

# ANNIKA HJELMSTAD

PhD Candidate

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## EDUCATION

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2020 - 2025	<b>Ph.D. Civil and Environmental Engineering</b> Hydrology and Water Resources 08/2023: Advanced to candidacy	University of California Irvine
May 2020	<b>M.S. Civil, Environmental, and Sustainable Engineering</b> Hydrosystems Engineering Master's thesis: Propagation of Radar Rainfall Uncertainties into Urban Flood Predictions: An Application in Phoenix, AZ	Arizona State University
Dec 2018	<b>B.S.E. Civil Engineering (Environmental Engineering)</b> Minor: Mathematics Honors thesis: Effect of Drought Policies on Los Angeles Water Demand	Arizona State University

## EXPERIENCE

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9/2020 - present	<b>Graduate Student Researcher</b> • Research topic: Impact-based attribution of extreme events. • Advisor: Dr. Amir AghaKouchak • Applied for & received funding from multiple fellowships, see "Awards & Fellowships."	University of California Irvine
8/2019 - 8/2020	<b>Graduate Service Assistant</b> • Project: "Assessing the Accuracy of Multi-Radar/Multi-Sensor (MRMS) Precipitation Estimates in the Phoenix Metropolitan Area to Support Flash Flood Warning Operations." Pls: Giuseppe Mascaro (ASU), Larry Hopper Jr. and Paul Iñiguez (National Weather Service). • Project "FloodAware: Community-Based Automated Information for Urban Flooding." Pls: Drs. Mikhail Chester, Giuseppe Mascaro, Margaret Garcia	Arizona State University
4/2018 - 8/2020	<b>Research Aide, NEWT (Nanotechnology-Enabled Water Treatment) Center</b> • Laboratory work performing column tests for removal of arsenic and per-fluorinated chemicals. • Sorption modeling in MATLAB and MINEQL+. • PI: Dr. Paul Westerhoff.	Arizona State University
5/2019 - 8/2019	<b>Graduate Teaching Assistant</b> • CEE 321: Structural Analysis and Design. Assisted students during recitations. Held office hours. Gave lecture on the direct stiffness method for beams. Instructor: Dr. Kristen Ward. • CEE 341: Fluid Mechanics for Civil Engineers. Ran lab section, held office hours. Instructor: Naushita Sharma. • CEE 212: Engineering Mechanics II-Dynamics. Assisted students in recitation. Instructor: Dr. Efthalia Chatziefstratiou.	Arizona State University
1/2019 - 5/2019	<b>Grader</b> • CEE 441: Water Resources Engineering. Graded student homework and exams. Instructor: Dr. Giuseppe Mascaro.	Arizona State University
1/2018 - 12/2018	<b>Undergraduate Research Assistant</b> • Worked on mathematical modeling project exploring factors affecting water demand for Los Angeles. • Learned and used R for data analysis, multiple linear regression modeling, and spatial interpolation of data. • Advisor: Dr. Margaret Garcia	Arizona State University
1/2018 - 5/2018	<b>Engineering Tutor</b> • Assisted students in tutoring center with civil engineering coursework at all undergraduate levels in the Fulton Schools of Engineering Tutoring Centers.	Arizona State University
8/2016 - 12/2018	<b>Undergraduate Teaching Assistant</b> • FSE 100 (Introduction to Engineering, 1 semester). Assisted instructor during labs. • CEE 212 (Engineering Mechanics II-Dynamics, 4 semesters). Provided tutorial assistance to students during problem-solving recitations. • CEE 213 (Introduction to Deformable Solids, 1 semester). Provided tutorial assistance to students during problem-solving recitations.	Arizona State University

4/2018 - 8/2020 **Student Worker, Hayden Library**

Arizona State University

- Clerical work, customer service duties.
- Assisted library patrons in finding research materials.

9/2015 - 12/2015 **Professional Tutor**

Dorrance Scholarship Programs

- Courses: CHM 114 (General Chemistry for Engineers at ASU).
- Tutored a student one-on-one to prepare for exams and labs.

## PEER-REVIEWED PUBLICATIONS

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1. AghaKouchak, A., Huning, L. S., Sadegh, M., Qin, Y., Markonis, Y., Vahedifard, F., ... **Hjelmstad, A.**, ... & Kreibich, H. (2023). Toward impact-based monitoring of drought and its cascading hazards. *Nature Reviews Earth & Environment*, 4(8), 582-595.
2. **Hjelmstad, A.**, Shrestha, A., Garcia, M., & Mascaro, G. (2021). Propagation of radar rainfall uncertainties into urban pluvial flood modeling during the North American monsoon. *Hydrological Sciences Journal*, 66(15), 2232-2248.
3. Zeng, C., Atkinson, A., Sharma, N., Ashani, H., **Hjelmstad, A.**, Venkatesh, K., & Westerhoff, P. (2020). Removing per- and polyfluoroalkyl substances from groundwaters using activated carbon and ion exchange resin packed columns. *AWWA Water Science*, 2(1).

## PRESENTATIONS AND CONFERENCE PAPERS

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1. **Hjelmstad, A.**, & AghaKouchak, A. (2023, June). Attribution of Sea-Level Rise-Induced Roadway Flooding to Anthropogenic Emissions [Oral presentation and poster]. CUAHSI Biennial Colloquium, Tahoe City, California. (Presented)
2. **Hjelmstad, A.**, & AghaKouchak, A. (2022, December). Impact-Based Attribution of Heatwaves [Oral presentation]. American Geophysical Union Fall Meeting 2022, Session GC56A: Detection and Attribution of Anthropogenic Climate Change and Extreme Weather and Climate Events, Chicago, Illinois. (Presented)
3. **Hjelmstad, A.**, & AghaKouchak, A. (2021, December). Impact-Based Attribution of Extreme Events [Poster]. American Geophysical Union Fall Meeting 2021, Session GC022: Climate Litigation Relevant Research: Hazards, Impacts, and Attribution Science, Virtual. (Presented)
4. **Hjelmstad, A.**, Shrestha, A., Garcia, M., Hopper Jr., L., Iniguez, P., Mascaro, G. (2021, January). Propagation of Radar Rainfall Uncertainty into Urban Flood Predictions during the North American Monsoon. Poster presented at the meeting of the 101st American Meteorological Society Annual Meeting, 35th Conference on Hydrology, Virtual. (Presented)
5. Zeng, C., Sharma, N., **Hjelmstad, A.**, Venkatesh, K., & Westerhoff, P. (2019, August). Removal of perfluoroalkyl substances (PFASs) in groundwater using activated carbon and ion exchange resin: Column test [Oral Presentation]. American Chemical Society Fall 2019 National Meeting & Expo, San Diego, California.
6. **Hjelmstad, A.**, Garcia, M., Larson, K. (2019, May). Effect of Drought Policies on Los Angeles Water Demand [Poster]. ASCE EWRI World Environmental Resources Conference, Pittsburgh, PA. (Presented)
7. **Hjelmstad, A.**, Garcia, M., & Larson, K. (2019). Effect of Drought Policies on Los Angeles Water Demand. *World Environmental and Water Resources Congress 2019* 239. In *World Environmental and Water Resources Congress 2019* (pp. 239-250). Posters & Presentations

## SERVICE

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8/2022 - present	<b>Officer, CEE Graduate Association (CEEGA)</b>	University of California Irvine
5/2022 - present	<b>Student representative</b> CEE Graduate Affairs Committee	University of California Irvine
10/2021 - present	<b>Student Advisory Board member</b> Center for Environmental Health Disparities Research	University of California Irvine
9/2021 - present	<b>Co-created and co-lead UCI seminar Social Justice in CEE</b> Fall 2021, Spring 2023 quarters	University of California Irvine
1/2021 - present	<b>Officer and founding member</b> Reframing CEE at UCI (CEER)	University of California Irvine
5/2021 - 12/2022	<b>Graduate student representative</b> Diversity, Equity, and Inclusion Committee	University of California Irvine

## AWARDS & FELLOWSHIPS

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5/2023	<b>EPA Environmental Justice Video Challenge for Students Phase II, 1st place</b> Submission title: Civic Bioremediation: Building a Network of Soil Practitioners	University of California Irvine
7/2022	<b>EPA Environmental Justice Video Challenge for Students Phase I, 1st place</b> Submission title: Unearthing Lead: The Power of Historical Maps	University of California Irvine
6/2022	<b>Awarded UCI-Engineering LANL Fellowship</b>	University of California Irvine
6/2021, 6/2023	<b>Awarded Ridge to Reef and UCI Graduate Division fellowship</b>	University of California Irvine
Spring 2020	<b>Awarded Provost PhD Fellowship</b>	University of California Irvine
5/2019	<b>3rd place, Poster Competition</b>	ASCE-EWRI Conference
12/2018	<b>Leadership and Service Award</b> Civil, Environmental, and Sustainable Engineering	Arizona State University
2015 - 2018	<b>Dean's list, Fulton Schools of Engineering</b> Awarded FA15, FA16, FA17, SP18, FA18 semesters.	Arizona State University

## CERTIFICATIONS

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3/2019	<b>Passed Fundamentals of Engineering (FE Civil) exam.</b>
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## TECHNICAL SKILLS

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- Programming in MATLAB, R, and Python
- Statistical analysis
- Basic lab work skills
- Microsoft Office (proficient in Excel, PowerPoint, Word)