

KARTIK VENKATARAMAN, PhD, PE
Curriculum Vitae

Associate Professor
Department of Engineering & Computer Science
Tarleton State University
Stephenville, TX 76402

venkataraman@tarleton.edu
(254) 968 9164

EDUCATION

2010 PhD, Civil Engineering, Texas Tech University
2002 MS, Environmental Technology Management, Texas Tech University
2000 BS, Chemical Engineering, University of Madras
Research Areas: Groundwater Hydrology & Contamination, Hydrologic Trends

EMPLOYMENT

2018-Present Research Faculty Fellow, Tarleton State University
2018-Present Associate Professor, Department of Engineering and Computer Science, Tarleton State University
2012-2018 Assistant Professor, Department of Engineering and Computer Science, Tarleton State University
2011-2012 NSF-CREST RESSACA Post-Doctoral Research Scientist, Texas A&M University-Kingsville
2003-2010 Instructor, Department of Civil Engineering, Texas Tech University
2002-2003 Research Associate, Water Resources Centre, Texas Tech University

AWARDS

Tarleton State University College of Science and Technology Outstanding Junior Faculty Award (2016)

GRANTS

External Grants [Awarded]

Higgins, C (PI), Bellows, B (Co-PI), Cavazos, R, Herrmann, K, Chraibi, V, Meik, J, Nelson, A, Srinivasan, R, Thompson, C, **Venkataraman, K**. NSF REU Site: Restoring cattle ranches for sustainable land and water resources (2017-2019). [PI has received notification of delay in award; it is set to begin in 2018]

Internal Grants [All awarded]

Venkataraman, K (PI). Impacts of climate change on wind speed and the water energy nexus in Texas. Tarleton State University Office of Faculty Research Organized Research Grant (2016-2017; \$3489.95)

Venkataraman, K (PI). Multi-decadal hydrologic trends in the Brazos River basin of Texas. Tarleton State University Office of Faculty Research Organized Research Grant (2014-2015; \$9,350.44).

Venkataraman, K (PI). Modelling nitrate contamination of groundwater: implications for aquifer monitoring and management. Tarleton State University Office of Faculty Research Organized Research Grant (2013-2014; \$9,811.11).

Venkataraman, K (PI). A GIS-based DRASTIC model for the assessment of vulnerability of the Trinity aquifer of Central Texas to nitrate contamination. Tarleton State University Office of Faculty Research Organized Research Grant (2012-2013; \$8,211).

Venkataraman, K (faculty mentor for an Undergraduate Research Assistantship [URA]). Land use effects on subsurface arsenic occurrence in South Texas. Tarleton State University Office of Research and Innovation (2018; \$1000).

Venkataraman, K (faculty mentor for an Undergraduate Research Assistantship [URA]). Potential Evapotranspiration in Texas in a changing climate. Tarleton State University Office of Student Research and Creative Activities (2016; \$1000).

Venkataraman, K (faculty mentor for an Undergraduate Research Assistantship [URA]). Spatio-temporal hydrologic trends in South Texas. Tarleton State University Office of Student Research and Creative Activities (2014; \$4000).

External Grants [Not awarded]

Kan, E (PI), **Venkataraman, K** (Co-PI). Effective recovery of phosphorous from dairy wastewater using surface-functionalized biochar. 15th Annual P3 Awards: A National Student Design Competition Focusing on People, Prosperity and the Planet - Safe and Sustainable Water Resources (2018-2019; \$14,991).

Bellows, B (PI), Cavazos, R, Herrmann, K, Higgins, C, Nelson, A, Srinivasan, R, Thompson, C, **Venkataraman, K**. REU Site: Student engagement in the interdisciplinary and watershed-based study of ephemeral stream systems in North Central Texas. (2016-2018; \$346,128).

Sinha, T (PI), Ren, J, Chen, J, **Venkataraman, K**, Sabo, J, Peng, B, Zhang, L, Chen, N, Fang, Q, Huang, J, Chen, M and Zhang, Y (2014). Eco-hydrologic and socio-economic impacts of climate change and urbanization on sustainability of selected US-China coastal water systems. National Science Foundation Environmental Sustainability Program.

Uddameri, V (PI), Morse, A, Hamilton, D, Hernandez, A, Jackson, WA, Klein, D, Rahman, SM, Vercellino, A, Morse, S and **Venkataraman, K** (2014). *National Center for Innovation in Small Drinking Water Systems*. United States Environmental Protection Agency (\$881,493).

Liao, KJ (PI), Ren, J, Shanks, C, and **Venkataraman, K** (2013). *Development of a Model Management System Tool (M2ST) to Improve Adaptability of Coastal Decision Makers to Climate Change Impacts on Saltwater Intrusion in South Texas*. National Oceanic and Atmospheric Administration Coastal and Ocean Climate Applications (NOAA COCA; \$300,000).

Ren, J (PI), Liao, KJ, Su, H, Tissot P, Jeffries G, **Venkataraman, K**, Osidele, O, and Morales M (2013). *Impact of climate change and sea level rise on water resources along the coast of Gulf of Mexico*. National Science Foundation Science, Engineering, and Education for Sustainability (NSF SEES; \$600,000).

Higgins, C (PI), **Venkataraman, K**, Srinivasan, R, Thompson, C, Kurwadkar, S, Nelson, A, Herrmann K, Meik, J (2013). REU Site: Environmental Studies of Ephemeral System in Texas. National Science Foundation Research Experience for Undergraduates (NSF REU).

PEER-REVIEWED PUBLICATIONS

Venkataraman, K and Lozano, JW (2018). Reliable predictors of arsenic occurrence in the Southern Gulf Coast Aquifer of Texas. *Geosciences*, 8(5), 155. <https://doi.org/10.3390/geosciences8050155>

Venkataraman, K, Nelson, M and Frandsen, C (2016). Comparison of two temperature-based methods of estimating potential evapotranspiration (PET) in Texas. *World Environmental & Water Resources Congress 2016*, 699-708. <http://dx.doi.org/10.1061/9780784479872.072>

Venkataraman, K, Tummuri, S, Medina, A, and Perry, J (2016). 21st century drought outlook for major climate divisions of Texas based on CMIP5 multimodel ensemble: Implications for water resource management. *Journal of Hydrology*, 534, 300-316. <http://dx.doi.org/10.1016/j.jhydrol.2016.01.001>

Venkataraman, K, Crawford, J, and Emmert, K. (2015). Modeling the Impact of CAFOs on Nitrate Contamination in the Middle Trinity Aquifer of Central Texas. *World Environmental & Water Resources Congress 2015*, 585-594. <http://dx.doi.org/10.1061/9780784479162.053>

Kurwadkar, S and **Venkataraman, K** (2013). Groundwater Quality Impact Reconnaissance: 2012 – 2013. *Water Environment Research*, 85(10), 1700-1714. <http://dx.doi.org/10.2175/106143013X13698672322787>

Uddameri, V and **Venkataraman, K** (2013). Assessing the effect of initial vapor-phase concentrations on inhalation risks of disinfection by-products (DBPs) in multi-use shower facilities. *Clean Technologies and Environmental Policy*, 15(4), 591-606. <http://dx.doi.org/10.1007/s10098-012-0543-9>

Venkataraman, K and Uddameri, V (2012). Modeling simultaneous exceedance of drinking-water standards of arsenic and nitrate in the Southern Ogallala aquifer using multinomial logistic regression. *Journal of Hydrology*, 458-459, 16-27. <http://dx.doi.org/10.1016/j.jhydrol.2012.06.028>

Venkataraman, K and Uddameri, V (2011). A GIS-based evaluation of risks due to trihalomethane exposure during showering in coastal Texas. *Clean Technologies and Environmental Policy*, 14(4), 551-564. <http://dx.doi.org/10.1007/s10098-011-0415-8>

OTHER PUBLICATIONS

Venkataraman, K, Medina, A and Perry, J (2014). Assessment of Long-term Drought Characteristics in 14 Major Texas Cities Based on CMIP5 Multi-Model Projections. Abstract H23N-1073, presented at Fall 2014 Meeting, American Geophysical Union San Francisco, Dec 15-19.

Venkataraman, K and Uddameri, V (2012). Mapping Arsenic and Nitrate Exceedance in Southern Ogallala Aquifer. In Fox, S (ed.), American Water Resources Association Spring Specialty Conference on GIS and Water Resources VII, New Orleans, LA, March 26-28 (pp 42-48).

Venkataraman, K, Ortegon, J, Uddameri, V, and Dyke, R (2012). GIS Based Mapping of Wind-Powered Desalination Potential in South Texas. In Fox, S (ed.), American Water Resources Association Spring Specialty Conference on GIS and Water Resources VII, New Orleans, LA, March 26-28 (pp 358-364).

Venkataraman, K and Uddmaeri, V (2011). Impacts of Sea Level Rise caused by Climate Change on Saltwater Intrusion into the Gulf Coast Aquifer of South Texas. Abstract H34E-05, presented at 2011 Fall Meeting, American Geophysical Union, San Francisco, CA, Dec 5-9.

Venkataraman, K, Rainwater, K, Jackson, WA, and Ridley, MK (2009). Speciation and Source Identification for Arsenic in the Southern High Plains Aquifer. EOS Trans. AGU, 90(52), Fall Meet. Suppl., Abstract H51I-0895.

Venkataraman, K and Rainwater, K (2007). Subsurface Occurrence, Distribution and Speciation of Arsenic in the Southern High Plains. EOS Trans. AGU, 88 (52), Fall Meet. Suppl., Abstract H13L-02.

Rainwater, K, Jones, MW, **Venkataraman, K**, McEnery, JA, and Bathulla, A (2004). Sorption of Selected Metals on Blackwater Draw Sediments. Final Report to BWXT Pantex, Amarillo, Texas, 74 p.

PUBLICATIONS IN REVIEW

Crawford, J, **Venkataraman, K**, and Booth, N (2018). Developing climate model ensembles: a comparative case study. *Journal of Hydrology* [under review as of Apr 24, 2018]

PRESENTATIONS (SELF)

Venkataraman, K. Hydrologic trends and water availability in Texas. Joint ASCE Fort Worth/Dallas Meeting, July 2017. [invited]

Venkataraman, K, Nelson, M (co-presenter), and Frandsen, C (co-presenter) [poster]. Comparison of two temperature-based methods of estimating potential evapotranspiration (PET) in Texas. World Environmental & Water Resources Congress: West Palm Beach, FL May 23-26, 2016.

Venkataraman, K, Crawford, J and Emmert, K. Modeling the Impact of CAFOs on Nitrate Contamination in the Middle Trinity Aquifer of Central Texas. World Environmental & Water Resources Congress: Austin, TX May 17-21, 2015.

Venkataraman, K, Crawford, J and Emmert, K. Modeling Spatial Trends in Nitrate in the Middle Trinity Aquifer of Central Texas: A Comparison of Approaches. AWRA Annual Water Resources Conference: Portland, OR, November 4-7, 2013.

Venkataraman, K and Foyt, S. Modeling Vulnerability of the Middle Trinity Aquifer to Nitrate Contamination using a Geospatial DRASTIC Model. ASCE 2013 Texas Section Fall Conference, Dallas, TX. September 11-14, 2013.

Venkataraman, K. Workshop on Sustainable Groundwater Management in Coastal Areas. Anna University, Chennai, India. Jul 09 2013. (invited)

Venkataraman, K. Arsenic in the Southern High Plains aquifer system of Texas, USA. Anna University, Chennai, India. Jul 05, 2012. (invited)

Venkataraman, K. Evaluation of the Potential for Brackish Ground Water Desalination using Wind Power in Coastal South Texas. CREST-RESSACA Environment and Energy Sustainability Conference: Houston, TX. Apr 26-27, 2012.

Venkataraman, K. Mapping Arsenic and Nitrate Exceedance in Southern Ogallala Aquifer. American Water Resources Association Spring Specialty Conference on GIS and Water Resources VII: New Orleans, LA. Mar 26-28, 2012.

Venkataraman, K. GIS Based Mapping of Wind-Powered Desalination Potential in South Texas [poster]. American Water Resources Association Spring Specialty Conference on GIS and Water Resources VII: New Orleans, LA. Mar 26-28, 2012.

PRESENTATIONS (STUDENTS)

Sienkiewich, J (co-presenter), Flinn, K (co-presenter), Viehmann, H (co-presenter), Riebe, T (co-presenter). Alligator Creek Wastewater Treatment Plant Expansion. Water Environment Association of Texas Student Design Competition: San Antonio, TX, Apr 23-25, 2018.

Frandsen, C (co-presenter), Nelson, M (co-presenter) and **Venkataraman, K**. Comparison of potential evapotranspiration estimation methods for drought evaluation. Texas A&M University 12th Annual Pathways Student Research Symposium: Corpus Christi, TX Oct 22-23, 2015.

Holland, T. Intercomparison of Global Climate Models for Applicability in West Texas. Tarleton State University Annual Research Symposium: Stephenville, TX Oct 16 2015.

Frandsen, C (co-presenter), Nelson, M (co-presenter) and **Venkataraman, K**. Potential evapotranspiration in a changing climate and its effect on drought assessment. Tarleton State University College of Science and Technology (COST) Research Symposium, Apr 16, 2015. * winner of 2nd place award for best poster.

Perry, J (presenter) and **Venkataraman, K**. 21st Century Drought Characteristics in Laredo and McAllen Based on CMIP5 Multi-model Projections. Tarleton State University 13th Annual Student Research Symposium, Nov 2014. * winner of best poster award.

Perry, J (presenter) and **Venkataraman, K**. Trends in Groundwater Levels in the Southern High Plains Aquifer. 11th Annual TAMUS Pathways Symposium, Kingsville, TX Nov 8, 2013. (poster)

Fuchs, C (presenter) and **Venkataraman, K**. Trends in Nitrate Occurrence in the Middle Trinity Aquifer. 11th Annual TAMUS Pathways Symposium, Kingsville, TX Nov 8, 2013. (poster)

Mills, J (presenter) and **Venkataraman, K**. Evaluation of the Effect of Agricultural Practices on Nitrate Leaching. Tarleton State University Internal Research Symposium, Nov 2, 2013 (poster).

Pugh, K (presenter), Foyt, S, **Venkataraman, K**, Crawford, J, Emmert, K. Modeling Nitrate Occurrence in the Middle Trinity Aquifer of Texas. Mathematics Association of America Texas Section Spring 2013 Meeting, Lubbock, TX. April 11-13, 2013.

Myers, R (presenter) and **Venkataraman, K**. Spatial trends in cancer risks due to exposure to arsenic in water supplies in the Southern High Plains of Texas. 10th annual TAMUS Pathways Symposium, Galveston, TX. Nov 10, 2012. (poster)

GRADUATE & UNDERGRADUATE MENTORING AND OUTREACH ACTIVITIES

Graduate Thesis Advisees

Ermon Dave Thomas (2016-2018). Evaluation of hydrologic trends in the Nueces River Basin of Texas [MS Thesis supervisor/committee chair].

Graduate Student Research Mentored

Nina Culver & Juliann Booth (Sep 2015 to Jun 2016). Climate model ensembles – data mining approaches.

Shawn Foyt (Jan 2013 to Aug 2013). Fate and transport of nitrate in the subsurface environment.

Srinivaskumar Anandam (Aug 2002 to Dec 2002). Trained student in field sampling techniques and laboratory water quality analysis methods.

Undergraduate Research Mentored

John Lozano (Jan 2018 to present). Reliable predictors for arsenic occurrence in the Southern Gulf Coast Aquifer of Texas [funded through URA].

Caleb Frandsen & Madisyn Nelson (Sep 2014 to Aug 2016). Evolution of PET in the 21st century [funded through URA].

Thomas Holland (Jan 2015 to Aug 2015). Comparison of CMIP3 and CMIP5 model ensembles for climate evolution in Texas [funded through FYRE program].

Kayla Jacobs (Jun 2014 to Aug 2014). Evaluation of the potential for brackish groundwater in fracking use in the Permian Basin of Texas [funded through FYRE program].

Aldo Medina (May 2014 to Dec 2014). 21st century drought evolution in Texas: using a CMIP5 ensemble [funded through URA].

Jordan Perry (Jan 2013 to Sep 2014). 21st century drought evolution in Texas: using a CMIP5 ensemble [funded through URA].

Kameron Pugh (Jan 2013 to May 2013). Statistical tools in water quality modelling [funded through ORG].

Caleb Fuchs (Jan 2013 to May 2013). Geostatistical assessment of groundwater vulnerability [funded through ORG].

Ryan Myers (Aug 2012 to Nov 2012). Mapping excess cancer risk from arsenic exposure in the Southern High Plains region of Texas.

NSF-REU Mentorship

Ibrahim Elkashlan, NSF REU program Undergraduate Student (anticipated: Jun 2018-Aug 2018).

Joshua Ortegon, NSF CREST REU program Undergraduate Student (Jun 2011 to Aug 2011). Trained student in the basics of wind science and engineering, and turbine design. Imparted statistical analyses skills.

Debbie Garcia (Jan 2012 to Jun 2012). Trained student on GIS-based geostatistical and geospatial analyses techniques for studying contaminant behaviour.

Jerry Carmona (Jan 2011 to May 2011). Introduced student to water quality data collection, analysis, and reporting methods.

NSF-RET Outreach and Mentorship

Rick Dyke, NSF RET program High School Teacher (Jun 2011 to Jul 2011). Trained participant on GIS mapping skills, report writing skills and Microsoft Office Access Database management skills.

Oliver Long, NSF RET program High School Teacher (Jun 2012 to Aug 2012). Trained teacher in using geospatial mapping techniques and environmental indicators to evaluate the distribution of and understand the behaviour of scorpion species in South Texas.

TEACHING

(all at Tarleton State University)

ENVE 2310	Introduction to Environmental Engineering
ENVE 2311	Soil Mechanics
ENVE 3400	Fluid Mechanics
ENVE 3310	Basic Hydrology
ENVE 3333	Groundwater Contamination and Remediation
ENVE 3420	Groundwater Hydrology
ENVE 4302	Atmospheric Systems & Air Pollution
ENVE 4310	Water Resources Engineering
ENVE 4330	Texas Water Resources Management
ENVE 4340	Advanced GIS Applications
HYDR 1310	Introduction to Hydrology
HYDR 4388	Undergraduate Research in Hydrology
ENGR 1100	Freshman Seminar/Transition to University Studies
ENGR 1211	Fundamentals of Engineering I
ENGR 1212	Fundamentals of Engineering II
ENGR 2322	Thermodynamics
ENGR 2251	Introduction to GIS
ENGR 4259	Capstone Design I
ENGR 4360	Capstone Design II

PROFESSIONAL MEMBERSHIPS

Sigma Xi (by nomination only)

American Society of Civil Engineers (ASCE)

American Geophysical Union (AGU)

American Water Resources Association (AWRA)

SERVICE

(all at Tarleton State University)

Tarleton State University Centre for Environmental Studies Executive Committee Member (2018-present)

TIAER-Tarleton Focal Group Committee Member (2017-current)

Assistant/Associate Dean of the College of Science and Technology Search Committee Member (2016)
Tarleton CRI Research Professor Search Committee Member (2015-2016)
TIAER Executive Director Search Committee Member (2015)
University Research Committee (2014-current)
University Scholarship Committee (2014-current)
College of Science and Technology Curriculum Review Committee (2013-current)
College of Science and Technology Scholarship Committee (2013-current)
College of Science and Technology subcommittee for Study Abroad Programs (2014)
College of Science and Technology Communications Committee (2016-current)
Junior faculty mentor (2014-current)
Engineering club co-advisor (2012-current)
Editorial Board of the Civil Engineering Journal (2015-current)
Reviewer for the Texas Water Journal (2014-current)
Reviewer for the Journal of American Water Resources Association (2011-current)
Reviewer for the Journal of Water Resources Management (2014-current)
Reviewer for the Journal of Applied Meteorology and Climatology
Search Committee Member for all faculty searches conducted in the Engineering and Computer Science department since 2012

CERTIFICATIONS

Licensed Professional Engineer [Texas PE # 128773; Environmental discipline]