Kat Sale

Research Engineer | Carbon Solutions LLC

Profile

Kat Sale is a research engineer at Carbon Solutions with a background in Chemical Engineering. She is the head developer for Carbon Solutions' *CO_2NCORD* software and the current team lead for life cycle assessment. Her interests include point-source and direct-air carbon capture. Prior to joining Carbon Solutions, she was involved with the Global CO2 Initiative at the University of Michigan and interned at Holcim and its subsidiary Elevate. In her free time, she enjoys fish-keeping and non-competitive boxing.

Contact Information

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Education & Training

BS | Chemical Engineering
University of Michigan | 2020-2022

Professional Experience

Research Engineer | Carbon Solutions LLC | 2023–Present
Evaluating the cost of point-source and direct-air carbon capture systems based on regional, industrial, and capture mechanism differences.

Research and Development Intern | Elevate, Holcim | 2022
Developed a novel vegetative roofing design that was advanced to patent review. Authored and updated standard operating procedures. Assessed and implemented a weekly recycling program and annual technology recycling initiatives with nearby businesses. Performed and analyzed TGA, DSC, FTIR, and Soxhlet extraction tests.

Research Associate | Global CO_2 Initiative | 2021-2022
Created an index of all direct air carbon capture companies as of April 2022, complete with their capture capability, mechanism of action, and TRL.

Process Engineering Intern | Holcim | 2021
Tested and improved upon the carbon capture capability of cement waste product CKD. Tested and presented on using plastic chips as an alternative fuel source.

Math and Violin Tutor | Wyzant | 2021-2022
Tutored young students in early to advanced math courses and early violin.

Publications, Proceedings, and Key Reports

- **Sale, K.J.**, Bennett J.A., Eidbo, J.B., Gilhooley, C.B., Harrison, A.F., Lubeck, V.L., Middleton, E.J., Rodriguez, D.S., Talsma, C.J., Taylor, J.R., Middleton, R.S. (2024), Finding New Opportunities for Carbon Capture with *CO_2NCORD*. *White Paper*, https://doi.org/10.31224/3642
- Jordan, A.B., Rodriguez, D.S., Bennett, J.A., **Sale, K.**, & Gilhooley, C. (2024), Quantifying air quality co-benefits to industrial decarbonization: The local Air Emissions Tracking Atlas. *Frontiers in Public Health*, 12(1394678).
- Bennett, J., **Sale, K.**, Rodriguez, D., Talsma, C., Gilhooley, C., Lubeck, V., Middleton, E., Middleton, R. (2024) Identifying Opportunities and Cost for CO2 Capture at Power and Industrial Facilities in the United States. *Carbon Capture, Utilization, and Storage conference (CCUS)*, DOI 10.15530/ccus-2024-4014460
- Bennett, J., Kammer, R., Eidbo, J., Ford, M., Henao, S., Holwerda, N., Middleton, E., Ogland-Hand, J., Rodriguez, D., **Sale, K.**, Talsma, C., Thomley, E., Fry, M. (2023), Carbon Capture Co-Benefits. *Great Plains Institute,* https:// carboncaptureready.betterenergy.org/carbon-capture-co-benefits/

Poster Presentations

- **Sale, K.** (presenter), Siwatch, M., Mahler, S., (2021), Technical Feasibility Assessment of Point-Source Carbon Capture Implementation on the NCRC Power Plant, *Mechanical Engineering Undergraduate Symposium.*