

What role for solar geoengineering in climate policy?

Friday 2/14/2020, 4:00pm, room 3-270

David Keith

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I will review the science and technology of solar radiation modification. Estimates of the risks and efficacy of solar geoengineering are deeply uncertain. Accurate physically-based models along with laboratory and in situ experiments will be needed to improve estimates of the efficacy and risks of proposed solar geoengineering methods. As an example, I will discuss out laboratory experiments and plans for perturbative outdoor experiments. Governance poses the greatest challenge for solar geoengineering. Finally, I will sketch how solar geoengineering might fit together with emissions cuts, carbon removal, and adaptation in a coherent climate strategy.



David Keith has worked near the interface between climate science, energy technology, and public policy since '91. He took first prize in Canada's national physics prize exam, won MIT's prize for excellence in experimental physics, and was one of TIME Magazine's [Heroes of the Environment](#). David is Professor of Applied Physics at the [Harvard School of Engineering and Applied Sciences](#) and Professor of Public Policy at the [Harvard Kennedy School](#), and founder of [Carbon Engineering](#), a Canadian company developing technology to capture CO₂ from ambient air to make carbon-neutral hydrocarbon fuels. Best known for his work on the science, technology, and public policy of solar geoengineering, David led the development of [Harvard's Solar Geoengineering Research Program](#), a Harvard-wide interfaculty research initiative. His work has ranged from the climatic impacts of large-scale wind power to an early critique of the prospects for hydrogen fuel. David's hardware engineering work includes the first interferometer for atoms, a high-accuracy infrared spectrometer for NASA's ER-2, the development of Carbon Engineering's air contactor and overall process design, and the development of a stratospheric propelled balloon experiment for solar geoengineering. David teaches science and technology policy, climate science, and solar geoengineering. He has reached students worldwide with an [edX energy course](#). David is author of >200 academic publications with total citation count of >13,000. He has written for the public in op-eds and [A Case for Climate Engineering](#). David splits his time between Cambridge, Massachusetts and Canmore, Alberta.

Refreshments will be served before the Seminar. **Please note the new start time for the Colloquium.**

Upcoming MechE Colloquiums:

- April 3rd - Cynthia Hipwell, Texas A&M
- April 10th - Al Grodzinsky, MIT BE and ME
- April 24th - Demetri Psaltis, EPFL
- May 8th - Phil Messersmith, UC Berkeley

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