

SCOTT W. TYLER
Foundation Professor
Dept. of Geologic Sciences and Engineering
University of Nevada, Reno
Reno, Nevada USA
styler@unr.edu
<http://scotttylerhydro.com/>

AREAS OF EXPERTISE

Dr. Tyler has conducted research on hydrologic cycles in a wide variety of climates and environments, and has extensive experience developing interdisciplinary field teams and field experiments. He has focused on the transport of radioactive contaminants in soils and groundwater, arid region hydrology and the sustainability and management of groundwater in arid regions such as Nevada. Recently, he has become world leader in the application of Raman spectra fiber-optic temperature measurements (DTS), working on Antarctic glacier basal melting, stream/groundwater interactions, soil temperature and mixing in deep lakes and is the co-director of NSF's Center for Transformative Environmental Monitoring Programs (www.ctemps.org). His center has recently developed low cost airborne sensing systems for drones and small UAS for monitoring vegetation health, water stress, soil contamination and soil moisture sensing. He has conducted research on vadose zone transport and the development of paleoclimate reconstructions from deep arid unsaturated zones, conducted quantitative assessment of root dynamics using micro-Computed X-ray Tomography (XMT), design and operation of salinity-gradient solar ponds coupled with membrane distillation for the development of low-cost desalination and studied the impacts of forest management practices on snow hydrology in snow-dominated Mediterranean climates.

EDUCATION

B.S. Mechanical Engineering, University of Connecticut; Storrs, Connecticut. June 1978

M.S. Hydrology, New Mexico Institute of Mining and Technology; Socorro, New Mexico
Thesis Title: *Field Results of Borehole Infiltration Tests*. June 1983

Ph.D. Hydrology/Hydrogeology, University of Nevada, Reno, Nevada

Dissertation Title: *Fractal Applications to Soil Hydraulic Properties*. August 1990

PROFESSIONAL ASSIGNMENTS

2010-Present **Director**, Centers for Transformative Environmental Monitoring Programs
2011-Present **Foundation Professor**, Department of Geological Sciences and Engineering
2005 **Visiting Professor**: Catholic University of Chile and EPFL, Lausanne Switzerland
2000-2005 **Professor and Director**, Department of Natural Resources and Environmental Sciences and the Department of Geological Sciences, Graduate Program of Hydrologic Sciences
1998 - 1999 **Professor**, Desert Research Institute and Department of Environmental and Resource Sciences,
1992 - 1998 **Associate Professor**, Desert Research Institute and Department of Environmental and Resource Sciences

PROFESSIONAL APPOINTMENTS

2018-2020 President of the Hydrology Section of the American Geophysical Union
2013-2014 Chairman of the Board of Directors of the Consortium for the Advancement of Hydrologic Sciences (Board member since 2009)
2007-2008 Chairman, Hydrogeology Division of the Geological Society of America
2005-2009 Editor, Water Resources Research (member of editorial board from 1995-2009)
2009-2011 National Academy of Sciences Panel member: Challenges and Opportunities in the Hydrologic Sciences

1994-1995 National Academy of Sciences Panel member (1994-1995) to review the proposed low-level nuclear waste disposal site at Ward Valley, California.

AWARDS AND RECOGNITION

Elected Council Leadership Team, American Geophysical Union (2017-2019)
University of Connecticut Academy of Distinguished Engineers (2016)
Fellow of the American Geophysical Union (2015)
John Hem Award for Excellence in Science and Engineering, Nat. Ground Water Association (2013)
University of Nevada Foundation Professor (2012)
Geological Society of America Hydrogeology Division Outstanding Service Award (2010)
Mackay School of Mines Faculty Achievement Award (2010)
Fellow of the Soil Science Society of America and Agronomy Society of America (2003)
Fellow of the Geologic Society of America (1997)
Distinguished Darcy Lecturer, National Ground Water Association (1999)

HIGHLIGHTED PUBLICATIONS (127 Total)

Tyler, S.W. (2020) Are arid regions always that appropriate for waste disposal? Examples of complexity from Yucca Mountain Nevada. *Geosciences*.10(1) <https://doi.org/10.3390/geosciences10010030>

Meira Neto, A.A., Niu, G.Y., Roy, T., Tyler, S. and Troch, P. (2020). Interactions between snow cover and evaporation lead to higher sensitivity of streamflow to temperature. *Commun Earth Environ* **1**, 56. <https://doi.org/10.1038/s43247-020-00056-9>

Tyler, S., S. Chandra, and G. Grant (2017), Management strategies for sustainable western water, *Eos*, 98, <https://doi.org/10.1029/2017EO071701>

Pai, H., H. Malenda, M. Briggs, K. Singha, R. González-Pinzón, M. Gooseff, S.W. Tyler, and the AirCTEMPS Team (2017). Potential for small unmanned aircraft systems applications for identifying groundwater-surface water exchange in a meandering river reach. *Geophy. Res. Letters*. doi:10.3390/s16101712

Hausner, M. B., K. P. Wilson, D. B. Gaines, F. Suarez, G. G. Scoppettone, and S. W. Tyler (2014), Life in a fishbowl: Prospects for the endangered Devils Hole pupfish (*Cyprinodon diabolis*) in a changing climate, *Water Resour. Res.*, doi: 10.1002/2014WR015511.

Kobs, S., D. Holland, V. Zagorodnov, A. Stern, and S. Tyler (2014). Novel monitoring of Antarctic ice shelf basal melting using a fiber-optic distributed temperature sensing mooring, *Geophys. Res. Lett.*, 41, doi:10.1002/2014GL061155.

Tyler, S.W., J. B. Chapman, S. Conrad, D. Hammermiester, D. Blout, J. Miller, M. Sully and J. Ginanni (1996). Soil Water Flux on the Nevada Test Site: Temporal and Spatial Variations over the Last 120,000 Years. *Water Resources Research*. Vol. 32(6): 1481-1499.

Wheatcraft, S.W. and S.W. Tyler (1988). An Explanation of Scale-Dependent Dispersivity in Heterogeneous Aquifers using Concepts of Fractal Geometry. *Water Resources Research*, Vol. 24(4): 566-578.