NATIONAL SCIENCE FOUNDATION
2415 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22314

NSF 23-097

Dear Colleague Letter: Rapidly Accelerating Research on Artificial Intelligence in K-12 Education in Formal and Informal Settings

May 8, 2023

Dear Colleagues:

Directorate for STEM Education (EDU)

The unprecedented speed of advancements in machine learning (ML), generative artificial intelligence (AI), and large language models (LLM) is rapidly transforming formal and informal educational settings and systems. Educators and learners are grappling with unanticipated and rapidly changing AI that impacts both day-to-day K-12 classroom practices and the use of AI in informal (out of school) settings.

In response to these technological changes, the nature of learning, teaching, and assessment is rapidly evolving. Schools are faced with insufficient research-based findings on the use of AI tools and environments for teaching; other educational organizations are equally challenged. There is also a great need to clarify which AI concepts and principles K-12 students should be learning. Finally, it is critical to investigate the ways AI will both promote and impact equitable education and inclusive learning.

As a result, there is a severe urgent need for research on the use of AI, and the teaching of AI, in K-12 classroom and informal settings. This Dear Colleague Letter (DCL) invites researchers to submit Rapid Response Research (RAPID) proposals for time-sensitive research including, but not limited to:

- Developing AI tools and environments to advance age-appropriate equitable learning and inclusive teaching;
- Supporting learning about and interest in AI;
- Using AI to teach AI; and,
- Integrating generative AI in education in an ethical, responsible, and effective way.

Proposed projects must include strong data-driven research methods in need of a quick

response due to rapidly changing AI. NSF strongly encourages proposals that will sustain and advance diversity, equity, and inclusion in STEM education research. Likewise, NSF is seeking proposals that will have an impact on underserved and underrepresented schools and communities.

Requests for RAPID proposals may be for up to $200K and up to one year in duration.

PREPARATION AND SUBMISSION INSTRUCTIONS

Proposers must submit a 1-page Concept Outline that details the proposed research by email to RAPID-DRL-AI@nsf.gov.

The prospective PI will receive an email from the cognizant NSF program officer specifying whether a full proposal may be submitted. The email confirming approval to submit a RAPID proposal must be uploaded by the prospective PI in the "Program Officer Concurrence Email" section of Research.gov.

Guidance on submitting a RAPID proposal may be found in Chapter II.F.2 of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG).

In addition, the following instructions apply:

- Either an IRB approval or approved exemption is required. The IRB approval date or exemption number should be provided on the proposal Cover Sheet.
- Proposals must specify plans for bounding the proposed research within reasonable constraints given rapidly changing technology.

Invited proposals must be submitted via Research.gov to the current PAPPG and directed to the EDU/DRL "ITEST - Innovative Technology Experiences for Students and Teachers". Proposal titles should begin with the phrase, "DRL AI:" after the prepended text "RAPID:".

After the submission of the RAPID proposal, PIs should alert the cognizant program officers by sending an email to RAPID-DRL-AI@nsf.gov with the proposal number assigned to the submission. Proposals submitted in response to this DCL will be subject to internal NSF review only.

Proposals submitted to this DCL will be reviewed and funded on a rolling basis while this notice is posted.

DISSEMINATION

Briefing Paper and Presentation at NSF forum

Each project must post a briefing paper on a public project website, 12-months post-award.

The briefing paper should inform a broad audience about (a) research results; and (b) how the results inform future research and practice in the short- and long-term.

The PI also must present results at an NSF forum that will be held virtually approximately one-year post-award.

POINTS OF CONTACT

All correspondence should be directed to RAPID-DRL-AI@nsf.gov.

DUE DATE

Required Concept Outlines may be submitted at any time.

Sincerely,

James L. Moore III, Assistant Director
Directorate for STEM Education