

## R. Troy Peters, Ph.D., P.E.

Professor and Extension Irrigation Engineer,  
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### **Education**

Ph.D. Irrigation Engineering. Utah State University. May 2003. GPA: 3.93  
B.S. Manufacturing Engineering. Brigham Young University. April 1997. GPA: 3.72  
*International Emphasis*, and Korean Language Minor.

### **Licenses/Certifications**

**Licensed Professional Agricultural Engineer (PE)**. Washington. # 44143  
**Certified Agricultural Irrigation Specialist (CAIS)**, Through the Irrigation Association (IA).

### **Professional Experience**

**Professor and Extension Irrigation Engineer**. Mar. 2006 – Present  
Washington State University. Irrigated Agriculture Research and Extension Center. Prosser, WA. 80% extension, 20% research appointment. Education for improved irrigation water management. Research, including deficit irrigation, irrigation automation, crop cooling, and irrigation timing studies.

**Agricultural Engineer/Post-doctoral Research Scientist**. Jul. 2003 – Feb. 2006  
USDA – ARS, Conservation and Production Research Laboratory, Bushland, TX  
Research on center pivot automation using crop canopy temperature as a water stress indicator, using GPS for center pivot positioning, canopy temperature mapping using sensors mounted on center pivots.

**Manufacturing Systems Engineer**. May 1997 – Jun. 2000  
Motorola, Semiconductor Products Sector, MOS13, Austin, TX

### **Selected Publications**

Molaei, B., R.T. Peters, A. Chandel, C.O. Stockle, L.R. Khot, C. Campbell. 2023. Measuring Evapotranspiration Suppression from the Wind Drift and Spray Water Losses from LESA and MESA Sprinklers in a Center Pivot System. *Water*. 15(13), 2444; <https://doi.org/10.3390/w15132444>

Sadeghi, S.H., S.I. Saedi, R.T. Peters, C. Stockle. 2022. Towards Improving the Global Water Application Uniformity of Center Pivots through Lateral Speed Adjustment. *Biosystems Engineering*. Mar. 2022. (215),215-227

Molaei, B., A. Chandel, R.T. Peters, L.R. Khot, and J.Q. Vargas. 2021. Investigating Lodging in Spearmint with Overhead Sprinklers Compared to Drag Hoses Using the Texture Feature from Low Altitude RGB Imagery. *Information Processing in Agriculture*. 9(2):335-341

Molaei, B., R.T. Peters, A.Z. Mohamed, and A. Sarwar. 2021. Large Scale Evaluation of a LEPA/LESA system compared with MESA on Spearmint and Peppermint. *Industrial Crops and Products*. Vol 159:113048

Peters, R.T. and B. King. 2020. Field Test Procedure for Determining Irrigation Water Distribution Uniformity of Center Pivot and Lateral Move Systems. Adopted as an ASABE and ANSI standard. S436.2 Jun 2020.

Chandel, A.K., B. Molaei, L.R. Khot, R.T. Peters, and C.O. Stockle. 2020. High Resolution Geospatial Evapotranspiration Mapping of Irrigated Field Crops Using Multispectral and Thermal Infrared Imagery with METRIC Energy Balance Model. *Drones*. 4(52):1-19

- Sarwar, A., R.T. Peters, and A.Z. Mohamed. 2019. Linear mixed modeling and artificial neural network techniques for predicting wind drift and evaporation losses under moving sprinkler irrigation systems. *Irrigation Science*. 10.1007/s00271-019-00659-x
- Mohamed, A.Z., R.T. Peters, X. Zhu, and A. Sarwar. 2019. Adjusting Irrigation Uniformity Coefficients for Unimportant Variability on a Small Scale. *Ag. Water Management*. 213 (2019):1078-1083
- Nakawuka, P., R.T. Peters, and D. Walsh. 2017. Effect of deficit irrigation on yield quantity and quality, water use efficiency and economic returns of four cultivars of hops in the Yakima Valley, Washington State. *Industrial Crops and Products*. 98(2017) 82-92
- Osroosh, Y., R.T. Peters, C.S. Campbell, and Q. Zhang. 2016. Comparison of Irrigation Automation Algorithms for Drip-Irrigated Apple Trees. *Computers and Electronics in Agriculture*. 128:87-99.
- Sadeghi, S.H., R.T. Peters, B. Shafii, M.Z. Amini, and C. Stockle. 2017. Continuous Variation of Wind Drift and Evaporation Losses under a Linear Move Irrigation System. *Ag. Water Mgmt.* 182(39-54)
- Osroosh, Y., R.T. Peters, and C.S. Campbell. 2016. Daylight Crop Water Stress Index for Continuous Monitoring of Water Status in Apple Trees. *Irrigation Science*. 34(3), 209-219.
- Zhu, Xingye, R.T. Peters, and W.H. Neibling. 2016. Hydraulic Performance Assessment of LESA at Low Pressure. *Irrig. and Drain*. 65:530-536
- Osroosh, Y., R.T. Peters, and C.S. Campbell. 2015. Estimating Actual Transpiration of Apple Trees Based on Infrared Thermometry. *J. Irrig. Drain Eng.* 141(8): 04014084
- Sadeghi, S.H., R.T. Peters, M.Z. Amini, and H. Loescher. 2015. Novel Approach to Evaluate the Dynamic Variation of Wind Drift and Evaporation Losses under Moving Irrigation Systems. *Biosystems Engineering*. (35) 44-53.
- Nakawuka, P., Okwany, R., Peters, R.T., Desta, K., & Sadeghi, H. 2014. Efficacy of Boom Systems in Controlling Runoff under Center Pivots and Linear Move Irrigation Systems. *Applied Engineering in Agriculture*. 30(5): 797-801.
- Sadeghi, S.H., and R.T. Peters. 2014. Analytical Determination of Distribution Uniformity for Micro-Irrigation Paired Laterals Laid on Uphill and Horizontal Slopes. *J. Irrig. Drain Eng.* 139(6):483-489.
- Nakawuka, P., R.T. Peters, K.R. Gallardo, D. T Gonzalez, R.O. Okwany, and D.B. Walsh. 2013. Effect of deficit irrigation on yield, quality and costs of production of native spearmint. *J. Irrig. Drain Eng.* 140(5):05014002.
- Lamm, F. R., J. P. Bordovsky, L. J. Schwankl, G. L. Grabow, J. Enciso-Medina, R. T. Peters, P. D. Colaizzi, T. P. Trooien, and D. O. Porter. 2012. Subsurface drip irrigation: Status of the technology in 2010. *Trans. ASABE* 55(2): 483-491.
- Mobbs, T.L., R.T. Peters, J.R. Davenport, M.A. Evans, and J.Q. Wu. 2012. Effects of four soil surfactants on four soil-water properties in sand and silt loam. *J. Soil and Water Cons.* 67(4):275-283
- Sadeghi, SH, and R.T. Peters. 2011. Adjusted Friction Correction Factors for Center-Pivots with an End Gun. *Irrigation Science*. 31:351-358
- Malek, K., and R.T. Peters. 2010. Wetting Pattern Models for Drip Irrigation: A New Empirical Model. *Irrig. and Drain. Eng.* 137(8):530-536
- Peters, R.T., and S.R. Evett. 2008. Automation of a Center Pivot Using the Temperature-Time-Threshold Method of Irrigation Scheduling. *Journal of Irrig. and Drainage Eng.* 133(3), 286-291.
- Peters, R.T. and S.R. Evett. 2007. Spatial and temporal analysis of crop stress using multiple canopy temperature maps created with an array of center-pivot-mounted infrared thermometers. *Transactions of the ASABE*. 50(3):919-927.
- Peters, R.T., and S.R. Evett. 2004. Modeling diurnal canopy temperature dynamics using one time-of-day measurements and a reference temperature curve. *Agronomy Journal*. 96:1553-1561
- Peters, R.T., and S.R. Evett. 2005. Using low-cost GPS receivers for determining field position of mechanized irrigation systems. *Applied Engineering in Agriculture*. 21(5): 841-845