

Ty P. A. Ferré

email: tyferre@gmail.com

phone: (520) 621-2952

fax: (520) 621-1422

home page: <https://sites.google.com/site/tyferre/home>

EXPERIENCE

Academic Experience

July 2011 to present	Professor Department of Hydrology and Water Resources University of Arizona , Tucson, AZ
July 2011 to present	Professor (Joint), Department of Soil, Water and Environmental Sciences University of Arizona , Tucson, AZ
Sept. 2004 to June 2011	Associate Professor Department of Hydrology and Water Resources University of Arizona , Tucson, AZ
Sept. 2004 June 2011	Associate Professor (Joint), Department of Soil, Water and Environmental Sciences University of Arizona , Tucson, AZ
Apr. 2001 to Aug. 2004	Assistant Professor (Joint), Department of Soil, Water and Environmental Sciences University of Arizona , Tucson, AZ
Aug. 1999 to Aug. 2004	Assistant Professor, Department of Hydrology and Water Resources University of Arizona , Tucson, AZ
Oct. 1998 to July 1999	Postdoctoral Fellow, Department of Biology University of Victoria , Victoria, BC, Canada
Sept. 1997 to Sept. 1998	Lecturer, Department of Earth Sciences University of Waterloo , Waterloo, ON, Canada

Professional Experience

Feb. 2011 to Present	Independent Consultant: provided guidance on the selection of water content monitoring devices and networks for automated irrigation. RainBird , Tucson, AZ
May. 2010 to March 2012	Independent Consultant: provided guidance on the development of a common data platform for subsurface investigations in earth sciences and geotechnical engineering. Defense Advanced Research Projects Agency , Washington, DC
November. 2009 to March 2010	Independent Consultant: provided guidance on the selection of geophysical methods for water resource development. Yavapai Ranch , Phoenix, AZ
September. 2008 to August 2009	Independent Consultant: conducted literature review of vadose zone applications of surface nuclear magnetic resonance instrumentation and planned a field examination of infiltration monitoring. Vista-Clara Engineering , Mukilteo, WA

- November. 2007 to Present Independent Consultant: model conceptualization and development of methods for hydrologic measurement network optimization.
Montgomery and Associates, Tucson, AZ
- July. 2002 Independent Consultant: conducted numerical flow modeling and planned field experiments in support of the development of nuclear magnetic resonance instrumentation for water flow monitoring.
Vista-Clara Engineering, Mukilteo, WA
- Oct. 2002 Independent Consultant: reviewed technical documents and oversaw modeling efforts in preparation to challenge increased water withdrawals.
Coalition to Save the Canada del Oro, Tucson, AZ
- Feb. 2002 Independent Consultant: conducted subsurface monitoring of air injection system using borehole ground penetrating radar.
Hydro Geo Chem, Inc., Tucson, AZ
- Mar. 2001 Independent Consultant: analyzed sample area of water content measurement probes
Decagon, Pullman, WA
- Jun. 2000 Independent Consultant: designed water content monitoring system for landfill during aerobic biodegradation.
Hydro Geo Chem, Inc., Tucson, AZ
- Apr. 1999 Independent Consultant: designed water content monitoring system for graywater facility.
Pacific Groundwater Group, Seattle, WA
- Sept. 1990 to May 1991 Geophysicist: conducted electrical resistance tomography surveys of hazardous waste sites.
Hydrosystems, Inc., Dunn Loring, VA

EDUCATION

- June 1997 **Ph.D. in Earth Sciences, University of Waterloo**, Dept. of Earth Sciences, Waterloo, ON, Canada
Thesis title: “The Design and Analysis of Time Domain Reflectometry Probes for Measuring Water Content and Bulk Electrical Conductivity under Steady and Transient Flow”
- June 1988 **B.S. in Geophysical Engineering, Colorado School of Mines**, Golden, CO
Minors: Public Affairs (Honors Program) and Geology

HONORS, AWARDS, AND NOMINATIONS

Individual Awards

- Verschuren Centre Research Fellow, Cape Breton University (2013-2016)
Fellow of the Soil Science Society of America (2011)
Associate Editor of the Year – Vadose Zone Journal (2003) – given in recognition of service to the journal through editorial service in regular admissions and special issues.
S-1 Early Career Award (2002) – first recipient of this award given by the Soil Physics section of the Soil Science Society of America to recognize scientists who have made an outstanding contribution in Soil Physics within six years of completing the Ph.D. degree.
Excellence at the Student Interface – College of Engineering and Mines, University of Arizona (2013, 2012, 2010, 2006, 2002, 2001, 2000) – chosen by the graduate students of the department of Hydrology and Water Resources in recognition of excellence in teaching and student guidance.

Nominated by University of Arizona for Packard Fellowship (2002) – one of 100 members of faculty across the nation chosen by their university to compete for this national award recognizing achievement within the first four years of beginning their academic career.

John Wesley Powell Award (2001) – only the twelfth university professor to receive this national award for contributions to the USGS mission by an individual that is not an employee of the USGS.

USGS Arizona District Partnership Award (2001) – first recipient of this award to recognize collaborative efforts with the Arizona District Office of the USGS.

University of Waterloo Alumni Association Gold Medal (1997) – recipient of University-wide annual award for outstanding achievement in completion of a Ph.D.

University of Waterloo Outstanding Achievement in Graduate Studies Award (1997) – recipient of University-wide award recognizing outstanding contributions in graduate research.

National Science Foundation Graduate Fellowship (1991-1996) – awarded to support graduate research in the fields of geophysics and hydrogeology.

Thomas J. Watson Foundation Fellowship (1988-89) – awarded to pursue independent research into the cultural lessons that children in Trinidad, England, and Spain learn through participation in youth soccer.

Outstanding Graduating Senior – Geophysics, Colorado School of Mines (1988) – recipient of annual award selected by the faculty of Geophysical Engineering.

William Keck Foundation Scholarship (1983-1987) – granted to pursue an undergraduate degree in Geophysical Engineering at the Colorado School of Mines.

National Merit Scholarship (1983-87) – recipient of educational scholarship based on SAT scores.

Society of Exploration Geophysicists Scholarship (1983-87) – educational scholarship granted to outstanding students in the field of geophysics.

Students' Honors and Awards while under My Direct Supervision

Matt Bailey:	Arizona Hydrological Society Student Scholarship (2000) First Place, Eng., Graduate and Professional Student Council's Student Showcase (1999) USGS STAR Award, Department of the Interior (1999)
Tim Bayley:	NASA Space Grant Fellowship (2010)
Joan Blainey:	Sol Resnick Scholarship, Hydrology and Water Resources, University of Arizona (2008) Graduate and Professional Student Travel Grant, University of Arizona (2008) National Water Research Institute Fellowship (2005-2008) Achievement Rewards for College Scientists (ARCS) Award (2004) Geological Society of America (2004) NASA Space Grant Fellowship (2003) USGS STAR Award, Department of the Interior (2003)
Kyle Blasch:	Best Student Presentation, AGU Fall Meeting (2001) Errol Montgomery Prize, Hydrology and Water Resources, University of Arizona (2001) Arizona Hydrological Society Student Scholarship (2001) NASA Space Grant Fellowship (2000)
Karletta Chief:	American Indian Science and Engineering Society National Spokesperson (2007) Department of Hydrology & Water Resources Student Interface Award (2007) University of Arizona School of Engineering Outstanding Teaching Assistant (2007) Marshall Foundation Dissertation Fellowship (2006) Minorities Striving and Pursuing Higher Degrees of Success in Earth System Science (2005) Stanford University Minority Alumni Task Force Featured Alumni (2004) Am. Indian Sci. and Eng. Society, EPA Tribal Lands Environmental Science Scholar (2003) Arizona Hydrological Society Student Scholarship (2003) Centennial Achievement Award – University of Arizona (2003) National Science Foundation Doctoral Fellowship Award (2000)
Jeff Cordova:	Sloan Foundation Scholarship (2003)
Jesse Dickinson:	USGS STAR Award, Department of the Interior (2002)
Gavin Fielding:	Hargis Award (1 st place), Hydrology and Water Resources, University of Arizona (2003)
Alex Furman:	Harshbarger Fellowship, Hydrology and Water Resources, University of Arizona (2003) Eugene Simpson Prize, Hydrology and Water Resources, University of Arizona (2002)
Andrew Hinnell:	Emil Truog Award – Soil Science Society of America (2010)

Hargis Award (2nd place), Hydrology and Water Resources, University of Arizona (2006)
 Harshbarger Fellowship, Hydrology and Water Resources, University of Arizona (2005)
 TRIF Prop 301 Grant Scholarship, University of Arizona (2003)
 Arizona Hydrological Society Student Scholarship (2002)
 Chevron Scholarship, Society of Exploration Geophysicists (2002)
 National Ground Water Association / American Petroleum Institute Scholarship (2002)
 “Best of SAGEEP” presentation award (2012)

Jeff Kennedy:
 Colin Kikuchi:
 Harshbarger Fellowship (2013)
 AGU Outstanding Student Poster (2011)
 University of Arizona Galileo Scholar (2011)
 Graduate and Professional Student Council Travel Grant (2010)

Elizabeth León:
 Dale Rucker: Errol Montgomery Prize, Hydrology and Water Resources, University of Arizona (2002)
 Harshbarger Fellowship, Hydrology and Water Resources, University of Arizona (2002)
 NSF Grant to attend NATO-ASI Hydrogeophysics Conference- Prague, Czech Republic (2002)

Kelsey Waite:
 Errol Montgomery Prize, Hydrology and Water Resources, University of Arizona (2002)
 Harshbarger Fellowship, Hydrology and Water Resources, University of Arizona (2002)
 NSF Grant to attend NATO-ASI Hydrogeophysics Conference- Prague, Czech Republic (2002)
 United States Navy 3rd Place Certificate (2010)
 SARSEF SciEnTeK-12 2nd Place (2010)
 I-Sweep Award and invitation to ISWEEEP in Houston, TX (2010)
 Stockholm Water Environment Award (2010)
 Arizona Hydrological Society 1st Place (2010)
 UA Water Sustainability 1st Place (2010)
 Wallace Foundation Scholarship (2010)
 Arizona Science and Engineering Fair Environmental Science 2nd Place (2010)
 National Society of Professional Engineers “Innovative Engineering Award (2010)
 I-SWEEP Environment Bronze Medal
 Congressional Commitment to Community Award (2010)

Becky Witte: AGU Student Travel Grant (2010)
 Hargis Award (2nd place), Hydrology and Water Resources, University of Arizona (2011)

PUBLICATIONS AND PRESENTATIONS

(* denotes a student under my direct supervision at the time of writing)
 (# denotes work completed during graduate studies)

Refereed Publications

(Note: the following publications are in journals that are not included in Science Citation Index: 8; 44; 53; 54; 68.)

89. Franz, T. E., M. Zreda, P. A. Ferre, and R. Rosolem, 2013. **An assessment of the effect of horizontal soil moisture heterogeneity on the area-average measurement of cosmic-ray neutrons** Water Resources Research, 49(10).
88. Bakker, M., R. Bartholomeus, and T.P.A. Ferré. 2013. **Groundwater Recharge: Processes and Quantification.** Hydrology and Earth System Science, 17(7), 2653-2655, DOI: 10.5194/hess-17-2653-2013.
87. Lloyd, R.A., K.A. Lohse, and T.P.A. Ferré. 2013. **Influence of Road Reclamation Prescription on Ecosystem Recovery Trajectory.** Frontiers of Ecology and the Environment, 11(2): 75–81, DOI:10.1890/120116.
86. Creutzfeldt, B., P. Troch, T.P.A. Ferré, A. Guntner, A. Graeff, and B. Merz. 2013. **Storage-discharge relationships at different catchment scales estimated by high-precision gravimetry.** Hydrological Processes. DOI: 10.1002/hyp.9689.
85. Franz, T., M. Zreda, R. Rosolem, and T.P.A. Ferré. 2013. **A universal calibration function for cosmic-ray neutron probes.** Hydrology and Earth System Sciences, 17: 453-460. DOI:10.5194/hess-17-453-2013.

84. Naveed, M., P. Moldrup, M. Tuller, T.P.A. Ferré, K. Kawamoto, T. Komatsu, and L. Wollesen de Jonge. 2012. **Predicting soil-water characteristics from volumetric contents of pore-size analogue particle fractions.** Soil Science Society of America Journal, v.76, no. 6: 1946-1956. DOI: 10.2136/sssaj2012.0124.
83. Franz, T., M. Zreda, R. Rosolem, and T.P.A. Ferré. 2012. **Field validation of cosmic-ray soil moisture probe using a distributed sensor network.** Vadose Zone Journal, v.11, no.4: DOI: 10.2136/vzj2012.0046.
82. Huisman, J.A., J. Vrugt, and T.P.A. Ferré. 2012. **Vadose zone model-data fusion: state of the art and future challenges.** Vadose Zone Journal, v.11, no.4: DOI: 10.2136/vzj2012.0140.
81. Kikuchi*, C. T.P.A. Ferré, and J.M. Welker. 2012. **Spatially telescoping measurements for improved characterization of groundwater-surface water interactions.** Journal of Hydrology, DOI: 10.1016/j.jhydrol.2012.04.002.
80. Franz, T., M. Zreda, T.P.A. Ferré, R. Rosolem, C. Zweck, S. Stillman, X. Zeng, and W.J. Shuttleworth. 2012. **Measurement depth of the cosmic-ray soil moisture probe affected by hydrogen from various sources.** Water Resources Research, DOI: 10.1029/2012WR011871
79. Creutzfeldt, B., T.P.A. Ferré, P. Troch, B. Merz, H. Wziontek, and A. Guntner. 2012. **Total water storage dynamics in response to climate variability and extremes: inference from long-term terrestrial gravity measurement.** Journal of Geophysical Research, 117, D08112, doi: 10.1029/2011JD016472.
78. Arthur, E., F. Razzaghi, P. Moldrup, M. Tuller, T.P. A. Ferré, and L.W. de Jonge. 2012. **Simple predictive models for saturated hydraulic conductivity of Technosands,** Soil Science, 10.1097/SS.0b013e3182435b18.
77. Callegary, J.B., T. P. A. Ferré. and R.W. Groom. 2012. **Three-dimensional sensitivity distribution and sample volume of low-induction-number electromagnetic-induction instruments,** Soil Science Society of America Journal, DOI: 10.2136/sssaj2011.0003.
76. Soto-Lopez, C.D., T. Meixner, and T. P. A. Ferré. 2011. **Effects of measurement resolution on the analysis of temperature time series for stream-aquifer flux estimation,** Water Resources Research, DOI 10.1029/2011WR010834.
75. Resurreccion, A.C., P. Moldrup, M. Tuller, T.P.A. Ferré, K. Kawamoto, 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 Resources Research, DOI: 10.1029/2010WR010229.
74. Bechtold, M., S. Haber-Pohlmeier, J. Vanderborght, A. Pohlmeier, T. P. A. Ferré, and H. Vereecken. 2011. **Near-surface solute redistribution during evaporation,** Geophys. Res. Lett., 38, L17404, DOI:10.1029/2011GL048147.
73. Walsh, D.O., P. Turner, A.C.H. Hinnell*, and T.P.A. Ferré. 2011. **Practical limitations and applications of short dead-time surface NMR.** Near Surface Geophysics, v. 9, no. 2, pp. 103-111, DOI 10.3997/1873-0604.2010073.
72. Desilets, D., M. Zreda, and T.P.A. Ferré. 2010. **Nature's neutron probe: Land-surface hydrology at an elusive scale with cosmic-rays.** Water Resources Research, DOI 10.1029/2009WR008726.
71. Blasch, K.W., T.P.A. Ferré, and J.A. Vrugt. 2010. **Environmental Controls on Drainage Behavior of an Ephemeral Stream: an Example of the Limitations of Correlative Modeling.** DOI: 10.1007/s00477-010-0398-8.
70. Ferré, T.P.A. and M.J. Thomasson. 2010. **Understanding the Impacts of Anisotropy on the Extent of Drawdown.** Ground Water, v.58, no. 4, 478-479.
69. Hinnell*, A.C., T.P.A. Ferré, J.A. Vrugt, S. Moysey, S.A. Huisman, and M.B. Kowalsky. 2010. **Improved extraction of hydrologic information from geophysical data through coupled hydrogeophysical inversion.** Water Resources Research, 46, DOI 10.1029/2008WR007060

68. Ferré, T.P.A., L. Bentley, A. Binley, N. Linde, A. Kemna, K. Singha, K. Holliger, S. Huisman, and B. Minsley. 2009. **Critical steps for the continuing advancement of hydrogeophysics.** EOS Trans. AGU, v. 90, no. 23, 200.
67. Selker, J.S. and T.P.A. Ferré. 2009. **The ah-ha moment of measurement: introduction to the special section on measurement methods.** Water Resources Research, 45, DOI 10.1029/2009WR007966.
66. Chief*, K., T.P.A. Ferré, and B. Nijssen. 2009. **Correlation between Air Permeability and Saturated Hydraulic Conductivity in Unburned and Burned Desert Soils.** Soil Science Society of America Journal, v. 72, no. 6, 1501-1509.
65. Zreda, M., D. Desilets, and T.P.A. Ferré. 2008. **Measuring soil moisture content non-invasively at intermediate spatial scale using cosmic-ray neutrons.** Geophysical Research Letters, DOI 10.1029/2008GL035655.
64. Hinnell*, A.C. and T.P.A. Ferré. 2008. **Considerations for Measuring Pressure Head and Water Content in Inclined Boreholes.** Water Resources Research, DOI 10.1029/2008WR007122.
63. Desilets*, S.L.E., T.P.A. Ferré, and B. Ekwurzel. 2008. **Flash Flood Dynamics and Composition in a Semi-Arid Mountain Watershed.** Water Resources Research, v. 44, W12436, DOI 10.1029/2007WR006159.
62. Desilets*, S.L.E., T.P.A. Ferré, and P.A. Troch. 2008. **Effects of Stream-Aquifer Disconnection on Local Flow Patterns.** Water Resources Research, v.44, Art No. W09501. DOI 10.1029/2007WR006782.
61. Robinson, D., A. Binley, N. Crook, F. Day-Lewis, T.P.A. Ferré, V. Grauch, R. Knight, M. Knoll, V. Lakshmi, R. Miller, J. Nyquist, L. Pellerin, K. Singha, and L. Slater. 2008. **Advancing Process-Based Watershed Hydrological Research Using Near-Surface Geophysics: A Vision for, and Review of, Electrical and Magnetic Geophysical Methods.** Hydrological Processes, v. 22, 3604-3635.
60. Warrick, A.W., A.C. Hinnell*, T.P.A. Ferré, and J.H. Knight. 2008. **Steady State Lateral Water Flow through Unsaturated Soil Layers.** Water Resources Research, v.44, Art No. W08438. DOI 10.1029/2007WR006784.
59. Chief*, K., T.P.A. Ferré, and A.C. Hinnell*. 2008. **The Effects of Anisotropy on In-Situ Air Permeability Measurements.** Vadose Zone Journal, v. 7: 941-947.
58. Furfaro, R, J.M Dohm, W. Fink, J.S. Kargel, D. Schulze-Makuch, A.G. Fairen, P.T. Ferré, A. Palmeiro-Rodriguez, V.R. Baker, T.M. Hare, M. Tarbell, H.M Miyamoto, and G. Komatsu. 2008. **The Search for Life Beyond Earth through Fuzzy Expert Systems.** Planetary and Space Science, v.56, no. 3-4: 448-472.)
57. Desilets*, S.L.E., B. Nijssen, B. Ekwurzel, and T.P.A. Ferré. 2007 **Post-wildfire Changes in Suspended Sediment Rating Curves: Sabino Canyon, Arizona.** Hydrological Processes v.21, no. 11: 1413-1423.
56. Ferré, T.P.A. and J.S. Selker. 2007. **A Glass Always Half Full: Reconsideration of the Wales Apparatus to Apply Constant Head Boundary Conditions.** Water Resources Research, v.43, Art. No. W12503. DOI: 10.1029/2007WR005889
55. Blainey*, J.B., T.P.A. Ferré, and J. Cordova*. 2007. **Assessing the Likely Value of Gravity and Drawdown Measurements to Constrain Estimates of Hydraulic Conductivity and Specific Yield during Unconfined Aquifer Testing.** Water Resources Research, v. 43, Art. No. W12408. DOI:10.1029/2006WR005678.
54. Desilets, D., Zreda, M. and Ferré, T. 2007. **Scientist Water Equivalent Measured with Cosmic Rays at 2006 AGU Fall Meeting.** EOS Trans. AGU, v. 88, no. 48, 521.
53. El-Kaliouby, H., T.P.A. Ferré, and K. Zonge. 2007. **Examination of the potential for time domain electromagnetic method for monitoring infiltration and recharge in arid area.** Journal of King Abdulaziz University, Earth Sciences, v. 18: 71-87.

52. Rucker*, D.F. and T.P.A. Ferré. 2007. **The Effects of a Dipping Layer on the First Arrival Travel Time from Zero-Offset and Fixed-Offset Borehole Radar.** *Near Surface Geophysics*: 151-159.
51. Furman*, A., T.P.A. Ferré, and G.L. Heath. 2007. **Spatial Focusing of Electrical Resistivity Surveys Considering Geologic and Hydrologic Layering.** *Geophysics*, v. 72, no. 2: F65-F73.
50. Callegary, J.B., T.P.A. Ferré, and R.W. Groom. 2007. **Spatial Sensitivity of Low-Induction-Number Frequency-Domain Electromagnetic Induction Instruments.** *Vadose Zone Journal*, v. 6: 158-167.
49. Chief, K.D., T.P.A. Ferré, and B. Nijssen. 2006. **Field Testing of a Soil-Corer Air Permeameter (SCAP) to Measure Air Permeability in Desert Soils.** *Vadose Zone Journal*, v. 5: 1257-1263.
48. Thomasson, M.J., P.J. Wierenga and T.P.A. Ferré. 2006. **A Field Application of the Scaled-Predictive Method for Unsaturated Soil.** *Vadose Zone Journal*, v. 5: 1093-1109.
47. Blasch*, K.W., T.P.A. Ferré, J.P. Hoffmann, and J.B. Fleming. 2006. **Relative Contributions of Transient and Steady-State Infiltration Fluxes during Ephemeral Streamflow.** *Water Resources Research*, v. 42, no. 8: Art. No. W08405.
46. Faust*, A.E., T.P.A. Ferré, M.G. Schaap, and A. C. Hinnell*. 2006. **Can Basin-Scale Recharge Be Estimated Reasonably with Water Balance Models?** *Vadose Zone Journal*, v. 5: 850-855.
45. Ferré, T.P.A. 2006. **Review of “Practical Handbook of Soil, Vadose Zone, and Ground-Water Contamination”** by J.R. Boulding and J.S. Ginn. *Vadose Zone Journal*, v. 5: 507.
44. Ferré, T.P.A., A.C. Hinnell, and J.B. Blainey. 2006. **Examining the Potential for Inferring Hydraulic Properties Using Surface-Based Electrical Resistivity during Infiltration.** *The Leading Edge*, v. 25, no. 6: 720-723. [Cover image of issue from this paper.]
43. Hinnell*, A.C., T.P.A. Ferré, and A.W. Warrick. 2006. **The Influence of TDR-Rod-Induced Flow Disruption on Measured Water Content During Steady State Unit Gradient Flow.** *Water Resources Research*, v. 42, no. 8: Art. No. W08420.
42. Kawamoto, K., P. Moldrup, T.P.A. Ferré, M. Tuller, and T. Komatsu. 2006. **Linking the Gardner and Campbell Models for Water Retention and Hydraulic Conductivity in Near-Saturated Soil.** *Soil Science*, v. 171, no. 8: 573-584.
41. Whitaker, M.P.L., T.P.A. Ferré, B. Nijssen, and J. Washburne. 2006. **Design and Testing of a Low-Cost Soil-Drying Oven.** *Vadose Zone Journal*, v. 5: 856-859.
40. Baker, V.R., J.M. Dohm, T.P.A. Ferré, J.C. Ferris, and D. Schulze-Makuch. 2005. **Extraterrestrial Hydrology.** *Hydrogeology Journal*, v. 13: 51-68. doi: 10.1007/s10040-004-0433-2.
39. Burke, E.G., R.C. Harlow*, and T. Ferré. 2005. **Measuring the Dielectric Permittivity of a Plant Canopy and Its Response to Changes in Plant Water Status: An Application of Impulse Time Domain Transmission.** *Plant and Soil*, v. 268: 123-133. doi: 10.1007/s11104-004-0303-7.
38. Delin, K.A., S.P. Jackson, D.W. Johnson, S.C. Burleigh, R.R. Woodrow, J.M. McAuley, J.M. Dohm, F. Ip, T.P.A. Ferré, D.F. Rucker*, and V.R. Baker. 2005. **Environmental Studies with Sensor Web: Principles and Practice.** *Sensors*, v. 5: 103-117. (Identified as one of the three most significant papers in *Sensors* in 2005.)
37. Rucker*, D.F. and T.P.A. Ferré. 2005. **Automated Water Content Reconstruction of Zero-Offset Borehole Ground Penetrating Radar Data Using Simulated Annealing.** *Journal of Hydrology*, v. 309: 1-16.

36. Rucker*, D.F. A.W. Warrick, and T.P.A. Ferré. 2005. **Parameter Equivalence for the Gardner and van Genuchten Soil Hydraulic Conductivity Functions for Steady Vertical Flow with Inclusions.** *Advances in Water Resources*, v. 28: 689-699.
35. Blasch*, K.W., T.P.A. Ferré, and J.P. Hoffmann. 2004. **A Statistical Technique for Interpreting Streamflow Timing Using Streambed Sediment Thermographs.** *Vadose Zone Journal*, v. 3: 936-946.
34. Dickinson*, J.E., R.T. Hanson, T. P.A. Ferré, and S.A. Leake. 2004. **Inferring time-varying recharge from inverse analysis of long-term water levels.** *Water Resources Research*, v. 40: W07403, doi:10.1029/2003WR002650.
33. Furman*, A., T.P.A. Ferré, and A. W. Warrick. 2004. **Optimization of ERT Survey for rapid hydrological measurement using perturbation sensitivity approach and genetic algorithm.** *Vadose Zone Journal*, v. 3: 1230-1239.
32. Hook, W.R., T.P.A. Ferré, and N.J. Livingston. 2004. **The Effects of Salinity on the Accuracy and Uncertainty of Water Content Measurement.** *Soil Science Society of America Journal*, v. 68: 47-56.
31. Huisman, S., W. Bouten, J.A. Vrugt, and P.A. Ferré. 2004. **Accuracy of Frequency Domain Analysis Scenarios for the Determination of Complex Dielectric Permittivity.** *Water Resources Research*, v. 40, art. no. W02401.
30. Rucker*, D.F. and T.P.A. Ferré. 2004. **BGPR_Reconstruct: A MATLAB ray-tracing program for nonlinear inversion of first arrival travel time data from zero-offset borehole radar.** *Computers and Geosciences*, v. 30: 767-776.
29. Rucker*, D.F. and T.P.A. Ferré. 2004. **Correcting water content measurement errors associated with critically refracted first arrivals on zero offset profiling borehole ground penetrating radar profiles.** *Vadose Zone Journal*, v. 3: 278-287.
28. Rucker*, D.F. and T.P.A. Ferré. 2004. **Parameter Estimation for Soil Hydraulic Properties Using Zero-Offset Borehole Radar.** *Soil Science Society of America Journal*, v. 68: 1560-1567.
27. Vereecken, H., S. Hubbard, A. Binley, and T.P.A. Ferré. 2004. **Hydrogeophysics: An Introduction from the Guest Editors.** *Vadose Zone Journal*, v. 3: 1060-1062.
26. Dowman*, C.E.V., T.P.A. Ferré, J.P. Hoffmann, D.F. Rucker*, and J.B. Callegary*. 2003. **Quantifying ephemeral streambed infiltration from downhole temperature measurements collected before and after streamflow.** *Vadose Zone Journal*, v. 2: 595-601.
25. Ferré, T.P.A., G. von Glinski*, and L. A. Ferré. 2003. **Monitoring the Maximum Depth of Drainage in Response to Pumping Using Borehole Ground Penetrating Radar.** *Vadose Zone Journal*, v. 2: 511-518.
24. Ferré, T.P.A. and G. Kluitenberg. 2003. **Advances in Monitoring and Measurement Methods: Preface from the Guest Editors.** *Vadose Zone Journal*, v. 2: 443.
23. Ferré, T.P.A., H.H. Nissen, J.H. Knight, and P. Moldrup. 2003. **The Transverse Sample Area of Two- and Three-rod Time Domain Reflectometry Probes: Electrical Conductivity.** *Water Resources Research*, v. 39, no. 9: doi:10.1029/2002WR001572.
22. Ferré#, P.A., D.L. Rudolph, and R.G. Kachanoski. 2003. **The Electrical Conductivity Response of a Profiling Time Domain Reflectometry Probe.** *Soil Science Society of America Journal*, v. 67, no. 2: 494-496.
21. Furman*, A., T.P.A. Ferré, and A. W. Warrick. 2003. **A Sensitivity Analysis of Electrical-Resistance-Tomography Array Types Using Analytical Element Modeling.** *Vadose Zone Journal*, v. 2: 416-423.

20. Harlow*, R.C., E.J. Burke, and T.P.A. Ferré. 2003. **Measuring Water Content in Saline Soils Using Impulse Time Domain Transmission Techniques.** *Vadose Zone Journal*, v. 2: 433-439.
19. Harlow*, R.C., E.J. Burke, T.P.A. Ferré, J.C. Bennett, and W. J. Shuttleworth. 2003. **Measuring Spectral Dielectric Properties Using Gated Time Domain Transmission Measurements.** *Vadose Zone Journal*, v. 2: 424-432.
18. Masbruch*, K. and T.P.A. Ferré. 2003. **A Time Domain Transmission Method for Determining the Dependence of the Dielectric Permittivity on Volumetric Water Content: An Application to Municipal Landfills.** *Vadose Zone Journal*, v. 2: 186-192.
17. Nissen, H.H., P.A. Ferré, and P. Moldrup. 2003. **The Transverse Sample Area of Two- and Three-rod Time Domain Reflectometry Probes: Dielectric Permittivity.** *Water Resources Research*, v. 39, no. 10: doi:10.1029/2002WR001303.
16. Nissen, H.H., P.A. Ferré, and P. Moldrup. 2003. **Time Domain Reflectometry Developments in Soil Science: I. Unbalanced Two-Rod Probe Spatial Sensitivity and Sampling Volume.** *Soil Science*, v. 168, no. 2: 77-83.
15. Nissen, H.H., P.A. Ferré, and P. Moldrup. 2003. **Time Domain Reflectometry Developments in Soil Science: II. Coaxial Flow Cell for Measuring Effluent Electrical Conductivity.** *Soil Science*, v. 168, no. 2: 84-89.
14. Nissen, H.H., P.A. Ferré, and P. Moldrup. 2003. **Time Domain Reflectometry Developments in Soil Science: III. Small-Scale Probe for Measuring Bulk Soil Electrical Conductivity.** *Soil Science*, v. 168, no. 2: 90-98.
13. Rucker*, D.F. and T.P.A. Ferré. 2003. **Near-Surface Water Content Estimation with Borehole Ground Penetrating Radar Using Critically Refracted Waves.** *Vadose Zone Journal*, v. 2: 247-252.
12. Blasch*, K.W., T.P.A. Ferré, A.H. Christensen, and J.P. Hoffmann. 2002. **A New Field Method to Determine Streamflow Timing Using Electrical Resistance Sensors.** *Vadose Zone Journal*, v. 1: 289-299.
11. Ferré, T.P.A., H.H. Nissen, and J. Šimunek. 2002. **The Effect of the Spatial Sensitivity of TDR on Inferring Soil Hydraulic Properties from Water Content Measurements Made During the Advance of a Wetting Front.** *Vadose Zone Journal*, v. 1: 281-288. [Cover image of issue from this paper.]
10. Furman*, A., A. W. Warrick, and T.P.A. Ferré. 2002. **Electrical Potential Distributions in a Heterogeneous Subsurface in Response to Applied Current: Solution for Circular Inclusions.** *Vadose Zone Journal*, v. 1: 273-280.
9. Nissen, H.H., P.A. Ferré, and P. Moldrup. 2002. **Metal-coated Printed Circuit Board Time Domain Reflectometry Probes for Measuring Water and Solute Transport in Soil.** *Water Resources Research*, v. 39, no. 7: doi:10.1029/2000WR000168.
8. Ferré, P.A. 2000. **Review of “Principles of Hydrogeology”** by P. Hudack. *EOS, Trans. Am. Geophys. Union*, v. 81, no. 23: 256.
7. Ferré#, P.A., J.H. Knight, D.L. Rudolph, and R.G. Kachanoski. 2000. **A Numerically Based Analysis of the Sensitivity of Conventional and Alternative Time Domain Reflectometry Probes.** *Water Resources Research*, v. 36, no. 9: 2461-2468.
6. Ferré#, P.A., D.L. Rudolph, and R.G. Kachanoski. 2000. **Identifying the Conditions Amenable to the Determination of Solute Concentrations with Time Domain Reflectometry.** *Water Resources Research*, v. 36, no. 2: 633-636.
5. Ferré#, P.A., J.H. Knight, D.L. Rudolph, and R.G. Kachanoski. 1998. **The Sample Area of Conventional and Alternative Time Domain Reflectometry Probes.** *Water Resources Research*, v. 34, no. 11: 2971-2979.

4. Ferré, P.A., J.D. Redman, D.L. Rudolph, and R.G. Kachanoski. 1998. **The Dependence of the Electrical Conductivity Measured by Time Domain Reflectometry on the Water Content of a Sand.** *Water Resources Research*, v. 34, no. 5: 1207-1213.
3. Ferré, P.A., D.L. Rudolph, and R.G. Kachanoski. 1998. **The Water Content Response of a Profiling Time Domain Reflectometry Probe.** *Soil Science Society of America Journal*, v. 62, no. 4: 865-873.
2. Knight, J.H., P.A. Ferré, D.L. Rudolph, and R.G. Kachanoski. 1997. **The Response of a Time Domain Reflectometry Probe with Fluid-Filled Gaps around the Rods.** *Water Resources Research*, v. 33, no. 6: 1455-1460.
1. Ferré, P.A., D.L. Rudolph, and R.G. Kachanoski. 1996. **Spatial Averaging of Water Content by Time Domain Reflectometry: Implications for Twin Rod Probes with and without Dielectric Coatings.** *Water Resources Research*, v. 32, no. 2: 271-279.

Accepted Refereed Publications

1. Walsh, D.O., E.D. Grunewald, P. Turner, A. Hinnell, and T.P.A. Ferré. **Surface NMR Instrumentation and Methods for Detecting and Characterizing Water in the Vadose Zone.** (Accepted for publication in *Near Surface Geophysics*).
2. Dickinson, J., T.P.A. Ferré, M. Bakker, and B. Crompton. **A screening tool for delineating subregions of steady recharge within groundwater models.** (Submitted to *Vadose Zone Hydrology*.)
3. Kennedy, J., T.P.A. Ferré, A. Gunter, B. Creutzfeldt, M. Abe. **Direct measurement of sub-surface mass change using the variable-baseline gravity gradient method.** (Submitted to *Geophysical Research Letters*)

Refereed Publications in Submission

1. Goode, T.C., T.P.A. Ferré, and A.C. Hinnell. **Optimization of an Electrical Resistivity Tomography (ERT) System for Target Identification and Discrimination.** (Submitted to the *Journal of Applied Geophysics*.)
2. Norgaard, T., P. Moldrup, T.P.A. Ferré, S. Katuwall, P. Olsen, and L.W. de Jonge. **Field-scale Variation in Soil Dispersibility as Determined from Intact Soil Samples and Aggregates.** (Submitted to *Journal of Environmental Quality*.)

Published Book Chapters and Encyclopedia Articles

17. Stonestrom, D.A., Constantz, J., Ferré, T.P.A., and Leake, S.A., eds., 2007, **Ground-water recharge in the arid and semiarid southwest, U.S.A.:** U.S. Geological Survey Professional Paper 1703: Reston, VA, U.S. Geological Survey.
16. Ferré, T.P.A., A. Binley, K.W. Blasch, J.B. Callegary, S.M. Crawford, J.B. Fink, A.L. Flint, L.E. Flint, J.P. Hoffmann, J.A. Izbicki, M.T. Levitt, D.R. Pool, and B.R. Scanlon. 2007. **Geophysical Methods for Investigating Ground-Water Recharge.** In USGS Professional Paper 1703: 375-412.
15. Topp, G.C., G.W. Parkin and T.P.A. Ferré 2007. Soil water content, Ch. 70. In M.R. Carter and E.G. Gregorich, (eds.). **Soil Sampling and Methods of Analysis**, 2nd Ed., CRC Press, Taylor & Francis Group, Boca Raton, FL, USA. p. 939-961.
14. Cassiani, G., A.M. Binley, and T.P.A. Ferré. 2006. **Unsaturated Zone Processes.** *Applied Hydrogeophysics*, NATO Science Series, IV Earth and Environmental Sciences, v. 71: 75-116.

13. Topp, G.C. and T.P.A. Ferré. 2006. **Measuring Soil Water Content**. Encyclopedia of Hydrological Sciences. John Wiley and Sons: 1077-1088.
12. Ferré, P.A. and A.W. Warrick. 2005. **Infiltration**. Encyclopedia of Soils in the Environment, D. Hillel, Ed., Elsevier Ltd., Oxford, UK.: 254-259.
11. Ferré, P.A. and A.W. Warrick. 2005. **Hydrodynamics in Soils**. Encyclopedia of Soils in the Environment, D. Hillel, Ed., Elsevier Ltd., Oxford, UK.: 227-230.
10. Topp, G.C. and P.A. Ferré. 2005. **Time Domain Reflectometry**. Encyclopedia of Soils in the Environment, D. Hillel, Ed., Elsevier Ltd., Oxford, UK.: 174-181.
9. Blasch*, K., T.P.A. Ferré, J. Hoffmann, D. Pool, M. Bailey*, and J. Cordova*, 2004, **Processes controlling recharge beneath ephemeral streams in southern Arizona**, in Groundwater Recharge in a Desert Environment: The Southwestern United States, edited by J.F. Hogan, F.M. Phillips, and B.R. Scanlon, Water Science and Applications Series, vol. 9, American Geophysical Union, Washington, D.C.: 69-76
8. Ferré, P.A., A. Binley, J. Geller, E. Hill, and T. Illanngasekare. 2004. **Hydrogeophysical Methods at the Laboratory Scale**, in Hydrogeophysics, Eds. Y. Rubin and S. Hubbard, Springer, Netherlands: 441-463.
7. Hoffmann, J.P., K.W. Blasch*, and P.A. Ferré. 2003. **Combined Use of Heat and Soil Water Content to Determine Stream/Ground-Water Exchanges, Rillito Creek, Tucson, Arizona**. Heat as a Tool for Studying the Movement of Ground Water Near Streams. USGS Circular 1260: 47-55.
6. Ferré, P.A. and G.C. Topp. 2002. **Time Domain Reflectometry in Water Content Measurement Methods**. Methods of Soil Analysis, American Society of Agronomy: 434-446.
5. Topp, G.C. and P.A. Ferré. 2002. **The Basis of Electromagnetic Methods: a Wave Equation Framework in Water Content Measurement Methods**. Methods of Soil Analysis, American Society of Agronomy: 428-433.
4. Topp, G.C. and P.A. Ferré. 2002. **Thermogravimetric Methods Using Convective Oven Drying in Water Content Measurement Methods**. Methods of Soil Analysis, American Society of Agronomy: 422-424.
3. Topp, G.C. and P.A. Ferré. 2002. **Thermogravimetric Methods Using Microwave Oven Drying in Water Content Measurement Methods**. Methods of Soil Analysis, American Society of Agronomy: 425-428.
2. Topp, G.C. and P.A. Ferré, editors. 2002. **Water Content Measurement Methods**. Methods of Soil Analysis, American Society of Agronomy: 417-545.
1. Ferré, P.A. and G.C. Topp. 1999. **Time Domain Reflectometry Techniques for Soil Water Content and Electrical Conductivity Measurements**. Sensors Update, v. 7: 277-300.

Book Chapters in Submission

Patents

Title: **Probes for Measurement of Complex Dielectric Permittivity of Porous and Other Materials**. Inventors: Livingston, N.J. and T.P.A. Ferré. Filed: December 23, 2002.

Title: **Multilevel Waveguide for Profiling Water Content and Bulk Electrical Conductivity Using Time Domain Reflectometry**. Inventors: Ferré, P.A., D.L. Rudolph and R.G. Kachanoski. Filed: April 7, 1994.

Invited Talks

University of Nebraska, April 2012.

Water for Food Initiative Annual Meeting, May 2011.

American Geophysical Union Fall Meeting, December 2010.

Danish Technical University, Denmark, November 2010.

CESAR – Soil Inner Space, Denmark, November 2010.

Agronomic Society of America, October 2010.

Nuclear Regulatory Commission and United States Department of Agriculture, October 2010.

ETH-Zurich, Dani Or's research group, February 2010.

AGU, San Francisco, December 2009.

Agronomic Society of America, November 2009 (two presentations).

European Geophysical Union, April 2009 (personal conflict).

University of Wageningen, December 2008.

New Mexico State University, September 2008.

1st International Conference on Hydrogeology, Pennsylvania State University, July 2008. (Schedule conflict with BIRS conference.)

European Geophysical Union Meeting, Vienna, Austria, April 2008.

Princeton University, March 2008.

University of Alabama at Birmingham, February 2008.

American Geophysical Union Spring Meeting, Acapulco, Mexico, May 2007. (Personal conflict.)

Oregon State University, Corvallis, OR, November, 2006.

Plenary Talk: TDR2006, West Lafayette, IN, September 2006.

American Geophysical Union Spring Meeting, Baltimore, MD, May 2006. (Schedule conflict with Field Course.)

Plenary Talk: Canadian Geophysical Union and Canadian Society of Soil Science Joint Meeting, Banff, AB, May 2006.

Department of Geology and Geophysics, International Association of Hydrogeologists (Calgary Chapter), Calgary, AB, Canada, May 2006

European Geophysical Union Meeting, Vienna, Austria, April 2006.

University of California, Berkeley, Department of Civil and Environmental Engineering, Berkeley, CA, March 2006. (Schedule conflict with EGU.)

Oregon State University, Corvallis, OR, July 2005.

Oregon State University, Corvallis, OR, April 2005.

Northern Arizona University, Flagstaff, AZ, February 2005.

Gordon Conference on Flow through Porous Media, Oxford, England, July 2004.

University of Lancaster, England, July 2004.

Forschungszentrum Julich, Germany, May 2004.

University of Giessen, Germany, April 2004.

UFZ Centre for Environmental Research Leipzig-Halle, Germany, April 2004

NSF Funded Joint U.S./Egyptian Workshop entitled, "Integration of Remote Sensing and Geographic Information Systems (GIS) Technology for Assessing and Managing Surface and Ground Water in Egypt", Cairo, Egypt, December 2003.

University of Waterloo, Ontario, Canada, September 2003.

University Roma Tre, Rome, Italy, April 2003.

Soil Science Society of America Annual Meeting, Indianapolis, IN, November 2002.

Northern Arizona University, Flagstaff, AZ, October 2002.

Arizona Hydrologic Society, Tucson, AZ, January 2002.

Danish Agricultural Institute, Foulum, Denmark, May 2001.

Forschungszentrum Karlsruhe, Germany, May 2001.

Conference Session Chairs

Characterization and Noninvasive Imaging of Plant Roots and Other Hydrobiophysical Processes Across Scales. American Geophysical Union Fall Meeting, Dec 5 - 9, 2011, San Francisco, CA.

Involving End Users in the Design and Interpretation of Geophysical Surveys. Society for the Application of Geophysics to Environmental and Engineering Problems, April 11 - 13, 2011, Charleston, South Carolina.

Combining Modelling and Measuring to Improve Understanding of Subsurface Flow and Transport Systems. European Geophysical Union Annual Spring Meeting, April 3-8, 2011, Vienna, Austria.

Groundwater recharge: Processes and Quantification. European Geophysical Union Annual Spring Meeting, April 3-8, 2011, Vienna, Austria.

Hydrogeophysics in Subsurface Hydrology. European Geophysical Union Annual Spring Meeting, April 3-8, 2011, Vienna, Austria.

General Soil Physics. Soil Science Society of America Annual Meeting, October 31 – November 4, 2010, Long Beach, CA.

Connections - the Role of Connectivity In Soil Processes. Soil Science Society of America Annual Meeting, October 31 – November 4, 2010, Long Beach, CA.

Innovation: Novel Measurement Methods. Soil Science Society of America Annual Meeting, October 31 – November 4, 2010, Long Beach, CA.

Seeing into the Soil: Noninvasive Characterization of Biophysical Processes in the Soil Critical Zone. Soil Science Society of America Annual Meeting, October 5-9, 2008.

Hydrogeophysics - methods to identify properties and monitor processes governing water flow and solute transport in groundwater and vadose zones. European Geophysical Union Annual Spring Meeting, April 13 - 18, 2008, Vienna, Austria.

Advancing Measurement Techniques and Modeling Synergy for Environmental Soils Research in Space and Time. Soil Science Society of America Annual Meeting, November 4-8, 2007.

Applications of Geophysics for Groundwater Resources. National Groundwater Association, Groundwater Summit, Albuquerque, NM, April 29 – May 3, 2007.

Hydrogeophysics - methods to identify properties and monitor processes governing water flow and solute transport in groundwater and vadose zones. European Geophysical Union Annual Spring Meeting, April 2 - 7, 2006, Vienna, Austria.

Field Scale Characterization of Hydraulic Properties. American Geophysical Union Fall Meeting, Dec 5 - 9, 2005, San Francisco, CA.

Hydrogeophysics - methods to identify properties and monitor processes governing water flow and solute transport in groundwater and vadose zones. European Geophysical Union Annual Spring Meeting, April 24 - 29, 2005, Vienna, Austria.

Hydrogeophysics: characterization and monitoring of soil/rock properties and processes in the laboratory. American Geophysical Union Fall Meeting, Dec 13 - 17, 2004, San Francisco, CA.

Hydrogeophysics: methods to identify properties and monitor processes governing water flow and solute transport in groundwater and vadose zones. European Geophysical Union Annual Spring Meeting, April 25 - 30, 2004, Nice, France.

Hydrogeophysics: application of geophysical methods to hydrologic field investigations. American Geophysical Union Fall Meeting, Dec 5 - 10, 2003, San Francisco, CA.

Hydrogeophysics: methods to identify properties and monitor processes governing water flow and solute transport in groundwater and vadose zones. Combined American Geophysical Union and European Geophysical Society Annual Spring Meeting, April 7 - 11, 2003, Nice, France.

Subsurface Hydrologic Measurement Methods – A Special Symposium in Honor of Clarke Topp. Soil Science Society of America Annual Meeting, November 11-15, 2002, Indianapolis, IN.

Methods for Estimating Migration Parameters and Predicting Migration. Waste Management 2001, February 25 – March 1, Tucson, AZ.

Conferences and Meetings (Oral Presentations)

Christensen, N.K., S. Christensen, and T.P.A. Ferré, 2014. Testing how geophysics can reduce the uncertainty of groundwater model predictions. EGU, 27 April – 2 May, Vienna, Austria.

Ferré, T.P.A, C.P. Kikuchi, and J.A. Vrugt, 2014. Choosing the Right Measurements for the Right Reasons. EGU, 27 April – 2 May, Vienna, Austria.

- Goode, T. and T.P.A. Ferré. 2014. Optimization of Mobile Capacitatively-Coupled Geophysical Surveys for Tunnel Discrimination. SAGEEP, 16-20 March, Boston, MA.
- Kennedy, J.R., Ferre, P. A., Abe, M., Guentner, A., 2013. Increased accuracy through variable-baseline gradient measurements with superconducting gravimeters. AGU Fall meeting, San Francisco, December.
- Franz, T.F., M. Zreda, TPA Ferré, R Rosolem, S. Papuga, Z. Sanchez Mejia. 2013. Understanding the Spatiotemporal Distribution of Soil Moisture in the Santa Rita Experimental Range, RISE Symposium, 12 Oct, Tucson, AZ.
- Kennedy, J.R., Ferre, P.A., 2013. Newly Developed Gravity Methods for Monitoring Infiltration and Recharge. Arizona Hydro. Soc. Annual Symposium, Sept. 18-21. Tucson, AZ
- Kennedy, J., Ferre, P.A., Creutzfeldt, B., Guentner, A., Neumeyer, J., Brinton, E., Warburton, R., 2013. Smaller is better: first experiences using the iGrav superconducting gravimeter in a field enclosure. 17th International Symposium on Earth Tides. 15-19 April, Warsaw, Poland
- Kikuchi, C.P., T.P.A. Ferre. 2013. DIRECT: Discrimination Inference to Reduce Expected Cost Technique, Application to Groundwater-Surface Water Investigations, El Dia del Agua, April 10, Tucson.
- Ferré, T.P.A. 2013. Designing an augmented recharge facility for the Rio Teno basin. Rio Teno Agricultural Collective, April, Curico, Chile.
- Franz, T.E., M. Zreda, and T.P.A. Ferré. 2013. The effect of horizontal soil moisture heterogeneity on the cosmic-ray neutron probe. European Geophysical Union, Vienna, Austria, Apr. 7-12.
- Bayley, T., T.P.A. Ferre, and T. Leo. 2013. Monte-Carlo Model Generation for Optimization of Data Collection and Development of Probabilistic Model Projections. Nevada Groundwater Association Mine Water Management Symposium, Poster Presentation, Jan. 28-29.
- Creutzfeldt, B., J. Kennedy, and P. A. Ferré. 2012. Water-storage change measured with high-precision gravimetry at a groundwater recharge facility in Tucson, USA (Invited). AGU Fall Meeting, San Francisco, CA, 3-7 Dec.
- Groenendyk, D.G., T.P.A. Ferre, K.R. Thorp, W.T. Crow. 2012. Testing an Ensemble Kalman Filter for Assimilation of Soil Moisture into HYDRUS 1D and Coupled Crop Model. American Geophysical Union Fall 2012 Meeting, Poster Session, Dec. 3-7.
- Hundt, S., T.P.A. Ferre. 2012. Optimizing Gas Production in an Aquifer Using the Discrimination/Inference to Reduce Expected Cost Technique (DIRECT). American Geophysical Union Fall 2012 Meeting, Dec. 3-7.
- Kikuchi, C.P., T.P.A. Ferre, T. Bayley, S. Hundt. 2012. Discrimination-Inference to Reduce Expected Cost Technique: Application to groundwater-surface water investigations. American Geophysical Union Fall 2012 Meeting, Invited Talk, Dec. 3-7.
- Kennedy, J., B. Creutzfeldt, and P.A. Ferré. 2012. Monitoring vadose zone infiltration with time-lapse gravity data at a municipal recharge and withdrawal facility (Invited), Geological Society of America annual meeting, Charlotte, NC, 4-7 Nov.
- Kennedy, J., B. Creutzfeldt, P.A. Ferré, and A. Guntner. 2012. Gravity-measured water storage change and subsurface hydraulic properties at a managed recharge facility in Tucson, AZ (Invited). EAGE Near Surface Meeting, Paris, France, 3-5 Sept.
- Kennedy, J., B. Creutzfeldt, and T.P.A. Ferré. 2012. Recent developments in the use of time-lapse gravity measurements. USGS National Groundwater Meeting, Denver, CO, 6-10 Aug.

- Zreda, M., C. Zweck, T. Franz, R. Rosolem, B. Chrisman, J. Shuttleworth, X. Zeng, and T.P.A. Ferré. 2012. COsmic-ray Soil Moisture Observing System (COSMOS): an overview and recent progress. European Geophysical Union, Vienna, Austria, Apr. 22-7.
- Goode, T. and T.P.A. Ferré. 2012. Optimizing ERT Surveys for Tunnel Detection. Symposium on the Application of Geophysics to Engineering and Environmental Problems, Mar. 26-8.
- Franz, T., M. Zreda, and T.P.A. Ferré. 2012. Understanding the Spatiotemporal Distribution of Soil Moisture at Intermediate Spatial Scales Using Geophysical Methods. Symposium on the Application of Geophysics to Engineering and Environmental Problems, Mar. 26-8.
- Kennedy, J., T.P.A. Ferré, B. Creutzfeldt, and A. Guntner. 2012. Gravity-measured water storage change and subsurface hydraulic properties at a managed recharge facility in Tucson, AZ USA. Symposium on the Application of Geophysics to Engineering and Environmental Problems, Mar. 26-8.
- Ferré, T.P.A., D. Gosch, and D. Tosline. 2012. A novel approach to monitoring enhanced recharge with time lapse gravity. Symposium on the Application of Geophysics to Engineering and Environmental Problems, Mar. 26-8.
- Zreda, M., C. Zweck, T. Franz, R. Rosolem, J. Shuttleworth, X. Zeng, and T.P.A. Ferré. 2012. Measuring area-average soil moisture using cosmic-rays, Second International Soil Moisture Sensing Technology Conference, Manoa, Hawaii, Jan. 3-7.
- Bayley, T.W., T. Shipman, M.J. Thomasson, and T.P.A. Ferré. 2011. Outcome Prioritized Assessment for Water Resources. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.
- Ferré, T.P.A. 2011. Puzzles, Mysteries, and Conundrums: Three Modes of Hydrogeophysical Investigation. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9, 2011.
- Franz, T.E., R. Rosolem, M. Zreda, T.P.A. Ferré, C. Zweck, X. Zeng, and J. Shuttleworth. 2011. COSMOS: An In Situ Soil Moisture Observational Network At Intermediate Spatial Scales. ASA International Annual Meeting, San Antonio, TX, Oct 16-19.
- Rice, A. and T.P.A. Ferré. 2011. Reclassifying Soils Based on Hydrologic Function. ASA International Annual Meeting, San Antonio, TX, Oct 16-19.
- Ferré, T.P.A. 2011. Aquifer tests: interesting hydrogeophysical insights related to merging monitoring well and gravity data for aquifer test analyses. Workshop on the state and future of gravimeter measurements for hydrology, Tucson, AZ, May 23.
- Creutzfeldt, B., T.P.A. Ferré, and A. Guntner. 2011. Using superconducting gravimeters for local water storage change monitoring: Case study of the Geodetic Observatory Wettzell, Germany. Society for the Application of Geophysics to Environmental and Engineering Problems, Charleston, SC, April 10-14.
- Ferré, T.P.A. 2011. Emphasizing Collaboration in Hydrogeophysical Research. European Geophysical Union, Vienna, Austria, April 3-8.
- Bechtold, M., S. Haber-Pohlmeier, J. Vanderborght, A. Pohlmeier, T.P.A. Ferré, and H. Vereecken. 2011. Deep and near-surface solute redistribution during evaporation leads to high-concentration spots and loops of solute mass fluxes, European Geophysical Union, Vienna, Austria, April 3-8.
- Ferre, T.P.A.. 2010. Process-Facilitated Characterization – A Promising Direction in Hydrogeophysics. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 14-18.
- Ferre, T.. 2010. Evolving Patterns of Connectedness During Unsaturated Flow: A Possible Role for Geophysics in Soil Science? CESAR – Soil Inner Space, Foulum, Denmark, Nov 30 – Dec 2.

- Ferre, T.P.A. 2010. Are We Ready for Google Underground? Danish Technical University, Copenhagen, Denmark, Dec 5.
- Ferre, T.P.A. and M. Tuller. 2010. Evolving Patterns of Connectedness During Unsaturated Flow: A Possible Role for Geophysics in Soil Science? ASA International Annual Meeting, Long Beach, CA, Oct 31 – Nov 4.
- Ferre, T.P.A. 2010. Monitoring the Seawater Interface with Simple Resistance Measurements. ASA International Annual Meeting, Long Beach, CA, Oct 31 – Nov 4.
- Hinnell, A.C., D. Walsh, and T.P.A. Ferre. 2010. Monitoring Root Water Uptake with NMR. ASA International Annual Meeting, Long Beach, CA, Oct 31 – Nov 4.
- Shuttleworth, W.J., M. Zreda, X. Zeng, C. Zweck, and T.P.A. Ferré. 2010. **The COsmic-ray Soil MOisture Observing System (COSMOS): a Non-Invasive, Intermediate Scale Soil Moisture Measurement Network.** British Hydrological Society Annual Symposium, Newcastle, England, July 19-23.
- Zreda, M., J.W. Shuttleworth, C. Zweck, X. Zeng, and T.P.A. Ferré. 2010. **The COsmic-ray Soil Moisture Observing System (COSMOS): a non-invasive, intermediate scale soil moisture measurement network.** European Geophysical Union Annual Meeting, Vienna, Austria, May 2-7.
- Zreda, M., D. Desilets, C. Zweck, and T.P.A. Ferré. 2010. **Measuring Soil Moisture Content Using Cosmic-Ray Fast Neutrons Emitted from Soils: a Near-Field Remote Sensing Tool.** European Geophysical Union Annual Meeting, Vienna, Austria, May 2-7.
- Ferré, T.P.A. 2009. **Identifying Opportunities to Invigorate Soil Science.** Soil Science Society of America Annual Meeting, Pittsburgh, PA, Nov. 1-5.
- Ferré, T.P.A. 2009. **Seeing What You Want To See.** Soil Science Society of America Annual Meeting, Pittsburgh, PA, Nov. 1-5.
- Ferré, T.P.A. and P.G. Cook. 2009. **When Does Averaging Equal Scaling? Thoughts on Isotopic and Geophysical Methods in Hydrogeology.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 14-18.
- Ferré, T.P.A. and A.C. Hinnell. 2009. **Viewing Geophysics in a Hydrologic Context (and Vice Versa).** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 14-18.
- Blasch, K.W., T.P.A. Ferré, and J.A. Vrugt. 2009. **Environmental Controls on Drainage Behavior of an Ephemeral Stream – Implications for Stream Restoration.** Montana Section of AWRA, Missoula, MT, Sept. 20 – Oct. 2.
- Desilets, D., M. Zreda and T.P.A. Ferré, 2009. **Land-Surface Hydrology and Intermediate Scales Using Cosmic-Ray Neutrons.** National Ground Water Association Summit, Tucson, AZ, April 19-23.
- Ferré, T.P.A., M.J. Thomasson, E.L. Montgomery, and H.W. Barter. 2009. **Effects of Anisotropy on the Maximum Extent of Influence of Wells and Dewatered Pits.** National Ground Water Association Summit, Tucson, AZ, April 19-23.
- Rice, A., T.P.A. Ferré, M. Zreda and D. Desilets. 2009. **Optimal Sensor Location: Comparison of Soil Textural Classification and Response Clustering Approaches.** National Ground Water Association Summit, Tucson, AZ, April 19-23.
- Thomasson, M.J., T.P.A. Ferré, L.A. Davis, and D. Weber. 2009. **Errors in Pore Pressure Predictions Associated with Two-Dimensional Modeling.** National Ground Water Association Summit, Tucson, AZ, April 19-23.
- Ferré, T.P.A., K.B. Blasch, and J.A. Vrugt. 2008. **The Value of Intuition: Firetrucks, Ice Cream Sales, and Rates of Death by Drowning.** Symposium in Honor of Shlomo Neuman's 70th Birthday, Tucson, AZ, October 25.

- Knight, J. and T.P.A Ferré. 2008. **Assessing the Susceptibility of Sensors to Local Property Variability.** Soil Science Society of America Annual Meeting, October 5-9.
- Ferré, T.P.A, K. W. Blasch, and J.A. Vrugt. 2008. **Inferring Hydraulic Parameters In a Layered Streambed Based on TDR Measurements Made during Active Flow and Recession: Impacts of High Dimensionality and Model Structural Error.** Soil Science Society of America Annual Meeting, October 5-9.
- Ferré, T.P.A, A.C. Hinnell, J.A. Vrugt, S. Moysey, S.A. Huisman, and M.B. Kowalsky. 2008. **Sequential, Joint, and Coupled Inversion: from the State of the Practice toward Improved Hydrogeophysical Assessment.** European Geophysical Union, Vienna, Austria, April 13-18.
- Chief, K., P.A. Ferré, B. Nijssen, and A. Hinnell 2008. **Soil air permeability and saturated hydraulic conductivity: Development of Soil Corer Air Permeameter (SCAP), Post-fire soil physical changes, and 3D air flow model in anisotropic soils.** W1188 Soil Physics Multi-State Research Group Annual Meeting, Las Vegas, NV. January 3.
- Blainey, J.B. and T.P.A. Ferré. 2007. **Use of Gravity and Drawdown Information to Estimate Hydraulic Properties during an Unconfined Aquifer Test.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 10-14.
- Ferré, T.P.A. 2007. **Part Art, Part Science. The Life and Times of Art W. Warrick.** Soil Science Society of America Annual Meeting, November 4-8, 2007.
- Ferré, T.P.A. and J.S. Selker. 2007. **The Wales Apparatus Reconsidered: An End to Mariotte's Hegemony?** Soil Science Society of America Annual Meeting, November 4-8.
- Chief, K., P.A. Ferré, B. Nijssen, and A. Hinnell 2007. **Soil air permeability and saturated hydraulic conductivity: Development of Soil Corer Air Permeameter (SCAP), Post-fire soil physical changes, and 3D air flow model in anisotropic soils.** American Indian Science and Engineering Society National Conference. Phoenix, AZ. November 3.
- Stonestrom, D.A., J.E. Constantz, T.P.A. Ferré, A.L. Flint, L.E. Flint, S.A. Leake, D.E. Prudic, B.R. Scanlon, and M.A. Walvoord. Assessing Ground-Water Recharge in the Arid and Semi-Arid Southwestern United States. Geologic Society of America Annual Meeting, Denver, CO, October 28-31, 2007.
- Chief, K., P.A. Ferré, B. Nijssen, and A. Hinnell 2007. **Soil air permeability and saturated hydraulic conductivity: Development of Soil Corer Air Permeameter (SCAP), Post-fire soil physical changes, and 3D air flow model in anisotropic soils.** Desert Research Institute Division of Hydrologic Sciences Seminar Series. Las Vegas, NV. October 19.
- Chief, K., P.A. Ferré, B. Nijssen, and A. Hinnell 2007. **Soil air permeability and saturated hydraulic conductivity: Development of Soil Corer Air Permeameter (SCAP), Post-fire soil physical changes, and 3D air flow model in anisotropic soils.** Proctor and Gamble Research and Technical Careers in Industry Conference. Cincinnati, OH. June 4.
- Ferré, T.P.A. 2007. **What's It Worth To You? The Likely Value of Geophysical Measurements.** National Groundwater Association, Groundwater Summit, Albuquerque, NM, April 29 – May 3.
- Blainey, J.B., T.P.A. Ferré, and J. Cordova. 2007. Use of Gravity and Drawdown Information to Estimate **Hydraulic Conductivity and Specific Yield during Unconfined Aquifer Testing: A Hydrogeophysical Approach.** National Groundwater Association, Groundwater Summit, Albuquerque, NM, April 29 – May 3.
- Hinnell, A.C. and T.P.A. Ferré. 2007. **Hydrologic Parameter Identifiability Using Electrical Resistivity.** National Groundwater Association, Groundwater Summit, Albuquerque, NM, April 29 – May 3.
- Fink W, J.M. Dohm, M.A. Tarbell, T.M. Hare, V.R. Baker, D. Schulze-Makuch, R. Furfaro, A.G. Fairén, T.P.A. Ferré, H. Miyamoto, G. Komatsu, and W.C. Mahaney. 2006. **Autonomous Tier-Scalable Reconnaissance Missions For Remote Planetary Exploration.** 4th International Planetary Probe Workshop, Pasadena, June 27-30.

- Huisman, J.A., T.P.A. Ferré, A. Kemna, H. Vereecken. 2006. **Towards Optimal Experimental Design in Hydrogeophysical Studies**. Computational Methods in Water Resources, Copenhagen, Denmark, June 19-22.
- Blainey, J., T.P.A. Ferré, Hinnell, A.C., and J.A. Vrugt. 2006. **Using Gravity Measurements to Infer Large Scale Hydraulic Properties**. European Geophysical Union, Vienna, Austria, April 2-7.
- Ferré, T.P.A. 2006. **Model Mismatch – A Hidden and Avoidable Source of Error in Using Indirect Measurements to Constrain Hydrologic Analyses**. European Geophysical Union, Vienna, Austria, April 2-7.
- Ferré, T.P.A., J. Cordova, and M.C. Hill. 2005. **Pumping Test Analyses Based on Gravity Measurements**. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.
- Furman, A., T.P.A. Ferré, and A.W. Warrick. 2005. **Optimizing the Design of Electrical Resistivity Tomography Surveys for Hydrologic Monitoring**. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.
- Ferré, T.P.A., J. Cordova, and M.C. Hill. 2005. **Large-Scale Hydraulic Property Estimation Using Gravimetry Design**. ASA International Annual Meeting, Salt Lake City, UT, Nov. 6-10.
- Hinnell, A.C. and T.P.A. Ferré. 2005. **Optimizing Electrical Resistance Tomography Surveys to Monitor Infiltration**. ASA International Annual Meeting, Salt Lake City, UT, Nov. 6-10.
- Ferré, T.P.A., J.T. Cordova and M.C. Hill. 2005. **Direct Integration of Gravity Measurements in Pumping Test Analyses**. EGU Spring Meeting, Vienna, Austria, April 25-29.
- Ferré, T.P.A. and A.C. Hinnell. 2005. **Benefits of Coupled Hydrogeophysical Modeling for ERT Survey Design**. EGU Spring Meeting, Vienna, Austria, April 25-29.
- Stonestrom, D.A., J. Constantz, T. P. A. Ferré, A.L. Flint, L.E. Flint, S.A. Leake, D.E. Prudic, B.R. Scanlon, M.A. Walvoord. 2005. **Assessing Groundwater Recharge in the Desert Southwest**. Geological Society of America Cordilleran Section Meeting, San Jose, CA, April 29-May 1.
- Huisman, S., W. Bouten, and T.P.A. Ferré. 2004. **Bridging the Gap between Geophysical Measurements and Hydrological Modelling**. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 13-17.
- Baker, V. R., J. M. Dohm, A. G. Fairén, T. P. A. Ferré, J. C. Ferris, H. Miyamoto, and D. Schulze-Makuch. 2004. **Extraterrestrial Hydrogeology**. Geological Society of America Fall Meeting, Denver, CO, Nov. 7-10.
- Bowman, R.S., J.E.A. Coonrod, P.T. Ferré, J.F. Hogan, F.M. Phillips, A. Rango, R. Rasmussen, E.E. Small, E.P. Springer, and E.R. Vivoni. 2004. **A Semiarid Long-Term Hydrologic Observatory at the Continental Scale: The Upper Rio Grande Basin**. Geological Society of America Fall Meeting, Denver, CO, Nov. 7-10.
- Ferré, T.P.A., B. Ekwurzel, B. Nijssen, K. Chief, S. Desilets, and M. Guardiola. 2004. **Plant/Soil Composition and Soil Permeability Following Wildfire**. Arizona Hydrological Society Annual Meeting, Tucson, AZ, Sept. 16-17.
- Ferré, T.P.A. and J.A. Huisman. 2004. **The Effects of Nonlinear Calibration on Measurement Uncertainty in Heterogeneous Media**. EGU Spring Meeting, Nice, France, April 25-30.
- Ferré, T.P.A.. 2004. **Considerations on Hydrogeophysical Monitoring in Aerobic Bioreactors**. Scientific Issues Related to Management of Landfills in Arid and Semi-Arid Regions, Tucson, AZ, Mar. 19.
- Ferré, T.P.A., A. Furman*, and A.W. Warrick. 2003. **Optimizing Electrical Resistance Tomography Surveys to Monitor Transient Water Flow**. Soil Science Society of America Annual Meeting, Denver, CO, Nov. 2-6.
- Ferré, T.P.A. and G. von Glinski. 2002. **Monitoring Delayed Drainage with Cross Borehole Ground Penetrating Radar**. Soil Science Society of America Annual Meeting, Indianapolis, IN, Nov. 11-15.

- Ferré, T.P.A., J. Washburne, and B. Nijssen. 2002. **The New GLOBE Moisture Content Sampling Campaign.** GLOBE Annual Meeting, Chicago, IL, July 22-26.
- Ferré, P.A. 2002. **Monitoring Delayed Drainage and Recovery with Borehole Ground Penetrating Radar.** W-188 Western Regional Meeting of the Soil Science Society, Las Vegas, NV, Jan. 2-5.
- Ferré, P.A., H.H. Nissen, and J.H. Knight. 2001. **A Comparison of the Sample Areas of TDR for Dielectric Permittivity and Electrical Conductivity Measurement: Numerical Analyses and Laboratory Results.** TDR2001, Evanston, IL, September 6-7.
- Nissen, H.H., P.A. Ferré, and J.H. Knight. 2001. **Numerical Analysis and Laboratory Measurement of the Effects of Sharp Dielectric Boundaries on the Travel Time Response of TDR.** TDR2001, Evanston, IL, September 6-7.
- Ferré, P.A., H.H. Nissen, P. Moldrup, and J.H. Knight. 2001. **The Sample Area of Time Domain Reflectometry Probes in Proximity to Sharp Dielectric Permittivity Boundaries.** Electromagnetic Wave Interaction with Water and Moist Substances, Weimar, Germany, May 13-16.
- Topp, G.C. and P.A. Ferré. 2001. **Electromagnetic Wave Measurements of Soil Water Content: A State of the Art.** Electromagnetic Wave Interaction with Water and Moist Substances, Weimar, Germany, May 13-16.
- Ferré, P.A. 2001. **The Effects of Sharp Dielectric Gradients on the Spatial Sensitivity of TDR Probes.** W-188 Western Regional Meeting of the Soil Science Society, Las Vegas, NV, Jan. 2-5.
- Ferré, P.A., H.H. Nissen, and P. Moldrup. 2000. **Numerical Analyses of the Effects of Sharp Dielectric Gradients on the Spatial Sensitivity of TDR Probes.** Soil Science Society of America Annual Meeting, Minneapolis, MN, Nov. 5-9.
- Topp, G.C. and P.A. Ferré. 2000. **In-Situ Sensors and Their Calibration.** Proceedings of the GEWEX/BAHC International Workshop on Soil Moisture Monitoring, Analysis and Prediction, Norman, OK, May 16-18.
- Ferré, P.A., W.R. Hook, N.J. Livingston and C. Bassey. 1999. **Errors in TDR-Determined Water Content in Saline Sand.** Proceedings of the Third Workshop on Electromagnetic Wave Interaction with Water and Moist Substances, Athens, GA, Apr. 12-14.
- Ferré, P.A., D.L. Rudolph. 1998. **Profiling Water Content with Time Domain Reflectometry.** Proceedings of Society for the Application of Geophysics to Environmental and Engineering Problems, Chicago, IL, March 22-26.
- Ferré, P.A., D.L. Rudolph and R.G. Kachanoski. 1994. **A Multilevel Waveguide for Profiling Water Content Using Time Domain Reflectometry.** Proceedings of Time Domain Reflectometry in Environmental, Infrastructure and Mining Applications, Evanston, IL, Sept. 7-9.
- Rudolph, D.L. and P.A. Ferré. 1994. **Field Scale Tracer Testing to Evaluate Solute Transport and Remedial Strategies in the Vadose Zone.** Proceedings of the Symposium on Advanced Methods for Groundwater Pollution Control, Udine, Italy. May 5-6.
- Schneider, G.W., S.M. DeRyck and P.A. Ferré. 1993. **The Application of Automated High Resolution DC Resistivity in Monitoring Hydrogeological Field Experiments.** Proceedings of the Society for the Application of Geophysics to Environmental and Engineering Problems, San Diego, CA, April 18-22.
- Ferré, P.A. and L.R. Silka. 1987. **Application of Soil Gas Surveys to Underground Storage Tank Monitoring and Leak Detection.** Proceedings of the National Water Well Association's Fourth Annual Eastern Regional Ground Water Conference, Burlington, VT, July 14-16.

Conferences and Meetings (Poster Presentations)

- Ferré, T.P.A., J. Kennedy, A. Gunter, B. Creutzfeldt, M. Abe, 2014. Using superconducting gravimeters as an infiltrometer. EGU, 27 April – 2 May, Vienna, Austria.
- Groenendyk D.G., Thorp K. R., Ferre T.P.A., Crow W.T. 2013. *Simulation Methodology to Inform Crop Yield Predictions from Remotely Sensed Soil Moisture Time Series*. NASA Terrestrial Ecology Science Team Meeting, La Cholla, CA, April.
- Kikuchi, C.P., J.C. Koch, C.M. Steelman, P.F. Schuster, Hydrologic characterization of a boreal catchment with modeling and field measurements of active layer characteristics, El Dia del Agua, April 10, 2013.
- Walsh, D.O., E.D. Grunewald, K. Keating, A.B. Sanderlin, S.J. Vogt, B.A. Bergin, S.L. Codd, T.P.A. Ferré, A.C. Hinnell, J. Butler, E. Reboulet, S. Knobbe, R. Knight. 2012. Long-term Monitoring of Hydrological Changes in the Near Surface via Surface NMR and Borehole NMR. SEG Hydrogeophysics Workshop, Boise, ID, July 8-11.
- Kennedy, J., D. Pool, P.A. Ferré, and C.R. Wilson. 2011. Using high-resolution gravity and pumping data to infer aquifer parameters. American Geophysical Union Fall Meeting, 2011, San Francisco, CA, Dec. 5-9.
- Rosolem, R., M. Zreda, C. Zweck, T. Franz, WJ Shuttleworth, X. Zeng, D. Desilets, T.P.A. Ferre, and S. Stillman. 2011. Can a COSMOS probe measure other environmental variables other than water content in the soils? American Geophysical Union Fall Meeting, 2011, San Francisco, CA, Dec. 5-9.
- Franz, T., M. Zreda, TPA Ferré, and C. Zweck. 2011. Understanding the Spatiotemporal Distribution of Soil Moisture from the Point to the Field Scales in a Southern Arizonan Dryland. American Geophysical Union Fall Meeting, 2011, San Francisco, CA, Dec. 5-9.
- Kikuchi, C., T.P.A. Ferré, and J.A. Vrugt. 2011. Multiple model analysis with discriminatory data collection (MMA-DDC): A new method for improving measurement selection. American Geophysical Union Fall Meeting, 2011, San Francisco, CA, Dec. 5-9.
- Naveed, M., P. Moldrup, M. Tuller, T. Ferré, K. Kawamoto, T. Komatsu, and L. de Jonge. 2012. Predicting Soil-Water Characteristics From Volumetric Contents of Pore-Size Analogue Particle Fractions. American Society of Agronomy Annual Meeting, Cincinnati, Oct. 21-24.
- Norgaard, T., P. Moldrup, T.P.A. Ferré, P. Olsen, and L.W. de Jonge. 2012. Field scale variation in water dispersible colloids from aggregate and intact soil samples: method comparison and relevance for leaching risk mapping. American Society of Agronomy Annual Meeting, Cincinnati, Oct. 21-24.
- Ferré, T.P.A. 2011. Would You Like Some Geophysics with That? The CUAHSI HydroGeoPhysics Facility. Society for the Application of Geophysics to Environmental and Engineering Problems, Charleston, SC, April 10-14.
- Hinnell, A.C., L. Wihermuller, D. Walsh, T.P.A. Ferré, and H. Vereecken. 2011. Determination of Soil Hydraulic Properties by Coupled Inversion of Laboratory Nuclear Magnetic Resonance. European Geophysical Union, Vienna, Austria, April 3-8.
- Witte, B.A., T.P.A. Ferré, M. Bechtold, P. Brooks, K.A. Lohse, and A.C. Hinnell. 2011. Evaluating Hydraulic Response to Soils to Cyclic Infiltration. European Geophysical Union, Vienna, Austria, April 3-8.
- Ferré T.P.A. and J.S. Selker, 2010. Rediscovering the Wales Apparatus. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 14-18.
- Kikuchi, C., T.P.A. Ferré, J. Welker, and B. Cohn. 2010. Using spatially telescoping measurements to characterize groundwater contribution along a small stream in south-central Alaska. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 14-18.

- Witte, B.A., T.P.A. Ferré, M. Bechtold, P. Brooks, K.A. Lohse, and A.C. Hinnell. 2011. Evaluating Hydraulic Response to Soils to Cyclic Infiltration. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 14-18.
- Resurreccion, A., P. Moldrup, P. Schjonning, M. Tuller, T. Ferre, K. Kawamoto, T. Komatsu, and L. de Jonge. The Soil Characteristic Curve at Low Water Contents: Relations to Specific Surface Area and Texture. ASA International Annual Meeting, Long Beach, CA, Oct 31 – Nov 4.
- Soto-Lopez, C.D., T. Meixner, and T.P.A. Ferré, 2010. Uncertainties in temperature based estimates of stream-aquifer flux. American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 14-18.
- Tuller, M., Mirjat, M. and T. Ferre. Optimization of Border Irrigation for Salinity Control in Arid and Semiarid Regions., Long Beach, CA, Oct 31 – Nov 4.
- Ferré, T.P.A. 2010. Would You Like Some Geophysics with That? The CUAHSI HydroGeoPhysics Facility. Hydrology Conference, San Diego, CA, Oct. 11-13.
- Rice, A., P.A. Ferré, D. Desilets, and M. Zreda. 2008. Predicting the Likely Value of Cosmic-Ray Neutron Measurements to Estimate Soil Hydraulic Properties and ET rates. European Geophysical Union, Vienna, Austria, April 13-18, 2008.
- Ferré, T.P.A., J.A. Vrugt, G. von Glinski, and A.C. Hinnell. 2007. **Characterizing the Response of an Unconfined Aquifer to Pumping with Borehole Ground Penetrating Radar.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 10-14.
- Desilets, S.L.E., T.P.A. Ferré, B. Ekwurzel. 2006. **Stable isotopes yield new insights into flash flood composition and routing in a semi-arid watershed.** AGU Fall Meeting, San Francisco, CA, Dec. 11-15.
- Young, E.M., A.E. Springer, and T.P.A. Ferré. 2006. **Numerical Optimization of Readily Acquired Data to Determine Maximum Frost Depth and Freeze Thaw Frequency** Geological Society of America Annual Meeting, Philadelphia, PA, Oct. 22-25.
- 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.** World Congress of Soil Science, Philadelphia, PA, July 9-15, 2006.
- Fink, W., J.M. Dohm, M.A. Tarbell, T.M. Hare, V.R. Baker, D. Schulze-Makuch, R. Furfaro, A.G. Fairén, T.P.A. Ferré, H. Miyamoto, G. Komatsu, and W.C. Mahaney. 2006. **Autonomous Tier-Scalable Reconnaissance Missions for Remote Planetary Exploration.** International Planetary Probe Workshop, Pasadena, CA, June 27-30.
- Hinnell, A.C., T.P.A. Ferré, J.A. Vrugt. 2006. **Inferring Unsaturated Hydraulic Properties from Measurements Made in Angled Boreholes.** European Geophysical Union, Vienna, Austria, April 2-7, 2006.
- Fink, W., J.M. Dohm, M.A. Tarbell, T.M. Hare, V.R. Baker, D. Schulze-Makuch, R. Furfaro, A.G. Fairén, T.P.A. Ferré, H. Miyamoto, G. Komatsu, and W.C. Mahaney. 2006. **Multi-Tier, Multi-Agen Autonomous Robotic Planetary Surface/Subsurface Reconnaissance for Life.** Lunar and Planetary Sciences Conference, League City, Texas, March 13-17.
- Blainey*, J., J. Pelletier, and T.P.A. Ferré. 2005. **Using Surficial Geomorphic Information to Describe Spatial and Temporal Variation of Infiltration on Alluvial Fans in Semi-Arid Environments** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.
- Chief*, K., T.P.A. Ferré, and B. Nijssen. 2005. **Design and Testing of a Soil-Corer Air Permeameter.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.

- Desilets*, S.L., B. Nijssen, B. Ekwurzel, and T.P.A. Ferré. 2005. **Optimizing the Design of Electrical Resistivity Tomography Surveys for Hydrologic Monitoring.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.
- Faust*, A.E., T.P.A. Ferré, and M.G. Schaap. 2005. **Can Basin-scale Recharge be Estimated Reasonably with Water Balance Models?.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.
- Hinnell*, A.C., T.P.A. Ferré, and A.W. Warrick. 2005. **Effects of use of sloping boreholes on vadose zone monitoring.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.
- Zreda, M., D. Desilets, and T.P.A. Ferré. 2005. **Cosmic-Ray Neutron Probe: Non-Invasive Measurement of Soil Water Content.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 5-9.
- Chief*, K., T.P.A. Ferré, and B. Nijssen. 2005. **Design and Testing of a Soil-Corer Air Permeameter.** ASA International Annual Meeting, Salt Lake City, UT, Nov. 6-10.
- Hinnell*, A.C., T.P.A. Ferré, and A.W. Warrick. 2005. **The Effects of Water Flow around Time Domain Reflectometry Probes on Water Content Measurement.** ASA International Annual Meeting, Salt Lake City, UT, Nov. 6-10.
- Whitaker, M.P.L., J. Washburne, T.P.A. Ferré, and B. Nijssen. 2005. **Globe One: a Collaborative Field Campaign with Volunteer- and Student-Collected Data.** ASA International Annual Meeting, Salt Lake City, UT, Nov. 6-10.
- Whitaker*, M.P.L., J. Washburne, T.P.A. Ferré, and B. Nijssen. 2005. **Globe One: a Collaborative Field Campaign with Volunteer- and Student-Collected Data.** ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT, Nov. 6 - 10.
- Whitaker*, M.P.L., J. Washburne, T.P.A. Ferré, and B. Nijssen. 2005. **A New GLOBE Partner in Sonora, México.** Annual GLOBE Conference, Prague, Czech Republic, July 31 – Aug. 5.
- Callegary*, J.B. T.P.A. Ferré and R.W. Groom. 2005. **Three Dimensional Spatial Sensitivity of Low-Induction-Number Frequency-Domain Electromagnetic-Induction Instruments.** American Geophysical Union Spring Meeting, New Orleans, LA, May 23-27.
- Whitaker*, M.P.L., B. Nijssen, J. Washburne, and T.P.A. Ferré. 2005. **GLOBE Student Observations in support of SMEX04.** Annual Meeting of the American Meteorological Society, San Diego, CA, Jan. 8-14.
- Barnes*, F. and T.P.A. Ferré. 2004. **Using Relative Gravity Measurements to Monitor Transient Infiltration.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 13-17.
- Hinnell*, A.C. T.P.A. Ferré, and A. Warrick. 2004. **Examining the Influence of TDR-Rod-Induced Flow Disruption on Measured Water Content during Steady State Flow.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 13-17.
- Von Glinski*, G. and T.P.A. Ferré. 2004. **Using Borehole Ground Penetrating Radar to Monitor Transient Flow during Pumping of an Unconfined Aquifer.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 13-17.
- Whitaker*, M.P.L., J. Washburne, B. Nijssen, and T.P.A. Ferré. **The GLOBE Soil Moisture Campaign's Cross-Border Science-Education Outreach and SMEX04-NAME.** The 2nd International Symposium on Transboundary Waters Management, , Tucson, AZ, Nov. 6-19, 2004.
- Hinnell*, A.C. T.P.A. Ferré, and A. Warrick. 2004. **The Influence of TDR-Rod-Induced Flow Disruption on Measured Water Content during Steady State Flow.** Kirkham Conference, Logan, UT, Oct. 28-29.

- Leon*, E., J.P. Hoffmann, and T.P.A. Ferré. 2004. **Numerical Ground-Water Flow Model of the Verde River Headwaters Area.** Arizona Hydrological Society Annual Meeting, Tucson, AZ, September 16-17.
- Young*, E.M., A.E. Springer, T.P.A. Ferré, and R.W. Wilkinson. 2004. **Determining the frost penetration depth in two stoney and one non-stoney soil types using the SHAW model and field based data in Northern Arizona.** Arizona Hydrological Society Annual Meeting, Tucson, AZ, Sept. 16-17.
- Callegary, J.B. and T.P.A. Ferré. 2004. Re-evaluation of Spatial Sensitivity of Low-Induction-Number Frequency-Domain Electromagnetic-Induction Instruments: Implications for Improved Efficiency in Field Surveys. Joint CGU-AGU-SEG-EEGS Spring Meeting, Montreal, Canada, May 17-21.
- El-Kaliouby, H. and T.P.A. Ferré. 2004. **Integrated hydrologic and TEM forward modeling in MATLAB.** EGU Spring Meeting, Nice, France, April 25-30.
- Blasch*, K.W., T.P.A. Ferré, J.P. Hoffmann, and J.T. Cordova. 2003. **Field Measured Infiltration Fluxes at the Onset of Ephemeral Streamflow.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8-12.
- Chief*, K., B. Nijssen, T.P.A. Ferré, B. Ekwurzel. 2003. **Development of an Air Permeameter for Monitoring Changes in Hydraulic Conductivity of Surface Soils due to Fire: Measurements Made Following the 2003 Aspen Fire in Sabino Canyon, Arizona** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8-12.
- Einloth, S.L., K.D. Chief*, B. Ekwurzel, B. Nijssen, and P.A. Ferré. 2003. **Monsoon Season Surface Water Chemistry Response Following Wildfire: 2003 Aspen Fire in Sabino Canyon, Arizona.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8-12.
- Furman*, A., T.P.A. Ferré, and G. Heath. 2003. **A Comparison of Surface and Surface-Borehole ERT Arrays for Monitoring Subsurface Hydrologic Processes at the INEEL Site.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8-12.
- Scott, R.L., K. Hultine, and P.A. Ferré. 2003. **The Ecohydrological Interactions between Mesquite and Its Water Source.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8-12.
- Thomasson, M.J., J.P. Hoffmann, and P.A. Ferré. 2003. **Numerical Solutions Used to Test the Effects of Lithology and Recharge Rates on Temperature Profiles beneath Ephemeral Streams in Southern Arizona.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8-12.
- Whitaker*, M.P., Tietema*, D., T.P.A. Ferré, B. Nijssen, and J. Washburne. 2003. **The GLOBE Soil Moisture Campaign's Light Bulb Oven.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8-12.
- Whitaker*, M.P., J. Washburne, T.P.A. Ferré, and B. Nijssen. 2003. **The GLOBE Soil Moisture Campaign and SMEX03: Making it Real for Teachers.** American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 8-12.
- Furman*, A., A. Hinnell*, A.W. Warrick, and T.P.A. Ferré. 2003. **Analysis of the Influence of Measurement Devices on Flow Fields: TDR and Heat Pulse Probes.** Soil Science Society of America Annual Meeting, Denver, CO, Nov. 2-6.
- Fielding*, G. 2003. **Water through Life, A New Technique for Mapping Shallow Water Tables in Arid and Semi-Arid Climates Using Color Infrared Aerial Photographs.** EGS-AGU-EUG Joint Assembly, Nice, France, Apr. 4-9.
- Furman*, A., T. P.A. Ferré, and A.W. Warrick. 2003. **Optimizing Electrical Resistivity Tomography Surveys to Monitor Transient Hydrologic Processes.** EGS-AGU-EUG Joint Assembly, Nice, France, Apr. 4-9.

- Harlow*, R.C., E.J. Burke, R.L. Scott, C.M. Brown, J.R. Petti, T.P.A. Ferré, and W.J. Shuttleworth. 2003. **Determination of soil moisture and infiltration using minimal soil water content data in conjunction with detailed temperature profiles via a robust optimization routine.** EGS-AGU-EUG Joint Assembly, Nice, France, Apr. 4-9.
- Rucker*, D.F. and T. P.A. Ferré. 2003. **Improved Analysis of Zero Offset Profiling Borehole Ground Penetrating Radar Measurements for Hydrologic Monitoring.** EGS-AGU-EUG Joint Assembly, Nice, France, Apr. 4-9.
- Whitaker*, M.P.L., T. P.A. Ferré, B. Nijssen, and J. Washburne. 2003. **The GLOBE Soil Moisture Project's examination of a low-technology method for measuring gravimetric soil moisture.** EGS-AGU-EUG Joint Assembly, Nice, France, Apr. 4-9.
- Whitaker*, M.P.L., B. Nijssen, J. Washburne, and T. P.A. Ferré. 2003. **GLOBE Soil Moisture Measurement Campaigns: Toward School-based Validation of Satellite Measurements and Model Predictions.** American Meteorological Society Annual Meeting, Long Beach, CA, Feb. 9-13.
- Hogan, J.F., C. Duffy, C. Eastoe, T.P.A. Ferré, D. Goodrich, J. Hendrickx, B. Hibbs, F. Phillips, E. Small, and J. Wilson. 2003. **Basin-scale recharge in the Southwestern United States.** EGS-AGU-EUG Joint Assembly, Nice, France, Apr. 4-9.
- Burke, E.J., R.C. Harlowe*, and T. P.A. Ferré. 2002. **Measurements of Whole Canopy Water Status Using an Impulse Time Domain Transmission Technique.** American Geophysical Union Fall Meeting, San Francisco, Dec. 6-10.
- Harlow*, R.C., K.W. Blasch*, C.M. Brown, J.R. Petti, W.J. Shuttleworth, T. P.A. Ferré and E.J. Burke. 2002. **Measurements of Whole Canopy Water Status Using an Impulse Time Domain Transmission Technique.** American Geophysical Union Fall Meeting, San Francisco, Dec. 6-10.
- Whittaker*, M.P.L., T. P.A. Ferré, B. Nijssen, and J. Washburne. 2002. **Can Your Global Climate Modeling Project Use a Global Soil Moisture Data Set?** American Geophysical Union Fall Meeting, San Francisco, Dec. 6-10.
- Furman*, A., T.P.A. Ferré, and A.W. Warrick. 2002. **Analytic Element Modeling to Investigate the Spatial Sensitivity of ERT.** Soil Science Society of America Annual Meeting, Indianapolis, IN, Nov. 11-15.
- Rucker*, D.F. 2002. **A Comparative Study of Buried and Downhole Geophysical Instruments During a 1-Step Inflow Experiment.** NATO Advanced Study Institute on Hydrogeophysics: Improved Subsurface Characterization using Integrated Hydrogeological and Geophysical Data. Trest, Czech Republic, July 17-28.
- Rucker*, D.F. and P. A. Ferré. 2002. **Measuring the Advance of a Wetting Front Using Cross Borehole GPR.** GPR 2002, 9th International Conference on Ground Penetrating Radar, Santa Barbara, CA, April 29-May 2.
- Rucker*, D.F. and P. A. Ferré. 2002. **A Back Propagation Neural Network for Identifying First-Break Times on Cross Borehole Ground Penetrating Radar Traces.** GPR 2002, 9th International Conference on Ground Penetrating Radar, Santa Barbara, CA, April 29-May 2.
- Dickinson*, J. 2002. **Numerical Analysis of the Preservation of Cyclical Climate Variations in Ground-Water Levels in Alluvial Basins.** USGS Southwest Ground Water Resources and Hydrogeologic Framework of the Desert South West, Annual Workshop, Tucson, AZ, April 22-26.
- Dowman*, C.E., J. Hoffmann and P. Ferré. 2002. **Estimation of Recharge Using Deep Temperature Profiles.** USGS Southwest Ground Water Resources and Hydrogeologic Framework of the Desert South West, Annual Workshop, Tucson, AZ, April 22-26.
- Faust*, A.E., A.L. Flint, P.A. Ferré, and S.A. Leake. 2002. **Application of Basin Scale Recharge Modeling to the Tucson Basin.** USGS Southwest Ground Water Resources and Hydrogeologic Framework of the Desert South West, Annual Workshop, Tucson, AZ, April 22-26.

- Lawler*, D., S. Leake, and Ty Ferré. 2002. **Using Streambed Temperature to Identify the Onset and Duration of Ephemeral Streamflow in the San Pedro River.** USGS Southwest Ground Water Resources and Hydrogeologic Framework of the Desert South West, Annual Workshop, Tucson, AZ, April 22-26.
- Dickinson*, J. 2002. **Numerical Analysis of the Preservation of Cyclical Climate Variations in the Phreatic Surface in Alluvial Basins.** El Dia del Agua, University of Arizona, Department of Hydrology and Water Resources, Tucson, AZ, April 12.
- Dowman*, C.E., J. Hoffmann and P. Ferré. 2002. **Estimating Recharge in the Semiarid Southwest Using Deep Temperature Profiles.** El Dia del Agua, University of Arizona, Department of Hydrology and Water Resources, Tucson, AZ, April 12.
- Harlow*, R.C., E.J. Burke, and P.A. Ferré. 2002. **Measuring Water Content in Saline Sands Using Impulse Time Domain Transmission Techniques.** El Dia del Agua, University of Arizona, Department of Hydrology and Water Resources, Tucson, AZ, April 12.
- Rucker*, D.F. 2002. **A Comparison of Responses from Buried Instruments to Cross Borehole GPR During the Advance of a Wetting Front.** El Dia del Agua, University of Arizona, Department of Hydrology and Water Resources, Tucson, AZ, April 12.
- Faust*, A.E., A.L. Flint, P.A. Ferré, and S.A. Leake. 2002. **Application of Basin Scale Recharge Modeling to the Tucson Basin.** SAHRA Second Annual Meeting, Tucson, AZ, February 25-March 1.
- Furman*, A., A.W. Warrick, and T.P.A. Ferré. 2002. **Application of Analytic Element Analysis to Define the Spatial Sensitivity of Electrical Resistance Tomography (ERT).** SAHRA Second Annual Meeting, Tucson, AZ, February 25-March 1.
- Hinnell*, A., P.A. Ferré, and A.A. Warrick. 2002. **Coupled Hydrological and Geophysical Forward Modeling to Optimize Water Content Monitoring using Electrical Resistivity Tomography.** SAHRA Second Annual Meeting, Tucson, AZ, February 25-March 1.
- Lawler*, D., S. Leake, and T. Ferré. 2002. **Using Streambed Temperature to Identify the Onset and Duration of Ephemeral Streamflow in the San Pedro River.** SAHRA Second Annual Meeting, Tucson, AZ, February 25-March 1.
- Furman*, A., A.W. Warrick, and T.P.A. Ferré. 2002. **Using Numerical Perturbation Analysis to Optimize Electrode Arrays for Rapid Subsurface Monitoring.** SAGEEP 2002, Annual meeting of the Environmental and Engineering Geophysical Society, Las Vegas, NV, February 10-14.
- Rucker*, D.F. and P.A. Ferré. 2002. **Direct Comparison of Ground Penetrating Radar Transillumination and In-Situ Time Domain Reflectometry for Monitoring the Advance of a Wetting Front.** SAGEEP 2002, Annual meeting of the Environmental and Engineering Geophysical Society, Las Vegas, NV, February 10-14.
- Blasch*, K.W., L.J. Meli*, and T.P.A. Ferré. 2001. **Modifications of Temperature Sensors to Aid in Determining Streamflow Timing and Duration.** American Geophysical Union Fall Meeting, San Francisco, Dec. 10-14.
- Blasch*, K.W., T.P.A. Ferré, and J.P. Hoffmann. 2001. **Using a Bed Sediment Thermograph from beneath an Ephemeral Stream to Identify Periods of Flow.** American Geophysical Union Fall Meeting, San Francisco, Dec. 10-14.
- Callegary*, J. and T.P.A. Ferré. 2001. **Borehole Geophysics and Surface Electromagnetic Induction Surveys to Describe Ephemeral Channel Recharge in the Sierra Vista Subwatershed of the Upper San Pedro Basin.** EOS, Transactions of the American Geophysical Union, vol.82, no.47, p. F462.

- Dowman*, C.E., J. Hoffmann, and P. Ferré. 2001. **Unsaturated Temperature Profiles to Evaluate Recharge Processes in the Semiarid Southwest**. American Geophysical Union Fall Meeting, San Francisco, Dec. 10-14.
- Rucker*, D.F. and P.A. Ferré, 2001. **Quantifying the Redistribution of Pore Water After Infiltration Using Ground Penetrating Radar**. American Geophysical Union Fall Meeting, San Francisco, Dec. 10-14.
- Blasch*, K.W., T.P.A. Ferré, and J.P. Hoffmann. 2001. **A Streambed-Temperature Method for Identifying the Occurrence of Streamflow: The Moving Standard Deviation Method**. 14th Annual Symposium of the Arizona Hydrological Society, Tucson, AZ, September 12-15.
- Dowman*, C.E., J. Hoffmann and P. Ferré. 2001. **Unsaturated Temperature Profiles to Evaluate Recharge Processes in the Semiarid Southwest**. 14th Annual Symposium of the Arizona Hydrological Society, Tucson, AZ, September 12-15.
- Lawler*, D. 2001. **Monitoring Flow Events Using Diurnal Streambed Temperature Fluctuations in the San Pedro River, Arizona**. 14th Annual Symposium of the Arizona Hydrological Society, Tucson, AZ, September 12-15.
- Rucker*, D.F. and P.A. Ferré. 2001. **The Determination of Sub-Antenna Scale Moisture Content from Cross-Borehole GPR Measurements**. 14th Annual Symposium of the Arizona Hydrological Society, Tucson, AZ, September 12-15.
- Lawler*, D. 2001. **Interpretation of Streambed Thermographs from the San Pedro River Drainage**. Southwest Groundwater Recharge Project Annual Meeting, Victorville, CA, May 2-4.
- Lawler*, D. 2001. **Using Temperature Sensors to Monitor the Spatial and Temporal Pattern of Streamflow in the San Pedro River, Arizona**. 45th Annual Meeting of the Arizona-Nevada Academy of Science, University of Nevada, Las Vegas, NV, April 14.
- Furman*, A., T.P.A. Ferré, and A.W. Warrick. 2001. **A Two-Dimensional Analysis of the Spatial Sensitivity of the Four-Electrode Electrical Resistivity Method**. El Dia del Agua, University of Arizona, Department of Hydrology and Water Resources, Tucson, AZ, April 4.
- Lawler*, D. 2001. **Monitoring Groundwater/Surface Water Interactions in the San Pedro River, Arizona, Using Low-Cost Temperature Sensors**. El Dia del Agua, University of Arizona, Department of Hydrology and Water Resources, Tucson, AZ, April 4.
- Furman*, A., T.P.A. Ferré, and A.W. Warrick. 2001. **A Two-Dimensional Analysis of the Spatial Sensitivity of the Four-Electrode Electrical Resistivity Method**. SAHRA First Annual Meeting, Tucson, AZ, February 20-23.
- Lawler*, D., S. Leake, J. Constantz, T. Ferré, and D. Goodrich. 2001. **Using Temperature Sensors to Monitor the Spatial and Temporal Pattern of Streamflow in the San Pedro River, Arizona**. SAHRA First Annual Meeting, Tucson, AZ, February 20-23.
- Fleming, J.B., M.A. Bailey*, K. W. Blasch*, and T.P.A. Ferré. 2001. **Monitoring Near Surface Changes In Temperature And Moisture Content To Characterize Infiltration In Rillito Creek, Tucson, Arizona**. 13th Annual Symposium of the Arizona Hydrological Society, Phoenix, AZ, September 12-14.
- Blasch*, K.W., J.B. Fleming, J.P. Hoffmann, and P.A. Ferré. 2000. **Temperature and Moisture Content Profiling of an Ephemeral Stream Channel In a Semiarid Watershed: Comparison of vertical infiltration velocities at the onset and cessation of flow**. American Geophysical Union Fall Meeting, San Francisco, Dec. 15-19.
- Nissen, H.H., P.A. Ferré, and P. Moldrup. 2000. **Laboratory Measurements of the Response of TDR Probes to Sharp Gradients in Dielectric Permittivity**. Soil Science Society of America Annual Meeting, Minneapolis, MN, Nov. 5-9.

- Nissen, H.H., P. Moldrup, and P.A. Ferré. 1999. **Improved High-Resolution Time Domain Reflectometry Probes for Measuring Water and Solute Transport in Soil.** Soil Science Society of America Annual Meeting, Salt Lake City, Utah, Oct. 31 – Nov. 4.
- Ferré, P.A., D.L. Rudolph and R.G. Kachanoski. 1995. **Monitoring Solute Removal from a Variably Saturated Soil during the Operation of a Pumping Well.** Vadose Zone Hydrology: Cutting across Disciplines, Davis, CA, Sept. 6-8.
- Ferré, P.A., D.L. Rudolph and R.G. Kachanoski. 1994. **Transient, Three Dimensional Water Content Monitoring.** Joint Annual Conference of the American Water Works Association and the Ontario Municipal Water Association, Windsor, ON, May 1-4.
- Ferré, P.A., D.L. Rudolph and R.G. Kachanoski. 1993. **Water Content Profiling with a Multilevel Time Domain Reflectometry Probe.** AGU Fall Meeting, San Francisco, CA, Dec. 6-10.

STUDENT ADVISING

(Titles in **bold** denote completed work. *Italicized* titles indicate works in progress.)

Graduate Thesis or Dissertation Advisor

- Bailey, Matthew. **Analysis of Vertical Hydraulic Conductivity Using Heat as a Tracer to Estimate Streambed Infiltration in Rillito Creek, Tucson, Arizona.** 2002. M.S., Hydrology and Water Resources, University of Arizona. Lawyer with Snell and Wilmer, LLP, Phoenix, AZ.
- Bayley, Tim. *Use of multimodel analysis to guide robust decision making.* Ph.D, Hydrology and Water Resources, University of Arizona.
- Blainey, Joan. **Using Coupled Modeling Approaches to Quantify Hydrologic prediction Uncertainty and to Design Effective Monitoring Networks.** 2008. Ph.D., Hydrology and Water Resources, University of Arizona. Co-Advised with Jon Pelletier. Hydrogeologist with Interra, Austin, TX.
- Blasch, Kyle. **Streamflow Timing and Estimation of Infiltration Rates in an Ephemeral Stream Channel Using Variably Saturated Heat and Fluid Transport Methods.** 2003. Ph.D., Hydrology and Water Resources, University of Arizona. Assistant Director, USGS, Bozeman, MT.
- Callegary, James. **Spatial Sensitivity of Low-Induction-Number Frequency-Domain Electromagnetic-Induction Instruments.** 2005. Ph.D., Soil, Water and Environmental Sciences, University of Arizona. Hydrologist USGS, Tucson, AZ.
- Chief, Karletta. **Soil Air Permeability and Saturated Hydraulic Conductivity: Development of Soil Corer Air Permeameter, Post-Fire Physical Changes, and Three-Dimensional Air Flow Model in Anisotropic Soils.** 2007. Ph.D., Hydrology and Water Resources, University of Arizona. Assistant Research Professor, University of Arizona, Tucson, AZ.
- Cordova, Jeff. **Optimizing Gravity Monitoring Networks for Characterizing Basin Scale Hydrology.** M.S., Hydrology and Water Resources, University of Arizona. Hydrologist USGS, Tucson, AZ.
- Desilets, Sharon. **Flood Processes in Semi-Arid Streams: Flood Routing and Groundwater-Surface Water Interactions.** 2007. Ph.D., Hydrology and Water Resources, University of Arizona. (Co-advised with Brenda Ekwurzel.)
- Dickinson, Jesse. M.S. **Inferring Time-Varying Recharge from Inverse Analysis of Long-Term Water Levels.** 2003. M.S., Hydrology and Water Resources, University of Arizona. Hydrologist USGS, Tucson, AZ.

- Dickinson, Jesse. Ph.D. "*Hydrologic Filters*" 2003. M.S., Hydrology and Water Resources, University of Arizona. Hydrologist USGS, Tucson, AZ.
- Dowman, Charles. **Measured Temperature Profiles to Evaluate Recharge in the Semiarid Southwest.** 2002. M.S., Hydrology and Water Resources, University of Arizona. Hydrogeologist, Geomatrix, Oakland, CA.
- Faust, Abbie. **The Effect of Pedo-Transfer Functions on Estimated Rates and Patterns of Potential Recharge.** 2003. M.S., Hydrology and Water Resources, University of Arizona. Hydrogeologist, Golder Associates, Atlanta, GA.
- Fielding, Gavin. **ARMETT - Arid Region Mapping of Evapo-Transpiration Technique.** 2003. M.S., Hydrology and Water Resources, University of Arizona. Arizona Army National Guard, Phoenix, AZ.
- Furman, Alex. **Steps Towards the Implementation of ERT for Monitoring Transient Hydrologic Processes.** 2003. Ph.D., Hydrology and Water Resources, University of Arizona. (Co-advised with Art Warrick.) Faculty Technion, Israel.
- Goode, Tomas. **Optimization of Electrical Geophysical Survey Design for Hydrogeological Applications and Subsurface Target Discrimination.** 2012. Ph.D., Hydrology and Water Resources, University of Arizona.
- Gosch, Damian. **Determining Fate and Transport Parameters for Nitroglycerine, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, and Nitroguanidine in Soils.** 2012. M.Sc Hydrology and Water Resources, University of Arizona. Hargis and Associates, Tucson, AZ.
- Groenendyke, Derek. "*Merging Satellite Imagery and Physical Models to Understand Limits to Crop Productivity*", Ph.D., Hydrology and Water Resources, University of Arizona.
- Harlow, Chawn. **Remote and In Situ Measurements of Soil and Vegetation Water Content.** 2003. Ph.D., Hydrology and Water Resources, University of Arizona. (Co-advised with Jim Shuttleworth. Meteorologist, UK Meteorology Office, Bristol, England.
- Hinnell, Andrew. **The Influence of TDR-Rod-Induced Flow Disruption on Measured Water Content During Steady-State Flow.** 2004. M.S., Hydrology and Water Resources, University of Arizona, 2004. Worley-Parsons, Calgary, AB.
- Hinnell, Andrew. **Merging Measurement and Modeling for More Efficient Hydrologic Analysis.** 2009. Ph.D., Hydrology and Water Resources, University of Arizona. Worley-Parsons, Calgary, AB.
- Hundt, Stephen. "*Modeling the potential impacts of microbial stimulation on water quality.*" M.S., Hydrology and Water Resources, University of Arizona.
- Kennedy, Jeff. "*Hydrologic Applications of Absolute and Relative Gravimeters.*" Ph.D., Hydrology and Water Resources, University of Arizona.
- Kikuchi, Colin. **Improved modeling of lake-groundwater interactions for integrated surface water groundwater management: a hierarchical modeling approach.** 2011. M.Sc., Hydrology and Water Resources, University of Arizona.
- Kikuchi, Colin. "*DIRECT: Discrimination Inference to Reduce Expected Cost Technique.*" Ph.D., Hydrology and Water Resources, University of Arizona.
- Lawler, David. **Using Streambed Temperature Sensors to Monitor Flow Events in the San Pedro River, Southeastern Arizona and North-Central Sonora, Mexico.** 2002. M.S., Hydrology and Water Resources, University of Arizona, 2002. Hydrogeologist, Interra, Albuquerque, NM.

- Leon, Elizabeth. **Sensitivity Analysis and Inverse Modeling of an Updated and Refined Numerical Groundwater Flow Model of the Prescott Active Management Area, Yavapai County, Arizona.** M.S., Hydrology and Water Resources, University of Arizona. Errol Montgomery and Associates, Phoenix, AZ.
- Masbruch, K. **A Time Domain Transmission Method for Determining the Dependence of the Dielectric Permittivity on Volumetric Water Content: Applications to Municipal Landfills.** 2002. M.S., Hydrology and Water Resources, University of Arizona. City of Tucson, Environmental Management, Tucson, AZ.
- Olander, Anastasia. **Comparison Of Measured Hydraulic Properties To Predicted Values for the Upper San Pedro Watershed, Arizona.** 2004. M.S., Hydrology and Water Resources, University of Arizona.
- Peterson, Lars. **Comparative Analysis of Step and Pulse Time Domain Transmission Techniques Using Laboratory Sands and Saline Pore Water.** M.S., Hydrology and Water Resources, University of Arizona. Hydrogeologist, Golder Associates, Phoenix, AZ.
- Rice, Amy. **Predicting Hydraulic Response: Comparison of Textural and Response Clustering Approaches to Soil Classification.** 2009. Research Scientist, Pacific Northwest National Laboratories, Richland, WA.
- Rucker, Dale. **“Improved Analysis of Borehole Ground Penetrating Radar to Monitor Transient Water Flow in the Vadose Zone.”** 2003, Ph.D., Hydrology and Water Resources, University of Arizona. Hydrogeophysics, Tucson, AZ.
- Von Glinski, Gerd. **Using BGPR to Monitor Water Content.** 2004. M.S., Hydrology and Water Resources, University of Arizona, Hydrogeologist, White River Apache Tribe.
- Young, Erin. **Maximum Frost Depth and Freeze-Thaw Frequency Measurements and Simulations at Bellemont, Arizona.** 2006. M.S., Geosciences, Northern Arizona University. (Co-advised with Abe Springer, Northern Arizona University) Hydrogeologist, Fluid Solutions, Phoenix, AZ.

Undergraduate and High School Research Advisor

- Ashton, Kelly. **Field Monitoring of Infiltration Using Borehole Ground Penetrating Radar.** B.S., Soil, Water and Environmental Science, University of Arizona, 2001.
- Cordova, Jeff. **Using Historical Flow Data to Predict Changes in Recharge Rates in the Tucson Basin.** B.S., Hydrology and Water Resources, University of Arizona, 2001.
- Finnerty-Rae, Eileen. **Correlation of Time Domain Reflectometry, Neutron Probe, and Gravimetric Water Content Measurements under Variable Surface Mulch Treatments.** B.S., Soil, Water and Environmental Science, University of Arizona, 2000.
- Hua, Ahn. **Developing a Methodology to Identify Introverted and Extroverted Children in Waiting Rooms for Improved Personalized Medicine.** Freshman Honors Independent Study, 2013.
- Jurkat, Tina. **Use of Time Domain Reflectometry to Measure Water Content in Soil.** B.S., Environmental Physics, University of Heidelberg, Germany, 2002.
- Quijada, Brandon. **Use of Ground Penetrating Radar to Study Infiltration in Rillito Creek.** B.S., Electrical Engineering, University of Arizona, 2000.
- Meli, Leo. **Designing a Simple Flow Instrument to Indicate the Duration of Flow in Ephemeral Streams.** B.S., Systems Engineering, University of Arizona, 2001.
- Mette, Jordan. **Reexamining the Meaning of Myers-Brigs Tests to Identify Introverts and Extroverts.** Freshman Honors Independent Study, 2013.

Thiptus, Warren. **Use of Ground Penetrating Radar to Study Infiltration in Rillito Creek. Designing a Monitoring System to Examine the Spatial Sensitivity of Borehole Ground Penetrating Radar Instruments.** B.S., Systems Engineering, University of Arizona, 2001.

Tietema, Doug. **Alternative Methods for Soil Drying without a Drying Oven.** B.S. Hydrology and Water Resources, University of Arizona, 2002.

Trail, Dan. **Use of Gravity to Monitor Aquifer Storage and Recovery.** B.S. Hydrology and Water Resources, University of Arizona, 20013.

Waite, Kelsey. **A Simple Resistance Instrument for Monitoring the Fresh Water / Salt Water Interface in Wells.** Sonoran Science Academy, 2010.

Witte, Becky. **Assessing the Impact of Flood Frequency on Infiltration.** B.S., Hydrology and Water Resources, University of Arizona, 2010.

Woodring, Josh. **To Eat or Not to Eat, an Interactive Game to Examine Evolution by Natural Selection.** Freshman Honors Independent Study, 2013.

Postdoctoral Research Advisor and Host to Visiting Scientists

Bechtold, Michel – Juelich Research Center, Germany, Coupled Electrical Conductivity and Flow and Transport Analysis, 2010.

Creutzfeldt, Benjamin – Potsdam Research Center, Germany, Use of Microgravity for Hydrologic Analysis, 2011.

El Kaliouby, Hesham. Cairo University. Spatial Sensitivity of Time Domain Electromagnetic Methods. 2002.

Furman, Alex. Optimizing Electrical Resistance Tomography Surveys to Monitor Transient Hydrologic Processes. 2003 - 2004.

Harlow, Chawn. Monitoring Soil Water Content at Intermediate Scales Using Cosmogenic Neutrons. 2003 - 2004.

Huisman, Sander. University of Amsterdam. Effects of TDR Probe Design on Measurement of the Frequency Dependent Dielectric Permittivity. 2001.

Knight, John. Australian National University. Spatial Sensitivity of Time Domain Reflectometry to Electrical Conductivity. 2001, 2002.

Nissen, Henrik. Aalborg University. Spatial Sensitivity of Time Domain Reflectometry to Dielectric Permittivity. 2000.

Parkin, Gary. Visiting Scientist. 2008. University of Guelph.

Rucker, Dale. Developing Multidimensional Alternative Hydraulic Functions to Describe Unsaturated Flow. 2003 - 2004.

Saito, Hiroataka. Visiting Scientist. 2008. University of Agriculture and Technology, Fuchu, Tokyo, Japan.

Whitaker, Martha. GLOBE Soil Moisture Protocol. Post Doctoral Researcher, Hydrology and Water Resources, University of Arizona, 2002 - present.

Thesis Committee Member

- Alter, Stacie. **Use of Biotracer Tests to Evaluate the Impact of Enhanced-Solubilization Flushing on In-Situ Biodegradation.** M.S., Hydrology and Water Resources, University of Arizona, **2000.**
- Anderson, Darcy. **Central Avra Valley Storage and Recovery Project Geochemical Modeling Study.** M.S., Hydrology and Water Resources, University of Arizona, **2000.**
- Blanford, Bill. **Characterization of Remediation of Pathogen, Solvent, and Petroleum Contaminated Aquifers.** Ph.D., Hydrology and Water Resources, University of Arizona, **2001.**
- Blattstein, Ayelet. **Stochastic Analysis of Transient Flow to a Well in a Randomly Heterogeneous Aquifer.** M.S., Hydrology and Water Resources, University of Arizona, **2006.**
- Blaylock, Myra. **Geophysics in the Upper San Pedro Watershed.** M.S., Physics, University of Arizona, **2001.**
- Bryson, Jeannie. **Determination of ground-water flow paths using stable isotopes as geochemical tracers: upper and middle Verde river watersheds, Arizona, USA.** M.S., Hydrology and Water Resources, University of Arizona. **2005.**
- Burkhart, John. **Sorption Behavior of Formaldehyde to Ice Grains.** M.S., Hydrology and Water Resources, University of Arizona, **2000.**
- Carlson, Tyson. **Effect of Velocity and Water Content on the Gas-Phase Partitioning Tracer Test for the In-Situ Measurement of Soil-Water Content in a Large Weighing Lysimeter.** M.S., Hydrology and Water Resources, University of Arizona, **2000.**
- Christoffersen, Bradley.
- DiGuilio, Dominic. **Development of Recommendations and Methods to Support Assessment of Soil Venting Performance and Closure.** Ph.D., Soil, Water and Environmental Sciences, University of Arizona, **2002.**
- Davies, Darian. **A Study of Perched Mound Growth and Dissipation: Potential Effects on Artificial Recharge Efficiency.** M.S., Hydrology and Water Resources, University of Arizona, **2000.**
- Deane, Thomas. **Conceptualization of Groundwater Flow in the Shallow Aquifer along the Apache Reach of the San Pedro River, Cochise County, Arizona.** M.S., Hydrology and Water Resources, University of Arizona, **2000.**
- Druhan, Jennifer. **Geochemical Analysis of Recharge and Salinization in the Northern Hueco Bolson Aquifer, El Paso, Texas.** M.S., Hydrology and Water Resources, University of Arizona, **2006.**
- Gardiner, Ryan. **Application of an Inverse Algorithm Using a Two-Dimensional Laboratory Sandbox Model.** M.S., Hydrology and Water Resources, University of Arizona, **2000.**
- Goode, Tomas. **Simulation of Groundwater Conditions in the Upper San Pedro Basin for the Evaluation of Alternative Futures.** M.S., Hydrology and Water Resources, University of Arizona, **2000.**
- Gosch, Damian. *Transport of Munitions Components.* M.S., Hydrology and Water Resources, University of Arizona.
- Guardiola, Maite. **Potential Effects of Wildfire on Watershed Hydrologic Responses: Sabino Creek Basin, Arizona.** M.S., Hydrology and Water Resources, University of Arizona, **2005.**
- Heidbuchel, Ingo. **On the variability of hydrologic catchment response: inherent and external controls.** Ph.D., Hydrology and Water Resources, University of Arizona, **2012.**
- Henry, Eric. **Contaminant Induced Flow Effects in Variably-Saturated Porous Media.** Ph.D., Hydrology and Water Resources, University of Arizona, **2001.**

- Hultine, Kevin. **Reverse Flow in Tap- and Main Lateral Roots of Semiarid Riparian Trees: Evidence for Hydraulic Redistribution?** M.S., Renewable Natural Resources, University of Arizona, 2001.
- Hultine, Kevin. **Water Uptake by Prosopis Velutina: The Role of Soil Hydraulic Limits and Root Function.** Ph.D., Renewable Natural Resources, University of Arizona, 2004.
- Keller, Jason. **In-Situ Characterization of Soil-Water Content at the Lysimeter and Field Scales Using Gas-Phase Partitioning Tracer Tests.** M.S., Soil, Water, and Environmental Science, University of Arizona, 2002.
- Korich, Dee. **Ground Water Pollution Assessment of Landfills in the Rio Nuevo Area, Tucson, Arizona.** M.S., Hydrology and Water Resources, University of Arizona, 2001. (Co-chair with Gray Wilson)
- Li, Li. **The Effects of Pore Water Velocity and Substrate Concentration on Biodegradation during Transport.** Ph.D., Soil, Water and Environmental Sciences, University of Arizona, 2001.
- Malama, Bwalya. **Inverse Stochastic Moment Analysis of Transient flow in Randomly Heterogeneous Media.** Ph.D., Hydrology and Water Resources, University of Arizona. 2006.
- McIsaac, Gerry. **Time Domain Reflectometry Measurement of Water Content and Electrical Conductivity Using a Polyolefin Coated TDR Probe.** M.Sc. (*Reader*) University of Waterloo, ON, Canada, 2009.
- Nearing, Grey. **Diagnostics and Generalizations of Parametric State Estimation.** Ph.D., Hydrology and Water Resources, University of Arizona. 2013.
- Neff, Kirstin. **Modeling the impact of climate change and groundwater pumping scenarios on the upper San Pedro river in Arizona, USA and Sonora, Mexico.** M.S., Hydrology and Water Resources, University of Arizona, 2012.
- Nicholas, Hillary. **Estimating surface water presence and infiltration for intermittent streams in the semi-arid Southwest.** M.S., Hydrology and Water Resources, University of Arizona, 2012.
- Park, Gi-Hyeon. **Spatial and Temporal Patterns in Soil Moisture Variations in Oklahoma and its Comparison with ETA Model.** M.S., Hydrology and Water Resources, University of Arizona, 2000.
- Pantano, Chris. **Hydrogeochemical controls on microbial coalbed methane accumulations in the Williston basin, North Dakota.** M.S., Hydrology and Water Resources, University of Arizona, 2012.
- Ross, Stephanie. **Characterization of Residual NAPL in the Vadose Zone using Gas-Phase Partitioning Tracers.** M.S., Hydrology and Water Resources, University of Arizona, 2000.
- Serrat-Capdevila, Aleix. **An Alternative Approach To The Operation Of Multinational Reservoir Systems.** M.S., Hydrology and Water Resources, University of Arizona, 2004.
- Strobach, Elmar. **Hydrogeophysical Investigation of Water Recharge into the Gngangara Mound.** Ph.D., University of Western Australia. 2013.
- Stroud, Matt. **Solar Desalination in the Southwest US.** M.S., Hydrology and Water Resources, University of Arizona, 2012.
- Szweminska, Maria. **Metolachlor Flushing under Unsaturated Flow Conditions.** M.S., Department of Earth Sciences, University of Waterloo, 1998.
- Swiercoski, Rosangela. **Multiscale Analytical Solutions and Homogenization of n-Dimensional Generalized Elliptic Equations.** Ph.D., Applied Mathematics, University of Arizona, 2005.

- Taylor, Michael. **Investigation of Flow in the Capillary Fringe Using a Synthetic Aquifer.** M.S., Hydrology and Water Resources, University of Arizona, **2001.** (Co-chair with Jim Smith)
- Thomasson, Mark. **Variably Saturated, Transient Flow and Transport Models with Numerical Inversion Techniques to Characterize a Field Soil in Central Arizona.** Ph.D., Hydrology and Water Resources, University of Arizona, **2000.**
- Tick, Geoff. **Examination of DNAPL Mass Removal by Cyclodextrin.** Ph.D., Hydrology and Water Resources, University of Arizona, **2003.**
- Treese, Sam. **“Stream-Aquifer Interactions in a Semi-Arid Effluent Dependent River: A Clogging Conceptual Model”** M.S., Hydrology and Water Resources, University of Arizona, 2008.
- Wang, Jiann-Ming. **Intrinsic and Enhanced Biodegradation of Polyaromatic Hydrocarbons in Aqueous and Soil Systems.** Ph.D., Soil, Water, and Environmental Science, University of Arizona, **1999.**
- Wolf, Ailko. **Comprehensive Geostatistical Based Parameter Optimization and Inverse Modeling of North Avra Valley, Arizona.** M.S., Hydrology and Water Resources, University of Arizona, **2002.**
- Yolcubal, Irfan. **In-situ Monitoring of Bioavailability and Biodegradation of Organic Contaminants in Porous Media by Using Lux Reporter Organisms and Fiber Optic Detection System.** Ph.D., Hydrology and Water Resources, University of Arizona, **2001.**

TEACHING

Short Courses

- Recharge, Chilean Ministry of Public Works, Santiago, Chile, March, 2013.
- Merging Measurements and Modeling in Soil Physics, STAIR Ph.D. Course, Foulum, Denmark, March, 2009, 2011-13.
- Geophysics in the Park, Tucson, AZ, April, 2009.
- Merging Measurements and Modeling in Soil Physics, FIVA Ph.D. Course, Foulum, Denmark, March, 2005.
- Soil Physics. United States Geological Survey National Meeting, June, 2004.
- Vadose Zone Hydrology. University of Arizona, March, 2001.
- Who Needs Geophysics? Arizona District Office, USGS, April, 2001.

University of Arizona

- ENGR 102 Becoming Engineers and Teaming on Design Projects (1999)
Project-based first year undergraduate engineering design course introducing teamwork.
- HNRS 150 The Art and Science of Decision Making (2012)
Basic concepts in quantitative decision making, human psychology, and biases. Heavy emphasis is placed on student participation, including two presentations on special topics in decision making and construction of ‘group’ notes through a wiki page.
- HWR 431/531 Hydrogeology (2001)

Fundamentals of fluid flow and solute transport through geologic materials from the laboratory scale to the basin scale. Accompanying laboratory includes exercises in physical property measurement, basin scale hydrology, flow modeling, and the operation and analysis of a pumping test.

HWR 432/532 Field and Laboratory Methods in Hydrogeology (2002 - present)

Modular course designed to give students the theoretical background and hands-on experience in methods including well installation, column experiments, pumping tests, geophysical well logging, electrical resistivity, ground penetrating radar, and time domain reflectometry.

HWR 505 Vadose Zone Hydrology (1999 - present)

The movement of water, nonaqueous phase liquids, and solutes through variably saturated porous materials. Special emphasis is placed on methods of monitoring in the vadose zone.

HWR 513 Field Hydrology (2005 - present)

Field methods for completing a water balance and predicting the movement of water into and through the subsurface, including water exchange with surface water bodies.

HWR 514 Summer Subsurface Field Course (2002 - 2004)

Field methods for assessing and quantifying subsurface hydrologic properties and processes.

HWR 518 Survey of Subsurface Hydrology (1999 – 2001)

Introduction to subsurface hydrology for those students who will focus their research on surface water hydrology and water policy. Topics covered include flow, transport, multiphase flow, and field monitoring methods.

HWR 518 Fundamentals of Subsurface Hydrology (2002 – present)

Quantitative introduction to the fundamentals of subsurface hydrology for all incoming M.S. students in the Department of Hydrology and Water Resources. Topics covered include saturated and unsaturated flow and solute transport.

SWES 605 Hydrodynamic Modeling (2010 – 2011)

Introduction to the use of HYDRUS to analyze subsurface flow and transport and to design monitoring networks.

University of Waterloo

CivE 253 Introduction to Geology for Engineers (1998)

Second-year undergraduate engineering course covering introductory geology.

ESC 360 Earth Physics and Plate Tectonics (1998)

Fourth-year undergraduate course treating the role of geophysics in the development of the theory of plate tectonics.

ESC 458 Physical Hydrogeology (1997 – 1998)

Fourth-year undergraduate course covering miscible flow and solute transport.

ESC 460 Special Topics in Geophysics (1998)

Fourth-year undergraduate course focused on the use of forward modeling to gain insight into the responses of gravity and direct current resistivity methods.

ESC 650 Flow through Porous Media (1994 – 1997)

Fundamental graduate course covering solute transport and single and two-phase flow.

ESC 671 Field Methods in Hydrogeology (1995 – 1998)

Graduate course with lecture and field demonstrations of topographic surveying, monitoring in the unsaturated zone, chemical sampling, single well tests, geophysical methods, and groundwater/surface water interaction.

SERVICE

Editor

2012 – present	Journal of Hydrology, Associate Editor
2010 – present	Hydrology and Earth System Sciences, Associate Editor
2010 – present	Vadose Zone Journal, Invited Review Coordinator
2012 – 2013	Water Resources Research, Associate Editor
2007 – 2012	Soil Science Society of America Journal, Associate Editor
2006 – 2012	Near Surface Geophysics, Associate Editor, Geoelectrics and Hydrology
2007 – 2009	Water Resources Research, Guest Associate Editor, Special Issue on Measurement Methods
2002 - 2009	Vadose Zone Journal, Associate Editor
2004	Vadose Zone Journal, Guest Editor, Special Section on Hydrogeophysics
2003	Vadose Zone Journal, Guest Editor, Special Section on Measurement Methods

Reviewer

Journals: Advances in Water Resources, American Society of Civil Engineers, Composites Part A: Applied Science and Manufacturing, Geotechnical Engineering Division; Australian Journal of Soil Science; Canadian Journal of Soil Science; Computers and Electronics in Agriculture; Environmental Engineering Science; European Hydrogeology Journal; European Journal of Hydrology; European Journal of Irrigation and Drainage Engineering; European Journal of Soil Science; Geoderma; Geophysical Research Letters; Geophysics; Geosciences and Remote Sensing Letters; Ground Water; Hydrogeology Journal, Hydrologic Sciences Journal, Hydrology and Earth System Sciences, Hydrology Journal, Hydrologic Processes, Inverse Problems in Science and Engineering; Journal of African Earth Sciences, Journal of Applied Geophysics, Journal of Contaminant Hydrology, Journal of Geophysical Research – Earth Surface, Journal of Geoscience Education; Journal of Hydraulic Research, Journal of Hydrology; Journal of Irrigation and Drainage Engineering; Journal of Plant Nutrition and Soil Science; Journal of Soil Science; Recent Advances in Hydrogeology; Sensors Review, Soil Science; Soil Science Society of America; Stochastic Environmental Research and Risk Assessment; Water Resources Research; Vadose Zone Journal; Water Resources Research.

Grants: Department of Energy Fundamental Research; Department of Energy Small Business Innovation Research; National Science Foundation, Bioengineering & Environment Systems; National Science Foundation, Fluid Dynamics and Hydraulics; National Science Foundation, Collaborations in Mathematics and Geosciences; National Science Foundation, Hydrology; National Science Foundation – Instruments and Facilities; National Science Foundation, Integrated Research and Education in Environmental Systems; Qatar National Research Fund; USGS National Institutes for Water Resources; US-Israel Binational (BARD) Program.

Technical Reports: National Resources Defense Council, United States Geological Survey.

External Review for Ph.D. Dissertations: University of British Columbia; University of Wageningen; University of Western Australia; Danish Technical University

External Review for Tenure and Promotion: McMaster University, Canada; Colorado School of Mines; Clemson University; Volcani Institute, Israel; Michigan State University

External Review for Faculty Selection: Aachen University, German

Memberships

American Geophysical Union
Arizona Hydrological Society
European Association of Geoscientists and Engineers
National Groundwater Association
Soil Science Society of America
Society of Exploration Geophysicists

Committee Member and Other Service

2012	AGU Soil Systems and Critical Zone Processes Tech Committee
2012-present	WyCEHG advisory committee, University of Wyoming
2012-present	HYGEM advisory committee, University of Aarhus
2011-present	Don and Betty Kirkham Soil Physics Award Committee, Soil Science Society of America
2010	Peer Evaluation of Teaching Review Team for Dr. Shirley Papuga
2010-present	Global Water Brigades Club Sponsor, University of Arizona
2010	Hydrologic Sciences Panel – National Science Foundation, Spring and Fall panels
2010	Department of Energy Subsurface Biogeochemical Research Spring panel
2010-present	Interim Associate Department Head, Hydrology and Water Resources, University of Arizona
2009	SSSA Policy Development Committee to identify promising areas for future soils-related research
2009-2011	Faculty Mentor – Marcel Schaap (SWES)
2009-present	HWR Faculty Annual Review Committee
2009-2010	Chair of the S-1 Division of the Soil Science Society of America.
2008-present	Member of the U.S. National Committee on Soil Science of the National Academy of Sciences.
2008	Participant in NSF-Sponsored on-line workshop: Earth Science Literacy Initiative.
2008-present	AGU Hydrogeophysics Tech Committee
2005-2008	Geophysics Advisory Group for the CUAHSI Hydrologic Measurement Facility.
2005-2006	Member of the Pacific Northwest Hydrologic Observatory Advisory Group.
2005-2006	Member of the post-tenure review committee, Department of Hydrology and Water Resources, University of Arizona.
2005	Participated in an NSF-funded meeting at UCLA to represent CUAHSI's interests in Embedded Sensors for Hydrologic Observatories.
2004-2007	Member of the S-1 Early Career Award Committee for the S-1 Division of the Soil Science Society of America. (Chair, 2007)

- 2004-2006 Member of the Executive Committee for the Upper Rio Grande Hydrologic Observatory.
- 2004 Head of Geochemistry Search Committee, Department of Hydrology and Water Resources, University of Arizona.
- 2004 HWR Department Head Search Committee, Department of Hydrology and Water Resources, University of Arizona.
- 2003-2006 Kisiel Lecture Series committee, Department of Hydrology and Water Resources, University of Arizona.
- 2003-present PI on a Cooperative Agreement between the USGS-Water Discipline and College of Engineering and Mines to provide USGS support to university groups and individual graduate students undertaking hydrological research.
- 2003-2004 Member of the selection committee for the Don and Betty Kirkham Soil Physics Award for Division S-1 (Soil Physics) of the Soil Science Society of America.
- 2003-present Liaison for American Geophysical Union to the U.S. National Committee on Soil Science of the National Academy of Sciences.
- 2003 Steering committee member for the USGS Earth Surfaces Processes Research Institution (ESPRIT) Subsurface Hydrology component.
- 2003 Department Head Five-Year Review Committee, Department of Hydrology and Water Resources, University of Arizona.
- 2002 - 2006 El Dia del Agua Organizing Committee, Department of Hydrology and Water Resources, University of Arizona.
- 2002 Co-Organizer, Arizona Hydrological Society First Biennial Symposium on Scientific Issues Related to Management of Landfills in Arid and Semi-Arid Regions.
- 2001 - 2004 Graduate Studies Committee, College of Engineering and Mines, University of Arizona.
- 2001 - 2002 Faculty Search Committee, Department of Mining and Geological Engineering, University of Arizona.
- 2001 - present Chair, Graduate Admissions Committee, Department of Hydrology and Water Resources, University of Arizona.
- 2001 - 2004 Graduate Policy Committee, Department of Hydrology and Water Resources, University of Arizona.
- 2001 - 2002 Scientist-Teacher Alliance. Partnered with elementary school teachers to provide students in-class interaction with practicing scientists.
- 2000 Faculty Search Committee, Department of Hydrology and Water Resources, University of Arizona.
- 2000-2002 Organizer, Department of Hydrology and Water Resources Seminar Series.

FUNDED AND PENDING GRANTS

(Italicized titles indicate completed grants.)

National Science Foundation, Hydrologic Sciences: Using Multiple Gravimeters to Test Conceptual Models of Subsurface Flow (09/12 – 08/13) \$171,744. One month per year committed. (submitted)

Southwest Climate Science Center: Multicriteria Sensitivity Analysis of the Vulnerability of Hydrologic Systems to Climate Variability and Change in the Southwestern U.S.: an Investigation of the Inherent Filtering Characteristics of Hydrologic Systems (7/12-6/14). \$200,000. Five weeks committed.

Conoco Phillips: Hydrogeologic Characterization of Drunkard's Wash (2/11 – 1/13). \$125,730. Two weeks per year committed.

United States Geologic Survey, National Institutes for Water Resources: Improving Hydrologic Investigations through Multi-Model Analysis and Discriminatory Data Collection (8/10 – 7/12). \$122,130. One month per year committed.

National Science Foundation, Hydrologic Sciences: CUAHSI Hydrologic Measurement Facility – Geophysics Center (03/10 – 04/13) \$121,435. One month per year committed.

United States Geologic Survey: Cooperative Agreement to Fund Graduate Student Research (09/03 – 08/10) \$60,000. No time committed.

Department of Energy, Small Business Innovative Research: Surface NMR Instrumentation and Analysis Methods for Characterizing Vadose Zone Hydrology (09/09 – 10/11) Co-PI with David Walsh - \$168,486 (UofA portion). One month per year committed.

Water Sustainability Program: Acquisition of a DUALEM-21S Electromagnetic Induction Instrument for Large-Scale Subsurface Characterization in Support of Development of SMART Monitoring Systems (06/10-07/10) Co-PI with Markus Tuller and Scott Saleska - \$38,138. No time committed.

National Science Foundation, Instruments and Facilities, EAR: Development of an Integrated Superconducting Gravity Meter Sensor System for Subsurface Water Storage (03/04 – 12/10) Co-I with Clark Wilson, University of Texas at Austin - \$45,437 subaward on total grant of \$494,258. Two weeks committed.

National Science Foundation, Hydrologic Sciences: Determination of Soil Water Content at Intermediate Spatial Scale Using Cosmic-Ray Neutrons: Field Applications (04/07 – 3/10) Co-PI with Darin Desilets and Marek Zreda - \$347,841. Two weeks per year committed.

United States Department of Agriculture, National Research Initiatives: Monitoring of Water Flow at Intermediate Scales Using Electrical Resistance Tomography (08/03 – 07/06) Co-PI with Art Warrick - \$255,000. Two weeks per year committed.

National Science Foundation, Hydrologic Sciences: New Multi-Dimensional Solutions for Water Flow through Heterogeneous and Unsaturated Media. (09/03 – 08/06) Co-PI with Art Warrick - \$113,257. Two weeks per year committed.

Technology and Research Initiative Fund (TRIF), University of Arizona: Characteristic Flood Response of a Burned Catchment: Sabino Creek Basin, Arizona (07/04 – 06/06) Co-PI with Brenda Ekwurzel and Bart Nijssen - \$110,284. No time committed.

National Science Foundation, Hydrologic Sciences: Determination of Soil Water Content at Intermediate Spatial Scale Using Cosmic-Ray Neutrons (01/03 – 12/05) Co-PI with Marek Zreda - \$236,859. One month per year committed.

National Science Foundation, Hydrologic Sciences: Rapid Response Monitoring of Wildfire Impact on Partitioning of Infiltration and Runoff: The 2003 Aspen Fire in Sabino Canyon, Arizona. (06/03 – 08/04) Co-PI with Bart Nijssen and Brenda Ekwurzel - \$99,944. No time committed.

National Science Foundation, International Programs, Africa, Near East, and South Asia: Improved Hydrogeophysical Assessment of Recharge beneath Ephemeral Streams: Applications in Arid Areas, (09/03-08/05) Co-PI with Mary Poulton - \$47,999. No time committed.

Technology and Research Initiative Fund (TRIF), University of Arizona: Integrated surface and subsurface response of alluvial basins to ephemeral stream channel recharge and urban-focused recharge (07/05 – 06/07) Co-PI with Jon Pelletier - \$113,636. No time committed.

INEL: Comparison of Geophysical Responses and Conventional Vadose-Zone Monitoring During Controlled Infiltration (05/03 – 09/03) - \$20,000. No time committed.

National Science Foundation, Geosciences: GLOBE Soil Moisture Investigation (01/03 – 06/06) Co-PI with Jim Washburne and Bart Nijssen - \$729,519. One month per year committed.

NASA: Collection of Mars Analog Field Data during Aircraft Radar Overflights in the Southwest United States, (01/02 – 12/03) Co-PI with Vic Baker - \$45,000. Two weeks per year committed.

NASA: Extended Validation of AMSR-E Soil Moisture Products (01/02 – 12/03) Subcontract to Dave Goodrich, ARS - \$31,400. No time committed.

Arizona Department of Water Resources Rural Watersheds Initiatives: Groundwater study in the Upper Agua Fria Watershed Adjacent to the Prescott Active Management Area, (05/02 – 04/03) Co-PI with Richard Hawkins - \$25,000. No time committed.

National Science Foundation, Biotechnology and Environmental Sciences: SGER: Measurement of the Electrical and Dielectric Properties of Degrading Refuse for the Application of Borehole Ground Penetrating Radar to Monitoring Landfill Bioreactors, (12/00 – 12/02) - \$70,069.

Arizona Department of Water Resources Rural Watersheds Initiatives: A Reconnaissance Assessment of the Sacramento Valley, Hualapai Valley, Big Sandy Valley, Detrital Valley and Meadview Watersheds, (01/01 – 04/02) Co-PI with Richard Hawkins - \$25,000.

Water Resources Research Council: Using Ground Penetrating Radar and Tensiometry to Estimate Recharge from the Rillito Creek, (03/00 – 03/01) - \$12,001.

University of Arizona Faculty Small Grants Program: Direct Measurement of Recharge Beneath the Rillito Creek, (01/00 – 12/00) - \$5,000.

University of Northern Arizona: Design of Field Instrumentation to Monitor Frost Heave (10/03 – 10/05) \$13,000. No time committed.