

## Madalsa Singh

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### APPOINTMENTS

#### **Rochester Institute of Technology**

Aug 2025 - present

Assistant Professor

Golisano Institute of Sustainability

#### **University of California Santa Barbara**

Aug 2024 - July 2025

Postdoctoral Research Fellow

Bren School of Environmental Science & Management

### EDUCATION

#### **Stanford University**

Sep 2019 - May 2024

Ph.D.

Energy Science and Engineering

Thesis: Rapid and Equitable Transport Decarbonization in the Age of Electrification

#### **Carnegie Mellon University**

Aug 2018 - May 2019

Master of Science

Energy Science and Mechanical Engineering

#### **Indian Institute of Technology Bombay**

Aug 2011 - Aug 2015

Bachelor of Technology

Materials Science and Metallurgical Engineering

### PUBLICATIONS

#### **First Author Publications & Working Papers**

1. Wires and fire: Wildfire investment and network cost differences across California's power providers. [with Alison Ong, Rayan Sud] *The Electricity Journal*. 2025
2. Ensuring greenhouse gas reductions from electric vehicles compared to hybrid gasoline vehicles requires a cleaner U.S. electricity grid. (with Tugce Yuksel, Jeremy Michalek, Inês Azevedo). *Nature Scientific Reports*, 2024.
3. Distributional impacts of fleet-wide changes in light-duty transportation: mortality risks of PM<sub>2.5</sub> emissions from electric vehicles and Tier 3 conventional vehicles. (with Chris Tessum, Julian Marshall, Inês Azevedo). *Environmental Research Letters*, 2024.
4. How differential privacy will affect our understanding of air pollution exposure and disparities in the United States? *Findings*, 2023.
5. Microhybrid electricity system for energy access, livelihoods, and empowerment. (with P. Balachandra). *Proceedings of the IEEE*, 2019
6. Equitable retail rates for a decarbonized and resilient electricity system. (with Bruce Cain and Inês Azevedo). *In revision, Progress in Energy* [Draft]

7. Policies to retire old light-duty vehicles will help achieve California's zero-emissions targets and provide substantial air-pollution co-benefits. (with Eleanor Hennessy, Sarah Saltzer, Andrew Berson, Inês Azevedo). *In submission* [Draft]

## Contributing Author Publications

1. Pathways to zero emissions in California's heavy-duty transportation sector.(with Nora Hennessy, Sarah Saltzer, Inês Azevedo). *Environmental Research: Infrastructure and Sustainability*, 2024.
2. Performance metrics required of next-generation batteries to electrify commercial aircraft. (with Alexander Bills, Shashank Sripad, Venkat Vishwanathan). *ACS Energy Letters*, 2020.

## REPORTS

1. Pathways to Carbon Neutrality in California: Decarbonizing the Transportation Sector. (with Eleanor Hennessy, Sarah Saltzer, Andrew Berson, Inês Azevedo) *Stanford Center for Carbon storage and Stanford Carbon Removal Initiative* 2022.

## AWARDS

SAE Excellence in Oral Presentation 2024  
 The William H. Bourne Fellowship 2023  
 Columbia University travel grant 2023  
 American Geophysics Union travel grant 2022  
 Fellow, Inaugural Aspen Climate Cohort 2022  
 Shultz Energy Fellow, Stanford University 2021  
 Winner, United States Energy Economics Case Competition, 2020  
 Science Fellowship, Department of Science and Technology, Government of India 2011

## SERVICE

**Moderator:** Behavior, Energy, and Climate Change Conference 2023.  
**Reviewer:** Energy Findings, Joule, IEEE Vehicle Power and Propulsion, Energy Policy, Environmental Research Letters, Nature Reviews: Electrical Engineering, Progress in Energy, Nature Communications: Sustainability, Environmental Research: Energy.  
**Service:** President, Women in Earth Sciences, Stanford University (2021-2023)  
 Department Mentor, Energy Resources Engineering, Stanford University (2021-2023)

## PROFESSIONAL EXPERIENCE

<b>Tesla Inc.</b> <i>Algorithms and Operations Intern</i>	June 2022 - Sept 2022
<b>California Public Utilities Commission, Office of Commissioner Martha Guzman Aceves</b> <i>Shultz Energy Fellow</i>	May 2021 - Sept 2021
- Energy systems modeler for commissioner's office on the net energy metering rule-making (NEM3.0 proceeding)	
<b>Oorja Development Solutions Ltd., Technical Consultant</b>	Oct 2017 - July 2018

## MEDIA

How Electricity Got So Expensive? *Heatmap* 2025 [link]  
 AI is 'an energy hog,' but DeepSeek could change that. *Verge* 2025 [link]  
 Should I Buy an Electric Vehicle in California? All Your Questions Answered. *KQED* 2024 [link]

India needs a green economic stimulus (with Aniruddh Mohan). *Hindustan Times* 2020 [link]

–updated aug 2025–