Stanford

Catherine (Hay) Callas

Ph.D. Student in Energy Resources Engineering, admitted Spring 2020

Bio

BIO

Catherine Callas is a Ph.D. candidate in the Benson Lab in Energy Resources Engineering. She is an ExxonMobil Emerging Energy Fellow, and her research is focused on offshore carbon capture and sequestration in the Gulf Coast. 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 as a Financial Analyst within the Fixed Income group at Goldman Sachs in New York City for three years. She was a Schneider Fellow at the Natural Resources Defense Council in San Francisco where she analyzed the impact of the 2017 Northern California wildfires and 2018 Camp Fire on retail rates within PG&E's service territory.

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)

EDUCATION AND CERTIFICATIONS

- M.S., Stanford University , Civil and Environmental Engineering (2020)
- B.S., Brown University , Chemical Engineering (2015)

Publications

PUBLICATIONS

- **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.
  2024; 135
- **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