Zhilin Guo

EDUCATION

Doctor of Philosophy (Ph.D.) Major: Soil, Water and Environmental Science; Minor: Hydrology and Water Resources. August, 2015
University of Arizona, Tucson, Arizona GPA:4.00
Dissertation: "Understanding the factors influencing contaminant attenuation and plume persistence"

Master of Science: Environmental Engineering Science. May, 2012
University of Florida, Gainesville, Florida GPA:3.62
Thesis: "Contaminant transport in aquitard and impact of back diffusion to aquifer"

Bachelor of Science: Resources, Environment & Urban-rural Planning Management. July, 2010
Shanxi University, China

SKILLS

Computer: Matlab, Fortran, Modflow, MT3D, RWhet, Groundwater Vista, GMS, Auto CAD, ArcGIS, Phreeqc, Phast.
Language: English, Chinese (Mandarin)

WORK EXPERIENCE

Postdoc Scholar, University of Davis, Davis, CA, February 2016-Now

- Develop tools for simulating basin-scale groundwater salinization including both transport and geochemical process in California and North China Plain.
- Generate reasonable representations on basin heterogeneity using stochastic models.
- Determine management strategies for reversing ongoing declines in groundwater quality in SJV while maximizing water storage.

Senior Research Associate, Contaminant Transport Group, University of Arizona, Tucson, AZ, August, 2015-Janurary, 2016

- Conduct numerical modeling research on water flow and contaminant transport. Work on method to generate more realistic heterogeneous domain.
- Perform batch experiments to test different remediation products including acetate, ethanol, glucose, benzoate, and emulsified vegetable oil on bioremediate Uranium.
- Work on improved methods for site characterization by conducting both numerical simulations and field study.

Research Associate, Contaminant Transport Group, University of Arizona, Tucson, AZ, July 2012- August, 2015

- Identify the factors that contribute to contaminant plume persistence, impacts and significances of these factors using mathematical model. Conduct modeling simulations on Tucson International Airport Area (TIAA) Superfund site.
- Study on the remediation methods, and their performance according to the field data. Analyze data on different sites including TIAA, Motorola site, Pheonix Goodyear site.

- Collect vegetation, soil, water, and vapor samples in Motorola site where the TCE contaminants exist in groundwater and vadose zone.

Field Work Assistant, Iron King Mine, Dewey-Humboldt, Arizona, July 2014

- Field site research sampling, collection of soil core with potential contaminants, arsenic and lead, at the Iron King Mine and Humboldt Smelter Superfund Site.

Superfund Research Program Trainee, University of Arizona, Tucson, AZ, August 2013- June 2014

- Conduct research at the Tucson International Airport Area Superfund site determining the mass removal, mass flux, and plume contraction behavior of chlorinated solvents at the field scale.
- Attend colloquiums, community conferences of contaminant sites. Understand more widely of hazardous waste issues and how to handle them.

Environmental Research Assistant, University of Florida, Gainesville, FL, March 2011-May 2012

- Simulate groundwater flow and contaminant transport with numerical modeling.
- Investigate the potential impact made by the waste-disposal site on surface water and groundwater system.

Water Reclamation Research Assistant, Water Reclamation Facility, University of Florida, Gainesville, FL, September 2010-December 2011

- Work on Experiment Techniques for bacteria optimization. Enhance capability to degrade NH3-N of the bacteria with low efficiency or reduce and eliminate the lag during degradation.

Junior Engineer (Intern), Environmental Engineering Design & Research Institute, Shanxi Juli Environmental Protection Group Co., Ltd., China, May 2011-August 2011

- Design the wastewater treatment system of mine water treatment plant and domestic sewage treatment plant.
- Draw flow chart using Auto CAD and maps using GIS. Write reports.

Research Assistant, Shanxi University, China, February 2010-May 2010

- Study on removing Ammonia-nitrogen in coking wastewater by Adsorption and Deposition Combination Method in the key scientific and technological project of Shanxi Province.
- Work on the national funded project to study typical coal mine area environmental risk management based on multi-stakeholder.

AWARDS and LEADERSHIP (Selected)

- NIEHS K.C. Donnelly Externship Award , 2015
- EPA Superfund Research Program Training Core Fellowship, 2013-2014
- Graduate College Fellowship, 2014-2015 academic year
- Graduate Committee of Soil, water and environmental science department, 2014-2015 academic year
- Vice president of Chinese Students Association at University of Florida (FACSS), 2011-2012

SELECT PUBLICATIONS

- **Zhilin Guo, Mark L. Brusseau,** "*The Impact of Well-Field Configuration on Contaminant Mass Removal and Plume Persistence: Homogeneous versus Layered Systems*". Under Revision.

- **Mark L. Brusseau, Zhilin Guo,** "*The Enhanced Contaminant Elution and Tracer Test for Improved Characterization of Natural Attenuation and Plume Persistence".* Under Revision.
- **Zhilin Guo, Mark L. Brusseau,** "*The application of the coupled injection-extraction concept for evaluating the impact of mass-transfer and attenuation processes*". Accepted by Water, Air, & Soil Pollution.
- **Zhilin Guo, Mark L. Brusseau,** "*The Impact of Well-Field Configuration and Permeability Heterogeneity on Contaminant Mass Removal and Plume Persistence*", Journal of Hazardous Materials, 333(5), 109-115
- **Mark L. Brusseau, Zhilin Guo,** "*Assessing contaminant-removal conditions and plume persistence through analysis of data from long-term pump-and-treat operations*", Journal of Contaminant Hydrology, 164: 16-24,2014
- **D.E. Matthieu, III, M.L. Brusseau, Z. Guo, M. Plaschke, K.C. Carroll1, F. Brinker, "***Persistence of a Groundwater Contaminant Plume after Hydraulic Source Containment at a Chlorinated-Solvent Contaminated Site*", Groundwater Monitoring and Remediation. Groundwater Monitoring & Remediation 34, 4: 23-32,2014
- **Hong Zhang, Zhilin Guo**, "*Analysis of SWOT in Eco-compensation Mechanisms of Coal Exploitation in Shanxi Province",* Economic Issues, 363(11):53-56,2009

SELECT PROCEEDINGS

- Assessing the Groundwater Salinization Closed Hydrologic Basins Due To Overdraft. Zhilin Guo, Rich Pauloo, Graham Fogg. December, 2016. American Geophysical Union Fall Meeting.
- Case study of using the stochastic method for contaminant transport in groundwater. Zhilin Guo, Graham Fogg, Mark Brusseau. June 2016. NIEHS Environmental Health Science FEST.
- The Impact of Well-Field Configuration and Permeability Heterogeneity on Contaminant Mass Removal and Plume Persistence. Zhilin Guo, Mark Brusseau, December, 2015. AGU fall meeting, H43F-1574
- Persistence of Groundwater Contaminants Plume. Zhilin Guo. April, 2014. U.S. EPA Superfund Colloquium
- The Impact of Well-Field Configuration and Back Diffusion on Plume Persistence. Zhilin Guo, Mark L. Brusseau, 2013. AGU fall meeting, H41H-1334