

## Curriculum Vitae – J. Mark Blonquist Jr.

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### EDUCATION

**Masters of Science** in Soil Science, emphasis in Soil Physics,  
Utah State University, Logan, Utah, expected graduation in December 2005, GPA: 4.0.

**Bachelors of Science** in Environmental Soil/Water Science, minor in Agronomy,  
Utah State University, Logan, Utah, graduation in May 2003, GPA: 3.9.

### EXPERIENCE

**Research Assistant**, Department of Plants, Soils, and Biometeorology, Utah State University, Logan, Utah (May 2003-May 2005).

- \*Assisted in development and testing of electromagnetic soil moisture sensor characterization and calibration methodology.
- \*Assisted in characterization of porous media constituent effects on time domain reflectometry measurements of permittivity and electrical conductivity.
- \*Assisted in simultaneous field mapping of soil water content and elevation for inference of water flow and spatial distribution at the field scale.

**Teaching Assistant**, Department of Plants, Soils, and Biometeorology, Utah State University Logan, Utah (January 2002-May 2005).

- \*Lectured on basic soil/water concepts and demonstrated experiments for laboratory section of introductory soil/water course (5 semesters).
- \*Assisted students with homework assignments and laboratory data processing, graded homework assignments, and filled in as lecturer for soil physics course (2 semesters).
- \*Assisted students with homework assignments, graded homework assignments, and filled in as lecturer for introductory meteorology course (1 semester).

**Soils Lab Assistant**, Department of Plants, Soils, and Biometeorology, Utah State University, Logan, Utah (December 2001-April 2003).

- \*Worked on long-term saline irrigation water research project gathering and preparing soil, water, and plant samples for testing.
- \*Performed laboratory tests and analysis on soil, water, and plant samples and collected and organized measured data.
- \*Cleaned and maintained lab instruments and tools.

### PUBLICATIONS

#### Refereed Publications

- Blonquist Jr., J.M., S.B. Jones, and D.A. Robinson. 2005. A Time Domain Transmission Sensor with TDR Performance Characteristics. *Accepted in J. of Hydrology*.
- Blonquist Jr., J.M., S.B. Jones, and D.A. Robinson. 2005. Standardizing Characterization of Electromagnetic Water Content Sensors: Part II. Evaluation of Seven Sensing Systems. *Accepted in Vadose Zone J.*

- Jones, S.B., J.M. Blonquist Jr., D.A. Robinson, V.P. Rasmussen, and D. Or. 2005. Standardizing Characterization of Electromagnetic Water Content Sensors: Part I. Methodology. *Accepted in Vadose Zone J.*
- Robinson, D.A., S.B. Jones, J.M. Blonquist Jr., and S.P. Friedman. 2005. A Physically Based Water Content/Permittivity Calibration Model for Coarse-textured, Layered Soils. *Accepted in Soil Sci. Soc. Am. J.*

### **Manuscripts in Preparation**

- Abdu, H., J.M. Blonquist Jr., V. Urdanoz, and D.A. Robinson. Inferring Landscape Influence on Field-Scale Soil Moisture Content Distribution Using Simultaneous Electromagnetic Induction and GPS Measurements. *In Preparation.*
- Blonquist Jr., J.M., S.B. Jones, and D.A. Robinson. Precise Irrigation Scheduling Using a Subsurface Electromagnetic Soil Moisture Sensor. *In Review in Ag. Water Management.*
- Blonquist Jr., J. M., S. B. Jones, and D. A. Robinson. On the Water Content – Dielectric Relationship in Dual Porosity, Aggregated Media. *In Preparation.*
- Blonquist Jr., J. M., S. B. Jones, and D. A. Robinson. Water Content Determination in Aggregated Soils Using Dielectric Properties. *In Preparation.*
- Kelleners, T.J., M.S. Seyfried, J.M. Blonquist Jr., J. Bilskie, and D.G. Chandler. Permittivity Measurements in Air, Fluids, and Soils Using Water Content Reflectometers. *In Review in Soil Sci. Soc. Am. J.*

### **Technical Reports**

- Dudley, L.M., A. Ben-Gal, J.M. Blonquist Jr., and R.W. Mace. 2003. Use of Saline Water from Electrical Power Plants for Irrigation: Part I. Soil, Irrigation Water, and Crop Yield Studies. *Utah Ag. Exp. Sta. Report*, 186.

### **Abstracts**

- Blonquist Jr., J.M., S.B. Jones, and D.A. Robinson. 2005. Water Conservation from Precise Irrigation Scheduling Using a Subsurface Electromagnetic Soil Moisture Sensor. 26<sup>th</sup> Annual Irrigation Association International Irrigation Show. November 6-8, 2005, Phoenix, AZ.
- Blonquist Jr., J.M., S.B. Jones, and D.A. Robinson. 2005. Precise Irrigation Scheduling Using a Subsurface Electromagnetic Soil Moisture Sensor. *Agronomy Abstracts, ASA, Madison, WI.*
- Blonquist Jr., J.M., R. Heinse, P. Dittthakit, R.W. Mace and S.B. Jones. 2005. An Instrumented Soil Column for Teaching Unsaturated Flow and Transport Processes. *Agronomy Abstracts, ASA, Madison, WI.*
- Blonquist Jr., J.M., S.B. Jones, and D.A. Robinson. 2005. Comparison of Seven Electromagnetic Water Content Sensors Commonly Used in Ecohydrological Studies. *American Geophysical Union 2005 Joint Assembly. May 23-May 27, 2005, New Orleans, LA.*
- Friedman, S.P., D.A. Robinson, S.B. Jones, J.M. Blonquist Jr., and M.G. Schaap. 2005. Measurement and Modeling of the TDR Signal Propagation Through Layered Dielectric Media and the Effective Permittivity of Sandy Soils. *American Geophysical Union 2005 Joint Assembly. May 23-May 27, 2005, New Orleans, LA.*
- Jones, S.B., Blonquist Jr., J.M., D.A. Robinson, V.P. Rasmussen, and D. Or. 2005. Proposal of a Methodology for Comparing Electromagnetic Soil Water Content Sensors. *American Geophysical Union 2005 Joint Assembly. May 23-May 27, 2005, New Orleans, LA.*
- Robinson D.A., S.B. Jones, and J.M. Blonquist Jr. 2005. Evaluation of Time Domain Transmission Water Content Sensors and Their Potential for Water Conservation within Irrigation. 26<sup>th</sup> Annual Irrigation Association International Irrigation Show. November 6-8, 2005, Phoenix, AZ.
- Blonquist Jr., J.M., S.B. Jones, and D.A. Robinson. 2004. Characterization and Calibration of Seven Electromagnetic Water Content Sensors. 68<sup>th</sup> Annual Meeting of the Soil Science Society of America. October 31-November 4, 2004, Seattle, WA.

- Blonquist Jr., J.M., S.B. Jones, and D.A. Robinson. 2004. A Low Cost Time Domain Transmission Sensor with TDR Performance Characteristics. 85<sup>th</sup> Annual Meeting of the Pacific Division of American Association for the Advancement of Science. June 13-17, 2004, Logan, UT.
- Jones, S.B., J.M. Blonquist Jr., D.A. Robinson, V.P. Rasmussen, and D. Or. 2004. Standardizing Characterization and Calibration of Electromagnetic Sensors for Dielectric Measurement. 68<sup>th</sup> Annual Meeting of the Soil Science Society of America. October 31-November 4, 2004, Seattle, WA.
- Jones, S.B., J.M. Blonquist Jr., D.A. Robinson, V.P. Rasmussen, and D. Or. 2004. Toward Standardizing Electromagnetic Sensor Characterization and Calibration. 85<sup>th</sup> Annual Meeting of the Pacific Division of American Association for the Advancement of Science. June 13-17, 2004, Logan, UT.
- Robinson, D.A., S B. Jones, S.P. Friedman, and J.M. Blonquist Jr. 2004. Grain Scale Structural Effects on Electrical Transport Properties in Soils. 68<sup>th</sup> Annual Meeting of the Soil Science Society of America. October 31-November 4, 2004, Seattle, WA.
- Robinson, D.A., S.B. Jones, S.P. Friedman, J.M. Blonquist Jr., and M.G. Schaap. 2004. Geometrical Effects on Electromagnetic Wave Interaction with Moist Materials. 85<sup>th</sup> Annual Meeting of the Pacific Division of American Association for the Advancement of Science. June 13-17, 2004, Logan, UT.

## **HONORS AND AWARDS**

- \*Western Society of Soil Science 3<sup>rd</sup> Place Award for excellence in the AAAS Pacific Division general student paper competition for graduate and advanced undergraduate students (June 2004).
- \*Named to Dean's Honors List (Fall 2001 through Spring 2005).
- \*Received graduate tuition waivers (Fall 2003 through Spring 2005).
- \*Received Evan B. Campbell, Glen A. Leggett, and David and Retta Jennings Scholarships (2004).
- \*Received John E. and Ruth M. Osguthorpe Scholarship (2003).
- \*Received John B. and Joyce C. Olsen and Sterling A. Taylor Scholarships (2002).

## **PROFESSIONAL AFFILIATIONS**

Soil Science Society of America  
Phi Kappa Phi Honor Society