Mathematics and Physical Sciences

Solar Radiation Management

Policies and
Procedures
Open

LOI due at 12 p.m. (noon) EDT
May 31, 2023

Important Dates

LOI due at 12 p.m. (noon) EDT
May 31, 2023

LOI notification sent by
July 31, 2023

Full proposal due at 11 a.m. EDT
October 3, 2023

Full proposal notifications sent by
December 31, 2023

Awards begin
February 1, 2024

RFA How To Apply

The Simons Foundation's Mathematics and Physical Sciences (MPS) division invites applications for a new Solar Radiation Management program (SRM). The foundation strongly encourages applications from scientists in the global south and from investigators who may not have worked in SRM but have expertise that could bring new perspectives and skills to this field.

Basis for Awards

The Simons Foundation is launching an international collaborative research program designed to fill fundamental scientific knowledge gaps relevant to Solar Radiation Management. SRM is an emerging collection of approaches, including stratospheric aerosol injection (SAI), marine cloud brightening (MCB), and cirrus cloud thinning (CCT), designed to modify the Earth's radiative balance and cool the planet. Although reducing atmospheric greenhouse gas concentrations is the only long-term strategy to mitigate climate change and other impacts, SRM might be able to ameliorate some of the negative impacts this century. However, SRM also may pose significant environmental and societal risks, including stratospheric warming, ozone depletion and changes in rainfall, thereby affecting water resources and agriculture**.** At present, not enough is known about SRM systems and their potential impacts to allow informed decision-making. This call aims to help fill key fundamental knowledge gaps in the science of SRM.

Priority areas for this call include:

- Environmentally benign materials discovery for SAI and CCT.
- Laboratory physicochemical characterization of SAI and CCT materials and their interactions with light, clouds, atmospheric trace gases and with themselves or ambient aerosols, with the aim to improve microphysical inputs to existing climate models.
- Approaches to minimize cirrus cloud formation, including from aircraft emissions.
- Assessments of near-field (<100 km) atmospheric turbulence and its impact on SAI and CCT interventions, primarily through modeling.
- Integration of improved representations of aerosols and turbulence into global-scale modeling, and characterization of global and regional impacts of novel materials for SAI and CCT.

Areas not within the scope of this program include social science research and *in-situ* field experiments involving aerosol release.

Proposals can be from individual investigators or small teams; the latter are not required to be from the same institution. Investigators can be either science/engineering faculty at Ph.D.-granting research universities or Ph.D.-level research staff members at nonacademic institutions. We will prioritize funding projects which have not been well supported through existing national programs. Proposals will be judged on scientific

quality, potential for impact, potential for collaboration, extent of training graduate students and postdocs, and broadening participation domestically and globally.

Level and Duration of Funding

The program is anticipated to award $10M total per year over a five-year period. Proposal budgets should not exceed $500,000 per year, including indirect costs (limited to 20 percent modified total direct costs), for a period of three years. Allowable indirect costs to the primary institution for subcontracts are not included in the $500,000 budget threshold (see grant policies). Up to 20 awards will be funded although some of the original $10M may be held in reserve to award during a potential two-year renewal period after the initial three year award.

Eligibility Requirements

Applications may be submitted by established U.S. and foreign public and private educational and nonprofit institutes, research centers and national laboratories or the equivalent. Any entity must adhere to the 20 percent maximum overhead rate noted above.

As a part of the program obligations, awardees will be invited and expected to attend an annual meeting held at and paid directly by the Simons Foundation.

Allowable Expenses

The funding provided may be used to support research expenses in the following categories:

- Universities: for faculty on an academic year salary in principal investigator (PI) or co-investigator roles, the grant can provide up to one month of summer salary support and related benefits. These salary funds are not substitutional (cannot be used to relieve a university of salary costs) and cannot be used to reduce teaching loads below the departmental norm. They can only be used to supplement the salary, similar to a summer salary in the U.S. system.
- All other institutions (including national laboratories): for staff/research scientists in PI or co-investigator roles, the grant can provide salary support and related benefits.

- For non-PI/co-investigator staff/research scientists, as well as postdoctoral, graduate and/or undergraduate research assistants, the grant can provide salary support and related benefits, including tuition support.
- Scientific domestic or international travel for project members per the travel policies of the awardee institution. Parking, hotel, taxi, registration and other related travel and conference costs are allowable.
- Meetings appropriate to the needs of the project, including meals, travel and lodging.
- Support for visitors and collaborators, including domestic and international travel, meals and lodging expenses.
- Research equipment, supplies and other expenses directly related to the research, including computers, computer support, professional literature, publication expenses and professional membership dues.
- Salary support for a project administrator.
- Other expenses related to the support and administration of the project.

Expenditures in other expense categories may be possible but must be approved in advance by the foundation.

Please see the Simons Foundation's grant policies for further guidelines.

How to Apply

Letter of Intent:

Letters of Intent (LOIs) must be completed electronically and submitted via the Simons Award Manager (SAM) by **May 31, 2023, at 12 p.m. (noon) EDT**. Applications will require a two-page letter of intent, and two-page biosketch for each senior investigator. Please refer to the How to Apply tab instructions for further details.

Notifications of the status of the LOI will be sent by July 31.

Full Proposal:

A review of the LOI may lead to a request for a full proposal, which will be due by **October 3, 2023, at 11 a.m. EDT**. Selected applicants will be requested to submit a full statement of work, budget and other information, as outlined in the How to Apply tab instructions. Full proposal notifications will be sent by December 31, 2023.

Awards will begin February 1, 2024.

Our Commitment to Diversity, Equity and Inclusion

Many of the greatest ideas and discoveries come from a diverse mix of minds, backgrounds and experiences. The Simons Foundation is committed to grantmaking that inspires and supports greater diversity and inclusiveness by cultivating a funding environment that ensures representation of all identities and differences and equitable access to information and resources for all applicants and grantees.

The Simons Foundation provides equal opportunities to all applicants for funding without regard to race, religion, color, age, sex, pregnancy, national origin, sexual orientation, gender identity, genetic disposition, neurodiversity, disability, veteran status or any other protected category under federal, state and local law. The foundation also funds programs directed at supporting scientists from disadvantaged backgrounds or underrepresented groups, often working closely with professional societies and other funding agencies.
