

Curriculum Vitae

Name: Zhuping Sheng

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PROFESSIONAL PREPARATION

Education

University of Nevada, Reno, Nevada, Ph. D. Hydrology/Hydrogeology, 1996

Chinese Academy of Sciences, China, M. Sci. Engineering Geology/Hydrogeology, 1987

Tongji University, China, B. Eng. Hydrogeology/Engineering Geology, 1983

Texas A&M University (TAMU), Texas, Texas AgriLife Advanced Leadership Cohort III, 2016

Professional Registration

Professional Engineer:

- License in Texas (87496) since December 1, 2000.
- License in New Mexico (27106) since August 26, 2021.

Professional Hydrologist:

- Certified by American Institute of Hydrology (06-H-1656) since January 2006.

Professional Specialty and Interest

- Environmental & Water Resources: Groundwater hydrology, aquifer mechanics, surface water hydrology, environmental flow
- Geotechnical: Soil mechanics, rock mechanics, slope stability

Interest: Hydrological processes of river systems; Dynamics of aquifer systems; Interactions of atmospheric, surface, and subsurface waters; Brackish/saline water intrusion; Conjunctive uses and management of surface and groundwater resources; Managed aquifer recharge; Integrated water resources management (IWRM); Water conservation: irrigation efficiency and use of reclaimed water and brackish water; Linking hydrological model with economic model; Database and GIS applications in water resources management and planning; Desalination and new materials, disposal of and beneficial uses of concentrates; and Mitigation of geological hazards, land subsidence and earth fissures, landslides.

EMPLOYMENT & EXPERIENCE

Appointments

2022 - present, Professor, Morgan State University, Baltimore, Maryland

2020 – present, Principal, Sheng Engineering PLLC

2017 – 2020, Center Director, Texas A&M AgriLife Research Center at El Paso, El Paso, Texas

2014 – 2020, Professor, Department of Biological and Agricultural Engineering, TAMU and Texas A&M AgriLife Research Center at El Paso, Texas

2007 – 2014, Associate Professor, Department of Biological and Agricultural Engineering, TAMU and Texas A&M AgriLife Research Center at El Paso, Texas

2001 – 2007, Assistant Professor, Department of Biological and Agricultural Engineering, TAMU and Texas A&M AgriLife Research Center at El Paso, Texas

1998 – 2001, Hydrogeologist, El Paso Water Utilities, Texas

1997 – 1998, Research Fellow, Morgan State University, Baltimore, Maryland

1991 – 1996, Hydrogeologist, Nevada Bureau of Mines and Geology, Reno, Nevada

1983 – 1991, Geoscientist, Institute of Geology, Chinese Academy of Sciences, Beijing, China

Curriculum Vitae

SELECTED GRANTS AND CONTRACTS

- Cyber Training: Implementation: Small: Broadening Adoption of Cyberinfrastructure and Research Workforce Development for Disaster Management (NSF, 2024-2026), Investigator, PI, Zhe Zhang TAMU.
- Improve highway safety by reducing the risks of landslides (UTC Safety 21, 2023-2028), U.S. Department of Transportation, PI.
- Incorporating Precipitation Data into Geotechnical Asset Management, Funded by Maryland Department of Transportation State Highway Administration (MDOT SHA) April 11, 2023 - December 31, 2024, PI.
- Verifying interconnection between different aquifer layers at the Managed Aquifer Recharge Site in Anne Arundel County, Maryland with isotope analysis, Funded by Morgan State University March 1, 2023 - September 30, 2023, PI.
- Diversifying the Water Portfolio for Agriculture in the Rio Grande Basin, Investigator; PI: Tracy J., TWRI, USDA-NIFA, 2017-2020.
- ASR Feasibility Study, Harris County Flood Control District, 2017-2020. Co-PI, PI: Miller, G., TAMU.
- Sustainable Water Resources for Irrigated Agriculture in a Desert River Basin Facing Climate Change and Competing Demands: From Characterization to Solutions, USDA-NIFA, 2015-2020, Co-PI; PI: Hargrove, W., UTEP.

SELECTED PUBLICATIONS

Over last 23 years, published over 80 journal articles, 9 book chapters, 37 technical and project reports; edited 1 ASCE manual of practice, 5 standard guidelines, and 1 committee report; made over 100 invited presentations at international, national, research group meetings and university seminars, and prepared over 200 conference papers, abstracts, and related presentations.

- Hargrove a, W.L., J.M. Heyman, A. Mayer, A. Mirchi, A. Granados-Olivas, G. Ganjegunte, D. Gutzler, D.D. Pennington, F.A. Ward, L. Garnica Chavira, Z. Sheng, S. Kumar, N. Villanueva-Rosales, W.S. Walker. 2023. The future of water in a desert river basin facing climate change and competing demands: A holistic approach to water sustainability in arid and semi-arid regions, *Journal of Hydrology: Regional Studies* 46 (2023) 101336.
- Jia, S., Z. Sheng, J. Xia, and M. Campana. 2022. Closing remarks to the featured collection: Water security—New technologies, strategies, policies, and institutions, November 2022, *JAWRA, Journal of the American Water Resources Association*, DOI:10.1111/1752-1688.13081
- Ma, Q., Y. Yang, Z. Sheng, S. Han, Y. Yang, and I. P. Moiwo, I.P. 2022. Hydro-Economic Model Framework for Achieving Groundwater, Food, and Economy Trade-Offs by Optimizing Crop Patterns, October 2022, *Water Research* 226(12):119199 DOI:10.1016/j.watres.2022.119199
- American Society of Civil Engineers (ASCE) (Sheng, Z., Contributing Author) 2022. Investigation of Land Subsidence due to Fluid Withdrawal, Land Subsidence Task Committee. Reston, VA, ASCE.
- Jung, C., S. Ahn, Z. Sheng, E.K. Ayana, R. Srinivasan, and D. Yeganantham. 2021. Evaluate River Water Salinity in a Semi-Arid Agricultural Watershed by Coupling Ensemble Machine Learning Technique with SWAT Model, *Journal of the American Water Resources Association*: <https://doi.org/10.1111/1752-1688.12958>, October 2021
- Lu, P., Z. Sheng, Z. Zhang, G. Miller, S. Reinert, and M. Huang, 2021. Effect of multilayered groundwater mounds on water dynamics beneath a recharge basin: Numerical simulation and

Curriculum Vitae

assessment of surface injection, *Hydrological Processes*, 35(5):

<https://doi.org/10.1002/hyp.14193>, 26 April 2021

- Ahn, S., and Z. Sheng. 2021. Assessment of Water Availability and Scarcity Based on Hydrologic Components in an Irrigated Agricultural Watershed Using SWAT. *Journal of the American Water Resources Association*. 57(1): 186-203. <https://doi.org/10.1111/1752-1688.12888>.
- Hargrove, W.L., Z. Sheng, A. Granados, J.M. Heyman, and S.T. Mubako. 2021. Impacts of Urbanization and Intensification of Agriculture on Transboundary Aquifers: A Case Study. *Journal of the American Water Resources Association* 57(1): 170-185. <https://doi.org/10.1111/1752-1688.12889>.
- Hong, M., B. Mohanty, and Z. Sheng. 2020. An Explicit Scheme to Represent the Bidirectional Hydrologic Exchanges Between the Vadose Zone, Phreatic Aquifer, and River, *Water Resources Research*, 56(9): <https://doi.org/10.1029/2020WR027571>, Sept. 1, 20p., 2020.
- ASCE. 2020. (Sheng, Z., Contributing Author) Standard Guidelines for Managed Aquifer Recharge, ASCE/EWRI 69-19. Reston, VA.
- Abudu S., Z. Sheng, J.P. King, and S. Ahn. 2019. A Karez System's Dilemma: A Cultural Heritage on a Shelf or Still a Viable Technique for Water Resiliency in Arid Regions. In: Yang L., Bork HR., Fang X., Mischke S. (eds) *Socio-Environmental Dynamics along the Historical Silk Road*. Springer, Cham, 507-525. https://doi.org/10.1007/978-3-030-00728-7_22.
- Sheng, Z., V.A., Kelly, M. Zang, and Q. Liu. 2018. Subsidence Caused by Groundwater Withdrawal and Rebound/uplift with Mitigation Measures, XIII IAEG Congress, San Francisco, USA. Sept. 17-21
- Chang, B., K. He, R. Li, Z. Sheng, and H. Wang. 2017. Linkage of climatic factors and human activities with water level fluctuations in Qinghai Lake of the northeastern Tibetan Plateau, China, *Water*, 9(7): 552. <https://doi.org/10.3390/w9070552>.
- Bushira, K.M., J.R. Hernandez, and Z. Sheng. 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, <https://doi.org/10.1007/s40808-017-0337-5>.
- Abudu, S., Z. Sheng, C. Cui, M. Saydi, H. Zamani-Sabzic, and J.P. King. 2016. Integration of aspect and slope in snowmelt runoff modeling in a mountain watershed, *Water Science and Technology*: 9(4): 265-273 <http://dx.doi.org/10.1016/j.wse.2016.07.002>.
- Ahmed, N., S.W. Taylor, and Z. Sheng (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.
- 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., C. Wang, J. Gastelum, S. Zhao, and J. Bordovsky. 2012. Desired future conditions for groundwater availability in the High Plains aquifer system, in Lal R. and Stewart, B.A. (eds.), *Advance in Soil Science: Soil Water and Food Security*, Taylor & Francis Group, LLC, 85-116.
- Liu, Y. and Z. Sheng. 2011. Trend-outflow method for understanding interactions of surface water with groundwater and atmospheric water for eight reaches of the upper Rio Grande, *J. of Hydrology*. 409(3-4): 710-723. <https://doi.org/10.1016/j.jhydrol.2011.09.004>
- National Research Council. 2008 (Sheng, Z., Contributing author). *Prospects for Managed Underground Storage of Recoverable Water*, Committee Chair: Dr. Edward Bouwer, The National Academies Press.
- Sheng, Z. 2005. An aquifer storage and recovery system with reclaimed wastewater to preserve

Curriculum Vitae

native groundwater resources in El Paso, Texas, *Journal of Environmental Management*. 75(4): 367-377. <https://doi.org/10.1016/j.jenvman.2004.10.007>

- Sheng, Z., D.C. Helm, and J. Li. 2003. Mechanisms of earth fissuring caused by groundwater withdrawal: *Journal of Environmental & Engineering Geoscience*. IX(4): 313-324. <https://doi.org/10.2113/9.4.351>

SERVICE ACTIVITIES

University and Department Service

- University Council, 2022-, Morgan State University
- University IT Commission, 2022-, Morgan State University
- College of Life and Agricultural Sciences Promotion and Tenure Committee, 2016-18, TAMU
- Award Committee Co-Chair, 2017-18, Texas A&M AgriLife Research
- Biological and Agricultural Engineering, Promotion and Tenure Committee, 2007-20, TAMU
- BAEN Recognition and Events Committee, 2009-11, TAMU
- Chair, Search Committee for the Faculty in Hydrological System Dynamics, 2019, TAMU

Leadership and Services in Professional Societies

- Member, 2005-06, Advisory Committee on Sustainable Underground Storage of Recoverable Water, National Academy of Sciences, National Research Council
- Panelist, NSF 1631 Infrastructure Panel, June 18, 2010, Reston, VA.
- Vice President for International Affairs, 2016-2019. American Institute of Hydrology
- Board Director, 2019-2020, American Water Resources Association
- President, 2024-present, Chinese American Water Resources Association
- President, 2012-2013, Association of Oversea Chinese Agricultural, Biological and Food Engineers
- American Society of Civil Engineers – Environmental and Water Resources Institute
 - Secretary, 2020-2022, Groundwater Council
 - Chair, 2018-2022, Land Subsidence Task Committee
 - Chair, 2011-2013, Groundwater Hydrology Committee
 - Chair, 2008-2010, Committee on Symposia and Continuing Education
 - Vice Chair, 2007-2010, Groundwater Management Committee, 2007-2010.