# Zhang Chiqian, Ph.D., E.I.T.

**Assistant Professor**. Arkansas State University. Jonesboro, Arkansas, U.S.A.
czhang@astate.edu | +1-573-239-2887 | Google Scholar: rebrand.ly/ZhangChiqian
ORCID: orcid.org/0000-0003-4532-7376

---

**SHORT PROFESSIONAL BIO** Public health and welfare; Drinking water safety; Renewable energy
Dr. Zhang Chiqian is a tenure-track Assistant Professor in the Civil Engineering Program at the College of Engineering & Computer Science, Arkansas State University, Jonesboro, Arkansas, U.S.A. From August 2022 to August 2023, he served as a tenure-track Assistant Professor at Southern University and A&M College, Baton Rouge, Louisiana, U.S.A. From 2019 to 2022, he worked as a federal research contractor for the United States Environmental Protection Agency in Cincinnati, Ohio, U.S.A. He completed his postdoctoral training in June 2019 at Georgia Institute of Technology, Atlanta, Georgia, U.S.A. He earned his Ph.D. (2018) in Civil Engineering from the University of Missouri, Columbia, Missouri, U.S.A. He also holds a master's degree in Environmental Engineering from the University of Nebraska, Lincoln, Nebraska, U.S.A., and another master's degree in Civil Engineering from Tsinghua University, Beijing, China.

Dr. Zhang conducts cutting-edge research to promote public health and welfare; ensure clean drinking water supply; and advance affordable, clean, and renewable energy production. His research expertise encompasses safe drinking water supply and distribution, detection and control of opportunistic pathogens in drinking water, monitoring and control of drinking water disinfection by-products, biochemical wastewater treatment, surface water quality monitoring and restoration, control of harmful cyanobacterial blooms, anaerobic digestion of municipal sludge for renewable energy production, environmental microbiology, and environmental nanotechnology.

Dr. Zhang has authored 55 high-quality publications in top-tier journals in Environmental Engineering and Sustainability such as *Renewable and Sustainable Energy Reviews*, *Water Research*, and *Environmental Science & Technology*. His articles have been cited over 2,500 times by scholars worldwide (Google Scholar). His research outcomes have been instrumental in government initiatives to enhance public health and welfare. Additionally, he has secured over ten research grants totaling over $500k to advance his work in Environmental Engineering and Public Health Protection. He has served as a reviewer for over 60 journals and reviewed 490 manuscripts.

## EDUCATION Theoretical foundations and practical applications of Environmental Engineering

**Ph.D. in Civil Engineering with a Specialty in Environmental Engineering** 2018
University of Missouri, Columbia, MO, USA
Graduate Research Assistant (Biochemical Water and Wastewater Treatment)

**M.S. in Environmental Engineering** (Minor: Biological Sciences) 2011
University of Nebraska, Lincoln, NE, USA
Graduate Research Assistant (Antimicrobial Resistance Genes in Livestock Waste)

**M.S. in Civil Engineering with a specialty in Environmental Engineering** 2009
Tsinghua University, Beijing, China
Graduate Research Assistant (Volatile Compound Removal from Drinking Water)

**B.E. in Environmental Engineering** 2005
Xi'an University of Architecture and Technology, Xi'an, China
Undergraduate Research Assistant (Anaerobic Treatment of Starch Wastewater)

## PROFESSIONAL APPOINTMENTS Public health, clean drinking water, and sustainability

**Tenure-Track Assistant Professor**. Civil Engineering Program, College of Engineering & Computer Science 08-2023 to present
Arkansas State University, Jonesboro, AR, U.S.A.

**Tenure-Track Assistant Professor**. Department of Civil and Environmental Engineering 08-2022 to 08-2023
Southern University and A&M College, Baton Rouge, LA, U.S.A.

**Postdoctoral Fellow**. University of Missouri, Columbia, MO, U.S.A. 12-2021 to 08-2022
For projects from the United States Environmental Protection Agency

**Adjunct Instructor**. Ohio University Southern, Ironton, OH, U.S.A. 08-2021 to 12-2021

**Federal Research Contractor to the U.S. Environmental Protection Agency** 10-2019 to 10-2021
Pegasus Technical Services, Inc., Cincinnati, OH, U.S.A.

**Research Lab Tech II**. Department of Civil & Environmental Engineering 06-2019 to 10-2019
University of Missouri, Columbia, MO, U.S.A.

**Postdoctoral Fellow**. School of Civil and Environmental Engineering 07-2018 to 06-2019
Georgia Institute of Technology, Atlanta, GA, U.S.A.

**GRANTS** Twelve grants totaling **$543,294.61**

1. **Principal Investigator**. *Alkaline Thermal Pretreatment to Improve Anaerobic Digestion of Sewage Sludge through Mitigating Volatile Sulfur Compounds: Reactor Performance, Pathways, and Mechanisms* **($177,108.00**) 2026
Source: The U.S. Natural Science Foundation (Engineering Research Initiation program)
Project period: July 2026 to June 2028

2. **Principal Investigator**. *Think out of the Box: Developing a Novel Zero-Waste Platform to Convert Rice Hulls into Various Value-Added Products* **($7,000.00**) 2026
Source: Riceland Foods, Inc. (Stuttgart, AR, U.S.A.)
Project period: January 2026 to December 2026

3. **Faculty Mentor**. *Summer Research Internship in Renewable Energy Production from Agricultural Waste* (**$3,500.00**) 2025
Source: Arkansas Biosciences Institute (ABI) | Project period: May 2025 to July 2025

4. **Principal Investigator**. *Advancing Benthic Algal Quantification: Evaluating Microscopy and qPCR Methods Using Experimental Stream Data* **($54,579.48**) 2025
Source: United States Environmental Protection Agency
Project period: June 2025 to January 2026

5. **Principal Investigator**. *Multi-Year, Life Cycle Analysis to Reveal the Patterns of Harmful Cyanobacterial Blooms in Harsha Lake, Ohio* **($28,998.19**) 2024
Source: United States Environmental Protection Agency
Project period: May 2024 to September 2024

6. **Principal Investigator**. *Using Peracetic Acid to Control Nitrification in Chloraminated Water Distribution Systems* **($9,999.54**) 2024
Source: Faculty Research Fund (Arkansas State University, Jonesboro, AR, U.S.A.)
Project period: July 2024 to July 2025

7. **Principal Investigator**. *Direct-Solar-Energy-Powered Hydrothermal Treatment of Grain Processing Waste* **($500.00**) 2024
Source: Nathan Deutsch Faculty Development Endowment Funds (Arkansas State University, Jonesboro, AR, U.S.A.) | Project period: July 2024 to July 2025

8. **Principal Investigator**. *Analysis of Microbial Community Structure and Water Quality to Reveal the Critical Stressors Threatening Ecological Resources of the United States* **($29,999.40**) 2023
Source: United States Environmental Protection Agency
Project period: September 2023 to April 2024

9. **Principal Investigator**. *Establishing a Modern Environmental Engineering Laboratory for Safety Drinking Water Supply and Renewable Energy Production from Waste Materials* **($118,310.00**) 2023
Source: Start-up fund (Arkansas State University, Jonesboro, AR, U.S.A.)
Project period: August 2023 to August 2028

10. **Principal Investigator**. *Constructing an Environmental Microbiology and Biotechnology Laboratory to Augment the Research and Education in the Department of Civil and Environmental Engineering at SUBR* (**$100,000.00**) 2022
Source: Louisiana Board of Regents (U.S.A.) | Project period: June 2023 to June 2024

11. **Faculty Mentor**. *The Impact of the COVID-19 Pandemic on Safe Drinking Water Supply* (**$10,800.00**) 2022
Source: The United States Department of Education (Higher Education Emergency Relief Fund) | Project period: August 2022 to April 2023

12. **Co-principal Investigator**. *Applying Advanced Electron Microscopy to Differentiate the Disinfection Mechanisms of Peracetic Acid and Chlorine against Chlorine-Resistant Microorganisms* (**$2,500**) | Source: Excellence in Electron Microscopy Award (University of Missouri, U.S.A.) 2017
Project period: 2017

---

## PEER-REVIEWED JOURNAL PUBLICATIONS

Fifty-five articles, with twenty one as the first and/or corresponding author
Google Scholar citations: Over 2,500 times | Total journal impact factor: 407.8
*Corresponding author(s). †: Equal contribution

1. Zhang, Z; **Zhang, C.Q.**; Pi, L.* Chemical and biological cascade responses triggered by nitrate-driven in-situ iron corrosion: mechanism of simultaneous nitrogen and phosphorus removal from piggery tailwater in iron carbon biofilter. ***Water*** In press. Impact factor: 3.5
2. Gu, J.; Liu, X.*; **Zhang, C.Q.**; Yuan, S.; Dai, X. (2026) Efficient Cr(VI) adsorption from wastewater by food waste digestate-based carbon materials regulated via thermochemical processes (article in Chinese). ***China Env. Sci.*** doi.org/10.19674/j.cnki.issn1000-6923.20260525.003.
3. Raut, S.; Hossain, N.U.I.*; **Zhang, C.Q.**; Buchanan, R. (2026) Deep learning driven time series modelling for forecasting water discharge. ***Next Res.*** 9, 101775.
4. Liu, X.; Zou, Q.; Wang, X.; Huang, Y.; **Zhang, C.Q.**; Yuan, S.*; Dai, X. (2026) Structure-reactivity insights in combusting rice straw hydrochar: role of hydrothermal temperature. ***Renew. Energy*** 260, 125149. Impact factor: 9.1

5. Liao, Q.; Jin, C.; Li, P.*; Wu, J.; **Zhang, C.Q.**; Hu, Z. (2026) Nitrate-mediated anaerobic microorganism-sponge iron system promoting simultaneous nitrogen and phosphate removal from piggery tail water. ***J. Env. Sci.*** 163, 741-750. Impact factor: 6.3
6. Lv, C.; Li, Y.; Zhang, H.*; Wang, C.*; Ren, R.; **Zhang, C.Q.** (2026) Microbial communities in coastal salt marshes along the Southeast Coast of China and their effects on carbon storage. ***Curr. Anal. Chem.*** 22(3), 520-535. Impact factor: 1.7
7. Feng, F.†; Zhang, Y.†; Chen, Z.; Ni, J.; Feng, Y.; Xie, Y.*; **Zhang, C.Q.*** (2025) Machine learning to assess and support safe drinking water supply: a systematic review. ***J. Environ. Chem. Eng.*** 13(1), 114481. Impact factor: 7.2
8. Yang, H.R.; Li, C.; **Zhang, C.Q.**; Lan, X.; Dong, X.; Jiang, Y.H.; Zheng, Y.M.; Yuan, Z.H.* (2025) Synergistic coupling of bipolar membrane electrodialysis and Fenton process for sustainable management of landfill leachate reverse osmosis concentrate. ***Chem. Eng. J.*** 516, 164133. Impact factor: 13.2
9. Liu, Y.; Jin, C.; **Zhang, C.Q.**; Wu, J.; Li, P.* (2025) Mitigating VFAs accumulation and enhancing anaerobic stability in continuous-flow leachate from waste transfer stations using zero-valent iron. ***J. Water Process Eng.*** 73, 107442. Impact factor: 6.7
10. Wu, X.; Ji, C.; **Zhang, C.Q.**; Li, P.*; Huang, J.; Wu, J.; Wu, J.; Hu, Z. (2025) Mixotrophic *Chlorella pyrenoidosa* biofilm with enhanced biomass production, microalgal activity, and nutrient removal from nutrient-rich wastewater. ***J. Environ. Sci.*** 157, 366-377. Impact factor: 6.3
11. Liu, X.*; Peng, L.; Deng, P.; Xu, Y.; Wang, P.; Tan, Q.; **Zhang, C.Q.**; Dai, X.* (2025) Co-hydrothermal carbonization of sewage sludge and rice straw to improve hydrochar quality: effects of mixing ratio and hydrothermal temperature. ***Bioresour. Technol.*** 415, 131665. Impact factor: 9.0
12. **Zhang, C.Q.***; Rahnuma, K.; Hou, L.; Liu, X.; Tang, Y.; Pavlostathis, S. G. (2024) Energy and economic assessment of hydrothermal-treatment-coupled anaerobic digestion. ***Renew. Sustain. Energy Rev.*** 202, 114674. Impact factor: 16.3
13. **Zhang, C.Q.**; McIntosh, K.D.; Sienkiewicz, N.; Stelzer, E.A.; Graham, J.L; Lu, J.* (2024) qPCR-based phytoplankton abundance and chlorophyll *a*: a multi-year study in twelve large freshwater rivers across the United States. ***Sci. Total Environ.*** 954, 175067. Impact factor: 8.0
14. **Zhang, C.Q.**; Sienkiewicz, N.; Struewing, I.; Mistry, J.H.; Buse, H.; Hu, Z.; Lu, J.* (2024) Reconsider the burn: The transient effect of a chlorine burn on controlling opportunistic pathogens in a full-scale chloraminated engineered water system. ***Sci. Total Environ.*** 933, 172690. Impact factor: 8.0

15. Li, Y.; **Zhang, C.Q.***; Hu, Z. (2024) Hydraulic retention time governed the micro/nanostructures of titanium-incorporated diatoms and their photocatalytic activity. ***Environ. Pollut.*** 345, 123398. Impact factor: 7.3
16. Liao, Y.; **Zhang, C.Q.**; Li, P.*; Feng, T.; Wu, J. (2024) Coupled *in-situ* fermentation for enhanced biological phosphorus removal from digested swine wastewater. ***Water*** 16(1), 80. Impact factor: 3.0
17. Li, B.; **Zhang, C.Q.**; Zuo, Q.; Bu, H.; Li, J.; Li, P.; Wu, J.* (2024) Goethite-activated carbon as a persulfate activator for effective *Escherichia coli* inactivation. ***J. Water Process Eng.*** 57, 104652. Impact factor: 6.7
18. Zhao, F.; Zheng, S.; **Zhang, C.Q.**; Liu, Q., Yuan, Z.*; Zheng, Y.*; Wang, J. (2024) Flexible beads-on-string hierarchically porous carbon nanofiber/nanotube composites for enhanced capacitive deionization performance in water desalination. ***J. Environ. Chem. Eng.*** 12(6), 114521. Impact factor: 7.2
19. Rahman, T.; Jiang T.; **Zhang C.Q.**; Rao Y.; Sims R.; Hou, L.* (2024) Diatoms in wastewater treatment: potentials, applications, and values of biomass. ***Crit. Rev. Environ. Sci. Technol.*** 54(7), 557-580. Impact factor: 13.2
20. **Zhang, C.Q.**; McIntosh, K.D.; Sienkiewicz, N.; Stelzer, E.A.; Graham, J.L.; Lu, J.* (2023) Using cyanobacteria and other phytoplankton to assess trophic conditions: a qPCR-based, multi-year study in twelve large rivers across the United States. ***Water Res.*** 235, 119679. Impact factor: 12.4
21. Li, B.; **Zhang, C.Q.**; Jin, C.; Wu, J.; Li, P.* (2023) Intermediate accumulation and process stability for facultative and obligate anaerobic treatment of leachate from waste transfer stations. ***Fermentation*** 9(5), 465. Impact factor: 3.3
22. Wang, J.; **Zhang, C.Q.**; Li, P.*; Xu, H.; Wang, W.; Yin, W.; Wu, J.; Hu, Z. (2023) Bioaugmentation with *Tetrasphaera* to improve biological phosphorus removal from anaerobic digestate of swine wastewater. ***Bioresour. Technol.*** 373, 128744. Impact factor: 9.0
23. Zhang, J.; Zheng, B.; **Zhang, C.Q.**; Xie, Li; Fang, C.* (2023) Calcined waste shells as a promising, eco-friendly adsorbent, antimicrobial, food preservative, and food packaging material: a mini review. ***J. Food Process Eng.*** 46(12), e14477. Impact factor: 2.9
24. Struewing, I.; Sienkiewicz, N.; **Zhang, C.Q.**; Dugan, N.; Lu, J.* (2023) Effective early treatment of *Microcystis* exponential growth and microcystin production with hydrogen peroxide and hydroxyapatite. ***Toxins*** 15(1), 3. Impact factor: 4.0

25. Yang, H.; Li, B.; **Zhang, C.Q.**; Yang, J.; Zheng, Y.; Younas, M.; Jiang, Y.; Yuan, Z.* (2023) Bipolar membrane electrodialysis for sustainable utilization of inorganic salts from the reverse osmosis concentration of real landfill leachate. ***Sep. Purif. Technol.*** 308, 122898. Impact factor: 9.0
26. Duan, X.D.†; **Zhang, C.Q.**†; Struewing, I.; Li, X.; Allen, J.; Pressman, J.; Lu, J.* (2022) Cyanotoxin-encoding genes as powerful predictors of cyanotoxin production during harmful cyanobacterial blooms in an inland freshwater lake: evaluating a novel early-warning system. ***Sci. Total Environ.*** 830, 154568. Impact factor: 8.0
27. Li, Y.; **Zhang, C.Q.**; He, X.; Hu, Z.* (2022) Solids retention time dependent, tunable diatom hierarchical micro/nanostructures and their effect on nutrient removal. ***Water Res.*** 216, 118346. Impact factor: 12.4
28. **Zhang, C.Q.;** Struewing, I.; Mistry, J.H.; Wahman, D.; Pressman, J.; Lu, J.* (2021) *Legionella* and other opportunistic pathogens in full-scale chloraminated municipal drinking water distribution systems. ***Water Res.*** 205, 117571. Impact factor: 12.4
29. **Zhang, C.Q.**; Lu, J.* (2021) *Legionella*: a promising supplementary indicator of microbial drinking water quality in municipal engineered water systems. ***Front. Environ. Sci***. 9, 684319. Impact factor: 3.7
30. **Zhang, C.Q.**; Qin, K.; Struewing, I.; Buse, H., Santo Domingo, J.; Lytle, D.; Lu, J.* (2021) The bacterial community diversity of bathroom hot tap water was significantly lower than that of cold tap and shower water. ***Front. Microbiol***. 12, 625324. Impact factor: 4.5
31. **Zhang, C.Q.**; Lu, J.* (2021) Optimizing disinfectant residual dosage in engineered water systems to minimize the overall health risks of opportunistic pathogens and disinfection by-products. ***Sci. Total Environ.*** 770, 145356. Impact factor: 8.0
32. **Zhang, C.Q.**; Liu, X.; Wang, Q.; Tang, Y.; Pavlostathis, S.G.* (2021) Comparative assessment of pre- and inter-stage hydrothermal treatment of municipal sludge for increased methane production. ***Water Environ. Res.*** 93 (7), 1126-1137. Impact factor: 1.9
33. Wang, Q.; **Zhang, C.Q.**; Jung, H.; Liu, P.; Patel, D.; Pavlostathis, S.G.; Tang, Y.* (2021) Transformation and mobility of Cu, Zn, and Cr in sewage sludge during anaerobic digestion with pre- or interstage hydrothermal treatment. ***Environ. Sci. Technol.*** 55 (3), 1615–1625. Impact factor: 11.3
34. Li, Y.; **Zhang, C.Q.**; Hu, Z.* (2021) Selective removal of pharmaceuticals and personal care products from water by titanium incorporated hierarchical diatoms in the presence of natural organic matter. ***Water Res.*** 189, 116628. Impact factor: 12.4

35. Feng, F.; Li, Y.; Latimer, B.; **Zhang, C.Q.**; Nair, S.S.; Hu, Z.* (2021) Prediction of maximum algal productivity in membrane bioreactors with a light dependent growth model. ***Sci. Total Environ.*** 753, 141922. Impact factor: 8.0
36. Wang, Q.; **Zhang, C.Q.**; Patel, D.; Jung, H.; Liu, P.; Wan, B.; Pavlostathis, S.G.; Tang, Y.* (2020) Coevolution of iron, phosphorus, and sulfur speciation during anaerobic digestion with hydrothermal pretreatment of sewage sludge. ***Environ. Sci. Technol.*** 54 (13), 8362–8372. Impact factor: 11.3
37. Wang, Q.; **Zhang, C.Q.**; Liu, P.; Jung, H.; Wan, B.; Patel, D.; Pavlostathis, S.G.; Tang, Y.* (2020) Effect of interstage hydrothermal treatment on anaerobic digestion of sewage sludge: speciation evolution of phosphorus, iron, and sulfur. ***ACS Sustain. Chem. Eng.*** 8 (44), 16515-16525. Impact factor: 7.3
38. Rood, B.; **Zhang, C.Q.**; Inniss, E.; Hu, Z.* (2020) Forward osmosis with an algal draw solution to concentrate municipal wastewater and recover resources. ***Water Environ. Res.*** 92 (5), 689-697. Impact factor: 1.9
39. **Zhang, C.Q.***; Brown, P. J. B.; Miles, R. J.; White, T. A.; Grant, D. G.; Stalla, D.; Hu, Z.* (2019) Inhibition of regrowth of planktonic and biofilm bacteria after peracetic acid disinfection. ***Water Res.*** 149, 640-649. Impact factor: 12.4
40. **Zhang, C.Q.***; Brown, P. J. B.; Hu, Z.* (2019) Higher functionality of bacterial plasmid DNA in water after peracetic acid disinfection. ***Sci. Total Environ.*** 685, 419-427. Impact factor: 8.0
41. Gajaraj, S.; Sun, X.; **Zhang, C.Q.***; Hu, Z.* (2019) Improved chromium reduction and removal from wastewater in continuous flow bioelectrochemical systems. ***Environ. Sci. Pollut. Res.*** 26 (31), 31945-31955. Impact factor: 0.0
42. **Zhang, C.Q.**; Brown, P. J. B.; Hu, Z.* (2018) Thermodynamic properties of an emerging chemical disinfectant, peracetic acid. ***Sci. Total Environ.*** 621, 948-959. Impact factor: 8.0
43. **Zhang, C.Q.**; Parrello, D.; Brown, P. J. B.; Wall, J. D.; Hu, Z.* (2018) A novel whole-cell biosensor of *Pseudomonas aeruginosa* to monitor the expression of quorum sensing genes. ***Appl. Microbiol. Biotechnol.*** 102 (14), 6023-6038. Impact factor: 4.3
44. **Zhang, C.Q.***; Hu, Z.; Deng, B. (2016) Silver nanoparticles in aquatic environments: Physiochemical behavior and antimicrobial mechanisms. ***Water Res.*** 88, 403-427. Impact factor: 12.4
45. **Zhang, C.Q.***; Hu, Z.; Li, P.; Gajaraj, S. (2016) Governing factors affecting the impacts of silver nanoparticles on wastewater treatment. ***Sci. Total Environ.*** 572, 852-873. Impact factor: 8.0

46. **Zhang, C.Q.** (2016) A comment on "Sources, distribution, environmental fate, and ecological effects of nanomaterials in wastewater streams." ***Crit. Rev. Environ. Sci. Technol.*** 46 (23-24), 1782-1786. Impact factor: 13.2
47. Zheng, C.R.; Li, S.; Ye, C.; Li, X.; **Zhang, C.Q.***; Yu, X.* (2016) Particulate respirators functionalized with silver nanoparticles showed excellent real-time antimicrobial effects against pathogens. ***Environ. Sci. Technol.*** 50 (13), 7144-7151. Impact factor: 11.3
48. Dai, J.; **Zhang, C.Q.**; Hu, Z.* (2015) Emission of carbon dioxide and methane from duckweed ponds for stormwater treatment. ***Water Environ. Res.*** 87 (9), 805-812. Impact factor: 1.9
49. Taxis, T. M.; Wolff, S.; Gregg, S. J.; Minton, N. O.; **Zhang, C.Q.**; Dai, J.; Schnabel, R. D.; Taylor, J. F.; Kerley, M. S.; Pires, J. C.; Lamberson, W. R.; Conant, G. C.* (2015) The players may change but the game remains: network analyses of ruminal microbiomes suggest taxonomic differences mask functional similarity. ***Nucleic Acids Res.*** 43 (20), 9600-9612. Impact factor: 13.1
50. **Zhang, C.Q.**; Liang, Z.; Hu, Z.* (2014) Bacterial response to a continuous long-term exposure of silver nanoparticles at sub-ppm silver concentrations in a membrane bioreactor activated sludge system. ***Water Res.*** 50, 350-358. Impact factor: 12.4
51. **Zhang, C.Q.**†; Wang, G.†; Hu, Z.* (2014) Changes in wastewater treatment performance and activated sludge properties of a membrane bioreactor at low temperature operation. ***Environ. Sci.: Process. Impacts*** 16 (9), 2199-2207. Impact factor: 4.3
52. Xu, S.; Sun, M.; **Zhang, C.Q.**; Surampalli, R.; Hu, Z.* (2014) Filamentous sludge bulking control by nano zero-valent iron in activated sludge treatment systems. ***Environ. Sci.: Process. Impacts*** 16 (12), 2721-2728. Impact factor: 3.9
53. Lu, P.; Zhang, X.; **Zhang, C.Q.**; Niu, Z.; Xie, S.; Chen, C.* (2014) Biostability in distribution systems in one city in southern China: Characteristics, modeling and control strategy. ***J. Environ. Sci.*** 26 (2), 323-331. Impact factor: 6.3
54. Zhang, Y.; **Zhang, C.Q.**; Parker, D. B.; Snow, D. D.; Zhou, Z.; Li, X.* (2013) Occurrence of antimicrobials and antimicrobial resistance genes in beef cattle storage ponds and swine treatment lagoons. ***Sci. Total Environ.*** 463-464, 631-638. Impact factor: 8.0
55. Yang, Y.; **Zhang, C.Q.**; Hu, Z.* (2013) Impact of metallic and metal oxide nanoparticles on wastewater treatment and anaerobic digestion. ***Environ. Sci.: Process. Impacts*** 15 (1), 39-48. Impact factor: 3.9

## PEER-REVIEWED BOOK CHAPTER

1. **Zhang, C.Q.**; McIntosh, K.D.; Sienkiewicz, N.; Stelzer, E.A.; Graham, J.L; Lu, J.* (2026) Using quantitative polymerase chain reaction to assess phytoplankton and indicate eutrophication in freshwater rivers: a muti-year nationwide study across the United States. In: Roshni, T.; Ramesh, M.V.; Pietz, D.A.; Pushpalatha, R. (Eds) *Building Resilient Water and Food Systems under Climate Change* (Chapter 1, pp. 3-30). Elsevier Inc. (Academic Press). Cambridge, Massachusetts, U.S.A. Paperback ISBN: 9780443417412. eBook ISBN: 9780443417429. doi.org/10.1016/B978-0-443-41741-2.00026-0

## CONSORTIUM PUBLICATION

1. Zhu, C.; Wu, L.*; Ning, D.; Tian, R.; Gao, S.; Zhang, B.; Zhao, J.; Zhang, Y.; Xiao, N.; Wang, Y.; Brown, M.R.; Tu, Q.; Global Water Microbiome Consortium [I am listed as a member]; Ju, F.; Wells, G.F.; Guo, J.; He, Z.; Nielsen, P.H.; Wang, A.; Zhang, Y.; Chen, T.; He, Q.; Criddle, C.S.; Wagner, M.; Tiedje, J.M.; Curtis, T.P.; Wen, X.; Yang, Y.; Alvarez-Cohen, L.; Stahl, D.A.; Alvarez, P.J.J.; Rittmann, B.E.; Zhou, J.* (2025) Global diversity and distribution of antibiotic resistance genes in human wastewater treatment systems. ***Nat. Commun.*** 16, 4006.

## RESEARCH INTERESTS

Focusing on drinking water safety, public health, and renewable energy

**Public Health Protection and Safe Drinking Water Supply**

- Monitoring and control of opportunistic pathogens in drinking water systems
- Monitoring and control of disinfection by-products in drinking water systems
- Monitoring and control of harmful algal blooms in natural freshwater bodies
- The next-generation sequencing and bioinformatics to ensure safe drinking water supply

**Drinking Water, Wastewater, and Municipal Solid Waste Treatment**

- Peracetic acid for drinking water and wastewater disinfection
- Membrane bioreactors for municipal sewage treatment
- Hydrothermal treatment to enhance anaerobic digestion of municipal sewage sludge
- Advanced technologies to promote clean, renewable energy (biomethane) production from sewage sludge and agricultural waste

**Environmental Nanotechnology**

- Fate and toxicology of engineered nanoparticles in the environment
- Using engineered nanoparticles to control the growth of undesirable bacteria

---

**CONFERENCE PRESENTATIONS** *Corresponding author

1. Kafle, K.; **Zhang, C.Q.*** (2026) *Turning Rice Hulls into High-Value Products*. Oral presentation at the Scholars Check-In and Touch Point Meeting for Riceland Projects (April 23rd, 2026; Jonesboro, AR, U.S.A.)
2. Kafle, K.; Rahnuma, K.; **Zhang, C.Q.*** (2026) *Is Arkansas Rice Waste a Liability or a Solar-storable Fuel?* Poster presentation at the 16th Annual Create@State Student Research and Creativity Symposium at Arkansas State University (April 16th, 2026; Jonesboro, AR, U.S.A.)
3. Li, Y.; **Zhang, C.Q.*** (2026) *Threefold Benefits of Outdoor Microalgal Cultivation: Biomass Production, Carbon Dioxide Sequestration, and Sewage Effluent Polishing*. Oral presentation at the 2026 Arkansas Academy of Sciences Meeting (April 11th, 2026; Magnolia, AR, U.S.A.)
4. **Zhang, C.Q.** (2025) *Exploring the Potential of Peracetic Acid as a Drinking Water Disinfectant: Thermodynamics, Inhibition on Bacterial Regrowth, and Effects on Plasmid DNA*. Oral presentation at the 2025 Cross Talk at Arkansas Biosciences Institute (ABI) (CrossTalk@ABI) session (October 14th, 2025; Jonesboro, AR, U.S.A.)
5. Mai, V.; **Zhang, C.Q.*** (2025) *Reduced-Iron-Enhanced Anaerobic Digestion to Promote Biomethane Production from Agriculture Waste*. Poster presentation at the 2025 Arkansas Biosciences Institute (ABI) Fall Research Symposium (September 23rd, 2025; Little Rock, AR, U.S.A.)
6. **Zhang, C.Q.**; McIntosh, K.D.; Sienkiewicz, N.; Struewing, I.; Stelzer, E.A.; Graham, J.L.; Lu, J.* (2025) *Using qPCR to Assess Phytoplankton and Indicate Trophic States in Freshwater Rivers: A Muti-Year Nationwide Study Across the United States*. Oral presentation at the AEESP 2025: Information and Engineering for the Public Sector (May 20 to 22, 2025; Durham, NC, U.S.A.)
7. Rahnuma, K.; Islam, M.S.; **Zhang, C.Q.***; Hwang, Y.S. (2025) *River Water Quality Prediction in the White River Basin: A Machine Learning Approach Using Base and Ensemble Models*. Poster presentation at the AEESP 2025: Information and Engineering for the Public Sector (May 20 to 22, 2025; Durham, NC, U.S.A.)

   Supported by: Graduate Travel Fund from Arkansas State University ($400.00)
   Research & Creativity Travel Grant from Arkansas State University ($500.00)

8. Rahnuma, K.; **Zhang, C.Q.*** (2025) *Direct-Solar-Energy-Powered Hydrothermal Treatment to Promote Biomethane Production from Anaerobic Digestion of Grain Processing Waste*. Poster presentation at the 15th Annual Create@State Student Research and Creativity Symposium at Arkansas State University (April 24th, 2025; Jonesboro, AR, U.S.A.)
9. **Zhang, C.Q.*** (2023) *Reconsider the Current Drinking Water Disinfection Practice: How Should We Ensure Safe Drinking Water Supply?* Oral presentation at the 2023 A-State Sustainable Conference: The Influence of Sustainability on All Aspects of Lives (October 23rd, 2023; Jonesboro, AR, U.S.A.)
10. **Zhang, C.Q.**; Struewing, I.; Sienkiewicz, N.; Mistry J.; Buse, H.; Hu, Z.; Lu, J.* (2023) *Is Chlorine Burn Effective in Controlling Microbial Drinking Water Quality? A Comprehensive Study in a Full-Scale Chloraminated Engineered Water System*. Oral presentation in the 12th Southeast Symposium on Contemporary Engineering Topics (SSCET) in conjunction with the 2nd Arkansas Engineering Forum (AEF) (September 15th, 2023; Little Rock, AR, U.S.A.)
11. **Zhang, C.Q.**; Struewing, I.; Sienkiewicz, N.; Mistry J.; Buse, H.; Hu, Z.; Lu, J.* (2023) *Evaluation of Distribution System Microbial Water Quality During a Free Chlorine Conversion*. Oral presentation in the 20th Annual EPA Drinking Water Workshop: Small System Challenges and Solutions (September 13th, 2023; Covington, KY, U.S.A.)
12. **Zhang, C.Q.**; McIntosh, K.D.; Sienkiewicz, N.; Struewing, I.; Stelzer, E.A.; Graham, J.L.; Lu, J.* (2022) *Quantitative Polymerase Chain Reaction Assessment of Phytoplankton Composition and Abundance to Assess Eutrophication: A Multi-year Study in Twelve Large Rivers Across the United States*. Oral presentation at the 2022 AEESP Research and Education Conference (June 28 to 30, 2022; St. Louis, MO, U.S.A.)
13. **Zhang, C.Q.**; Struewing, I.; Mistry J.; Wahman, D.; Pressman, J.; Lu, J.* (2021) Legionella *and Other Opportunistic Pathogens in Chloraminated Drinking Water Distribution Systems*. Oral presentation in the AWWA Virtual Summit on Sustainable Water Management, PFAS, and Waterborne Pathogens (Virtual Summit)
14. **Zhang, C.Q.** (2021) *Exploring the Impact of Peracetic Acid on Long-Term Bacterial Regrowth and Plasmid DNA*. Oral presentation in the 5th International Symposium for Persistent, Bioaccumulating and Toxic Substances (IJRC-PTS 2021) (July 26 to 28, 2021; Online conference)
15. **Zhang, C.Q.**; Struewing, I.; Mistry J.; Wahman, D.; Pressman, J.; Lu, J.* (2020) Legionella *and Other Opportunistic Pathogens in Chloraminated Drinking Water Distribution Systems*. Oral presentation in the 2nd International Conference on Advances in Civil and Ecological Engineering Research (Online Conference)

16. **Zhang, C. Q.**; Hu, Z.* (2016) *Effects of Boiling, Autoclaving, and Ultraviolet (UV) Light Radiation on the Fate of Bacterial Plasmid DNA*. Oral presentation in the 2016 Annual Mid-American Environmental Engineering Conference (MAEEC) (Edwardsville, IL, U.S.A.)
17. **Zhang, C. Q.**; Hu, Z.* (2015) *Bacteriophages as Living Bacteriocides: Will Phage Treatment Facilitate Gene Transformation?* Oral presentation in the 2015 MAEEC (Columbia, MO, U.S.A.)
18. **Zhang, C. Q.**; Hu, Z.* (2016) *Bacteriophages as Living Bacteriocides: Will Phage Treatment Facilitate Gene Transformation?* Poster presentation in the 32nd Annual Missouri Life Sciences Week (Columbia, MO, U.S.A.)
19. **Zhang, C. Q.**; Wang, G.; Hu, Z.* (2015) *Changes in Wastewater Treatment Performance and Activated Sludge Properties of a Membrane Bioreactor at Low Temperature Operation*. Poster presentation in the 2015 Engineering Week (E-Week), College of Engineering, University of Missouri (Columbia, MO, U.S.A.)
20. Zhong, C.; Yin, J.; **Zhang C. Q.**; Hu, Z.; Deng, B.* (2015) *Thin Film Composite (TFC) Membranes with Copper Nanoparticles: Preparation and Antibacterial Characteristics*. Oral presentation at the 2015 AlChe Annual Meeting (Salt Lake City, UT, U.S.A.)
21. Taxis, T. M.; Wolff, S.; **Zhang, C. Q.**; Dai, J.; Schnabel, R. D.; Taylor, J. F.; Kerley, M.; Pires, J. C.; Lamberson, W. R.; Conant, G. C.* (2015) *Assaying the Metabolic Network of the Bovine Rumen Microbiome*. Oral presentation in the ASAS Midwestern Section and the ADSA® Midwest Branch Scientific Sessions & Business Meeting (Des Moines, IA, U.S.A.)
22. **Zhang, C. Q.*** (2014) *Using PCR for Identifying Antibiotic Resistance Genes (ARGs) in Lagoons*. Oral presentation in the 2nd Plant Sciences and Bioengineering Colloquium of the University of Missouri (Columbia, MO, U.S.A.)
23. **Zhang, C. Q.**; Hu, Z.* (2014) *Thermodynamics and Silver Ion ($Ag^+$) Release Kinetics of Silver Nanoparticles in Engineered and Natural Aqueous Environments*. Poster presentation in the 248th ACS National Meeting & Exposition (San Francisco, CA, U.S.A.)
24. **Zhang, C. Q.**; Liang, Z.; Hu, Z.* (2013) *Bacterial Response to Long-term Exposure of Silver Nanoparticles (AgNPs) at Low Concentrations in a Membrane Bioreactor (MBR) Activated Sludge System*. Poster presentation in the 50th Anniversary Conference of AEESP-Environmental Engineers and Scientists of 2050: Education, Research, and Practice (Golden, CO, U.S.A.)
25. Wolff, S. M.; Taxis, T. M.; Dai, J.; **Zhang, C. Q.**; Lamberson, W. R.; Taylor, J. F.; Kerley, M. S.; Schnabel, R. D.; Conant, G. C.* *Metagenomic Evaluation of the Rumen Microbiome in Cattle*. Poster presentation in the 2013 Graduate Research Forum, Division of Animal Sciences, the College of Agriculture, Food and Natural Resources, University of Missouri (Columbia, MO, U.S.A.)

## MEDIA COVERAGE OF RESEARCH

● Feng, F.; Li, Y.; Latimer, B.; **Zhang, C.Q.**; Nair, S.S.; Hu, Z.* (2020) Prediction of maximum algal productivity in membrane bioreactors with a light dependent growth model. *Sci. Total Environ.* 753, 141922: featured in "Mizzou engineering team develops new model to predict algae growth." By Janese Heavin, September 22nd, 2020. engineering.missouri.edu/2020/09/mizzou-engineering-team-develops-new-model-to-predict-algae-growth/

● **Zhang, C. Q.***; Hu, Z.; Deng, B. (2016) Silver nanoparticles in aquatic environments: physiochemical behavior and antimicrobial mechanisms. *Water Res.* 88, 403-427: featured in "Silver nanoparticle concentration too low to be harmful in water supply, paper finds." By Ryan Owens, October 12th and 13th, 2016. engineering.missouri.edu/2016/10/silver-nanoparticle-concentration-low-harmful-water-supply-paper-finds/, nsf.gov/news/news_summ.jsp?cntn_id=190097, eurekalert.org/pub_releases/2016-10/uom-snc101316.php, and phys.org/news/2016-10-silver-nanoparticle-paper.html

● Zheng, C. R.; Li, S.; Ye, C.; Li, X.; **Zhang, C. Q.***; Yu, X.* (2016) Particulate respirators functionalized with silver nanoparticles showed excellent real-time antimicrobial effects against pathogens. *Environ. Sci. Technol.* 50 (13), 7144-7151: featured in **I**) "Silver-Coated Doctor's Face Masks Kill Germs." By Steve Barwick, 2016. thesilveredge.com/silver-coated-doctors-face-masks-kill-germs/ and **II**) "Respirators with an Antimicrobial Effect." By ChemistryViews.org, June 23rd, 2016. chemistryviews.org/details/news/9482801/Respirators_with_an_Antimicrobial_Effect.html

## ACADEMIC MENTORING OF STUDENTS

**Kainat Rahnuma** (Master's student, Arkansas State University, AR, U.S.A.)

● Projects: Using direct sunlight to conduct hydrothermal treatment for enhancing the performance of anaerobic digestion of agricultural wastes (I served as the mentor)

Surface water quality prediction using machine learning (I served as the mentor)

**Vu Mai** (Undergraduate student, Arkansas State University, AR, U.S.A.)

● Project: Acidification control in anaerobic reactors with a high organic loading rate of grain-processing waste (I served as the mentor)

**Saroj Raut** (Master's student, Arkansas State University, AR, U.S.A.)

● Project: Water discharge forecasting using SARIMA and LSTM approaches: a case study of the Big Black River (I served as a graduate committee member)

**Cevher Akin** (Master's student, Southern University and A&M College, LA, U.S.A.)

● Project: The impact of COVID-19 pandemic on safe drinking water supply (funded by the Higher Education Emergency Relief Fund; I served as the mentor)

**Tarun Vulupala** (Master's student, Southern University and A&M College, LA, U.S.A.)

● Thesis: Usage of plastic waste to stabilize soil (I served as a graduation committee member)

---

## TEACHING EXPERIENCE

**Assistant Professor**. Arkansas State University, Jonesboro, AR, U.S.A. 2023 to present

● Undergraduate course on environmental engineering (*Introduction to Environmental Engineering*)

● Undergraduate course on water and wastewater (*Water and Wastewater Treatment*)

● Undergraduate course on fluid mechanics (*Fluid Mechanics*)

● Undergraduate course on mechanics of materials (*Mechanics of Materials Laboratory*)

● Undergraduate course on an anaerobic digestion project (*Senior Design I and II*)

● Undergraduate course on a flooding control project (*Senior Design I and II*)

● FE Examination Review Session (*Environmental Engineering*) [Fall 2023, Spring 2024, Fall 2024, Spring 2025, and Fall 2025]

**Assistant Professor**. Southern University and A&M College, Baton Rouge, LA, U.S.A. 2022 to 2023

● Undergraduate course on probability and statistics (*Probability and Statistics*)

● Undergraduate course on hydraulics and hydrology (*Hydraulics and Hydrology*)

● Undergraduate course on engineering economics (*Engineering Economy*)

● FE Examination Review Session (*Environmental Engineering*)

**Adjunct Instructor.** Ohio University Southern, Ironton, OH, U.S.A. 2021

● Undergraduate course on radiation and radiation protection (*Introduction to Health Physics*)

● Developed the curriculum, delivered lectures, and designed exams (evaluation score: 4.22/5.00)

**Graduate Teaching Assistant.** University of Missouri, Columbia, MO, U.S.A. 2016

- Advanced graduate course (*Biochemical Processes for Water and Wastewater Treatment*)
- Taught how to use BioWin software for water/wastewater facility design and simulation

**Graduate Teaching Assistant.** University of Missouri, Columbia, MO, U.S.A. 2015

- Basic undergraduate course (*Fundamentals of Environmental Engineering*)
- Led multiple laboratory sections and graded laboratory reports

**Graduate Teaching Assistant.** University of Nebraska, Lincoln, NE, U.S.A. 2011

- Field course in an off-campus biological station (*Field Environmental Education*)
- Led primary school students on field trips and elaborated on environmental protection

## TEACHING INTERESTS

- Environmental Engineering
- Public Health and Drinking Water Safety
- Waste-to-Energy and Renewable Energy
- Aquatic Chemistry
- Drinking Water and Wastewater Facility Design
- Biochemical Processes for Wastewater Treatment
- Environmental Microbiology
- Environmental Biotechnology
- Engineering Economics
- Environmental Nanotechnology
- Sustainability
- Fluid Mechanics
- Hazardous and Solid Waste Management
- Bioinformatics and Statistics
- Radiation and Radiation Protection
- Water Resources Engineering
- Hydraulics and Hydrology
- Statistics and Probability

## PROFESSIONAL SERVICES

**Proposal Review Service**

- Invited Independent Research Proposal Review for Environmental Research & Education Foundation (Raleigh, NR, U.S.A.) (August 2025)
- Invited Independent Research Proposal Review for a Leading University in Italy (August 2025)
- The NSF Research Experiences for Undergraduates (REU) program (2024)
- The NSF Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs (2022)
- The NSF Engineering Research Initiation (ERI) program (2021)

**Academic Conference Chairmanship**

● Co-chair of the oral presentation session Electrochemical Treatment Systems for Pollutant Removal and Resource Recovery in the 2022 AEESP Research and Education Conference (St. Louis, MO, U.S.A.), June 29th, 2022

● Co-chair of the oral presentation session Bioelectrochemical Treatment Systems and Electrochemical Reduction of Nitrate in the 2022 AEESP Research and Education Conference (St. Louis, MO, U.S.A.), June 29th, 2022

**Academic Conference Poster Judging**

● Judging multiple poster presentations in the 2022 AEESP Research and Education Conference (St. Louis, MO, U.S.A.), June 29th and June 30th, 2022

● Judging multiple poster presentations in the 2026 Arkansas Academy of Sciences Meeting (Magnolia, AR, U.S.A.), April 11th, 2026

**Editorial Activities**

● Associate Editor for *Annals of Microbiology*, 2024 to 2025

● Guest editor for *Sustainability* (Special Issue: Advanced Oxidation-Based Techniques for Heterogeneous Treatment of Sediment and Sludge), 2022

● One-off associate editor for *Front. Public Health,* 2022

● Review editor for *Front. Environ. Sci.* (section: Water and Wastewater Management), 2022

**Peer-Review Service for Scholarly Journals** (Over **490** manuscripts for **66** academic journals)

- *ACS Appl. Eng. Mater.*
- *ACS ES&T Water*
- Acta Geochim.
- *Appl. Energy*
- *Appl. Microbiol. Biotechnol.*
- *Bioprocess Biosyst. Eng.*
- *Case Stud. Chem. Environ. Eng.*
- *Chem. Biochem. Eng. Q.*
- *Chem. Eng. J.*
- *Chem. Pap.*
- *Chemosphere* (**Exc. Reviewer**)
- *Crit. Rev. Environ. Sci. Technol.*
- *Curr. Anal. Chem.*
- *Desalination and Water Treat.*
- *Ecol. Eng.*
- *Ecotoxicol. Environ. Saf.*
- *Environ. Eng. Sci.*
- *Environ. Microbiol. Rep.*
- *Environ. Monit. Assess.*
- *Environ. Pollut.*
- *Environ. Prog. Sustain. Energy.*
- *Environ. Res.*
- *Environ. Sci. Technol.*
- *Environ. Sci. Pollut. Res.*
- *Environ. Sci.: Adv.*
- *Front. Cell. Infect. Microbiol.*
- *Front. Environ. Sci.*
- *Health Secur.*
- *Heliyon*
- *Ind. Eng. Chem. Res.*
- *Int. J. Phytoremediation*
- *Int. J. Polym. Sci.*
- *J. Agric. Food Chem.*
- *J. Appl. Biomed.*
- *J. Appl. Microbiol.*

- *J. Chem. Soc. Pak*
- *J. Environ. Manage.*
- *J. Contam. Hydrol.*
- *J. Membr. Sci.*
- *J. Occup. Environ. Hyg.*
- *MethodsX*
- *Plant Physiol. Biochem.*
- *Process Biochem.*
- *Sci. Rep.*
- *Waste Manage.*
- *Water Res.*
- *J. Environ. Chem. Eng.*
- *J. Environ. Sci.*
- *J. Intercult. Ethnopharmacol.*
- *J. Nanosci. Nanotechnol.*
- *J. Water Process. Eng.*
- *Mol. Ecol. Resour.*
- *PLOS One*
- *React. Funct. Polym.*
- *Sci. Total Environ.*
- *Water Environ. Res.*
- *Water Sci. Technol.*
- *J. Environ. Eng.* (**Exc. Reviewer**)
- *J. Hazard. Mater.*
- *J. Med. Life*
- *J. Nanostructure in Chem.*
- *Mater. Sci. Eng. C*
- *npj Clean Water*
- *Pollution*
- *Res. Chem. Intermed.*
- *Sustain. Chem. Pharm.*
- *Water Qual. Res. J.*

**Committee Appointment**

- Member of a Postdoctoral Fellow search committee for the College of Engineering & Computer Science at Arkansas State University (Jonesboro, AR, U.S.A.) — 06-2024 to 08-2026
- Chair of the ABET Outcome 4 Committee at Arkansas State University (Jonesboro, AR, U.S.A.) — 12-2024 to now
- Member of the ABET Outcome 1 Committee at Arkansas State University (Jonesboro, AR, U.S.A.) — 12-2024 to now
- Member of the Undergraduate Admission Appeals Committee at Arkansas State University (Jonesboro, AR, U.S.A.) — 08-2024 to now
- Member of the ABET Outcome 4 Committee at Arkansas State University (Jonesboro, AR, U.S.A.) — 09-2023 to 12-2024
- Member of the Laboratory Practices Committee of the Water Environment Federation (WEF) — 2016 to 2017

## PROFESSIONAL MEMBERSHIPS AND CERTIFICATIONS

- Member of the Water Environment Federation (WEF)
- Member of the American Water Works Association (AWWA)
- Member of the Association of Environmental Engineering and Science Professors (AEESP)
- Quality Matters (QM) Digital Credential for Improving Your Online Course (Fall 2022)
- Passed the Professional Engineer (P.E.) Civil: Water Resources and Environmental exam (2021)
- Certification of Engineer in Training (E.I.T.) from Michigan (U.S.A., 2012)

● Certification of Project Wild from Nebraska (U.S.A., 2011)

## OTHER ACADEMIC ACTIVITIES

**Teaching Workshop**: Attended the teaching workshop provided by Dr. Michael Prince from Bucknell University (Lewisburg, PA, U.S.A.) on October 24th, 2025. The workshop was hosted by the College of Engineering and Computer Science at Arkansas State University (Jonesboro, AR, U.S.A.)

**Led Undergraduate Student Projects**:

● Bloomflow Irrigation System

The project participated in the 2025 First-Year Experience (FYE) Academic Expo of Arkansas State University (November 12th, 2025; Jonesboro, AR, U.S.A.)

● Design of a Tennis Ball Launcher

The project won the first prize in research in the 2024 First-Year Experience (FYE) Academic Expo of Arkansas State University (November 13th, 2024; Jonesboro, AR, U.S.A.)

**BioWin Project**: Modeling an intermittently decanted extended aeration lagoon in Miller, MO, U.S.A.

**AutoCAD Projects**: Design of full-scale drinking water and wastewater treatment plants

**White River Basin Watershed Assessment**: Participated in the project [organized by the Little Rock District of the U.S. Army Corps of Engineers and Arkansas State University] as a key representative from Arkansas State University (2023 to 2025)

**Field Trips**

● Participated in a field trip for engineering students at A-State to Craighead Electric Solar One Solar, a photovoltaic power plant in Brookland, AR, on September 27th, 2023.

● Participated in a tour to the grain processing facility of Riceland Foods, Inc., in Jonesboro, AR, on July 22nd, 2025.

**Fresh Connect: Student and Faculty Research**: Participated in the event (organized by the Office of Student Research and Scholarship at A-State) to share my research work with both graduate and undergraduate students, connect with students interested in my research, and recruit future collaborators (September 10th, 2025; Jonesboro, AR, U.S.A.)

**Academic Conference Attendances**

● CATALYST: NEA Leadership & Economic Development Forum; November 06th, 2025; Jonesboro, AR, U.S.A.
● 2025 Arkansas Transportation Summit; October 27th to 30th, 2025; Jonesboro, AR, U.S.A.
● 2023 Transportation Consortium of South-Central States (Tran-SET) Summit on Sustainable Transportation Infrastructures and Materials Durability; November 28th, 2023; Jonesboro, AR, U.S.A.
● Bio-Sensor Workshop (hosted by the Neil Griffin College of Business of Arkansas State University in collaboration with iMotions); November 02nd and 03rd, 2023; Jonesboro, AR, U.S.A.
● CyanoSymposium 2023 (virtual); U.S. Environmental Protection Agency; October 16th, 18th, 23rd, and 25th, 2023
● The 2023 Arkansas Commercialization Retreat, September 21st to 23rd; Morrilton, AR, U.S.A.
● White River Basin Stakeholder Meeting; September 20th, 2023; Point Lookout, MO, U.S.A.
● The 2022 Louisiana Smart Growth Summit, Baton Rouge, LA, U.S.A.
● The 6th Chinese Environmental Scholars Forum, Houston, TX, U.S.A., 2019
● The 2017 Annual Mid-American Environmental Engineering Conference, St. Louis, MO, U.S.A.
● The 2016 Annual Mid-American Environmental Engineering Conference, Edwardsville, IL, U.S.A.
● The 89th Technical Exhibition and Conference of WEF, New Orleans, LA, U.S.A., 2016
● The 2015 Annual Mid-American Environmental Engineering Conference, Columbia, MO, U.S.A.
● A Symposium for the 50th Anniversary of Missouri Water Resources Research Center, MO, U.S.A., 2014
● The 248th ACS National Meeting & Exposition, San Francisco, CA, U.S.A., 2014
● Midwest Environmental Compliance Conference, MO, U.S.A., 2011 and 2014
● The 50th Anniversary Conference of AEESP, Golden, CO, U.S.A., 2013
● Missouri Section of the AWWA and Missouri WEA Joint Conference, Osage Beach, MO, U.S.A., 2012
● The 54th Annual Great Plains Waste Management Conference, LaVista, NE, U.S.A., 2010

- Nebraska AWWA and Nebraska WEA Joint Conference, Kearney, NE, U.S.A., 2009
- IWA 5th World Water Congress and Exhibition, Beijing, China, 2006
- IWA Conference: Future of Urban Wastewater Systems, Xi'an, China, 2005

## TECHNICAL SKILLS

**Software/Programming Languages**

- AutoCAD
- BioWin
- MS Excel
- FORTRAN
- MedCalc
- MINEQL+
- Mothur
- Perl
- SPSS®
- SigmaPlot
- SAS
- R

**Experimental Skills**

- Bioreactor technology (design and operation)
- Traditional PCR, qPCR, and RT-qPCR
- T-RFLP
- Competent cell preparation and gene cloning
- High-throughput DNA sequencing
- Bacteriophage isolation and characterization
- Nanomaterial fabrication
- Phytoplankton identification and enumeration
- Genomic and plasmid DNA isolation
- Pathogen detection and control
- Gel electrophoresis
- Restriction enzyme digestion
- Bacterial isolation and identification
- Biofilm cultivation
- Bioinformatics and statistical analysis
- Cyanotoxin determination

**Instrumentation**

- SEM, TEM, and confocal microscope
- GC and HPLC
- UV-Vis and nanodrop spectrophotometers
- Atomic absorption spectrometer (AAS)
- Zetasizer
- Total organic carbon (TOC) analyzer
- Electroporation system
- Multilabel counter (Microreader)

## STUDENT ACTIVITY PARTICIPATION

- Departmental representative for the Fall 2023 Pack Preview (October 21st, 2023) 2023
Arkansas State University, Jonesboro, AR, U.S.A.
- Departmental representative for the Fall 2022 Jaguar Preview High School Day 2022
Southern University and A&M College, Baton Rouge, LA, U.S.A.
- Departmental representative for the Graduate Professional Council (GPC) 2016 to 2017
University of Missouri, Columbia, MO, U.S.A.

**AWARDS, RECOGNITIONS, AND HONORS** Twelve awards and honors totaling $9,200.30

● Recognized by the American Chemical Society (ACS) for reviewing multiple manuscripts in 2025 for ACS journals 2026

● High proposal activity recognized by the Office of the Provost of Arkansas State University 2026

● Co-authored publications recognized by the Chancellor's Office of Arkansas State University 2026

● American Society of Civil Engineers (ASCE) Outstanding Reviewer Award for *Journal of Environmental Engineering* 2023

● Travel award (**$1500.00**) from the HBCU Engage 2023 (Nashville, TN, U.S.A.) 2023

● Travel grant (**$250.00**) from the 2022 Louisiana Smart Growth Summit (Baton Rouge, LA, U.S.A.) 2022

● Postdoctoral Association Travel Award (**$277.95**) from the University of Missouri (Columbia, MO, U.S.A.) for the 2022 Association of Environmental Engineering and Science Professors (AEESP) Research and Education Conference (St. Louis, MO, U.S.A.) 2022

● Travel grant (**$500.00**) from the 2022 Association of Environmental Engineering and Science Professors (AEESP) Research and Education Conference (St. Louis, MO, U.S.A.) 2022

● American Society of Civil Engineers (ASCE) Outstanding Reviewer Award for *Journal of Environmental Engineering* 2018

● Excellence Reviewer Award for *Chemosphere* 2016

● Ronald F. Layton Scholarship (**$1,500**), Missouri Water Environment Association 2018
Awarded for my strong academic record in drinking water and wastewater treatment

● Outstanding Graduate Student Award, University of Missouri, Columbia, MO, U.S.A. 2018

● Valerie J. Goodin Global Tiger Alumni Scholarship (**$1,000**), University of Missouri, Columbia, MO, U.S.A. 2017

● Paul Kufrin Memorial Scholarship (**$3,000**), University of Missouri, Columbia, MO, U.S.A. 2015

● National Scholarship (second-class, **￥8,500.00**), China
Award issued by the Central People's Government of the People's Republic of China for outstanding undergraduate students