

Experts propose new structure for regulation of geoengineering research

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David Keith is Gordon McKay Professor of Applied Physics at the Harvard School of Engineering and Applied Sciences, and Professor of Public Policy at the John F. Kennedy School of Government at Harvard. Credit: Eliza Grinnell, Harvard SEAS Communications

Geoengineering, the use of human technologies to alter the Earth's climate system—such as injecting reflective particles into the upper atmosphere to scatter incoming sunlight back to space—has emerged as a potentially promising way to mitigate the impacts of climate change. But such efforts could present unforeseen new risks. That inherent

tension, argue two professors from UCLA and Harvard, has thwarted both scientific advances and the development of an international framework for regulating and guiding geoengineering research.

In an article published March 15 in the journal *Science*, Edward Parson of UCLA and David Keith of Harvard University outline how the current deadlock on governance of geoengineering research poses real threats to the sound management of climate risk. Their article advances concrete and actionable proposals for allowing further research—but not deployment—and for creating scientific and legal guidance, as well as addressing [public concerns](#).

"We're trying to avoid a policy train wreck," said Keith, a professor of public policy at the John F. Kennedy School of Government and Gordon McKay Professor of Applied Physics at the School of Engineering and Applied Sciences at Harvard University. "Informed policy judgments in the future require research now into geoengineering methods' efficacy and risks. If research remains blocked, in some stark future situation, only untested approaches will be available."

"Our proposals address the lack of international legal coordination that has contributed to the current deadlock," said Parson, a professor of law and faculty co-director of the Emmett Center on Climate Change and the Environment at the UCLA School of Law. "Coordinated international governance of research will both provide the guidance and confidence to allow needed, low-risk research to proceed and address legitimate public concerns about irresponsible interventions or a thoughtless slide into deployment."

In their paper, the authors state that progress on research governance must advance four aims:

- Allow low-risk, scientifically valuable research to proceed.
- Give scientists guidance on the design of socially acceptable research.
- Address legitimate public concerns.
- End the current legal void that facilitates rogue projects.

Parson and Keith argue that scientific self-regulation is not sufficient to manage risks and that scientists need to accept government authority over geoengineering research. They emphasize that initial steps should not require new laws or treaties but can come from informal consultation and coordination among governments.

The authors also propose defining two thresholds for governance of geoengineering research: a large-scale threshold to be subject to a moratorium and a separate, much smaller threshold below which research would be allowed. Keith, for example, is currently developing an outdoor experiment to test the risks and efficacy of stratospheric aerosol geoengineering, which would fall below the proposed allowable threshold.

The authors emphasize that this article proposes only first steps. In the near term, these steps frame a social bargain that would allow research to proceed; in the long term, they begin to build international norms of cooperation and transparency in geoengineering.

Provided by Harvard University

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