



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

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

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

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

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