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### **I. EDUCATION**

**Ph. D.** Hydrology/Hydrogeology, Minor in Geological Engineering, 1996, University of Nevada, Reno, Nevada, USA  
**M. Sci.** Engineering Geology/Hydrogeology, 1987, Institute of Geology, Chinese Academy of Sciences, Beijing, China  
**B. Eng.** Hydrogeology/Engineering Geology, 1983, Tongji University, Shanghai, China  
**AgriLife Advanced Leadership Cohort III**, Texas A&M University, 2014-16.

### **II. EMPLOYMENT HISTORY**

**Center Director**, Texas A&M AgriLife Research Center at El Paso, TX, 2017 -  
**Professor**, Texas A&M AgriLife Research Center at El Paso, TX, Department of Biological and Agricultural Engineering (BAEN), Texas A&M University, 2014 – present; **Associate Professor**, 2007 – 2014; **Assistant Professor**, 2001 – 2007  
**Adjunct Professor & Graduate Faculty**, Department of Civil Engineering, New Mexico State University, Las Cruces, New Mexico, 2004 - present  
**Adjunct Professor**, Texas Tech University, Lubbock, Texas, 2009 - present  
**Adjunct Professor**, Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, China, 2017-2020  
**Guest Professor**, Key Laboratory of Agricultural Water Resources, Chinese Academy of Sciences, 2016 - present  
**Adjunct Professor**, Institute Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China, 2007-2009  
**Hydrogeologist**, El Paso Water Utilities, El Paso, TX, 1998 - 2001  
**Postdoctoral Fellow /Visiting Assistant Professor**, Department of Civil Engineering, Morgan State University, Baltimore, Maryland, 1997 – 1998  
**Research Assistant**, Nevada Bureau of Mines and Geology, Reno, Nevada, 1991 – 1996  
**Assistant Professor**, Institute of Geology, Chinese Academy of Sciences, Beijing, China, 1989 – 1991  
**Research Assistant**, Institute of Geology, Chinese Academy of Sciences, Beijing, China, 1983 - 1988

### **III. SELECTED PROJECTS AND FUNDING**

Diversifying the Water Portfolio for Agriculture in the Rio Grande Basin, U.S. Department of Agriculture –NIFA, Co-Investigator.  
Transboundary Aquifer Assessment Program, U.S. Department of Interior (USGS), Co-PI.  
Improving Technologies for Multi-Well Aquifer Storage and Recovery (ASR) Systems, Texas A&M University Water Seed Grant, Co-PI.  
Sustainable Water Resources for Irrigated Agriculture in a Desert River Basin Facing Climate Change and Competing Demands: From Characterization to Solutions, U.S. Department of Agriculture –NIFA, UTEP Lead PI, TAMU Co-PI.  
Implementing the Pecos River watershed protection plan thru hydrogeological assessment & airborne electromagnetic survey, EPA 319 Program, TSSWCB, PI.  
A Hydro-Econometric analysis of producer water use and aquifer hydrology in the Texas High Plains, U.S. Department of Agriculture -CSREES, PI; Team with Texas Tech University

Transboundary aquifer assessment program, U.S. Department of Interior, U.S. Geological Survey, Co-PI  
 Development of RiverWare model of the Rio Grande for water resources management in the Paso Del Norte watershed, U.S. Army Corps of Engineers, PI  
 Assessment of snowmelt and runoffs in an inland river in an arid region in response to climate changes, National Science Foundation of China, Ministry of Human Resources and Social Security, Xinjiang Water Resources Bureau, Co-PI.  
 Crop water conservation system in arid regions, 948 Projects, Ministry of Water Resources, China, Technical advisor.  
 Economic assessment of Rio Grande salinity, U.S. Army Corps of Engineers, Co-PI  
 Evaluation of irrigation efficiency strategies for Far West Texas: Feasibility, water savings and cost considerations, Texas Water Development Board, Co-PI  
 Groundwater and surface water interaction and conjunctive uses in the Qiadam Basin – case study at the Xiangride-Qiadam River, Institute Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, Co-PI.  
 Membrane treatment of impaired irrigation return and other flows for creating new sources of high quality water, AWWARF, U.S. Bureau of Reclamation & El Paso Water Utilities, Co-PI  
 Installation of river and drain instrumentation stations to monitor flow and water quality and internet data sharing, sponsored by USBR, EPWU and TAES: PI.  
 Evaluation of alternatives for improvement of water delivery efficiency, hydrological modeling of the Rio Grande basin (Soil and Water Assessment Tool), and decision support system for irrigation district management (Rio Grande Basin Initiative on Irrigation Efficiency, USDA): Co-PI.  
 Coordinated water resources database and GIS (El Paso Water Utilities, U.S. Army Corps of Engineers, and PdN Watershed Council): PI.  
 Integrated management strategies to protect and conjunctively use water resources in the Paso Del Norte Region (USDA Hatch Project): PI.  
 Conceptual model for the Rio Grande flow between Elephant Butte Reservoir and El Paso (U.S. Army Corps of Engineers and Paso del Norte Watershed Council): PI.  
 Saltcedar control and water uses studies and monitoring; watershed protection plan development for the Pecos River, PI, C. Hart, sponsored by USEPA and Texas State Soil and Water Conservation Board; Co-PI.  
 The use of reclaimed effluents and salty groundwater as irrigation sources for cotton culture and vegetable production; the Texas Cotton Incorporated and USBR; PI.  
 Regional water resources plan for the Far West Texas (Senate Bill 2, TWDB): Co-PI.  
 Water conservation through reuse of gray water (USBR): Co-PI.  
 Seepage losses and water salvage by canal lining (TWRI, USBR and El Paso County Water Improvement District No. 1): PI

#### **IV. SELECTED PUBLICATIONS**

- Kong, X.\*, Wang, S., Liu, B., Sun, H., **Sheng, Z.** (2018). Impact of Water Transfer on Interaction between Surface Water and Groundwater in the Lowland Area of North China Plain. 09 May 2018, *Hydrological Processes*, doi: 10.1002/hyp.13136
- Bushira, K.M\*, Gebregiorgis, Y. B., Verma, R.K., **Sheng, Z.** (2018). Cut soil slope stability analysis along National Highway at Wozeka–Gidole Road, Ethiopia. April 2018, *Modeling Earth Systems and Environment*. doi: 10.1007/s40808-018-0465-6
- Wang, S., Yuan, R., Tang, C., Song, X., Currell, M., Yang, Z., **Sheng, Z.** (2018). Combination of CFCs and stable isotopes to characterize the mechanism of surface water-groundwater interaction in a headwater basin of the North China Plain. *Hydrological Processes*, 32 (11): 1571-1587. doi: 10.1002/hyp.11494.
- Zhang N., Li, X., **Sheng, Z.** (2018). The new formula of calculating depth of a tension crack in the upper surface of a sliding slope using inflection principle. *Journal of Engineering Geology*, 26(1): 157-163. doi:10.13544/j.cnki.jeg.2018.01.017.

- Zhang N., **Sheng, Z.**, Qi S. (2018). Noncircular curve searching for determining the minimum safety factor in designing homogenous slope. *Journal of Engineering Geology*, 26(1): 241-248. doi:10.13544/j.cnki.jeg.2018.01.024.
- He, Y., Chen, X., **Sheng, Z.**, Lin, K., Gui, F. (2018). Water allocation under the constraint of total water use quota: A case from Dongjiang River Basin, South China. *Hydrological Sciences Journal*, 63(1): 154-167. doi: 10.1080/02626667.2017.1417596.
- Smith, WB., Miller, G.R., **Sheng, Z.** (2017). Assessing Aquifer Storage and Recovery Feasibility in the Gulf Coastal Plains of Texas. *Journal of Hydrology: Regional Studies*, 14: 92-108. doi: 10.1016/j.ejrh.2017.10.007
- Bushira, K.M., Hernandez, J.R., **Sheng, Z.** (2017). Surface and groundwater flow modeling for calibrating steady state using MODFLOW in Colorado River Delta, Baja California, Mexico. *Modeling Earth Systems and Environment*, 3 (2): 815–824. doi:10.1007/s40808-017-0337-5.
- Sheng, Z.**, Jia, S. Michelsen, A., Abudu. S. (2017). Lessons learned from long term water resources plans: top town vs. bottom up, XVI World Water Congress, Cancun Mexico, May 29-June 2 [8p].
- Abudu S., **Sheng Z.**, Michelsen A., Rodriguez, O, King J.P. (2016). Evapotranspiration and Crop Coefficient for Pecan Trees in El Paso, Texas, Proc. Irrigation Show and Education Conference, December 4-7, Las Vegas, NV, [8p].
- Abudu S., **Sheng Z.**, He J., Cui C., Bayinmengke. (2016). Prospects on drip irrigation development in Xinjiang, China, Proc. Irrigation Show and Education Conference, December 4-7, Las Vegas, NV, [8p].
- Abudu, S., **Sheng, Z.**, Cui, C., Saydi, M., Zamani-Sabzic, H., King, J.P. (2016). Integration of aspect and slope in snowmelt runoff modeling in a mountain watershed, *Water Science and Technology*, 9(4): 265-273. doi:10.1016/j.wse.2016.07.002
- Li, Y., Shao, X., **Sheng, Z.**, Guan W., Xiao, M. (2016). Water conservation and nitrogen loading reduction effects with controlled and mid-gathering irrigation in a paddy field. *Pol. J. Environ. Stud*, 25(3): 1-7.
- Li, Y., Shao, X., **Sheng, Z.** (2016). Field experiments on reducing pollutants in agricultural-drained water using soil-vegetation buffer strips. *Pol. J. Environ. Stud*, 25(1): 183-192.
- McDonald, A. K., Wilcox, B.P., Moore, G.W., Hart, C.R., **Sheng, Z.**, Keith Owens M. (2015). Tamarix transpiration along a semiarid river has negligible impact on water resources, *Water Resour. Res.*, 51, doi:10.1002/2014WR016866.
- Sun, G., Michelsen, A., **Sheng, Z.**, Fang, A.F., Shang, Y., Zhang, H. (2015). Featured Collection Introduction: Water for Megacities - Challenges and Solutions, *Journal of AWRA*, 51(3): 585-588. doi: 10.1111/1752-1688.12317.
- Zhang, N., **Sheng, Z.** (2015). New analytical solutions for one dimensional steady-state flow in an unconfined aquifer with a sloping base. *Journal of Engineering Geology* (in Chinese), 23 (SUPPL.): 223-228.
- Sheng, Z.** Y. Liu. (2015). Evapotranspiration of flood-irrigated pecans under drought conditions in El Paso, TX, 2015 ASABE Irrigation Symposium, November 12-14, Long Beach, CA, [Peer-Reviewed paper].
- Sheng, Z.**, & Zhao X. (2014). Special Issue on Managed Aquifer Recharge: Powerful management tool for meeting water resources challenges. *Journal of Hydrologic Engineering*, 20(3). doi: 10.1061/(ASCE)HE.1943-5584.0001139.
- Ahmed, N., Taylor, S.W., **Sheng, Z.** (eds.) (2014). *Hydraulics of Wells: Design, Construction, Testing, and Maintenance of Water Well Systems*, ASCE Manuals and Reports on Engineering Practice No. 127. ASCE, Reston, 498p.
- Abudu, S., **Sheng, Z.**, Cui, C., D. Guan. (2014). The karez system in China's Xinjiang Region, in John Calabrese (ed.), *Harvesting Water and Harnessing Cooperation: Qanat Systems in the Middle East and Asia*, Middle East-Asia Project (MAP), Middle East Institute, January 18, 2014, available at: <http://www.mei.edu/content/harvesting-water-and-harnessing-cooperation-qanat-systems-middle-east-and-asia>.

- Ganjugunte, G.K., **Sheng, Z.**, Clark, J.A. (2014). Soil salinity and sodicity appraisal by electromagnetic induction in irrigated cotton soils. *Land Degradation & Development*. 25:228-235. doi: 10.1002/ldr.1162.
- Zhang, N., **Sheng, Z.**, Qi, S., He, J., Li S. (2014). Mechanisms and conditions of compression extrusion of a horizontal-dip thin soft rock strata. *Journal of Engineering Geology* (in Chinese), 22(4): 610-624.
- Gutchick, V.P., **Sheng, Z.** (2013). Control of atmospheric fluxes from a pecan orchard by physiology, meteorology, and canopy structure: modeling and measurement. *Agricultural Water Management*, 129: 200-211. doi: 10.1016/j.agwat.2013.08.004
- Liu, Y., **Sheng, Z.** (2013). Soil moisture statuses in an irrigated pecan field. *Journal of Irrigation and Drainage Engineering*, 139(1): 26-40.
- McDonald, A.K., **Sheng, Z.**, Hart, C.R., Wilcox, B.P. (2013). Studies of a regulated dryland river: surface-groundwater interactions. *Hydrological Processes*, 27(12): 1819–1828. doi: 10.1002/hyp.9340.
- Sheng, Z.**, Fox, G., Abudu, S. (2013). Interconnection of atmospheric water, surface water, and groundwater. *Journal of Hydrologic Engineering*, 18(10): 1-2
- Sheng, Z.** (2013). Impacts of groundwater pumping and climate variability on groundwater availability in the Rio Grande Basin. *Ecosphere*, 4(1): Art5. <http://dx.doi.org/10.1890/ES12-00270.1>
- Sheng, Z.**, Darr, M., King, J.P., Bumgarner, J., Michelsen, A. (2013). Mesilla Basin/Conejos-Médanos Section of the Transboundary Aquifer Assessment Program, in Alley, W.M. (ed.) *Five-Year Interim Report of the United States – Mexico Transboundary Aquifer Assessment Program: 2007 – 2012*, U.S. Geological Survey Open-File Report 2013–1059, Reston, VA: 19-30.

## **V. HONORS AND AWARDS**

- Award for Excellence in Research: Department of Biological and Agricultural Engineering, TAMU, 2016.
- Award for Outstanding Service: Association of Oversea Chinese Agricultural, Biological and Food Engineers, 2016
- Fellow: American Society of Civil Engineers, 2016.
- Texas Environmental Excellence Award: Rio Grande Basin Initiative Project – Texas Water Resources Institute, 2008.
- National Water Program Award as the Outstanding Integrated Activities for Water Resources: Rio Grande Basin Initiative Project, U.S. Department of Agriculture –Cooperative State Research, Education and Extension Service (USDA–CSREES), 2007.
- Vice Chancellor’s Award in Excellence Research Team for the Rio Grande Basin Initiative, TAMU Agriculture Program, 2006.

## **VI. PROFESSIONAL ACTIVITIES AND LICENSES**

- Invited Committee Member, Advisory Committee on Sustainable Underground Storage of Recoverable Water, National Academy of Sciences, National Research Council, Water Science and Technology Board; 2005-06.
- Invited Expert: Aquifer Storage & Recovery Experts Meeting, EPA, May 5-6, 2009, Chicago, IL.
- Panelist: NSF 1631 Infrastructure Panel, Reston, VA, 2010.
- Vice President for International Affairs, Award Committee Chair, American Institute of Hydrology, 2016-present
- Past President (2013-14), President (2012-13), President-Elect (2011-12), VP (2010-11), Board Member (2009-10), Association of Oversea Chinese Agricultural, Biological and Food Engineers.
- American Society of Civil Engineers (ASCE), Environmental and Water Resources Institute  
Past Chair, Chair (2011-2013) and Vice Chair (2009-2011), Committee of Groundwater Hydrology.  
Chair (2009) and Co-chair (2008 and 2010), EWRI Groundwater Symposium.  
Chair (2008–2009) and Vice Chair (2006–2008), Committee of Groundwater Management – Program Secretary, Land Subsidence Task Committee, 2002-present.

Award Committee Member, the Groundwater Council, 2008–2010.  
Past Co-chair, AWRA International Affairs Committee, Chair, 2011-2013, Co-Chair 2014 - 2016.  
Chair of Technical Committee on Aquifer Storage and Recovery (ASR); American Water Resources Association (AWRA); 2002-03  
Board Member (2013-15), Newsletter Editor (2016-17), Chinese American Water Resources Association (CAWRA).  
Vice Chair, Basin and Bay Expert Science Team (BBEST) for upper Rio Grande, TCEQ, 2011 – 2012  
Technical Committee Co-Chair, Executive Member, Paso del Norte Watershed Council (PdNWC), 2002-present  
Visiting Scholar and Seminar Lecturer, Applied geophysics in hydrological engineering, Peking University, July-August 2014, June 2012.  
Outstanding Research Fellow, Ministry of Human Resources and Social Security and Oversea Chinese Scholars Committee of Xinjiang Bureau of Human Resources and Social Security, Urumqi, China, 2010-present.  
Outstanding Research Fellow, Collaborative research on hydrologic cycle in arid region; sponsored by Institute of Geographical Sciences and Natural Resource Research, Chinese Academy of Sciences and Institute of Water Resources and Hydropower, Qinghai Province. 2007-2013.  
Technical Expert, International Association of Hydrology (IAH), International Hydrology Program (IHP)-UNESCO Program, ISARM Americas (Internationally Shared Aquifer Resources Management), 2003-05.  
Expert Team: Analysis and Strategic Plan: Water for Sustainable Agriculture in Qatar, Submitted to Barwa, Qatar, Matrix Process Integration, March 2008.  
Expert Testimony: Hydrologic impacts review in support of protest of the New Mexico Office of State Engineering water rights application No. 4830: The City of Albuquerque proposal to divert surface water from the Rio Grande; William J. Miller Engineers and Peter Thomas White, Attorney; Santa Fe, New Mexico, 2002.  
Section Editor, International Journal of Agricultural and Biological Engineering, 2012-present  
Associate Editor, Transactions of ASABE & Journal of Application of Engineering in Agriculture, 2010–present.  
Associate Editor, Journal of Hydrologic Engineering, ASCE, 2009–2015.  
  
Professional Engineer License in Texas (87496) since 2001.  
Professional Hydrologist, Certification (06-H-1656), American Institute of Hydrology since 2005.