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Reflecting Sunlight Report: Research Governance

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NASEM Reflecting Sunlight Report Recommendation: Research Governance

A U.S. national research program should operate under robust research governance and support the eventual development or designation of international governance mechanisms.



NASEM Reflecting Sunlight Report

Recommendations: Research Governance

Governance Mechanisms Proposed in the Report	sub-recommendations
Code of Conduct	5.1a, 5.1b, 5.1c
Registry	5.1d, 5.1e, 5.1p
Data Sharing	5.1j, 5.1.k
Assessments and Reviews	5.1f, 5.1g, 5.1h, 5.1o
Permitting	5.1i
Intellectual Property	5.1l
Participation and Stakeholder Engagement	5.1m, 5.1n, 5.1t, 5.1u
International Cooperation and Co-development on Research Teams	5.1q
International Cooperation Among National Scientific Agencies	5.1r
International Information Sharing and Cooperation	5.1s
International Anticipatory Governance Expert Committee	5.1v

Recommendations: code of conduct

SG researchers should adhere to relevant provisions of an accepted code or, if none has yet been accepted, an adequate code. At a minimum, researchers should commit to

- protect the scientific quality of proposed research;
- assess, monitor, and minimize potential adverse effects from research;
- avoid atmospheric experiments with detectable climate or other environmental effects . . .
- accept research funding only from funding entities that recognize the importance of an overall balance of resources that prioritize mitigation and adaptation;
- make public SG research activities, funding sources, and results;
- identify and limit and, when necessary, avoid conflicts of interest;
- provide for suitable levels of public and stakeholder participation and engagement independent of whether a proposed experiment has any known environmental risks . . . ; and
- actively support and advance the goals of racial, gender, geographic, and economic equity in the conduct of SG research.

Recommendations: public registry

A national public SG research registry should be created to collect information on all public and private sector SG research.

Once a national SG research registry is established, SG researchers should participate in the registry, and scientific publications should require participation as a prerequisite to consideration for publication.

Recommendations: assessments, reviews, permitting

All outdoor SG atmospheric experiments should be subject to a national permitting system. Permitting systems should be designed to encompass transboundary research and research performed by international research teams.

Recommendations: limits on outdoor experimentation

Experiments that involve releasing substances into the atmosphere should be considered only when they can provide critical observations not already available or likely to become available through laboratory studies, modeling, and experiments of opportunity (e.g., observing volcanic eruptions, rocket plumes, ship tracks).

All outdoor experiments involving the release of substances into the atmosphere **should be subject to governance**, including a permitting system and impact assessment.

Any outdoor substance releases should be limited to a quantity of material at least two orders of magnitude smaller than that which could cause detectable changes in global mean temperature or adverse environmental effects.

Recommendations: assessments, reviews, permitting

Any country engaged in SG research should prepare programmatic assessments that collectively assess the health, environmental, and social impacts of all SG activities that it sponsors or approves and any SG research program that it adopts. Such assessments, which should be revised on a regular basis, should incorporate broad and meaningful public engagement and protocols for public engagement.

Recommendations: participation and public engagement

SG researchers and funders should establish mechanisms to promote a diverse and inclusive community of SG researchers and research governance experts and set specific, measurable goals. These goals may be advanced through a variety of mechanisms, including offering incentives for international collaboration, addressing gender and other biases in peer-review processes, supporting research and research governance training opportunities, and building capacity in underrepresented regions and nations.

Recommendations: international

Funders of SG research should promote international cooperation—including with participants from the Global South—within research teams by giving priority to research efforts that include substantial international membership or institutional cooperation or, possibly in some cases, by requiring such cooperation and co-development as a condition for support, especially for large-scale or long-term projects.

Science agencies in countries that are funding SG research should advance international cooperation by coordinating with other national and regional level SG research programs. This cooperation should include

- **sharing information on national programs and effective practices, including codes of conduct;**
- **coordinating joint calls for research proposals;**
- **promoting inclusive engagement opportunities;**
- **promoting access to data from funded research projects;**
- **supporting partners from underrepresented countries; and**
- **exploring whether there is mutual interest in creating and funding an international facility for SG research.**

Transnational exercises designed to gauge the civic response to SG research and research governance issues should be promoted and adequately supported.