](#), **S.B. Jones**, [S.D. Humphries](#), R.W. Mace, S.L. Steinberg, M. Tuller, R. Newman, D. Or. 2005. Measurement of Porous Media Water Retention during Parabolic Flight Induced Microgravity. The 35th International Conference on Environmental Systems (ICES) and the 8th European Symposium on Space Environmental Control Systems (ESSECS), Villa Pamphili Hotel, Rome, Italy, 11-14 July.
12. Friedman, S.P., D.A. Robinson, **S.B. Jones**, [J.M. Blonquist Jr.](#), and M.G. Schaap. 2005.

Measurement and Modeling of the TDR Signal Propagation Through Layered Dielectric Media and of the Effective Permittivity of Sandy Soils, Eos Trans. AGU, 86(18), Jt. Assem. Suppl., Abstract NS41B-10.

13. **Jones, S.B., J.M. Blonquist Jr.**, D.A. Robinson, V.P. Rasmussen and D. Or. 2005. Proposal of a Methodology for Comparing Electromagnetic Soil Water Content Sensors, Eos Trans. AGU, 86(18), Jt. Assem. Suppl., Abstract H13B-02.
14. **Blonquist, J.M. Jr.**, D.A. Robinson and **S.B. Jones**. 2005. Comparison of Seven Electromagnetic Water Content Sensors Commonly Used in Ecohydrological Studies. Eos Trans. AGU, 86(18), Jt. Assem. Suppl., Abstract H21E-04.
15. Robinson, D.A., D. Chandler and **S.B. Jones**. 2005. An Overview of Advances in Water Content Sensing for Small Watersheds and Ecohydrological Studies. Eos Trans. AGU, 86(18), Jt. Assem. Suppl., Abstract H21E-03.
16. **Jones, S.B., R. Heinse**, G.B. Bingham and D. Or. 2005. Particulate Plant Growth Media for Reduced Gravity: Experiences and Challenges. Workshop on Granular Materials in Lunar and Martian Exploration, Feb. 2-3. John F. Kennedy Space Center, Orlando, FL.
17. Or. D., **S.B. Jones**, S. Steinberg and I. Alexander. 2005. Fluid Distribution in UnSaturated Porous Media under Zero Gravity – Plant Growth and Life Support Applications. Workshop on Granular Materials in Lunar and Martian Exploration, Feb. 2-3. John F. Kennedy Space Center, Orlando, FL.
18. Robinson, D.A., **S.B. Jones**, **J.M. Blonquist Jr.**, M.G. Schaap, A. Lazar, S.P. Friedman. 2005. Measurement and Modeling of the TDR Signal Propagation through Layered Dielectric Media and of the Effective Permittivity of Sandy Soils. Conference on Monitoring and Modeling of Porous Media Properties. Institute of Agrophysics PAS, Lublin, Poland, February 13-16.
19. Friedman, S.P., **S.B. Jones**, D.A. Robinson. 2005. Geometrical Factors Affecting the Bulk Electrical Properties of Soils and Rocks: Measurements and Continuum Mean Field Computations. Conference on Monitoring and Modeling of Porous Media Properties. Institute of Agrophysics PAS, Lublin, Poland, February 13-16.

Year 2004 (10/16)

1. **Jones, S.B., J.M. Blonquist**, D.A. Robinson, V.P. Rasmussen, D. Or. 2004. Standardizing Characterization and Calibration of Electromagnetic Sensors for Dielectric Measurement. Agronomy Abstracts, ASA, Madison, WI.
2. Blonquist, J.M., **S.B. Jones**, D.A. Robinson. 2004. Comparison of Seven Water Content Sensors in Lossless and Lossy Dielectrics. Agronomy Abstracts, ASA, Madison, WI.
3. Robinson, D.A., **S.B. Jones**, S.P. Friedman and **J.M. Blonquist**. 2004. Grain-Scale Structural Effects on Electrical Transport Properties in Soils. Agronomy Abstracts, ASA, Madison, WI.
4. Robinson, D.A., **S.B. Jones**, I. Lebron, and T. Kelleners, M.G. Schaap. 2004. Water Content Determination in Clay Soils: Implications for Comparing Water Content Sensors. Agronomy Abstracts, ASA, Madison, WI.
5. **Heinse, R., S.B. Jones, S.D. Humphries**, R.W. Mace, S.L. Steinberg, M. Tuller, R. Newman, D. Or. 2004. Porous Media Water Retention and Saturated Hydraulic Conductivity During Parabolic Flight Induced Microgravity. Agronomy Abstracts, ASA, Madison, WI.
6. Or, D., **S.B. Jones**, M. Tuller, S. Steinberg, I. Alexander, N. Diadzić, L.N. Reddi, G. Kluitenberg, F.L. Ogden, **R. Heinse**. 2004. Unsaturated Flow in Zero Gravity - Lessons and Challenges. Agronomy Abstracts, ASA, Madison, WI.

7. Friedman, S.P., **S.B. Jones**, and D.A. Robinson. 2004. Geometrical factors affecting the bulk electrical properties of soils and rocks: measurements and continuum mean field computations, p. 81-82, In D. J. Bergman and E. Inan, eds. Continuum Models and Discrete Systems, Vol. 158. Kluwer Academic Publishers, Dordrecht.
8. Or, D., **S.B. Jones**, M. Tuller, S. Steinberg, I. Alexander, N. Daidzic, L.N. Reddi, G. Kluitenberg, F.L. Ogden, **R. Heinse**. 2004. Unsaturated Flow in Zero Gravity - Lessons and Challenges. Kirkham Conference, Logan, UT, Oct. 28-29, 2004.
9. Robinson D.A., **Jones S.B.**, Friedman S.P., **Blonquist J.M Jr.** and Schaap, M.G. 2004. Geometrical effects on electromagnetic wave interaction with moist materials. 85th Annual Meeting of the Pacific Division, AAAS, June 14-17, 2004, Logan UT.
10. **Jones S.B.**, **Blonquist J.M Jr.**, Robinson D.A., Rassmussen V.P. and Or D. 2004. Toward standardizing electromagnetic sensor characterization and calibration. 85th Annual Meeting of the Pacific Division, AAAS, June 14-17, 2004, Logan UT.
11. **Blonquist J.M Jr.**, **Jones S.B.** and Robinson D.A., 2004. A low cost time domain transmission sensor with TDR performance characteristics. 85th Annual Meeting of the Pacific Division, AAAS, June 14-17, 2004, Logan UT.
12. Robinson D.A., **Jones S.B.**, Wraith J.M., Or D. and Friedman S.P. 2004. An Overview of Advances in Water Content and Electrical Conductivity Measurement in Soils Using Time Domain Reflectometry. CIGR The 7th Inter-Regional Conference on Environment-Water; Land and Water Management: Decision Tools and Practice, Beijing, China; Oct. 11 -14.
13. Chau, J.,D. Or, **S.B. Jones**, and M. Sukop. 2004. Lattice Boltzmann Modeling of Gaseous Diffusion in Unsaturated Porous Media under Variable Gravity Conditions. AGU 2004 Joint Assembly. May 17-21, Montreal, Canada.
14. Or, D., J.M. Wraith, G. Serbin, Y. Chen, and **S.B. Jones**. 2004. Bound water and thermodielectric phenomena affecting soil water content measurement using time domain reflectometry and radar remote sensing. AGU 2004 Joint Assembly. May 17-21, Montreal, Canada.
15. **Jones, S.B.**, G.E. Bingham, Dani Or and T.S. Topham. 2004. Measuring Oxygen Diffusion in Unsaturated Plant Growth Media in Microgravity. Habitation 2004 Conference on Space Habitation Research and Technology Development. Rosen Plaza Hotel in Orlando, Florida, January 4-7.
16. Steinberg, S., Alexander, I, N. Daidzek, **S.B. Jones**, G. Kluitenberg, D. Or, L. Reddi, , M. Tuller. 2004. Fluid flow and distribution through porous plant growth media in microgravity: Status update. Habitation 2004 Conference on Space Habitation Research and Technology Development. Rosen Plaza Hotel, Orlando, Florida, January 4-7.

Year 2003 (4/4)

1. **Jones, S.B.**, D. Or, M. Tuller, S.L. Steinberg, **S.D. Humphries**, G.E. Bingham, N.E. Daidzic and L.N. Reddi. 2003. Influence of Variable Gravity on Liquid Configurations in Micromodels. Agronomy Abstracts, ASA, Madison, WI.
2. Steinberg S.L., **S.B. Jones**, D. Or, N.E. Daidzic, M. Tuller, and F. Ogden. 2003. Tensiometer measurements under variable gravity conditions. Agronomy Abstracts, ASA, Madison, WI.
3. **Jones, S.B.**, D. Or. and G.E. Bingham. 2003. An Automated Measurement System and Models for Gaseous Diffusion in Coarse-Textured Porous Media Under Variable Gravity. Agronomy Abstracts, ASA, Madison, WI.
4. Friedman, S.P.; **Jones, S.B.**; Robinson, D.A. 2003. The effects of particle shape, orientation

and size distribution on the conductivity of granular media. EGS - AGU - EUG Joint Assembly, Nice, France.

Year 2002 (5/10)

1. **Jones, S.B.**, D. Or and G.E. Bingham. 2002. Gas Diffusion Measurement and Modeling In Coarse-Textured Porous Media. Special publication in Vadose Zone Journal.
2. **Jones, S.B.** and D. Or. 2002. Time domain reflectometry (TDR) measurement of water content in high surface area porous media. Special Publication in Physica B.
3. **Jones, S.B.** and D. Or. 2002. Dielectric and acoustic monitoring of water content and volume changes in ear corn drying bins. Agronomy Abstracts, ASA, Madison, WI.
4. Tuller, M., **S.B. Jones**, and D. Or, 2002. Liquid Configuration in Angular Pores under Microgravity. SSSA Annual Meeting Abstracts, November 10-14, Indianapolis, Indiana. IN. Agronomy Abstracts. ASA, Madison, WI
5. **Jones, S.B.** and D. Or. 2002. Automated gas diffusion measurements in coarse-textured plant growth media for microgravity studies. Agronomy Abstracts, ASA, Madison, WI.
6. **Jones, S.B.**, Bingham, G.E., D. Or and R.C. Morrow. 2002. ORZS: Optimization of Root Zone Substrates for Microgravity. The 32nd International Conference on Environmental Systems (ICES), San Antonio, Texas, USA, July 15-18.
7. Or, D. and **S.B. Jones**. 2002. Time Domain Reflectometry Measurement of Bulk Permittivity of Porous Mixtures Containing Bound Water. Sixth International Conference on the Electrical Transport and Optical Properties of Inhomogeneous Media. Snowbird's Cliff Lodge, Salt Lake City, Utah, July 15 - 19.
8. **Jones, S.B.** and D. Or. 2002. Time Domain Reflectometry (TDR) Applications in Earth Sciences. 2002 IEEE AP-S International Symposium and USNC/URSI National Radio Science Meeting. Hilton, San Antonio, Texas, 16-21 June.
9. Alexander, I, N. Daidzek, **S.B. Jones**, G. Kluitenberg, D. Or, L. Reddi, S. Steinberg, M. Tuller. 2002. Magnetic Resonance Imaging of the wetting front in thin slices of porous media: The effect of gravity. The 32nd International Conference on Environmental Systems (ICES), San Antonio, Texas, USA, July 15-18.
10. Steinberg, S., Alexander, I, N. Daidzek, **S.B. Jones**, G. Kluitenberg, D. Or, L. Reddi, , M. Tuller. 2002. Flow and distribution of fluid phases through porous plant growth media in microgravity. The 32nd International Conference on Environmental Systems (ICES), San Antonio, Texas, USA, July 15-18.

Year 2001 (4/5)

1. **Jones, S.B.**, G.E. Bingham, D. Or, R.C. Morrow and I.G. Podolsky. 2001. Optimization of the root zone substrates (ORZS): microgravity modeling and validation. ASGSB seventeenth annual meeting. November 7-10, Alexandria, VA, Gravitational and Space Biology Bulletin 15(1):66.
2. Chard, J., A. Henry, B. Doucette, J. Norton, **S.B. Jones**, C. Palmer, R. Hess, and B. Bugbee. 2001. Sterile Culture Techniques for Characterization of Root Exudates. Agronomy Abstracts, ASA, Madison, WI.
3. Wraith, J.M., D. Or. and **S.B. Jones**. 2001. Dielectric properties of bound water: Application to porous media surface area and grain moisture determination. TDR 2001: Innovative Applications of TDR Technology. Northwestern University, September 5-7, Evanston, Illinois.

4. **Jones, S.B.** and D. Or. 2001. Automated Frequency Domain Analysis for Extending TDR Measurement Range in Saline Soils. TDR 2001: Innovative Applications of TDR Technology. Northwestern University, September 5-7, Evanston, Illinois.
5. **Jones, S.B.** and D. Or. 2001. Thermal and geometrical effects on bulk permittivity of porous mixtures containing bound water. 1st International Conference on Dielectric Spectroscopy. 12-15 March, Jerusalem, Israel.

Year 2000 (2/2)

1. **Jones, S.B.** and D. Or. 2000. Frequency Domain Analysis for Extending the TDR Measurement Range in Saline Soils. ASA-CSSA-SSSA Annual Meeting. Minneapolis, MN, Nov. 5-9, *Agronomy Abstracts, ASA, Madison, WI.*
2. **Jones, S.B.**, B.W. Bingham and D. Or. 2000. Measurement of Soil CO₂ Gradient for In-situ Estimation of Carbon Fluxes. ASA-CSSA-SSSA Annual Meeting. Minneapolis, MN, Nov. 5-9, *Agronomy Abstracts, ASA, Madison, WI.*

Year 1999 (4/4)

1. **Jones, S.B.** and D. Or. 1999. Frequency-domain analysis of TDR waveforms in lossy porous media. Eos Trans. AGU. 80(17), Fall Meet. Suppl. F291.
2. **Jones, S.B.** and S.P. Friedman. 1999. Particle Shape Effect on the Dielectric Permittivity of Isotropic and Anisotropic Porous Media. *Agronomy Abstracts, ASA, Madison, WI.*
3. **Jones, S.B.**, D. Or, and S.P. Friedman. 1999. Permittivity of Moist Particulate Mixtures -- Geometrical, Interfacial, and Thermal Effects. *Agronomy Abstracts, ASA, Madison, WI.*
4. A.R. Mitchell, D. Or, M. Caldwell and **S.B. Jones.** 1999. Gradient method for in-situ measurement of CO₂ Flux. *Agronomy Abstracts, ASA, Madison, WI.*

Year 1996 (2/2)

1. **Jones, S.B.** and D. Or. 1996. Selection of particulated media for optimal liquid and gaseous fluxes to plant roots. Eos Trans. AGU. 77(46), Fall Meet. Suppl.
2. **Jones, S.B.** and D. Or. 1996. A capillary-driven root module for plant growth in microgravity. 31st Scientific Assembly of COSPAR. University of Birmingham, England, July, 14-21, 2006.

Year 1995 (1/1)

1. **Jones, S.B.** and D. Or. 1995. Growth media for optimal liquid and gaseous fluxes to plant roots in microgravity. 87th Annual Meeting, ASA, CSSA, SSSA. St. Louis, MO. Oct. 29 - Nov. 3.

FUNDED RESEARCH CONTRACTS AND GRANTS

Competitive Federal/Private Grants

USDA-AFRI - \$318,605 (\$599,880; PI w/Miller, Tuller, Walworth) Jul 2009-Jun 2013
 NOVEL GRADIENT-BASED AND SURFACE CHAMBER TECHNIQUES FOR MONITORING REGULATED AND GREENHOUSE GAS EMISSIONS FROM ANIMAL FEEDING OPERATIONS

USDA-AFRI - \$164,412 (\$448,662; Co-I w/ M. Tuller-PI, D. Or, R. Allen) Jul 2009-Jun 2012

A NOVEL APPROACH TO QUANTIFYING SOIL EVAPORATION RATES WITH HIGH RESOLUTION THERMAL IMAGING AND HEAT FLUX MEASUREMENTS.

CMIRP - (\$148,778; Co-I w/Ron Ryel-PI, D. Bartos, J. Leffler-Co-Is) Jul 2008-Jun 2011

EVALUATING THE MAGNITUDE AND EXTENT, AND ASSESSING CAUSES, OF ASPEN (POPULUS REMULOIDES) MORTALITY (DIE-OFF) IN SOUTHERN UTAH. *CEDAR MOUNTAIN INITIATIVE RESEARCH PROGRAM*

NASA-NAG 9-1284 \$50,540 (\$175,000; Co-I w/G.E. Bingham-PI) Jul 2006-Mar 2008

OPTIMIZATION OF ROOT ZONE SUBSTRATES FOR REDUCED GRAVITY EXPERIMENTS PHASE VI.

Rio Grande River Study -\$30,000 (Collaborator w/ Larry Hipps-PI) Jul 2006-Jun 2008

MODELING SAND BAR EVAPORATION ON THE RIO GRANDE RIVER

NASA-NAG 9-1284 \$60,380, (\$100,000; Co-I w/G.E. Bingham-PI) Apr 2005-Mar 2006

OPTIMIZATION OF ROOT ZONE SUBSTRATES FOR REDUCED GRAVITY EXPERIMENTS PHASE II.

NASA-NAG 9-1284 \$56,748 (\$441,554; Co-I w/G.E. Bingham-PI) Apr 2004-Mar 2005

OPTIMIZATION OF ROOT ZONE SUBSTRATES FOR REDUCED GRAVITY EXPERIMENTS PHASE II.

INRA (051131) - \$60,876 (PI) Ph.D. Graduate Research Fellowship Apr 2004-Jul 2006

VEHICLE-BASED FIELD-SCALE MAPPING OF SOIL WATER CONTENT AND ELECTRICAL CONDUCTIVITY.

NASA-NAG 9-1284 \$81,051 (\$642,762; Co-I w/G.E. Bingham-PI) Apr 2003-Mar 2004

OPTIMIZATION OF ROOT ZONE SUBSTRATES FOR REDUCED GRAVITY EXPERIMENTS PHASE II.

UCONN (NASA NRA-01-OBPR) \$60,820 (Co-I, D. Or-PI, M. Tuller-Co-I) Apr 2003-Mar 2004

FLOW AND DISTRIBUTION OF FLUID PHASES THROUGH POROUS PLANT GROWTH MEDIA IN MICROGRAVITY.

NASA-NAG 9-1284 \$67,827 (\$465,340; Co-I w/G.E. Bingham-PI) Apr 2002-Mar 2003

OPTIMIZATION OF ROOT ZONE SUBSTRATES FOR REDUCED GRAVITY EXPERIMENTS PHASE II.

USDA - NRICGP – \$264,000 (PI w/ D. Or-Co-I and D. Robinson-Co-I) Sept 2002-Aug 2005

IMPROVED ELECTROMAGNETIC DETERMINATION OF WATER CONTENT AND ELECTRICAL CONDUCTIVITY IN SALINE AND CLAYEY SOILS.

NASA 01-OBPR-01 \$68,000 (\$1,554,554-3Co-I w/ Steinberg-PI Co-I's) Apr 2001-Mar 2005

FLOW AND DISTRIBUTION OF FLUID PHASES THROUGH POROUS PLANT GROWTH MEDIA IN MICROGRAVITY.

NASA 99-HEDS-02 \$95,000 (Co-I w/ G.Bingham-PI, D.Or-CoI) 1 December 1999

OPTIMIZATION OF ROOT ZONE SUBSTRATES FOR REDUCED GRAVITY EXPERIMENTS PHASE I.

BARD Postdoctoral Fellowship Proposal FU-267-97 \$38,000 (Postdoc) Sep 1997-Mar 1999

DIELECTRIC MIXING MODEL FOR SOIL WATER MEASUREMENT: CONSTITUENT GEOMETRY AND INTERFACIAL EFFECTS.

Non-competitive Federal/Private Grants

USDA-CSREES Special Project (Congressional earmark)-\$100,000 (\$586,409 Co-I w/ P.

Johnson-PI, and 6 Co-I's)

Jul 2009-Jun 2011

DROUGHT MANAGEMENT INITIATIVE-VADOZE ZONE HYDROLOGY

USDA-CSREES Special Project (Congressional earmark)-\$145,000 (\$625,043 Co-I w/ P.

Johnson-PI, and 6 Co-I's)

Jul 2008-Jun 2010

DROUGHT MANAGEMENT INITIATIVE-VADOZE ZONE HYDROLOGY

USDA-CSREES Special Project (Hatch Fund)-\$55,000 (\$250,000 Co-I w/ P. Johnson-PI,

and 6 Co-I's)

Sep 2007-Oct 2008

DROUGHT MANAGEMENT INITIATIVE-VADOZE ZONE HYDROLOGY

USDA-CSREES Special Project (Congressional earmark)-\$202,000 (\$739,000 Co-I w/ P.

Johnson-PI, and 6 Co-I's)

Jul 2006-Jun 2008

DROUGHT MANAGEMENT INITIATIVE-VADOZE ZONE HYDROLOGY

ACCLIMA \$47,726 (PI)

Aug 2003-Sep 2004

ELECTROMAGNETIC MEASUREMENT ENHANCEMENT OF THE ACCLIMA SENSOR.

Competitive USU Grants

- USU – Water Initiative - \$19,430 (Co-I w/ Timothy Doyle-PI) Jul 2009-Jun 2010**
NUMERICAL METHODS FOR SENSING MOISTURE AND PHYSICAL CONDITION OF SOILS.
- USU – Water Initiative - \$20,005 (Co-I w/ R. Ryel-PI, and Kasahara, Leffler Co-I) Jul 2008**
ECOHYDROLOGY OF QUAKING ASPEN (*POPULUS TREMULOIDES*) COMMUNITIES.
- USU – Water Initiative - \$20,000 (Co-I w/ K. Shenai-PI, and M. McKee Co-I) 30 Oct 2006**
DEVELOPMENT OF COST-EFFECTIVE SOIL PROPERTIES SENSOR FOR UBIQUITOUS WIRELESS NETWORKS.
- USU – CURI Grant - \$15,000 (PI w/ Janis Boettinger-Co-I) Jul 2006-Jun 2007**
A NOVEL APPROACH TO MODELING SOIL CARBON DIOXIDE LOSS FROM A FOREST-RANGE ECOSYSTEM
- SDL – Enabling Technology Grant - \$30,000 (PI) Mar 2005-Apr 2006**
IMPROVING WATER AND NUTRIENT STATUS OF PLANT GROWTH SUBSTRATES IN SPACE FLIGHT.
- USU - New Faculty Startup Grant - \$15,000 (PI) Jul 2005-Jun 2006**
DEVELOPMENT OF FIELD-SCALE WATER CONTENT MEASUREMENT USING ADVANCED ELECTROMAGNETIC TECHNIQUES.

Submitted Proposals

- UAES - \$24,500 Jul 2009-Jun 2014**
EXPLORING NOVEL MEASUREMENT METHODS FOR SOIL FLUID FLUX DETERMINATION.
- NSF-EPSCoR - \$20,000,000 (Co-I w/ Elringer, Baxter, Hailey) July 2010 - June 2015**
UTAH EPSCoR: INTERACTIONS BETWEEN WATER, ENERGY, AND THE ATMOSPHERE

TEACHING

- SOIL 5650/6650 – Environmental Soil Physics (3 Cr.) 2006, 2008 - present**
SOIL 5650/6650 – Applied Soil Physics (3 Cr.) 2002, 2003, 2004, 2005
Taught Fall semester each year, includes 5 laboratory sessions
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY UTAH STATE UNIVERSITY, LOGAN, UTAH
- SOIL 6140 – Unsaturated Flow and Transport (3 Cr.) 2007, 2009 - present**
PSB 7900 – Special Problems (2 Cr.) 2005
Taught Spring semester, odd years
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY UTAH STATE UNIVERSITY, LOGAN, UTAH
- PLSC 4230 – Landscape Irrigation Design (3 Cr.) 2009 - present**
Co-Taught spring semester w/ Kelly Kopp
DEPT. PLANTS, SOILS AND CLIMATE UTAH STATE UNIVERSITY, LOGAN, UTAH

Invited Guest Lectures

Invited National/International Presentations (13)

1. **Jones, S.B.** and M. Sakai. 2010. Numerical evaluation of heat pulse sensor estimates of stage 2 - subsurface evaporation. Department of Environmental Physics and Irrigation; Soil, Water and Environmental Sciences Institute, Volcani Center, ARO, Bet Dagan, Israel, June 15.

2. **Jones, S.B.** 2009. Optimizing Root Zone Substrates for Microgravity. Environmental Biology and Life Support Technology Laboratory, School of Biological Science and Medical Engineering; Beihang University, Beijing, China, Aug. 18.
3. **Jones, S.B.** 2009. Improving crop production using irrigation management in greenhouse agriculture with numerical modeling and instrumented monitoring. Shanghai International Soil and Sustainable Agricultural Symposium, Shanghai, China, Aug. 15-16.
4. **Jones, S.B.** 2008. Soil Electromagnetic, Electrical, Thermal Property Assessment from Point- to Watershed-Scales. Institute of Soil and Water Conservation, Chinese Academy of Sciences, Yangling, China, Oct. 30.
5. **Jones, S.B.** 2008. Understanding Soil Properties Impacting Electromagnetic Determination of Soil Water Content. Korea University, Seoul, South Korea, Oct. 28.
6. **Jones, S.B.** and C.B. Yang. 2008. Two-Dimensional Water Flux Using a Penta-needle Heat-Pulse Probe (PHPP) Sensor: Numerical Evaluation and Laboratory Experiment. Agricultural Science Institute, Rural Development Administration, Suwon, South Korea, Oct. 27.
7. **Jones, S.B.**, D.A. Robinson, H. Abdu, R. Heinse and R. Ryel. Monitoring and Assessment of Vegetation Root-Zone Status in the T.W. Daniel Experimental Forest. Restoring the West Conference, Utah State University, Logan, UT, Sept. 16 – 18, 2008
8. **Jones, S.B.**, D.A. Robinson, H. Abdu and R. Heinse. Coupled geophysical techniques uncover soil property influence on ecohydrology. 93rd Ecological Society of America Annual Meeting, Midwest Airlines Center, Milwaukee, Wisconsin. Aug. 3 – 8, 2008
9. **Jones, S.B.** Frequency-Dependent Permittivity for Soil Water Content Determination. Workshop on Electromagnetic Techniques, Taubaté, Brazil Aug 28-29, 2008
10. **Jones, S.B.** Parabolic Flight and Space-Based (ISS) Experiments Reveal Porous Media-Fluid Behavior in Reduced Gravity. Soil, Water and Environmental Science Seminar Series, University of Arizona, Tuscon, AZ. January 28, 2008
11. **Jones, S.B.** Automated Measurements for Characterizing O₂ and CO₂ Diffusion and Flux in Controlled and Natural Environments. Soil and Environmental Biogeochemistry Group, Stanford University. 7 Dec 2006
12. **Jones, S.B.** and Krishna Shenai. Subsurface Measurement Needs for Ecological, Hydrological and Agricultural Applications. *The 50th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*. Montreal, Canada August 5-7, 2007
13. Robinson, D.A. and **S.B. Jones**. 2007. Mapping Soil Properties for Ecohydrological Studies in Small Semi-Arid Watersheds using Electromagnetic Induction. Presented by Jones at the AGU Joint Assembly, Acapulco, Mexico, May 22-25, 2007

Within USU (12)

Orientation to Plants, Soils and Biometeorology, USU	2004, 2005, 2006, 2007
Biological and Irrigation Engineering Seminar, USU	2004, 2005, 2006
Plants, Soils and Biometeorology Department Seminar, USU	2004, Spring 2006, Fall 2006
Geology Department Seminar, USU	2006
Fractional Order Calculus Day, Dept. Electrical Engineering, USU	April 2005

ACADEMIC AND RESEARCH MENTORING

Current - Graduate Student/Postdoc/Scholar (0 MS; 1 Ph.D.; 1 Postdoc)

M.S. Degrees

Ph.D. Degrees

Pakorn Sutitarnontr

August 2010 – August 2013

MEASUREMENT AND MODELING OF REGULATED AND GREENHOUSE GAS EMISSIONS FROM ANIMAL FEEDING OPERATIONS

Postdoctoral Fellows

Masaru Sakai

September 2009 – present

MODELING THE IMPACT OF MOUNTAIN VEGETATION ON THE TRANSPORT AND FATE OF SNOWMELT WATER

Visiting Scholars Hosted (1 Ph.D.; 1 Professional)

Congying Wang (Ph.D. student from China Agricultural University) Sept. 2008 – Sept. 2009
DEVELOPMENT OF REFERENCE STANDARDS FOR EM SENSOR CHARACTERIZATION AND CALIBRATION FOR WATER CONTENT DETERMINATION

Jun FAN (Scientist - Chinese Academy of Sciences, Yangling) July 2008 – July 2009
SENSOR-BASED IRRIGATION MANAGEMENT AND GRADIENT-BASED DETERMINATION OF SOIL CARBON FLUX

Completed - Graduate Student/Postdoc/Scholar (3 MS; 3 Ph.D.; 3 Postdoc)

M.S. Degrees

Kelly S. Lewis (Co-Advising MS project in Electrical Engineering) Jan. 2007 – Dec. 2007
DESIGN OF AN AUTOMATIC WIRELESS MULTI-LOGGER NETWORK (ENGINEER WITH ACCLIMA INC.)

James Mark Blonquist Jr. June 2003 – Dec. 2005
CHARACTERIZATION AND EVALUATION OF ELECTROMAGNETIC SENSORS AND CONSTITUENT INFLUENCE ON PERMITTIVITY MEASUREMENTS IN AGGREGATED POROUS MEDIA (PRODUCT DEVELOPMENT MANAGER WITH APOGEE INSTRUMENTS INC., LOGAN, UT)

Romulus Okwany July 2004 – Dec. 2006
LEACHING EFFICIENCY OPTIMIZATION AS A FUNCTION OF WATER APPLICATION RATE IN AGGREGATED POROUS MEDIA

Ph.D. Degrees

Robert Heinse

January 2004 – January 2009

MEASUREMENT AND MODELING OF REDUCED-GRAVITY FLUID DISTRIBUTION AND TRANSPORT IN UNSATURATED POROUS PLANT-GROWTH MEDIA

Hiruy Abdu

August 2004 – April 2009

CHARACTERIZING SUBSURFACE TEXTURAL PROPERTIES USING ELECTROMAGNETIC INDUCTION MAPPING AND GEOSTATISTICS

Vasile E. L. Turcu (Dani Or – advisor from 2000-April 2005) April 2005 – April 2007
CONTINUOUS MONITORING AND MODELING OF SOIL AND ATMOSPHERIC CO₂ DYNAMICS IN SEMI-
ARID ECOSYSTEMS (ROMANIAN METEOROLOGICAL SERVICE, NOW STARTING HIS OWN
ENVIRONMENTAL MONITORING BUSINESS, ROMANIA)

Postdoctoral Fellows

Changbing Yang June 2007 – August 2008
MODELING THE IMPACT OF MOUNTAIN VEGETATION ON THE TRANSPORT AND FATE OF SNOWMELT
WATER

David A. Robinson (Promoted to Res. Asst. Prof. Oct. 2004) August 2003 – October 2004
MODELING IMPROVED ELECTROMAGNETIC DETERMINATION OF WATER CONTENT AND ELECTRICAL
CONDUCTIVITY IN SALINE AND CLAYEY SOILS (ENVIRONMENT CENTRE WALES, UK)

Zijun Zhang January 2006 – May 2006
DEVELOPMENT OF FIELD-SCALE WATER CONTENT MEASUREMENT USING ADVANCED
ELECTROMAGNETIC TECHNIQUES (FAIRFAX, VA)

Graduate Student Committee Service (2 M.S. and 3 Ph.D.)

M.S. Degrees

Xystus Amakor, Plants, Soils and Climate December 2009 -
Lauren Ducas, Watershed Sciences January 2009 -
Curtis B. Adams, Plants, Soils and Climate August 2008 -
Amy Burke, Watershed Sciences March 2007 – Dec. 2008

Ph.D. Degrees

Hongyan Sun, Horticulture Nov. 2008 -
Vinod Mahat, Civil Engineering June 2007 -
May Myklebust, Watershed Science May 2007 – Dec. 2007
Robert N. Love, Plants, Soils and Biometeorology April 2003 – Deceased

Research Associate, Graduate, Undergraduate Research Mentoring

Research Associate II/III (3-currently, 1 completed)

Pawel Szafruga (50%) July 2009 - Present
R. William Mace (20%) Sept. 2002 - Present
Jonathon Carlisle (50%) Sept. 2007 – Present
Justin Robinson (100%) (Campbell Scientific Inc., Logan, UT) Jan. 2007 – Mar. 2007

Graduate Students (0-currently, 5 completed)

Matthew Dawson, M.S. Education, field technician Aug. 2007 – Sept. 2008
Guy Serbin, Ph.D. Soil Science, 2005 (co-advised with Dani Or) Aug. 2002 – Dec. 2003
(USDA-ARS, Beltsville, MD)
Raghuveer Vinukollu, BIE May 2006 – July 2006
(Now at Princeton University)
Zijun Zhang, Ph.D. – Physics Summer 2005, Spring Semester 2006
James Gregory, M.S. - Ecology Summer 2007

Undergraduate Students (3 currently, 16 completed)

Justin Walker, Mechanical Engineering	August 2009 - present
Kade Cox, Electrical Engineering	July 2009 - present
Ricardo Estevez, Electrical Engineering	Nov. 2006 - present
Mark Nielsen, Statistics	Oct. 2007 – Dec. 2008
Franyell Silfa, Electrical Engineering	July 2007 – Nov. 2008
Marcos Chalas, Electrical Engineering	July 2007 – Nov. 2008
James Suisse, Electrical Engineering	June 2006 –May 2008
Isaac Ashby, Natural Resources Graduate	June 2007 – Dec. 2007
Aaron Gines, Biology	Apr. 2007 – Aug. 2007
Justin Robinson, Plants, Soils and Climate	May 2006 – May 2007
Michael Larson, Electrical Engineering	Jan. 2006 – May 2006
Shane Hansen, Mathematics	Oct. 2005 – May 2006
Kelly Lewis, Electrical Engineering (+M.S.)	Jan. 2005 – Dec. 2006
Jeremiah Heiner, Computer Science	Aug. 2004 – Dec. 2004
Louis Koberstein, Electrical Engineering	Aug. 2002 – May 2003
Jason Bingham, Computer Engineer	Aug. 2002 – May 2004
Jeff VanShaar, Computer Science	Apr. 2001 – May 2004
Seth Humphries, Electrical Engineering/Mathematics (+M.S.)	Dec. 2000 – Aug. 2004
Brent Bingham, Biological and Irrigation Engineering	Jun. 1999 – Dec. 2002

HONORS and AWARDS

Wilford R. and Marjorie C. Gardner Junior Faculty Travel Fellowship	May 1, 2009
AWARDS GRANTED IN PHYSICS AND MUSIC RELATED SUBJECTS	UTAH STATE UNIVERSITY
2008 Undergraduate Mentor of the Year	April 1, 2008
COLLEGE OF AGRICULTURE	UTAH STATE UNIVERSITY
2008 Kirkham Conference Invitation	Feb. 25 - 26, 2008
INVITED GUEST	UNIVERSITY OF CALIFORNIA-DAVIS, DAVIS, CA
International Space Station (ISS) Experiment	May 12, 2007 – Oct. 4, 2007
OPTIMIZATION OF ROOT ZONE SUBSTRATES	SDL, USU AND INSTITUTE OF BIOMEDICAL PROBLEMS, RUSSIA
Invited to serve as SSSAJ AE	2005
POSTPONED SERVICE AT SUGGESTION OF P&T COMMITTEE	
NASA Parabolic Flight Week Opportunities	Jan. 2003, June 2003, Feb. 2004, May 2006
MICROGRAVITY POROUS MEDIA EXPERIMENTS, REDUCED GRAVITY OFFICE, HOUSTON, TEXAS	
2004 Kirkham Conference Coordinator	Oct. 28 - 29, 2004
COORDINATED THE CONFERENCE, DEVELOPED THE PROGRAM AND ARRANGED MEALS AND TRAVEL FOR 20 PRESENTERS AND ROOMS FOR 30 GUESTS.	UTAH STATE UNIVERSITY, LOGAN, UTAH
BARD Postdoctoral Fellowship	1997-1999
BINATIONAL AGRICULTURAL RESEARCH AND DEVELOPMENT FUND	THE VOLCANI CENTER, ISRAEL
RMNSGC Fellowship	1992-1997
ROCKY MOUNTAIN NASA SPACE GRANT CONSORTIUM	LOGAN, UTAH
Phi Kappa Phi	1997
NATIONAL HONOR SOCIETY	

PROFESSIONAL AFFILIATIONS

1996 – American Geophysical Union
1996 – Soil Science Society of America
2000 – American Society of Agronomy
2000 – W-1188 Western Regional Research Project
2002 – American Society of Agricultural Engineers
2004 – 2006 Western Society of Soil Science
2008 – 2009 Ecological Society of America

SERVICE ACTIVITIES

Don and Betty Kirkham Soil Physics Award Committee (S483) Jan. 2010 – Dec. 2011

S-1 Session Chair at the 2008 Annual Meeting of the Soil Science Society of America. “Soil Moisture: Advances in Design and Development of Water Content, Matric Potential, and Flux Measurement Methods for the Critical Zone: I”. Tuesday, 7 October 2008: 8:55 AM; George R. Brown Convention Center, 362F; Houston, TX.

S-1 Session Chair at the 2005 Annual Meeting of the Soil Science Society of America. “Advances in Methods/Theory” Monday, 7 November 2005: 2:10 PM; Salt Palace Convention Center, Salt Lake City, UT.

2004 Kirkham Conference Coordinator. Arranged travel and housing of 20 invited presenters and scheduled the facilities for the conference which honors one of the great soil physicists, Don Kirkham, Held at the Eccles Conference Center, Utah State University, Logan, UT, October 28-29.

Manuscript Reviews (53 total)

13 Soil Science Society of America
14 Vadose Zone Journal
9 Water Resources Research
2 Soil Science
2 Hydrology Journal
1 Environmental Science and Technology
2 Soil and Tillage Research
1 Journal of Environmental Engineering
1 Geoderma
1 Horticultural Science
2 Society of Automotive Engineers (Space Flight Hardware Division)
1 Canadian Biosystems Engineering
1 Habitation Journal
3 USDA - ARS

Grant Proposal Reviews (29 Total)

7	National Science Foundation
15	USDA-NRI Panel (2008)
5	USU-Agriculture Experiment Station
2	USU Water Initiative

Committee Assignments

PSC Climate Scientist Position Search Committee	2010-present
ASSISTANT PROFESSOR POSITION IN PLANTS, SOILS AND CLIMATE	UTAH STATE UNIVERSITY
Chair – W2188 Soil Physics Technical Committee	2010-2011
WESTERN REGIONAL MULTI-STATE RESEARCH PROJECT	USDA
Secretary - W1188 Soil Physics Technical Committee	2009-2010
WESTERN REGIONAL MULTI-STATE RESEARCH PROJECT	USDA
WATS Hydrology Position Search Committee	2008-2009
ASSISTANT PROFESSOR POSITION IN WATERSHED SCIENCES	UTAH STATE UNIVERSITY
USU SusCounc Transportation Committee	2008-
USU SUSTAINABILITY COUNCIL (SUSCOUNC)	UTAH STATE UNIVERSITY
Vehicle Committee Chair	2006-
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY
Graduate Studies Committee	2002-
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY
Soils Curriculum Committee	2002-
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY
Spring Runoff Conference Organizing Committee	2006, 2008
USU WATER INITIATIVE	UTAH STATE UNIVERSITY
Department Advisory Committee (DAC)	2006-2008
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY
Seminar Committee	2004-2008
DEPT. PLANTS, SOILS AND BIOMETEOROLOGY	UTAH STATE UNIVERSITY
Water Initiative Task Force	2002-2003
UNIVERSITY WIDE COMMITTEE TO STUDY WATER ISSUES	UTAH STATE UNIVERSITY

Extracurricular Service

Institute Men's Association (IMA) Advisor	2002-2006
(FORMERLY SIGMA GAMMA CHI FRATERNITY)	LOGAN INSTITUTE OF RELIGION