Stanford

Frances Reuland

Ph.D. Student in Energy Science and Engineering, admitted Spring 2025

Bio

BIO

Fran, from Chapel Hill, North Carolina, is a PhD student in Energy Science & Engineering at Stanford University. She completed her MS in the same department in 2025 and was named as a 2023 Knight Hennessy Scholar. Before becoming a Stanford student, she spent three years at the Rocky Mountain Institute (RMI) in Boulder, Colorado working on decarbonization solutions for the oil and gas sector. She has a particular focus on methane detection, mitigation, and policy solutions. Prior to RMI, she held a position at the International Energy Agency (IEA) in Paris, France working to support IEA's work on methane from the petroleum sector.

She is a graduate and varsity women's soccer player of the University of North Carolina-Chapel Hill. Fran earned a B.S. with High Honors in Environmental Science, a Chemistry minor, and a B.A. in Spanish. She has continued her love for competitive soccer career playing in France, Colorado, and California.

HONORS AND AWARDS

- Knight Hennessy Scholar, Stanford University (2023)

EDUCATION AND CERTIFICATIONS

- M.S., Stanford University , Energy Science & Engineering (2025)
- B.S., University of North Carolina at Chapel Hill , Environmental Sciences (2018)

Publications

PUBLICATIONS

- **The Carbon Mapper emissions monitoring system** *ATMOSPHERIC MEASUREMENT TECHNIQUES*
  Duren, R., Cusworth, D., Ayasse, A., Howell, K., Diamond, A., Scarpelli, T., Kim, J., O'neill, K., Lai-Norling, J., Thorpe, A., Zandbergen, S. R., Shaw, L., Keremedjiev, et al
  2025; 18 (22): 6933-6958

- **Direct measurement of plume velocity to characterize point source emissions.** *Proceedings of the National Academy of Sciences of the United States of America*
  Eastwood, M. L., Thompson, D. R., Green, R. O., Fahlen, J. E., Adams, T. J., Brandt, A. R., Brodrick, P. G., Chlus, A., Kort, E. A., Reuland, F., Thorpe, A. K.
  2025; 122 (36): e2507350122

- **Advancing New Technology and Policy to Manage Methane in This Decisive Decade** *ENVIRONMENT*
  Gordon, D., Reuland, F.
  2023; 65 (6): 5-17

- **Evaluating net life-cycle greenhouse gas emissions intensities from gas and coal at varying methane leakage rates** *ENVIRONMENTAL RESEARCH LETTERS*

  Gordon, D., Reuland, F., Jacob, D. J., Worden, J. R., Shindell, D., Dyson, M.

  2023; 18 (8)

- **Updated Global Fuel Exploitation Inventory (GFEI) for methane emissions from the oil, gas, and coal sectors: evaluation with inversions of atmospheric methane observations** *ATMOSPHERIC CHEMISTRY AND PHYSICS*

  Scarpelli, T. R., Jacob, D. J., Grossman, S., Lu, X., Qu, Z., Sulprizio, M. P., Zhang, Y., Reuland, F., Gordon, D., Worden, J. R.

  2022; 22 (5): 3235-3249

- **Methane emissions in the United States, Canada, and Mexico: evaluation of national methane emission inventories and 2010-2017 sectoral trends by inverse analysis of in situ (GLOBALVIEWplus CH₄ ObsPack) and satellite (GOSAT) atmospheric observations** *ATMOSPHERIC CHEMISTRY AND PHYSICS*

  Lu, X., Jacob, D. J., Wang, H., Maasakkers, J. D., Zhang, Y., Scarpelli, T. R., Shen, L., Qu, Z., Sulprizio, M. P., Nesser, H., Bloom, A., Ma, S., Worden, et al

  2022; 22 (1): 395-418