



## Sarah Fletcher

Assistant Professor of Civil and Environmental Engineering and Center Fellow at the Woods Institute for the Environment

 Curriculum Vitae available Online

### CONTACT INFORMATION

- **Administrator**

Geoffrey Tuttle - Program Administrator

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### Bio

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#### BIO

The Fletcher lab aims to advance water resources management to promote resilient and equitable responses to a changing world. We study water resources and climate change adaptation from a socio-technical systems perspective. Research integrates methods from hydrology, policy analysis, and data science to inform decision-making around critical environmental challenges. Recent and planned projects include: adaptive and modular water infrastructure planning under uncertainty; resilient and sustainable drought planning; integrated climate mitigation and adaptation planning; and integrating equity and justice measures into water resource systems analysis.

#### ACADEMIC APPOINTMENTS

- Assistant Professor, Civil and Environmental Engineering
- Center Fellow, Stanford Woods Institute for the Environment

#### HONORS AND AWARDS

- 1st Place Doctoral Thesis, Academic Achievement Award, American Water Works Association (2019)
- Editor's Choice Paper, Journal of Water Resources Planning and Management (2018)
- Best Presentation, Technology Management and Policy Consortium (2017)
- Outstanding Student Paper Award, AGU (2017)
- Outstanding Student Paper Award, AGU (2016)
- Graduate Research Fellowship, National Science Foundation (2015)
- Best Thesis, MIT Technology and Policy Program (2012)

#### PROFESSIONAL EDUCATION

- BA, University of Pennsylvania , Physics; Economics (2010)
- MS, Massachusetts Institute of Technology , Technology and Policy (2012)
- PhD, Massachusetts Institute of Technology , Engineering Systems (2018)

## LINKS

- <https://fletcherlab.science>: <https://fletcherlab.science>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

The Fletcher lab aims to advance water resources management to promote resilient and equitable responses to a changing world. We study water resources and climate change adaptation from a socio-technical systems perspective. Research integrates methods from hydrology, policy analysis, and data science to inform decision-making around critical environmental challenges. Recent and planned projects include: adaptive and modular water infrastructure planning under uncertainty; resilient and sustainable drought planning; integrated climate mitigation and adaptation planning; and integrating equity and justice measures into water resource systems analysis.

## Teaching

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### COURSES

#### 2023-24

- Citizenship in the 21st Century: COLLEGE 102 (Win)
- Stochastic Hydrology: CEE 266F (Win)

#### 2022-23

- Addressing deep uncertainty in systems models for sustainability: CEE 366A (Win)
- Water Resources Systems Analysis: CEE 266G (Aut)

#### 2021-22

- Stochastic Hydrology: CEE 266F (Win)
- Water Resources Systems Analysis: CEE 266G (Aut)

#### 2020-21

- Stochastic Hydrology: CEE 266F (Win)

### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Riley Post

#### Doctoral Dissertation Advisor (AC)

Jenny Skerker, Keani Willebrand, Mofan Zhang

#### Master's Program Advisor

Tanya Arora, Ananya Jain, Astrid Li, Mayuri Namasivayam, Adria Nyarko

#### Doctoral (Program)

Aniket Verma, Keani Willebrand, Mofan Zhang

## Publications

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### PUBLICATIONS

- **Multi-scale planning model for robust urban drought response** *ENVIRONMENTAL RESEARCH LETTERS*  
Zaniolo, M., Fletcher, S., Mauter, M. S.

2023; 18 (5)

- **Equity in Water Resources Planning: A Path Forward for Decision Support Modelers** *JOURNAL OF WATER RESOURCES PLANNING AND MANAGEMENT*  
Fletcher, S., Hadjimichael, A., Quinn, J., Osman, K., Giuliani, M., Gold, D., Figueroa, A., Gordon, B.  
2022; 148 (7)
- **Multicriteria, Multiresolution Modeling of Suburban Residential Landscape Alternatives: Water-Efficient Villas in the Arid Middle East** *JOURNAL OF URBAN PLANNING AND DEVELOPMENT*  
Birge, D., Fletcher, S., Siddiqi, A., Al Sumaiti, A., Wescoat, J. L.  
2022; 148 (2)
- **Spatiotemporal monsoon characteristics and maize yields in West Africa** *ENVIRONMENTAL RESEARCH COMMUNICATIONS*  
Shiu, J., Fletcher, S., Entekhabi, D.  
2021; 3 (12)
- **Joint inference of CFC lifetimes and banks suggests previously unidentified emissions.** *Nature communications*  
Lickley, M., Fletcher, S., Rigby, M., Solomon, S.  
2021; 12 (1): 2920
- **The COVID-19 lockdowns: a window into the Earth System** *NATURE REVIEWS EARTH & ENVIRONMENT*  
Diffenbaugh, N. S., Field, C. B., Appel, E. A., Azevedo, I. L., Baldocchi, D. D., Burke, M., Burney, J. A., Ciais, P., Davis, S. J., Fiore, A. M., Fletcher, S. M., Hertel, T. W., Horton, et al  
2020; 1 (9): 470-481