

SHIQIANG (NICK) ZOU

Assistant Professor

zoushiqi@msu.edu

Dr. Shiqiang (Nick) Zou leads the Electrified WAstewater Treatment and Element Recovery (E-WATER) Lab at Michigan State University. His research centers on applied electrochemistry to transform resource-intensive wastewater management into a resource-supplying hub. He extends this expertise by integrating applied electrochemistry with selective separation and process engineering to develop engineering solutions that improve environmental quality. The E-WATER Lab aims to (i) selectively recover critical resources such as nutrients and metals from industrial, agricultural, and domestic waste streams, (ii) fundamentally understand rate-limiting steps at interfacial and unit operations level via thermodynamic and kinetic analysis, and (iii) identify scaling-up challenges to better design the water and wastewater treatment train.

EDUCATION

Virginia Polytechnic Institute and State University, Blacksburg, VA, United States

Ph.D. Civil Engineering, 2019

National University of Singapore, Singapore, Singapore

M.S. Chemistry, 2014

Peking University, Beijing, China

M.S. Environmental Engineering, 2014

Beijing Institute of Technology, Beijing, China

B.ENG. Environmental Engineering, 2011

ACADEMIC APPOINTMENTS

2025-present Assistant Professor, Department of Civil and Environmental Engineering, Michigan State University, MI

2021-2025 Assistant Professor, Department of Civil and Environmental Engineering, Auburn University, AL

2019-2020 Postdoctoral Scholar, Department of Civil and Environmental Engineering, Leland Stanford Junior University, Stanford, CA

2019 summer Research Assistant, Department of Civil and Environmental Engineering, Virginia Tech, VA

2019 spring Via Teaching Scholar, Department of Civil and Environmental Engineering, Virginia Tech, VA

2014-2015 Research Fellow, Department of Chemistry, National University of Singapore, Singapore

SELECTED HONORS AND AWARDS

- 40 under 40 Recognition Program, American Academy of Environmental Engineers and Scientists, 2025
- Early Career Research Fellow, Gulf Research Program, National Academies of Science, Engineering, and Medicine, 2025
- William F. Walker Merit Teaching Award, Samuel Ginn College of Engineering, Auburn University, 2025
- Member of the Month, National Alliance for Water Innovation, Dept of Energy, 2023
- Early Career Travel Award, Industrial Electrochemistry & Electrochemical Engineering Division, ECS, 2022
- ACS-ENVR Certificate of Merit Award, Environmental Chemistry Division, American Chemical Society, 2021
- New Faculty Scholar, Biggio Center, Auburn University, 2021
- Early Career Travel Award, Industrial Electrochemistry & Electrochemical Engineering Division, ECS, 2021
- Outstanding Self-Financed Chinese Students, 2020
- Outstanding Doctoral Student, Department of Civil and Environmental Engineering, Virginia Tech, 2019
- Graduate Student Award in Environmental Chemistry, American Chemical Society, 2019
- Virginia AWWA Graduate Student Scholarship, 2018
- WaterJAM 2018 Young Professional “Fresh Ideas” Poster Contest - 1st Place, VA AWWA/VWEA, 2016-2018
- Top Reviewer, Water Environment Research, 2017
- Environmental Competition international (ECi) - 2nd Place, Air & Waste Management Association, 2016 & 2017
- Raymond and Madelyn Curry Fellowship, Dept of Civil and Environmental Engineering, Virginia Tech, 2015
- Singapore-Peking-Oxford Research Scholarship, Singapore-Peking-Oxford Research Enterprise, 2011-2014

PEER-REVIEWED PUBLICATIONS IN JOURNALS

(* denotes the corresponding author; underline denotes students and postdoc primarily advised by S. Zou)

I have published one (1) peer-reviewed book chapter and thirty-four (34) peer-reviewed journal articles. The following table summarizes the impact factors for the peer-reviewed journals in which these articles have been published or are currently in-press. One (1) manuscript is currently under review, and three (3) manuscripts are under preparation. In addition, I have published thirteen (13) conference proceedings at national conferences.

Name	ISSN	# of Papers	Journal Impact Factor (2024) ¹	
			Standard	Five Year
Water Research	0043-1354	5	12.4	12.9
Chemical Engineering Journal	1385-8947	4	13.2	13.5
Science of the Total Environment	0048-9697	3	8.0	8.7
ACS ES&T Engineering	2690-0645	3	6.7	7.3
Applied Catalysis B - Environ and Energy	0926-3373	1	21.1	20.2
Journal of Hazardous Materials	0304-3894	1	11.3	12.4
Environmental Science & Technology	0013-936X	1	11.3	12.4
Journal of Cleaner Production	0959-6526	1	10.0	10.7
Desalination	0011-9164	1	9.8	9.9
Environment International	0160-4120	1	9.7	11.6
Nano Letters	1530-6984	1	9.1	9.9
Bioresource Technology	0960-8524	1	9.0	9.5
Separation and Purification Technology	1383-5866	1	9.0	8.5
ACS Sustainable Chem & Engineering	2168-0485	1	7.3	8.0
J of Environmental Chemical Engineering	2213-2929	1	7.2	7.6
Waste Management	0956-053X	1	7.1	8.0
J of Geotech and Geoenvirons Eng	1090-0241	1	4.4	4.9
Aquaculture	0044-8486	1	3.9	4.4
Environmental Science - Water Research & Technology	2053-1400	1	3.2	4.3
Journal of Environmental Quality	0047-2425	1	2.3	2.8
Water Environment Research	1061-4303	1	1.9	2.8
Environmental Science and Pollution Research	0944-1344	1	1.0	
AI for Science	3050-287X	1	new journal	
Total		34		

¹ Notes: Impact factors are taken from Thomson Reuters Journal Citation Reports for the most recent year available (<https://jcr.clarivate.com/jcr/home>).

Submitted

J35 Zhao, J., Zou, S. Defining performance and energy operating windows for electrooxidation of PFAS in complex water matrices. *Submitted*.

Published

J34 Yang, Z., Martinez-Vargas, D.R., Xie, A., and **Zou, S.*** Three-Dimensional Packed-Bed Electrochemical Reactor Design for Selective Selenite Reduction in Water. *ACS ES&T Engineering*, **2025**.

J33 Zulfeqar, N., Khosravi, A.,* **Zou, S.*** Nano-Enhanced Electrokinetic Conditioning of Expansive Soils Using MgO Nanoparticles. *Journal of Geotechnical and Geoenvironmental Engineering*, **2025**, 151, 11.

J32 Wang, D., Xie, A., Ma, S., Tong, W., **Zou, S.**, Jain, A.* Computational catalysis and machine learning applications to water treatment technologies. *AI for Science*, **2025**.

J31 Hao, S., Feng, Y., Wang, D., Cho, J., Qiu, C., Wi, T., Xu, Z., Yu, Z., Sellers, C., **Zou, S.***, Jain, A.,* Wang, H.* Electrochemical removal of Se(IV) from wastewater using RuO₂-based catalysts. *Nano Letters*, **2025**, 25 (6), 2547-2553.

J30 Zheng, Y., Carter, E., **Zou, S.**, Chow, A.T., and Chen, H.* Using Syringe Filtration after Lab-scale Adsorption Processes Potentially Overestimates PFAS Adsorption Removal Efficiency from Non-conventional Irrigation Water. *Journal of Environmental Quality*, **2025**, 54, 1, 20-30.

J29 Xie, A. Martinez-Vargas, D.R., Yang, Z., and **Zou, S.*** Efficient selenate removal from impaired waters with TiO₂-assisted electrocatalysis. *Water Research*, **2024**, 262, 122134.

J28 Zhao, J., Yang, Z., Alderman, B., **Zou, S.*** Mechanistic insight into electrooxidation of aminomethyl phosphonic acid (AMPA) in diluted water matrices. *Journal of Environmental Chemical Engineering*, **2024**, 12, 1, 111669.

J27 Chu, L., Song, Z., **Zou, S.*** and Wang, D.* Effect of Carbonaceous Materials on Phosphorus Removal in Flow-Through Packed Column Systems. *Environmental Science and Pollution Research*, **2024**, 31, 60555-60567.

J26 Yang, Z., Zhao, J., Sullivan, E.G., **Zou, S.*** Cost-effective cathode materials to electrochemically tackle aquatic selenite pollution. *ACS EST Engineering*, **2023**, 3, 4, 458-466.

J25 Ferby, M., **Zou, S.**, He, Z.* Effects of draw solutes on an integrated forward osmosis-microbial fuel cell system treating a synthetic wastewater. *Water Environment Research*, **2022**, 94 (11), e10802

J24 **Zou, S.** and Mauter, M.S.* Competing ion behavior in direct electrochemical selenite reduction. *ACS EST Engineering*, **2021**, 1, 6, 1028-1035.

J23 **Zou, S.** and Mauter, M.S.* Direct electrochemical pathways for selenium reduction in aqueous solutions. *ACS Sustainable Chemistry & Engineering*, **2021**, 9, 5, 2027-2036.

J22 Ferby, M., **Zou, S.**, He, Z.* Reduction of reverse solute flux induced salinity buildup in the feed solution of forward osmosis. *Environmental Science: Water Research & Technology*, **2020**, 6(3), 423-425.

J21 Li, M., Zhang, B.,* **Zou, S.**, Liu, Q., Yang, M. Highly selective adsorption of vanadium by nano-hydrous zirconium oxide-modified anion exchange resin. *Journal of Hazardous Materials*, **2020**, 384, 121386.

J20 **Zou, S.**, Smith, E., Martin, S.,* He, Z.* Mitigation of Bidirectional Solute Flux in Forward Osmosis via Membrane Surface Coating of Zwitterion Functionalized Carbon Nanotubes. *Environmental International*, **2019**, 131, 104970.

J19 **Zou, S.**, Qin, M., He, Z.* Tackle reverse solute flux in forward osmosis towards sustainable water recovery: reduction and perspectives. *Water Research*, **2019**, 49, 362-374.

J18 Wu, S., **Zou, S.**, Yang, Y., Qian, G.,* He, Z.* Enhancing the performance of an osmotic microbial fuel cell through self-buffering with reverse-fluxed sodium bicarbonate. *Chemical Engineering Journal*, **2018**, 349, 241-248.

J17 Cecconet, D., **Zou, S.**, Capodaglio, A.G.,* He, Z.* Evaluation of energy consumption of treating nitrate-contaminated groundwater by bioelectrochemical systems. *Science of the Total Environment*, **2018**, 636, 881-890.

J16 Wu, Z., **Zou, S.**, Zhang, B., Wang, L., He, Z.* Forward osmosis promoted in-situ formation of struvite with simultaneous water recovery from digested swine wastewater. *Chemical Engineering Journal*, **2018**, 342, 274-280.

J15 Qin, M., White, C., **Zou, S.**, He, Z.* Passive separation of recovered ammonia from catholyte for reduced energy consumption in microbial electrolysis cell. *Chemical Engineering Journal*, **2018**, 334, 2303-2307.

J14 Wu, S., **Zou, S.**, Liang, G., Qian, G., He, Z.* Enhancing recovery of magnesium as struvite from landfill leachate by treatment of calcium with simultaneous reduction of liquid volume via forward osmosis. *Science of the Total Environment*, **2018**, 610-611, 137-146.

J13 **Zou, S.**, Guan, L., Taylor, D.P., Kuhn, D., He, Z.* Nitrogen removal from water of a recirculating aquaculture system by a bioelectrochemical system. *Aquaculture*, **2018**, 497, 74-81.

J12 **Zou, S.** and He, Z.* Efficiently “pumping out” value-added resources from wastewater by bioelectrochemical systems: a review from energy perspectives. *Water Research*, **2018**, 131, 62-73.

J11 Zhang, B., **Zou, S.**, Cai, R., Li, M., He, Z.* High-efficient photocatalytic disinfection of *Escherichia coli* under visible light using carbon supported Vanadium Tetrasulfide nanocomposites. *Applied Catalysis B: Environmental*, **2018**, 224, 383-393.

J10 **Zou, S.**, Kanimba, E., Diller, T.E., Tian, Z., He, Z.* Modelling assisted evaluation of direct electricity generation from waste heat of wastewater via a thermoelectric generator. *Science of the Total Environment*, **2018**, 635, 1215-1224.

J9 Yang, Y., Chen, M., **Zou, S.**, Long, T., Yang, X., He, Z.* Efficient recovery of polyelectrolyte draw solutes in forward osmosis towards sustainable water treatment. *Desalination*, **2017**, 422, 134-141.

J8 Iskander, S., **Zou, S.**, Brazil, B., Novak, J., He, Z.* Energy consumption by forward osmosis treatment of landfill leachate for water recovery. *Waste Management*, **2017**, 63, 284-291

J7 Xiang, X., **Zou, S.**, He, Z.* Energy consumption of water recovery from wastewater in a submerged forward osmosis system with commercial liquid fertilizers as draw solutes. *Separation and Purification Technology*, **2017**, 174, 432-438

J6 **Zou, S.** and He, Z.* Electrodialysis recovery of reverse-fluxed fertilizer draw solute during forward osmosis water treatment. *Chemical Engineering Journal*, **2017**, 330, 550-558.

J5 **Zou, S.**, Qin, M., Moreau, Y., He, Z.* Nutrient-energy-water recovery from synthetic sidestream centrate using a microbial electrolysis cell - forward osmosis hybrid system. *Journal of Cleaner Production*, **2017**, 154, 16-25.

J4 **Zou, S.** and He, Z.* Electrolysis-assisted mitigation of reverse solute flux in a three-chamber forward osmosis system. *Water Research*, **2017**, 115, 111-119.

J3 **Zou, S.**, Yuan, H., Childress, A.,* He, Z.* Energy consumption by recirculation: a missing parameter when evaluating forward osmosis. *Environmental Science & Technology*, **2016**, 50, 6827-6829

J2 **Zou, S.** and He, Z.* Enhancing wastewater reuse by forward osmosis with self-diluted commercial fertilizers as draw solutes. *Water Research*, **2016**, 99, 1, 235-243.

J1 **Zou, S.**, Yao, S., Ni, J.R.* High-efficient nitrogen removal by coupling enriched autotrophic-nitrification and aerobic-denitrification consortiums at cold temperature. *Bioresource Technology*, **2014**, 161, 288-296.

OTHER WRITING

Conference Proceedings

C13 Khosravi, A.,* Zulfeqar, N., **Zou, S.*** Evaluating Physicochemical Properties of Expansive Soils through Electrokinetic Conditioning. Transportation Research Board (TRB) Annual Meeting, Washington D.C., 2026.

C12 Bosman, A., Kerr, G., Bernegossi, A., Perez, M.,* **Zou, S.*** Evaluation of Nutrient Removal through Engineered Media Profiles and Implementation within an Infiltration Trench Testing Apparatus. Transportation Research Board (TRB) Annual Meeting, Washington D.C., 2026.

C11 Zulfeqar, N., **Zou, S.**,* Khrosravi, A.* Performance of MgCl₂ and CaCl₂ in Electrokinetic Nano-Stabilization of Expansive Soils. Geo-Congress 2026, Salt Lake City, UT, 2026

C10 Martinez-Vargas, D.R., **Zou, S.*** Electrografting EDTA on Glassy Carbon for Selective Heavy Metal Removal from Inland Reverse Osmosis Concentrates. 2025 ECS Meeting Proceedings, MA2025.

C9 Zulfeqar, N., **Zou, S.**,* Khrosravi, A.* Exploring Physicochemical Properties of Expansive Soils through Electro-Kinetic Conditioning. Geo-Congress 2025, Louisville, KY, 2025

C8 Xie, A., Martinez-Vargas, D.R., Yang, Z., **Zou, S.*** Energy-efficient selenate removal from impaired waters with TiO₂-assisted electrocatalysis. 2024 ECS Meeting Proceedings, MA2024.

C7 Yang, Z., Xie, A., **Zou, S.*** Treatment of Se-impacted wastewater using a 3-dimensional packed bed electrochemical reactor. 2024 ECS Meeting Proceedings, MA2024.

C6 Zulfeqar, N., **Zou, S.**,* Khrosravi, A.* Nanoparticle Mediated Soil Conditioning and Stability Enhancement: A Review of the Impacts on Hydro-Physico-Mechanical Characteristics. Geo-Congress 2024, Vancouver, 2024

C5 Zhao, J., Yang Z., Alderman, B., **Zou, S.*** Electrooxidation Pathway and Kinetics for Aminomethyl Phosphonic Acid (AMPA) Degradation in Diluted Water Matrices. 2022 ECS Meeting Abstract, MA2022-02, 1060.

C4 Yang, Z., Zhao, J., Sullivan, G., **Zou, S.*** Comprehensive Evaluation of Affordable Cathode Materials in Direct Electrochemical Selenite Reduction. 2022 ECS Meeting Proceedings, MA2022-02, 1044.

C3 **Zou, S.** and Mauter, M.S.* Direct Electrochemical Reduction to Separate Selenium from Industrially Impacted Water. 2021 AIChE Annual Meeting Proceedings, American Institute of Chemical Engineers, Boston, MA, 2021.

C2 **Zou, S.** and Mauter, M.S.* Electrochemical Selenium Remediation: Direct Reduction Pathways and System Optimization. 2021 ECS Meeting Proceedings, MA2021-02, 766

C1 **Zou, S.**, Smith, E.D., Martin, S., He, Z.* Mitigation of Bidirectional Solute Flux Via Membrane Surface Coating of Zwitterion Functionalized Carbon Nanotubes in Forward Osmosis Process. 2018 AIChE Annual Meeting, American Institute of Chemical Engineers, Pittsburgh, PA, 2018.

Book Chapters

B1 Jain, A., **Zou, S.**, He, Z. Integration of membranes into bioelectrochemical systems for enhanced treatment performance. *Current Trends and Future Developments on (Bio-) Membranes*, Elsevier, 2020.

INTELLECTUAL PROPERTY AND PATENTS

P5 **Zou, S.** and Yang, Z. Intercalative Method to Electrochemically Remove Selenium from Water. Provisional patent application, Auburn University, United States.

P4 Ni, J.R., **Zou, S.**, Yao, S. Application of psychrotolerant heterotrophic consortium capable of anoxic nitrogen removal in water treatment. Patent Number: CN 103342417 B, Peking University, China, 2014, Active till 2033.

P3 Ni, J.R., Yao, S., **Zou, S.** Application of psychrotolerant autotrophic nitrifying consortium in wastewater treatment. Patent Number: CN 103319000 B, Peking University, China, 2014, Active till 2033.

P2 Ni, J.R., Chen, Q., Fu, D., **Zou, S.** Application of Comamonas testosteroni with denitrification and dephosphorization function. Patent Number: CN 102531202 B, Peking University, China, 2013, Active till 2032.

P1 Chen, Q., Ni, J.R., **Zou, S.** Application of Achromobacter xylosoxidans with denitrification and dephosphorization function. Patent Number: CN 102533623 B, Peking University, China, 2013, Active till 2032.

GRANT AWARDS

Total involved grants: **\$ 11.80 million**

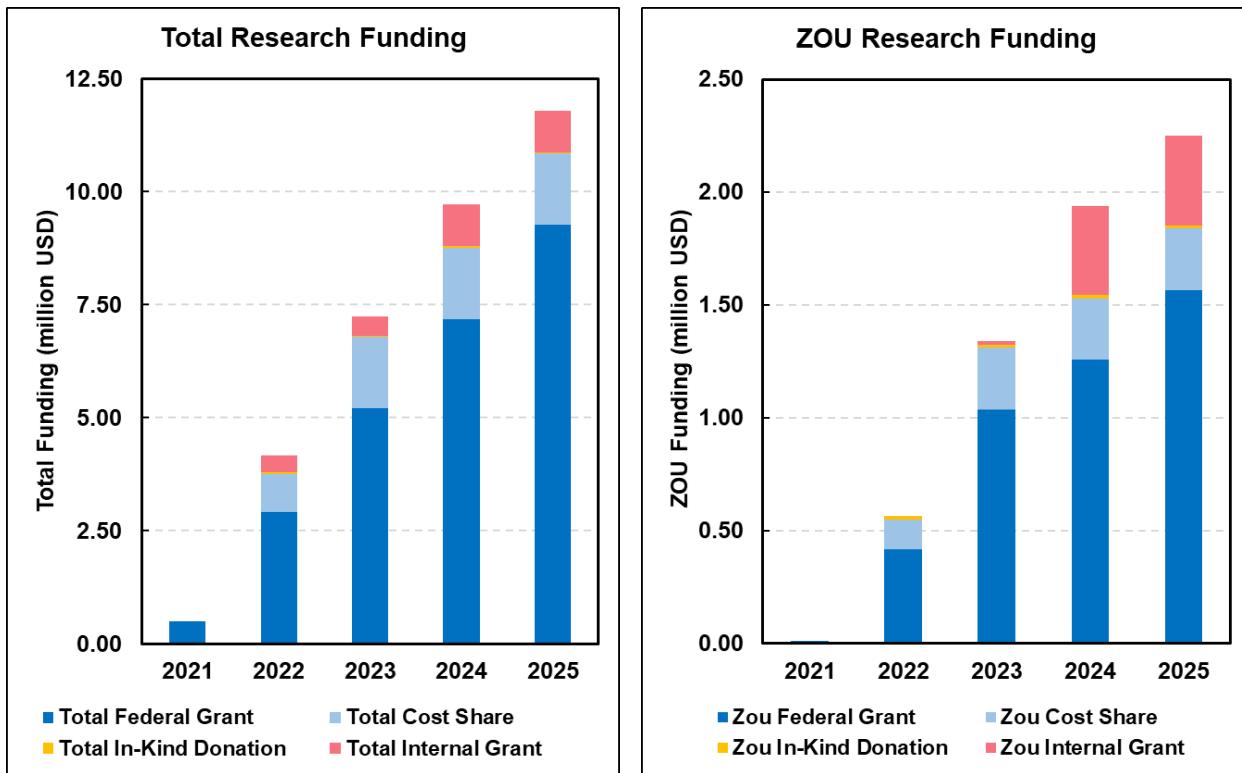
S. Zou as the PI (Auburn, Jan 2021 - July 2025): \$ 3.47 million

S. Zou's share (Auburn, Jan 2021 - July 2025): \$ 2.47 million

S. Zou as the PI (Michigan State, Aug 2025 - Present): \$ 0.44 million

S. Zou's share (Michigan State, Aug 2025 - Present): \$ 0.44 million

The figures below show a funding breakdown of all grant awards:



GRANT AWARDS (on which ZOU is the **Principal Investigator, PI** at Michigan State University or Auburn University)

Award Span	Grant Title	Agency	Investigators	Awards
Michigan State Grant Awards				
2026-2028	Transforming Agricultural Waste By-products into Sustainable Stormwater Nutrient Management Solutions (MSU subcontract PI)	U.S. Environmental Protection Agency (EPA); Gulf of America Division (GAD)	K. Venkiteshwaran (U of South Alabama, lead), B. Lohar, S. Wu (U of South Alabama), S. Zou (MSU PI), M. Perez (Auburn), E. Shim (NC State), K. Young (Wake Forest)	Michigan State: \$232,873 My share: 100% Total Award: \$1,999,986
2026-2027	Early-Career Research Fellowship, Offshore Energy Safety Track (Lead PI)	National Academies of Science, Engineering, and Medicine (NASEM), Gulf Research Program	S. Zou (MSU, lead)	Total Award: \$76,000 (F&A rate: 0%) My share: 100%
2026-2027	Direct Electrochemical PFAS Destruction for In Situ Regeneration of Spent Granular Activated Carbon (Lead PI, transferring)	Department of Defense (DOD), Strategic Environmental Research and Development Program (SERDP)	S. Zou (MSU, lead), D. Wang (U of Florida), C. Impellitteri (Water Tower)	Total Award: \$63,000 My share: 100%
2026	Development of a flow-through intensified electrodialysis (FIELD) system to manage inland reverse osmosis concentrate (Lead PI, transferring)	Department of Energy (DOE); National Alliance for Water Innovation (NAWI) Cost Share: California Department of Water Resources	S. Zou (MSU, lead), A. Jain (LBNL), H. Wang (Rice), J. Monnell (EPRI), C. Impellitteri (Water Tower)	Total Award: \$63,006 My share: 100%
Auburn University Grant Awards				
2025-2027	Direct Electrochemical PFAS Destruction for In Situ Regeneration of Spent Granular Activated Carbon (Lead PI)	Department of Defense (DOD), Strategic Environmental Research and Development Program (SERDP)	S. Zou (lead), D. Wang (U of Florida), C. Impellitteri (Water Tower)	Auburn: \$170,000 My share: 100% Total Award: \$250,000
2025-2027	Metal Speciation Analyzer: Advancing metal fingerprinting for the future development of the Center for Metal Sustainability (Lead PI)	Auburn University Mission Enhancement Fund	S. Zou (lead), L. Beckingham, J. Maxcy-Brown, N. Sharma, R. Wang, A. Wilson, Y. Olshansky, R. Prasad, H. Chen	Total Award: \$250,000 My share: 100%

2023-2025	Development of a flow-through intensified electrodialysis (FIELD) system to manage inland reverse osmosis concentrate (Lead PI)	Department of Energy (DOE); National Alliance for Water Innovation (NAWI) Cost Share: California Department of Water Resources	S. Zou (Auburn, lead), A. Jain (LBNL), H. Wang (Rice), J. Monnell (EPRI), C. Impellitteri (Water Tower)	Auburn: \$490,000 My share: 100% Total Award: \$1,492,000
2023-2026	Non-Woven Hybrid Geotextiles for Urban Stormwater Nutrient Management (Auburn subcontract PI)	U.S. Environmental Protection Agency (EPA); Gulf of Mexico Division (GMD)	K. Venkiteshwaran (U of South Alabama, lead), K. Young (Wake Forest), S. Zou (Auburn PI), M. Perez (Auburn co-PI), C. Kistler (Mobile Bay Keeper)	Auburn: \$420,000 My share: 60% Total Award: \$1,305,379
2022-2024	Direct electrochemical reduction of selenium to achieve A-PRIME water treatment (Auburn subcontract PI)	Department of Energy (DOE); National Alliance for Water Innovation (NAWI) Cost Share: California Department of Water Resources	A. Jain (LBNL, lead), W. Tong (LBNL), H. Wang (Rice), S. Zou (Auburn PI), and M.S. Mauter (Stanford)	Auburn: \$533,334 My share: 100% Total Award: \$2,513,334

GRANT AWARDS (on which ZOU is the **co-Principal Investigator, co-PI** at Michigan State University or Auburn University)

Award Span	Grant Title	Agency	Investigators	Awards
2024-2026	Innovate Alabama SBIR Phase II Supplemental Grant	Innovate Alabama	M. Perez (PI), S. Zou, W. Donald (co-PI)	\$125,485 My share: 15%
2024-2026	SBIR Phase II: Development of a self-contained electrocoagulation device to achieve stormwater water quality goals	Alabama Department of Transportation	M. Perez (PI), S. Zou, W. Donald (co-PI)	\$208,400 My share: 15%
2023-2027	Abiotic and Biotic Transformation of PFAS Precursors at Oxic-Anoxic Transition Zones in AFFF-Impacted Soil and Groundwater	Dept of Defense (DOD); Strategic Environmental Research and Development Program (SERDP)	D. Wang (PI), S. Zou, P.G. Tratnyek, Y. Men, D. Fan, A.S. Danko (co-PI)	\$1,394,747 My share: 1%

2023-2024	Innovate Alabama SBIR Supplemental Grant	Innovate Alabama	M. Perez (PI), S. Zou, W. Donald (co-PI)	\$37,582.35 My share: 15%
2023-2024	SBIR: Development of a self-contained electrocoagulation device to achieve stormwater water quality goals	Department of Transportation	M. Perez (PI), S. Zou, W. Donald (co-PI)	\$49,950 My share: 25%
2023-2024	Nano-conditioning of expansive soil using electroosmosis (Internal grant)	Auburn University Highway Research Center	A. Khosravi (PI), S. Zou (co-PI)	\$35,000 My share: 40%
2022-2024	Mission Enhancement Fund for Center for Ecotoxicology and Risk Assessment (Internal grant)	Auburn University	T. Hoang (PI), J. Tomasso, D. Wang, A. Wilson, A. Ojeda, P. Lotsch, J. Davis, S. Zou, D. Blersch (co-PI)	\$380,000 My share: 1%
2022-2026	A “trap-and-zap” technology for cost-effective removal and destruction of aqueous-phase per-and polyfluoroalkyl substances at DOD sites	Dept of Defense (DOD); Strategic Environmental Research and Development Program (SERDP)	D. Zhao (PI), S. Zou, L. Blaney (co-PI)	\$750,000 My share: 1%
2021-2024	Assessing nutrient cycling and food safety of poultry processing wastewater for irrigation in controlled-environment agriculture	United States Department of Agriculture (USDA); National Institute for Food and Agriculture (NIFA)	B. Higgins (PI), D. Wells, D. Bourassa, R. Prasad, S. Zou (co-PI)	\$499,576 My share: 3%
2020-2024	Development of predictive tools for assessment of natural attenuation capacity and treatment transition at chlorinated solvent sites	Dept of Defense (DOD); Strategic Environmental Research and Development Program (SERDP)	N. Capiro (PI), S. Zou (Auburn), M. Widdowson (VT), K. Pennell (Brown)	\$1,051,986 My share: 1%

STUDENT ADVISING

Post-Doctoral Advisees

Michigan State University

2 Dr. David Ricardo Martínez Vargas, Civil and Environmental Engineering

- Ph.D. in Environmental Sciences, Instituto Potosino de Investigación Científica y Tecnológica
- Michigan State University, Fall 2025 - present

- Auburn University, Fall 2023 - Summer 2025
- 1 Dr. Ao Xie, Civil and Environmental Engineering
 - Ph.D. in Environmental Engineering and Science, Clemson University
 - Michigan State University, Fall 2025 - present
 - Auburn University, Summer 2022 - Summer 2025

Ph.D. Dissertation Chairs (Primary Advisees)

Michigan State University

- 6 Wenbin (Cody) Li, Civil and Environmental Engineering, Michigan State University
 - Incoming Ph.D. student
 - Michigan State University, Fall 2026
- 5 Yiqian Chen, Civil and Environmental Engineering, Michigan State University
 - Incoming Ph.D. student
 - Michigan State University, Fall 2026
- 4 Jiagen Geng, Civil and Environmental Engineering, Michigan State University
 - Dissertation title: In Progress
 - Charles E. Gavin Fellowship
 - Michigan State University, Fall 2025 - present
 - Auburn University, Fall 2023 - Summer 2025
- 3 Jiaxiang Zhao, Civil and Environmental Engineering, Michigan State University
 - Dissertation title: In Progress
 - Student Travel Award, The Electrochemical Society, 2022
 - Alabama-Mississippi Water Conference Student Poster Competition winner, 2022
 - Michigan State University, Fall 2025 - Spring 2026
 - Auburn University, Fall 2021 - Summer 2025
- 2 Zilan Yang, Civil and Environmental Engineering, Michigan State University
 - Dissertation title: In Progress
 - Michigan State University, Fall 2025 - Spring 2026
 - Auburn University, Summer 2021 - Summer 2025
 - Student Travel Award, Association of Environmental Engineering and Science Professors, 2023
 - 100+ Women Strong Leadership Award, 2023
 - Alabama-Mississippi Section of the American Water Works Association Scholarship, 2023
 - Honorable Mention, Graduate Engineering Research Showcase, 2021
 - Walt and Virginia Woltosz Fellowship
 - Alabama-Mississippi Water Conference Student Poster Competition winner, 2021

Auburn University

- 1 Najibullah Zulfeqar, Civil and Environmental Engineering, Auburn University
 - Dissertation title: In Progress
 - Auburn University, Spring 2023 - Spring 2026

Other Doctoral Students (with whom I serve as an Advisory Committee member)

Michigan State University

- 9 N/A
- Auburn University**
- 8 Megan Armstrong, Auburn University
 - Primary Advisor: Michael Perez
 - Department: Civil and Environmental Engineering
- 7 Vivian Chimezie Usha, Auburn University
 - Primary Advisor: Hossein Jahromi
 - Department: Biosystems Engineering
- 6 Ziteng Song, Auburn University
 - Primary Advisor: Yaniv Olshansky
 - Department: Crop, Soil & Environmental Sciences

5 Mohammad Kariminasab, Auburn University
o Primary Advisor: Lauren Beckingham
o Department: Civil and Environmental Engineering

4 Mohammad Hossein Mehdi Pour, Auburn University
o Primary Advisor: Cassandra Porter
o Department: Chemical Engineering

3 Abdullah Al Nahian, Auburn University
o Primary Advisor: Lauren Beckingham
o Department: Civil and Environmental Engineering

2 Matthew F. Gladfelter, Auburn University
o Primary Advisor: Alan Wilson
o Department: School of Fisheries, Aquaculture, and Aquatic Sciences

1 Sheng Dong, Auburn University
o Primary Advisor: Natalie Capiro
o Department: Civil and Environmental Engineering

Other Doctoral Students (with whom I serve as a University Reader)

Michigan State University

5 N/A

Auburn University

4 Rezoanul Islam, Chemistry and Biochemistry, Auburn University
o Primary Advisor: Byron Farnum
o Dissertation title: Role of Solvent Coordination and Ligand Structure on the Electrochemical Redox Cycle of Nickel (II) bis(dithiocarbamate) Complexes for Energy Storage Applications
o Next Position: Postdoctoral Scholar, UNC-Greensboro

3 Antara Mazumder, Chemical Engineering, Auburn University
o Primary Advisor: Bryan Beckingham
o Dissertation title: Multi-component Transport Through Acrylate Based Side Chain Containing Membranes
o Next Position: Postdoctoral Scholar, Georgia Tech

2 Md Monir Hossain, Industrial and Systems Engineering, Auburn University
o Primary Advisor: Gregory Purdy
o Dissertation title: Integration of lean and industry 4.0 for smart manufacturing
o Next Position: Faculty member in Bangladesh

1 Jung Min (Luca) Kim, Chemical Engineering, Auburn University
o Primary Advisor: Bryan Beckingham
o Dissertation title: Understanding multi-solute transport behavior in ion exchange membranes and developing novel ion exchange membranes
o Next Position: Postdoctoral Scholar, Chemical Engineering, University of Virginia

Master Thesis Chairs (* indicates co-authorship on a peer-reviewed publication)

Michigan State University

3 N/A

Auburn University

2 Aline Christine Bernegossi, Auburn University
o Department: Civil and Environmental Engineering
o Duration: Spring 2024 - Summer 2025

1 Lingyang Chu,* Auburn University
o Department: Civil and Environmental Engineering
o Duration: Fall 2023 - Spring 2025

Master Non-Thesis Chairs

Michigan State University

1 David Olawale, Civil and Environmental Engineering, Michigan State University
o Duration: Fall 2025 - Fall 2026

Other Master Students (with whom I serve as an Advisory Committee Member)

Michigan State University

5 N/A

Auburn University

- 4 Carey Clark, Civil and Environmental Engineering, Auburn University, Summer 2023
 - Primary Advisor: Mark Barnett
 - Thesis title: A Case Study of Uniontown, Alabama's Spray Field: A Failing Land Application within the Black Belt of Alabama
- 3 Elnur Jabiyev, Chemical Engineering, Auburn University, Spring 2023
 - Primary Advisor: Cassandra Porter
 - Thesis title: Green TEAM: Surface-Initiated Free Radical Polymerization of Tethered Electrolyte Active-Layer
- 2 Spencer Cothran, Civil and Environmental Engineering, Auburn University, Spring 2023
 - Primary Advisor: Natalie Capiro
 - Thesis title: Assessment of Bioenhanced Back Diffusion and Reductive Dehalogenase Gene Abundance in an Aquifer Cell Packed with Heterogeneous Soils
- 1 Najibullah Zulfeqar, Civil and Environmental Engineering, Auburn University, Fall 2022
 - Primary Advisor: Dongye Zhao
 - Thesis title: A “concentrate-&-degrade” technology for cost-effective adsorption and photodegradation of per- and polyfluoroalkyl substances in municipal landfill leachate
 - Fulbright Program (Afghanistan)

Undergraduate Advisee (* indicates co-authorship on a peer-reviewed publication)

Michigan State University

- 12 Ashton Vogel, Civil and Environmental Engineering, Michigan State University
 - Major: Environmental Engineering
 - ENE Honors Student
 - Duration: Fall 2025 - Spring 2026
- 11 Mackenzie Voss, Civil and Environmental Engineering, Michigan State University
 - Major: Environmental Engineering
 - ENE Honors Student
 - Duration: Fall 2025

Auburn University

- 10 Caroline Torres, Civil and Environmental Engineering, Auburn University
 - Duration: Spring 2025
- 9 Evan Segrest, Biomedical Sciences, Auburn University
 - Duration: Fall 2024 - Spring 2025
- 8 T. Excie Guillot, Civil and Environmental Engineering, Auburn University
 - Duration: Spring 2024
- 7 Jacob Hurst, Civil and Environmental Engineering, Auburn University
 - Duration: Fall 2023
- 6 Hannah Schmucker, Chemical Engineering, Auburn University
 - Duration: Fall 2023
- 5 Garrett Huddleston, Civil and Environmental Engineering, Auburn University
 - Duration: Summer 2023 - Fall 2023
- 4 Phoebe Judkins, Civil and Environmental Engineering, Auburn University
 - Duration: Spring 2023 - Spring 2024
- 3 Zetong Li, Civil and Environmental Engineering, Auburn University
 - Duration: Fall 2022
- 2 Brandon Alderman, * Civil and Environmental Engineering, Auburn University
 - Duration: Spring 2022 - Spring 2023
- 1 E. Graf Sullivan, * Civil and Environmental Engineering, Auburn University
 - Duration: Spring 2021 - Spring 2022

- Auburn CEE Stone Leadership Awards

K-12 Students**Michigan State University**

2 N/A

Auburn University

1 Benjamin Tzou, Rising Senior, Auburn High School, Summer 2022

INVITED SEMINAR, LECTURE, AND WORKSHOP PRESENTATIONS

I17 *Electrifying Engineered Systems for Environmental Resilience and Circular Economy. Invited seminar at Michigan State University*, East Lansing, MI, 2025

I16 *Translating electroplating knowledge to tackle aquatic selenite pollution. Invited seminar at North Dakota State University*, Fargo, ND, 2023

I15 *Electrifying the wastewater treatment to sustainably extract value-added resources. Invited seminar at Marquette University*, Milwaukee, WI, 2023

I14 *NAWI NextGen Panel Discussion: Early-Career Professors. Invited panelist at NAWI NextGen Career Workshop*, Online Event, 2022.

I13 *Electrooxidation Pathway and Kinetics for Aminomethyl Phosphonic Acid (AMPA) Degradation in Diluted Water Matrices. Invited talk at 242nd ECS Meeting*, Atlanta, GA, 2022

I12 *Harnessing Electric Driving Force to Recover NEW Resources from Wastewater, Invited seminar at Ohio University*, Athens, OH, 2022

I11 *Advancing forward osmosis for energy-efficient wastewater treatment towards enhanced water reuse and resource recovery, Invited talk at Southeastern Regional Meeting of the American Chemical Society (SERMACS)*, Birmingham, AL, 2021.

I10 *Direct electrochemical reduction to separate selenium from industrially impacted water, Invited talk at 2021 AIChE Annual Meeting*, Boston, MA, 2021.

I9 *Harnessing electric driving force to recover NEW resources from wastewater, Invited seminar at Georgia Tech*, Atlanta, GA, 2021

I8 *Electrochemical Selenium Remediation: Direct Reduction Pathways and System Optimization, Invited talk at 240th ECS Meeting*, Orlando, FL, 2021.

I7 *How to Standout in the Interview, Preparing Future Faculty Workshop, Invited panelist at Auburn University*, Auburn, AL, 2021 Spring and Fall.

I6 *Harnessing electric driving forces for energy-efficient NEW resource recovery from wastewater, Invited talk at University of Toronto*, Canada, 2020. (Delivered virtually due to COVID-19)

I5 *Osmotic, electric, and biologic driving forces to recover NEW resource from wastewater, Invited talk at Auburn University*, Auburn, AL, 2020. (Delivered virtually due to COVID-19)

I4 *Advancing Forward Osmosis for Non-Potable Water Reuse: Opportunities, Challenges, and Perspectives, Invited talk at Carnegie Mellon University*, Pittsburgh, PA, 2019.

I3 *Energy analysis of bioelectrochemical systems, Invited lecture at University of Tampere (Finland)*, 2018.

I2 *Advancing forward osmosis for energy-efficient wastewater treatment towards enhanced water reuse, Invited lecture at University of Tampere*, Finland, 2018.

I1 *Optimizing forward osmosis process for enhanced water reuse, Invited talk at Nanjing Agricultural University*, China, 2018.

GENERAL CONFERENCE PRESENTATIONS

(* denotes the presenting author; underline denotes students and postdocs primarily advised by S. Zou)

Oral Presentation

O39 Shiqiang Zou,* David Ricardo Martinez Vargas, Dengjun Wang, Christopher Impellitteri. Direct electrochemical PFAS destruction for in-situ regeneration of spent granular activated carbon. SERDP & ESTCP PFAS Project Meeting, online, 2026

O38 **Shiqiang Zou**, Anubhav Jain, Haotian Wang, Jason Monnell, Chris Impellitteri, Jiaxiang Zhao,* David Ricardo Martinez Vargas, Duo Wang, Sushanth Ashokkumar. *Development of a Flow-through Intensified EElectroDialysis (FIELD) system to manage inland reverse osmosis concentrate*. NAWI annual project meeting, online, 2025.

O37 David Ricardo Martinez Vargas,* **Shiqiang Zou**. *Electrografting EDTA on Glassy Carbon for Selective Heavy Metal Removal from Inland Reverse Osmosis Concentrates*. 248th ECS Meeting, Chicago, IL, 2025.

O36 Ao Xie,* Zilan Yang, David Ricardo Martinez Vargas, **Shiqiang Zou**. *Three-dimensional packed-bed electrochemical reactor for selenite removal and recovery from FGD wastewater*. AEESP Research and Education Conference, Duke University, Durham, NC, 2025.

O35 **Shiqiang Zou,* David Ricardo Martinez Vargas**. *Selective Electrochemical Heavy Metal Removal from Reverse Osmosis Concentrates via EDTA-grafted Glassy Carbon Electrodes*. AEESP Research and Education Conference, Duke University, Durham, NC, 2025.

O34 **Shiqiang Zou,* Thomas Igou,* National Alliance for Water Innovation's Efforts in Electrified Treatment of Selenium-Impaired Wastewaters**. Water Environment Federation Joint Conference: Residuals & Biosolids and Innovations in Treatment Technology, Baltimore, MD, 2025.

O33 Jiaxiang Zhao,* David Ricardo Martinez Vargas, **Shiqiang Zou**. *Electrooxidation of PFAS in simulated liquid waste streams: Water matrix effects and energy efficiency*. American Chemical Society Spring 2025 Meeting & Expo, San Diego, CA, 2025.

O32 Jiagen Geng,* David Ricardo Martinez Vargas, Ao Xie, Aline Christine Bernegossi, **Shiqiang Zou**. *Electrocoagulation treatment of 6PPD and 6PPD-quinone in the stormwater runoff*. American Chemical Society Spring 2025 Meeting & Expo, San Diego, CA, 2025.

O31 **Shiqiang Zou,* Anubhav Jain, Haotian Wang, Jason Monnell, Chris Impellitteri, Jiaxiang Zhao, David Ricardo Martinez Vargas**, Duo Wang, Sushanth Ashokkumar. *Development of a Flow-through Intensified EElectroDialysis (FIELD) system to manage inland reverse osmosis concentrate*. NAWI annual project meeting, Denver, CO, 2025.

O30 Ao Xie,* Anubhav Jain, Wei Tong, Haotian Wang, Shiqiang Zou, Meagan Mauter, Jason Monnell, Duo Wang, Shengcun Ma, Shaoyun Hao, Zilan Yang, Charlie Merriam. *Direct electrochemical reduction of selenium to achieve A-PRIME water treatment*. NAWI annual project meeting, Denver, 2025.

O29 Najibullah Zulfeqar,* Ali Khosravi, Shiqiang Zou. *Evaluating Physiochemical Properties of Expansive Soils through Electrokinetic Conditioning*. InterPore2025 Conference, Albuquerque, NM, 2025.

O28 Najibullah Zulfeqar,* Ali Khosravi, Shiqiang Zou. *Transformative Effects of Nano-MgO Integration in Electrokinetic Soil Conditioning: A Systematic Analysis of Expansive Clay Stabilization*. InterPore2025 Conference, Albuquerque, NM, 2025.

O27 Anubhav Jain,* Wei Tong, Haotian Wang, **Shiqiang Zou**, Meagan Mauter, Jason Monnell, Duo Wang, Shengcun Ma, Shaoyun Hao, Ao Xie, Zilan Yang, Charlie Merriam. *Direct electrochemical reduction of selenium to achieve A-PRIME water treatment*. NAWI annual project meeting, online, 2024.

O26 **Shiqiang Zou,* Anubhav Jain, Haotian Wang, Jason Monnell, Chris Impellitteri, Jiaxiang Zhao, David Ricardo Martinez Vargas**, Duo Wang, Sushanth Ashokkumar. *Development of a Flow-through Intensified EElectroDialysis (FIELD) system to manage inland reverse osmosis concentrate*. NAWI fall project meeting, online, 2024.

O25 Zilan Yang,* Ao Xie, Shiqiang Zou. *Treatment of Se-impacted wastewater using a 3-dimensional packed bed electrochemical reactor*. EPRI Selenium Summit, Dublin, Ireland, 2024.

O24 Ao Xie,* David Ricardo Martinez-Vargas, Zilan Yang, Shiqiang Zou. *Energy-efficient selenate removal from impaired waters with TiO₂-assisted electrocatalysis*. 245th ECS Meeting, San Francisco, CA, 2024.

O23 Zilan Yang,* Ao Xie, Shiqiang Zou. *Treatment of Se-impacted wastewater using a 3-dimensional packed bed electrochemical reactor*. 245th ECS Meeting, San Francisco, CA, 2024.

O22 David Ricardo Martinez Vargas,* Shiqiang Zou. *Metal recovery from reverse osmosis concentrates*. AL/ML Water Conference, Mobile, AL, 2024.

O21 Duo Wang,* Anubhav Jain, Wei Tong, Haotian Wang, **Shiqiang Zou**, Meagan Mauter, Jason Monnell, Shengcun Ma, Shaoyun Hao, Ao Xie, Zilan Yang, Charlie Merriam. *Direct electrochemical reduction of selenium to achieve A-PRIME water treatment*. NAWI annual project meeting, Denver, CO, 2024.

O20 **Shiqiang Zou,* Anubhav Jain, Haotian Wang, Jason Monnell, Chris Impellitteri, Jiaxiang Zhao, David Ricardo Martinez Vargas**, Duo Wang, Sushanth Ashokkumar. *Development of a Flow-through Intensified EElectroDialysis (FIELD) system to manage inland reverse osmosis concentrate*. NAWI annual project meeting, Denver, CO, 2024.

O19 Dengjun Wang,* Jianzhou He, Ziteng Song; Chongyang Wang, Lingyang Chu, and **Shiqiang Zou**. *Biochar and Surfactant Synergistically Enhanced PFAS Destruction in UV/Sulfite System at Neutral pH*. Thirteenth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Denver, CO, 2024.

O18 Anubhav Jain,* Wei Tong, Haotian Wang, **Shiqiang Zou**, Meagan Mauter, Jason Monnell, Duo Wang, Shengcun Ma, Shaoyun Hao, Ao Xie, Zilan Yang, Charlie Merriam. *Direct electrochemical reduction of selenium to achieve A-PRIME water treatment*. NAWI annual project meeting, Online, 2023.

O17 Ao Xie,* Shiqiang Zou. *Electrocalaytic selenate reduction and removal using commercial and easily synthesized catalysts*. EPRI Selenium Summit, 2023.

O16 Jiaxiang Zhao,* Shiqiang Zou. *A stepwise potential fast chronoamperometry technique to degrade aminomethyl phosphonic acid (AMPA)*. AEESP 2023, AEESP Research and Education Conference, Boston, MA, 2023

O15 Zilan Yang,* Shiqiang Zou. *Translating electroplating knowledge to tackle aquatic selenite pollution*. AEESP 2023, AEESP Research and Education Conference, Boston, MA, 2023

O14 **Shiqiang Zou**.* *Electricity generation from waste heat of wastewater using a thermoelectric generator*. AL/ML Water Conference, Mobile, AL, 2023.

O13 Jiaxiang Zhao,* Zilan Yang, Brandon Alderman, Shiqiang Zou. *Electrooxidation pathway and kinetics for aminomethyl phosphonic acid (AMPA) degradation in diluted water matrices*. AL/ML Water Conference, Mobile, AL, 2023.

O12 Zilan Yang,* Jiaxiang Zhao, Graf Sullivan, Shiqiang Zou. *Direct electrochemical reduction of selenite*. AL/ML Water Conference, Mobile, AL, 2023.

O11 Anubhav Jain,* Wei Tong, Haotian Wang, **Shiqiang Zou**, Meagan Mauter, Jason Monnell, Duo Wang, Shengcun Ma, Shaoyun Hao, Ao Xie, Zilan Yang, Charlie Merriam. Direct electrochemical reduction of selenium to achieve A-PRIME water treatment. NAWI annual project meeting, Denver, CO, 2023.

O10 Zilan Yang,* Jiaxiang Zhao, Graf Sullivan, Shiqiang Zou. *Comprehensive Evaluation of Affordable Cathode Materials in Direct Electrochemical Selenite Reduction*. EPRI Selenium Summit, 2022.

O9 Zilan Yang, Jiaxiang Zhao, Graf Sullivan, Shiqiang Zou.* *Comprehensive Evaluation of Affordable Cathode Materials in Direct Electrochemical Selenite Reduction*. 242nd ECS Meeting, Atlanta, GA, 2022.

O8 **Shiqiang Zou**. *Advancing Forward Osmosis for Decentralized Wastewater Treatment towards Non-potable Water Reuse*. AL/ML Water Conference, Mobile, AL, 2022.

O7 **Shiqiang Zou*** and Meagan Mauter. Managing Aquatic Selenium Pollution through Direct Electrochemical Reduction. 2021 ACS Fall Meeting, American Chemical Society, Atlanta, GA, 2021.

O6 **Shiqiang Zou***. Managing Aquatic Selenium Pollution through Direct Electrochemical Reduction. AL/ML Water Conference, Mobile, AL, 2021.

O5 **Shiqiang Zou*** and Zhen He. *Efficiently “Pumping Out” Value-added Resources from Wastewater by Bioelectrochemical Systems: A Review from Energy Perspective*, WaterJAM 2018, VA AWWA/VWEA Joint Annual Meeting, Virginia Beach, VA, 2018.

O4 **Shiqiang Zou*** and Zhen He. *Advancing Forward Osmosis for Energy-Efficient Wastewater Treatment towards Enhanced Water Reuse*, AWWA Annual Conference and Exposition 2018, American Water Works Association, Las Vegas, NV, 2018

O3 **Shiqiang Zou*** and Zhen He. *Nutrient-Energy-Water Recovery from Sidestream Centrate via Microbial Electrolysis Cell - Forward Osmosis Hybrid System*, AWWA Annual Conference and Exposition 2018, American Water Works Association, Las Vegas, NV, 2018

O2 **Shiqiang Zou*** and Zhen He. *Advancing forward osmosis for energy-efficient wastewater treatment towards enhanced water reuse*, WaterJAM 2017, VA AWWA/VWEA Joint Annual Meeting, Hampton, VA, 2017.

O1 **Shiqiang Zou*** and Zhen He. *NEW recovery from sidestream centrate via a microbial electrolysis cell — forward osmosis hybrid system*, 2nd International Resource Recovery Conference, International Water Association, New York, NY, 2017

Poster Presentation

P47 Aidan Bosman,* Grace Kerr, Aline Bernegrossi, Shiqiang Zou, Michael Perez. *Evaluation of Nutrient Removal through Engineered Media Profiles and Implementation within an Infiltration Trench Testing Apparatus*. Transportation Research Board (TRB) 2026 Annual Meeting, Washington D.C., 2026.

P46 Ali Khosravi,* Najibullah Zulfeqar, Shiqiang Zou. *Evaluating Physicochemical Properties of Expansive Soils through Electrokinetic Conditioning*. Transportation Research Board (TRB) 2026 Annual Meeting, Washington D.C., 2026.

P45 **Shiqiang Zou,* David Ricardo Martinez Vargas, Dengjun Wang, Christopher Impellitteri.** Direct electrochemical PFAS destruction for in-situ regeneration of spent granular activated carbon. SERDP & ESTCP PFAS Project Meeting, Long Beach, CA, 2025

P44 **Jiagen Geng,* Aline Bernegossi, Shiqiang Zou.** Evaluating the resistance of Rudbeckia hirta and Rumex crispus to 6-PPDquinone and their potential use for runoff phytoremediation. AEESP Research and Education Conference, Duke University, Durham, NC, 2025.

P43 **Ao Xie,* David Ricardo Martinez Vargas, Zilan Yang, Shiqiang Zou.** Efficient selenate removal from impaired waters with TiO₂-assisted electrocatalysis. AEESP Research and Education Conference, Duke University, Durham, NC, 2025.

P42 **Jiagen Geng,* David Ricardo Martinez Vargas, Ao Xie, Aline Bernegossi, Shiqiang Zou.** Electrocoagulation-enhanced removal of 6PPD and 6PPD-Quinone in stormwater runoff. AEESP Research and Education Conference, Duke University, Durham, NC, 2025.

P41 Anubhav Jain, Wei Tong, Haotian Wang, **Shiqiang Zou**, Meagan Mauter, Jason Monnell, Duo Wang, Shengcun Ma, Shaoyun Hao, Ao Xie, Zilan Yang, Laxmicharan Samineni.* Direct electrochemical reduction of selenium to achieve A-PRIME water treatment. NAWI annual project meeting, Denver, CO, 2025.

P40 **Shiqiang Zou**, Anubhav Jain, Haotian Wang, Jason Monnell, Chris Impellitteri, Jiaxiang Zhao, David Ricardo Martinez Vargas,* Duo Wang, Sushanth Ashokkumar. Development of a Flow-through Intensified EElectroDialysis (FIELD) system to manage inland reverse osmosis concentrate. NAWI annual project meeting, Denver, CO, 2025.

P39 Najibullah Zulfeqar,* Ali Khosravi, Shiqiang Zou. Nano-Enhanced Electrokinetic Conditioning of Expansive Soils Using MgO Nanoparticles. Auburn University Research Symposium, AL, 2025.

P38 Ao Xie,* David Ricardo Martinez Vargas, Zilan Yang, Shiqiang Zou. Electrocatalytic selenate reduction and removal using commercial and easily synthesized catalysts. AEESP Distinguished Lecture Series, Georgia Tech, GA, 2024.

P37 Zilan Yang,* Ao Xie, Shiqiang Zou. Electrified selenium management towards a circular selenium economy. AEESP Distinguished Lecture Series, Georgia Tech, GA, 2024.

P36 Aline Christine Bernegossi,* Jiagen Geng, Shiqiang Zou. Enhancing Phosphorus Capture in Hybrid Geotextile Field Experiments. AEESP Distinguished Lecture Series, Georgia Tech, GA, 2024.

P35 Najibullah Zulfeqar,* Garrett Huddleston, Ali Khosravi, Shiqiang Zou. Nano-conditioning of expansive soil using electro-kinetics. AEESP Distinguished Lecture Series, Georgia Tech, GA, 2024.

P34 David Ricardo Martinez Vargas,* Shiqiang Zou. Flow-through Intensified ElectroDialysis (FIELD) System to Manage Inland Brine. AEESP Distinguished Lecture Series, Georgia Tech, GA, 2024.

P33 Jiagen Geng,* Megan Armstrong, Michael Perez, Shiqiang Zou. Electrocoagulation of the tire wear particle-derived 6PPD & 6PPD quinone in the urban runoff. AL/ML Water Conference, Mobile, AL, 2024.

P32 Aline Christine Bernegossi,* Jiagen Geng, Shiqiang Zou. Enhancing phosphorus capture: Preliminary ideas for hybrid geotextile field experiments. AL/ML Water Conference, Mobile, AL, 2024.

P31 Tamino Shoeffer,* Shiqiang Zou. Titanium mining in the Okefenokee: Assessing aquatic environmental impact. AL/ML Water Conference, Mobile, AL, 2024.

P30 Najibullah Zulfeqar,* Garrett Huddleston, Ali Khosravi, Shiqiang Zou. Nano-conditioning of expansive soil using electro-kinetics. AL/ML Water Conference, Mobile, AL, 2024.

P29 Phoebe Judkins,* Zilan Yang, Shiqiang Zou. An electrochemical platform to manage aquatic selenium pollution. AL/ML Water Conference, Mobile, AL, 2024.

P28 Ao Xie,* Shiqiang Zou. Combining biochemical and electro- driving forces to extract precious metals in urban mining. Rice University, 2024 NA-ISMET Conference, International Society of Microbial Electrochemical Technology, Houston, TX, 2024.

P27 **Shiqiang Zou, Anubhav Jain, Haotian Wang, Jason Monnell, Chris Impellitteri, Jiaxiang Zhao, David Ricardo Martinez Vargas*, Duo Wang, Sushanth Ashokkumar.** Development of a Flow-through Intensified EElectroDialysis (FIELD) system to manage inland reverse osmosis concentrate. NAWI annual project meeting, Denver, CO, 2024.

P26 Anubhav Jain, Wei Tong, Haotian Wang, **Shiqiang Zou**, Meagan Mauter, Jason Monnell, Duo Wang,* Shengcun Ma, Shaoyun Hao, Ao Xie,* Zilan Yang, Charlie Merriam. Direct electrochemical reduction of selenium to achieve A-PRIME water treatment. NAWI annual project meeting, Denver, CO, 2024.

P25 Ao Xie,* Shiqiang Zou. Electrocatalytic selenate reduction and removal using commercial and easily synthesized catalysts. AEESP Distinguished Lecture Series, Clemson, SC, 2024

P24 Zilan Yang*, **Shiqiang Zou**. Translating electroplating knowledge to tackle aquatic selenite pollution. AEESP Distinguished Lecture Series, Clemson, SC, 2024.

P23 Najibullah Zulfeqar*, Rayees Ahmad Rather, **Shiqiang Zou**, Dongye Zhao. A concentrate & destroy technology for removal and destruction of municipal landfill leachate. AEESP Distinguished Lecture Series, Clemson, SC, 2024.

P22 Dengjun Wang*, Ansley Hamid, Lingyang Chu, **Shiqiang Zou**. Phosphorus Removal by Cost-Effective Gypsum from Water. AGU 23, American Geophysical Union, San Francisco, CA, 2023.

P21 Ao Xie*, **Shiqiang Zou**. Precision selenate management in the aquatic environment: Need, challenges, and opportunities. AEESP 2023, AEESP Research and Education Conference, Boston, MA, 2023

P20 Jiaxiang Zhao*, Zilan Yang, **Shiqiang Zou**. Electrochemical degradation of aminomethyl phosphonic acid (AMPA) in water matrices. 26th Triennial Borchardt Conference, Ann Arbor, MI, 2023.

P19 Zilan Yang*, Ao Xie, **Shiqiang Zou**. Precision electrochemical management of selenium in the aquatic environment: Needs, challenges, and opportunities. 26th Triennial Borchardt Conference, Ann Arbor, MI, 2023.

P18 Ao Xie*, **Shiqiang Zou**. Precision selenate management in aquatic environment: Need, challenges, and opportunities. AL/ML Water Conference, Mobile, AL, 2023.

P17 Najibullah Zulfeqar*, Rayees Ahmad Rather, **Shiqiang Zou**, Dongye Zhao. A concentrate & destroy technology for removal and destruction of municipal landfill leachate. AL/ML Water Conference, Mobile, AL, 2023.

P16 Anubhav Jain, Wei Tong, Haotian Wang, **Shiqiang Zou**, Meagan Mauter, Jason Monnell, Duo Wang, * Shengcun Ma, Shaoyun Hao, Ao Xie, Zilan Yang, Charlie Merriam. Direct electrochemical reduction of selenium to achieve A-PRIME water treatment. NAWI annual project meeting, Denver, CO, 2023.

P15 Jiaxiang Zhao*, Zilan Yang, Brandon Alderman, **Shiqiang Zou**. Electrochemical pathway and kinetics of aminomethyl phosphonic acid (AMPA). Sustainable Phosphorus Summit, Raleigh, NC, 2022.

P14 **Shiqiang Zou***, Zilan Yang, Graf Sullivan, Jiaxiang Zhao. Harnessing electric driving force to manage aquatic selenium pollution. AEESP 2022, AEESP Research and Education Conference, St. Louis, MO, 2022

P13 Jiaxiang Zhao*, Zilan Yang, Brandon Alderman, **Shiqiang Zou**. Electrochemical oxidation of organophosphorus herbicide in aquatic environment. AL/ML Water Conference, Mobile, AL, 2022.

P12 Zilan Yang*, Jiaxiang Zhao, Graf Sullivan, **Shiqiang Zou**. An electrochemical platform to manage aquatic selenium pollution. Graduate Engineering Research Showcase, College of Engineering, Auburn University, AL, 2021.

P11 Jiaxiang Zhao*, Zilan Yang, **Shiqiang Zou**. Managing phosphorus at its aquatic sink using an electrochemical adsorption system. Graduate Engineering Research Showcase, College of Engineering, Auburn University, AL, 2021.

P10 Zilan Yang*, Jiaxiang Zhao, Graf Sullivan, **Shiqiang Zou**. An electrochemical platform to manage aquatic selenium pollution. AL/ML Water Conference, Mobile, AL, 2021.

P9 **Shiqiang Zou*** and Zhen He. *Towards Sustainable Desalination: Mitigation of Bidirectional Solute Flux in Forward Osmosis Process*, AWWA Annual Conference and Exposition 2019, American Water Works Association, Denver, CO, 2019

P8 **Shiqiang Zou**,* Ethan Smith, Stephen Martin, Zhen He. *Mitigation of Bidirectional Solute Flux in Forward Osmosis via Surface Coating of Zwitterion Functionalized Carbon Nanotubes*, AEESP 2019, AEESP Research and Education Conference, Tempe, AZ, 2019

P8 **Shiqiang Zou**, Ethan Smith,* Stephen Martin, Zhen He. *Mitigation of Bidirectional Solute Flux in Forward Osmosis via Surface Coating of Zwitterion Functionalized Carbon Nanotubes*, AIChE Annual Meeting, American Institute of Chemical Engineers, Pittsburgh, PA, 2018

P7 Daniele Ceconet,* **Shiqiang Zou**, Andrea G. Capodaglio, Zhen He. *Evaluation of Energy Consumption of Treating Nitrate-Contaminated Groundwater by Bioelectrochemical Systems*, 4th ISMET European Meeting, Newcastle, England, 2018

P6 **Shiqiang Zou*** and Zhen He. *Towards Sustainable Desalination: Mitigation of Bidirectional Solute Flux in Forward Osmosis Process*, WaterJAM 2018, VA AWWA/VWEA Joint Annual Meeting, Virginia Beach, VA, 2018.

P5 **Shiqiang Zou**,* Eurydice Kanimba, Thomas E Diller, Zhiting Tian, Zhen He. *Direct electricity generation from waste heat in water via thermoelectric generator*, AWWA Annual Conference and Exposition 2018, American Water Works Association, Las Vegas, NV, 2018

P4 **Shiqiang Zou*** Eurydice Kanimba, Thomas E Diller, Zhiting Tian, Zhen He. *Direct electricity generation from waste heat in water via thermoelectric generator*, WaterJAM 2017, VA AWWA/VWEA Joint Annual Meeting, Hampton, VA, 2017.

P3 **Shiqiang Zou*** and Zhen He. *Electrolysis-assisted mitigation of reverse solute flux in a three-chamber forward osmosis system*, AEEPS 2017, AEEPS Research and Education Conference, Ann Arbor, MI, 2017

P2 **Shiqiang Zou*** and Zhen He. *Nutrient-Energy-Water recovery from synthetic sidestream centrate using a microbial electrolysis cell - forward osmosis hybrid system*, Borchardt 2017 Conference, 24th Triennial Symposium on Advancements in Water and Wastewater, Ann Arbor, MI, 2017

P1 **Shiqiang Zou*** and Zhen He. *Closed-loop nutrient-energy-water (NEW) recovery from synthetic sidestream centrate using a microbial electrolysis cell - forward osmosis hybrid system*, WaterJAM 2016, VA AWWA/VWEA Joint Annual Meeting, Virginia Beach, VA, 2016.

PROFESSIONAL LEADERSHIP AND SERVICE

Review Activity (> 100 reviews)

Regularly peer review for *Nature Water*, *Water Research*, *Environmental Science & Technology*, *ACS Sustainable Chemistry & Engineering*, *ACS ES&T Water*, *ACS ES&T Engineering*, *ACS Applied Materials & Interfaces*, *Science of the Total Environment*, *Journal of Membrane Science*, *Desalination*, *Environmental Science: Water Research & Technology*, *Journal of Hazardous Materials*, *Resources, Conservation & Recycling*, *Journal of Environmental Management*, *Journal of Cleaner Production*, *Langmuir*, *Bioresource Technology*, *Water Science & Technology*, *Chemosphere*, *International Journal of Hydrogen Energy*, *RSC Advances*, *Electrochimica Acta*, *Water Environment Research*, *Environmental Engineering Science*, *Separation and Purification Technology*, *Advanced Powder Technology*, *Desalination and Water Treatment*, and *Trends in Food Science & Technology*.

Grant Review Panelist

USDA McIntire-Stennis Program	2025
University of Wisconsin Sea Grant College Program	2023
Environmental Research & Education Foundation	2022
State of Wisconsin Groundwater Research and Monitoring Program	2022
National Science Foundation CBET Division	2021-present

Conference Organizing and Services

Michigan State University

Session Organizer, Electrified Wastewater Management, ACS 2026 Fall Meeting	2026
Workshop Organizer, IWA Leading Edge Technology (IWA-LET) 2026	2026
Conference Organizer and Abstract Reviewer, 27th Triennial Borchardt Conference	2025-2026

Auburn University

Session Organizer, Electrified Resource Recovery and PFAS Remediation, Water Environment Federation Residuals & Biosolids and Innovation in Treatment Technology Joint Conference	2025
Session Chair, Resource Recovery from Waste Streams, AEEPS 2025	2025
Session Chair, I06- Energy Conversion Based on Nutrients, 247 th ECS Meeting	2025
Session Organizer, Electrified Wastewater Management, ACS 2025 Spring Meeting	2025
Conference abstract reviewer, WEF Innovation in Treatment Technology 2025	2024
Session Chair, Z03- Electrochemical Recovery of Critical Materials, 245 th ECS Meeting	2024
Session Chair, Electrified Membrane Processes, IWA Membrane Technology Conference	2023
Faculty Judge, AEEPS Student and Postdoc Poster Session	2023
Panelist, NAWI NextGen Panel Discussion: Early-Career Professors	2022
Session Chair, F02-Desalination and Water Treatment, 242 nd ECS Meeting	2022
Session Chair, F02-Element Recovery, 242 nd ECS Meeting	2022

Professional Societies

American Chemical Society (ACS)
The Electrochemical Society (ECS)
Water Environment Federation (WEF)
American Water Works Association (AWWA)

Association of Environmental Engineering & Science Professors (AEESP)
International Water Association (IWA)
International Society of Microbial Electrochemical Technologies (ISMET)
Chinese-American Professors in Environmental Engineering and Science (CAPEES)

Editorial Service

Associate Editor, Desalination and Water Treatment, Elsevier 2024-present

National Service

Michigan State Site Representative, National Alliance for Water Innovation 2025-present
Auburn Site Representative, National Alliance for Water Innovation 2022-2025

University Service

Michigan State University

N/A

Auburn University

Faculty Judge, Auburn Postdoctoral Research Symposium 2022
Faculty Judge, Auburn Research Symposium 2022-2025
Faculty Panelist, Preparing Future Faculty Workshop 2021-2025

College of Engineering Service

Michigan State University

N/A

Auburn University

Committee Member, College of Engineering Colloquium 2022-2025
Faculty Advisor, Engineers without Borders (domestic team) 2022-2023
Faculty Judge, Auburn Graduate Engineering Research Showcase 2022-2025

CEE Departmental Service

Michigan State University

Co-Faculty Advisor, Environmental Engineering Student Society (EES) 2025-present

Auburn University

Committee Member, CEE Graduate Program Committee 2024-2025
Committee Member, Environmental Faculty Search Committee 2023-2024
Committee Member, Environmental Faculty Search Committee 2022-2023
Faculty Advisor, Water and Environmental Student Association 2022-2025
Committee Member, CEE Computer Labs Committee 2021-2024
Committee Member, CEE Seminar Committee 2021-2024

TEACHING

Teaching Training and Professional Certification

ASCE ExCEEd Teaching Fellow, American Society of Civil Engineers 2023
New Faculty Scholar, Biggio Center, Auburn University 2021-2022
Preparing Future Professoriate Program, Virginia Tech 2016-2018
Engineering Futures Program, Tau Beta Pi Honor Society 2016-2018

Courses Taught at Michigan State University:

ENE 489 Air Pollution

○ Spring 2026 Student evaluation score: -/5.00

ENE 483 Water and Wastewater Engineering

○ Fall 2025 Student evaluation score: 4.33/5.00

Courses Taught at Auburn University:

CIVL5250/6250 Biological Principles of Environmental Engineering		
○ Spring 2025	Student evaluation score:	5.52/6.00
○ Spring 2024	Student evaluation score:	5.47/6.00
CIVL6970 Electrified Water Treatment		
○ Spring 2024	Student evaluation score:	5.61/6.00
○ Fall 2022	Student evaluation score:	5.52/6.00
CIVL7250 Biological Wastewater Treatment		
○ Fall 2024	Student evaluation score:	5.75/6.00
○ Spring 2023	Student evaluation score:	5.66/6.00
○ Spring 2022	Student evaluation score:	5.68/6.00
CIVL3010 Civil Engineering Analysis		
○ Spring 2025	Student evaluation score:	5.30/6.00
○ Fall 2023	Student evaluation score:	5.41/6.00
○ Spring 2023	Student evaluation score:	5.65/6.00
○ Spring 2022	Student evaluation score:	5.48/6.00
○ Spring 2021	Student evaluation score:	5.51/6.00

Courses Taught at Virginia Tech

CEE3010 Introduction to Environmental Engineering		
○ Spring 2019	Student evaluation score:	5.60/6.00

Guest Lectures

Auburn University	
○ Spring 2025	ENGR1110 Intro to Civil Engineering
○ Fall 2024	ENGR1110 Intro to Civil Engineering
○ Spring 2024	ENGR1110 Intro to Civil Engineering
○ Fall 2023	ENGR1110 Intro to Civil Engineering
○ Spring 2023	ENGR1110 Intro to Chemical Engineering
○ Fall 2022	ENGR1110 Intro to Civil Engineering
	ENGR1110 Intro to Chemical Engineering

Michigan State University

○ Fall 2022	ENE 481 Environmental Chemistry
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OUTREACH**MSU ENE Lunch & Learn Series**

○ Organizer and Host	2025-present
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MSU ENE Field Trips

○ Fall 2025	East Lansing Water Resource Recovery Facility (66 students) East Lansing-Meridian Water Treatment Plant (66 students) MSU T.B. Simon Power Plant (10 students)
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Senior Tigers Summer Camp

○ Summer 2023	30 high school rising seniors
○ Summer 2022	30 high school rising seniors

MEDIA COVERAGE

Michigan State University

- “The American Academy of Environmental Engineers and Scientists is proud to introduce the AAEES 40 Under 40 Recognition Program” November, 2025, American Academy of Environmental Engineers and Scientists <https://www.aaees.org/40under40>
- “Shiqiang Zou selected Early-Career Research Fellow for Gulf Research Program” September, 2025, Michigan State University <https://engineering.msu.edu/news-events/news/2025/09/19/shiqiang-zou-selected-early-career-research-fellow-for-gulf-research-program>
- “GRP Welcomes Early-Career Research Fellows in Offshore Energy Safety and Human Health and Community Resilience” Gulf Research Program, 2025 National Academy of Science, Engineering, and Medicine <https://www.nationalacademies.org/news/2025/09/grp-welcomes-early-career-research-fellows-in-offshore-energy-safety-and-human-health-and-community-resilience>
- “Welcoming 14 new faculty” September, 2025, Michigan State University <https://engineering.msu.edu/news-events/news/2025/09/17/welcoming-14-new-faculty>

Auburn University

- “Auburn Engineering recognizes outstanding students, faculty, staff, alumni at annual spring awards ceremony” May, 2025, Auburn University <https://eng.auburn.edu/news/2025/05/spring-awards-2025.html>
- “Civil and Environmental Engineering assistant professor receives grant to remove hazardous chemicals using electricity” April, 2025, Auburn University <https://eng.auburn.edu/news/2025/04/zou-pfas>
- “Auburn’s Water and Environmental Student Association (WESA) hosts process engineering modeling workshop with Hazen and Sawyer” Feb. 2025, The Wave (the official magazine of Alabama’s Water Environment Association) <https://www.kelmanonline.com/httpdocs/files/AWEA/thewave-winter2025/index.html>
- “CEE assistant professor and Stormwater Research Facility part of \$1.3M grant to safeguard Gulf Coast ecosystem” Sep, 2024, Auburn University <https://eng.auburn.edu/news/2023/09/stormwater-facility-gulf-coast-grant.html>
- “#GINNing Podcast: Brine of the Times” May, 2023, Auburn University <https://eng.auburn.edu/news/2023/05/ginning-podcast-nick-zou>
- “DOE, NAWI tap Auburn team for \$1.5M advance reverse osmosis brine management project” April, 2023, Auburn University. <https://www.eng.auburn.edu/news/2023/04/doe-nawi-grant-zou-team>
- “DOE Awards \$9 Million to 12 Projects to Advance Desalination and Water Reuse Technologies Across the U.S.” Mar, 2023, National Alliance for Water Innovation. <https://www.nawihub.org/doe-awards-9-million-to-12-projects-to-advance-desalination-and-water-reuse-technologies-across-the-u-s/>
- “DOE Awards \$9 Million to 12 Projects to Advance Desalination and Water Reuse Technologies Across the U.S.” Mar, 2023, Department of Energy. <https://www.energy.gov/eere/amo/doe-awards-9-million-12-projects-advance-desalination-and-water-reuse-technologies-across>
- “NAWI Member of the Month” Feb, 2023, National Alliance for Water Innovation. <https://mailchi.mp/lbl/february-nawi-dispatch?e=cc22ea0bce>
- “Civil and environmental engineering assistant professor receives grant to tackle selenium pollution in water” May 2, 2022, Auburn University. <https://eng.auburn.edu/news/2022/05/zou-selenium-pollution-in-water-grant>