Stanford



Catherine Callas

Postdoctoral Scholar, Energy Science and Engineering

Bio

BIO

Catherine Callas is a Postdoc in the Benson Lab. She received her Ph.D. in Energy Resources Engineering. She obtained her M.S. degree in the Atmosphere and Energy program within Civil and Environmental Engineering from Stanford University and a B.S. degree in Chemical Engineering from Brown University. Before attending Stanford, she worked at Goldman Sachs within the Fixed Income group.

HONORS AND AWARDS

- Schneider Fellow, NRDC (2019)
- Emerging Energy Fellow, Exxon Mobil (2020)
- Centennial Teaching Assistant Award, Stanford University (2021)
- Best Paper Award for the paper “CCSNet: A deep learning modeling suite for CO2 storage", The Applied Energy Symposium: MIT “A+B” (2022)
- High Impact Technology Fund Award, Stanford OTL (2023)
- EnergyTech University Prize, Department of Energy Office of Fossil Energy and Carbon Management (2024)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , ERE-PHD (2026)
- Master of Science, Stanford University , CEE-MS (2020)
- M.S., Stanford University , Civil and Environmental Engineering (2020)
- B.S., Brown University , Chemical Engineering (2015)

STANFORD ADVISORS

- Sally Benson, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **The Impact of Methane Co-Injection on Plume Migration for Carbon Storage** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
  Callas, C., Benson, S. M., Orr Jr, F. M.
  2026; 155
- **Sensitivity of multiphase flow behaviour to experimental methodology in laboratory core flooding** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
  Spurin, C., Callas, C., Kurotori, T., Tchelepi, H. A., Benson, S. M.
  2026; 151

- **Criteria and workflow for selecting saline formations for carbon storage** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
  Callas, C., Davis, J., Saltzer, S. D., Hashemi, S. S., Wen, G., Gold, P. O., Zoback, M. D., Benson, S. M., Kovscek, A. R.
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- **Assessing the impact of dip angle on carbon storage in saline reservoirs to aid site selection** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
  Callas, C., Kovscek, A. R., Benson, S. M.
  2023; 129
- **Criteria and workflow for selecting depleted hydrocarbon reservoirs for carbon storage** *APPLIED ENERGY*
  Callas, C., Saltzer, S. D., Davis, J., Hashemi, S. S., Kovscek, A. R., Okoroafor, E. R., Wen, G., Zoback, M. D., Benson, S. M.
  2022; 324
- **Assessment of oil and gas fields in California as potential CO2 storage sites** *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*
  Kim, T., Callas, C., Saltzer, S. D., Kovscek, A. R.
  2022; 114
- **CCSNet: A deep learning modeling suite for CO2 storage** *ADVANCES IN WATER RESOURCES*
  Wen, G., Hay, C., Benson, S. M.
  2021; 155
- **The impact of wildfires and beneficial electrification on electricity rates in PG&E's service territory** *The Electricity Journal*
  Hay, C., Chhabra, M.
  2020; 33 (3)
- **Impacts of Green New Deal energy plans on grid stability, costs, jobs, health, and climate in 143 countries** *ONE EARTH*
  Jacobson, M. Z., Delucchi, M. A., Cameron, M. A., Coughlin, S. J., Hay, C., Manogaran, I. P., Shu, Y., von Krauland, A.
  2019; 1: 449-463