

## Robert Heinse, Assistant Professor of Soil and Environmental Physics

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CONTACT INFORMATION	University of Idaho PSES Department Ag. Sci. Bldg., Room 113 Moscow, ID 83844-2339	☎ 208-885-5208 ☎ 208-874-3875 ✉ <a href="mailto:rheinse@uidaho.edu">rheinse@uidaho.edu</a> <a href="http://soils.cals.uidaho.edu/rheinse/">http://soils.cals.uidaho.edu/rheinse/</a>
EDUCATION	<b>Ph.D. Soil and Environmental Physics</b> Utah State University, Logan, Utah, USA, 2009 <i>Characterization, Modeling and Design of Optimal Plant Growth Media for Reduced Gravity</i>	
	<b>Diplom (M.Sc.), Geophysics</b> Universität Leipzig, Leipzig, Germany, 2003 <i>Geophysical Investigation of Structure and Hydraulic Properties of Alluvial Clays on Example of the Elbe Flood Plains near Torgau, Germany</i>	
PROFESSIONAL EXPERIENCE	<b>University of Idaho</b> , Moscow, Idaho, USA <i>Assistant Professor</i>	<b>2009–present</b>
	<b>Utah State University</b> , Logan, Utah, USA <i>Graduate Research Assistant</i>	<b>2004–2008</b>
	<b>Universität Leipzig</b> , Leipzig, Germany <i>Research Fellow</i>	<b>April–December, 2003</b>
	<b>Universität Leipzig</b> , Leipzig, Germany <i>Research Assistant</i>	<b>1999–2002</b>
RESEARCH INTERESTS	<p>My research area is environmental physics. In particular, I am interested in the integrative and complex array of processes governing the physical and hydrologic state of Earth systems at multiple spatial and temporal scales. In conducting my research, I aim to put feet in many waters, to bridge both disciplines and scales, to integratively study the environment in a holistic sense. My research focuses for example on the interface between sample and field scale through fostering the understanding of physical processes associated with fluid and gas transport at the pore/sample scale, and implementation for a variety of scales, ranging from field hydrology to plant-growth in space.</p> <ul style="list-style-type: none"><li>• Joint measurement and integrated interpretation of near-surface geophysical data to estimate water content, hydraulic conductivity and retarding properties of groundwater covering layers as part of a flood case risk assessment in flood catchment areas</li><li>• Geophysical characterization of transport and fate of snow melt to evaluate interactions between soil, vegetation and microclimate</li><li>• Transformation of geophysical data into soil physical and hydrological parameters</li><li>• Reduced gravity impact on fluid configuration and flow as well as impact on oxygen transport in porous media intended to be used for plant growth in space</li></ul>	


REFEREED  
PUBLICATIONS


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.* 73:3.

Heinse, R., S.B. Jones, M. Tuller, G.E. Bingham, I. Podolskiy and D. Or (2009). Providing Optimal Root-Zone Fluid Fluxes: Effects of Hysteresis on Capillary-Dominated Water Distributions in Reduced Gravity. SAE Technical Paper no. 2009-01-2360.

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.

Heinse, R., S.B. Jones, S.L. Steinberg, M. Tuller and D. Or (2007). Measurements and Modeling of Variable Gravity Effects on Water Distribution and Flow in Unsaturated Porous Media. *Vadose Zone J* 6:713-724. [BibTeX](#)

Heinse, R., G. Kluitenberg, K.S. Lewis, R.S. Austin, P.J. Shouse, G.B. Bingham, and S.B. Jones (2006). Integration of Heat Capacity and Electrical Conductivity Sensors for Root Module Water and Nutrient Assessment. SAE Technical Paper no. 2006-01-2211.  [BibTeX](#)

Heinse, R., S.D. Humphries, R.W. Mace, S.B. Jones, S.L. Steinberg, M. Tuller, R. Newman and D. Or. (2005). Measurement of Porous Media Water Retention during Parabolic Flight Induced Microgravity. SAE Technical Paper no. 2005-01-2950.  [BibTeX](#)

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 2005-01-2949. [BibTeX](#)

BOOK CHAPTERS


Heinse, R. (2011). Space Soil Physics. In: *Encyclopedia of Agrophysics (Encyclopedia of Earth Sciences Series)*, Jan Glinski, Józef Horabik, Jerzy Lipiec (eds.) Springer.

PROCEEDINGS

Jones, S.B., D. Or, R. Heinse, and M. Tuller, 2010. Beyond Earth: Designing Root Zone Environments for Reduced Gravity. Proceedings of the 1st International Conference and Exploratory Workshop on Soil Architecture and Physico-Chemical Functions (CESAR), Research Centre Foulum, Denmark, Nov 30–Dec 2 2010.

Heinse, R. and P. Schikowsky (2003). Geophysical Assessment of Groundwater Protective Layers. 9<sup>th</sup> EEGS-ES Meeting, Prague, Czech Republic, 2003.

LETTERS AND  
NEWS ARTICLES

Heinse, R., S.B. Jones, S.L. Steinberg, M. Tuller, and D. Or. (2007). Uncovering the Challenges of Watering Plants in Space. *Crops, Soils, Agronomy CSA News* V52 N12, pp. 2–3, Madison, WI, December 2007. 

Jacobs, F. (2002). Hochwasserschutz durch Geoelektrische Deichdiagnose. *Wirtschaft und Wissenschaft Transferbrief Leipzig*, Agentur für Innovationsförderung und Technologietransfer GmbH, Leipzig, Germany, March 2002. 

INVITED  
PRESENTATIONS

Heinse, R. (2010). Growing food on the Moon, Mars, or in Space: A soil physics narrative. Soil Seminar, PSES Department University of Idaho, Spring 2010

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

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

Heinse, R., H. Abdu and S.B. Jones. Field-scale assessment of soil properties using electromagnetic and electrical techniques. Distinguished Lecturer Series, Spring 2007, Dept. of Geology, Utah State University, Logan, UT. Feb. 12, 2007

CONFERENCE  
PRESENTATIONS  
AND PUBLISHED  
ABSTRACTS

Leslie, I., Smith, A. and R. Heinse (2010). Characterizing Soil Pipe Networks on Forested Hillslopes Using Electrical Resistivity Tomography. ASA, CSSA, and SSSA International Annual Meetings, Long Beach, CA, Oct 31-Nov 4, 2010.

Heinse, R. and S. B. Jones (2010). Identifying thresholds for water storage and transmission in montane watersheds from the soil up. ASA, CSSA, and SSSA International Annual Meetings, Long Beach, CA, Oct 31-Nov 4, 2010.

Leslie, I., E. Whitetemple, A. Smith and R. Heinse (2010). Imaging root channels and soil pipes on forested hillslopes using electrical resistivity tomography, NSF Idaho-EPSCoR Annual Meeting, Boise, ID, August 31–September 1, 2010.

Leslie, I., Smith, A. and R. Heinse (2010). Imaging Root Channels and Soil Pipes on Forested Hill-Slopes Using Electrical Resistivity Tomography. Collaborative and Interdisciplinary Climate Change Science—2nd Annual Tri State Consortium Meeting, Incline Village, NV, April 6–8, 2010.

Heinse, R., S.B. Jones, H. Abdu, R. Ryel and D. Robinson (2009). Time-lapse Characterization of Soil Moisture - A First Step towards Linking Soil and Vegetation Heterogeneity. AGU Fall Meeting Abstracts, San Francisco, CA, December 14–18, 2009.

Berger, P. A., R. Heinse, H. Abdu, M. Tuller and S.B. Jones (2009). Geophysical Characterization of Inactive Mine Tailings - A First Step for Revegetation. ASA-CSSA-SSSA 2009 Joint Annual Meeting, Pittsburgh, PA, Nov. 1–5, See Agronomy Abstracts, ASA, Madison, WI.

Jones, S.B., H. Abdu, R. Heinse, D.A. Robinson and R. Ryel (2009). Identifying Soil Resource Pools within Forest Communities Using Eco-Geophysics. ASA-CSSA-SSSA 2009 Joint Annual Meeting, Pittsburgh, PA, Nov. 1–5, See Agronomy Abstracts, ASA, Madison, WI.

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.

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. Porous plant growth media design considerations for Lunar and Martian habitats. 39th International Conference on Environmental Systems (ICES), Hyatt Regency, Savannah, Georgia, USA, July 12–16.

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. 17th International Academy of Astronautics 'Humans in Space' Symposium, Moscow, Russia, June 7–11.

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 8–12, 2008.

Berger, P. A., R. Heinse, M. Tuller, S.B. Jones and M.G. Schaap (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.

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.

Heinse, R., J. Carlisle and S.B. Jones (2008). Subsurface Snowmelt Patterns Identified using Time-Lapse Electrical Resistivity Imaging. Agronomy Abstracts, 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.

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. Agronomy Abstracts, ASA, Madison, WI.

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, 2008

Jones, S.B., D. A. Robinson, H. Abdu and R. Heinse (2008). Geophysical Techniques Uncover Soil Property Influence on Ecohydrological Processes. 93rd Ecological Society of America Annual Meeting, Midwest Airlines Center, Milwaukee, Wisconsin, Aug. 3–8, 2008.

Heinse, R., S.B. Jones, D. Or, M. Tuller, T.S. Topham, I.G. Podolskiy and G.E. Bingham (2008). Challenges of Watering Plants in Space: Water Retention and Distribution—What Have we Learned? 37th COSPAR Scientific Assembly, Montreal, Canada, 13–20 July 2008.

S.B. Jones, R. Heinse, D. Or, D. Poritz, T.S. Topham, I.G. Podolskiy and G.E. Bingham (2008). 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.

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, 2007.

Jones, S.B., R. Heinse, J. Šimunek, M. Tuller and D. Or (2007). Numerical Modeling of Unsaturated Flows in Variable Gravity During Parabolic Flight. AGU Fall Meeting Abstracts, San Francisco, CA, December 10–14, 2007.

Heinse, R., S.B. Jones, D. Or, T.S. Topham, I.G. Podolskiy and G.E. Bingham (2007). An Automated Oxygen Diffusion and Water Retention Measurement System for Microgravity. Agronomy Abstracts, ASA, Madison, WI.

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.

Jones, S.B., R. Heinse, D. Or, T.S. Topham, D.H. Poritz, I.G. Podolskiy and G.E. Bingham (2007). Oxygen diffusion measurements in partially saturated porous media onboard the International Space Station. Agronomy Abstracts, ASA, Madison, WI.

Heinse, R., S.B. Jones, B. Bugbee and G.E. Bingham (2007). Improving Root Zone Performance: Physical and Numerical Modeling of a Layered Plant-Growth Medium. USU Water Initiative, Spring Runoff Conference, Logan, UT 2007.

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, 2006.

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.

Schikowsky, P., R. Heinse and D. Laass (2006). Complex Geophysical Measurements for Predicting Hydrogeological Properties of Alluvial Clays. SEG Hydrogeophysics Workshop, Vancouver, British Columbia, 31 July–2, August 2006.

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 National Cooperative Soil Survey (WRCSS) and Western Society of Soil Science (WSSS) conference, Park City, Utah, June 19–23, 2006.

Lewis, K.S., R. Heinse, R. Austin, P. Shouse and S.B. Jones (2006). Measuring Electrical Conductivity Using A Low-Power Datalogging System. West Regional National Cooperative Soil Survey (WRCSS) and Western Society of Soil Science (WSSS) conference, Park City, Utah, June 19–23, 2006.

Heinse, R., K. Lewis and S.B. Jones (2006). Water Content and Electrical Conductivity Assessment using Small-Scale Multifunctional Heat-Pulse Sensors. USU Water Initiative, Spring Runoff Conference, Logan, UT 2006.

Heinse, R., Lewis, K., Kluitenberg, G. E., Bingham, G. 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.

Jones, S. B. , Heinse, R., Or, D., Poritz, D. 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.

Heinse, R., Jones S. B. and D. Or. (2005). Inverse Modeling of Porous Media Unsaturated Hydraulic Properties in Microgravity. Agronomy Abstracts, ASA, Madison, WI.

Blonquist, J. M., Heinse, R., Ditthakit, P., Mace, B., Lewis K. and S. B. Jones (2005). An Instrumented Soil Column For Teaching Unsaturated Flow And Transport Processes. Agronomy Abstracts, ASA, Madison, WI.

Jones, S. B., Heinse R., Bingham G. B. and D. Or (2005). Particulate Plant Growth Media for Reduced Gravity: Experiences and Challenges. Workshop on Granular Materials in Lunar and Martian Exploration, John F. Kennedy Space Center, Orlando, FL, Feb. 2–3, 2005.

Heinse, R., Jones S. B., Humphries S. D., Mace R. W., Steinberg S. L., Tuller M., Newman R. and D. Or (2004). Porous Media Water Retention and Saturated Hydraulic Conductivity During Parabolic Flight Induced Microgravity. Agronomy Abstracts, ASA, Madison, WI.

Or, D., Jones S. B., Tuller M. , Steinberg S. L., Alexander I., Diadzić N., Reddi L. N., Kluitenberg G., Ogden F. L. and R. Heinse (2004). *Unsaturated Flow in Zero Gravity—Lessons and Challenges*. Agronomy Abstracts, ASA, Madison, WI.

Laass, D., Schwabe, J., Schikowsky, P. and Heinse, R. (2004). *Einsatz der Geophysik bei hydrogeologischen Aufgabenstellungen*. GeoLeipzig 2004—Geowissenschaften sichern Zukunft, Leipzig, Germany 2004.

Heinse, R., Laass, D. and Schikowsky, P. (2004). *Common and Multi-Offset Ground Penetrating Radar in Assessing Soil Water Content Dynamics in the Vadose Zone*. 85<sup>th</sup> Annual Meeting Pacific Division American Assoc. for the Advancement of Science, Logan, UT 2004.

Heinse, R. and Schikowsky, P. (2004). *Geophysical Assessment of Groundwater Protective Layers*. USU Water Initiative, Spring Runoff Conference, Logan, UT 2004.

Schwabe, J., Grützner, C., Heinse, R. and Schikowsky, P. (2004). *Georadarmessungen für Hydrogeologische Aufgabenstellungen*. Rundtischgespräch GEORADAR, Nossen, Germany 2003.

Heinse, R. and Schikowsky, P. (2004). *Hochfrequente Elektromagnetische und Gleichstromgeoelektrische Untersuchungen zur Bewertung von Auelehmschichten*. Rundtischgespräch GEORADAR, Nossen, Germany 2003.

Heinse, R., Schikowsky, P. and Storz, W. (2003). *Geophysikalische Untersuchungen zur Deckschichtbewertung—Ein Beitrag zum Grundwasserschutz*. 63. Jahrestagung der Deutschen Geophysikalischen Gesellschaft, Jena, Germany 2003.

Heinse, R., Grützner, C., Schwabe, J. and Schikowsky, P. (2003). *Georadarmessungen zur Bewertung von Auelehmschichten - Ein Beitrag zum Grundwasserschutz*. 63. Jahrestagung der Deutschen Geophysikalischen Gesellschaft, Jena, Germany 2003.

Heinse, R., Schikowsky, P. and Storz, W. (2003). *Geophysikalische Untersuchungen zu Struktur und hydraulischen Eigenschaften von Auelehm am Beispiel der Elbaue bei Torgau*. X. Arbeitsseminar Hochoflösende Geoelektrik, Kloster Nimbschen bei Leipzig, Germany 2002.

Heinse, R., Just, A. and Kürschner, D. (2002). *Modelluntersuchungen zur elektrischen Vertikaltomographie in Gewässern*. 62. Jahrestagung der Deutschen Geophysikalischen Gesellschaft, Hannover, Germany 2002.

Just, A., Helbig, K., Heinse, R., Flechsig, Ch., Jacobs, F. and Endler, R. (2001). *Messungen mit einer neuen Elektrischen In Situ Apparatur (ELISA) in der Ostsee*. 61. Jahrestagung der Deutschen Geophysikalischen Gesellschaft, Frankfurt, Germany 2001.

Just, A., Helbig, K., Heinse, R., Flechsig, Ch., Jacobs, F. and Endler, R. (2000). *Messungen mit der Elektrischen In Situ Apparatur (ELISA) in der Ostsee*. IX. Arbeitsseminar Hochoflösende Geoelektrik, Bucha/Sachsen, Germany 2000.

TEACHING  
EXPERIENCE

Soil and Environmental Physics SOIL 415	(Fall 2009, 2011)
Environmental Geophysics SOIL 504	(Fall 2010)
Hydrologic Measurement Techniques BAE356/CE326/FOR463	(Fall 2009, 2010)
Resilience in Changing Landscapes ENVS 50?	(Fall 2011)

Teaching Assistant, Utah State University  
• *Unsaturated Flow and Transport SOIL 6140* (Spring 2007)  
• *Environmental Soil Physics SOIL 6650* (Fall 2005-2008)

Teaching Assistant, Universität Leipzig  
• *Applied Geophysics/Engineering Geophysics I and II* (Spring 2001–2003)

Guest Lecturer, Utah State University  
Single lectures on:  
• *Water content measurements for Landscape Irrigation Mgmt. PLSC 5100* (Spring 2006)  
• *Time Domain Reflectometry (TDR) for Surface Hydrology SOIL 6600* (Spring 2004)

ADVISING AND  
MENTORING

Undergraduate Students  
• *Farren Hauck, Environmental Science*  
• *Ethan White Temple, REU*

Graduate Students — Major Professor  
• *Ian Leslie, M.S. Soil and Land Resources*  
• *Angie Vanhoozer, PhD Environmental Science*  
• *Luke Cerise, M.S. Soil and Land Resources*  
• *Mark Corrao, Ph.D. Water Resources*

Graduate Students — Committees  
• *Thomas Gebrenegus, Ph.D. Soil Science (2010)*  
• *Thomas Barrett, M.S. Soil and Land Resources (2011)*  
• *Ryan Niemeyer, M.S. Environmental Science*  
• *Sandya Rani Kesoju, Ph.D. Plant Science*  
• *Stetson Wilson, M.S. Soil and Land Resources*  
• *Jennifer Godwin, M.S. Geology*

UNIVERSITY  
SERVICE

Member, CALS Promotion and Tenure Committee

HONORS &  
AWARDS

Nominated for the PSES R. M. Wade Excellence in Teaching award

Named USU Water Fellow. USU Water Initiative, 2008

Invited Student Presenter. Don and Betty Kirkham Conference on Soil Physics, October 28–29, Logan, UT 2004.

STUDENTS HONORS AND AWARDS

• *Ian Leslie*  
- S1 Soil Physics 1st place student presentation, ASA, CSSA, and SSSA International Annual Meetings, Long Beach, CA, Oct 31-Nov 4, 2010.  
- Best poster presentation, 3rd Annual Epscor Western Consortium Tri-state Meeting, Santa Ana Pueblo, NM, April 6th-8th, 2011.

AFFILIATIONS

AGU American Geophysical Union

ASA/CSSA/SSSA Soil Science Society of America

SEG Society of Exploration Geophysicists

SERVICE AND  
ACTIVITIES

Peer reviewer for *Near Surface Geophysics*, *Vadose Zone Journal*, *Soil Science Society of America Journal*, *Geophysics*, *SAE Technical Papers (Space-Flight Hardware Division)* and *International Journal of Geomechanics*

Co-organizer and chair, “Detecting thresholds of ecosystem resilience in a changing climate.” AGU Joint Assembly, San Francisco, 2010

Co-organizer and chair, “Characterization of Soil Moisture Dynamics and Plant-Soil Water Interactions.” AGU Joint Assembly, San Francisco, 2009

Co-organizer of the *Utah State Water Speaker Series 2007–2008*

SPECIAL  
EXPERIENCES

**NASA Parabolic Flight Opportunities**

Reduced Gravity Office, Houston, Texas

*Microgravity porous-media experiments*

**May, 2006**

**Underground Mine Experiments**

Asse potassium salt mine, Lower Saxony, Germany

*Geophysical measurements in a salt repository*

**June, 2003**

**Marine Research Vessel Cruises**

Institut für Ostseeforschung Warnemünde, Germany

*ELISA Electrical In-Situ Apparatus experiments*

**April, 2000  
February, 2001**