



## Joshua A. Schaidle

### Education and Training

Laboratory Operations Supervisor Academy, Battelle, 2022

Distinguished Leader Executive Certificate, University of Michigan – Ross School of Business, Ann Arbor, MI, 2020

Energy I-Corps, Department of Energy, 2017

Certified Professional Innovator, University of Michigan, Ann Arbor, MI, 2016

Ph.D., Chemical Engineering with a Concentration in Environmental Sustainability, University of Michigan, Ann Arbor, MI, 2011

B.S., Chemical Engineering, University of California – Santa Barbara, Santa Barbara, CA, 2006

### Research and Professional Experience

2021–Present      Lab Program Manager – Carbon Management, NREL, Golden, CO. Responsibilities include: Lead development of NREL’s carbon management strategy and work with cross -functional teams to execute this strategy

2020–Present      Chief of staff, Bioenergy Science Technology Directorate, NREL, Golden, CO. Responsibilities include: Support operations and strategic planning activities focused on developing low-carbon supply chains for fuels, materials and chemicals spanning early-stage R&D to integration and scale up

2016–Present      Director, Chemical Catalysis for Bioenergy Consortium (ChemCatBio). Responsibilities include: Lead an Energy Materials Network National Lab consortium of over 100 researchers focused on decarbonizing our economy by accelerating the development of catalytic technologies that convert biomass and waste resources into renewable fuels and chemicals

2015-2021      Catalytic Carbon Transfer Platform Lead, NREL, Golden, CO. Responsibilities include: Led a \$15MM per year research platform spanning over 20 projects focused on catalyst and process development to enable efficient utilization of renewable and waste carbon streams

2018-2021      Engineer V, NREL, Golden, CO

2014-2018      Engineer IV, NREL, Golden, CO

2012-2014      Engineer III, NREL, Golden, CO

### Awards and Honors

- Oppenheimer Science and Energy Leadership Fellow, 2023
- Invited Speaker, National Academy of Engineering – Frontiers in Engineering Symposium, 2022
- Outstanding Mentor Award, NREL, 2014 and 2022
- Distinguished Member of the Research Staff, NREL, 2021
- Outstanding Partnership Award, NREL, 2019
- Outstanding Commitment to Community Involvement, NREL, 2018
- Chairman’s Award for Exceptional Performance, NREL, 2014

## Selected Publications

- G. Grim, Z. Huang, M. Guarnieri, J. Ferrell, L. Tao, and J. Schaidle, “Transforming the Carbon Economy: Challenges and Opportunities in the Convergence of Low-Cost Electricity and CO<sub>2</sub> Utilization”, *Energy & Environmental Science*, 13 (2020) 472-494.
- F. Baddour, E. Roberts, A. To, L. Wang, S. Habas, D. Ruddy, N. Bedford, J. Wright, C. Nash, J. Schaidle, R. Brutchey, N. Malmstadt, “An Exceptionally Mild and Scalable Solution-phase Synthesis of Molybdenum Carbide Nanoparticles for Thermocatalytic CO<sub>2</sub> Hydrogenation”, *Journal of American Chemical Society*, 142 (2020) 1010-1019.
- Z. Huang, G. Grim, J. Schaidle, Ling Tao, “The Economic Outlook for Converting CO<sub>2</sub> and Electrons to Molecules”, *Energy & Environmental Science*, 14 (2021) 3664-3678
- G. Faber, C. Mangin, B. Olfe-Krautlein, J. Schaidle, “AssessCCUS: An Integrated Approach for Aggregating Resources to Enable Techno-Economic and Life Cycle Assessment of Carbon Management Technologies”, *Frontiers in Climate – Negative Emission Technologies*, (2022) <https://doi.org/10.3389/fclim.2022.817211>.
- A. Zimmerman, T. Langhorst, S. Moni, J. Schaidle, F. Bensebaa, A. Bardow, “Life-Cycle and Techno-Economic Assessment of Early-Stage Carbon Capture and Utilization Technologies – A Discussion of Current Challenges and Best Practices”, *Frontiers in Climate – Negative Emission Technologies* 4 (2022) <https://doi.org/10.3389/fclim.2022.841907>.
- G. Grim, D. Ravikumar, E. Tan, Z. Huang, J. Ferrell, M. Resch, Z. Li, C. Mevawala, S. Phillips, L. Snowden-Swan, L. Tao, J. Schaidle, “Electrifying the Production of Sustainable Aviation Fuel: The Risks, Economics, and Environmental Benefits of Emerging Pathways Including CO<sub>2</sub>”, *Energy & Environmental Science*, 15 (2022) 4798-4812.
- M. Freyman, Z. Huang, D. Ravikumar, E. Duoss, Y. Li, S. Baker, S. Pang, J. Schaidle, “Reactive CO<sub>2</sub> Capture: A Path Forward for Process Integration in Carbon Management”, *Joule*, 7 (2023) 631-651.

## Synergistic Activities

- Advisory Board Member for the Global CO<sub>2</sub> Initiative
- Lecturer for the ACS Summer School on Green Chemistry and Sustainable Energy, 2016-2018, 2022
- Lead organizer for a workshop titled “Reactive CO<sub>2</sub> Capture: Process Integration for the New Carbon Economy”, February 2020