

CURRICULUM VITAE

NAME

Ye Zhang

ADDRESS

Department of Geology & Geophysics
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University of Wyoming
Laramie, WY 82071

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EDUCATION

- 2005 Ph.D., Groundwater Hydrology, GPA: 3.97, Indiana University, Bloomington, Indiana; *Ph.D. Minor: Scientific Computing*
- 2004 M.S., Groundwater Hydrology, GPA: 4.0, University of Minnesota, Minneapolis, Minnesota; *M.S. Minor: Civil Engineering*
- 1998 B.S., Groundwater Hydrology & Engineering Geology, Ranked 1st in class, Nanjing University, Nanjing, PR China

ACADEMIC POSITIONS

- July 2018 – present Professor, Dept. of Geology & Geophysics, University of Wyoming, Laramie, WY.
- July 2013 – June 2018 Associate Professor, Dept. of Geology & Geophysics, University of Wyoming, Laramie, WY.
- Aug. 2007 – June 2013 Assistant Professor, Dept. of Geology & Geophysics, University of Wyoming, Laramie, WY.
- Sept. 2005 – July 2007 Turner Postdoc Fellow, Dept. of Earth & Environmental Sciences, University of Michigan, Ann Arbor, MI.

PROFESSIONAL LEAVES

- Feb. 2015 – May 2015 Visiting Scientist, Division of Computational Earth Sciences

(EES-16), Los Alamos National Laboratory, Los Alamos, NM.

Sept. 2014 – Jan. 2015 Visiting Research Associate Professor, Dept. of Civil & Environmental Engineering, Colorado School of Mines, Golden, CO.

OTHER POSITIONS:

June 2014 – present Adjunct Faculty, School of Energy Resources, University of Wyoming, Laramie, WY.

July 2004 – Aug. 2004 Research Intern, Reservoir Characterization Team, Chevron Energy & Technology Company, San Ramon, CA.

JOB DESCRIPTION

30% Teaching 60% Research 5 % Service 0 % Admin 5 % Advising

TEACHING

Spring: Geostatistics (GEOL 5446);
 Groundwater Flow & Transport Modeling (GEOL 4030/5030)
Fall: Geohydrology (GEOL 4444/5444)
In prep: Reactive Transport Modeling

PUBLICATIONS IN PROGRESS

† *Student or postdoc for whom Ye is the primary advisor*

In Preparation:

Ye Li[†], **Ye Zhang**, Uncertainty Analysis of CO₂ Modeling in a Complex Faulted and Fractured Reservoir, Teapot Dome, Wyoming, *in prep.*

Dongdong Wang[†], **Ye Zhang**, Huang He, Liqiang Wang, Stochastic Aquifer Inversion with Parallel Computing, *in prep.*

Fangyu Gao[†], **Ye Zhang**, Simultaneous estimation of aquifer thickness and boundary conditions based on borehole and hydrodynamic data, *in prep.*

Y. Zee Ma, **Ye Zhang**, Jason Sitchler, Spurious Correlations and Low Correlations in Geoscience Data Analysis, Geophysical Research Letter, *in prep.*

Jianying Jiao[†], **Ye Zhang**, Scott Miller, Reed Maxwell, Ryan Armstrong[†], Minh C. Nguyen[†], Brady Flinchum[†], Andrew Parsekian, W. Steven Holbrook, Integrated hydrological modeling of the No-Name Watershed, Medicine Bow Mountains, Wyoming, Water Resources Research, *in prep.*

Fangyu Gao[†], Dongdong Wang[†], **Ye Zhang**, Stochastic data integration assessing aquifer parameter and boundary conditions uncertainty in a mountain-front aquifer, Journal of Hydrology, *in prep.*

Under Review:

Jianying Jiao[†], **Ye Zhang**, A New Inverse Method for Contaminant Source Identification under unknown Boundary Conditions, Water Resources Research, *in revision.*

Wei Wang, Po Chen, Ian Keifer, Ken Dueker, En-Jui Lee, Dawei Mu, Jianying Jiao[†], **Ye Zhang**, Bradley Carr, Weathering front under a granite ridge revealed through full-3D seismic ambient-noise tomography, Earth and Planetary Science Letters, *in revision.*

Shuangpo Ren[†], Guangqing Yao, **Ye Zhang**, High-resolution geostatistical modeling of an intensively drilled heavy oil reservoir, the BQ 10 Block, Biyang Sag, Nanxiang Basin, China, Marine & Petroleum Geology, *under review.*

PUBLISHED WORKS

Refereed journal articles:

[42] Shengli Li, **Ye Zhang**, Z. Zee Y. Ma (2018) Discussion of “A comparative study of reservoir modeling techniques and their impact on predicted performance of fluvial-dominated deltaic reservoirs”, AAPG Bulletin, Vol. 102, No. 8, p. 1659-1663.

[41] Dan Zhou[†], **Ye Zhang**, Guillaume Gianni, Peter Lichtner, Irina Engelhardt (2018) Numerical modeling of stream-aquifer interaction: quantifying the impact of transient streambed permeability and aquifer heterogeneity, Hydrological Processes, *in press*, <https://doi.org/10.1002/hyp.13169>

[40] Shuangpo Ren[†], Andrew Parsekian, **Ye Zhang**, Bradley Carr (2018) Hydraulic conductivity calibration of logging NMR in a granite aquifer, Laramie Range, Wyoming, Groundwater, *in press*, <https://doi.org/10.1111/gwat.12798>

[39] Zhenxue Dai, **Ye Zhang**, Jeffrey M. Bielicki, M Amooie, Mingkan Zhang[†], Changbing Yang, Youqin Zou, William Ampomah, Ting Xiao, Wu Jia, Richard Middleton, Mohamad Soltanian, Philp H. Stauffer (2018) Heterogeneity-assisted carbon dioxide storage

in marine sediments, Applied Energy, Vol. 225, p. 876-883.

[38] Shuangpo Ren[†], Samuel Gragg[†], **Ye Zhang**, Bradley Carr (2018) Borehole characterization of hydraulic properties and groundwater flow in a crystalline fractured aquifer of a headwater mountain watershed, Laramie Range, Wyoming, Journal of Hydrology, Vol. 403, p. 66-82.

[37] Zhenxue Dai, **Ye Zhang**, Philp Stauffer, Ting Xiao, Mingkan Zhang[†], William Ampomah, Changbing Yang, Youqin Zhou, Mei Ding, Richard Middleton, Mohamad Soltanian, Jeffery Bielicki (2017) Injectivity evaluation for offshore CO₂ sequestration in marine sediments, Energy Procedia, Vol. 114, p. 2921-2932.

[36] Minh C. Nguyen[†], Xu Zhang, Ning Wei, Jun Li, Xiaochun Li, **Ye Zhang**, Philip Stauffer (2017) An object-based modeling and sensitivity analysis study in support of CO₂ storage in deep saline aquifers at the Shenhua site, Ordos Basin, Geomechanics and Geophysics for Geo-energy and Geo-resources, Vol. 3, Issue 3, p 293-314.

[35] Minh Nguyen[†], **Ye Zhang**, Jun Li, Xiaochun Li, Bing Bai, Haiqing Wu, Ning Wei, Philip Stauffer (2017) A Geostatistical Study in support of CO₂ storage in deep saline aquifers of the Shenhua CCS project, Ordos Basin, China, Energy Procedia, Vol. 114, p. 5826-5835.

[34] Mingkan Zhang[†], **Ye Zhang**, Peter Lichtner (2017) Model Complexity in Simulating scCO₂ Dissolution, Leakage, Footprint, and Pressure for Three-Dimensional Hierarchical Aquifer, International Journal of Greenhouse Gas Control, Vol.64, p. 284-299.

[33] Jianying Jiao[†], **Ye Zhang**, Julian Zhu (2017) Direct Hydraulic Characterization for Diverse Soil types under Infiltration and Evaporation, Transport in Porous Media, Vol. 116, Issue 2, p 797-823.

[32] Jianying Jiao[†], **Ye Zhang** (2016) Direct Method of Hydraulic Conductivity Structure Identification for Subsurface Transport Modeling, Journal of Hydrologic Engineering, Vol. 21, Issue 10, 04016033.

[31] Jianying Jiao[†], **Ye Zhang** (2016) Multiscale Subgrid Models of Large Eddy Simulation for Turbulent flows, International Journal of Numerical Methods for Heat and Fluid Flow, Vol. 26, Issue: 5, p. 1380-1390

[30] S-Q Li[†], Morteza Akbarabadi, **Ye Zhang**, Mohammed Piri (2016) An integrated Site Characterization-to-Optimization Study for Commercial-Scale Carbon Dioxide Storage, International Journal of Greenhouse Gas Control, Vol. 44, p. 74–87.

[29] Zee Y. Ma, William R. Moore, Ernest Gomez, William J. Clark, **Ye Zhang** (2015) Tight Gas Sandstone Reservoirs, Part 1: Overview and Lithofacies, in Unconventional Oil and Gas Resources Handbook: Evaluation and Development, Elsevier, p. 405-427, <http://dx.doi.org/10.1016/B978-0-12-802238-2.00014-6>.

[28] William R. Moore, Zee Y. Ma, Iain Pirie, **Ye Zhang** (2015) Tight Gas Sandstone Reservoirs, Part 2: Petrophysical Analysis and Reservoir Modeling, in Unconventional Oil and Gas Resources Handbook: Evaluation and Development, Elsevier, p. 429-448, <http://dx.doi.org/10.1016/B978-0-12-802238-2.00015-8>.

[27] Mingkan Zhang[†], **Ye Zhang** (2015) Multiscale Solute Transport Upscaling for a Three-Dimensional Hierarchical Porous Medium, Water Resources Research, 51, p. 1688-1709, doi:10.1002/2014WR016202 .

[26] Jianying Jiao[†], **Ye Zhang** (2015) Functional Parameterization for Hydraulic Conductivity Inversion with Uncertainty Quantification, Hydrogeology Journal, Vol. 23, Issue 3, Page 597-610, doi:10.1007/s10040-014-120205.

[25] Jianying Jiao[†], **Ye Zhang** (2015) Tensor Hydraulic Conductivity Estimation for Heterogeneous Aquifers under unknown boundary conditions, Groundwater, June 4, doi: 10.1111/gwat.12202.

[24] **Ye Zhang**, Guang Yang[†], S-Q Li[†] (2014) Significance of Conceptual Model Uncertainty in Simulating Carbon Sequestration a Deep Inclined Saline Aquifer, Journal of Hazardous, Toxic, and Radioactive Waste, doi: 10.1061/(ASCE)HZ.2153-5515.0000246.

[23] Jianying Jiao[†], **Ye Zhang** (2014) A Method based on Local Approximate Solutions (LAS) for Inverting Transient Flow in Heterogeneous Aquifers, Journal of Hydrology, Vol. 514, p. 145-149, <http://dx.doi.org/10.1016/j.jhydrol.2014.04.004>.

[22] S-Q Li[†], **Ye Zhang** (2014) Model Complexity in Carbon Sequestration: A Design of Experiment and Response Surface Uncertainty Analysis, International Journal of Greenhouse Gas Control, Vol. 22, p. 123-138, <http://dx.doi.org/10.1016/j.ijggc.2013.12.007>.

[21] Jianying Jiao[†], **Ye Zhang** (2014) Physically-Based Inversion of Confined and Unconfined Aquifers under Unknown Boundary Conditions, Advances in Water Resources, Vol. 65, p. 43-57, <http://dx.doi.org/10.1016/j.advwatres.2013.10.011>.

[20] **Ye Zhang**, Juraj Irsa[†], Jianying Jiao[†] (2014) Three-Dimensional Aquifer Inversion under unknown Boundary Conditions, Journal of Hydrology, Vol. 509, p. 416-429, 10.1016/j.jhydrol.2013.11.024.

[19] **Ye Zhang** (2014) Nonlinear Inversion of an Unconfined Aquifer: Simultaneous Estimation of Heterogeneous Hydraulic Conductivities, Recharge Rates, and Boundary Conditions, Transport in Porous Media, Vol. 102, p. 275-299, DOI: 10.1007/s11242-014-0275-x.

[18] Zee Y. Ma, **Ye Zhang** (2013) A Resolution of the Happiness-Income Paradox, Social Indicators Research, doi: 10.1007/s11205-013-0502-9.

[17] **Ye Zhang** (2013) Reducing Uncertainty in Aquifer Flow Model Calibration with Multiple Scales of Heterogeneity, Groundwater, doi: 10.1111/gwat.12111.

[16] Juraj Irsa[†], **Ye Zhang** (2012) A New Direct Parameter Estimation Method for Steady State Flow in Heterogeneous Aquifers with Unknown Boundary Conditions, Water Resources Research, Vol. 48, W09526, doi:10.1029/2011WR011756.

[15] S-Q Li[†], **Ye Zhang**, Xu Zhang, Chungan Du (2012) Geologic Modeling and Fluid Flow Simulation of Acid Gas disposal in western Wyoming, AAPG Bulletin, Vol. 96, No. 4, p. 635-664.

[14] Baozhong Liu[†], **Ye Zhang** (2011) CO₂ Modeling in A Deep Saline Aquifer: a Novel Sensitivity Study based on the Design of Experiment, Environmental Science & Technology, Vol. 45, No. 8, p. 3504-3510, DOI: 10.1021/es103187b.

[13] S-Q Li[†], **Ye Zhang**, Xu Zhang (2011) A Study of Conceptual Model Uncertainty in Large Scale CO₂ Storage Simulation, Water Resources Research, 47, W05534, doi:10.1029/2010WR009707.

[12] BaoZhong Liu[†], **Ye Zhang**, Xu Zhang (2011) Acid Gas Storage in A Deep Saline Aquifer: A Study on Parameter and Model Uncertainty, Journal of Hazardous, Toxic, and Radioactive Waste, Vol. 15, No. 4, doi:10.1061/(ASCE)HZ.1944-8376.0000061.

[11] **Ye Zhang**, BaoZhong Liu[†], Carl W. Gable (2011) Homogenization of Hydraulic Conductivity for Hierarchical Sedimentary Deposits at Multiple Scales, Transport in Porous Media, Vol. 87, Issue 3, p. 717-737, doi: 10.1007/s11242-010-9711-8.

[10] **Ye Zhang**, Carl W. Gable, Ben Sheets (2010) Equivalent Hydraulic Conductivity Of Three-Dimensional Heterogeneous Porous Media: An Upscaling Study Base on An Experimental Stratigraphy, Journal of Hydrology, V. 388, No. 3-4, p. 304-320, doi: 10.1016/j.jhydrol.2010.05.009.

[9] **Ye Zhang**, Carl W. Gable, George Zivoloski, Lynn Walter (2009) Hydrogeochemistry and Gas Compositions of the Uinta Basin: A Regional Scale Overview, AAPG Bulletin, V. 93, No. 8, p. 1087-1118, doi: 10.1306/05140909004.

[8] **Ye Zhang** (2008) Hierarchical Geostatistic Analysis of an Experimental Stratigraphy, Mathematical Geosciences (formerly, Mathematical Geology), doi:10.1007/s11004-008-9180-6.

[7] **Ye Zhang**, Carl W. Gable (2008) Two-Scale Modeling of Solute Transport in an Experimental Stratigraphy, Journal of Hydrology, Vol. 348, p. 395-411, doi: 10.1016/j.jhydrol.2007.10.017.

[6] William Milliken, Marjorie Levy, Sebastian Strebelle, **Ye Zhang** (2007) The Effect of Geologic Parameters and Uncertainties on Subsurface Flow: Deepwater Depositional Systems, SPE 109950.

[5] **Ye Zhang**, Mark Person, Carl W. Gable (2007) Representative Hydraulic Conductivity of Hydrogeologic Units: Insights from an Experimental Stratigraphy, Journal of Hydrology, Vol. 339, p. 65-78, doi: 10.1016/j.jhydrol.2007.03.007.

[4] **Ye Zhang**, Carl W. Gable, Mark Person (2006) Equivalent Hydraulic Conductivity of an Experimental Stratigraphy - Implications for Basin-Scale Flow Simulations, Vol. 42, W05404, Water Resources Research, doi:10.1029/2005WR004720.

[3] **Ye Zhang**, Mark Person, Chris Paola, Carl W. Gable, Xian-Huan Wen, J. M. Davis (2005) Geostatistical Analysis of an Experimental Stratigraphy, Vol. 41, W11416, Water Resources Research, doi:10.1029/2004WR003756.

[2] **Ye Zhang**, Mark Person, Enrique Merino, Michael Szpakiewicz (2005) Evaluation of Soluble Benzene Migration in the Uinta Basin, Geofluids, Vol. 5, No. 2, 106-123.

[1] **Ye Zhang**, Mark Person, Enrique Merino (2005) Hydrologic and Geochemical controls on Soluble Benzene Migration in Sedimentary Basins, Geofluids, Vol. 5, No. 2, 83-105.

Others (e.g., lab texts, theses):

Ye Zhang (2008) Groundwater Flow & Transport Modeling, Lecture Notes, 233p.

Ye Zhang (2007) Introduction to Groundwater Hydrology, Lecture Notes, 255p.

Ye Zhang (2007) Introduction to Geostatistics, Lecture Notes, 140 p.

Ye Zhang (2005) Estimation of Representative Hydrological Parameters Using an Experimental Stratigraphy, *PhD Thesis*, Dept. of Geological Sciences, Indiana University, 195 p.

Ye Zhang (2004) Geostatistical Analysis of An Experimental Stratigraphy, *Ms Thesis*, Dept. of Geology and Geophysics, University of Minnesota, 86 p.

Ye Zhang, 1998, Modeling a Leaky Foundation Site using the Boundary Element Method, Hangzhou, China, *BS Thesis*, Dept. of Earth Sciences, Nanjing University, 65 p.

CONTRACTS & GRANTS

Funded Projects as PI

- Year (2008) Subsurface flow and transport modeling: a quantitative approach to education enhancement, *NASA Space Grant*, #NNG05G165H, \$10,000 (*PI: Ye Zhang*).
- Years (2009-2010) A sensitivity analysis of acid gas modeling at Moxa Arch, Wyoming, *UW SER*, \$69,552 (*PI: Ye Zhang*).
- Year (2009-2011) Evaluation of CO₂ modeling uncertainties in deep saline aquifers: a flow relevance study, Mt. Simon Sandstone, Illinois Basin, *ACS PRF* (*PRF# 48773 -DNI 8*) & *UW SER MGF*, \$182,450 (*PI: Ye Zhang*).
- Years (2009-2012) Evaluation of uncertainty in CO₂ sequestration modeling: a flow relevance study using experimental stratigraphy and field verification (Teapot Dome, Wyoming), *NSF*, EAR-0838250, \$262,416 (*PI: Ye Zhang*).
- Years (2010-2013) An integrated well location optimization study for commercial-scale CO₂ storage in a deep saline aquifer, *UW CFSF*, WYDEQ49811ZHNG, \$300,300 (*PI: Ye Zhang; co-PIs: KJ Reddy, Phil Stauffer*).
- Years (2012-2013) Groundwater modeling of coalbed methane aquifers of the Powder River Basin, Wyoming, *UW SER*, Ph.D. Energy GA (*PI: Ye Zhang*).
- Years (2012-2015) Model complexity in geological carbon sequestration: a response surface based uncertainty analysis, *DOE*, Office of Fossil Energy, DE-FE-0009238, 415,950 (DOE) + 95,343 (UW SER MGF) =

\$511,292 (total) (PI: Ye Zhang; co-PI: Peter Lichtner).

- Years (2014-2016) The development of a new subsurface simulation theory for environmental and energy applications, UW Office of Academic Affairs, Ph.D. Energy GA (PI: Ye Zhang).
- Year (2014-2017) Computational resources awarded (23 million core-hours on Yellowstone; 15,000 hours of DAV; 50 TBs of GLADE project space; and 20 TBs of HPSS), NCAR-Wyoming Supercomputing Center (PI: Ye Zhang; co-PI: Peter Lichtner).
- Year (2015-2016) Modeling of CO₂ storage in the Ordos Basin, China, U.S.-China Clean Energy Research Center, \$45,982 (PIs: Phil Stauffer, Ye Zhang)
- Year (2015-2016) The development and verification of integrated surface/subsurface hydrological models at two Wyoming watersheds, WyCEHG, \$181,186 (PI: Ye Zhang).
- Year (2015-2016) Hydrologic modeling of the WyCEHG watersheds: multiple approaches to modeling coupled systems, WyCEHG, \$464,456. (PIs: Scott Miller, Nori Ohara, Thijs Kelleners, Ye Zhang)
- Year (2015-2018) Groundwater modeling of the Casper Aquifer, Belvoir Ranch, Cheyenne, Wyoming Water Development Commission (\$196,718) + USGS (\$34,112) = 230,830 (PI: Ye Zhang).
- Year (2016-2017) Shallow subsurface monitoring to improve recharge and hydraulic conductivity estimation for the Casper Aquifer, Belvoir Ranch, Cheyenne, Wyoming, USGS, \$59,538 (PI: Ye Zhang).
- Year (2015-2017) Modeling of CO₂ storage and CO₂-EOR in the Ordos Basin, China, UW SER, Ph.D. Energy GA (PI: Ye Zhang).
- Year (2016) Summer workshop: modeling reactive transport in porous and fractured media, UW SER, \$40,000 (PIs: John Kaszuba, Ye Zhang).
- Year (2016-2017) Development and verification of a new groundwater inverse theory for quantifying natural recharge in mountain front aquifers, WyCEHG, \$50,000 (PI: Ye Zhang; co-PI: Brad Carr).
- Year (2017-2018) Stream and riparian groundwater monitoring to improve recharge

estimation for the Casper Aquifer, Belvoir Ranch, Cheyenne, Wyoming, USGS, \$21,302 (PI: Ye Zhang; co-PI: Noriaki Ohara).

Year (2017-2020) Collaborative research: A new inverse theory for joint parameter and boundary conditions estimation to improve characterization of deep formations and leakage monitoring, NSF, EAR-1702078, \$622,480 (PIs: Tissa Illangasekare, Ye Zhang)

Year (2018-2019) Computational resources awarded (5.8 million core-hours on Cheyenne; 10,000 hours of DAV; 8 TBs of Campaign space), NCAR-Wyoming Supercomputing Center (PI: Ye Zhang).

Funded Project as Co-PI

Years (2008-2009) Carbon sequestration monitoring activities, DOE, DE-NT0004730, \$2,400,000 (PI: Carol Frost; co-PIs: Ye Zhang et al.).

Year (2011-2014) Collaborative research: CI-WATER, cyberinfrastructure to advance high performance water resource modeling, NSF, EPS-1135483, UW: \$2,564,005 (PIs: Norm Jones, Fred Odgen; co-PIs: Steven Corbato, Craig Douglas, Kristi Hansen, Laura Hunter, Scott Miller, James Nelson, David Tarboton, Ye Zhang)

Year (2015-2018) MRI: acquisition of hydrogeophysical downhole nuclear magnetic resonance instrument to support research and student training, NSF, \$408,284 (PI: Andrew Parsekian, co-PIs: Steven Holbrook, Brad Carr, Scott Miller, Ginger Paige, Jianting Zhu, Fred Ogden, Ye Zhang).

Year (2017-2019) CO₂ storage modeling at the Kevin Dome pilot injection site, Montana, DOE Big Sky Carbon Sequestration Partnership, \$100,325 (PI: Phil Stauffer; co-PI: Ye Zhang).

Year (2017-2018) PFLOTRAN web application, DOE Office of Science (SBIR/STTR), \$999,992; UW: 45,008 (PI: Zhou, Haiyan; co-PIs: Satish Karra, Roelef Versteeg, Ye Zhang).

Funded Project as Sub-Contractor

Year (2018-2021) Integrated assessment of CO₂ EOR in Ordos Basin, China, DOE U.S.-China Clean Energy Research Center, 180,000, (PI: John Jiao).

Projects not funded as PI or co-PI

Information of unfunded projects can be provided upon request.

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Memberships in professional societies:

American Geophysical Union; Geological Society of America

Grant refereeing:

National Science Foundation; ACS Petroleum Research Fund, UW School of Energy Resources (SER), Wyoming ISR Uranium Program

Book proposal review:

Cambridge University Press; Oxford University Press; Elsevier; Wiley-Blackwell.

Manuscript refereeing:

Water Resources Research; Advances in Water Resources; Transport in Porous Media; Environmental Science & Technology; Journal of Hydrology; Groundwater; Hydrogeology Journal; Stochastic Environmental Research & Risk Assessment; Journal of Hydrologic Engineering, Journal of Hazardous, Toxic, & Radioactive Waste; Geofluids; International Journal of Greenhouse Gas Control; AAPG Bulletin; Energy & Fuels; Journal of Engineering Science & Technology Review; ASCE Annual Conference.

Review panel:

Canada Foundation for Innovation

Editorial board:

Associate Editor, Hydrogeology Journal (2013-2016); Associate Editor, Journal of Hydrology (2017-2018); Editor, Geofluids (2018-).

HONORS AND AWARDS

2013, Nielsen Fellow, School of Energy Resources, University of Wyoming

2012, Extraordinary Merit in Research, College of Art & Sciences, University of Wyoming

2005, Turner Postdoc Fellowship, University of Michigan, Ann Arbor, Michigan

2004, Outstanding Academic Achievement, Indiana University, Bloomington, Indiana

2004, Estwing Award, Indiana University, Bloomington, Indiana

2003, Outstanding Academic Achievement, Indiana University, Bloomington, Indiana

1998, GuangHua Scholarship of Nanjing University, Nanjing, PR China

1997, People's Scholarship, Nanjing University, Nanjing, PR China

1996, People's Scholarship, Nanjing University, Nanjing, PR China

1995, People's Scholarship, Nanjing University, Nanjing, PR China

**PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/
PROFESSIONAL MEETINGS/WORKSHOPS**

Talks

2018, High Performance Computing in Subsurface Modeling, NCAR-Wyoming Days, Laramie, Wyoming, **Invited**.

2018, The Mountain is fractured and permeable: bedrock hydrology of Laramie Range and mountain front areas, SFA Hydrology Meeting, Lawrence Berkeley National Laboratory, Berkeley, CA.

2017, The Mountain is Fractured and Permeable: Hydrological Connectivity in Laramie Range, Southeast Wyoming, AGU Annual Meeting, New Orleans, LA.

2017, Subsurface Modeling: Upscaling, Inversion, and Model Complexity, Petroleum Engineering Seminar, Dept. of Petroleum Engineering, University of Wyoming, Laramie, WY.

2017, Subsurface Modeling: Upscaling, Inversion, and Model Complexity and New Research on Mountain Hydrology, Distinguished Lecture Series, Dept. of Geology & Geophysics, University of Wyoming, Laramie, WY.

2017, Hydrological Research in Laramie Range: Results and Highlights, Water Interest Group Meeting, Wyoming Center for Environmental Hydrology & Geophysics, Laramie, WY.

2017, Hydrological Connectivity in the Laramie Range: Implication for Water Resources Management, Wyoming Water Resources Association Annual Meeting, Sheridan, WY.

2017, New Discovery of Hydrological Connectivity in the Mountain West: Implications for Water Resources Management, Research & Economic Development Day, University of Wyoming, Laramie, WY.

2015, My Sabbatical Experience: New Research and New Thinking, Colloquium, Dept. of Geology and Geophysics, University of Wyoming, Laramie, WY.

2015, Subsurface Modeling: Upscaling, Inversion, and Model Complexity, Colloquium, Computational Earth Sciences (EES-16), Los Alamos National Lab, Los Alamos, NM.

2015, Subsurface Modeling: Upscaling, Inversion, and Model Complexity, Colloquium, Dept. of Hydrology & Water Resources, University of Arizona, Tucson, AZ.

2015, Subsurface Modeling: Upscaling, Inversion, and Model Complexity, Colloquium, Dept. of Earth & Environmental Science, New Mexico Institute of Mine & Technology, Socorro, NM.

2014, Geochemical study of Unconventional Natural Gas in Tight Sandstones of Uinta Basin, AAPG Geosciences Technology Workshop (Bakken/Three Forks/Plus Emerging Plays), Golden, CO, **Invited**.

2014, Improving Computational Efficiency in Modelling Complex Environmental Systems (with Uncertainty). AGU Annual Meeting, San Francisco, CA, **Convener**.

2013, Subsurface Flow Modeling: Upscaling, Inversion, and Model Complexity, Colloquium, Dept. of Civil & Environmental Engineering, Colorado School of Mine, Golden, CO.

2013, Simultaneous Parameter and Boundary Condition Estimations for Heterogeneous Confined and Unconfined Aquifers, Seminar, University of Wyoming Enhanced Oil Recovery Institute, Laramie, Wyoming.

2013, Subsurface Flow Modeling: Upscaling, Inversion, and Model Complexity, Brown Bag Seminar, Los Alamos National Laboratory, EES-16, Los Alamos, New Mexico.

2013, A New Direct Method of Parameter Estimation for Steady State Flow in Heterogeneous Aquifers with Unknown Boundary Conditions, MODFLOW and MORE, Translating Science into Practice, Golden, Colorado.

2013, Subsurface Hydrology: Parameter Estimation and Model Complexity, WyCHEG Seminar Series, University of Wyoming, Laramie, Wyoming.

2013, Simultaneous Inversion of Parameters, Source/Sink Strengths, and Boundary Condition for Confined and Unconfined Aquifers, Analysis and Computational Math Seminar Series, Dept. of Mathematics, University of Wyoming, Laramie, Wyoming.

2012, T103, Groundwater Model Calibration and Uncertainty Analysis, GSA Annual Meeting, Charlotte, North Carolina, **Convener**.

2012, New Direct Method for Aquifer Inversion with Unknown Boundary Conditions, GSA Annual Meeting, Charlotte, North Carolina.

2012, Subsurface Fluid Flow Modeling in Heterogeneous Media: Insights Gained & Ongoing Research, Distinguished Lecture Series, Dept. of Geology & Geophysics, University of Wyoming.

2012, Upscaling & Complexity in Modeling Hierarchical Subsurface Reservoirs, Annual Meeting of the International Society for Porous Media, West Lafayette, Indiana, **Invited**.

2012, Upscaling & Complexity in Subsurface Modeling: Insights Gained & On-going Research, Colloquium, Dept. of Ecosystem Science and Management, University of Wyoming, Laramie.

2011, CO₂ Modeling in a Deep Saline Aquifer: A Predictive Uncertainty Analysis Using Design of Experiment, AGU Annual Meeting, San Francisco, CA.

2011, H121. Multiscale and Coupled Complexity in Geologic Carbon Sequestration. AGU Annual Meeting, San Francisco, CA, **Convener**.

2011, Statistical Methods in Subsurface Simulation, Colloquium, Dept. of Statistics, University of Wyoming, Laramie.

2011, Design of Experiment in Carbon Sequestration Modeling, 2nd CFSF Workshop on Porous Media, Laramie, Wyoming.

2011, Hydrogeochemistry & Gas Chemistry of Uinta Basin: Implication for Genesis & Migration of Unconventional Gas, AAPG E-Symposium (online), **Workshop Instructor**, <http://www.aapg.org/career/training/online/e-symposia/details/articleid/1436/green-river-shales-geochemical-basin-study#1809117-overview>

2011, Hydrogeochemistry & Gas Chemistry of Uinta Basin: Implication for Genesis & Migration of Unconventional Gas, AAPG Geoscience Technology Workshop, Resource Plays in Tight Unconventional Reservoirs: Multi-Disciplinary Technological Challenges and Solutions, Banff, Alberta, Canada, **Invited**.

2011, Upscaling & Model Complexity in Subsurface Flow Simulation: Insights Gained & On-going Research, Colloquium, Dept. of Geosciences, Colorado State University, Fort Colin, CO.

2011, Design of Experiment & Response Surface Modeling of CO₂ Sequestration in Deep Saline Aquifers, AGU Hydro Days, Fort Colin, CO.

2010, Geostatistics in Subsurface Flow & Transport Modeling: Select Topics & Future Research, WyGIS Forum, University of Wyoming.

2010, Multi-Scale, Multi-Variance, and Multi-dimensional Upscaling in Groundwater Flow and Solute Transport Modeling, Ground Water Summit, National Groundwater Association Annual Meeting, Denver, CO.

2009, Dealing Explicitly with Complexity: Evaluation of Hydrogeologic Framework Models in Capturing Subsurface Flow and Solute Transport in an Experimental Stratigraphy, AGU Annual Meeting, Section H21, **Invited**.

2009, Estimation of CO₂ Storage and Leakage for the Nugget Sandstone, Moxa Arch, Wyoming, USA, DOE Moxa Arch Carbon Sequestration Project, Third Quarter Workshop, Laramie, Wyoming.

2009, Estimation of CO₂ Storage and Leakage for the Nugget Sandstone, Moxa Arch, Wyoming, USA, DOE Moxa Arch Carbon Sequestration Project Second Quarter Workshop, Laramie, Wyoming.

2008, CO₂ Modeling in the Nugget Sandstone, Moxa Arch, Wyoming, USA, DOE Moxa Arch Carbon Sequestration Project, First Quarter Workshop, Laramie, Wyoming.

2008, Dealing Explicitly with Complexity: Evaluation of Hydrogeologic Models on Capturing Flow and Transport using an Experimental Stratigraphy, Colloquium, Department of Mathematics, University of Wyoming, Laramie, Wyoming.

2006, Solute Transport Modeling in an Experimental Stratigraphy, AGU Annual Meeting, San Francisco, California.

2006, Representative Hydraulic conductivity of Model Units: Insights from an Experimental Stratigraphy, GSA Annual Meeting, Philadelphia, Pennsylvania.

2006, Dealing Explicitly with Complexity: An Upscaling Analysis and Evaluation of Layer-Cake Hydrogeologic Models based on an Experimental Stratigraphy, Colloquium, Department of Geology & Geophysics, University of Wyoming, Laramie, Wyoming.

2006, Modeling Coupled Flow, Heat, and Mass Transfer in the Deep Subsurface: A Case Study of Benzene Migration from Oil Reservoirs in the Uinta Basin, Colloquium, Department of Geology & Geophysics, University of Wyoming, Laramie, Wyoming.

2005, Emerging and Innovative Approaches to Groundwater Flow Modeling, GSA Annual Meeting, Philadelphia, Pennsylvania, **Convener**.

2005, Benzene Migration in Sedimentary Basins, Smith Lecture Series, Department of Geological Sciences, University of Michigan, Ann Arbor, Michigan.

2005, Upscaling for Representative Hydraulic Conductivity based on an Experimental Stratigraphy, Colloquium, Department of Geology & Geophysics, University of Minnesota, Minneapolis, Minnesota.

2004, Estimation of Representative Flow and Transport Parameters using an Experimental Stratigraphy, Colloquium, Department of Hydrology and Water Resources, University of Arizona, Tucson, Arizona.

2004, Flow Relevance Study on the Mahakam Upper Channel-Levee System, Final Project Presentation, ChevronTexaco, San Ramon, California.

2003, Benzene Migration in Sedimentary Basins, AAPG Annual Meeting, Salt Lake City, Utah, **Invited**.

2002, Benzene Migration in the Uinta Basin, AAPG Hedberg Conference, Vancouver, Canada.

Workshops & Seminars

2005, Instructor, Introduction to Geostatistics, Department of Geological Sciences, Indiana University, Bloomington, Indiana.

2004, Instructor, Introduction to SUPCRT92, Department of Geological Sciences, Indiana University, Bloomington, Indiana.

2004, Instructor, Computing on Unix Systems, Department of Geological Sciences, Indiana University, Bloomington, Indiana.

Student Talks († Student)

2018, Jianying Jiao†, Ye Zhang, Contaminant source identification under unknown subsurface boundary conditions, AGU Annual Meeting, Washington D.C..

2018, Minh Nguyen†, Ye Zhang, Wade Zaluski, Tsubasa Onishi, William J. Carey, Phil H. Stauffer, Investigating subsurface heterogeneity of naturally fractured reservoir in relation to CO₂ geological storage at the Kevin Dome site, Montana, GSA Annual Meeting, Indianapolis, Indiana.

2018, Minh Nguyen†, Xu Zhang, Ning Wei, Jun Li, Xiaochun Li, Ye Zhang, Philip

Stauffer, Fluvial channels and boundary conditions in relation to the success of CO₂ geological storage into deep saline aquifers at the Shenhua Site, Ordos Basin, AAPG Annual Convention & Exhibition, Salt Lake City, Utah.

2017, Fangyu Gao[†], Ye Zhang, A new inverse method for the simultaneous estimation of aquifer thickness and boundary conditions based on borehole and hydrodynamic measurements, AGU Hydro Days, Fort Collins, CO, March 20 - 22.

2017, Bradley Carr, Ye Zhang, Brady Flinchum[†], Andrew Parsekian, W. Steven Holbrook, and Daniel Richter, What borehole geophysical logging and well testing tells us about groundwater presence and flow in headwater, fractured granite aquifers? Annual Meeting of the Environmental and Engineering Geophysical Society, Denver, CO.

2016, Jianying Jiao[†], Ye Zhang, Scott Miller, Minh Nguyen, Ryan Armstrong, Andrew Parsekian, W Steven Holbrook, Integrated modeling of groundwater surface water interaction in Snowy Range, Wyoming, AGU Annual Meeting, San Francisco, CA.

2016, Minh Nguyen[†], Jun Li, Xiaochun Li, Ye Zhang, Philip H. Stauffer, Geological Modeling and Reservoir Simulation supporting CO₂ storage in a Deep Saline Formation, Shengbei Injection Site, Ordos Basin, China, Greenhouse Gas Control Technologies Conference, Series 13, November 14th – 18th, Switzerland.

2014, Jianying Jiao[†], Ye Zhang, A General Inverse Theory for Estimating Discrete and Continuous Parameters in Subsurface Flow Modeling, Experimentation, Mathematical Modeling, & Numerical Simulation of Porous Media Flows, Laramie, Wyoming.

2014, Dongdong Wang[†], Ye Zhngang, He Huang, Liqiang Wang, Stochastic Aquifer Inversion with a New Highly Scalable Parallel Solver, Annual Meeting of the International Society for Porous Media, Milwaukee, Wisconsin.

2014, Dongdong Wang[†], Ye Zhang, An Efficient Physical-Based Stochastic Inversion on Confined Aquifer and the Uncertainty Assessment on Hydraulic Conductivities and Boundary Conditions, Annual Meeting of the International Society for Porous Media, Milwaukee, Wisconsin.

2013, Jianying Jiao[†], Ye Zhang, Physical-Based Inversion of Confined and Unconfined Aquifers with Recharge under Unknown Boundary Conditions, AGU Annual Meeting, San Francisco, CA.

2013, Dongdong Wang[†], Ye Zhang, Juraj Irsa, He Huang, Liqiang Wang, Dynamic data integration and stochastic inversion of a confined aquifer, AGU Annual Meeting, San Francisco, CA.

2013, Jianying Jiao[†], Ye Zhang, Aquifer Inversion with Simultaneous Estimation of Parameters, Source/Sinks, and Boundary Condition, AGU Hydro Days, Fort Collins, CO.

2012 Shuiquan Li[†], Ye Zhang, Xu Zhang, Mike Du, Geological Modeling and Fluid Flow Simulation of Acid Gas Storage, Nugget Sandstone, Moxa Arch, Wyoming, GSA Annual Meeting, Charlotte, North Carolina.

2012 Juraj Irsa[†], Ye Zhang, A Direct Method of Parameter Estimation for Steady-State Flow in Heterogeneous Aquifers with Unknown Boundary Conditions, GSA Annual Meeting, Charlotte, North Carolina.

2012 Shuiquan Li[†], Ye Zhang, Optimal Complexity in Reservoir Modeling of an Eolian Sandstone for Carbon Sequestration Simulation, GSA Annual Meeting, Charlotte, North Carolina.

2012 Shuiquan Li[†], Ye Zhang, Xu Zhang, A Study of Conceptual Model Uncertainty in Large Scale CO₂ Storage Simulation, GSA Annual Meeting, Charlotte, North Carolina.

2012 Guang Yang[†], Ye Zhang, Shuiquan Li, Uncertainty Analysis of Carbon Sequestration in an Inclined Deep Saline Aquifer, 3rd CFSF Workshop on Porous Media, Laramie, Wyoming.

2012 Juraj Irsa[†], Ye Zhang, A New Direct Method of Parameter and Boundary Condition Estimation for Steady State Flow in Heterogeneous Aquifers, 3rd CFSF Workshop on Porous Media, Laramie, Wyoming.

2012 Guang Yang[†], Ye Zhang, Shuiquan Li, Uncertainty Analysis of Carbon Sequestration in an Inclined Deep Saline Aquifer, Earth and Energy Research Conference, Colorado School of Mine, Golden, Colorado.

2011 Shuiquan Li[†], Ye Zhang, Xu Zhang, Complexity in Geologic Modeling for Carbon Sequestration, 2nd CFSF Workshop on Porous Media, Laramie, Wyoming.

COMMITTEES

Department of Geology & Geophysics:

Graduate Admission Committee:

2007-2008; 2015-2016; 2017-2018; 2018-2019 (Committee Chair);

Computer Committee:

2007-2011; 2013-2014 (Committee Chair);

Curriculum Committee:

2011-2013; 2016-2017;
Assessment Committee:
2016-2017;
Chevron Scholarship Committee:
2015-present;

Active Member of Other Committees:

WRESE (Water Resources/Environmental Science & Engineering), 2007-present;
CFSF (SER Center of Fundamentals of Subsurface Flow), 2008-present;
Search Committee: WyCEHG Postdoc cluster hire, 2013-2015;
Search Committee: Watershed hydrologist, 2015-2016;

STUDENT ADVISING/GRADUATE SUPERVISION

List all undergraduate, graduate, postdoctoral students, and research associates who you have supervised during the last five years.

UNDERGRADUATE STUDENTS:

Current Undergraduate Advisees:

Jordan Short, Nathan Swaim, Noah Kolis, Raven Shelton, Junkyu Shin, Korissa Straub, Joshua Riffie, Khoi Nguyen, John Pulick, Patrick Rapciak, Kymbre Skersies, Ross Riley

Past Undergraduate Advisees:

Brandon Rumph, Logan Maclean, Michael Tharby, Denial Nichols, Virginia Marcon, Eric Easley, Brandon Sadler, John Schmidt, Justin Stern, Amy Henline, Jeffrey Ingram, Tabetha Johnson, David Shafer, Tabetha Wolf, John Gram, Leslie Logan, Zoey Meyers, Jacob Moore, Aaron Naccarato, James Ramsay, Ryan Selvius, Derek Smith, Cody Staudt, William Latner Straley, Elizabeth Johnson, David Lere, Thomas Rohn, Emmy Wickiser, Samuel Gragg, Thomas Lozier

Undergraduate Research Assistants:

Huilong Yang (Fall, 2008), Ju Sheng (Fall, 2008), Erin Larney (Fall, 2008), Anna da Silva (Summer, 2015), Dylan Perkins (Spring, 2015), Samuel Gragg (Fall, 2016; Spring & Summer, 2017), Samuel Coker (Summer & Fall, 2017)

GRADUATE STUDENTS:

Past Graduate Advisees:

Guang Yang (MS); Ye Li (PhD); Dongdong Wang (MS); Yifan Zhang (MS); Alimohammad Anbari (PhD);

Samuel Gragg (Undergraduate Honor Thesis)

Current Graduate Advisees:

Minh Nguyen (PhD); Fangyu Gao (PhD); Jianying Jiao (PhD);
Nikki Li (PhD); Chau Duc Minh Ha (MS)

Current Graduate Committee Chairmanships:

Minh Nguyen (PhD); Fangyu Gao (PhD); Jianying Jiao (PhD); Nikki Li
(PhD); Chau Duch Min Ha (MS)

Current Graduate Committee Memberships (excluding those chaired):

___0___ MS/MA (thesis)
___7___ PhD

Student Awards/Scholarships:

Guang Yang	Outstanding Academic Award (2012);
Ye Li	Chevron Scholarship (2013);
Dongdong Wang	Roy J. Shlemon Student Travel Grant (2014);
Minh Nguyen	Chevron Travel Grant (2016);
Minh Nguyen	Academic Affair Summer Scholarship (2016);
Fangyu Gao	Chevron Travel Grant (2017);
Samual Gragg	Meritorious Undergraduate Research Grant (2017);

POSTDOCTORAL STUDENTS/RESEARCH ASSOCIATES:

Past:

Shuiquan Li (Postdoc); Baozhong Liu (Research Associate II); Juraj Irsa
(Postdoc); Mingkan Zhang (Postdoc), Jianying Jiao (Postdoc)

OTHER ACTIVITIES/ACCOMPLISHMENTS

- **Regular participant of UW activities that do not fall into formal committees:**

UW-NCAR: workshops & meetings (once a semester, each ~1 days);

UW HPC meetings (1 meeting a semester, each ~0.5 days);

- **Visiting Scholars/Outstanding students sponsored**

2011, Dr. Zee Ma (Principal Geoscientist of Schlumberger, Inc.), SER Distinguished
Lecture Series (duration: 1 week);

2015, Prof. Gour-Tsyh (George) Yeh, Penn State (duration: 2 days);
2016, Dan Zhou, Visiting Ph.D. candidate, Institute of Bio- and Geosciences, TU
Freiberg, Germany (duration: 3 months);
2016, Shuangpo Ren, Visiting Ph.D. candidate, Dept. of Petroleum and Natural Gas
Engineering, China University of Geosciences, Wuhan, P.R. China (duration: 2 years);

• **Service to the university/state/community:**

2008, Provide free hydrological consulting to the city of Powell on basement leakage
issues related to irrigation return flow, Wyoming.

2007, Represent the University of Wyoming in the EPSCoR Cyberinfrastructure
Assessment Workshop, Lexington, Kentucky.

• **Media coverage:**

2013, Radio Interview for Wyoming PBS on acid gas disposal and carbon sequestration in
western Wyoming.

2013, Professor's subsurface computer models have real-world applications, Laramie
Boomerang,
<http://www.laramieboomerang.com/articles/2013/09/24/news/doc5240fa85e86df723436051.txt>

2014, Wyoming Carbon Capture and Storage Technology interview,
<http://origin.library.constantcontact.com/download/get/file/1109382325661-34/WCTI+Interview+with+Ye+Zhang.pdf>

2018, Wyoming PBS produced by UW Institutional Marketing. A YouTube video pertaining
to a hydraulic test at the Blair Wallis Fractured Rock Research Well Field is available:
<https://www.youtube.com/watch?v=54POr7uoMyg&t=6s>