

CURRICULUM VITAE

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EDUCATION

Ph.D. Soil Physics and Water Management (*cum laude*)

University of Natural Resources and Applied Life Sciences Vienna, Austria, 1997

M.Sc. Civil Engineering and Water Management

University of Natural Resources and Applied Life Sciences Vienna, Austria, 1993

Areas of Expertise

- Hydraulic behavior of swelling porous media
- Modeling of flow and transport phenomena in unsaturated porous- and structured porous media
- Application of NIR microscopy and laser techniques to visualize liquid behavior in micromodels
- Stability and flow of fine granular materials
- Flow and transport in particulate and rigid plant growth media under microgravity conditions
- Simulation of leaching processes and ground water contamination

PROFESSIONAL EXPERIENCE

- 01/2007 – Associate Professor, University of Arizona**
Department of Soil, Water & Environmental Science
- 10/2007 – Joint Associate Professor, University of Arizona**
Department of Hydrology and Water Resources
- 05/2010 – Affiliated Faculty, University of Arizona**
The Lowell Institute for Mineral Resources
- 05/2009 – Affiliated Faculty, University of Aarhus, Denmark**
STAIR International Research Education Program for Soil Technology and Interdisciplinary Research in Soil and Environmental Sciences
- 01/2007 – Affiliated Faculty, University of Arizona**
The Institute of the Environment
- 08/2006 – 12/2006 Associate Professor, University of Idaho**
Department of Plant, Soil & Entomological Sciences
- 08/2006 – 12/2006 Adjunct Associate Professor, University of Idaho**
Department of Agricultural Engineering
- 08/2001 – 07/2006 Assistant Professor, University of Idaho**
Department of Plant, Soil & Entomological Sciences
- 08/2001 – 07/2006 Adjunct Assistant Professor, University of Idaho**
Department of Agricultural Engineering
- 04/1997 – 07/2001 Postdoctoral Research Associate, Utah State University**
Department of Plants, Soils & Biometeorology
- 07/1993 – 03/1997 Research Assistant, University of Agricultural Sciences, Vienna, Austria**
Department of Hydraulics and Water Management

TEACHING

- **Soil Physics** (SWES 470/570)
<http://ag.arizona.edu/classes/sw570/>
- **Modeling of Mass and Energy Flow in Soils** (SWES 605)
<http://ag.arizona.edu/classes/sw605/>
- **Physical Characterization and Monitoring of the Critical Zone** (SWES 625)
<http://cals.arizona.edu/classes/swes625/>
- **Merging Measurement and Modeling in Soil Physics (International Ph.D. Course)**
Delivered at the Danish Research Center Foulum in May 2005, March 2009, March 2011, and March 2012.
http://ag.arizona.edu/swes/soilphysics/stair_2012.html
- **Soil & Environmental Physics** (Soil 415-01)
- **Soil & Environmental Physics** (Soil 415-02: Environmental Science Outreach) Web Course
- **Solute Transport in Porous Media** (Soil 519)
- **Modern Approaches to Liquid Behavior in Porous Media (International Ph.D. Course)**
Delivered at ETH Zürich (Switzerland) in April 2001, and at the Technical University of Denmark Lyngby (DTU) in June 2002.
- **Terrestrial Subsurface Processes I (Ph.D. Course)**
Inland Northwest Research Alliance (INRA) Subsurface Science Core Course (Fall 2006)

HONORS AND AWARDS

- **Award for Excellence in Recognition of Outstanding Contributions to Western Region Multistate Research, Western Association of Agricultural Experiment Station Directors**, July 2011
- **Recognition by the Soil Science Society of America (SSSA) for Associate Editor Services for the Vadose Zone Journal (VZJ)**, May 2009
- **Recognition by the Davidson Institute for Talent Development for Mentoring**, August 2005
- **Soil Science Society of America S-1 Soil Physics Early Career Award**, Nov 4, 2003
- **Editors' Citation for Excellence in Manuscript Review - Vadose Zone Journal**, Jun 10, 2003
- **NASA Student Involvement Program NSIP Research Advisor Award**, May 5, 2003
- **UI Alumni Award for Excellence**, University of Idaho, Fall 2002
- **Deans Commendation for Teaching Excellence**, University of Idaho, Spring 2002

PUBLICATIONS

Refereed Journals

- (1) NAVEED, M., P. MOLDRUP, M. TULLER, T.P.A. FERRE, K. KAWAMOTO, T. KOMATSU, and L.W. DE JONGE, 2012. Predicting Soil-Water Characteristic from Volumetric Contents of Pore-Size Analogue Particle Fractions. *Soil Sci. Soc. Am. J.* (under review).
- (2) WUDDIVIRA, M.N., D.A. ROBINSON, I. LEBRON, L. BRÉCHET, M. ATWELL, S. DE CAIRES, M. OATHAM, S.B. JONES, H. ABDU, A.K. VERMA, and M. TULLER, 2012. Rapid Clay percentage Estimation for Proximal Sensing using Hygroscopic Water Content. *Soil Sci. Soc. Am. J.* (under review).

- (3) DE JONGE, L.W., P. MOLDRUP, A.L. VENDELBOE, M. TULLER, and D. WILDENSCHILD, 2012. Soil Architecture and Physicochemical Functions: An Introduction. *Vadose Zone J.* 11. doi:10.2136/vzj2011.0185.
- (4) KULKARNI, R., M. TULLER, W. FINK, and D. WILDENSCHILD, 2012. Three-Dimensional Multiphase Segmentation of X-Ray CT Data of Porous Materials Using a Bayesian Markov Random Field Framework. *Vadose Zone J.* 11. doi:10.2136/vzj2011.0082.
- (5) JONES, S.B., D. OR, R. HEINSE, and M. TULLER, 2012. Beyond Earth: Designing Root Zone Environments for Reduced Gravity Conditions. *Vadose Zone J.* 11. doi:10.2136/vzj2011.0081
- (6) ARTHUR, E., F. RAZZAGHI, P. MOLDRUP, M. TULLER, T.P.A. FERRE, and L.W. DE JONGE, 2012. Predicting Saturated Hydraulic Conductivity of Technosands. *Soil Science.* 177(3):153–157, doi: 10.1097/SS.0b013e3182435b18.
- (7) ROBINSON, D.A., N. HOCKLEY, E. DOMINATI, I. LEBRON, K.M., SCOW, B. REYNOLDS, B.A. EMMETT, A. KEITH, L.W. DE JONGE, P. SCHJONNING, P. MOLDRUP, S.B. JONES, and M. TULLER, 2012. Natural Capital, Ecosystem Services and Soil Change: Why Soil Science must Embrace an Ecosystems Approach. *Vadose Zone J.* 11. doi:10.2136/vzj2011.0051.
- (8) VAZ, C.M.P., J.M. MANIERI, I.C. DE MARIA, and M. TULLER, 2011. Modeling and Correction of Soil Penetration Resistance for Varying Soil Water Content. *Geoderma*, 166(1):92-101, doi:10.1016/j.geoderma.2011.07.016.
- (9) GEBRENEGUS, T., T. GHEZZEHEI, and M. TULLER, 2011. Physicochemical Controls on Initiation and Evolution of Desiccation Cracks in Sand-Bentonite Mixtures: X-Ray CT Imaging and Stochastic Modeling. *Journal of Contaminant Hydrology*, 126(1-2): 100-112, doi: 10.1016/j.jconhyd.2011.07.004.
- (10) RESURRECCION, A.C., P. MOLDRUP, M. TULLER, T.P.A. FERRE, K. KAWAMOTO, and T. KOMATSU, and L.W. DE JONGE, 2011. Relationship between specific surface area and the dry end of the water retention curve for soils with varying clay and organic carbon contents. *Water Resour. Res.*, 47, W06522, doi:10.1029/2010WR010229.
- (11) SAKAI, M., S.B. JONES, and M. TULLER, 2011. Numerical Evaluation of Subsurface Soil Water Evaporation Derived from Soil Thermal Properties. *Water Resour. Res.*, 47, W02547, doi:10.1029/2010WR009866.
- (12) VAZ, C.M.P., I.C. DE MARIA, P.O. LASSO, and M. TULLER, 2011. Evaluation of an Advanced Benchtop Micro-Computed Tomography System for Quantifying Porosities and Pore-Size Distributions of Two Brazilian Oxisols. *Soil Sci. Soc. Am. J.* 75(3): 832-841, doi:10.2136/sssaj2010.0245.
- (13) SCHAAP, M.G., and M. TULLER, 2010. Quantitative Pore-Scale Investigations of Multiphase Bio/Geo/Chemical Processes. *Vadose Zone J.*, 9:573–575, doi:10.2136/vzj2010.0090.
- (14) SAN JOSÉ MARTÍNEZ, F., M.A. MARTIN, F.J. CANIEGO, M. TULLER, A. GUBER, Y. PACHEPSKY, and C. GARCIA-GUTIÉRREZ, 2010. Multifractal analysis of discretized X-ray CT images for the characterization of soil macropore structures. *Geoderma*, 156(1-2):32-42, doi:10.1016/j.geoderma.2010.01.004.
- (15) IASSONOV, P., and M. TULLER, 2010. Application of Image Segmentation for Correction of Intensity Bias in X-Ray CT Images. *Vadose Zone J.*, 9:1–5, doi:10.2136/vzj2009.0042.
- (16) IASSONOV, P., T. GEBRENEGUS, and M. TULLER, 2009. Segmentation of X-Ray CT Images of Porous Materials: A Crucial Step for Characterization and Quantitative Analysis of Pore Structures. *Water Resour. Res.*, 45, W09415, doi:10.1029/2009WR008087.
- (17) AKRAM QAZI, M., M. AKRAM, N. AHMAD, J. ARTIOLA, and M. TULLER, 2009. Economical and Environmental Implications of Solid Waste Compost Applications to Agricultural Fields in Punjab, Pakistan. *Waste Management, Waste Management*, 29(9):2437-2445, doi:10.1016/j.wasman.2009.05.006.

- (18) 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.
- (19) 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 2009-01-2360.
- (20) 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, doi:10.2136/vzj2006.0105.
- (21) OR, D., R. FEDORS, S. STOTHOFF, and M. TULLER, 2006. Reply to comment by Stefan Finsterle on "Seepage into drifts and tunnels in unsaturated fractured rock". *Water Resour. Res.*, Vol. 42, No. 7, W0760410.1029/2006WR005008.
- (22) KAWAMOTO, K., P. MOLDRUP, T.P.A. FERRÉ, M. TULLER, O.H. JACOBSEN, and T. KOMATSU, 2006. Linking the Gardner and Campbell Models for Water Retention and Hydraulic Conductivity in Near-Saturated Soils, *Soil Science*, Vol. 171, No. 8, 573-584.
- (23) SHIRA J.M., B.C. WILLIAMS, M. FLURY, S. CZIGANY, and M. TULLER, 2006. Sampling silica and ferrihydrite colloids with fiberglass wicks under unsaturated conditions. *J. Environ. Qual.*, Vol. 35, No. 4, 1127-1134.
- (24) TULLER, M., and D. OR, 2005. Water films and scaling of soil characteristic curves at low water contents, *Water Resour. Res.*, Vol. 41, No. 9, W0940310.1029/2005WR004142.
- (25) STEINBERG, S.L., G.J. KLUITENBERG, S.B. JONES, N.E. DAIDZIC, L.N. REDDI, M. XIAO, M. TULLER, R.M. NEWMAN, D. OR and J.I.D. ALEXANDER, 2005. Physical and hydraulic properties of baked ceramic aggregates used for plant growth medium. *J. Amer. Soc. Hort. Sci.* 130(5):767-774.
- (26) OR, D., M. TULLER, and R. FEDORS, 2005. Seepage into drifts and tunnels in unsaturated fractured rock. *Water Resour. Res.*, Vol. 41, No. 5, W0502210.1029/2004WR003689.
- (27) HEINSE, R., S.B. JONES, S.D. HUMPHRIES, R.W. MACE, 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 2005-01-2950.
- (28) STEINBERG, S.L., S.B. JONES, M. XIAO, D. OR, L. REDDI, J.I.D. ALEXANDER, G. KLUITENBERG, N. DAIDZIC, and M. TULLER, 2005. Challenges to Understanding Fluid Behavior in Plant Growth Media under Microgravity. SAE Technical Paper 2005-01-2947.
- (29) OR, D., and M. TULLER, 2003. Reply to comment on "Cavitation during desaturation of porous media under tension" by Toker, N.K., J.T. Germaine, and P.J. Culligan. *Water Resour. Res.*, Vol. 39, No. 11, 1306.
- (30) OR, D., and M. TULLER, 2003. Hydraulic conductivity of unsaturated fractured porous media: Flow in a cross-section. *Advances in Water Resources*, Vol.26, No.8, 883-898.
- (31) TULLER, M., and D. OR, 2003. Hydraulic Functions for Swelling Soils: Pore Scale Considerations. *Journal of Hydrology*, 272(1-4):50-71.
- (32) TULLER, M., and D. OR, 2002. Unsaturated Hydraulic Conductivity of Structured Porous Media. *Vadose Zone Journal*, 1:14-37.
- (33) OR, D., and M. TULLER, 2002. Cavitation during desaturation of porous media under tension. *Water Resour. Res.*, Vol.38, No.5, 19.
- (34) STEINBERG, S., I. ALEXANDER, N. DAIDZIC, S. JONES, G. KLUITENBERG, D. OR, L. REDDI, and M. TULLER, 2002. Flow and distribution of fluid phases through porous plant growth media in microgravity: Progress to date. SAE Technical Paper 2002-01-2386.

- (35) TULLER, M., and D. OR, 2001. Hydraulic conductivity of variably saturated porous media: Film and corner flow in angular pore space. *Water Resour. Res.*, Vol.37, No.5, 1257-1276.
- (36) OR, D., and M. TULLER, 2000. Flow in unsaturated fractured porous media: Hydraulic conductivity of rough surfaces. *Water Resour. Res.*, Vol.36, No.5, 1165-1177.
- (37) OR, D., and M. TULLER, 1999. Liquid retention and interfacial area in variably saturated porous media: upscaling from single pore to sample scale model. *Water Resour. Res.*, Vol.35, No.12, 3591-3606.
- (38) TULLER, M., D. OR, and L.M. DUDLEY, 1999. Adsorption and capillary condensation in porous media – liquid retention and interfacial configurations in angular pores. *Water Resour. Res.*, Vol.35, No.7, 1949-1964.
- (39) TULLER, M., M. K. SHUKLA, and W.LOISKANDL, 1997. Measurement of volumetric soil water content under field conditions with TDR and gypsum blocks. *Österreichische Wasserwirtschaft ÖWAW*, Vol.49, No.3-4, 64-69. (original in German)
- (40) CEPUDER, P., and M. TULLER, 1996. Simple field-testing sites to determine the extent of nitrogen leaching from agricultural areas. In N. Ahmad, *Nitrogen Economy in Tropical Soils*, Kluwer Academic Publishers, Dordrecht, 355-361.
- (41) CEPUDER, P., CH. SAILER, and M. TULLER, 1992. Field-testing sites for the determination of nitrate leaching from agricultural areas. *Die Bodenkultur, Austrian Journal for Agricultural Research*, Vol.43, No.4, 295-306. (original in German)

Refereed Book Chapters

- (42) TULLER, M., R. KULKARNI, and W. FINK, 2012. Segmentation of X-Ray CT Data of Porous Materials: A Review of Global and Locally Adaptive Algorithms. In S.A Anderson and J.W. Hopmans (ed.) *Tomography and Imaging of Soil-Water-Root Processes*, 2nd Edition, *SSSA Special Publication* (in revision)
- (43) TULLER, M., 2012. Soil Water Relations. In A. Warrick and N. Lazarovitch (ed.) *Soil Physics Exercises*, Catena, Reiskirchen, Germany (accepted).
- (44) GEBRENEGUS, T., M. TULLER, and B. MUHUNTHAN, 2006. The Application of X-ray Computed Tomography for Characterization of Surface Crack Networks in Bentonite-Sand Mixtures. In: J. Desrues, G. Viggiani, and P. Besuelle (Eds.), *Advances in X-Ray Tomography for Geomaterials*, pp. 207-212, ISTE Publishing Company, ISBN:1905209606.
- (45) TULLER, M., and D. OR, 2006. Hydraulic Properties of Swelling Clay-Sand Mixtures: Microscale Modeling and Measurements. In: G.A. Miller, C.E. Zapata, S.L. Houston, D.G. Fredlund (Eds.), *Unsaturated Soils*, Geotechnical Special Publ. No.147, Vol.2, 2186-2197, ASCE, Reston, VA.
- (46) VIOLA, R., M. TULLER, D. OR, and J. DRASDIS, 2005. Microstructure of Clay-Sand Mixtures at Different Hydration States. In A. Tarantino, E. Romero, Y.J. Cui (Eds.), *Advanced Experimental Unsaturated Soil Mechanics*, Taylor & Francis, Leiden, The Netherlands, pp.437-442.
- (47) TULLER, M., and M.R. ISLAM, 2005. Field methods for monitoring solute transport. In J. Álvarez-Benedí and R. Muñoz-Carpena (Eds.), *Soil-Water-Solute Process Characterization: An Integrated Approach*, CRC Press, Boca Raton, FL, pp.309-355.
- (48) TULLER, M., and D. OR, 2004. Water retention and characteristic curve. In D. Hillel (Ed.), *Encyclopedia of Soils in the Environment - Volume 4*, Elsevier Ltd., Oxford, U.K., pp.278-289.
- (49) OR, D., M. TULLER, and J.M. WRAITH, 2004. Water potential. In D. Hillel (Ed.), *Encyclopedia of Soils in the Environment - Volume 4*, Elsevier Ltd., Oxford, U.K., pp.270-277.
- (50) OR, D., and M. TULLER, 2004. Capillarity. In D. Hillel (Ed.), *Encyclopedia of Soils in the Environment - Volume 1*, Elsevier Ltd., Oxford, U.K., pp.155-163.

- (51) OR, D., and M. TULLER, 2001. Adsorption and capillary processes in variably saturated porous media – Pore scale hydrostatic and hydrodynamic considerations. In: H. Magdi Selim and Donald L. Sparks (editors) “Physical and Chemical Processes of Water and Solute Transport/Retention in Soils”, SSSA Special Publication No.56, pp.1-50, ISBN 0-89118-835-5.

Edited Book Sections

- (1) TULLER, M., 2011. Soil Physics. In P.M. Huang, Y. Li, and M.E. Sumner (eds.) Handbook of Soil Sciences, 2nd Edition, CRC Press, Boca Raton, FL, ISBN: 9781439803035.

Popular Articles

- (1) ROBINSON, D.A., N. HOCKLEY, E. DOMINATI, I. LEBRON, K.M., SCOW, B. REYNOLDS, B.A. EMMETT, A. KEITH, L.W. DE JONGE, P. SCHJONNING, P. MOLDRUP, S.B. JONES, and M. TULLER, 2012. Why Soil Science Must Embrace an Ecosystems Approach. Crops, Soils, Agronomy CSA News V57 N4, pp. 4-11, Madison, WI.
- (2) 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.

Published Scientific Reports

- (1) OR, D., M. TULLER, and S. STOTHOFF, 2006. Review of Vadose Zone Measurement and Monitoring Tools for Yucca Mountain Performance Confirmation Program. U.S. Nuclear Regulatory Commission Report under Contract NRC-02-02-012.
- (2) STEINBERG, S.L., J.I.D. ALEXANDER, S.B. JONES, G. KLUITENBERG, D. OR, L. REDDI, M. XIAO, N. DAIDZIC, and M. TULLER, 2005. Flow and distribution of fluid phases through porous plant growth media in microgravity. Final Report NASA NAG9-1399.
- (3) CEPUDER, P., M. TULLER, H. MÜLLER, E. KORTSCHAK, P. LIEBHARD, H. HAGER, S. HUBER and R. HABERL, 1997. Potential sources of groundwater contamination in the Tullner Field. County Government of Lower Austria WA2, *Final Report*, Vienna, April 1997. (original in German)
- (4) CEPUDER, P., and M. TULLER, 1996. Field-testing sites to monitor nitrate leaching from agricultural areas in the Leibnitz Field. County Government of Styria, *Final Report*, Vienna, December 1996. (original in German)
- (5) CEPUDER, P., M. TULLER, and B. BRAZA, 1996. Nitrate leaching from agricultural areas with conventional and alternative crop rotation systems. Austrian Ministry of Agriculture and Forestry, *Final Report Zl.: 41.033/26-IV 1/94*, Vienna, January 1996. (original in German)
- (6) CEPUDER, P., and M. TULLER, 1996. Groundwater contamination with plant nutrients. City of Vienna, MA 45 – Water management. *Final Report*, Vienna, December 1994. (original in German)
- (7) CEPUDER, P., M. TULLER, and B. BRAZA, 1994. Nitrate leaching from agricultural areas with conventional and alternative crop rotation systems. Austrian Ministry of Agriculture and Forestry, *Annual Report Zl.: 41.033/42-IV 1/92*, Vienna, December 1994. (original in German)
- (8) CEPUDER, P., E. KLAGHOFER, A. KLIK, B. HARTNER, M. TULLER, and M. ROUBIN, 1994. Measuring and modeling water and solute movement in the vadose zone. In Austrian Hydrology “Protection of alluvial aquifers in the large basins of Austria”. Austrian Ministry of Science and Research, *Final Report Project 3*, Vienna, Mai 1994. (original in German)
- (9) CEPUDER, P., E. KLAGHOFER, A. KLIK, Ch. SAILER, and M. TULLER, 1992. Measuring and modeling water and solute movement in the vadose zone. In Austrian Hydrology “Protection of alluvial aquifers in the large basins of Austria”. Austrian Ministry of Science and Research, *Annual Report Project 3*, Vienna, April 1992. (original in German)

Theses

- (1) M. TULLER. 1996. Prevention of ground water pollution with nitrate by controlled irrigation and fertilization practices in horticulture. *Ph.D. Thesis*. University of Agricultural Sciences Vienna. (original in German)
- (2) M. TULLER. 1992. Water movement and solute transport in the unsaturated soil zone. *Masters Thesis*. University of Agricultural Sciences Vienna. (original in German)

Proceedings and Reviewed Journals

- (1) FINK, W., M. TULLER, A. JACOBS, R. KULKARNI, M.A. TARBELL, R. FURFARO, and V.R. BAKER, 2012. Robotic Lake Lander Test Bed for Autonomous Surface and Subsurface Exploration of Titan Lakes. Proceedings of 2012 IEEE Aerospace Conference, Big Sky, MO, March 3-10.
- (2) TULLER, M., C.M.P. VAZ, and R. KULKARNI, 2010. A New Generation of High-Resolution Benchtop Micro-CT Scanners for Application in Soil Science. 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, pp. 391-394.
- (3) 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, pp. 157-161.
- (4) RESURRECCION, A.C., P. MOLDRUP, M. TULLER, T.P.A. FERRE, K. KAWAMOTO, and T. KOMATSU, and L.W. DE JONGE, 2010. Soil Water Retention at Dry Conditions and its Relation to Specific Surface Area and Texture. 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, pp. 321-324.
- (5) GUBER, A., M. TULLER, F. SAN JOSÉ MARTÍNEZ, P. IASSONOV, M.A. MARTIN, 2010. The Through Porosity of Soils as the Control of Hydraulic Conductivity. Proceedings of the 19th World Congress of Soil Science, Brisbane, Australia, August 1-6.
- (6) VIOLA, R., F. ZAMA, M.TULLER, E. MESINI, 2009. Simulation of Incompressible Flow through Rhombohedral Pores. Proceedings of the 2009 European COMSOL Conference, Milan, Italy, October 14-16.
- (7) CHEN LOPEZ, J.C., P. WALLER, G. GIACOMELLI, and M. TULLER, 2008. Physical Characterization of Greenhouse Substrates for Automated Irrigation Management. In: Kubota C. and M. Kacira, Proceedings of the International Workshop on Greenhouse Environmental Control and Crop Production in Semi-Arid Regions. Acta Horticulturae, No. 797, 333-338.
- (8) WINOWIECKI, L., E. SOMARRIBA, P. McDANIEL, M. TULLER, J. JOHNSON-MAYNARD, and A. FALEN, 2007. Biogeochemical Cycling of Base Cations in a Cacao Agroforestry System in the Cabecar Indigenous Territory, Talamanca, Costa Rica. Proceedings of the 15th International Cocoa Research Conference, VOL I, pp. 423-429.
- (9) 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, March 7-10, League City, TX. ASCE, Reston, VA, pp.346-353.
- (10) STEINBERG, S., I. ALEXANDER, D. OR, N. DAIDZIC, S. 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, March 7-10, League City, TX. ASCE, Reston, VA, pp.325-332.

- (11) TULLER, M., and D. Or, 2002. Preferential flow in structured soils - Hydraulic functions derived from pore-scale processes. Proceedings of the 17th World Congress of Soil Science, August 14-21, Bangkok, Thailand.
- (12) TULLER, M., and D. Or, 2002. Hydraulic properties of partially saturated fractured porous media, Proceedings of the International Groundwater Symposium, Berkeley, California, March 25-28, pp.416-420, ISBN 90-805649-4-X.
- (13) TULLER, M., and D. Or, 2001. Hydraulic functions for macroporous soils. *ASAE Proceedings of the 2nd International Symposium on Preferential Flow*, Honolulu, Hawaii, January 3-5. pp. 37-40. ISBN 1-892769-14-X.
- (14) CEPUDER, P., M.K. SHUKLA, P. LIEBHARD, and M. TULLER, 1998. Optimizing soil fertility and plant nutrition to prevent groundwater pollution. *Proceedings of the 16th World Congress of Soil Science*, Paper No. 1315, Montpellier, France.
- (15) CEPUDER, P., M. TULLER, M.K. SHUKLA, H. MÜLLER, E. KORTSCHAK, P. LIEBHARD, H. HAGER, S. HUBER and R. HABERL, 1997. Estimation of groundwater contamination by various land-uses with the simulation model EPIC and GIS. *Proceedings of the XIth World Fertilizer Congress*, Gent, Belgium.
- (16) CEPUDER, P., M. TULLER, and M.K. SHUKLA, 1997. Application of small suction lysimeters to measure deep percolation. *Proceedings of the 7th Lysimeter Conference*, BAL Gumpenstein, Austria, 11-16. (original in German)
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Conference Presentations & Published Abstracts

- (1) SUTITARNNONTR, P., M. TULLER, R. MILLER, S.BIALKOWSKI, and S.B. JONES, 2012. Metal Oxide Gas Sensor Performance Compared with a FTIR Gas Analyzer for Monitoring Regulated and Greenhouse Gas Emissions from Manure Sources. ASABE Annual International Meeting, Dallas, TX, Jul. 29 – Aug. 1, 2012.
- (2) RUMANA, K., M. TULLER, and S.B. Jones, 2012. Determination of Subsurface Soil Evaporation using a Heat Pulse Probe Array. 2012 Spring Runoff Conference, Utah State University, Logan, UT, April 3-4, 2012.
- (3) SUTITARNNONTR, P., M. TULLER, R. MILLER, and S.B. JONES, 2012. Temporal Variations in Greenhouse Gas Emissions from Dairy and Beef Cow Manure. 2012 Spring Runoff Conference, Utah State University, Logan, UT, April 3-4, 2012.
- (4) VAZ, C.M.P, S.B. JONES, S.M. MEDING, and M. TULLER, 2012. Comparison of Commonly-Applied Electromagnetic Sensors for Soil Water Content and Electrical Conductivity Measurements in Mineral, Organic and Saline Soils. 2nd International Soil Sensing Technology Conference, Honolulu, HW, Jan. 3-7, 2012.
- (5) TULLER, M., and R. KULKARNI, 2011. Multiphase Segmentation of 3-D X-Ray Micro Computed Tomography Data of Porous Materials. AGU International Annual Meeting, San Francisco, CA, Dec. 5-9, 2011.
- (6) JONES, S.B., M. SAKAI, and M. TULLER, 2011. Partitioning Evaporation and Infiltration Processes with an Array of Multifunction Heat Pulse Probes. AGU International Annual Meeting, San Francisco, CA, Dec. 5-9, 2011.
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- (10) BABCOCK, E.L., M. TULLER, S.B. JONES, and J. WALWORTH, 2011. Greenhouse Gas Emissions from Agriculture and Animal Operations: Influencing Factors, Measurement Limitations, and Potential Mitigation Strategies. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX, Oct. 16-19, 2011.
- (11) RATTANAPICHAJ, W., S.B. JONES, R.W. MACE, and M. TULLER, 2011. An Automated Microlysimeter for Long-Term Monitoring of Soil Evaporation. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX, Oct. 16-19, 2011.

- (12) VAZ, C.M.P, S.B. JONES, A. JACOBSEN, and M. TULLER, 2011. Evaluation of Electromagnetic Sensors Using Acetic Acid/Water Mixtures - Dielectric Constant and Electrical Conductivity Responses. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX, Oct. 16-19, 2011.
- (13) JONES, S.B., M. SAKAI, A. BEMBENEK, and M. TULLER, 2011. A Penta-Needle Heat Pulse Probe Array for Soil Subsurface Evaporation and Heat Flux Estimates. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX, Oct. 16-19, 2011.
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- (17) KULKARNI, R., M. TULLER, W. FINK, and D. WILDENSCHILD, 2011. Three-Dimensional Multiphase Segmentation of X-Ray CT Data of Porous Materials Using a Bayesian Markov Random Field Framework. Workshop on Image Analysis for Porous Media, Austin, TX, Jul. 14-15, 2011.
- (18) TULLER, M., G.S. NEARING, S.B. JONES, and R. HEINSE, 2011. Geophysical Characterization of Inactive Mine Tailings - A First Step for Revegetation. Abstract EGU2011-5751. European Geosciences Union (EGU) General Assembly, Vienna, Austria, Apr. 3-8, 2011.
- (19) TULLER, M., C.M.P. VAZ, P.O. LASSO, and R. KULKARNI, 2011. A New Generation of High-Resolution Benchtop Micro-CT Scanners for Application in Earth Sciences. Abstract EGU2011-5798. European Geosciences Union (EGU) General Assembly, Vienna, Austria, Apr. 3-8, 2011.
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- (21) CHEN-LOPEZ, J.C., M. TULLER, G.A. GIACOMELLI, and P. WALLER, 2010. Numerical Simulations of Root Zone Fluid Fluxes in Greenhouse Substrates. SSSA International Annual Meeting, Long Beach, CA, Oct. 31 – Nov. 4, 2010.
- (22) TULLER, M., T.P.A. FERRÉ, and M.S. MIRJAT, 2010. Optimization of Border Irrigation for Salinity Control in Arid and Semiarid Regions. SSSA International Annual Meeting, Long Beach, CA, Oct. 31 – Nov. 4, 2010.
- (23) VAZ, C.M.P., J.M. MANIERI, I.C. DE MARIA, and M. TULLER, 2010. Modeling the Influence of Water Content and Bulk Density on Soil Penetration Resistance. SSSA International Annual Meeting, Long Beach, CA, Oct. 31 – Nov. 4, 2010.
- (24) RESURRECCION, A., P. MOLDRUP, P. SCHJONNING, M. TULLER, T.P.A. FERRÉ, K. KAWAMOTO, T. KOMATSU, and L.W. DE JONGE, 2010. The Soil Characteristic Curve at Low Water Contents: Relations to Specific Surface Area and Texture. SSSA International Annual Meeting, Long Beach, CA, Oct. 31 – Nov. 4, 2010.
- (25) GEBRENEGUS, T., T. GHEZZEHEI, and M. TULLER, 2010. Physicochemical Controls on Initiation and Evolution of Desiccation Cracks in Sand-Bentonite Mixtures: X-Ray Imaging and Stochastic Modeling. SSSA International Annual Meeting, Long Beach, CA, Oct. 31 – Nov. 4, 2010.

- (26) SAKAI, M., S.B. JONES, and M. TULLER, 2010. Estimation of Evaporation Rates From a Subsurface Drying Front Using a Penta-Needle Heat Pulse Probe. SSSA International Annual Meeting, Long Beach, CA, Oct. 31 – Nov. 4, 2010.
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- (31) JONES, S.B., SAKAI, M., and M. TULLER, 2010. Snowmelt Infiltration and Soil-Water Evaporation Estimates using Heat-Pulse Measurements and Energy Balance Modeling. Spring Runoff/Western Snow Conference, Logan, UT, April 20-21, 2010.
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- (39) CHEN-LOPEZ, J.C., M. TULLER, G.A. GIACOMELLI, and P. WALLER, 2009. Optimization of Root Zone Fluid Fluxes in Greenhouse Substrates. SSSA International Annual Meeting, Pittsburgh, PA, November 1-5, 2009.
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- (41) MARTIN, M.A., F. SAN JOSÉ MARTÍNEZ, J. CANIEGO, M. TULLER, A. GUBER, Y. PACHEPSKY, and C. GARCIA-GUTIÉRREZ, 2009. Macropore structures of discretized X-ray CT of undisturbed soil columns and long range dependencies. 1st International Conference "Challenges of Porous Media", Kaiserslautern, Germany, March 11-14, 2009.

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- (44) SCHAAP, M.G., M. TULLER, A. GUBER, and Y. PACHEPSKY, 2009. Lattice Boltzmann Modeling of Macro-Porous Flow: Effects of Image Segmentation Algorithms and Comparisons with Observed Data. SIAM Conference on Mathematical & Computational Issues in the Geosciences, Leipzig, Germany, June 15-18, 2009.
- (45) HEINSE, R., S.B. JONES, M. TULLER, G. BINGHAM, I. PODOLSKIY, and D. OR, 2009. Providing Optimal Root-Zone Fluid Fluxes: Effects of Hysteresis on Capillary-Dominated Water Distributions in Microgravity. 39th International Conference on Environmental Systems (ICES), Savannah, Georgia, USA, July 12-16, 2009.
- (46) 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, San Francisco, CA, December 10-19, 2008.
- (47) TULLER, M., P. IASSONOV, and Th. GEBRENEGUS, 2008. Advanced Techniques for Segmentation of X-Ray Computed Tomography Images of Geomaterials. AGU Fall Meeting, San Francisco, CA, December 10-19, 2008.
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- (51) VIOLA, R., P. MACINI, E. MESINI, and M. TULLER, 2008. Non-Darcy Flow: Correlation between Inertial Coefficient and Particle Size Distribution of Unconsolidated Porous Media. SSSA International Annual Meeting, Houston, TX, October 5-9, 2008.
- (52) IASSONOV, P., and M. TULLER, 2008. Segmentation of X-Ray Computed Tomography Images: A Crucial Step for Quantitative Analysis of Porous Structures. SSSA International Annual Meeting, Houston, TX, October 5-9, 2008.
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- (54) CHEN LOPEZ, J.C., P. WALLER, G. GIACOMELLI, and M. TULLER, 2008. Physical Characterization of Greenhouse Substrates for Automated Irrigation Management. ISHS International Workshop on Greenhouse Environmental Control and Crop Production in Semi-Arid Regions, Tucson, AZ, October 20-24, 2008.

- (55) GUBER, A.K., M. TULLER, M.A. MARTIN, F. SAN JOSÉ MARTÍNEZ, and Y.A. PACHEPSKY, 2008. Using X-Ray Computed Tomography Visualizations of Large Soil Columns to Study Hydropedologic Relationships at the Horizon Scale. 1st International Hydropedology Conference, University Park, Pennsylvania, July 28-31, 2008.
- (56) MARTIN, M.A., F. SAN JOSÉ MARTÍNEZ, F.J. CANIEGO, M. TULLER, A. GUBER, C. GARCIA-GUTIÉRREZ, and Y. PACHEPSKY, 2008. Macroporosity of 2-D Cross Sections of Soil Columns via X-ray CT: Multifractal Statistics and Long Range Correlations for Assessing 3-D Soil Pore Structure. XVII International Conference on Computational Methods in Water Resources (CMWR), San Francisco, CA, July 6-10, 2008.
- (57) IASSONOV, P., and M. TULLER, 2008. Evaluation of Segmentation Techniques for Quantitative Analysis of X-Ray CT Images of Geological Materials. XVII International Conference on Computational Methods in Water Resources (CMWR), San Francisco, CA, July 6-10, 2008.
- (58) HEINSE, R., S.B. JONES, D. OR, M. TULLER, T.S. TOPHAM, I. PODOLSKY, and G. BINGHAM, 2008. Challenges of Watering Plants in Space: Water Retention and Distribution – What Have We Learned? 37th Committee on Space Research (COSPAR) Scientific Assembly, Montreal, Canada, 13-20 July 2008.
- (59) JONES, S.B., M. TULLER, and D. OR. 2008. Liquid Imbibition in Particulate Porous Media in Microgravity. 37th Committee on Space Research (COSPAR) Scientific Assembly, Montreal, Canada, 13-20 July 2008.
- (60) SESHADRI, S., R.C. ANDERSON, M. SCHAAP, V. BAKER, J. DOHM, M. TULLER, K.B. CHIN, and M. BUEHLER, 2008. Detecting Water/Ice in Planetary Regoliths Using Electrical Impedance Spectroscopy. 39th Lunar and Planetary Science Conference (LPSC), League City, Texas, 10-14 March, 2008
- (61) TULLER, M., and Th. GEBRENEGUS, 2007. Evaluation of Local and Global Segmentation Techniques for Quantitative Analysis of X-Ray CT Images of Geological Materials. AGU Fall Meeting, San Francisco, CA, December 10 14, 2007.
- (62) MARTIN, M.A., M. TULLER, A.K. GUBER, C. GARCIA-GUTIÉRREZ, F. SAN JOSÉ MARTÍNEZ, Y. PACHEPSKY, and F.J. CANIEGO, 2007. Pore Space Statistics from the X-ray CT of Large Undisturbed Soil Columns. AGU Fall Meeting, San Francisco, CA, December 10 14, 2007.
- (63) SCHAAP, M.G, M. TULLER, A. GUBER, M.A. MARTIN, F. SAN JOSÉ MARTÍNEZ, and Y. PACHEPSKY, 2007. Macropore Flow in Soil Columns: Investigations with Computer Tomography and Lattice Boltzmann Simulations. AGU Fall Meeting, San Francisco, CA, December 10 14, 2007.
- (64) JONES, S.B., R. HEINSE, J. SIMUNEK, M. TULLER, and D. OR, 2007. Numerical Modeling of Unsaturated Flows in Variable Gravity During Parabolic Flight. AGU Fall Meeting, San Francisco, CA, December 10 14, 2007.
- (65) DINWIDDIE, C.L., D. OR, S.A. STOTHOFF, R.W. FEDORS, J.A. POHLE, and M. TULLER, 2007. Sensors and Monitoring Techniques for the Deep Unsaturated Zone: Reducing Uncertainty Related to Seepage and Transport in Fractured Rock. AGU Fall Meeting, San Francisco, CA, December 10 14, 2007.
- (66) GEBRENEGUS, Th., B.E. LASSITER, N. ARAKI, and M. TULLER, 2007. Evaluation of Global and Local Image Binarization Techniques for Quantitative Analysis of X-Ray CT Images of Geological Materials. SSSA International Annual Meeting, New Orleans, LA, November 4-8, 2007.
- (67) TULLER, M., and Th. GEBRENEGUS, 2007. Assessment of the Impact of Physico-Chemical Factors on Initiation and Evolution of Dessication Cracks in Bentonite-Sand Mixtures with X-Ray Computed Tomography. SSSA International Annual Meeting, New Orleans, LA, November 4-8, 2007.

- (68) SCHAAP, M., M. TULLER, A.K. GUBER, and Y. PACHEPSKY, 2007. Observing and Simulating Macropore Flow with Computed Tomography and Lattice Boltzmann Methods. SSSA International Annual Meeting, New Orleans, LA, November 4-8, 2007.
- (69) MARTIN, M.A., M. TULLER, A. GUBER, C. GARCIA-GUTI ERREZ, F. SAN JOSE, Y. PACHEPSKY, and J. CANIEGO, 2007. CT Data and Analysis for Large Soil Columns. International Meeting on X-ray Computed Tomography of Soil, University of Guelph, Guelph, Canada August 19-22, 2007.
- (70) DINWIDDIE, C., D. OR, S. STOTHOFF, R. FEDORS, J. POHLE, and M. TULLER, 2007. Sensors and Monitoring Techniques for the Deep Unsaturated Zone: Reducing Uncertainty Related to Seepage and Transport in Fractured Rock. Unsaturated Zone Interest Group (UZIG) Meeting, Los Alamos, New Mexico, August 27-30, 2007.
- (71) WINOWIECKI, L., E. SOMARRIBA, P. McDANIEL, J. JOHNSON-MAYNARD, M. TULLER, and A. FALEN, 2007. Biogeochemical Cycling of Base Cations in a Diverse Cacao Agroforestry System, Cabécar Indigenous Territories, Talamanca, Costa Rica. 2nd International Symposium on Multi-Strata Agroforestry Systems with Perennial Crops: Making Ecosystem Services Count for Farmers, Consumers and the Environment, CATIE, Turrialba, Costa Rica, 17-21 Sept. 2007.
- (72) KAWAMOTO, K., P. MOLDRUP, T.P.A. FERRÉ, M. TULLER, O.H. JACOBSEN, and T. KOMATSU, 2006. Linking the Gardner and Campbell Models for Predicting Unsaturated Hydraulic Conductivity in Near-Saturated Soil, Abstracts of the 18th World Congress of Soil Science, July 9-15, 2006, Philadelphia, PA.
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- (85) TULLER, M., and K. GEBREHAWARIAT, 2005. Saturated Hydraulic Conductivity and Swelling Properties of Clay Soils. Abstracts of the European Geosciences Union General Assembly, 24-29 April, Vienna, Austria.
- (86) TULLER, M., and D. OR, 2004. A Universal Slope for Soil Water Characteristic Curves at Low Water Content. SSSA Annual Meeting Abstracts, Oct. 31 - Nov. 4, Seattle, WA.
- (87) VIOLA, R., M. TULLER, and M.R. ISLAM, 2004. Microscopic Observations of Pore Space Geometry in Clay-Sand Mixtures under Varying Hydration States. SSSA Annual Meeting Abstracts, Oct. 31 - Nov. 4, Seattle, WA.
- (88) MÖLLER, L., M. TULLER, K. KUHLMAN, and M.R. ISLAM, 2004. Deposition and Stability of Surrogate Martian Dust on Inclined and Spherical Surfaces. SSSA Annual Meeting Abstracts, Oct. 31 - Nov. 4, Seattle, WA.
- (89) GEBREHAWARIAT, K., M. TULLER, and D. OR, 2004. Saturated Hydraulic Conductivity and Volume Change of Clay-Sand Mixtures. SSSA Annual Meeting Abstracts, Oct. 31 - Nov. 4, Seattle, WA.
- (90) ISLAM, M.R., M. TULLER, and S.L. STEINBERG, 2004. Chemical and Mineralogical Composition of Baked Ceramic Aggregates Used as Plant Growth Media in Space. SSSA Annual Meeting Abstracts, Oct. 31 - Nov. 4, Seattle, WA.
- (91) GEBRENEGUS, T., M. TULLER, and B. MUHUNTHAN, 2004. Visualization and Quantification of Spatial Phase Arrangement in Bentonite-Sand Mixtures with X-Ray Computed Tomography. SSSA Annual Meeting Abstracts, Oct. 31 - Nov. 4, Seattle, WA.
- (92) OR, D., S.B. JONES, M. TULLER, S.L. STEINBERG, I. ALEXANDER, N. DIADZIC, L.N. REDDI, G. KLUITENBERG, F.L. OGDEN, and R. HEINSE, 2004. Unsaturated Flow in Zero Gravity - Lessons and Challenges. SSSA Annual Meeting Abstracts, Oct. 31 - Nov. 4, Seattle, WA.
- (93) HEINSE, R., S.B. JONES, S.D. HUMPHRIES, R.W. MACE, S.L. STEINBERG, M. TULLER, R. NEWMAN, and D. OR, 2004. Porous Media Water Retention and Saturated Hydraulic Conductivity during Parabolic Flight Induced Microgravity. SSSA Annual Meeting Abstracts, Oct. 31 - Nov. 4, Seattle, WA.
- (94) GEBRENEGUS, T., M. TULLER, and B. MUHUNTHAN, 2004. Visualization of Spatial and Transient Phase Distributions in Porous Materials with X-Ray Computed Tomography. INRA Environmental & Subsurface Science Symposium "Environmental and Subsurface Science Applied to Energy, Nuclear & National Security Research", Sept. 20-22, 2004, Spokane, WA
- (95) MÖLLER, L., M. TULLER, M.R. ISLAM, L. BAKER, and K. KUHLMAN 2004. Mars Environmental Chamber for Dynamic Dust Deposition and Statics Analysis. Abstracts of the 35th Lunar and Planetary Science Conference (LPSC), March 15-19, 2004, League City, Texas.

- (96) EUBANK, L., T. PRATHER, and M. TULLER, 2004. The Physiological Limits to Yellow Starthistle Distribution. 57th Western Society of Weed Science Meeting Abstracts, March 9-11, 2004, Colorado Springs, Colorado.
- (97) STEINBERG, S.L., J.I.D. ALEXANDER, D. OR, N. DAIDZIC, S. JONES, L. REDDI, M. TULLER, G. KLUITENBERG, and M. XIAO, 2004. Flow and Distribution of Fluid Phases Through Porous Plant Growth Media in Microgravity. 9th ASCE Aerospace Division International Conference, March 7-10, 2004, League City, Texas.
- (98) OR, D., M. TULLER, and S.B. JONES, 2004. Liquid-Gas Interfacial Configurations in Angular Pores under Microgravity. 9th ASCE Aerospace Division International Conference, March 7-10, 2004, Houston, Texas.
- (99) TULLER, M., L. MÖLLER, L. BAKER, M. R. ISLAM, K. KUHLMAN, J. MARSHALL, 2003. Experimental Study of the Angle of Repose of Surrogate Martian Dust. SSSA Annual Meeting Abstracts, November 2-6, Denver, Colorado.
- (100) STEINBERG, S.L., S.B. JONES, D. OR, N.E. DAIDZIC, M. TULLER, and F. OGDEN, 2003. Tensiometer measurements under variable gravity conditions, SSSA Annual Meeting Abstracts, November 2-6, Denver, Colorado.
- (101) JONES, S.B., D. OR, M. TULLER, S. STEINBERG, S.D. HUMPHRIES, G.E. BINGHAM, N.E. DAIDZIC, and L.N. REDDI, 2003. Influence of Variable Gravity on Liquid Configurations in Micromodels, SSSA Annual Meeting Abstracts, November 2-6, Denver, Colorado.
- (102) TULLER, M., K. GEBREHAWARIAT, D. OR, and B. MUHUNTHAN, 2003. Experimental Studies on Swelling and Saturated Flow Behavior of Clay Soils. SSSA Annual Meeting Abstracts, November 2-6, Denver, Colorado.
- (103) MÖLLER, L.E., M. TULLER, L. BAKER, J. MARSHALL, P. CASTIGLIONE, and K. KUHLMAN, 2003. Experimental study of the angle of repose of surrogate Martian dust. Abstracts of the 34th Lunar and Planetary Science Conference (LPSC), March 17–21, 2003, League City, Texas.
- (104) STEINBERG, S.L., J.I.D. ALEXANDER, N. DAIDZIC, S. JONES, G. KLUITENBERG, D. OR, L. REDDI, and M. TULLER, 2003. Flow and Distribution of Fluid Phases through Porous Plant Growth Media in Microgravity. Bioastronautics Investigator's Workshop. Abstract Volume p. 121. Jan. 13-15, Galveston, Texas.
- (105) TULLER, M., D. OR, and B. MUHUNTHAN, 2002. Evolution of textural pore space of clay-sand mixtures under variable water potential: Experimental studies on water retention and saturated flow behavior. SSSA Annual Meeting Abstracts, November 10-14, Indianapolis, Indiana.
- (106) 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.
- (107) MÖLLER, L., L. BAKER, M. TULLER, K. KUHLMAN, J. MARSHALL, M. TOWNER, and B. BETTS, 2002. Calibration of the SNOOPY angle of repose instrument. Abstracts of the GSA Annual Meeting, October 27-30, Denver, Colorado.
- (108) TULLER, M., D. OR, and B. MUHUNTHAN, 2002. Theoretical and experimental studies on retention and transport properties of swelling porous media. Abstracts of the INRA-INEEL Subsurface Science Symposium, October 13-16, Boise, Idaho.
- (109) TULLER, M., and D. OR, 2002. Preferential flow in structured soils - Hydraulic functions derived from pore-scale processes. 17th World Congress of Soil Science, August 14-21, Bangkok, Thailand.

- (110) ALEXANDER, I., N. DAIDZIC, S. JONES, G. KLUITENBERG, D. OR, L. REDDI, S. STEINBERG, and M. TULLER, 2002, Flow and Distribution of Fluid Phases through Porous Plant Growth Media in Microgravity: Progress to Date. 32nd International Conference on Environmental Systems (ICES), July 15-18, 2002, San Antonio, Texas.
- (111) TULLER, M., and D. OR, 2002. Hydraulic properties of partially saturated fractured porous media, International Groundwater Symposium, Berkeley, California.
- (112) OR, D., and M. TULLER, 2001. Hydraulic functions for swelling soils: Clay fabric hydration and flow in textural pore space. American Geophysical Union Fall Meeting 2001, December 10-14, San Francisco, California.
- (113) OR, D., and M. TULLER, 2001. Hydraulic functions for swelling soils, SSSA Annual Meeting, Charlotte, North Carolina (invited).
- (114) TULLER, M., and D. OR, 2001. Hydraulic properties of unsaturated fractured porous media: Flow in a cross-section, 8th Biannual Unsaturated Zone Interest Group Meeting, July 30 - August 2, Idaho Falls, Idaho.
- (115) TULLER, M., and D. OR, 2001. Preferential flow in macroporous soils. 2nd International ASAE Symposium and Exhibition on Preferential Flow, January 3-5, Honolulu, Hawaii.
- (116) TULLER, M., D. OR, and S.E. BIALKOWSKI, 2000. Experimental studies of liquid behaviour in partially saturated angular pore micromodels. *EOS, Transactions*, American Geophysical Union Fall Meeting 2000, December 15-19, San Francisco, California.
- (117) TULLER, M., and D. OR, 2000. Prediction of hydraulic conductivity in unsaturated macroporous soils, p.202, *SSSA Abstracts*, Annual Meeting, Minneapolis, Minnesota.
- (118) OR, D., M. TULLER, and S.E. BIALKOWSKI, 2000. Liquid behaviour in angular pore micromodels - Experimental studies, p.204, *SSSA Abstracts*, Annual Meeting, Minneapolis, Minnesota.
- (119) TULLER, M., and D. OR, 2000. Hydraulic functions for unsaturated fractured porous media. Gordon Research Conference, Modeling of Flow in Permeable Media, Proctor Academy, Andover, New Hampshire, 6-11 August.
- (120) OR, D., and M. TULLER, 2000. Hydraulic conductivity of variably saturated porous media: Upscaling film and corner flows in angular pores. *Geophysical Research Abstracts*, Vol.2, HS04.01, p. 166, XXV General Assembly of the European Geophysical Society, Millennium Conference on Earth, Planetary & Solar Systems Sciences, Nice, France, 25-29 April.
- (121) TULLER, M., and D. OR, 2000. Hydraulic Functions for Structured and Macroporous Soils. *Geophysical Research Abstracts*, Vol.2, HSA5.01, p. 270, XXV General Assembly of the European Geophysical Society, Millennium Conference on Earth, Planetary & Solar Systems Sciences, Nice, France, 25-29 April.
- (122) TULLER, M., and D. OR, 1999. Hydraulic Conductivity of Unsaturated Porous Media: Film and Corner Flow in Angular Pore Space. *EOS, Transactions*, American Geophysical Union 1999 Fall Meeting, Vol.80, No.46, Supplement, p. F467.
- (123) OR, D., M. TULLER, R. FEDORS, and R. GREEN, 1999. Hydraulic Properties of Partially Saturated Fractured Porous Media. *EOS, Transactions*, American Geophysical Union 1999 Fall Meeting, Vol.80, No.46, Supplement, p. F458.
- (124) OR, D., and M. TULLER, 1999. Liquid retention and unsaturated hydraulic conductivity in fractured porous media. p.172, *SSSA Abstracts*, Annual Meeting, Salt Lake City, Utah.

- (125) TULLER, M., and D. OR, 1999. Adsorption and capillary condensation in glass micro-models – Observations and modeling. p.172, *SSSA Abstracts*, Annual Meeting, Salt Lake City, Utah.
- (126) TULLER, M., and D. OR, 1999. Hydraulic conductivity in partially saturated porous media – pore scale hydrodynamic processes. p.172, *SSSA Abstracts*, Annual Meeting, Salt Lake City, Utah.
- (127) STOTHOFF, S.A., D. HUGHSON, G.I. OFOEGBU, R. GREEN, R. FEDORS, D. OR, and M. TULLER, 1999. Discrete-fracture modeling of drift-scale processes at Yucca Mountain, NV. *EOS, Transactions*, American Geophysical Union 1999 Spring Meeting, Vol.80, No.17, Suppl., p. S10.
- (128) TULLER, M., and D. OR, 1999. Models for pore space and liquid configuration in unsaturated porous media. *Geophysical Research Abstracts*, Vol.1, No.2, p. 336, XXIV General Assembly of the European Geophysical Society, The Hague, The Netherlands, 19-23 April.
- (129) OR, D., and M. TULLER, 1999. Unsaturated hydraulic conductivity of fractured porous media. *Geophysical Research Abstracts*, Vol.1, No.2, p. 272, XXIV General Assembly of the European Geophysical Society, The Hague, The Netherlands, 19-23 April.
- (130) TULLER, M., D. OR, and L.M. DUDLEY, 1998. Pore scale liquid retention and interfacial processes in partially saturated porous media. *EOS, Transactions*, American Geophysical Union 1998 Fall Meeting, Vol.79, No.45, Supplement, p. F370.
- (131) OR D., M. TULLER, and L.M. DUDLEY, 1998. Adsorption and capillary condensation in porous media. p. 169, *SSSA Abstracts*, Annual Meeting, Baltimore, Maryland.
- (132) TULLER, M., D. OR, and L.M. DUDLEY, 1998. New pore scale geometry models for capillary and adsorptive water retention – predictions and upscaling considerations. p.168, *SSSA Abstracts*, Annual Meeting, Baltimore, Maryland.
- (133) CEPUDER, P., M.K. SHUKLA, P. LIEBHARD, and M. TULLER, 1998. Optimizing soil fertility and plant nutrition to prevent groundwater pollution. Abstracts of the 16th World Congress of Soil Science, Montpellier, France.
- (134) CEPUDER, P., M. TULLER, M.K. SHUKLA, H. MÜLLER, E. KORTSCHAK, P. LIEBHARD, H. HAGER, S. HUBER and R. HABERL, 1997. Estimation of groundwater contamination by various land-uses with the simulation model EPIC and GIS. Abstracts of the XIth World Fertilizer Congress, Gent, Belgium.
- (135) CEPUDER, P., M. TULLER, and P. MOUTONNET, 1995. Field measurements to investigate nitrogen leaching by means of the 15N-Method. p.67, Abstracts of the IXth International Symposium of CIEC, Kusadasi, Turkey.
- (136) TULLER, M., and P. CEPUDER, 1995. Prevention of groundwater pollution with nitrate by controlled fertilization practices. p.68, Abstracts of the IXth International Symposium of CIEC, Kusadasi, Turkey.
- (137) TULLER, M., and P. CEPUDER, 1995. Estimating percolation and nitrate leaching with the numerical simulation model EPIC. p.88, Abstracts of the IXth International Symposium of CIEC, Kusadasi, Turkey.
- (138) CEPUDER, P., A. KLIK, and M. TULLER, 1994. Investigations of water and nitrate transport in the unsaturated zone of the soil. *Annales Geophysicae*. European Geophysical Society, Part II, Oceans, Atmosphere, Hydrology & Nonlinear Geophysics.

INVITED PRESENTATIONS

- Application of X-Ray Micro-Computed Tomography in the Earth and Environmental Sciences. Bouyoucos Conference on Synchrotron Analyses of Airborne Soil Particulates Originating from Agricultural and Modified Ecosystems. Estes Park, CO, Aug. 1-2, 2011.
- A New Generation of High-Resolution Benchtop Micro-CT Scanners for Application in Earth Sciences – Comparison to Synchrotron Micro-CT. Department of Earth Sciences, Boston University, May 5, 2011.
- A New Generation of High-Resolution Benchtop Micro-CT Scanners for Application in Soil Science. Keynote Lecture, 1st International Conference and Exploratory Workshop on Soil Architecture and Physico-Chemical Functions (CESAR), Research Centre Foulum, Denmark, Nov 30 – Dec 2, 2010.
- Geophysical Characterization of Inactive Mine Tailings – A First Step for Revegetation. 7th Annual Symposium “Research Insights in Semiarid Ecosystems (RISE)”. Tucson, AZ, October 2, 2010.
- Recent Advances in Quantitative Image Processing. Synchrotron Environmental Science IV (SESIV) Meeting, San Francisco, CA, December 11-13, 2008.
- Segmentation of X-Ray Computed Tomography Images: A Crucial Step for Quantitative Analysis of Porous Structures”, Departamento de Matemática Aplicada a la Ingeniería Agronómica. Escuela Técnica Superior de Ingenieros Agrónomos, Universidad Politécnica de Madrid, Spain, June 12, 2008.
- Active Clay Soils: Modeling Liquid Retention and Hydraulic Conductivity within a Hierarchy of Pore Structures”, Department of Chemical, Mining and Environmental Engineering (DICMA), University of Bologna, Italy, June 16, 2008.
- Hydraulic Properties of Clays - Microscale Modeling and Measurements, USDA ARS Arid-Land Agricultural Research Center, Maricopa, AZ November 13, 2007.
- Modeling Liquid Retention and Hydraulic Conductivity within a Hierarchy of Pore Structures, Invited Lecture PEDOFRACT 2007, International Workshop on Scale Dependences in Soil and Hydrologic Systems, El Barco de Avila, Spain, July 3-6, 2007.
- Hydraulic Properties of Swelling Porous Media: Microscale Modeling and Measurements”, Department of Hydrology and Water Resources, University of Arizona, April 11, 2007
- Physically Based Models for Prediction of Liquid Retention and Hydraulic Conductivity of Soils, Keynote Lecture at the German Soil Science Society - Soil Physics Commission Meeting, Müncheberg, Germany, February 18-19, 2005.
- A Framework for Modeling Pore-Scale Structural Changes and Hydraulic Properties of Clays, University of California San Diego, Department of Mechanical and Aerospace Engineering, March 11, 2003.
- Theoretical and Experimental Studies on Pore Space Evolution and Hydraulic Properties of Clay Soils, Washington State University, Department of Crop and Soil Science, December 3, 2002.
- Theoretical and Experimental Studies on Pore-Scale Liquid Retention and Flow Behavior in Swelling Porous Media, University of Idaho, Department of Physics, December 2, 2002.
- Theoretical and Experimental Studies on Retention and Transport Properties of Swelling Porous Media, INRA-INEEL Subsurface Science Symposium, Boise, Idaho, October 13-16, 2002.
- Effects of Alternative Management Practices on Nitrate Leaching from Agricultural Areas in Austria - Estimated with EPIC, Food and Agricultural Policy Research Institute FAPRI at the University of Missouri, January 16, 2001.
- Hydraulic Functions for Unsaturated Porous Media Based on Pore Scale Processes, University of Agricultural Sciences Vienna, Vienna, Austria, May 3, 2000.

AWARDED GRANTS AND CONTRACTS

- 2012:** \$ 7,000 WEES “Capacity Building Workshop Grant” in Support of the Development of an IGERT Proposal to NSF in the Area of Water Security in the Face of Environmental, Population, and Societal Change” PI’s: *Larry Winter, Karl Flessa, Katie Hirschboeck, Markus Tuller, Jim Shuttleworth and Xubin Zeng*
- 2010:** \$ 38,138 TRIF WSP “Acquisition of a DUALEM-1S Electromagnetic Induction Instrument for Large-Scale Subsurface Characterization in Support of Development of SMART Monitoring Systems” PI’s: *Markus Tuller, Ty Ferre and Scott Saleska*
- 2009 to 2010:** \$ 32,520 NSF EAR “Supplemental Funding for Upgrade of Weighing Lysimeter Facility for Studying Ecosystem and Vadose Zone Dynamics in Arid Environments” PI: *Markus Tuller*
- 2010 to 2013:** \$ 599,880 USDA NIFA AFRI – Air Quality “Novel Gradient-Based and Surface Chamber Techniques for Monitoring Regulated and Greenhouse Gas Emissions from Animal Feeding Operations” PI’s: *Scott Jones (USU), Markus Tuller (UA), Rhonda Miller (USU), and James Walworth (UA)*
- 2009 to 2012:** \$ 448,662 USDA NIFA AFRI – Soil Processes “A Novel Approach to Quantifying Soil Evaporation Rates with High Resolution Thermal Imaging and Heat Flux Measurements” PI’s: *Markus Tuller (UA) and Scott Jones (USU)*
- 2009 to 2011:** \$ 249,820 NSF EAR “Development of Efficient X-Ray CT Image Segmentation Techniques for Quantitative Analysis of Phase Distributions and Flow Processes in Porous Media” PI’s: *Markus Tuller, Pavel Iassonov, and Marcel Schaap*
- 2009 to 2010:** \$ 87,963 TRIF – Anyplace Access for Arizonans Initiative (AAA) “Development of a Web-Based Soil and Environmental Physics Course: A New Approach to Distance Education” PI’s: *Markus Tuller, Marcel Schaap, and Alys Thomas*
- 2008 to 2010:** \$ 263,553 NSF EAR “Upgrade of Weighing Lysimeter Facility for Studying Ecosystem and Vadose Zone Dynamics in Arid Environments” PI’s: *Markus Tuller, Travis Huxman, Craig Rasmussen, and Marcel Schaap*
- 2008 to 2009:** \$ 63,058 TRIF WSP “High-Resolution Thermal Imaging: A Novel Tool to Study Soil Evaporation and Plant Water Relations” PI’s: *Markus Tuller et al.*
- 2008 to 2009:** \$ 39,976 SBRP – Superfund Basic Research Program “Pilot Project for Physical and Hydrological Characterization of an Inactive Mine Tailings Site to Develop Novel Multidisciplinary Management Strategies in Support of Native Revegetation” PI’s: *Markus Tuller, Marcel Schaap, and Janick Artiola*
- 2007 to 2008:** \$ 161,630 NRICGP “Shrink-Swell Behavior and Hydraulic Properties of Clay Soils” PI: *Markus Tuller (UA)*
- 2006:** \$20,265 INRA “SSRI/SSGP Core Sequence Development and Instruction” PI: *Markus Tuller (UI)*
- 2006 to 2011:** \$ 1,666,358 UI Presidential Reinvestment Initiative “Water of the West: Towards a Sustainable, Interdisciplinary Water Resources Program.” PI’s: *Jan Boll, Barbara Cosens, Fritz Fiedler, Gary Johnson, Chuck Harris, Brian Kennedy, Tim Link, Markus Tuller, and Patrick Wilson*
- 2006 to 2009:** \$ 350,420 NSF-REU “Summer Research Experience for Undergraduates in Water Resources.” PI’s: *Fritz Fiedler, Kathleen Kavanagh, Jan Boll, Stephanie Hampton, Timothy Link, John Marshall, Christopher Peery, Markus Tuller, Barbara Williams, and J.D. Wulfhorst*

- 2005:** \$ 20,882 NRICGP “Acquisition of a High-End Computer Workstation and Software for Rendering and Spatial Analysis of 3D X-ray Computed Tomography Images”
PI: Markus Tuller (UI)
- 2004 to 2007:** \$ 352,000 NRICGP “Shrink-Swell Behavior and Hydraulic Properties of Clay Soils”
PI’s: Markus Tuller (UI) and Dani Or (UConn)
- 2003 to 2005:** \$ 30,000 NASA ISGC “Experimental Study of the Angle of Repose of Surrogate Martian Dust” PI’s: Markus Tuller (UI), Leslie Barker (UI), and Lucas Möller (Moscow High School)
- 2003 to 2005:** \$ 70,000 INRA Doctoral Scholarship “Application of X-Ray Computed Tomography (CT) to Determine Anisotropic Hydraulic Behavior of Clay Liners” (Support for Ph.D. Student). PI: Markus Tuller (UI)
- 2002 to 2005:** \$ 1,500,000 NASA “Flow and Distribution of Fluid Phases Through Porous Plant Growth Media in Microgravity” PI’s: Susan L. Steinberg (LSS/Lockheed; Project Coordinator), Iwan D. Alexander (NCMR); Nihad Daidzik (NCMR); Scott Jones (USU); Gerard Kluitenberg (KSU); Dani Or (USU); Lakshmi Reddi (KSU); Markus Tuller (UI)
- 2003 to 2004:** \$ 14,998 USGS “Physically Based Models for Hydraulic Properties of Swelling Soils” PI: Markus Tuller (UI)
- 2002 to 2004:** \$ 195,880 SBOE TECHNOLOGY INCENTIVE GRANT “Use of the Web to Enhance Existing and Develop New Water-Based Courses to Improve Both Campus and Distance-Based Programs Offered by the University of Idaho”
PI’s: Bob Mahler (Project Coordinator), Jan Boll, Jeff Braatne, Michael Falter, Karen Humes, Tim Link, Markus Tuller, Barbara Williams, Patrick Wilson, and Scott Wood
- 2002 to 2004:** \$70,000 INRA Doctoral Scholarship “Geotechnical Centrifuge Studies to Determine Hydraulic Properties of Clay Soils” (Support for Ph.D. Student).
PI: Markus Tuller (UI)
- 2002 to 2003:** \$14,949 USGS “Physically Based Models for Hydraulic Properties of Swelling Soils” PI: Markus Tuller (UI)
- 2002 to 2003:** \$7,987 UI-SEED “Infiltration and Surface Runoff from Frozen Agricultural Soils”
PI: Markus Tuller (UI)
- 2002 to 2003:** \$10,000 NASA ISGC “Experimental Study of the Angle of Repose of Martian Dust”
PI’s: Markus Tuller (UI), Leslie Barker (UI), and Lucas Möller (Moscow Junior High)
- 2001:** \$ 70,000 NSF EPSCoR “Equipment grant for testing hydraulic properties of porous media”
PI: Markus Tuller (UI)
- 2000 to 2003:** \$229,500 NRI CGP - “Hydraulic conductivity of unsaturated porous media - Film and corner flows in angular pore space” PI’s: Dani Or (USU) and Markus Tuller (UI)

ADVISING AND MENTORING

Students' Honors and Awards while under my direct supervision

- **Aditya Kumar Verma** (Ph.D. Student, Soil, Water and Environmental Science)
 - 3rd Place, Oral Presentation, SWES Earth Day, March 29, 2012
- **Jose Choc Chen-Lopez** (*Ph.D. Candidate, Agricultural and Biosystems Engineering*)
 - Water Fellowship 2010/2011, Water Sustainability Program (WSP)
 - Institute of the Environment Graduate Travel Award 2010
 - 2nd Place, UA GeoDaze Poster Competition, Tucson, AZ, April 1-3, 2010
- **Kelsey Waite** (*Student, Tucson High Magnet School & Sonoran Science Academy, Tucson, AZ*)
 - **Southern Arizona Regional Science & Engineering Fair (SARSEF), Tucson, AZ, March 8-12, 2010**
 - 1st Place, Arizona Hydrological Society
 - 1st Place, UA Water Sustainability
 - 2nd Place, SARSEF SciEnTeK-12 Foundation
 - 3rd Place, United States Navy
 - Wallace Foundation Scholarship
 - Arizona Science and Engineering Fair (AzSEF), Phoenix, AZ, March 22-25, 2010
 - 1st Place, Arizona Hydrological Society
 - Copper Medal, AzSEF - Environmental Science Category
 - National Society of Professional Engineers "Innovative Engineering Award"
 - International Sustainable World Project Olympiad (I-SWEEEP), Houston, TX, May 4-9, 2010
 - Bronze Medal, Senior Environment Category
- **Afroza Yeasmin** (*Student, Paul D. Schreiber High School Port Washington, NY*)
 - Finalist, Long Island Junior Science and Humanities Symposium, Stony Brook, March 14, 2009
 - Finalist, International Sustainable World (Energy, Engineering & Environment) Project Olympiad (I-SWEEEP 2009), Houston, Texas – April 19, 2009
- **Phyllis Berger** (*MS Student, SWES Department*)
 - Association of Women Soil Scientists (AWSS) Travel Scholarship, 2008
- **Thomas Gebrenegus** (*Ph.D. Candidate, Soil & Land Resources*)
 - Easton Scholarship, 2006
 - 3rd Place, Poster Competition, Idaho Academy of Sciences Meeting, March 25, 2006
 - Research Fellowship, Inland Northwest Research Alliance (INRA), 2004
 - Research Fellowship, Inland Northwest Research Alliance (INRA), 2003
- **Lucas Möller** (*Student, Moscow High School*)
 - Finalist, Intel Science Talent Search (STS), March 2006 (first finalist from Idaho since 15 years)
 - Fellowship, Davidson Institute for Talent Development, September 2005
 - 1st Place High School Winner, NASA Student Involvement Program NSIP, 2003

Advisees

High School Students

- Sean Jurecky, *Edge High School, Tucson, AZ.*
- Lucas Möller, *Moscow High School, Moscow, ID.*
- Afroza Yeasmin, *Paul D. Schreiber High School, Port Washington, NY.*
- Kelsey Waite, *Sonoran Science Academy, Tucson, AZ.*

Undergraduate Students

- Seth Gilchrist, Electrical and Computer Engineering, *University of Arizona*, Tucson, AZ.
- Noritoshi Araki, Material Science, *University of Idaho*, Moscow, ID.
- Brian Lassiter, Material Science, *University of Idaho*, Moscow, ID.
- Tenzin Lhundup, Geology, *Stony Brook University*, NY.

Graduate Students – Major Professor

- Juan Roberto Gonzalez Cena, Ph.D. ABE (current), *Univ. of Arizona*, Tucson, AZ.
- Aditya Verma, Ph.D. Soil and Water Science (current), *Univ. of Arizona*, Tucson, AZ.
- Maria Pilar Cendrero Mateo, Ph.D. Soil and Water Science (current), *Univ. of Arizona*, Tucson, AZ.
- Ramaprasad Kulkarni, MS Electrical and Computer Eng. (current), *Univ. of Arizona*, Tucson, AZ.
- Matthew Stroud, MS Hydrology (discontinued), *University of Arizona*, Tucson, AZ.
- Jose Choc Chen-Lopez, Ph.D. ABE (2011), *University of Arizona*, Tucson, AZ.
- Thomas Gebrenegus, Ph.D. Soil Science (2010), *University of Idaho*, Moscow, ID.
- Phyllis Berger, MS Soil and Water Science (2009), *University of Arizona*, Tucson, AZ.
- Kidane Gebrehawariat, MS Soil Science (2005), *University of Idaho*, Moscow, ID.

Graduate Students – Committees

- Corin Hammond, Ph.D. Soil and Water Science (current), *University of Arizona*, Tucson, AZ.
- Hazel Cox, Ph.D. Soil and Water Science (current), *University of Arizona*, Tucson, AZ.
- Juliana Araujo, Ph.D. Soil and Water Science (current), *University of Arizona*, Tucson, AZ.
- Matthew Narter, Ph.D. Soil and Water Science (current), *University of Arizona*, Tucson, AZ.
- Candice Morrison, Ph.D. Soil and Water Science (2010), *University of Arizona*, Tucson, AZ.
- Ibrahima Niane, MS Ag. and Biol. Engineering (2010), *University of Arizona*, Tucson, AZ.
- Amy Rice, MS Hydrology and Water Resources (2009), *University of Arizona*, Tucson, AZ.
- Andrew Miller, MS Plant Science (2009), *University of Arizona*, Tucson, AZ.
- Matthew Narter, MS Soil and Water Science (2008), *University of Arizona*, Tucson, AZ.
- Krzysztof Ostrowski, Ph.D. Biol. and Ag. Engineering (2006), *University of Idaho*, Moscow, ID.
- Hillary Talbott, MS Soil Science (2006), *University of Idaho*, Moscow, ID.
- Lee Eubank, MS Plant Science (2005), *University of Idaho*, Moscow, ID.
- Nabte Abraham, Ph.D. Biol. and Ag. Engineering (2004), *University of Idaho*, Moscow, ID.

Postgraduate Students and Visiting Scholars

- Dr. Mercer Meding, 2007-present, SWES Department, *University of Arizona*, Tucson, AZ.
- Emmanuel Arthur, 2012, SWES Department, *University of Arizona*, Tucson, AZ.
- Dr. Carlos Vaz, 2009-2011, SWES Department, *University of Arizona*, Tucson, AZ.
- Dr. Nicole Emerstorfer, 2009, SWES Department, *University of Arizona*, Tucson, AZ.
- Dr. Pavel Iassonov, 2008-2009, SWES Department, *University of Arizona*, Tucson, AZ.
- Dr. Muhammad Saffar Mirjat, 2008-2009, SWES Department, *University of Arizona*, Tucson, AZ.
- Dr. Wibke Markgraf, 2008, SWES Department, *University of Arizona*, Tucson, AZ.
- Dr. Rossella Viola, 2007-2008, SWES Department, *University of Arizona*, Tucson, AZ.
- Dr. Muhammad Akram Qazi, 2007, SWES Department, *University of Arizona*, Tucson, AZ.
- Dr. Mohammed Islam, 2003-2005, PSES Department, *University of Idaho*, Moscow, ID.

UNIVERSITY SERVICE

*Departmental Level (*current)*

- Assistant Head, SWES Department*
- Director, SWES Graduate Program*
- Chair, Graduate Committee (SWES, UA)*
- Member, Curriculum Committee (SWES, UA)*
- Member, Long Range Planning Committee (SWES, UA)*
- Member, Peer Review Committee (SWES, 2008-2011)
- Chair, SEES Web Page Committee (UA, 2009-2010)
- Member, Long Range Planning Committee (SWES, 2007)
- Member, ERL Committee (SWES, 2007)
- Member, 3rd Year Review Committees (UI)
- Member, Promotion and Tenure Committees (UI)
- Member, Position Search Committees (UI)

College Level

- Member, Post Tenure Review Committee (CALs, UA)*
- Member, Promotion & Tenure Committee (UI, 2003-06)

University Level

- Member, Marshall Foundation Dissertation Fellowship Evaluation Committee (UA, 2011)
- Chair, Sabbatical Leave Evaluation Committee, (UI, 2003-06)
- Member, Radiation Safety Committee, Technical Member (UI, 2002-06)

International Level

- Member, Hiring Committee, Aarhus University, Denmark, Department of Agroecology (2012)

PROFESSIONAL MEMBERSHIPS

- American Association for the Advancement of Science (AAAS)
- American Geophysical Union (AGU)
- American Society of Agronomy (ASA)
- Austrian Union of Civil Engineering and Water Management
- Austrian Union of Hydro-Geological Research
- European Geophysical Society (EGS)
- Idaho Academy of Sciences (IAS)
- International Union of Soil Science (IUSS)
- Society of Petroleum Engineers (SPE)
- Soil Science Society of America (SSSA)

PROFESSIONAL SERVICE

- Editorial Services

- Associate Editor for the Journal of Hydrology, 2012 – present
- Associate Editor for the Vadose Zone Journal (VZJ), 2006 – present
- Guest Associate Editor for the VZJ Special Issue “Soil Architecture and Physicochemical Functions”, 2011
- Editor of the Soil Physics Section of the 2nd Edition of the Handbook of Soil Sciences, CRC Press, 2008 - 2011
- Guest Associate Editor for the VZJ Special Issue “Pore-Scale Processes”, 2009 – 2010

- Journal Peer Review Services

- Advances in Water Resources
- Agricultural Water Management
- AIChE Journal
- Austrian Journal of Agricultural Research (Die Bodenkultur)
- Canadian Geotechnical Journal
- European Journal of Soil Science
- Geoderma
- Geophysical Research Letters
- Géotechnique
- Hydrology and Earth System Sciences (HESS)
- Hydrogeology Journal
- Hydrological Processes (HP)
- Journal of Environmental Quality (JEQ)
- Journal of Geotechnical and Geoenvironmental Engineering
- Journal of Hydrology
- Journal of Plant Nutrition and Soil Science (JPNSS)
- Journal of Porous Media (JPM)
- Journal of Soil and Water Conservation
- Soil Science
- Soil Science Society of America Journal (SSSAJ)
- Transport in Porous Media (TIPM)
- Vadose Zone Journal (VZJ)
- Water, Air, & Soil Pollution
- Water Resources Research (WRR)

- Competitive Grant Proposal Peer Review Services

- Department of Energy (DOE) Office of Basic Energy Sciences (BES)
- ACS Petroleum Research Fund (American Chemical Society)
- The National Science Foundation (NSF) EAR & CMS Programs
- The United States - Israel Binational Agricultural Research & Development Fund (BARD)
- The U.S. Geological Survey and National Institutes for Water Resources (USGS-NIWR)

- Competitive Grant Proposal Panels

- USDA CSREES NRI Peer Review Panel for the Soil Processes Program, 2006
- USDA CSREES NRI Peer Review Panel for the Soil Processes Program, 2007

- International Dissertation Review and Defense Committees

- Aarhus University, Aarhus, Department of Agroecology, Denmark, September 2011
- Ben-Gurion University of the Negev, The Kreitman School of Advanced Studies, Israel, March 2012

- Regional/National/International Committees

- Soil Science Society of America S495 Fellows Committee (2012 - 2014)
- Soil Science Society of America S774 Kirkham Conference Committee, Member (2010 - 2012)
- Soil Science Society of America S774 Kirkham Conference Committee, Member (2006 - 2008)

- Soil Science Society of America S483 Don and Betty Kirkham Soil Physics Award Committee, Member (2006)
 - W-2188 Regional Research Committee, Technical Member (1999 – present)
 - W-2188 “Award for Excellence in Multistate Research” Proposal Writing Committee (2010)
 - W-2188 Regional Research Committee, Chair (2009)
 - W-2188 Regional Research Committee, Secretary (2008)
 - W-2188 Renewal Proposal Writing Committee, Member (2008-2009)
- Meeting Organization**
- Organized W-2188 Annual Meeting, Las Vegas, NV, January 2010
 - Organized W-2188 Annual Meeting, Tucson, AZ, January 2009
- Conference Session Organization and Chair**
- AGU International Annual Meeting, San Francisco, CA, Dec. 5-9, 2011
Co-Organizer and Chair of “Environmental Vadose Zone Hydrology” H122 poster session.
 - ASA-CSSA-SSSA International Annual Meeting, San Antonio, TX, Oct. 16-19, 2011
Co-Organizer of “Emission of Regulated and Greenhouse Gases: Measurement Technology, Monitoring and Policy: I” S01 symposium.
 - ASA-CSSA-SSSA International Annual Meeting, San Antonio, TX, Oct. 16-19, 2011
Co-Organizer and Chair of “Emission of Regulated and Greenhouse Gases: Measurement Technology, Monitoring and Policy: II” S01 poster session.
 - ASA-CSSA-SSSA International Annual Meeting, Long Beach, CA, Oct. 31 – Nov. 4, 2010
Co-Organizer of “Soil Change – Characterization and Modeling across Scales: I” S01 session.
 - ASA-CSSA-SSSA International Annual Meeting, Long Beach, CA, Oct. 31 – Nov. 4, 2010
Co-Organizer and Chair of “Soil Change – Characterization and Modeling across Scales: II” S01 poster session.
 - ASA-CSSA-SSSA International Annual Meeting, Pittsburg, PA, Nov. 1-5, 2009
Chair of “General Soil Physics” S01 poster session.
 - 1st Int. Conference and Exploratory Workshop on Soil Architecture and Physicochemical Functions (CESAR), Research Center Foulum, Denmark, Nov. 30 – Dec. 2, 2010
Chair of “Soil-Water Repellency and Soil Hydrology - Controls of water repellency and water distribution across scales from pore to field” session.
- Other Professional Services**
- AGU Hydrology Section Graduate Student Poster Competition Judge, AGU International Annual Meeting, San Francisco, CA, Dec. 5-9, 2011
 - SSSA S-1 Graduate Student Poster Competition Judge, ASA-CSSA-SSSA International Annual Meeting, San Antonio, TX, Oct. 16-19, 2011
 - Webmaster and Newsletter Administrator for the Soil Science Society of America S01-Soil Physics Division (SSSA-S01), 2002–2010.
 - Webmaster for the Don & Betty Kirkham Awards and Conferences:
<http://soils.ag.uidaho.edu/tuller/kirkham/index.htm>, 2002-2010.