

Caltech | Funding Memo

Title: Interdisciplinary Social and Natural Science Research Projects on Critical Minerals and Metals in the United States - LOI

Funding Agency: Alfred P. Sloan Foundation

External Deadline(s):

12/18/2023 02:00 PM PST (LOI)

Cognizant Office: Office of Foundation Relations

Description:

The Energy and Environment program at the Alfred P. Sloan Foundation supports research, training, networking, and dissemination efforts to inform the societal transition toward low-carbon energy systems in the United States by investigating economic, environmental, technological, and distributional issues. The program is currently soliciting Letters of Inquiry for interdisciplinary, collaborative, social and natural science research projects led by early- and mid-career scholars to examine under-explored questions related to issues associated with critical minerals and metals for the low-carbon energy transition in the United States. Three to four full proposals are expected to be invited from submissions received in response to this Call.

Frequency: First-time opportunity

Total Award: \$500,000 to \$750,000

- Grant amounts are expected to be between \$500,000 and \$750,000 over a 2-3 year period.
- Allowable expenses include:
 - Faculty: Up to one-month summer salary per investigator per year, plus benefits, capped at \$35,000 per investigator per year, based on project time commitment.
 - For graduate students, postdoctoral researchers, or undergraduate students: salary/stipend, plus benefits, based on project time commitment.
 - Tuition reimbursement: Requests for graduate student tuition reimbursement are allowed up to a maximum of \$16,000 per student per academic year, provided justification is provided.
 - For project-related administrative and research staff: salary, plus benefits.
 - Research implementation expenses: data acquisition, conducting experiments, computation, hardware, advisory committee honoraria, and other research expenses.
 - Dissemination and workshop expenses: travel, meals, lodging, conference fees, room rentals, speaker stipends, audio-visual equipment, and other dissemination expenses.

Indirect Costs: 20% of Modified Direct Costs

- Overhead expenses are not allowed on tuition reimbursement.
- **Caltech's minimum overhead rate is based on the award's annual gross funding. Please refer to the [FY24 Annual Rate Memo](#) for applicable minimum overhead**

requirements. Applicants must work within their division to account for the required overhead via an approved MORA form.

Duration: 2-3 years

- Projects should have a proposed start date of July 1, 2024 or later.

Discipline(s): Biology and Biological Engineering; Chemistry and Chemical Engineering; Engineering and Applied Science; Geological and Planetary Sciences; Humanities and Social Sciences

Eligibility: Tenure-Track Faculty

- The lead principal investigator must be at the rank of Assistant or Associate Professor and based at a United States university/college.
 - Senior researchers and non-U.S.-based researchers may participate in proposed projects and can receive funding as research team members, advisors, or collaborators.
- Researchers who have not previously received funding from the Energy and Environment program at the Alfred P. Sloan Foundation are particularly encouraged to submit for consideration.
- Submissions from diverse teams led by Black, Indigenous, and Latina/o researchers and/or women are strongly encouraged.
- Researchers may participate in a maximum of two proposed projects.

Research Areas of Interest:

- The goal of this Call is to be broadly relevant to a wide range of social science scholars, disciplines, and approaches, particularly those projects that involve researchers from engineering and natural science disciplines, as well as those that draw on a variety of conceptual frameworks and methodologies, ensuring that novel research is generated, students are trained, networks are strengthened, and information is disseminated to inform decision-making. The intention is to advance interdisciplinary, collaborative scholarship focusing on underexplored empirical research questions related to critical minerals and metals in the United States.
 - Relevant disciplines and fields could include but are not limited to: political science, public policy, economics, anthropology, geology, engineering, chemistry, and biology, among others.
- Attention by the research community is also needed to address questions relevant to historically under-represented or marginalized regions and populations. In particular, there is a need for research investigating opportunities to ensure the benefits from mineral and metal supply chains reach Native and Indigenous communities, communities of color, economically vulnerable communities, or other vulnerable populations that have been historically overlooked or excluded from decision-making processes.
- Example research questions for examination include but are not limited to:
 - What are the environmental, economic, and equity impacts of new mining and refining techniques or innovations, and what are the barriers and opportunities for their adoption? How might recent federal legislation and incentives affect the development of relevant supply chains?

- What can be learned from applying life-cycle assessment perspectives to better understand the full range of impacts, including waste disposal, recycling, and end-of-life management options, of critical minerals and metals?
- What are underexplored sectors of the economy that rely on critical minerals and metals, and how might these sectors be impacted by novel scientific or technological developments? What market failures exist and what policies might help overcome them?
- How has the political economy of the mining industry changed given renewed attention to clean energy transitions? How might these changes affect the location, siting, or expansion of critical mineral and metal mining operations, and what is the potential impact on local communities?
- What are the transportation dynamics inherent to critical minerals and metals, and what are the most equitable approaches for different minerals and metals over various distances? How might innovative approaches help to ensure more efficient and equitable transport?
- What lessons can be learned from efforts where new critical mineral and metal mining operations have been equitably implemented in partnership with historically under-represented or marginalized communities? What can be learned from relevant examples or experiences drawn from other contexts or countries?

Research Exclusions:

- Projects with the following characteristics are out of scope and not eligible for consideration:
 - Projects involving advocacy or lobbying activities.
 - Projects with a public health or biomedical component.
 - Projects that solely involve energy system modeling activities.
 - Projects with solely an international focus that do not relate to the United States.

Post-Award Obligations:

TBD

Recent Caltech Recipients:

- None, New Opportunity

Guidelines & Other Information:

Call for Proposals: https://apply.sloan.org/prog/minerals_and_metals/

General Grant Information and Forms: <https://sloan.org/grants/apply>

Sloan Grants Database: <https://sloan.org/grants-database>

Please notify the Foundation Relations team if you anticipate making a submission or if you have any questions regarding this opportunity. We are here to help ensure that Caltech's proposals are competitive. We can assist with proposal development and advise you on the routing of your paperwork. Interested researchers should work with their division grant manager to prepare the budget, the MORA form, and the Division Approval Form (DAF). Submissions and awards for this grant program will be processed through the Office of Foundation Relations.

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