

Kevin E. Lansey
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Kevin Lansey is a Professor in the Department of Civil and Architectural Engineering and Mechanics at the University of Arizona. His expertise is in the application of systems analysis approaches including optimization and uncertainty analysis to water resources problems. Dr. Lansey's interests are in the related to water supply planning, water/energy links, and water distribution systems design, operation and monitoring. His expertise on water modeling covers a range of systems including water distribution, surface hydrology, and groundwater. He has published over 100 journal articles, 10 book chapters and two textbooks.

With colleagues at the UA, he has developed a unique solar driven pumped storage hydropower system concept for Biosphere 2 and similar high solar insolation regions that large topographic differences. Water is stored in a pair of closed tanks serves the energy storage system. Conceptual design and benefit-cost/ROI analysis are ongoing.

A. Professional Preparation

SUNY-College of Environmental Science and Forestry, Forest Engineering,
B.S., 1981 Virginia Polytechnic Institute, Civil Engineering, Water Resources, M.S.,
1982 University of Texas-Austin, Civil Engineering, Water Resources, PhD, 1987

B. Appointments

Department Head, Department of Civil Engineering & Engineering Mechanics, University of Arizona, 7/2008-8/2018

Professor and adjunct professor, respectively, Dept. of Civil Engineering and Engineering Mechanics and Dept of Hydrology and Water Resources, 7/2002-present

Associate Professor and adjunct associate professor, respectively, Dept. of Civil Engineering and Engineering Mechanics and Dept of Hydrology and Water Resources, 7/1994-2002.

Assistant Professor and adjunct assistant professor, respectively, Dept. of Civil Engineering and Engineering Mechanics and Dept of Hydrology and Water Resources, 9/1990-7/1994

Assistant Professor, School of Civil Engineering, Oklahoma State University, 1987-990. Graduate Research Assistant, The University of Texas at Austin, 1984-1987.

Water Resources Planner, U.S. Army Corps of Engineers, Philadelphia, Pennsylvania, 1983.

C. Publications - Most closely related publications (from 2 textbooks, over 100 refereed publications, 8 book chapters and 200 conference papers primarily in the water resources systems and water distribution field)

1. Lan, F., W. Lin and K. Lansey (2015), "Scenario-based robust optimization of a water supply system under risk of facility failure, *Environmental Modelling & Software*, 67, May, 160-172.
2. Kang, D. and K. Lansey, "[Scenario-Based Robust Optimization of Regional Water and Wastewater Infrastructure](#)," *ASCE Journal of Water Resources Planning and Management*, 139(3), 325-338, May, 2013, DOI: 10.1061/(ASCE)WR.1943-5452.0000236.

3. Kang, D. and Lansey, K. (2014). "Multiperiod Planning of Water Supply Infrastructure Based on Scenario Analysis." *J. Water Resour. Plann. Manage.*, 140(1), 40-54.
4. Woods, G., Kang, D., Quintanar, D., Curley, E., Davis, S., Lansey, K., and Arnold, R. (2013). "Centralized versus Decentralized Wastewater Reclamation in the Houghton Area of Tucson, Arizona." *J. Water Resour. Plann. Manage.*, 139(3), 313–324.
5. Scott, C. A., C. J. Bailey, R. Marra, G. Woods, K. Ormerod, and K. Lansey, "Scenario Planning to Address Critical Uncertainties for Robust and Resilient Water-Wastewater Infrastructures under Conditions of Water Scarcity and Rapid Development," *Water*, 4(4), 848-868, Dec. 2012.

Five other significant publications

1. Lan, F., Bayraksan, G., and Lansey, K. (2016). "Reformulation linearization technique based branch-and-reduce approach applied to regional water supply system planning." *Eng. Optimiz.*, 48(3), 454-475.
2. Lansey, K. "Sustainable, robust, resilient, water distribution systems" [online] In: WDSA 2012: 14th Water Distribution Systems Analysis Conference, 24-27 September 2012 in Adelaide, South Australia. Barton, A.C.T.: Engineers Australia, 2012: 1-18.
3. Chung, G., K. Lansey, P. Blowers, P. Brooks, W. Ela, S. Stewart, and P. Wilson, 2008. "A General Water Resources Planning Model using Dynamic Simulation: Evaluation of Decentralized Treatment," Environmental Modeling and Software, 23(7) July, 893-905.
4. Chung, G. and K. Lansey, 2009. "Application of the SFLA Method for the Optimization of a General Large Scale Water Supply System," Water Resources Management, 23(4), March, 797-823.
5. Eusuff, M. and K. Lansey, 2006. "Shuffled frog leaping algorithm: A memetic meta-heuristic for combinatorial optimization," Engineering Optimization, 38(2), March, 129-154.

D. Synergistic Activities

- Lead organizer for the 12th Annual Water Distribution Systems Analysis Symposium (2010)
- PI on NSF EFRI-RESIN project - Optimization of conjunctive water supply and reuse systems with distributed treatment for high-growth water-scarce regions, (2008-2012)
- Associate Editor, *Engineering Optimization* (2005-present), *ASCE Journal of Water Resources Planning and Management* (1995-2000)
- Co-authored two textbooks on water distribution system hydraulics and water quality