

YUFEI AO

Email: ayfzoe@hotmail.com
<https://orcid.org/0000-0002-3602-2653>

Current Location:
GILBERT, ARIZONA

EDUCATION

- 2020 – May 2023** **Ph.D., Civil and Environmental Engineering at Virginia Polytechnic and State University, Blacksburg, VA**
Under the supervision of Professor Landon Marston, Ph.D., P.E..
Concentration: Environmental and Water Resources Engineering. Current GPA: 3.83 /4.00.
Dissertation title: *Quantifying the linkages between US' water resources and its production of food, energy, and water*
- 2017 - 2020:** **Ph.D. student, Civil Engineering at Kansas State University, Manhattan, KS**
Under the supervision of Professor Landon Marston, Ph.D., P.E..
Concentration: Water Resources Engineering. GPA: 3.90/4.00.
- 2017 – present:** **DataCamp, R Programming online courses for data science and data analysis**
- June 24-28, 2019** Agent Based Modeling Short Course at National Socio-Environmental Synthesis Center (SESYNC) selected cohort, Annapolis MD
Instructor: Dr. Nicholas Magliocca
- 2015 - 2017:** **M.Sc. in Civil Engineering at University of Illinois, Urbana-Champaign, IL**
Under the supervision of Professor Megan Konar, Ph.D.
Concentration: Environmental Hydrology and Hydraulic Engineering (non-thesis track).
GPA: 3.81/4.00
- 2012 - 2016:** **B.E. in Environmental Engineering at Zhejiang University, Hangzhou, China**
Under the supervision of Professors Xinhua Xu, Ph.D., and Xiaowu Tang, Ph.D..
Graduated with Chu Kochen Honors Degree. GPA: 3.86/4.00.
Senior design project with thesis: *Functionalized ferrous ferric oxide for the removal of heavy metal ions from aqueous solution*

APPOINTMENTS

- September 2023 - Current** **Postdoctoral Research Scholar, School of Sustainability, Global Futures Lab, Arizona State University**
Under the supervision of Professor. Jay Famiglietti
- August 2020 – May 2023** **Graduate Research Assistantship, Civil and Environmental Engineering at Virginia Polytechnic and State University**
Under the supervision of Professor Landon Marston.
- February 2019 – May 2020** **Rural Resource Resiliency (R3) National Science Foundation (NSF) Research Traineeship (NRT) Program at Kansas State University, 2019 Cohort**
Program mentors: Dr. Landon Marston, Dr. Nathan Hendricks, Dr. Jonathan Aguilar
Served as peer mentor for: Evan Heronemus
- 2017 – May 2020:** **Graduate Research Assistantship, Civil Engineering Department of Kansas State University**
Under the supervision of Professor Landon Marston.
- 2018 - 2019:** **Graduate Teaching Assistantship, Civil Engineering Department of Kansas State University**
CE550 Water Resources Engineering [lab section]: Fall 2018 (67 students); Fall 2019 (43 students), under the supervision of Professor Landon Marston

- Responsibilities: developing lab documents, teaching lab, holding office hours and review sessions, grading exams and lab reports, leading lecture while the instructor was out of town

CE552 Hydraulic Engineering [one of the two lab sections]: Spring 2019 (54 students), under the supervision of Professor Weston Koehn

- Responsibilities: developing lab documents, teaching lab, holding office hours, grading homework assignments and lab reports, coordinating with instructor in the classroom

2018 - 2019

Serving as research mentor for undergraduate researcher, Civil Engineering Department of Kansas State University

- Responsibilities: training undergraduate researcher(s) in conducting data collection, data processing and data analysis tasks, including providing guidance in initiating data search, calibrating models, debugging, and answering related questions

PEER-REVIEWED PUBLICATIONS

- **Ao, Y. Z.**, Siddik, M. A. B., Konar, M., & Marston, L. T. (2024) Watersheds and Infrastructure Providing Food, Energy, and Water to US Cities, *Earth's Future*, 12, e2023EF004258. <https://doi.org/10.1029/2023EF004258>
- Richter, B.D., Prunes, E., Liu, N., Caldwell, P., Wei, D., Davis, K.F., Sandoval-Solis, S., Herrera, G.R., Rodriguez, R.S., **Ao, Y.** and Lamsal, G., 2024. Opportunities for Restoring Environmental Flows in the Rio Grande–Rio Bravo Basin Spanning the US–Mexico Border. *Journal of Water Resources Planning and Management*, 150(2), p.04023079.
- Richter, B. D., **Ao, Y.**, Lamsal, G., Wei, D., Amaya, M., Marston, L., & Davis, K. F. (2023). Alleviating water scarcity by optimizing crop mixes. *Nature Water*, 1(12), 1035-1047.
- **Yufei Zoe Ao**, Bakar Siddik, M. A., Konar, M., & Marston, L. T. (2023) Food, energy, and water production within watersheds of the United States. *Water Resources Research*, e2022WR034031.
- **Ao, Y. Z.**, Hendricks, N. P., & Marston, L. T. (2021). Growing farms and groundwater depletion in the Kansas High Plains. *Environmental Research Letters*, 16(8), 084065.
- Landon Marston, **Yufei Ao**, Megan Konar, Mesfin M. Mekonnen and Arjen Y. Hoekstra (2018), High-resolution water footprints of production of the United States. *Water Resources Research*. 54(3), 2288-2316. doi:10.1002/2017WR021923

PAPERS IN PROGRESS

- Tyler Sharretts, Piyush Mehta, Tariq Ali, **Yufei Zoe Ao**, Davide Danilo Chiarelli, Qinyu Deng, Landon Marston, Maria Cristina Rulli, Marta Tuninetti, Wei Xie, Kyle Frankel Davis, Deepening water scarcity in breadbasket nations, *Nature Communications* (under Review)
- Will Tysinger, Chung-Yi Lin, **Yufei Zoe Ao**, Landon Marston, Food supplies and demand reliant on large irrigation dams (in preparation)

PRESENTATIONS

- *“Conceptualization of a water footprint label (WaFL) for food in the United States”*, Poster Presentation (Selected) at National Sustainability Society 2024 Inaugural Fall Meeting, September 9-11th, 2024, Seattle WA
- *“Mapping the flows of Food, Energy, and Water supplies to US Cities via infrastructure”*, Oral Presentation (Invited) (first author but not presenter of), American Geophysical Union 2023 Fall Meeting, San Francisco CA
- *“Direct and indirect watershed dependencies of US Cities”*, Poster Presentation (Selected) at American Society of Civil Engineering’s 2022 World Environmental & Water Resources Congress, Atlanta GA

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- *“Growing farms and groundwater depletion in the Kansas High Plains”*, Invited Oral Presentation (virtual) at Environmental and Water Resources Seminar Series at The Charles Edward Via, Jr. Department of Civil and Environmental Engineering at Virginia Tech, September 24th, 2021
 - *“Feedbacks between increasing farm size and groundwater depletion”*, Oral Presentation (Selected) at American Geophysical Union 2019 Fall Meeting, San Francisco CA
 - *“Feedbacks between increasing farm size and groundwater depletion”*, (first author but not presenter of) Poster at American Geophysical Union 2019 Chapman Conference: Quest for Sustainability of Heavily Stressed Aquifers at Regional to Global Scales, Valencia, Spain
 - *“Farm consolidation reduces groundwater irrigation rates: Empirical evidence from the Kansas High Plains Aquifer Region”*, Poster Presentation (Selected) at American Geophysical Union 2018 Fall Meeting, Washington DC
 - *“Farm consolidation reduces groundwater irrigation intensity: Empirical evidence from the Kansas High Plains Aquifer Region”*, Poster Presentation (Selected) at 2018 Kansas Governor’s Water Conference, Manhattan, Kansas
 - *“High-Resolution Water Footprints of Production of the United States”*, Poster Presentation (Selected) at 2018 SESYNC Symposium: Boundary Spanning: Advances in Socio-Environmental Systems Research, Annapolis Maryland
 - *“High-Resolution Water Footprints of Production of the United States”*, Poster Presentation (Selected) at 2017 Kansas Governor’s Water Conference, Manhattan, Kansas
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HONORS AND AWARDS

2022	Virginia Tech Graduate and Professional Student Senate Spring 2022 Travel Fund Program (TFP) award (\$750)
2020	2020-2021 School Year Kansas State University Robert I-Jen and Sophia Shui-Kan Jung Graduate Scholarship in Engineering (selected to receive) (\$6,000)
2019	Rural Resource Resiliency (R3) National Science Foundation Research Traineeship (NRT) at Kansas State University Travel Award (\$500)
2019	Kansas State University Graduate Student Council (GSC) Travel Award for December (\$400)
2019	Global Food Systems (GFS) Initiative Summer Stipend Awardee (\$7,000)
2018	Kansas State University Graduate Student Council (GSC) Travel Award for December (\$450)
2018	Foundation of Food and Agricultural Research (FFAR) Fellowship Finalist Round (11 out of 110+) - Research & Professional Development Category
2013, 2014, 2015	Scholarship of Academic Excellence (top 15% GPA in Honors College) of Zhejiang University
2015	Scholarship of Excellent Holistic Performance of Zhejiang University

SERVICES AND OUTREACH

Journal Reviewer Duties	Advances in Water Resources: June 2020 – November 2020 Water Resources Research: September 2021 (Invited), November 2023-April 2024
July 22nd, 2024	President’s Council of Advisors on Science and Technology (PCAST) Workshop: Safeguarding America’s Groundwater Security: Addressing Challenges and Risks, note-taker and local on-site coordinator for

	breakout group “water governance and incentives”, Arizona State University, Tempe AZ USA
November 2023	Guest Module Educator for Fall 2023 SOS 598 Water Sustainability: Challenges and Solutions (instructor host: Dr. James Famiglietti)
January 2017	Fundamentals of Engineering (FE) Examination (Civil) passed, verification link: https://account.ncees.org/rn/1756133-973692-bfccfbb
August 2019 - February 2020	Domestic Project Team member, Engineers Without Borders Student Chapter at Kansas State University
February 2019 - May 2020	Water Resources Representative, Civil Engineering Graduate Student Council, Dept of Civil Engineering, Kansas State University
February 2019	Volunteer at Kansas State University Engineering Career Fair
April 2016 and April 2017	IWRA Illinois Water Day at University of Illinois, Urbana-Champaign Role in organization team: logistics committee chairman (2016), logistics committee member (2017)
April 2016	Boneyard Creek Community Clean-up volunteer, Champaign IL
March 2016	Trail Restoration Volunteer at Buffalo National River Park, Arkansas
January-July 2016	Volunteer at Champaign County Humane Society, Illinois
July-September 2014	Student Coordinator and Program Participant, Summer Exchange Program, University of California, Davis

SKILLS

Selected Skill Assessment available: <https://www.linkedin.com/in/yufei-ao-62677b24b/details/skills/>

Fundamentals of Engineering (FE) Examination (Civil) passed: <https://account.ncees.org/rn/1756133-973692-bfccfbb>

Languages	Chinese (native speaker, reader, and writer) English (fluent in speaking, reading, and writing) German (beginner in speaking, reading, and writing)
Research skills	data processing; data analysis; data visualization; research design, writing and presentation; public communication; basic economics analysis; water footprint accounting and modeling
Data analysis and data visualization Modeling	Microsoft Excel; R Programming; ArcMap ArcMap; MATLAB; R Programming (RStudio); HEC-HMS; HEC-RAS; Vensim (basics); NetLogo (basics)
Other software	Microsoft Word; Microsoft Powerpoint; Zotero; Mendeley; iMovies; see additional software skills at the end of Pg2

ADDITIONAL SOFTWARE SKILLS AT LIMITED CAPACITY

OriginPro (visualization), GAMS (optimization modeling), FERUM (risk analysis/modeling), C (basic), Python (basic), SQL (basic), VisualAEM (groundwater modeling), NetLogo (agent-based modeling basics), SciLab (groundwater analytical modeling)