CURRICULUM VITAE

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EDUCATION

2002 Post-Doctoral Fellow, Soil Physics and Environmental Science, University of California, Riverside (with Dr. William A. Jury)
1997 Ph.D., Hydrology and Soil Physics, Institute for Land and Water Management, University of Leuven, Belgium (Katholieke Universiteit Leuven, with Dr. Jan Feyen)
1993 Advanced Certificate, Supplementary Studies in Irrigation Engineering, Center for Irrigation Engineering, University of Leuven, Belgium
1985 M. Sc., Irrigation and Drainage Engineering, Northwest A & F University, China (Dr. Fengshu Zhu)
1982 B. Eng., Civil and Hydraulic Engineering, Xi'an University of Technology, China

Dissertation, thesis and project design

Ph.D. Dissertation: "Dynamic Simulation of Liquid-Air Displacement and Preferential Flow in Porous Media", KU Leuven Dissertation #347, 1997. Published in four articles in *Water Resources Research,* 1997-98.

M. Sc. Thesis: "Experimental Study of the Long Border Segment Irrigation Systems". Published in *Irrigation and Drainage*, 5(4): 15-26, 1986.

B. Eng. Project and Thesis: Design of the Multi-Stage Pumping Stations in Jingtai County, Gansu Province; Thesis on Computer analysis of the concrete pipeline stabilizers, 1982.

PROFESSIONAL EXPERIENCE

Aug.2014-Present: Professor, Department of Earth and Environmental Sciences, California State University, Fresno.

Aug.2008-Jul.2014: Associate Professor, Department of Earth and Environmental Sciences, California State University, Fresno.

Aug.2002-Jul.2008: Assistant Professor, Dept of Earth and Environmental Sciences, CSU Fresno.

Nov.1997- Jul.2002: Post-doctoral researcher, Dept of Environmental Sciences, University of California, Riverside (advisor: Prof. William A. Jury, a member of US Academy of Sciences).

Feb.1993-Oct.1997: PhD student, Institute for Land and Water Management, Catholic University Leuven, Belgium (advisor: Prof. Jan Feyen, former director of the Institute).

Feb.1992-Jan.1993: Pre-doctoral Complementary Studies in Irrigation Engineering, Center for Irrigation Engineering, University of Leuven, Belgium.

Aug.1985.08-Jan.1992: Assistant Professor (1988-92) and Director of the Irrigation Engineering Division, College of Civil and Hydraulic Engineering, Northwest A&F University, Yangling, China.

HONORS AND AWARDS

- Guest Editor, Special Issue in *WATER* (an open-access international journal): Climate Change Effects on Hydrological Processes, Water Resources, Ecosystems and Agriculture (2018-2020)

- Editor-In-Chief, GSTF International Journal of Geological Sciences (March 2013-2018) http://globalstf.org/journal/gstf-journal-of-geological-sciences-jgs/ (Print ISSN: 2335-6774, E-periodical: 2335-6782)

- CSU WATER representative at CSU Fresno (2023-2024)
- Affiliated Researcher, Viticulture and Enology Research Center (VERC), Fresno State (2022-)
- Coordinator, Graduate GIS Certificate Program of Advanced Study, Fresno State (March 2011-)
- Guest Professor, Research Center for Echo-Environ. Sci., Chinese Academy of Sciences (2009-2014)
- Guest Professor, Institute for Water and Development, ChangAn University, China (2010-2017)
- HouJi Guest Professor, Northwest A & F University, Yangling, China (2010-2014)
- Provost's Research Activity Award ($25,000), California State University, Fresno (March 2008)
- Selected Scientist by US Department of Energy, Office of Scientific and Technical Information, on E-print Network (2006-)
- Selected California Concerned Scientist with leading efforts toward new laws in California: 1) limit greenhouse gas emissions in California (April 2005) and 2) limit destruction of forest land for bio-fuel crops (April 2009)
- Board member, Asian Faculty and Staff Association at Fresno State (2010-13)
- Elected president of Chinese American Faculty Association at CSUF (2005-06)
- Elected president of Chinese Student and Scholar Association, University of Leuven, Belgium (1995-96)
- Doctoral Full Scholarship and Research Fund, University of Leuven (Belgium 1993-97)
- Outstanding Teacher, Northwestern A & F University, China, 1987-90

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Geophysical Union (AGU, 1998-)
American Society of Agronomy (ASA, 1998-)
Soil Science Society of America (SSSA, 1998-) served on Graduate Award Committee (2007-2013)
Geological Society of America (GSA, 2014-2020)
European Geophysical Society (EGS, 1995-1998)
American Association for the Advancement of Science (AAAS, 1998-2000)

RESEARCH

Research Interests

- Hydrology and Soil Physics - movement and storage of water and solutes in hydrologic cycle, variably-saturated and saline soils, Soil-water-salt-plant relations.
- Soil Quality Assessment - Development of soil quality indices (SQI) and evaluation of soil quality for agricultural and other purposes based on soil survey data
- Hydraulic and Irrigation Engineering – irrigation hydraulics, scheduling and technology
- Dryland Hydrology – special hydrology of dew, soil moisture and limited rainfall, soil, water, native plant and animal interactions in arid and semi-arid regions
- Post-fire Hydrology – wildfire effects on soil wettability (or hydrophobicity), soil and water erosion
- Watershed Hydrology and Groundwater Hydrology (hydrogeology) - water flow and solute transport
- Climate Change – its effects on hydrological processes, water resources, agriculture and ecosystems
- GIS Applications - in natural sciences and all other possible areas
- Fluid Mechanics – unstable (finger) flow in porous media including soils, oil reservoirs, and fractured rocks
- Geo-spatial Data Science - based on geostatistics, Excel, Python and ArcGIS Pro platforms

Publications

Published in Peer-reviewed Journals (underlined are Students and Advisees, asterisked corresponding authors)

1. Zhang, L.Y., **Z. Wang***, Z.L. He, X.J Ma, B. Ma*, J.C. Tian, J.Y. He. Effects of Gravel-Sand and Plastic Film Mulching on Soil Water and Temperature Retention in Cold and Arid Regions without Irrigation (DOI). *Science of the Total Environment* 934, 2024.
2. Yang, Z.F., J.C. Tian*, **Z. Wang**, K.P. Feng, Z. Ouyang, L.X. Zhang, X.F. Yan. Coupled soil water stress and environmental effects on changing photosynthetic traits in wheat and maize (DOI). *Agricultural Water Management*, 282:108246, 2023.
3. Jia, Z.F.，D.Z. Chen, **Z. Wang***，P.C. Liu, P. Liu，C.C. Yao. Soil water condensation versus atmospheric vapor source in Guanzhong Plain, China (DOI, WebLink1, WebLink2). *Chinese J. of Applied Ecology*, 34(2):369-376, 2023.
4. Yang, Z.F., J.C. Tian*, **Z. Wang**, K.P. Feng. Monitoring the photosynthetic performance of grape leaves using a hyperspectral-based machine learning model (DOI). *European J. of Agronomy*. 140 (126589), 2022.
5. Ma, B., J.C. Tian, J.Y. He, **Z. Wang***. The mechanisms of dew formation and its influence on surface soil water content in the Central Ningxia arid belt (DOI, WebLink). *Advances in Water Science.* 33(6): 100-111, 2022.
6. Ren, T., Z.F. Jia, **Z. Wang***, Z. Zhong. Dynamics of soil water potential under plastic membrane and geotextile cloth mulching in Mu Us desert (WebLink). *Journal of Soil and Water Conservation*, 34(4): 78-84, 2020.
7. Zhong, Z，Z.F. Jia，**Z. Wang***，Y.D. Lu，T. Ren，J. Chen，X.P. Wang. Effects of double ridge geotextile mulching on soil moisture in arid and semi-arid regions (WebLink1, WebLink2). *Agricultural Research in the Arid Areas*, 38(2):21-29, 2020.
8. Ren, T., Z.F. Jia, **Z. Wang***, Y.D. Lu, X.H. Liu, Z. Zhong. Characteristics of soil temperature change under plastic membrane-geotextile cloth mulching in Mu us desert land (WebLink1, WebLink2). *Agricultural Research in the Arid Areas*, 38(1):1-11, 2020.
9. Jia, Z.F., **Z. Wang***, H. Wang. Characteristics of dew formation in semi-arid loess plateau of central Shaanxi Province, China (DOI). *Water*, 11(1), 126, 2019.
10. Su, F.M., Z.F. Jia, **Z Wang***. Effects of geotextile plus plastic film mulching on soil moisture in WeiBei dryland (WebLink). *Bulletin of Soil and Water Conservation*. 38(5):97-102, 2018.
11. Wang, X., Z.Y. Gao, Y.K. Wang, **Z. Wang**, S.S. Jin. Dew measurement and estimation of rain-fed jujube in a semi-arid loess hilly region of China (WebLink). *J. Arid Land*. 9:547-557, 2017.
12. Scudiero, E., D.L. Corwin, R.G. Anderson, K. Yemoto, W. Clary, Z. Wang, T.H. Skaggs. Remote sensing is a viable tool for mapping soil salinity in agricultural lands (**DOI**). ***California Agriculture***, 71(4):231-238, 2017.
13. Liang, X., D.R. Su, **Z. Wang**, and X. Qiao. Effects of turfgrass thatch on water infiltration, surface runoff, and evaporation (PDF). *J. of Water Resources and Protection*, 9(7), 799-810, 2017.
14. Wang, H.，Z.F. Jia，**Z. Wang***. Dew amount and it's inducing factors in the loess hilly region of Ansai County, northern Shaanxi Province, China (DOI). *J. of Applied Ecology*, 28 (11): 3703-3710, 2017.
15. Wang, H.，Z.F. Jia，Y.D. Lu，Z.L. He，Y.K. Wang，Y.M. Chen，**Z. Wang***. Dew condensation time and frequency in the loess hilly region of Ansai County, northern Shaanxi Province, China (DOI). *J. of Applied Ecology*, 28(8), 2017.
16. Wang Z. Shallow Saline Aquifer Monitoring at Naval Air Station Lemoore, Fresno and Kings County, California. *Final Report to the US Department of Defense*, Cooperative Agreement No. W9126G-10-2-0029. 160 p. March 2013.
17. He, Z.L., **Z. Wang***, C.J. Suen, and X. Ma. Hydrologic sensitivity of the Upper San Joaquin River Watershed in California to climate change scenarios (DOI). *Hydrology Research*, 44.4: 723-736, 2013.
18. Liu, X.H., **Z. Wang**, L. Li, A. Hu. Hydrochemical characterization of a groundwater aquifer and its water quality suitability for irrigation in Jinghuiqu Irrigation District of China (DOI). *Water Environment Research,* 85(3):245-58, 2013.
19. Liu, Y., B.J. Fu, Y.H. Lü, **Z. Wang**, G.Y. Gao. Hydrological responses and soil erosion potential of abandoned cropland in the Loess Plateau, China (DOI). *Geomorphology*, 138: 404–414, 2012.

20. Jin, T.T., B.J. Fu, G.H. Liu, and **Z. Wang**. Hydrologic feasibility of artificial forestation in the semi-arid Loess Plateau of China (DOI). *Hydrology and Earth System Sci.*, 15: 2519–2530, doi: 10.5194/hess-15-2519-2011, 2011.
21. Liu, X.H., B. He, Z. Li, J. Zhang, L. Wang, **Z. Wang**. Influences of land terracing on agricultural and ecological environment in Loess Plateau regions, China (DOI). *Environmental Earth Sciences*, 2010.
22. Liang, X., D.R. Su, S. Yin, and **Z. Wang**. Leaf water absorption and desorption functions for three turfgrasses (DOI). *Journal of Hydrology*, 376: 243–248, 2009.
23. Lan J.Y., H.E. Li, W.J. Shi, J.F. Zhang, and Z. Wang. Finger flow experiments in homogeneous and layered soils. *Water Saving Irrigation (Chinese)*, 11: 53-70, 2009.
24. Li, H.L., H.E. Li, **Zhi Wang**, W.J. Shi. Research of Finger Flow in Porous Media: Review and Perspective, *Soils (*PDF*)*, 41: 27-33, 2008.
25. Kim, S.B., H.S. On, D.J. Kim, W. A. Jury, and **Z. Wang**. Determination of bromacil transport as a function of water and carbon content in soils (DOI). *Journal of Environmental Science and Health Part B,* 42, 529–537, 2007.
26. Wang, Z. Watershed Monitoring and Hydrologic Simulation using GIS (PDF). *CSU Geospatial Review*, Vol. 4, Spring 2006.
27. Mathieu, J., **Z. Wang**, J. Feyen, D. Elrick and M. Vanclooster. Correction to "Prediction of fingering in porous media" (DOI). *Water Resources Research*, Vol. 41, No. 4, W04005, 2005.
28. Wang, Z. Invited Book Review: Seepage in soils – principles and applications by Lakshmi N. Reddi (DOI). *Vadose Zone Journal*, 3: 728-729, 2004.
29. Wang, Z., W.A. Jury, A. Tuli, and D.J. Kim. Unstable flow during redistribution: Controlling factors and practical implications (DOI). *Vadose Zone Journal*, 3: 549-559, 2004.
30. Wang, Z, A. Tuli, and W.A. Jury. Unstable flow during redistribution in homogeneous soil (DOI). *Vadose Zone Journal*, 2: 52-60. 2003.
31. Jury, W.A., **Z. Wang**, and A. Tuli. A conceptual model of unstable flow in unsaturated soil during redistribution (DOI). *Vadose Zone Journal*, 2: 61-67, 2003.
32. Wang, Z., L. Wu, T. Harter, J. Lu and W.A. Jury. A field study of unstable preferential flow during soil water redistribution (DOI). *Water Resources Research* 39 (4): 1075, 2003.
33. Wang, Z., A. Chang, L. Wu, and D. Crowley. Assessing the soil quality after long-term wastewater irrigation - principal component and factor analysis (DOI). *Geoderma*, 114: 261-278, 2003.
34. Wang, Z, J. Lu, L. Wu, T. Harter, and W.A. Jury. Visualizing preferential flow in field soils using ammonium carbonate and a pH indicator (DOI), *Soil Science Society of America Journal*, 66: 347-351, 2002.
35. Wang, J., B. Fu, Y. Qiu, L. Chen, and **Z. Wang**. Geostatistical analysis of soil moisture variability on Da Nangou catchment of the loess plateau, China (DOI). *Environmental Geology*, 41: 113-120, 2001.
36. Jury, W. A., and **Z. Wang**. Unresolved Problems in vadose zone hydrology and contaminant transport (PDF). In *Dynamics of Fluids in Fractured Rock*, AGU Geophysical Monograph 122, edited by B. Faybishenko, P. A. Witherspoon and S. M. Benson. pp. 67-72, 2000.
37. Wang, Z., L. Wu, and Q. J. Wu. Water-entry value as an alternative indicator of soil water repellency and wettability (DOI). *Journal of Hydrology*, 231-232: 76-83, 2000.
38. Wang, Z., Q.J. Wu, L. Wu, C.J. Ritsema, L.W. Dekker and J. Feyen, Effects of soil water repellency on infiltration rate and flow instability (DOI). *Journal of Hydrology*, 231-232: 265-276, 2000.
39. Zerihun, D., J. Feyen, J. M. Reddy and **Z. Wang**. Minimum cost design of furrow irrigation systems (DOI). *Transactions of the ASAE*, 42(4): 945-955, 2000.
40. Wang, Z., Jan Feyen, and D.E. Elrick. Prediction of Fingering in porous media (DOI). *Water Resources Research,* 34: 2183-2190, 1998.
41. Wang, Z., Jan Feyen and C. J. Ritsema. Susceptibility and predictability of conditions for preferential flow (DOI). *Water Resources Research*, 34: 2169-2182, 1998.
42. Wang, Z., J. Feyen, M. Th. van Genuchten and D. R. Nielsen. Air entrapment effects on infiltration rate and flow instability (DOI). *Water Resources Research*, 34(2): 213-222, 1998.

43. Wang, Z., J. Feyen, D. R. Nielsen and M. Th. van Genuchten. Two-phase flow infiltration equations accounting for air entrapment effects (DOI). *Water Resources Research*, 33(12): 2759-2768, 1997.
44. Zerihun, D, **Z. Wang**, J. Feyen and J. M. Reddy. Empirical functions for dependent furrow irrigation parameters. 2: Applications (WebLink). *Irrigation Science*, 17: 121-126, 1997.
45. Zerihun, D., **Z. Wang**, S. Rimal, J. Feyen and J. M. Reddy. Analysis of surface irrigation performance terms and indices (DOI). *Agricultural Water Management*, 34: 25-46, 1997.
46. Wang Z., D. Zerihun, and J. Feyen. General irrigation efficiency for field water management (DOI). *Agricultural Water Management*, 30(2): 123-132, 1996.
47. Wang, Z., J. M. Reddy and J. Feyen. Improved 0-1 programming model for optimal flow scheduling in irrigation canals (WebLink). *Irrigation and Drainage Systems*, 9: 105-116, 1995.
48. Wang, Z. and J. Feyen. Unsaturated infiltration properties affected by soil air pressure (WebLink). *Unsaturated Soils* (edited by E. E. Alpnso and P. Delage, A.A. Balkema Publisher, Rotterdam), Vol. 1: 417-422, 1995.
49. Lin, X. C., **Z. Wang**, W. Meng, L. Zhao, W.Z. Fan and Q.L. Shen. A quantitative evaluation of on-farm irrigation methods and techniques, *Journal of Northwestern Agricultural University* (Acta Univ. Agric. Boreali-occidentalis), 23(5): 17-22, 1995.
50. Wang, Z.Y., Z. M. Zhen and **Z. Wang**. The use and conveyance of hyper-concentrated turbid flow. *ICID Bulletin CIID*, 43(2): 117-126, 1994.
51. Wang, Z., F. S. Zhu and X. M. Liu. Experimental study of parabolic throat-less flumes (PDF). *Journal of Water Resources,* 23(7): 12-23, 1994.
52. Wang, Z., Ai-Min Zhang and De-Hua Liao. Field study of on-farm irrigation efficiencies in XiYingHe irrigation district. *Water Resources & Water Engineering*, 4(1): 17-25, 1993.
53. Wang, Z. and F. Zhu. Optimal flow regulation in canal systems using 0-1 programming method, *Irrigation & Drainage*, 11(3): 8-13. 1992.
54. Wang, Z., Parabolic cut-throat flumes for U-shaped canals, *Shaanxi Water Conservancy*, (4): 16-19, 1990.
55. Xiong, Y.Z., S. Kang, **Z. Wang**, X.C. Ling, and Z.N. Wang. Water saving irrigation in semi-arid regions of northwestern China, in *Water-Saving Agriculture and Development of Irrigation & Drainage Technologies*, Oct: 16-21, 1989.
56. Wang, Z. Recession/advance model for design of Long Border Segment Irrigation systems, *People's Yellow River*, 1989(3): 33-37, 1989.
57. Wang, Z. Evaluating application parameters of soil infiltration characteristics, *Irrigation & Drainage and Small Hydro-Power*, 1989(1): 30-33, 1989.
58. Wang, Z., An analytical model for predicting surface flow advance and the rational length of borders, *Irrigation & Drainage and Small Hydro-Power*, 1987(1): 30-33, 1987.
59. Wang, Z. A mathematical model for border irrigation flow advancement, *Journal of Northwestern Agricultural University* (Acta Univ. Agric. Boreali-occidentalis, China), 15(4): 47-54, 1987.
60. Wang, Z. and F. Zhu. A Venturi-pipe devices for open canal water measurement*, Water Measurement Techniques and Devices*, 4: 58-64, 1986.
61. Wang, Z. Simulation and design of Long Border Segment Irrigation Systems (PDF), *Irrigation & Drainage*, 5(4): 15-26, 1986.

Abstracts in Conference Proceedings (underlined are Students and Advisees)

1. Geostatistics class of 14 students (K.A. Allen, B.J. Andersen, J.F. Bautista-Lopez, C.A. Burton, J. Canchola, R.S. Chevalier, B.J. Esber, J.A. Karr, C.A. Lopez-Flores, J.R. Mostafa, E. Rivas, M.J. Smelski, A.L. Trice, D.L. Walker) and **Z. Wang**. Analyses and prediction of rainfall patterns in California. Fresno State STEM Symposium for Course Based Research and Projects. Fresno, Dec 8, 2017.
2. Easley, Micheale, Kaitlyn Willems, Alan Gallegos, and **Z. Wang**. Effects of forest fire on soil water repellency. *Abstract of the 37th Annual Central California Research Symposium*, Fresno, CA, USA, April 20, 2016.

3. Willems, Kaitlyn, Micheale Easley, Alan Gallegos, and **Z. Wang**. Effects of Controlled Burning on Soil Erosion and Forest Restoration in the Sierra Nevada Forests. *Abstract of the 37th Annual Central California Research Symposium*, Fresno, CA, USA, April 20, 2016.
4. White, Dustin, and **Z. Wang**. Stratigraphy and Transmissivity of the Kaweah River Fan, Visalia, California. *Abstract of the 37th Annual Central California Research Symposium*, Fresno, CA, USA, April 20, 2016.
5. Wang, Z, Youke Wang, ZhiYong Gao, Kassandra Hishita, Yan Zhang. Interception of Vapor Flow near Soil Surface for Water Conservation and Drought Alleviation. *Abstract of AGU 2015 Fall Meeting*, **San Francisco**, CA, USA, December 14-18, 2015.
6. Ronald Holcomb, Dale Rieth, Kassandra Hishida, **Z. Wang**. Characterization of the Shallow Saline Aquifer at NAS Lemoore in Western San Joaquin Valley, California. *GSA Abstracts with Programs*. Vol. 45, No. 6, 2013.
7. Dale Rieth, Ronald Holcomb, Kassandra Hishida, **Z. Wang**. Soil organic matter contents in the shallow saline aquifer below NAS Lemoore in Western San Joaquin Valley, California. *GSA Abstracts with Programs*. Vol. 45, No. 6, 2013.
8. Kassandra Hishida, Dale Rieth, Ronald Holcomb, **Z. Wang**. Soil versus groundwater salinity at NAS Lemoore in Western San Joaquin Valley, California. *GSA Abstracts with Programs*. Vol. 45, No. 6, 2013.
9. Wang, Z., Ronald Holcomb, Dale Rieth, Kassandra Hishida. Shallow saline aquifer monitoring at Naval Air Station Lemoore in western San Joaquin valley, California. *GSA Abstracts with Programs*. Vol. 45, No. 6, 2013.
10. Wang, Z. Vapor flow contributions to eco-hydrology in dry land critical zones. *GSA Abstracts with Programs*. Vol. 45, No. 6, 2013.
11. Wang, Z., C. John Suen, Zili He. Hydrologic sensitivity of the southern Sierra Nevada critical zones to climate change projections. *GSA Abstracts with Programs*. Vol. 45, No. 6, 2013.
12. DeFlitch, Douglas., **Zhi Wang**. Measurement and monitoring of bedload sediment transport along the upper San Joaquin River. *Abstracts of the 31st Annual Central California Research Symposium, Fresno, California*, April, 23, 2010 (won **Best Graduate Presentation Award, $250**).
13. Sartono, O., **Z. Wang**, C. J. Suen, and K. D Schmidt. Parameterization of a fractured hardrock aquifer in western foothills of the Sierra Nevada, California, *GSA Abstracts with Programs*. Vol. 39, No. 6, 2007.
14. Wang, Z., William A. Jury, and Atac Tuli. Observation and Modeling of Unstable Flow during Soil Water Redistribution. *Proceedings of the 2nd International Symposium on the Dynamics of Fluids in Fractured Rock*, Lawrence Berkeley National Laboratory, Berkeley, CA, Feb. 10-12, 2004.
15. Wang, Z. Does Water Flow Become Unstable in All Soils? *Proceedings of the Twenty-Fourth Annual Central California Research Symposium*. California State University, Fresno**.** CA, April 17, 2003.
16. Wang, Z. Effects of soil water repellency on infiltration rate and flow instability. International Workshop on "*Soil Water Repellency - origins, assessment, occurrence, consequences, modeling and amelioration*", Wageningen, The Netherlands, September 2-4, 1998.
17. Wang Z. and J. Feyen. Effects of air entrapment on water flow. *Proceedings of the International Conference Kearney Foundation of Soil Science*, Vadose Zone Hydrology: Cutting across Disciplines. University of California, Davis, sep. 6-8:163-164, 995.
18. Wang, Z. and J. Feyen. Inter-displacement behaviors between air and water during unsaturated infiltration. In: *Annales Geophysicae of the XXth general Assembly of the EGS*, Hamburg, Germany, Apr. 3-4, 7pp. 1995.
19. Wang, Z.. and J. Feyen. Effect of air entrapment on water flow and solute transport. *Proceedings of International workshop on Water and Matter Transport at Various Scales*. Leuven, Belgium April 18-19, 1995.
20. Zerihun D, **Z. Wang**, J. Feyen and J. M. Reddy. Performance Curves for Border irrigation. *Proceedings of the first International Conference on Water Resources Engineering*, ASCE (August 14-18, 1995, San Antonio, Texas, USA), edited by W.H. Espey, Jr. and P.G. Combs, Vol. 2: 1595-1599, 1995.
21. Feyen J., W. Mulonga, F. Liu, D. Zerihun and **Z. Wang**, 1994. Computer applications in irrigation and drainage education, research and practice. *Proceedings of the 5th MANCID* (Malaysian National Commission on

Irrigation and Drainage) *Annual National Conference on "Hydroinformatics - Information technology for Irrigation, Drainage and Water Resources*. Pangkor Island, Malaysia. Nov. 25-27, 1996.

22. Wang, Z. and J. Feyen. A criterion for design, evaluation and optimization of on-farm irrigation systems. *Proceedings of the 45th ICID International Executive Council Meeting and 17th European Regional Conference* on "Effective and ecological sound use of irrigation waters", Varna, Bulgaria, May, 1994.
23. Wang, Z. and F. Zhu. Parabolic throat-less flumes for open channel discharge measurement, *Proceedings of the International Conference on Agricultural Engineering* (Beijing): V86-V92, 1992.
24. Wang, Z. and F. Zhu. Water-saving agriculture in Shaanxi Province, Proceedings of the *Symposium on Water Resources Utilization in NW China*, October, 1990, Xi'an. pp:20, 1990.

Conference Presentations and Abstracts (underlined are Students and Advisees)

1. Wang, Z. Using a Soil-Compost-Biochar-Coriphol (SCBC) mulch mix to save water, improve soil and crop health and boost agricultural production. Fresno State F3 Innovate Symposium, **Fresno**, December 13, 2024.
2. Wang, Z., Z.F. Jia, B. Ma and J.C. Tian. The hydrology of dew in arid and semi-arid regions. AGU Fall Meeting, Session H25ZB, **New Orleans and on Zoom**, Dec. 13-17, 2021.
3. Ma, B., J.C. Tian, J.Y. He, Z. Wang. Effects of dew, geotextile and gravel mulching on soil moisture storage in arid middle Ningxia of China. AGU Fall Meeting, Session H25ZB, **New Orleans and on Zoom**, Dec. 13-17, 2021.
4. Geostatistics class, 14 posters (K.A. Allen, B.J. Andersen, J.F. Bautista-Lopez, C.A. Burton, J. Canchola, R.S. Chevalier, B.J. Esber, J.A. Karr, C.A. Lopez-Flores, J.R. Mostafa, E. Rivas, M.J. Smelski, A.L. Trice, D.L. Walker) and Z. Wang. Analyses and prediction of rainfall patterns in California. Fresno State STEM Symposium for Course Based Research and Projects. **Fresno**, Dec 8, 2017.
5. Easley, Micheale, Kaitlyn Willems, Alan Gallegos, and Z. Wang (poster). Effects of forest fire on soil wettability：French Fire Recovery Area, North Fork California. GSA Annual Meeting, **Denver**, CO, September 25-28, 2016.
6. Easley, Micheale, Kaitlyn Willems, Alan Gallegos, and Z. Wang (poster). Effects of forest fire on soil water repellency. The 37th Annual Central California Research Symposium, **Fresno**, CA, USA, April 20, 2016.
7. Willems, Kaitlyn, Micheale Easley, Alan Gallegos, and Z. Wang (poster). Effects of Controlled Burning on Soil Erosion and Forest Restoration in the Sierra Nevada Forests. The 37th Annual Central California Research Symposium, **Fresno**, CA, USA, April 20, 2016.
8. White, Dustin, and Z. Wang (poster). Stratigraphy and Transmissivity of the Kaweah River Fan, Visalia, California. Interception of Vapor Flow near Soil Surface for Water Conservation and Drought Alleviation. The 37th Annual Central California Research Symposium, **Fresno**, CA, USA, April 20, 2016.
9. Wang, Z, Youke Wang, ZhiYong Gao, Kassandra Hishita, Yan Zhang (poster). Interception of Vapor Flow near Soil Surface for Water Conservation and Drought Alleviation. AGU 2015 Fall Meeting, **San Francisco**, CA, USA, December 14-18, 2015.
10. Wang, Z., Zili He, Youke Wang, ZhiYong Gao, Yan Zhang, Kassandra Hishita (poster). Measurement of Vapor Flow as an Important Source of Water in Dry Land Eco-hydrology. AGU 2014 Fall Meeting, **San Francisco**, CA, USA, December 15-19, 2014.
11. Wang, Z., (Invited speaker). GIS applications and the GIS certificate of advanced study at Fresno State. 2014 GIS-Day Conference, Lyles College of Engineering at Fresno State, **Fresno**, California, November 19, 2014.
12. Sartono, O., Z. Wang, and C, John Suen (poster). Transmisivity and storetivity of a fractured hardrock aquifer in the Sierra Nevada Foothills, 2014 All Hands Meeting for the CZO Network, **Fish Camp**, California, September 21-24, 2014.
13. Wang, Z., Zili He and C. John Suen (poster). Streamflow sensitivity to climate change projections in the Southern Sierra watersheds, 2014 All Hands Meeting for the CZO Network, **Fish Camp**, California, September 21-24, 2014.

14. Wang, Z., Bojie Fu, Zili He, Youke Wang, ZhiYong Gao, Kassandra Hishita (poster). The Role of Vapor Flow for Plant Survival in Dry Land Ecosystems, 2014 All Hands Meeting for the CZO Network, **Fish Camp**, California, September 21-24, 2014.
15. Wang, Z., (oral presentation). Measurement and interpretation of near-surface vapor flow in gravel-mulched desert soils. International Symposium on Water Resources and Pollution Control in Arid/Semi-arid Regions (ISWPAR), **Xian**, Shaanxi, China, June 21-23, 2013.
16. Wang, Z., Ronald Holcomb, Dale Rieth, Kassandra Hishida (oral presentation). Shallow saline aquifer monitoring at Naval Air Station Lemoore in western San Joaquin valley, California. *GSA* Cordilleran Section - 109th Annual Meeting, **Fresno**, California, May 20-22, 2013.
17. Ronald Holcomb, Dale Rieth, Kassandra Hishida, Z. Wang (oral presentation). Characterization of the Shallow Saline Aquifer at NAS Lemoore in Western San Joaquin Valley, California. *GSA* Cordilleran Section - 109th Annual Meeting, **Fresno**, California, May 20-22, 2013.
18. Dale Rieth, Ronald Holcomb, Kassandra Hishida, Z. Wang (poster). Soil organic matter contents in the shallow saline aquifer below NAS Lemoore in Western San Joaquin Valley, California. *GSA* Cordilleran Section - 109th Annual Meeting, **Fresno**, California, May 20-22, 2013.
19. Kassandra Hishida, Dale Rieth, Ronald Holcomb, Z. Wang (poster). Soil versus groundwater salinity at NAS Lemoore in Western San Joaquin Valley, California. *GSA* Cordilleran Section - 109th Annual Meeting, **Fresno**, California, May 20-22, 2013.
20. Wang, Z. (oral presentation). Vapor flow contributions to eco-hydrology in dry land critical zones. Geological Society of America (*GSA)* Cordilleran Section - 109th Annual Meeting, **Fresno**, California, May 20-22, 2013.
21. Wang, Z., C. John Suen, Zili He. Hydrologic sensitivity of the southern Sierra Nevada critical zones to climate change projections. *GSA* Cordilleran Section - 109th Annual Meeting, **Fresno**, California, May 20-22, 2013.
22. Wang, Z. (oral presentation). Characterizing Mass and Energy Transport at Different Scales, Multi-State Soil Physics Research Project W-2188 Technical Committee Annual Meeting, Desert Research Institute, **Las Vegas**, Nevada, January 2-4, 2013.
23. Wang, Z. Ronald Holcomb (oral presentation). Shallow saline aquifer monitoring at NAS Lemoore – observed groundwater status. Lemoore Naval Air Station Agricultural Outlease Program 2011 Growers Meeting, **Lemoore**, CA, January 10, 2011
24. Wang, Z. (oral presentation). Measurement and Modeling of Soil Erosion in the Sierra Nevada, California. Chinese Academy of Sciences International Workshop on "Ecosystem processes and services", **Orlando**, Florida, USA, Nov 20-21, 2010.
25. Wang, Z., Jorge Baca, Zili He, Steve Blunmenshine (poster). Effects of the First Floods on Water Quality and Sediment Transport in the Sierra Nevada Foothill Streams, California. AGU 2010 Fall Meeting, **San Francisco**, USA, December 13-17, 2010.
26. Wang, Z. (oral presentation). The effects of first floods and soil erosion on water quality in the Fresno River watershed. Central Sierra Watershed Committee meeting. **Oakhurst**, California, April 28, 2010.
27. DeFlitch, Douglas., Zhi Wang (oral presentation). Measurement and monitoring of bedload sediment transport along the upper San Joaquin River. The 31st Annual Central California Research Symposium, **Fresno**, California, April, 23, 2010. (**Best Graduate Presentation Award, $250**).
28. Wang, Z. (oral presentation). Assessment of eco-system health, services and restoration - Case studies in California and the Loess Plateau of China. Chinese Academy of Sciences. **Beijing**, China, April 2, 2010.
29. Wang, Z. (oral presentation). Eco-hydrology, infiltration, irrigation engineering and hydrogeology with applications in California and the Loess Plateau of China. Institute for Water and Environment, ChangAn University, **Xi'An**, China, January 2-18, 2010.
30. Wang, Z. (oral presentation). Eco-hydrological measurement and simulation of watershed sustainability with respect to global climate change. Chinese Academy of Sciences. **Beijing**, China, Dec 28, 2009.
31. Suen, C. John, Bernad. F. Nelson, Ori Sartono, Z. Wang (poster presentation). Using isotope hydrology, fracture mapping, and pump tests to characterize groundwater flow through the fractured rock terrane of the Sierra Nevada foothills, GSA Annual Meeting, **Portland**, Oregon, October 18-21, 2009.

32. Wang, Z**,** Zili He, John Suen, Xiaoyi Ma (Oral presentation). Climate Change Impacts on the Headwaters of San Joaquin River, California. The 30th Annual Central California Research Symposium, **Fresno**, California, April, 30, 2009.
33. Baca, Jorge Jr., Zili He, Zhi Wang, Steve Blumenshine (Poster). Estimating Soil Erosion Potential within the Fresno River Watershed using the RUSLE model and GIS. The 30th Annual Central California Research Symposium, **Fresno**, California, April, 30, 2009.
34. Moore, Brett**,** Steve Blumenshine, Zhi Wang, Zili He (Poster). Influence of sedimentation on the distribution of macroinvertebrates in the upper Fresno River. The 30th Annual Central California Research Symposium, **Fresno**, California, April, 30, 2009.
35. Wang, Z. (oral presentation). Estimating Soil Erosion Potential in the Fresno River Watershed using the RUSLE Model and GIS. Central Sierra Watershed Committee meeting. **Oakhurst**, California, May 27, 2009.
36. Wang, Z. (oral presentation). Impacts of the first flood events and sedimentation on water quality in the Fresno River wathershed. Central Sierra Watershed Committee meeting. **Oakhurst**, California, February 25, 2009.
37. Wang, Z., and S. Blumenshine (oral presentation). Monitory plan for the upper Fresno River watershed. Oakhust area public information meeting sponsored by Central Sierra Watershed Committee. **Oakhurst**, California, October 16, 2008.
38. Wang, Z., Louis A. Tesseo (Poster). Upper San Joaquin River: A Geostatistical Analysis of the Snowpack water yield in the upper San Joaquin River watershed. GIS Day at Fresno State, **Fresno**, CA, Nov. 14, 2007.
39. Ori Sartono, Nelson F. Bernal, C. John Suen, Zhi Wang (Poster). Groundwater Flow through a Fractured Rock Aquifer in the Sierra Nevada Foothills of California. AGU 2007 Fall Meeting, **San Francisco**, California, December 10-14, 2007.
40. Wang, Z., Louis A. Tesseo (Oral presentation). Spatial Analysis of Snowpack Water Resources in Sierra Nevada for San Joaquin River. International Annual Meetings of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America in **New Orleans**, Louisiana. Nov. 4-8, 2007.
41. Xinxiao Yu, Derong Su, Yuan Tian, Zhi Wang (Oral presentation)., Performance of ridge and furrow water-harvesting system in Loess Plateau of China. International Annual Meetings of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America in **New Orleans**, Louisiana. Nov. 4-8, 2007.
42. Ori Sartono, Zhi Wang, C. John Suen, and K. D Schmidt (Poster). Parameterization of a fractured hard rock aquifer in western foothills of the Sierra Nevada, California, GSA Annual Meeting and Exposition. **Denver,** Colorado, Oct 28-31, 2007.
43. Wang, Z. (Invited Oral Presentation). Geospatial Analysis in Earth and Environmental Sciences, GIS Day 2006 for San Joaquin Valley, **Fresno**, CA, November 15, 2006.
44. Wang, Z. (Invited Oral presentation). GIS-based modeling of water quality and water supply in Fresno River Watershed. The 12th Annual Cal GIS Conference, Fess Parker's Doubletree Resort, **Santa Barbara**, CA, April 5-7, 2006.
45. Wang, Z. (Oral presentation). Characterizing Mass and Energy Transport at Different Scales. Western Regional Soil Physics Research Project W-1188 Annuposital Meeting, Desert Research Institute, 755 E. Flamingo Road, **Las Vegas**, NV, Jan. 2-4, 2006.
46. Wang, Z., Ronald E. Holcomb, Ori Sartono, Jim Meier (Oral presentation). Moving Toward GIS-Based Modeling of Watersheds and Groundwater Banks in San Joaquin Valley. Western Regional Soil Physics Research Project W-1188 Annual Meeting, **Las Vegas**, NV, Jan. 2-4, 2005.
47. Wang, Z., William A. Jury, and Atac Tuli. (Poster presentation). Observation and Modeling of Unstable Flow during Soil Water Redistribution. The 2nd International Symposium on the Dynamics of Fluids in Fractured Rock, Lawrence Berkeley National Laboratory, **Berkeley**, CA, Feb. 10-12, 2004.
48. Wang, Z., S. Blumenshine, and M McClanahan. (Oral presentation). Fresno River Monitoring. Central Sierra Watershed committee meeting, **Oakhurst**, CA, April 28, 2004.

49. Wang, Z., William A. Jury, and Atac Tuli. (Oral presentation). Critical depth of infiltration for unstable flow during redistribution. US West Region Soil Physics Workshop (W-188), **Las Vegas**, January. 4-7, 2004.
50. Wang, Z., O. Satono, S. Blumenshine, and M McClanahan. (Oral presentation). GIS-Aided Watershed Modeling. GIS Day 2003, California State University, **Fresno**, CA, November 19, 2003.
51. Wang, Z., William A. Jury, and Atac Tuli. (Oral presentation). Does Water Flow Become Unstable in All Soils? Twenty-Fourth Annual Central California Research Symposium. California State University, **Fresno.** CA, April 17, 2003.
52. Wang, Z., S. Blumenshine, and M McClanahan. (Oral presentation). Fresno River Monitoring Plan and initial results. Central Sierra Watershed committee meeting, **Oakhurst**, CA, September 4, 2003.
53. Wang, Z. (Oral presentation). Contaminant flow in water. Western Athletic Conference (WAC) Universities Academic Alliance Symposium on Energy & Water Issues in Homeland Security and Health Disparities. **San Jose,** California. June 5-7. 2003.
54. Jury, W.A., and Z. Wang. (Oral presentation). Experimental and theoretical studies of unstable flow during soil water redistribution. US West Region Soil Physics Workshop (W-188), **Las Vegas**, January. 6-8, 2003.
55. Wang, Z. A. Tuli and W. A. Jury. (Poster presentation) Evidence of unstable preferential flow during soil water redistribution. AGU 2002 Fall Meeting, **San Francisco**, USA, December 4-10, 2002.
56. Wang, Z., W.A. Jury and L. Wu. (Oral presentation). Preferential flow in non-structured field soils. US West Region Soil Physics Workshop (W-188), **Las Vegas**, January. 2-5, 2001.
57. Wang, Z., W.A. Jury and L. Wu. (Oral presentation). Measurement and prediction of unstable flow, American Society of Agronomy, Crop Science Society of America, Soil Science Society of America 91ST Annual Meeting, **Salt Lake City**, Oct. 31 – Nov. 4, 1999.
58. Jury, W.A., and Z. Wang. (Oral presentation by Dr. Jury). Recent Developments and Unresolved Problems in Vadose Zone Hydrology and Contaminant Transport. International Symposium (in Honor of Paul A. Witherspoon) on "Dynamics of Fluids in Fractured Rocks: Concepts and Recent Advances", Ernest Orlando Lawrence Berkeley National Laboratory, **Berkeley**, California, February 10-12, 1999.
59. Wang, Z. and L. Wu. (Oral presentation). Effects of soil water repellency on infiltration rate and flow instability. International Workshop on "Soil Water Repellency - origins, assessment, occurrence, consequences, modeling and amelioration", **Wageningen**, The Netherlands, September 2-4, 1998.
60. Wang, Z. (Oral presentation). Prediction and observation of preferential flow in porous soils. US West Region Soil Physics Workshop (W-188), **Las Vegas**, January. 5-8, 1998.
61. Wang, Z., Jan Feyen, D.E. Elrick. (Poster presentation). Prediction of fingering in porous media. AGU 1997 Fall Meeting, **San Francisco**, USA, December 8-12, 1997.
62. Wang, Z., Jan Feyen and C. J. Ritsema. (Poster presentation). Susceptibility of conditions for preferential flow. 22nd General Assembly of EGS, **Vienna**, Austria, 21-25 April 1997.
63. Wang, Z., and J. Feyen. (Presentations, demonstrations, field experiments, exercises and exams). Surface Irrigation System Measurement and Design, International Post-graduate Program by University of Leuven and Universidad de Cuenca, **Cuenca**, Ecuador, Feb 23-Mar. 8, 1997.
64. Wang, Z., J. Feyen. (Poster presentation). Two-phase flow infiltration equations accounting for air entrapment effects, EGS XXI General Assembly, **The Hague**, The Netherlands, May 6-10, 1996.
65. Wang, Z. and J. Feyen. (Poster presentation). Fingered Flow Visualization in Two Dimensional Columns. Gordon Research Conference on "Modeling of Flow in Permeable Media", Proctor Academy, **Andover**, New Hampshire, USA, August 4-9, 1996.
66. Wang, Z., J. Feyen. (Poster presentation). Air entrapment effects on infiltration rate and flow instability. International workshop on "Vadose Zone Hydrology: Cutting across disciplines", University of California, **Davis**, Sept. 6-8, 1995.
67. Wang, Z. and J. Feyen. (Oral presentation by Dr. DJ Kim). Unsaturated infiltration properties affected by soil air pressure. First International Conference on Unsaturated Soils, **Paris**, France, Sept. 6-8, 1995.
68. Wang, Z. and J. Feyen. (Oral presentation). Inter-displacement behaviors between air and water during unsaturated infiltration. European Geophysical Society (EGS) X General Assembly, **Hamburg**, Germany, April 3-7, 1995.

69. Wang, Z. and J. Feyen. (Oral presentation). Effect of air entrapment on water flow. Workshop on Water and Matter Transport at Various Scales. **Leuven**, Belgium, April 18-19, 1995.
70. Wang, Z. and J. Feyen, (Oral presentation). A criterion for design, evaluation and optimization of on-farm irrigation systems. 45th ICID Executive Council Meeting & 17th European Regional Conference on the theme "Effective and ecological sound use of irrigation waters with special reference to European countries", **Varna**, Bulgaria, May 16-22, 1994.
71. Wang, Z. and F. Zhu. (Oral presentation). Parabolic cutthroat flumes for open channel discharge measurement. International Conference on Agricultural Engineering, **Beijing**, China. Oct. 1992.

Invited Special Talks

1. Wang, Z., The Role of Dew on Desert Lands. Symposium on Smart Construction and Dam Safety, Topic 6: Integrated saline soil management and agricultural high water use efficiency theory and technology, **NingXia** University, China (on Zoom), November 25, 2022.
2. Wang, Z., The Dew, University of California, Merced, Enviro-Lunch Seminar Series, **Merced (on zoom)**, CA, October 24, 2022.
3. Wang, Z., Vapor Flow in Arid and Semiarid Regions. Chang'An University, **Xi'an**, Shaanxi, China, July 2, 2019.
4. Wang, Z., Climate change effects on California. Xi'an University of Technology, **Xi'an**, Shaanxi, China, July 3, 2018.
5. Wang, Z. Utilization of multiple water resources including vapor flow in arid and semiarid Regions. Chang'An University, **Xi'an**, Shaanxi, China, July 2, 2018.
6. Wang, Z. Studies of near-surface vapor flow in arid regions of China, Ningxia University, **Yinchuan**, Ningxia, China, March 20, 2017.
7. Wang, Z. Ecological effects of vapor flow in arid and semiarid regions, Research Center for Echo-Environ. Sci., Chinese Academy of Sciences, **Beijing**, China, July 13, 2016.
8. Wang, Z. Stratigraphy and Transmissivity of the Kaweah River fan, California. Institute of Water and Development, ChangAn University, **Xian**, Shaanxi, China, July 11, 2016.
9. Wang, Z. Two-phase flow infiltration and near-surface vapor flow in arid regions, Institute of Soil and Water Conservation, Northwest A & F University and Chinese Ministry of Water Resources, **Yangling**, Shaanxi, China, July 8, 2016.
10. Wang, Z. Hydro-ecology and efficient water resources utilization in the arid and semiarid regions of China, for junior students at ChangAn University, **Xian**, Shaanxi, China, June 24, 2014.
11. Wang, Z. Theory of irrigation hydrology and hydro-ecology, Graduate seminar, Northwest A & F University, **Yangling**, Shaanxi, China, July 14, 2013.
12. Wang, Z. Climate change and near-surface vapor water utilization, Ningxia University, **Yinchuan**, Ningxia, China, June 26, 2013.
13. Wang, Z. Hydro-ecology and sustainable ecosystems, ChangAn University, **Xian**, Shaanxi, China, July 19, 2013.
14. Wang, Z. Near-surface vapor flow on desert lands, Northwest A & F University, **Yangling**, Shaanxi, China, July 9, 2012.
15. Wang, Z. Near-surface vapor flow studies, ChangAn University, **Xian**, Shaanxi, China, July 5, 2012.
16. Wang, Z. California water transfer projects, ChangAn University, **Xian**, Shaanxi, China, July 4, 2012.
17. Wang, Z. California water issues – climate change effects, 2 sessions, ChangAn University, **Xian**, Shaanxi, China, August 4-5, 2011.
18. Wang, Z. Infiltration and finger flow in porous media, Northwest A & F University, **Yangling**, Shaanxi, China, July 15, 2011.
19. Wang, Z., Advanced topics in soil physics and fluid mechanics, 2 sessions, ChangAn University, **Xian**, China, January 14-15, 2010.
20. Wang, Z., Advanced topics in hydrogeology, 2 sessions, ChangAn University, **Xian**, Shaanxi, China, January 12-13, 2010.

21. Wang, Z., Advanced topics in hydrology and climate change, 3 sessions, ChangAn University, **Xian**, Shaanxi, China, January 6-8, 2010.
22. Wang, Z., Effects of Unstable Flow on Water System Contamination and Remediation. Department Earth and Environmental Sciences, California State University - Fresno, **Fresno**, CA, April 5, 2002.
23. Wang, Z., Effects of Unstable Flow on Water System Contamination and Remediation. Department Environmental Sciences, Rutgers University, The State University of New Jersey, **New Brunswick**, NJ, March 13, 2002.
24. Wang, Z., Measurement and Prediction of Unstable Flow in the Vadose Zone and Groundwater Aquifers, Department of Civil and Environmental Engineering, University of Tennessee, **Knoxville**, TN, February 13, 2002.
25. Wang, Z., Measurement and Prediction of Preferential Flow and Solute Transport in Soils, Soil and Water Science Department, University of Florida, **Gainesville**, FL, May 3, 2001.
26. Wang, Z, Dynamic Simulation of Liquid-Air Displacement and Preferential Flow in Porous Media, Department of Environmental Sciences, University of California, **Riverside**, CA, April 9, 1998.

Research Grants

Internal Research Grants

1. PI, **Grants from College of Science and Mathematics**. Faculty Professional Development (Performance) Awards ($16,700) 2003-2018, 2021, 2025; Faculty Sponsored University Undergraduate Research Grant (for Micheale Easley, $1000), 2016-17; Faculty Sponsored Student Research Award (for Kaitlyn Wellims, $1000) 2015-2016; Faculty Sponsored Student Research Award (for Kassandra Hishita, 2 x $1000), 2013-14, 2014-15; Graduate Student Research Award (for Ashley Ross $2000), 2010-2011; Faculty Sponsored Student Research Award 2011-12, $700; Faculty Research Equipment Awards ($66,686) including *Hydrology and Environmental Science Lab Setup*, EasyChem Analyzer ($45,000), 2005-06; Dewpoint Water potentiometer-WP4-T ($7,242.29), 2004-05; Data acquisition system ($5,641) 2003-04; Portable TDR for measuring soil water content ($8,803), 2002-03; College Minigrants: Education-Assisted Measurement and Modeling of Watersheds and Groundwater ($2,500), 2005-06; Measurement and modeling of stormwater and contaminant flow ($2,500), 2004-05; Light transmission investigation of water and contaminant movement in soils ($2,500), 2003-04; College Scholarly and Creative Activity Award (24 WTUs), 2002-06; College Instructional Equipment award - *GIS Lab upgrade*: 14 computers, one scanner and one plotter (~$40,000) 2004-05, 12 computers and monitors ($7,216) 2003-04; New Faculty Start-up fund ($20,000), 2002-03.
2. PI: **Provost's Research Activity Award** (Provost RAA, $2500), 2008. Collaborative grant writing for federal funding. Submitted an NSF proposal "Measurement and Modeling of Unstable Flow in Soils."
3. PI, **Office of Institutional Effectiveness (Research, Assessment and Planning): Direct Measurement of Geology Student Learning for a Culminating Experience Field Course Geology 107**. ($5,000). Co-PI: Dr. Robert Dundas, 2005-06. This project was designed to conduct a comprehensive test on the prerequisite courses before students begin the field course (Geology 107- Advanced Field Methods, 3 units, 9 lab hours). This assessment will permit us to evaluate student preparedness for the culminating experience course and to identify areas where the Department could improve the curriculum and note areas where we are doing well.

External Research Grants

4. PI, F3 (Farms-Food-Future, Fresno State-UC Merced Future of Food Innovation Initiative). **Using a Soil-Compost-Biochar-Coriphol mulching mix to save water, improve soil and crop health and boost agricultural production in hot and arid regions with irrigation** (2025-2028 funded, Summar salary, student and instrument support). Collaborators: Dr. Zhi Wang, (Department of Earth and Environmental Sciences, Fresno State Colleges of Science and Mathematics), Dr. Qun Sun (Department of Viticulture and Enology, College of Agriculture), Dr. The "Leo" Nguyen (Department of Mechanical Engineering, College of

Engineering), Mr. Joseph Gallegos, Founder and CEO, the UmidaAg company in Fresno, California for subsurface irrigation (www.UmidaAg.com); Mr. Mike Woelk, Co-Founder & CEO, the Corigin Company in Merced, California as the supplier of Coriphol and biochar (www.corigin.co); and Dr. Vince Vroos (Farm manager, the Fresno State Farm).

5. CO-PI, California Climate Action Seed and Matching Grants - University of California Office of Research and Innovation, **Edge Computing and Field Monitoring for Precision Agriculture of Specialty Crops/Grape** (2022 Pre-proposal, not funded). PI: Gabriel Granco (Cal-Poly Pomona), John Korah (Cal-Poly Pomona), Kristy Qun Sun (CSU Fresno), Zhi Wang (CSU Fresno), Shijian Zhuang (UC Davis).
6. CO-PI, F3 (Fresno-Merced Future of Food Innovation Initiative). **The Impact of Liquid Organic Matter on Vineyard Soil, Chardonnay, and Cabernet Sauvignon Vine Nutrients Under Greenhouse Conditions**. April 2022 ($75,000, not funded). CO-PIs: Dr. Kresty Qun Sun, Asmeret Berhe (UC Merced), John Breen (Nutrien Ag Solutions), Zhi Wang (Fresno State), Krish Krishnan, Aric Mine, Miguel Villarreal.
7. CO-PI, Water Research Foundation. **Holistic Wet Weather Management Through Adaptive Volume and Pollutant Source Control at the Community Scale.** Proposed by: California Water Institute, Fresno State University And Fresno Metropolitan Flood Control District, November 2021 ($149,947, not funded). CO-PIs: Steve Blumenshine, Cordie Qualle, Jared Shuman, Joseph Draper, Zhi Wang, Lubo Liu. The proposed work will create a decision framework to support adaptive strategies for wet weather management in a variable climate through systematic review, compilation, and analysis of the state of knowledge regarding municipal pollutant source controls and stormwater capture system design.
8. Co-PI. **American Vineyard Foundation (AVF)**: **Using Cover Crops to Mitigate the Negative Effect of Winery Wastewater Application on Soil, Crop Yield, Grape and Wine Quality in San Joaquin Valley of California, 2021-2023** (funded $85,226). PI. Dr. Kresty Qun Sun (Viticulture and Enology), Co-PIs: Dr. Lubo Liu (Engineering) and Dr. Zhi Wang (EES). The goal of this project is to select the promising cover crops to improve water use efficiency, maintain soil health, and reduce potential salinity resulted from wastewater irrigation in vineyard. The study will also determine whether cover crops will improve canopy growth, vine yield, grape and wine chemical compositions.
9. Faculty Mentor, **NSF funded AGEP California Hispanic Serving Institutions (HSI) Alliance to Increase Underrepresented Minority Faculty in STEM (**https://graduatedivision.ucmerced.edu/training-grants/grants/nsf-agep**), 2018-2024** (funded $621K). PI: Christopher Kello at UC Merced. The goal is to bring together four Hispanic Serving Institutions in California: UC Merced; UC Santa Barbara; CSU Fresno; and CSU Channel Islands, with the specific goal of developing, implementing and testing a model for creating a more diverse STEM faculty workforce. The Alliance focuses on pedagogical training and career mentoring to prepare senior doctoral students for teaching-focused careers at a broad range of colleges and universities.
10. Faculty Mentor, **NSF funded Research Experiences for Undergraduates (REU): Sustainable Groundwater Resources** (**https://reu-water.org/**), **2020-2022** (funded $398,362). PI: Jason Gurdak and Leora Nanus at CSU San Francisco. The goal of the REU is to provide genuine research experience and training in groundwater sustainability for undergraduate students from the 23-campus CSU system and nationwide universities, particularly women and under-represented minorities (URMs), at an early stage in their scientific careers.
11. PI, **NSF: Measurement and Simulation of Ground Cover Effects on Soil Drought, Salinity, Weed Growth and Erosion in Central California. 2019-2021 (**not funded**).** Co-PI: Dr. Sharon Benes (Plant science department).
12. Co-PI. **Agricultural Research Initiative (ARI) of CSU System**: **The Effects of Gypsum and Compost on Soil Properties, Crop Yield, Vine Performance and Grape Quality in Vineyard Soils on the West Side of the San Joaquin Valley**, **2018-2020** (funded $25,000). PI: Dr. Kresty Qun Sun (Viticulture and Enology).
13. Co-PI. **American Vineyard Foundation (AVF): The Effects of Gypsum and Compost on Soil Properties, Crop Yield, Vine Performance and Grape Quality in Vineyard Soils on the West Side of the San Joaquin Valley. 2018-1020** (not funded)**.** PI: Dr. Kresty Qun Sun.

14. Senior personnel (hydrological/costal modeling in California), **NSF: Hazards SEES: Location as Adaptation: Climate Change, Extreme Events and Spatial Sorting in the U.S. 2014-18** (**not funded**, requested $1.9M). PIs: Ian Sue Wing - Boston University, Senior personnel: Ryan Sriver, Momcilo Markus, Elias Bekele, Sally McConkey - U. of Illinois; Meri Davlasheridze – Texas A&M Galveston; **Qin Fan, Zhi Wang** - Fresno State (CA); Douglas Wrenn - Penn State; Bruce Ebersole, Robert Whalin - Jackson State (MS). This nationwide collaborative research project is intended to advance understanding of the vulnerability of U.S. metropolitan statistical areas (MSAs) and regional economies to extreme climate events (large-scale atmospheric circulation patterns causing heat waves, severe storms, cyclones and droughts), and economic consequences of, long run adaptation through individuals' location choices. Cross-cutting disciplinary teams will be established to ensure consistency of approaches across sites and nationally to maximize comparability of results at the synthesis phase (climate science: Sriver; hydrological/coastal modeling: Markus, Bekele, McConkey, Ebersole, Whalin, **Wang**; econometric modeling: Wrenn, Davlasheridze, Fan; economic simulation modeling: Fan, Sue Wing; spatial integration: Sue Wing).
15. PI, **UC-CSU-Community College Collaborations Program: Joint research and teaching using Southern Sierra Critical Zone Observatory (SS CZO) research framework, 2012** (**not funded**). Co-PIs: Jan Hopmans (UC Davis), Jiri Simunek (UC Riverside), Jasper Vrugt (UC Irvine). Joint research and teaching collaborations between CSU Fresno and UC campuses and with the Forest Service in Fresno, to particularly facilitate multi-agency, multi-disciplinary research in the southern Sierra CZO, and to develop research proposals for large grants at existing study sites, making effective use of available research infrastructures through the SS CZO and US Forest Service.
16. Faculty Research Mentor, **NSF: Geoscience Mentoring, Education, Training, Research and Outreach (METRO) Center at CSU Fresno. 2010-14** (funded $1.4 million). NSF OEDG: Opportunities for Enhancing Diversity in the Geosciences program - setting up the METRO Center at CSU Fresno. PI: Alam Hassan.
17. PI, **US Department of Defense (DOD): Shallow Saline Aquifer Monitoring at NAS Lemoore, 2010-2013** (funded $138,566). PI: Dr. Zhi Wang (hydrologist). The major objective of this project is to develop a groundwater monitoring program in concert with parallel studies on plant and wildlife habitats (Dr. Paul Crosbie, biologist) at NAS Lemoore. This part of the project is focused on field monitoring of the shallow saline groundwater and soil qualities and their dynamic changes to support sustainable land use and training missions at the base. Recommendations on water supply, plant and wildlife choices should be developed based on specific studies on shallow saline groundwater aquifer, saline-sodic soil, irrigation water quality, plant suitability and wildlife habitats.
18. Participant, **NSF: Resilience in an urban socioecological system: water management as a driver of landscape and biodiversity in Fresno-Clovis, California, 2010-13** (funded $299,232). NSF ULTRA program. PIs: Madhusudan Katti et al.; Participants: Zhi Wang et al.
19. Collaborator, **CSU System-ARI (Agricultural Research Initiative): The Impact of Climate Change and Air Quality on Central San Joaquin Valley Agriculture, 2009** (**not funded**). Pre-proposal submitted on September 8, 2009. PI. Donald Hunsaker; Co-PIs: Fraka Humsen, Alam Hassan; Collaborators: Charles Krauter, Zhi Wang. The requested total funding was $450,000.
20. PI, **California Department of Water Resources (DWR**): **Upper Fresno River Watershed Assessment Project. 2008-2010** (funded $187,366). PIs: Steve Blumenshine (ecologist) and Zhi Wang (hydrologist). Collaborators: Madera County and Central Sierra Watershed Committee. Major objectives are to develop GIS-based nutrient loading and vegetation distribution models that are capable of analyzing the fate and transport of nutrients and invasive plants in the Fresno River watershed. Using the data collected by the team, chart and quantify the septic systems, roads, water quality and species distribution within the watershed, identify watershed land use patterns associated with high nutrient loads and invasive weeds, and finally create a GIS-based geodatabase information system (web server) to help identify areas where nutrient input are highest, sources of point or non-point nature, and measures for watershed restoration.
21. Co-PI, **CA-DWR: Upper San Joaquin River Watershed Assessment Project. 2008-2010** (funded $94,778). PI: John Suen (hydrgeologist), Co-PIs: Zhi Wang (hydrologist) and Steve Blumenshine (ecologist). Collaborators: Sierra Resources Conservation District and Central Sierra Watershed Committee. Major

objectives are to conduct a comprehensive assessment of the watershed in the following areas: Evaluation of water quantity and quality concerning the Sierra Nevada snow packs, streams, lakes and groundwater; Climate change effects on the snow packs and the entire ecosystems; Impacts of regional air pollution on water quality and vegetation in the watershed; Status of hydrogeology, topography, soils and other physical aspects; Status of forest, aquatic habitats, biodiversity, invasive species and groundwater dependent ecosystems; Elements of hydrologic cycle including precipitation, evapotranspiration, groundwater recharge and infiltration; and Policy and management issues pertinent to the long-term sustainability and environmental conservation of the watershed.

22. PI, **NSF: Measurement and Modeling of Unstable Flow in Soils**, **2008-2010** (**not funded**). Collaborators: Ming Xiao (CSUF), Jiri Simunek (UC Riverside) and Atac Tuli (UC Davis).
23. PI, **California DWR: Development of Sequentially Activated Micro-Flood Irrigation Systems to Reduce Agricultural Runoff, 2007-08** (not funded). Collaborating with Ed Norum at CIT – Center of Irrigation Technology at CSU Fresno. We propose to develop and implement a Sequentially Activated Micro−Flood Irrigation System (SAMFIS) in which a low-cost Sequential Irrigation Valve will be used as the critical water-flow control device. The new concept of surface irrigation technology will result in a scientifically designed and technically programmed system that can be achieved without changing the existing field layouts and without arbitrary human intervention.
24. PI, **California DWR Water Use Efficiency Program: Water and Nitrogen Management in Surface Irrigated Crop Production Systems in San Joaquin Valley, 2005-06** (**not funded**). This project seeks to develop new design and management approaches and guidelines for improving the efficiencies of Irrigation and ferti-gation in the San Joaquin Valley. A training program will be developed to teach and demonstrate effectiveness of using surface irrigation models to improve water use efficiencies. Application guidelines will be developed for field water and fertilizer management.
25. PI, **US Department of Agriculture: Establishing a Water Coalition Support Center in CA's Central Valley**, **2004-07** (**not funded**, seeking $1.2 M). Co-PIs: D. Wichelns, K. Longley, Zhi Wang. The goal is to establish a Water Coalition Support Center that will provide technical, scientific, and policy expertise required to support efforts to improve water quality under the Conditional Waiver Program.
26. Co-PI, **DOE Environmental Management Program: Prediction of DNAPL Fate in Heterogeneous Aquifers under Uncertainty, 2004-06** (**not funded).** Collaborating with Los Alamos National Lab, UC Riverside and Colorado State University. Develop an improved predictive capability of DNAPL fate in heterogeneous aquifers with uncertainties; Based on a systematic analysis of the microscale physics using the Lattice Boltzmann method. The small-scale dynamics will be integrated into macroscale descriptions using stochastic theory. Incorporate stochastic analysis into the linear instability criteria developed by Wang et al. [1998] for the description of finger flow formation, propagation, and persistence in heterogeneous media. The end product will be used to evaluate the performance of various remediation techniques employed at DOE sites.
27. Co-PI, **NSF: Acquisition of an X-ray Diffraction Instrument, 2004-2005** (funded $148,421). PI: Keith Putirka. The range of research projects include: 1) issues in regional geology, volcanology and metamorphic petrology, 2) the identification of asbestiform minerals related to construction projects, 3) igneous barometery and the refinement of unit cell parameters of clinopyroxenes, 4) study of soil mechanics and soil contamination through the analysis of clay minerals and gypsum mineral fractions in agricultural soils, 5) problems in groundwater flow, and the relationship between mineralogy and clay fraction on flow-rates and mode of water transport through soils, and 6) the analysis of dust particles produced from dairy operations, recognized as a significant health hazard in regard to air quality.
28. PI, **California EPA**: **Fresno River-Hensley Lake Water Quality Monitoring, 2003-04** (funded $134,600). PIs: Dr. Steve Blunmenshine and Dr. Zhi Wang. The main tasks include: Sampling and monitoring of water discharge, water quality (physical, nutrients, algae) and disease-causing bacteria concentrations along the main Fresno River, its 7 tributaries and the Hensley Lake with a total of 24 monitory sites.
29. Post-doc Soil Physicist, **US – Israel Binational Agricultural Research and Development (BARD) Fund: Characterization of Preferential flow in spatially variable unsaturated field soils, 1998-2002** (funded).

PI: Dr. William A. Jury (UC Riverside). Dye tracing and multiple tracer experiments on undisturbed field plots to reveal information about the flow velocity, spatial prevalence, and time evolution of a preferential flow event. Numerical experiments to determine whether preferential flow observations are consistent with Richards' equation. Develop a flow model that incorporates preferential flow.

30. Post-doc Soil Physicist, **The Kearney Foundation of Soil Science. Sustainability of Long-term Reclaimed Wastewater Irrigated Cropland - A Field Evaluation of Soil Quality, 1998-2000** (funded). PI: Dr. Andrew Chang (UV Riverside. Field study for the effects of long term wastewater irrigation on soil's ability to sustain plant growth and to attenuate pollutants. Geostatistical analyses of soil physical, chemical and biological attributes to characterize soil qualities at two field sites outside the City of Bakersfield, CA. Development of integrated indicators of soil quality for assessment of soil and environmental degradation.
31. PI. **University of Leuven Doctoral Full Scholarship and Research Fund: Dynamic Simulation of Liquid-Air Displacement and Preferential Flow in Porous Media, 1993-1997** (funded Bf720K/year). University of Leuven, Belgium. Experimental measurement and theoretical analyses of inter-displacement behaviors between air and an infiltrating liquid in unsaturated porous media; derivation of infiltration equations accounting for air entrapment effects; experimental study and theoretical prediction of unstable preferential flow in porous media.
32. PI. **National Natural Science Foundation of China: Experimental and Numerical Simulation of Level Basin Irrigation Systems**, **1993-1995** (funded, RMB¥50K, NSFC# 59209099). Theoretical and experimental study for the effects of air entrapment on water infiltration; Numerical modeling of the overland flow and subsurface infiltration hydraulics; optimization of system design variables based on soil and flow properties.
33. Co-PI. **Chinese Education Commission - Education Research Fund: Optimum Control of Flow in Irrigation Canal Systems, 1990-92** (funded RMB¥40K). PI: Dr. F. Zhu. Optimization of canal system operation and control regimes; Beneficial use of hyper-concentrated turbid flow; Development of a 0-1 programming model for optimal control of flow in irrigation canals.
34. Co-PI, **Water Resources Department of China - Hydraulic Science Foundation: Water Control and Measurement Structures for Sediment-laden Canals, 1985-1989** (funded RMB¥30K). PI: Dr. F. Zhu., , , 1985-89. Development of Venturi type flowmeters and Flumes for discharge measurement in Trapezoidal and U-shaped open canals transporting sediment-laden flow.
35. Co-PI, **Water Resources Department of China - Hydraulic Science Foundation: Utilization and Transportation of Hyper-Concentrated Turbid Flow,** 1986-89 (funded RMB¥30K). PI: Dr. F. Zhu. Monitoring and prediction of floods in watersheds; Measurement of flow rate, sediment concentration and particle distribution; Transportation of turbid flow through canals; Fluid dynamics of turbid flow in canals and groundwater recharging fields.

TEACHING

New Programs Developed at CSU Fresno

1. Coordinator, Certificate of Advanced Study in Geographic Information Systems (GIS): An Online Graduate Certificate Program for working professionals, 12 units of graduate level academic credit. Program was approved by the university in May 2012 and has been offered since Fall 2012. Apply through the program WebLink: http://www.fresnostate.edu/cge/giscert/
2. Coordinator, UC Riverside-CSU Fresno Joint Degree Program in Environmental Sciences (2004-2007).

New Courses Developed and Cataloged at CSU Fresno

1. EES 265: Hydrology Systems (2013-present, for MS Water Resources Management program)
2. EES 211: Fundamentals of GIS (2012-present, for GIS certificate of Advanced Study program)
3. EES 230: Contaminant Transport (2008-present, for grad students in geology and engineering)
4. EES 108: Soil and Water Science (2009-present, taught every Spring)
5. EES 109: Atmospheric Science (approved in Fall 2004)

6. EES 004: Environmental Science - GE (taught since Fall 2006)
7. EES 178: Geostatistics (required by Geology majors, taught since Fall 2006)
8. NSCI 115: Environmental Earth and Life Science (Web-based, taught since Spring 2007)
9. EES 199S: Undergraduate Thesis through Service Learning (Fall 2016 -)

Courses Taught at CSU Fresno

1. EES 004: Environmental Science (2006-2010)
2. EES 108: Soil and Water Science (2010-)
3. EES 112: Earth System History (2009-2012)
4. EES 117: Hydrogeology (2002-)
5. EES 177: Quantitative Methods for Earth Science (2003-2004)
6. EES 178: Geostatistics (2006-)
7. EES 180: Computer Applications in Geology (2003-2006)
8. EES 186: Environmental GIS (2002- present)
9. EES 211: Fundamentals of GIS (2012-)
10. EES 217T: Contaminant Hydrology (2003-2004)
11. EES 217T: Unsaturated Zone Hydrology (2003-2004)
12. EES 220: Groundwater Hydrology (2018-)
13. EES 265: Hydrology Systems (2013-)
14. NSCI 115: Environmental Earth and Life Science (2002-)

Courses Taught Elsewhere

- Surface Irrigation Engineering - Design and Field Evaluations, graduate course taught at Universidad de Cuenca, **Ecuador** (Feb-March 1997)
- Irrigation and Drainage Engineering (undergraduate), Northwestern Agricultural University, **China** (1985-1992)
- Economic Evaluation of Irrigation Projects (undergraduate), Northwestern Agricultural University, **China** (1985-1992)

Funded Teaching Project at CSU Fresno

- CSU Fresno Assessment Award ($5,000), Office of the Provost and Office of Institutional Effectiveness (Research, Assessment and Planning): Direct Measurement of Geology Student Learning for a Culminating Experience Field Course Geology 107, (2005-06).

Visiting Scientist and Scholar Advising

- Zili He, Northwest A&F University, China — Nov 2007- July 2009
- Yudong Lu, ChangAn University, China — Nov 1010 – Oct 2011
- Yan Zhang, ChangAn University, China — Sept 2014 – Aug 2015
- Bo Ma, Ningxia University, China — Aug 2018 –Aug 2019
- Jinyu He, Ningxia University, China — Aug 2019 –Aug 2020

Graduate Student Advising at CSU Fresno (as Major Advisor)

Student name	*Degree*	*These Topic*	*Completion Date*
James R. Meier	MS Geology	Groundwater bank analysis in Bakersfield	**Aug 2005**
Ori Sartono	MS Geology	Fractured rock Aquifer test at	**Aug 2007**
Sana Alsaoudi	MS Geology	San Joaquin River Water source isotope	**Dec 2007**
Jorge Baca Jr	MS Geology	Fresno River watershed erosion	**Oct 2009**
Doug DeFlitch	MS Geology	San Joaquin River sediment transport	**April 2010**
Joe Knight	MS Geology	San Joaquin Valley Selenium transport	Aug 2006-

Ronald Holcomb	MS Geology	Groundwater modeling NAS Lemoore	Aug 2004-
Ashley Ross	MS Geology	Post-fire Kings River Watershed Erosion	Aug 2009-
Dustin White	MS Geology	San Joaquin Valley Stratigraphy transmissivity	**April 2016**
Benjamin Gooding	MS Geology	San Joaquin Valley groundwater H2S sources	**Aug 2019**
Kaitlyn Willems	MS Geology	Post-fire soil erosion in Sierra Nevada Forest	Aug 2016-
John Tanner	MS Geology	SJ Valley Groundwater modeling DWR C2VSim	Aug 2016-
Marienel Basiga	MS Geology	Salt transport modeling at NAS Lemoore	Aug 2016-
Eghosa Michael Eguagie	MS Geology	Fluid flow during Fracking operations	Aug 2016-
Erick Escobar	MS Geology	Trial properties in the Sierra Nevada forest	Aug 2017-
Cristian Lopez-Flores	MS Geology	Saline groundwater flow at NAS Lemoore	Jan 2021-
Andre Guimaraes	MS Geology	Soil minerology versus grape and wine properties	Aug 2023-

Graduate Student Advisory Committees at CSU Fresno

Student name	*Degree*	*Department*	*Major Advisor*	*Completion Time*
Nelson F. Bernal	MS Geology	EES	John Suen	**Dec 2007**
Rose Marrero-Cuebas	MS Geology	EES	John Suen	**Dec 2007**
Susan Bratcher	MS Geology	EES	John Suen	**Dec 2007**
Sean P. Boyd	MS Geology	EES	Fraka Harmsen	
Zachary Hoover	MS Biology	Biology	Steve Blunmenshire	
Brett Moore	MS Biology	Biology	Steve Blunmenshire	**July 2010**
James E Chambers	MS Geology	EES	Mathieu Rechaud	
Tiffany E Steinert	MS Geology	EES	Beth Weinman	**April 2016**
Abigail Dziegiel	MS Biology	Biology	Steve Blunmenshire	May **2021**

Undergraduate Thesis Advising at CSU Fresno (as primary advisor)

Student name	*Degree*	*These Topic*	*Completion Time*
Louis Tesseo	B. Sc. Geology	GIS Snow-pack calculation	May 2007
Brent Vanderburgh	B. Sc. Geology	GIS Snow water calculation	May 2008
Jassim Al-Safwani	B. Sc. Geology	Groundwater contamination by DBCP	Dec 2011
Kaitlyn Willems	B. Sc. Geology	Forest Fire effects on soil erosion	Apr 2016
Micheale Easley	B. Sc. Geology	Forest Fire effects on soil hydrophobicity	Dec 2016
Erick Escobar	B. Sc. Geology	Vehicle impact on forest soil erosion	Dec 2016
Paul Beattie	B. Sc. Geology	Modeling water table in NAS Lemoore	Dec 2016
Carson Burton	B. Sc. Geology	Analysis of historical rainfall in CA	May 2018
Douglas Timpson	B. Sc. Geology	Analysis of historical rainfall in CA	May 2019
Cristian Lopez-Flores	B. Sc. Geology	Swelling clay soil in Cantau Creek, CA	Dec 2020
Emily Kron	B. Sc. Env Sci	Soil Quality Index mapping in CA Kings County	May 2021
Gerardo Garcia	B. Sc. Env Sci	Soil Quality Index mapping in CA Fresno County	May 2021
Samantha Osterloh	B. Sc. Geology	Soil Quality Index analysis in CA Merced County	May 2021
Savannah Gonzales	B. Sc. Env Sci	EES 199i, internship at Verux Inc. water quality	May 2022
Martika Hall	B. Sc. Env Sci	Soil Quality Index mapping in CA Kern County	May 2023
Tristen Kuhn	B. Sc. Env Sci	Soil Quality Index mapping in CA Stanislaus County	May 2024

Undergraduate Program Advising (as major advisor)

- Geology majors (>15): Since 2005.
- Environmental Science majors (>30): including as Coordinator of the Joint BS in Environmental Science program between CSUF and UCR.

NSF Research Experiences for Undergraduates (REU) Program Advising (as major advisor): Sustainable Groundwater Resources (https://reu-water.org/), 2020-2022

Student name,	*University*	*Research Topic*	*Completion Time*
Kyle Benauro,	Texas A & M	Soil Quality evaluation/mapping, Madera County	Aug 2021
Madison Glenn,	CSU San Luis Obispo	Soil Quality evaluation /mapping, Tulare & Kings	Aug 2021

NSF Undergraduate METRO Program Advising (as major advisor), 2010-2014

- Daniel A Suvanto (Environmental Science)
- Dale Reith (Geology)
- Cassandra Slocum (Environmental Science)
- Kassandra Hishida (Environmental Science)
- Kelsey K Dicachea (Environmental Science)
- Chad Neptune (Environmental Science)
- Hector Duarte (Chemistry)
- Jasdeep Singh (Civil Engineering)
- Adrienne Olaivar (Electrical Engineering)

Undergraduates on the DoD-NAS Lemoore Project (as research supervisor and project director), 2010-2012

- Dale Rieth (Geology)
- Kassandra Hishida (Environmental Science)
- Brett Larson (Environmental Science)
- Rebecca Levers (Environmental Science)
- Marissa Williams (Environmental Science)
- Cassandra Slocum (Environmental Science)
- Spencer Rolfs (Geology)
- Milissa Stucker (Geography)
- Adrienne Olaivar (Electrical Engineering)
- Jasdeep Singh (Civil Engineering)
- Chad Neptune (Environmental Science)

SERVICES

California State University, Fresno Campus Committees and Duties

- University Campus Faculty Hearing Panel (2020-)
- University Search Committee, Chief Information Officer (2014-15)
- University Graduate Curriculum Sub-committee (2011-2014)
- University Graduate Committee (2007-2010)
- University Water Cluster Cohort Committee (2010-)
- Urban and Regional Transformation Cohort (2012-)
- University graduate program coordinator, Certificate of Advanced Study in GIS (2011-)
- University Udall Faculty representative, Udall Scholarship, Morris K. Udall and Steward L. Udall Foundation for the environment, tribal policy, or Native health care (2008-).
- University Equal Employment Officer (EEO) on Faculty Search committees – Department of Industrial Technology (2006-2007, 2007-08), Department of Viticulture and Enology (2007-2008, 2010-2011,

2011-2012), Department of Kinesiology (2012-13), Department of Criminology (2014-115), Department of Finance (2015-17).

- On-campus Asian Faculty and Staff Association (AFSA), founding member in Feb 2009, Board member 2010-2014.
- Environmental Science judge for Fresno Regional Science, Math and Engineering Fairs (2008-).
- University Air Quality Resources Group, CSUF (2003-)
- University Coordinator, Unitrack AP Environmental Science program for high schools (Clovis West, Clovis and CART) (2003-2008)
- University Task Force on Grants and Contracts, CSUF (2002-03)
- College Personnel Committee for Retention, Tenure and Promotion (RTP) (2015-16, 2019-)
- College Outreach Committee (2018-19)
- College Search Committee for Dean (2015.11-2016.12)
- College Search Committee for Interim Dean (2014.10-12)
- College Natural Science Education Committee (2011-)
- College Curriculum Committee (2005-2008)
- College International Education Committees (2005-2008, 2017-2019)
- College METRO Program faculty mentor (2010-2013)
- College RISE Program faculty mentor (2004-)
- Department Faculty RTP Committees (2006-), Chair (2008, 2014)
- Department Curriculum Committee Chair (2005-2008)
- Department Graduate Faculty Committee (2002-)
- Undergraduate Program Coordinator, the Joint BS Environmental Science Program with CSU Fresno and UC Riverside (2005-2008)
- Department GIS computer lab supervisor (2002-)
- Department Web master: Created and maintained the department Website (www.fresnostate.edu/csm/ees/ 2002-2012)

External Professional Services

- Member, Western Regional Soil Physics Research Group W-2188 (2002-)
- Member, Central Sierra Watershed Committee and Southern Sierra Regional Water Management Group (2003-2015)
- Guest Professor, Research Center for Echo-Environ. Sci., Chinese Academy of Sciences (2009-2014)
- Guest Professor, Institute for Water and Environment, ChangAn University, China (2010-2017)
- HouJi Guest Professor, Northwest A & F University, Yangling, China (2010-2014)
- Selected California Concerned Scientist with leading efforts toward new laws in California: 1) limit greenhouse gas emissions in California (April 2005) and 2) limit destruction of forest land for bio-fuel crops (April 2009)

Media Services (TV appearances):

- Jan 6, 2017, KMPH26 News: This could be the wettest year since drought, local hydrologist says.
- March 4, 2016, KSEE 24 News: Snow status in the Sierra Nevada Mountains.
- January 22, 2015, CBS 47 Eyewitness News: It could be the 4th year of Drought!
- December 2, 2014, KMPH Fox News 26: VALLEY DROUGHT 2014: Will the recent rain help?

Community Engagement

- 2024-Spring. Course-Based Research Activities for EES 108 at El Dorado Community Garden and Fresno State Parking lot 31 in collaboration with El Dorado Community Development Corporation (Jacob Bouchard) and Fresno State Sustainability Club (Robbie Cordova).

- 2023-Spring. Course-Based Research Activities for EES 117 at Ball Ranch in collaboration with DWR and San Joaquin River Conservancy (SJRC).
- 2021, Fresno State Café Scientific, French and Creek Fire Effects on Soil Wettability and Erosion Potentials.
- 2018 and 2019 Spring. Students in EES 108 studied water requirement and management issues in Bronco Wine company's vineyard at Cantua Creek of Fresno, CA. CPO: Bronco Wine Company (Tom Valdero, Pablo Santos, Vinticulturist and farm manager).
- 2016-present. Students in EES 199s studied Miami Creek Off-Highway Vehicle impact on Soil Erosion. Community partner organization (CPO): US Forest Service (Alan Gallegos, Geologist).
- Jan-May 2016. Students in EES 108 studied water requirement and management issues in the selected City of Fresno parks. CPO: City of Fresno Park Service (Tony Hernandez, Manager).
- Dec 2015 - present. Participated with university Faculty group (led by Sam Lankford et al.) in the PARCS program (Parks, After-School, Recreation and Community Services) program. Students in EES 108 and 186 courses adopted Fresno parks for term projects and service learning courses.
- April 26, 2015. Presented on "The 4th year of drought" to the Life-Long Learning Series at Carmel Village (retirement Care center) in Clovis, CA.
- Jan 29, 2015. Helped Brad Phillips, Deputy Director of the Madera County Public Works Department, in testing and identifying the source of "rotten egg" smell in groundwater in the southern suburban of the City of Madera.
- Jan 2014 – May 2019, Faculty advisor of the Chinese Dance Club, held in South Gym room 133 or 134 on Sundays during the Fall and Spring semesters, with invited instructors teaching Taichi and Martial Art style dance skills. Performed at Cultural Events held in Downtown Fresno and Fresno City College.
- July 11, 2020, Seminar talk on Zoom about "Soils of Fresno", organized by the Central California Chinese Cultural Assiciation (CCCCS) and Chinese American Faculty Association (CAFA).

Editorial, International Journal

- Editor-In-Chief, GSTF International Journal of Geological Sciences (March 2013-), focusing on the interactive relations between water and geology on Earth (as compared to other planets). http://www.globalstf.org/journal-jges.php (Print ISSN: 2335-6774, E-periodical: 2335-6782)
- Guest Editor, Special Issue in WATER (an open-access international journal): Climate Change Effects on Hydrological Processes, Water Resources, Ecosystems and Agriculture (2018-2020)

Session Chair, International Conference

- AGU Fall Meeting. Online or in person in **New Orleans**, LA, Session #H25ZB, Water-Soil-Vegetation Dynamics in Dryland Hydro-Ecosystems in Changing Climate. Dec. 13-17, 2021.
- Centennial ASA-CSSA-SSSA International Annual Meetings in **New Orleans**, LA, Session #341: Surface, Subsurface Hydrological Processes and the Impact of Land Use Changes. Nov. 4-8, 2007.

Convener of Regional Professional Seminar and Training Events

- May 8-9, 2014. California Water and Environmental Modeling Forum: C2VSim – Central Valley Groundwater-Surface Water Simulation Model. Taught by **Charles Brush** (California Department of Water Resources, DWR).
- March 20, 2014. David K. Todd Distinguished Lecturer Series of Groundwater Resources Association (GRA) of California. Fresno. **Carl Hague** (DWR): Groundwater – Past, Present and Future.
- March 7, 2013. David K. Todd Distinguished Lecturer Series of GRA of California, Fresno. **Jay Lund** (UC Davis): Can we stop undermining our water supplies? Groundwater and California's water future?

- March 18, 2011. David K. Todd Distinguished Lecturer Series of Groundwater Resources Association (GRA) of California. Fresno. **John Bredehoeft** (the Hydrodynamics Group): Conjunctive use: the impact of pumping wells on a nearby stream.
- December 10-11, 2004. Workshop on HYDRUS – PC-based Modeling of Water Flow and Contaminant Transport in the Vadose Zone and Groundwater. Taught by **Martinus Th. van Genuchten** (Georage E. Brown, Jr. Salinity Lab, USDA-ARS, Riverside, CA) and **Jirka Simunek** (UC Riverside)

Invited Guest Speaker at Professional Meetings

- Keynote speaker, International Symposium on Water Resources and Pollution Control in Arid/Semi-arid Regions (ISWPAR), **Xian**, China, June 21-23, 2013.
- GIS-based modeling of water quality and water supply in Fresno River Watershed. The 12th Annual California GIS Conference, **Santa Barbara**, CA, April 5-7, 2006.
- GIS Day 2014, **Fresno**, CA, November 19, 2014.
- GIS Day 2006, **Fresno**, CA, November 15, 2006.
- Soil Science Society of America 91st Annual Meeting, **Salt Lake City**, UT, 1999.
- International Conference on Water-Repellent Soils, **Wagningen,** The Netherlands, 1998.

Invited Reviewer for External Grant Proposals

- Israel Science Foundation (2009)
- US National Science Foundation (NSF), Geoscience – Hydrology proposals (2000-02, 2007, 2009)
- U.S. State Department, Civilian Research and Development Foundation proposals (2003)

Invited Reviewer for International Journals

- Acta Agriculturae Scandinavica
- ASCE Journal of Irrigation and Drainage Engineering
- ASCE International Journal of Geomechanics
- Canadian J of Soil Science
- Catena
- Ecological Modeling
- Environmental Fluid Mechanics
- Environmental Management
- European Journal of Soil Science
- Frontiers of Environmental Science and Engineering
- Geoderma
- Hydrogeology Journal
- Hydrology and Earth System Sciences
- International Journal of Environment and Pollution
- International Journal of Geomatics
- Irrigation Science
- Journal of Colloid and Interface Science
- Journal of Contaminant Hydrology
- Journal of Earth System Science
- Journal of Environmental Quality
- Journal of Hazardous Materials
- Journal of Hydrology
- Science of the Total Environment
- Soil Science

- Soil Science Society of America Journal
- Vadose Zone Journal
- Water Resources Research

Invited Reviewer for Academic Programs

- External Review Committee: Conversion of the Viticulture and Enology Pilot to a Regular Graduate Masters of Science Program, CSU Fresno (2015)