

# PROJECT EMBER

## Diversity, Equity and Inclusion

### What is the Challenge?

- Student outcomes from college mathematics class reveal systemic inequities in access (the higher level the course, the higher the proportion of white men in the class), achievement (grades show gaps for a variety of student identity groups), identity (students seeing themselves represented in the instructor workforce, in curriculum materials), and power dynamics (whose voices are heard in the classroom, who “owns” the mathematical knowledge)
- Inequitable mathematics teaching and learning hurts everyone; when students are not successful in mathematics (particularly in the introductory mathematics courses) this can lead to students leaving their intended STEM majors and leaving higher education; the STEM workforce needs more people (and more diversity).
- Improving teaching and learning for those historically marginalized in mathematics makes it better for everyone.

### Solution

Intentional focus on diversity, equity, and inclusion, which imply systemic reforms to improve student learning.

### What is the Innovation?

- When a system is optimized for equitable mathematics teaching and learning, then student access to and achievement in mathematics can no longer be predicted based on students' social identity markers (such as gender, sexual orientation, ethnicity, first generation status, income level)
- Although most of the research is at the K-12 level, much of it can apply to higher education. For instance, the five Equity-Based Mathematics Teaching Practices come from *The Impact of Identity in K-8 Mathematics Teaching: Rethinking Equity-Based Practices* (2013) by Julia Aguirre, Karen Mayfield-Ingram, and Danny Bernard Martin include practices appropriate for college classrooms:
  1. Going deep with mathematics
  2. Leveraging multiple mathematical competencies
  3. Affirming mathematics learners' identities
  4. Challenging spaces of marginality
  5. Drawing on multiple resources of knowledge
- It is not enough to tell people to use more inclusive teaching practices; instructors need immediate and sustained professional development and support to positively change their teaching practices.
- Understand that there are no magic/immediate solutions to diversity, equity, and inclusion issues. The efficacy of any strategy is an interaction among the course, instructor, students, and

outside factors. The details of how strategies are implemented matter a lot. If an instructor doesn't believe a strategy will work, it won't. Inclusive teaching is a mindset, not a checklist.

- Tie efforts to improve courses to department reviews and instructor annual reviews (and promotion/tenure).

### What are Some Key Terms to Know?

- Diversity, Equity, Inclusion, Belonging

### What are Some Key Questions to Ask Yourself as an Instructor?

- Whose voices are heard in the classroom?
- Whose ideas are valued?
- How can students show what they know (in multiple formats)?
- How do students' lived experiences contribute to class activities?
- What norms has the class established for interactions in whole group and small groups?
- What mechanisms do students have to communicate concerns?
- How transparent are instructional decisions to students?

### How Does this Play Out Across the System?

	Diversity	Equity	Inclusion
Institution	Goals Recruitment & admissions Instructor hiring practices	Goals Student supports (academics, mental health, housing, food, health care)	Goals Structures that support student clubs, spaces for students to connect
Department	Instructor hiring practices Math placement policies	Math placement policies Instructor professional development	Resources for instructors Collect data on student perceptions of inclusion
Course-Level	Instructor assignment to courses	Course Coordination (including syllabus, common grading of common exams, formative feedback, active learning)	Co-requisite courses to support student success in courses
Classroom-Level	Nurture course environment where diverse students can feel they belong	Equitable teaching practices that attend to whose voices are benign heard and what supports students need for learning	Setting class norms for interaction, that promote belonging, connections, and flexibility Active engagement of students in learning

## How Can You Learn More?

- MAA's best practices statement (#6) <https://maa.org/resource/best-practices-statements/>
- MAA Instructional Practices <https://maa.org/resource/instructional-practices-guide/>
- 5 Equity Practices from Aguirre et al. (2013) *The Impact of Identity in K-8 Mathematics Teaching: Rethinking Equity-Based Practices* (summary is available here: <https://www.cde.state.co.us/comath/equitybasedmathteachingpractices>)
- **I want to connect with others engaged in this same innovation**
  - [Zulip Network for Teaching-Focused Faculty](#)
  - [MAA Connect](#)