

## **Dr. Hua Zhang**

Texas A&M University-Corpus Christi  
Science & Engineering, Engineering

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### **Education**

PhD, University of Regina, 2011.

MS, Hunan University, 2004.

BS, Hunan University, 2001.

### **Licensures and Certifications**

Engineer-in-Training, Association of Professional Engineers and Geoscientists of Saskatchewan.  
(2012 - Present).

### **Professional Employment**

Assistant Professor of Engineering, Texas A&M University - Corpus Christi. (2014 - Present).

Post-Doctoral Fellow, Stanford University. (2012 - 2014).

Research Fellow, University of Regina. (2011 - 2012).

Research Assistant, University of Regina. (2006 - 2010).

Project Technician, University of Regina. (2005).

Assistant Engineer, Hunan University. (2004).

Research Assistant, Hunan University. (2001 - 2004).

### **Professional Memberships**

Association of Professional Engineers & Geoscientists of Saskatchewan  
American Geophysical Union  
Canadian Water Network  
Canadian Water Resources Association  
International Association of Hydrological Sciences  
International Society for Environmental Information Sciences

## **TEACHING**

### **Teaching Experience**

ENGR 2326, DYNAMICS

## **SCHOLARLY AND CREATIVE ACTIVITIES**

### **Publications**

## Refereed

### Journal Articles

Zhang, H., Gorelick, S. M., Avisse, N., Tilmant, A., Rajsekhar, D., Yoon, J. (2016). A New Temperature-Vegetation Triangle Algorithm with Variable Edges (TAVE) for Satellite-Based Actual Evapotranspiration Estimation. *Remote Sensing*, 8(9), 735. [www.mdpi.com/2072-4292/8/9/735](http://www.mdpi.com/2072-4292/8/9/735)

Huang, G., Qin, X., He, L., Zhang, H., Li, Z. (2015). Inconsistent desertification dynamics under climate change and human interference. *Journal of Geophysical Research: Atmospheres*.

Han, J.-C., Huang, G., Huang, Y., Zhang, H., Li, Z., Chen, Q. (2015). Chance-constrained overland flow modeling for improving conceptual distributed hydrologic simulations based on scaling representation of sub-daily rainfall variability. *Science of the Total Environment*, 524, 8-22.

Li, Z., Huang, G., Han, J.-C., Wang, X., Fan, Y., Cheng, G., Zhang, H., Huang, W. (2015). Development of a Stepwise-Clustered Hydrological Inference Model. *Journal of Hydrologic Engineering*. [dx.doi.org/10.1061/\(ASCE\)HE.1943-5584.0001165](https://doi.org/10.1061/(ASCE)HE.1943-5584.0001165)

Han, J.-C., Huang, G., Zhang, H., Li, Z. (2014). Heterogeneous Precipitation and Streamflow Trends in the Xiangxi River Watershed, 1961–2010. *Journal of Hydrologic Engineering*, 19(6), 1247-1258. [dx.doi.org/10.1061/\(ASCE\)HE.1943-5584.0000898](https://doi.org/10.1061/(ASCE)HE.1943-5584.0000898)

Zhang, H., Moffett, K. B., Windham-Myers, L., Gorelick, S. M. (2014). Hydrological controls on methylmercury distribution and flux in a tidal marsh. *Environmental Science & Technology*, 48(12), 6795-6804. [pubs.acs.org/doi/abs/10.1021/es500781g](https://pubs.acs.org/doi/abs/10.1021/es500781g)

Han, J.-C., Huang, G., Zhang, H., Li, Z., Li, Y. (2014). Bayesian uncertainty analysis in hydrological modeling associated with watershed subdivision level: a case study of SLURP model applied to the Xiangxi River watershed, China. *Stochastic Environmental Research and Risk Assessment*, 28(4), 973-989. [10.1007/s00477-013-0792-0](https://doi.org/10.1007/s00477-013-0792-0)

Zhang, H., Gorelick, S. M. (2014). Coupled impacts of sea-level rise and tidal marsh restoration on endangered California clapper rail. *Biological Conservation*, 172, 89-100. [dx.doi.org/10.1016/j.biocon.2014.02.016](https://doi.org/10.1016/j.biocon.2014.02.016)

Wang, S., Huang, G., Lin, Q., Li, Z., Zhang, H., Fan, Y. (2014). Comparison of interpolation methods for estimating spatial distribution of precipitation in Ontario, Canada. *International Journal of Climatology*.

Han, J.-C., Huang, G., Zhang, H., Li, Z., Li, Y. (2013). Effect of watershed subdivision level on semi-distributed hydrological simulations. *Hydrological Sciences Journal*, 59(1), 108-125. [dx.doi.org/10.1080/02626667.2013.854368](https://doi.org/10.1080/02626667.2013.854368)

Han, J.-C., Huang, G., Zhang, H., Li, Z. (2013). Optimal land use management for soil erosion control by using an interval-parameter fuzzy two-stage stochastic programming approach. *Environmental Management*, 52(3), 621-638. [link.springer.com/article/10.1007%2Fs00267-013-0122-9](https://link.springer.com/article/10.1007%2Fs00267-013-0122-9)

Zhang, H., Huang, G., Wang, D. (2013). Establishment of channel networks in a digital elevation model of the prairie region through hydrological correction and geomorphological

assessment. *Canadian Water Resources Journal*, 38(1), 12-23.  
dx.doi.org/10.1080/07011784.2013.773788

Zhang, H., Huang, G. (2013). Development of climate change projections for small prairie watersheds using multi-model ensemble simulation and stochastic weather generation. *Climate Dynamics*, 40(3-4), 805-821.

Han, J.-C., Huang, G., Zhang, H., Zhuge, Y.-S., He, L. (2012). Fuzzy constrained optimization of eco-friendly reservoir operation using self-adaptive genetic algorithm: a case study of a cascade reservoir system in the Yalong River, China. *Ecohydrology*, 5(6), 768-778.  
onlinelibrary.wiley.com/doi/10.1002/eco.267/citedby

Zheng, R.-B., Huang, G., Zhang, Y.-M., Zhang, H. (2012). Inexact de novo programming for agricultural irrigation system planning. *Environmental Engineering Science*, 29(7), 700-712.  
online.liebertpub.com/doi/abs/10.1089/ees.2010.0315

Zhang, H., Huang, G., Wang, D., Zhang, X., Li, G., An, C., Cui, Z., Liao, R., Nie, X. (2012). An integrated multi-level watershed-reservoir modeling system for examining hydrological and biogeochemical processes in small prairie watersheds. *Water Research*.  
dx.doi.org/10.1016/j.watres.2011.12.021

Zhang, H., Huang, G., Wang, D., Zhang, X. (2011). Multi-period calibration of a semi-distributed hydrological model based on hydroclimatic clustering. *Advances in Water Resources*, 34(10), 1292-1303. dx.doi.org/10.1016/j.advwatres.2011.06.005

Zhang, H., Huang, G. (2011). Assessment of non-point source pollution using a spatial multicriteria analysis approach. *Ecological Modelling*, 222(2), 313-321.  
dx.doi.org/10.1016/j.ecolmodel.2009.12.011

Zhang, H., Huang, G., Wang, D., Zhang, X. (2011). Uncertainty assessment of climate change impacts on the hydrology of small prairie wetlands. *Journal of Hydrology*, 396(1-2), 94-103. dx.doi.org/10.1016/j.jhydrol.2010.10.037

Zhang, H., Huang, G. (2009). Building channel networks for flat regions in digital elevation models. *Hydrological Processes*, 23(20), 2879-2887.  
onlinelibrary.wiley.com/doi/10.1002/hyp.7378/abstract

Zhang, H., Huang, G., Zeng, G. (2009). Health risks from arsenic-contaminated soil in Flin Flon-Creighton, Canada: integrating geostatistical simulation and dose-response model. *Environmental Pollution*, 157(8-9), 2413-2420. dx.doi.org/10.1016/j.envpol.2009.03.014

Qin, X., Huang, G., Zhang, H., Chakma, A. (2008). An integrated decision support system for management of CO<sub>2</sub> geologic storage in the Weyburn Field. *Petroleum Science and Technology*, 26(7-8), 813-843.

Li, Z.-W., Zeng, G., Zhang, H., Yang, B., Jiao, S. (2007). The integrated eco-environment assessment of the red soil hilly region based on GIS – a case study in Changsha City, China. *Ecological Modelling*, 202(3-4), 540-546. dx.doi.org/10.1016/j.ecolmodel.2006.11.014

Zhang, H., Zeng, G., Li, Z.-W., Huang, G., Xie, G. (2005). Multi-temporal remote sensing information model for pollution monitoring of inland water. *Environmental Monitoring*, 5, 65-75.

Shi, L., Zeng, G., Zhang, H., Cao, X., Peng, M. (2005). The application of Geographic Information System (GIS) in paroxysmal environmental accidents. *Remote Sensing Technology and Application*, 6, 93-97.

Li, Z.-W., Chen, G., Zeng, G., Zhang, H., Li, J., Chakma, A., Qin, X. (2004). Application of land productivity model for land use programming in hilly loess regions. *Transactions of Nonferrous Metals Society of China*, 14, 71-74.

Zhang, H., Zhu, H., Zeng, G., Huang, G., Li, Z.-W., Chang, C. W., Qian, L., Wang, Y.L., Hong, Y.X., Li, J. (2004). Applications of remote sensing for inland water quality. *Transactions of Nonferrous Metals Society of China*, 14, 116-121.

Li, Z.-W., Zeng, G., Zhang, H., Yang, B., Jiao, S. (2004). Integrated assessment of ecology and environment of hilly region of red soil based on GIS: a case study in Changsha. *Ecological Environment*, 3, 61-64.

## Presentations

Zhang, H., Gorelick, S. M., "Analyzing Land Surface Evapotranspiration in Semi-Arid Regions Using A Modified Triangle Method," AGU Fall Meeting, San Francisco, CA. (December 16, 2016).

Avisse, N., Tilmant, A., Zhang, H., Talozzi, S., Muller, M. F., Rajsekhar, D., Yoon, J., Gorelick, S., "Combining Remote Sensing and Multi-Agent Simulation to Assess Alternative Water Management Policies in Conflict-Prone Areas - The Case of the Yarmouk River Basin," AGU Fall Meeting, San Francisco, CA. (December 16, 2016).

Yoon, J., Klassert, C. J., Lachaut, T., Selby, P. D., Knox, S., Gorelick, S. M., Rajsekhar, D., Tilmant, A., Avisse, N., Harou, J., Medellin-Azuara, J., Gawel, E., Klauer, B., Zhang, H., "Evaluation of water security in Jordan using a multi-agent, hydroeconomic model: Initial model results from the Jordan Water Project," AGU Fall Meeting, San Francisco, CA. (December 16, 2016).

Klassert, C. J., Yoon, J., Gawel, E., Klauer, B., Sigel, K., Gorelick, S. M., Rajsekhar, D., Tilmant, A., Avisse, N., Harou, J., Knox, S., Mustafa, D., Talozzi, S., Zhang, H., "Simulating partially illegal markets of private tanker water providers on the country level: A multi-agent, hydroeconomic case-study of Jordan," AGU Fall Meeting, San Francisco, CA. (December 15, 2016).

Gorelick, S. M., Yoon, J., Rajsekhar, D., Muller, M. F., Zhang, H., Gawel, E., Klauer, B., Klassert, C. J., Sigel, K., Tilmant, A., Avisse, N., Harou, J., Knox, S., Selby, P. D., Mustafa, D., Talozzi, S., Haddad, Y., Shamekh, M., "Jordan Water Project: an interdisciplinary evaluation of freshwater vulnerability and security," AGU Fall Meeting, San Francisco, CA. (December 14, 2016).

Horadam, W., DeAnda, G., Baxtor, A., Duke, R., Zhang, H., "Reconstructing the Freshwater Balance of the Upper Laguna Madre Based on Improved Evaporation Estimates," Pathways Student Research Symposium, Prairie View, TX. (November 4, 2016).

Xu, H., Zhang, H., "High-efficient unmanned aircraft system operations for ecosystem assessment," AGU Ocean Sciences Meeting, AGU, New Orleans, LA. (February 23, 2016).

Zhang, H., Xu, H., "The framework of a UAS-aided flash flood modeling system for coastal regions," AGU Ocean Sciences Meeting, AGU, New Orleans, LA. (February 23, 2016).

Zhang, H., "Integrated modeling of water and environmental systems," TAMUCC-UTEP Joint Workshop, TAMUCC & UTEP, Houston, TX. (February 5, 2016).

Zhang, H., "Applications of remote sensing in hydrology and water resources management," Natural Resource Management with Remote Sensing 2016, Texas A&M AgriLife, Corpus Christi, TX. (February 4, 2016).

Zhang, H., Gorelick, S. M., "Evapotranspiration analysis using a zonal temperature-vegetation remote sensing approach," AGU Fall Meeting, AGU, San Francisco, CA. (December 18, 2015).

Zhang, H., "Taking dynamics to the next level," Islander Forum, Center for Faculty Excellence, TAMUCC, Corpus Christi, TX. (August 19, 2015).

Zhang, H., "Hydrological controls on methylmercury distribution and flux in a tidal marsh," UT Marine Science Institute Departmental Seminar, University of Texas at Austin, Port Aransas, TX. (April 24, 2015).

Zhang, H., "Effects of surface water-groundwater interactions on methylmercury distribution and flux in a tidal marsh," TAMUCC ENCS Seminar, ENCS, Corpus Christi. (February 20, 2015).

Zhang, H. (Author & Presenter), Gorelick, S. M. (Author), Yoon, J. (Author), "Comparisons of four methods for evapotranspiration estimates in Jordan," 2014 Fall Meeting of American Geophysical Union (AGU), TAMUCC and Stanford University, San Francisco, CA. (December 18, 2014).

## **Contracts, Grants and Sponsored Research**

### **Grant**

Zhang, Hua (Principal), Zimba, Paul V. (Co-Principal), "Linking coastal urbanization to water quality and habitat changes of the Upper Laguna Madre," Sponsored by Texas General Land Office, State, \$93,604.00. (2016 - 2019).

Zhang, Hua (Principal), Mehrubeoglu, Ruby (Principal), "An integrated characterization and simulation system for microplastics in coastal watersheds," Sponsored by TAMUCC, Local, \$20,000.00. (2016 - 2017).

## **SERVICE**

### **Department**

Committee Member, Faculty Search Committee (EE). (2016 - 2017).

Committee Member, ENGR Curriculum Subcommittee (Foundations and Materials/Mechanical Systems). (2015 - 2016).

Committee Member, Faculty Search Committee (ME & IE). (2015 - 2016).

### **College**

Committee Member, College Grade Appeal Committee. (2015).

Committee Member, College TA Selection Committee. (2015).

### **Professional**

Reviewer, Journal Article, ACS Sustainable Chemistry & Engineering. (2016).

Reviewer, Journal Article, Chemosphere. (2016).

Reviewer, Journal Article, Critical Reviews in Biotechnology. (2016).

Reviewer, Journal Article, Ecological Indicator. (2016).

Reviewer, Journal Article, Ecological Modelling. (2016).  
Reviewer, Journal Article, Energy Economics. (2016).  
Reviewer, Journal Article, Environmental Earth Sciences. (2016).  
Reviewer, Journal Article, Environmental Science & Technology. (2016).  
Reviewer, Journal Article, Hydrological Processes. (2016).  
Reviewer, Journal Article, Journal of Environmental Sciences. (2016).  
Reviewer, Journal Article, Journal of Geophysical Research - Atmospheres. (2016).  
Reviewer, Grant Proposal, Mitacs Accelerate. (2016).  
Reviewer, Journal Article, Remote Sensing. (2016).  
Reviewer, Journal Article, Renewable Energy. (2016).  
Reviewer, Journal Article, Science of the Total Environment. (2016).  
Reviewer, Journal Article, Theoretical and Applied Climatology. (2016).  
Reviewer, Journal Article, Water Research. (2016).  
Reviewer, Journal Article, Water, Air, & Soil Pollution. (2016).  
Judge, Texas A&M University System Pathways Research Symposium. (November 2016).  
Reviewer, Journal Article, A total of 20 international peer-reviewed academic journals. (January 2015 - December 2015).  
Reviewer, Journal Article, Over 20 academic journals. (January 2008 - December 2014).

## **Public**

Judge, FTC League Championship. (January 2017).  
Faculty for lab tour, Island Day. (November 2016).  
Session Director, Science Olympiad. (March 2016).  
Judge, FTC League Championship. (January 2016).  
Faculty assisting with information fair, Island Day. (November 2015).  
Judge, The 12th Annual Texas A&M University System Pathways Student Research Symposium. (October 2015).  
Guest Speaker, The Society of Hispanic Professional Engineers (SHPE) at TAMUCC. (March 2015).  
Session Director, Science Olympiad. (March 2015).  
Attendee and Presenter, Engineering Week. (February 2015).  
Program Coordinator, FIRST Tech Challenge. (January 2015).

## **Service Awards and Honors**

Best Reviewer of Renewable Energy, Energy Journals of Elsevier Limited. (2015).