Grant Inquiry Form

External Funding Opportunity Intake (Go / Hold / No-Go)

Terminology note: “Grant” is not used as a catch-all. Each opportunity must be labeled as one of the types below. The selected type determines routing, approvals, and compliance steps.

Opportunity

Date Submitted
7/9/2026

Submitted By

Name
Joe Faculty

Title
Assistant Professor

Department
Mathematics

Email
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Opportunity / Project Title
The Math-to-Matter Initiative: Computational Foundations for Emerging Technical Pathways

Sponsor / Funder (Organization)
National Science Foundation

Opportunity Name/Number
Advanced Technological Education (ATE) Program

Link to Solicitation / RFP / Webpage
https://www.nsf.gov/funding/opportunities/ate-advanced-technological-education/nsf24-584/solicitation?utm_source=chatgpt.com

RFP Due Date

Date
10/1/2026

Time
5:00 PM

Time Zone
PST

Estimated Award Amount
$475,000.00

Anticipated award period

Start Date
7/1/2027

End Date
6/30/2030

Required Funding Type

Funding Type
Federal Grant (Assistance Award)

Project Concept

6–8 sentence summary
The Math-to-Matter Initiative: Computational Foundations for Emerging Technical Pathways seeks to bridge the gap between traditional mathematics instruction and the emerging skills required in today's advanced technology workforce. For many students entering technical fields, a weak mathematics background creates a significant obstacle, limiting their ability to succeed in advanced coursework and fully engage with industry-relevant technologies. The project aims to connect mathematics to real-life technician skills by identifying the mathematical, computational, and problem-solving competencies used in authentic technical careers. Working initially with Pasadena City College's Laser Technology and Nanotechnology programs, the project will collaborate with industry partners and technical faculty to develop a transferable Technician Mathematics Competency Framework that can guide curriculum development across multiple technical pathways. Using this framework, the project will create competency-based instructional modules and Math & AI Innovation Laboratory (MAIL) experiences that integrate mathematical modeling, computational thinking, AI-supported learning, Python programming, and hands-on technical applications. Students will experience mathematics as a practical tool for solving authentic technical problems rather than as a collection of abstract procedures. The project will evaluate student outcomes, provide professional development for faculty, and disseminate the framework and instructional model through the NSF ATE community to support broader adoption by community colleges nationwide.

Primary target population(s) / departments impacted
Students pursuing advanced technology careers, initially focusing on Laser Technology and Nanotechnology students, with subsequent expansion to other technical pathways. Mathematics division, Laser Technology Program, and Nano Technology Program will be impacted.

Strategic alignment
This project aligns with Pasadena City College's strategic priorities by strengthening workforce development, student success, and equity. The project is designed to better prepare students for high-demand technical careers by aligning mathematics education with authentic technician competencies identified through industry partnerships. It promotes student success by helping students develop the mathematical, computational, and problem-solving skills needed to persist and excel in advanced technology programs. The project also advances equity by providing contextualized, hands-on learning experiences that reduce barriers for students from diverse educational backgrounds and create more accessible pathways into emerging technical careers.

What is the plan for sustaining the program/project and institutionalizing the expense?
The project is designed to create sustainable resources and instructional models that will continue beyond the grant period. A key institutionalization strategy is the development of Math 085, a new course centered on the project's competency-based curriculum and Math & AI Innovation Laboratory (MAIL) experiences. We will work toward establishing Math 085 as a recommended course within Pasadena City College's technical certificate pathways, embedding the project into students' academic and career preparation. Faculty professional development and implementation resources will support continued delivery and future refinement of the course. Industry partnerships and the advisory board will help ensure the curriculum remains aligned with evolving workforce needs, while additional external funding opportunities will be

pursued to support future expansion.

Must-know Contingencies

Match / Cost Share Required?
No

Partners Required?
Yes

List Partners
Laser Technology Program, Nanotechnology Program, Industry partners, External Evaluator,

Will PCC be the fiscal agent of the grant?
Yes

Compliance flags
IRB/Human subjects
Student data (FERPA)
Contracts/Procurement
Equipment

Other notes

Will you need assistance writing the grant?
No

Required Acknowledgements

Proposed Project Lead (Program Owner)

Professor Smart

Proposed Budget/Fiscal Lead

Professor Smart

Dean/Manager Discussion

Name	Date Discussed
Dean Mathes	7/2/2026