NSF 24-025

Dear Colleague Letter: Advancing education for the future AI workforce (EducateAI)

December 01, 2023

Dear Colleagues:

Artificial Intelligence (AI) is transforming the ways in which citizens navigate their daily lives, researchers make discoveries, educators teach their students, students learn both individually and collaboratively, and manufacturers build products. As new AI-driven discoveries and capabilities emerge, it is critical to promote responsible innovation, competition, and collaboration to unlock the technology's potential to solve some of society's most difficult challenges and maintain U.S. leadership in applying AI to address critical global challenges.

To develop the next generation of talent for a diverse, well-trained AI workforce, the computing community must create new pathways and educational experiences that provide the knowledge, skills, and dispositions necessary for current and future AI careers.

To address this growing need, the Directorates for Computer and Information Science and Engineering (CISE) and STEM Education (EDU) are launching the EducateAI initiative to support educators to make state-of-the-art, inclusive AI educational experiences available nationwide. **With this Dear Colleague Letter (DCL), EDU and CISE encourage the submission of novel and high impact proposals that advance inclusive computing education that prepares preK-12 and undergraduate students for the AI workforce**.

This EducateAI DCL seeks to support:

- professional learning opportunities & communities;
- inclusive AI educational resources (curricula, tools, data sources, assessments, etc.); and
- educational infrastructure needed to support AI education across institutions;

and build upon/contribute to

- research on broadening participation to better understand and inform efforts to support students from groups historically underrepresented in computing; and

- research and development needed to make state-of-the-art, inclusive AI education available to all students in preK-12 schools, 2-year colleges, and 4-year colleges and universities.

RESEARCH PROPOSALS

This DCL does not constitute a new competition or a new program. Rather, interested proposers should consult the program pages for Computer Science for All: Research Practice Partnership (CSforAll:RPP) <https://new.nsf.gov/funding/opportunities/computer-science-all-csforall-research-rpps> and Improving Undergraduate STEM Education: Computing in Undergraduate Education (IUSE: CUE) <https://new.nsf.gov/funding/opportunities/improving-undergraduate-stem-education-computing> as those programs are revised. Proposals submitted to either CSforAll or CUE will need to be responsive to requirements of the corresponding solicitation. Principal investigators (PIs) are encouraged to review the CSforAll and CUE programs that develop educational approaches or pathways to support learners' preparation toward skills relevant for AI careers.

The CSforAll:RPP program aims to provide all U.S. preK-12 students with opportunities to participate in rigorous computer science and computational thinking education in their schools through funding both research and research-practitioner partnerships. The IUSE: CUE program supports evidence-based transformative efforts to modernize computing courses and accelerate student success in the knowledge, skills, and dispositions of industries such as AI, and/or explore effective pathways to computing degrees and careers that involve two-year colleges and industry partnerships. Both CSforAll:RPP and IUSE: CUE have a focus on broadening participation of groups who are historically underrepresented and underserved by existing computing courses and careers.

Proposals in alignment with EducateAI should support the goal of providing opportunities for all students taking computing-related courses to participate in inclusive AI educational activities at the preK-12, 2-year college, or 4-year college levels. As appropriate, proposals may also address data science skills and practices relevant to AI careers. Proposals may incorporate perspectives of stakeholders such as AI subject matter experts, industry professionals, and educators in formal and or informal settings, including connecting to existing National AI Research Institutes (https://aiinstitutes.org <https://aiinstitutes.org/>) and other NSF-funded AI research projects.

CISE and EDU especially encourage proposals that develop and/or evaluate strategies that prepare teachers to incorporate AI material in computing courses in ways that a) enable students to progress in AI education pathways, b) are responsive to the quickly changing needs of the AI workforce, c) and aim to broaden participation in the AI workforce. Additionally, CISE and EDU encourage proposals from institutions in EPSCoR jurisdictions, minority-serving institutions, and emerging research institutions.

EducateAI supports the goals of the National AI Research Resource pilot initiative <https://new.nsf.gov/focus-areas/artificial-intelligence#national-ai-research-resource-pilot-351> , which aims to democratize access to the computational, data and related educational resources needed for AI research and education. In addition to learning and curricular specific activities, proposers can indicate needs for AI-related computational, data, model or other resources, and associated workforce training to accomplish the project's goals.

EAGER AND CONFERENCE PROPOSALS

In addition, NSF is interested in supporting proposals for capacity-building projects related to the goals of the EducateAI Initiative through EArly-concept Grants for Exploratory Research (EAGER) and conferences and workshops.

EAGER proposals seek support for highly innovative, potentially transformative, high-risk/high-reward projects. These proposals should describe radically different approaches, apply new expertise, or engage novel disciplinary or interdisciplinary perspectives to advance the EducateAI initiative. PIs must contact the NSF program officer(s) listed below whose expertise is most germane to the proposal topic prior to submission of an EAGER proposal. Guidance on preparation of EAGER proposals is contained in Chapter II.F.3 of the NSF Proposal and Award Policies and Procedures Guide <https://new.nsf.gov/policies/pappg> (PAPPG).

Conference or Workshop proposals should address bringing people together consistent with the goals of the EducateAI initiative and aligned with the program from which the proposer is seeking funding. Proposed activities should be innovative, focused on meeting clearly defined objectives with potentially broad implications for advancing AI education. They should go beyond what would be obtained through existing meetings such as professional societies or state or local education agency efforts. All conference proposals must comply with the guidance outlined in PAPPG Chapter II.F.9.

For EAGER and Conference proposals, proposals should select the current PAPPG as the funding opportunity and direct proposals to the Education and Workforce (EWF) program in the Division of Computer and Network Systems (CNS) in the Directorate of Computer and Information Science and Engineering (CISE).

Titles of EAGER and Conference proposals submitted in response to this DCL should include "EducateAI". The deadline for submission of EAGER and Conference proposals is March 31, 2024.

Principal investigators with questions pertaining to this DCL may contact:

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Sincerely,

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