

Institutional Recruitment Overview

Project EMBER (Eliminating Mathematics Barriers through Evidence-based Reforms) is a national initiative designed to help research universities improve student success in introductory mathematics courses.

The project is a collaboration between:

- A. Association of Public and Land-grant Universities (APLU)
- B. Transforming Post-Secondary Education in Mathematics (TPSE Math)
- C. Association for Undergraduate Education at Research Universities (UERU)

Project EMBER will partner with eight research universities to engage in a structured institutional process aimed at improving outcomes in gateway mathematics courses and supporting evidence-based reform.

Project Description

Introductory mathematics courses are one of the largest barriers to college completion and success in STEM fields. At many institutions, these courses have DFW (D, F, Withdrawal) rates averaging around 30 percent, with significant equity gaps among student populations.

Project EMBER is designed to help universities examine these challenges and implement research-supported solutions.

Participating institutions will engage in a structured process that includes:

- gathering and analyzing institutional data on introductory mathematics outcomes
- conducting departmental self-assessments
- developing action plans for reform
- beginning implementation of evidence-based innovations.

The goal of Project EMBER is to support departments and institutions in implementing changes that improve student success and equity in gateway mathematics courses.

The Need

While many student success initiatives focus on support services, the greatest barriers to completion often lie within required academic courses particularly introductory mathematics.

- High failure and withdrawal rates limit progression into majors
- Equity gaps disproportionately impact historically underserved students
- Misalignment between math pathways and programs slows student momentum

Improving these courses has an outsized impact: when gateway mathematics improves, entire student success systems improve.

Who are your partners

APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. With a membership of nearly 250 public research universities, land-grant institutions, state university systems, and affiliated organizations, APLU's agenda is built on the three pillars of increasing degree completion and academic success, advancing scientific research, and expanding engagement. Annually, member campuses enroll 5.0 million undergraduates and 1.3 million graduate students, award 1.3 million degrees, employ 1.3 million faculty and staff, and conduct \$49.3 billion in university-based research.

TPSE Math is a professional organization of mathematicians, statisticians, data scientists, educators, and administrators who strive to ensure that all students are prepared for a variety of career opportunities. TPSE Math facilitates an inclusive movement to strengthen post-secondary education in mathematics by working closely with and mobilizing faculty leaders, university administrations, membership associations, and relevant disciplinary societies in the pursuit of mathematically rich and relevant education for all students. TPSE Math identifies innovative practices where they exist, advocate for innovation where they do not, and work with and through partners to implement and scale effective practices, striving throughout to ensure that students and society are enriched by the power and beauty of mathematics.

UERU, or The Association for Undergraduate Education at Research Universities, is a national consortium of R1/2 research university leaders with expertise in the theory and practice of undergraduate education. UERU includes a robust network of Undergraduate Vice Provosts/Presidents (UVPs) -- strategically positioned leaders who work collaboratively with their colleagues to advance equity and excellence in undergraduate education. In addition, UERU fosters connections across units in academic affairs, helps members stay current and forward-thinking, and enlists leaders in common projects to meet the challenges and opportunities facing undergraduate programs

Project Activities

Participating institutions will work with the EMBER leadership team and institutional consultants through five phases.

Phase 1 – Institutional Recruitment and Consultant Selection

April–June 2026

- Recruitment of participating institutions
- Selection of institutional consultants

Phase 2 – Institutional Onboarding

July–September 2026

- Formation of cross-functional institutional teams
- Institutional kickoff meetings
- Consultant training and orientation

Phase 3 – Data Collection and Analysis

October–December 2026

- Gathering and analyzing data on introductory mathematics courses
- Identifying institutional data needs
- Beginning the EMBER self-assessment process

Phase 4 – Self-Assessment and Knowledge Sharing

January–May 2027

- Completing the EMBER departmental self-assessment
- Sharing experiences with peer institutions
- Participating in project convenings and learning sessions

Phase 5 – Action Planning and Early Implementation

June–September 2027

- Developing an institutional action plan
- Selecting reform strategies for implementation
- Beginning implementation of selected innovations

Evidence-Based Innovation Areas

Participating institutions will explore reforms across several research-supported areas, including:

- Active learning in introductory mathematics courses
- Mathematics pathways aligned with students’ academic programs
- Corequisite student support structures
- Department-level course coordination
- Technology-enabled curriculum and assessment

These innovations have been shown to significantly improve student success and reduce equity gaps in gateway courses.

Institutional Team Structure

Each participating university will assemble a cross-functional team including:

- mathematics department leadership
- teaching-focused faculty
- institutional research or data staff
- academic support professionals
- university administrators.

This team will lead the institutional work throughout the project.

Benefits of Participation

Participating institutions will receive:

Expert Guidance

Each university will work with an experienced institutional consultant who will guide the team through the reform process.

Access to Research-Based Tools

Institutions will receive access to EMBER resources, including:

- self-assessment rubrics
- data analysis tools
- innovation guidebooks
- implementation frameworks.

National Peer Network

Institutional teams will join a national community of universities working on similar challenges, creating opportunities for:

- shared learning
- collaboration
- exchange of best practices.

Institutional Support Funding

Each participating university will receive a **participation award of \$8,000** to support activities such as:

- faculty stipends
- course releases
- institutional data analysis.

Long-Term Institutional Impact

The project will help institutions:

- strengthen collaboration between departments and administration
- improve data-informed decision making
- build capacity for sustained instructional improvement.

Expected Project Outcomes

By the end of the project, participating institutions will have:

- established cross-functional teams focused on gateway mathematics reform
- gathered and analyzed institutional data on introductory mathematics outcomes
- completed the EMBER departmental self-assessment
- developed an institutional action plan for reform
- begun implementing selected innovations.

Project findings will also contribute to national conversations about improving student success in introductory mathematics.

Eligibility

Project EMBER seeks research universities committed to improving student success in introductory mathematics courses.

Institutions will be selected to represent a diverse cohort of universities, including:

- flagship public universities
- minority-serving institutions
- comprehensive public universities
- open-access institutions.

Institutional Commitment

Participating institutions will be expected to:

- designate a project lead
- designate a data lead
- form a cross-functional institutional team
- participate in project meetings and convenings
- engage in data analysis and self-assessment activities
- develop an institutional action plan.

Project Timeline

Phase	Dates
Institution Recruitment	April – June 2026

Institution Onboarding	July – September 2026
Data Analysis	October – December 2026
Self-Assessment	January – May 2027
Action Planning	June – September 2027

Contact Information

For more information about Project EMBER or to express interest in participating, please contact:

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