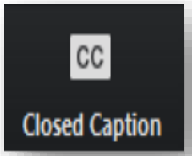
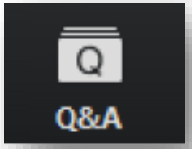
AB 1705 STEM Pathways:
Results of the Direct Calculus Placement Study

Wednesday, November 5, 2025

Webinar Logistics



Click the Closed Caption (CC) tab to read live captions



Click the Question & Answer (Q&A) tab to enter questions for the presenters and to read their responses. You will be muted with your camera off during the entire webinar.

Additional Webinar Logistics

The webinar session will be recorded. Slides and the recording will be available on the Chancellor's Office Equitable Placement and Completion website.

The webinar is part of a Fall 2025 Equitable Placement webinar learning series. Visit the Equitable Placement and Completion website to register for additional webinars.

https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Educational-Services-and-Support/equitable-placement/resources

Presenters

Terrence Willett – Assistant Vice Chancellor of Research, Analytics, and Data, CCCCO

Alyssa Nguyen – Senior Director of Research and Innovation, The RP Group

Lauren Ilano – Senior Research Analyst, The RP Group

Chantée Smith – Program Specialist, Academic Affairs, Chancellor's Office

Overview

- Towards more equitable math completion
- Interrogating the status quo
- The statewide study on Calculus completion
- The follow up Calculus completion study with local college data
- Additional follow-up research

Towards more equitable math completion

Completion of program-required math courses is critical for ensuring students can equitably achieve these key milestones

LEARN

apply key foundational math concepts for courses

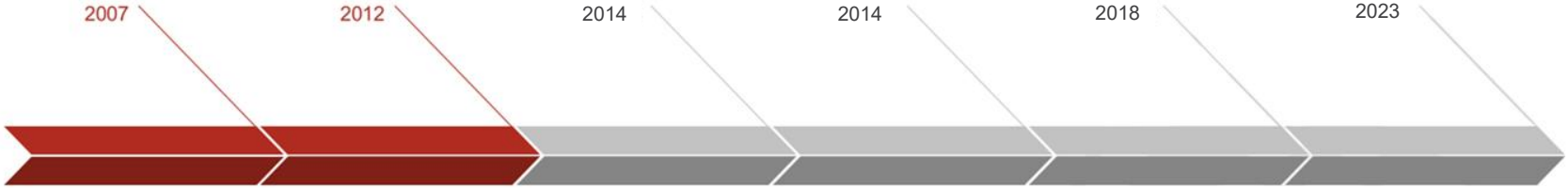
GRADUATE

complete program required courses in a timely manner

EARN

enter the workforce to earn wages

Long Arc of Remediation Reform in CA



Leveraging HS Grades and Tests

First large-scale study in CA showing: predictive power of HS grades for placement, grading variability, and equity gaps

Student Transcript-Enhanced Placement Study (STEPS)

11 Colleges locally replicate using HS grades for placement into all levels of English and math. >half of students college-ready

California Acceleration Project

Shortening course sequences with acceleration principles resulted in "large and robust" effects on student completion of gateway English and math

MMAP

Multiple Measures Assessment Project begins to eventually have over 90 colleges replicate and apply findings from STEPS into all levels of English, Reading, Math and ESL

AB 705

Creation of decision tree placement rules for transfer-level English and Math via peer reviewed and replicated research

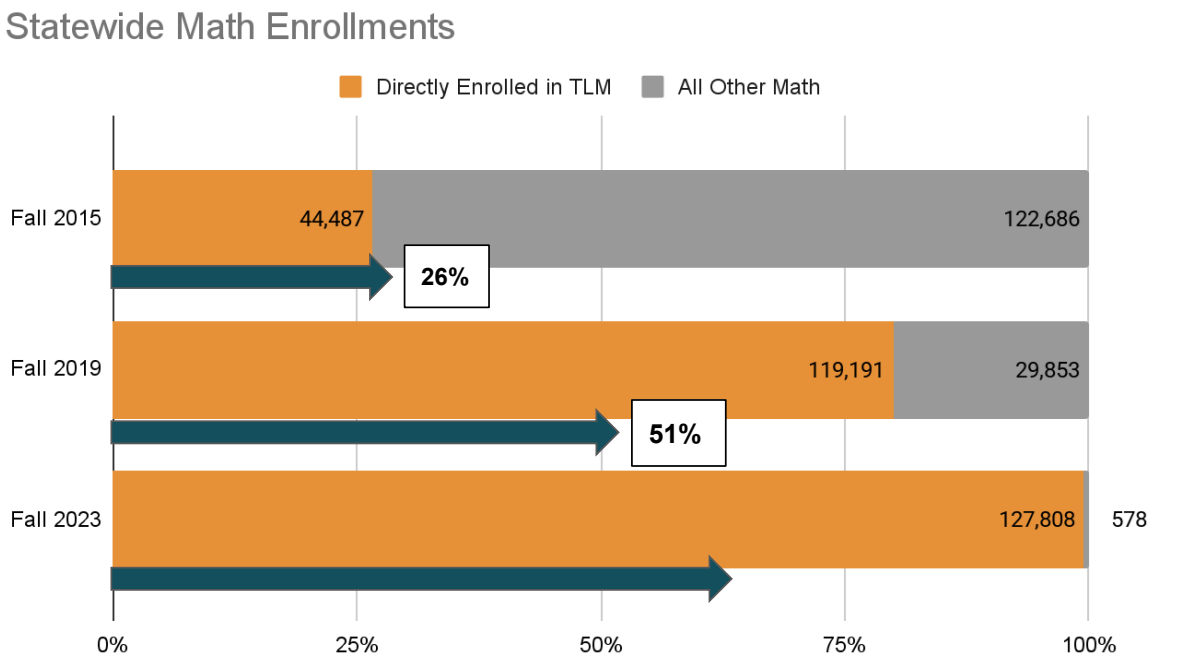
AB 1705

Research on impacts of AB 705 uncovered policy gaps for HS to CC transition and STEM pathways resulting in additional policies and research

EQUITABLE PLACEMENT:
START FAIR,
FINISH STRONG

See also: Mexican American Legal Defense Fund (MALDEF) 1988 lawsuit in California (*Romero-Frias, et al. v. Mertes, et al.*)

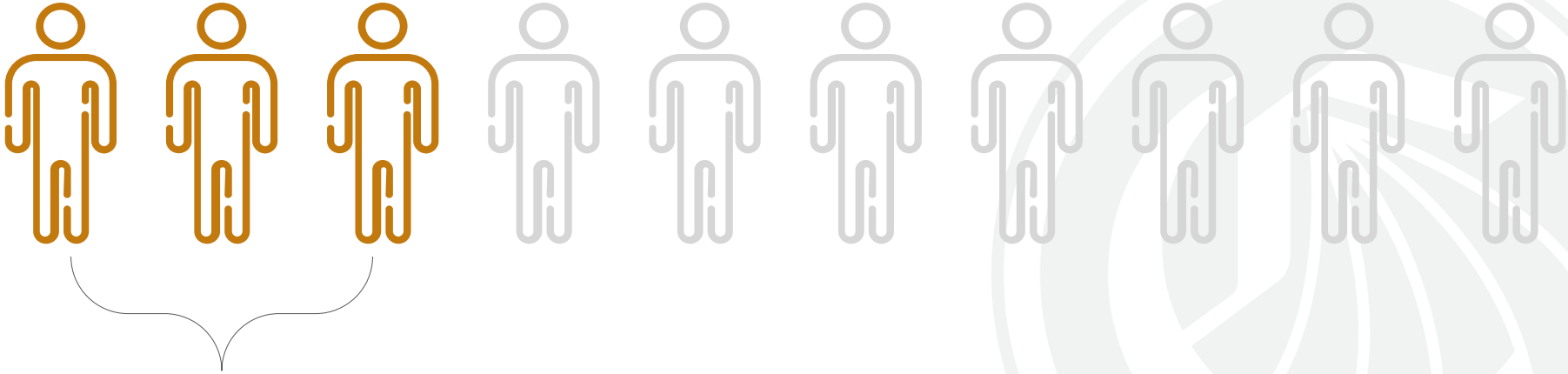
Students historically experienced stagnant progress and extended timelines to completion in math and English



California Community Colleges

Measures
ent Project

The impact on students before AB 705?



~ 30% had access to transfer-level math courses within six years

Interrogating the status quo

Two bills aimed at improving student completion rates in math and English by interrogating the institutional placement structures

AB 705 (2018)
intended to support assessment and placement strategies proven to increase student completion rates and close the achievement gap by requiring colleges to consider a student's high school coursework and GPA as primary determining factors for placement.

AB 1705 (2022)
supports full and comprehensive implementation of AB 705 with a focus on ensuring students can enter and complete their program- required English and math requirements within a one-year timeframe

The aspiration of these bills

Students

Believe in their prior knowledge and experiences, whether formal or informal to learn

Faculty

Believe in faculties' expertise and social justice orientation to transform math teaching and learning

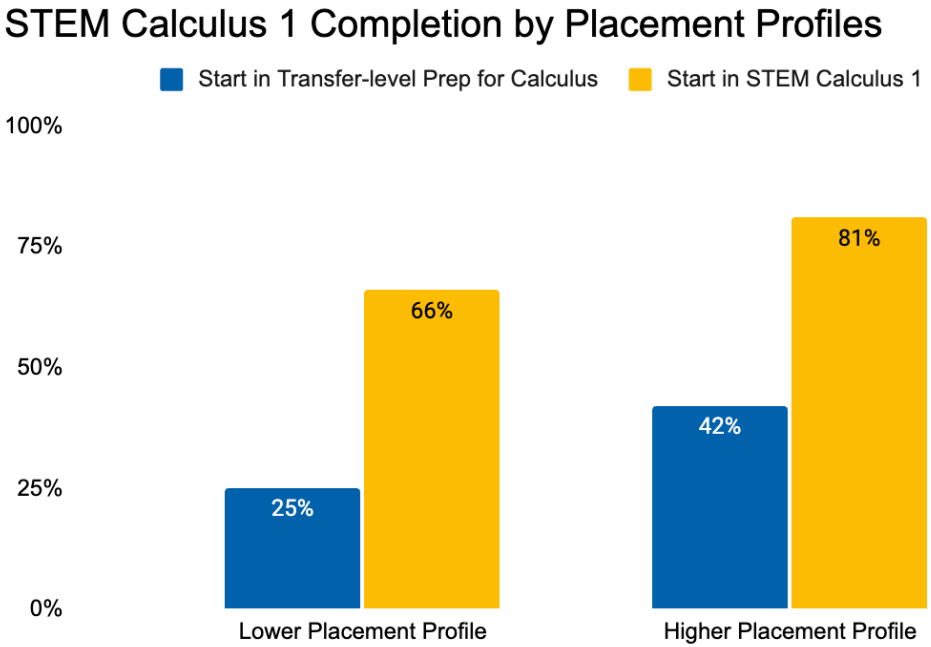
The Statewide Study on Calculus Completion

2-Year Calculus Completion Rate Patterns

Placement Profiles
Cohort of 37,232 STEM majors who enrolled in a math course between 2012 and 2020 (8 years)

- **High**
  HS GPA >= 2.6 & passed HS trigonometry, precalculus or calculus
- **Low**
  HS GPA < 2.6 and/or did not pass HS trigonometry, precalculus, or calculus

Direct enrollment into Calculus yields the highest completion rates



Considerations of Statewide Data

01

Statewide data are limited to observable/reported information

02

Local context of placement and challenge processes varies across colleges and not always well documented

03

Quasi-experimental design, not a randomized controlled trial

Preview of Local Data Findings

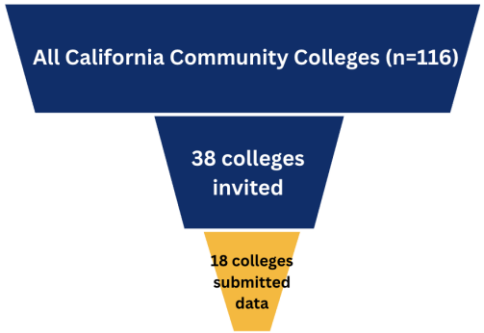
Local default placement was the most utilized method for students directly enrolled in Calculus 1

Local data affirm statewide results — students with recorded or unrecorded prior math experience show consistent and comparable completion rates across the different placement profiles.

Equity gaps continue to exist in completion of STEM Calculus 1 regardless of placement process for Students of Color and nonbinary students.

The Follow Up Calculus Completion Study with Local College Data

Sample Selection Process



- Used AB 1705 statewide data from college reports to **identify colleges that had at least 20 students in the lowest placement profile enrolling directly in STEM Calculus 1**
- 32 colleges met selection criteria
- After reviewing sample representativeness by urbanicity, size, first-generation status, age distribution, and race/ethnicity, 6 additional colleges were added to enhance regional representation.

Preparation Profiles

Population: Students who enrolled in STEM Calculus 1 as their first math course between fall 2019 and spring 2025

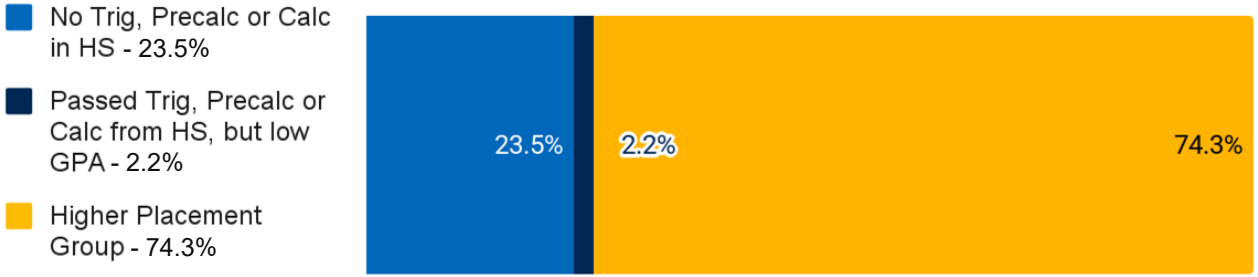
- **Lower Preparation Profiles**
  - Did not pass HS trigonometry, precalculus, or calculus
  - HS GPA < 2.6, but passed HS trigonometry, precalculus, or calculus
- **Higher Preparation Profile**
  - HS GPA >= 2.6 and passed HS trigonometry, precalculus, or calculus
  - Students with additional preparation beyond high school were also placed into higher preparation profile group

Sample Characteristics

15,808
students

76%
completed Trigonometry, Precalculus, or Calculus in High School

Preparation Profiles



Placement Process

Local Default Placement Process 81.7%

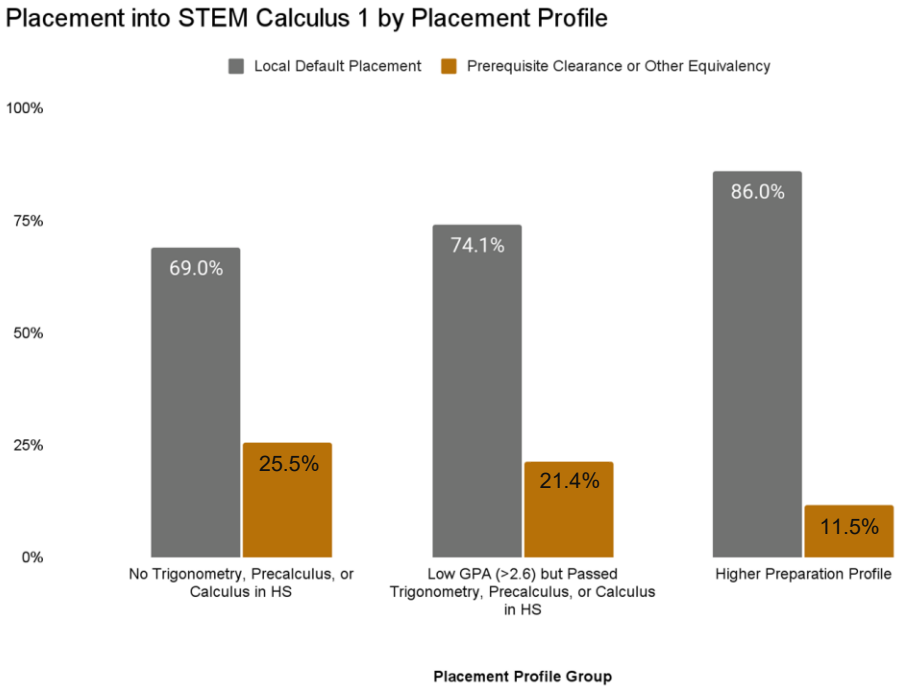
This category includes all students who met local criteria for placement into Calculus through high school information or a guided self-placement process.

Prerequisite Clearance 15%

This category includes students who provided additional documentation showing that they met prerequisites (e.g., additional HS or college transcripts, AP test scores), completed a challenge test, or received math department approval.

Placement in STEM Calculus 1

Local college data show prerequisite clearance more common for lowest-prepared students, but default placement is most common overall



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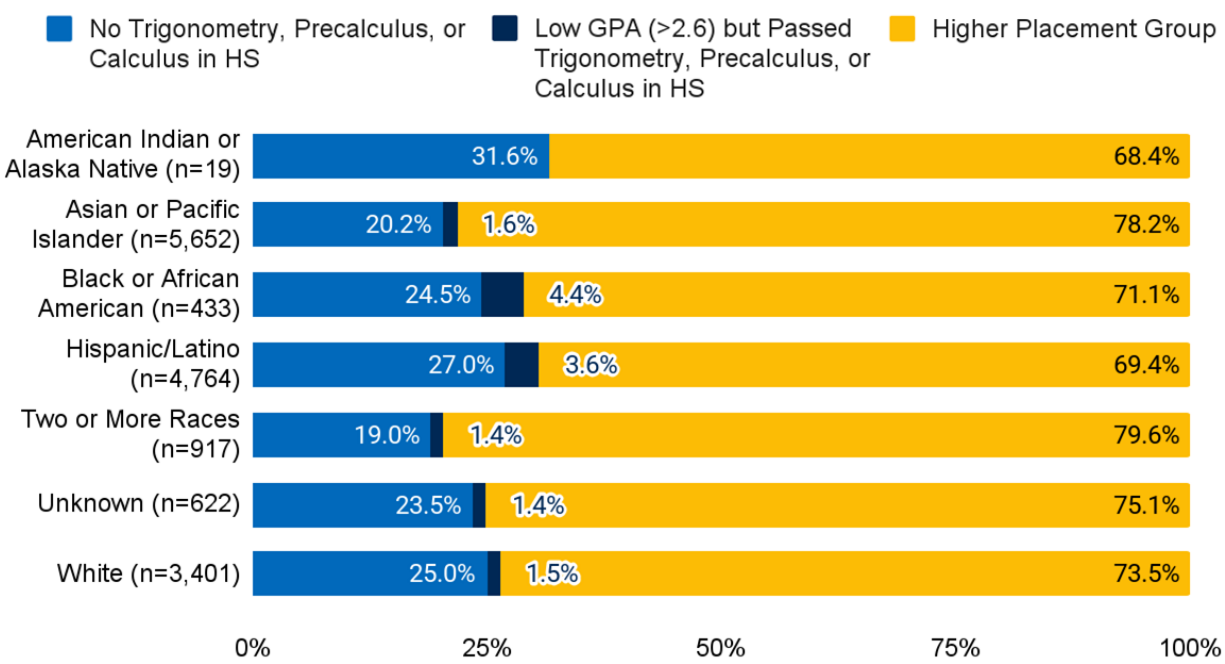
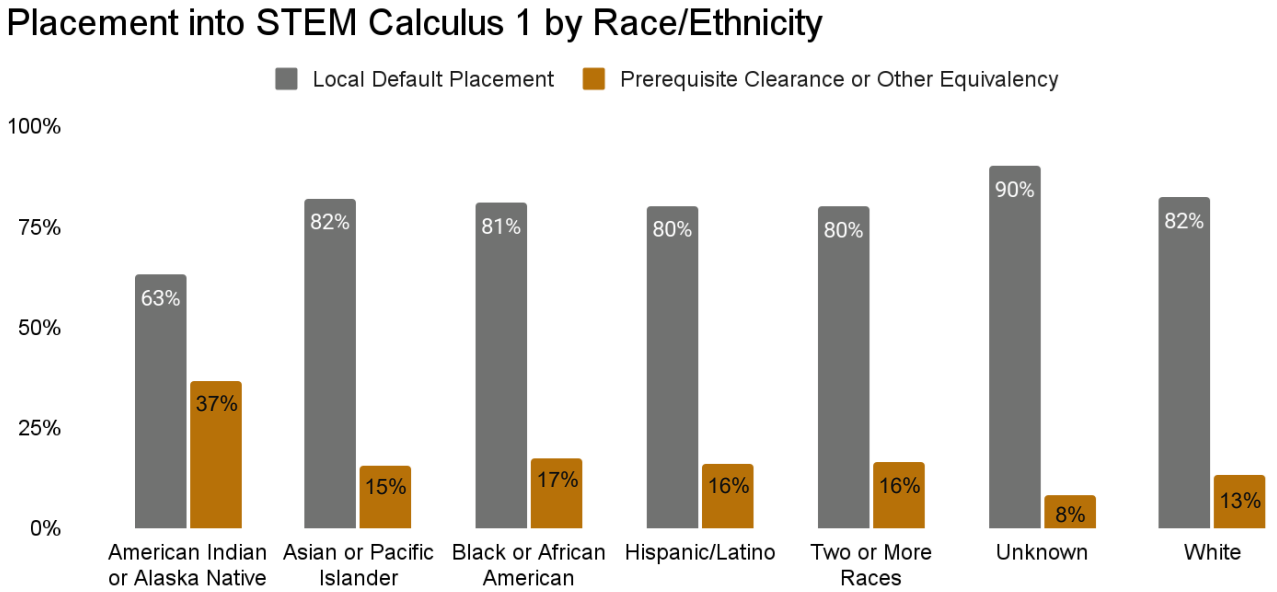
College data show inequities in high school math opportunities by race/ethnicity

Preparation Profile Groups by Race/Ethnicity

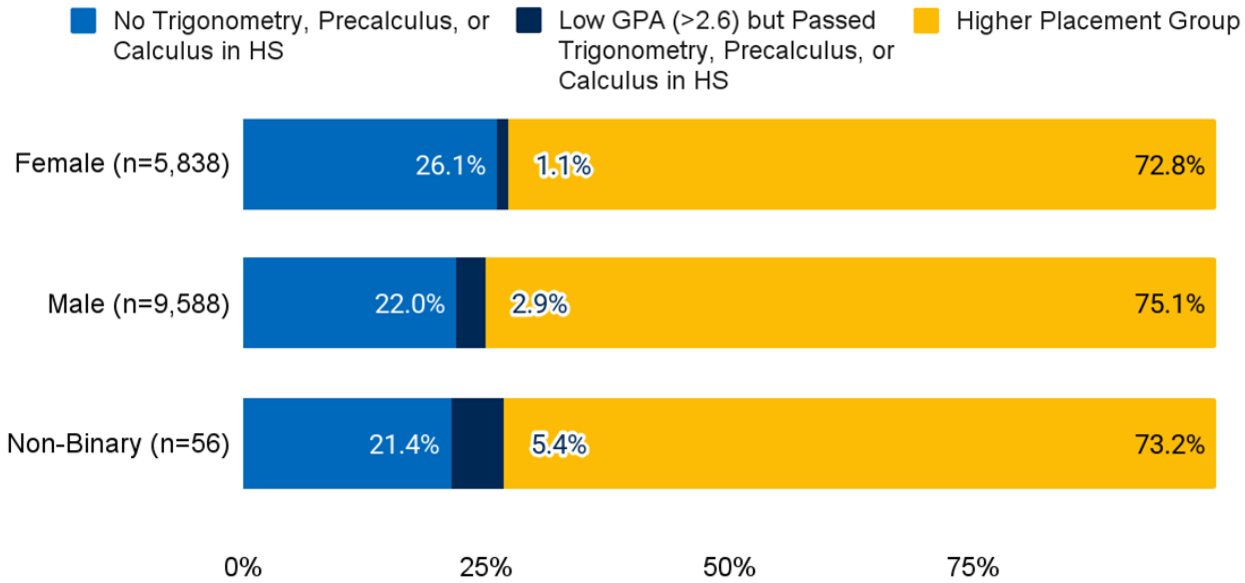


Across most groups, access is comparable, but American Indian students' experiences warrant attention

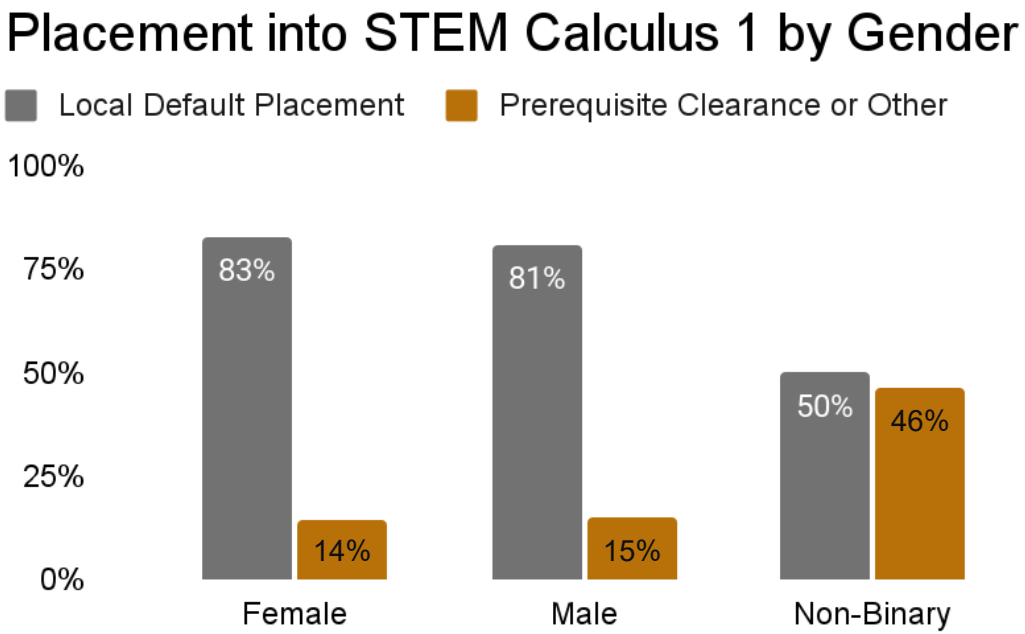


College data show slight gender differences in high school math preparation

Preparation Profile Groups by Gender

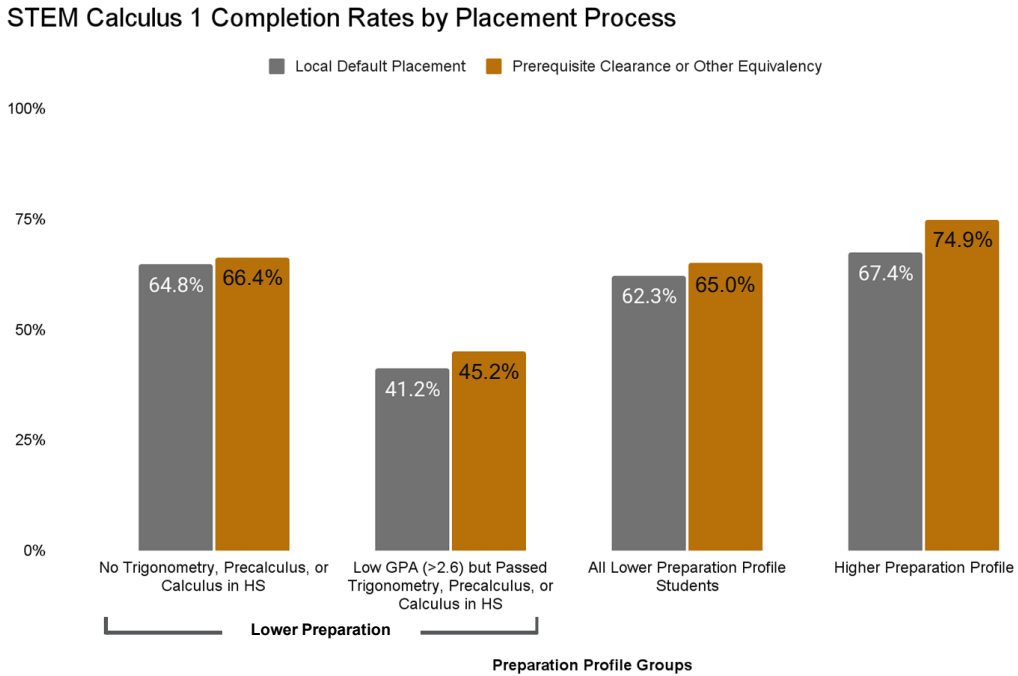


Despite relatively similar preparation, non-binary students more likely to utilize prerequisite clearance

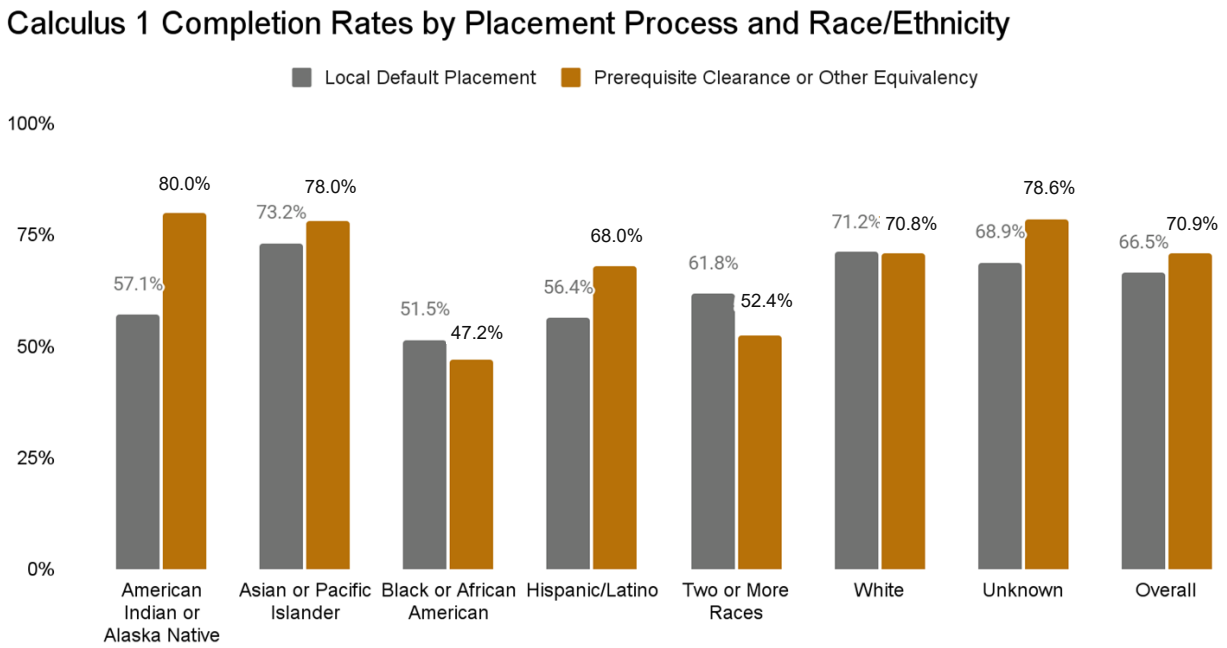


Completion of STEM Calculus 1

Slightly higher completion rates among students who used prerequisite clearance or equivalency



Historically underrepresented students have significantly lower Calculus 1 completion rates



California Community Colleges

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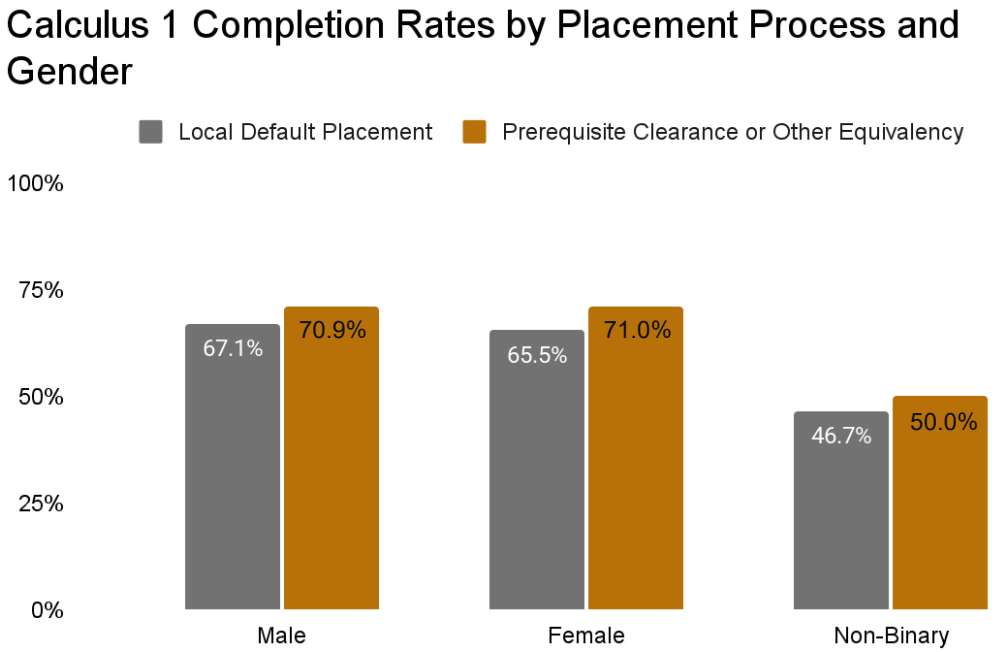
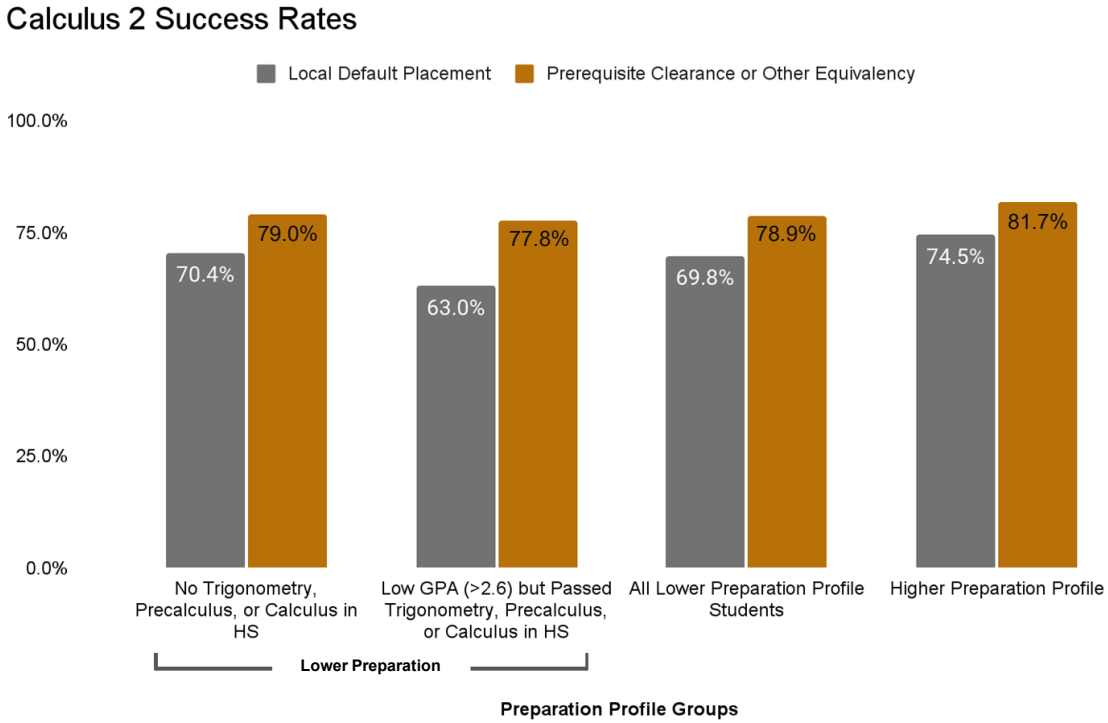
The RP Group

Across all genders, students utilizing prerequisite clearance have higher STEM Calculus 1 completion rates



Completion of Calculus 2

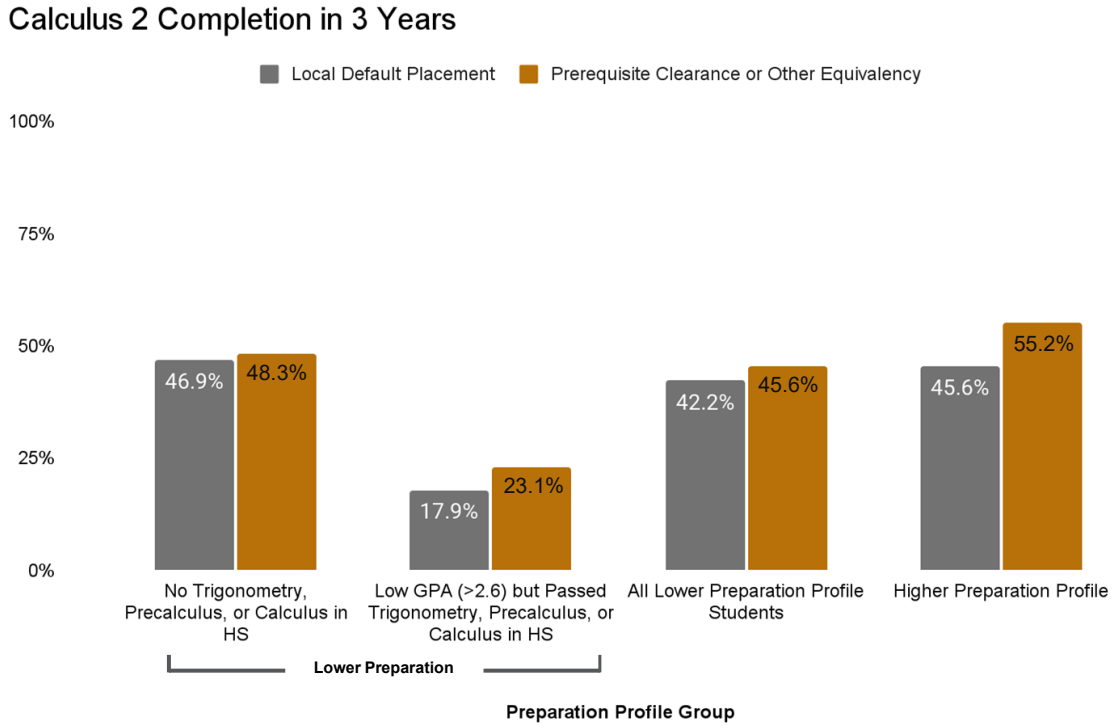
Calculus 2 one-term success rates are high…



…But low persistence is an issue

46.1%

of STEM students ever attempted Calculus 2 during the study timeframe



Takeaways

Local default placement was the most utilized method for placement.

Local data affirm that students with recorded or unrecorded prior math experience show consistent and comparable completion rates across the different math preparation levels

Equity gaps continue to exist in completion of STEM Calculus 1 regardless of placement process for Students of Color and nonbinary students.

Future research and support efforts

Ongoing research and capacity-building efforts to support colleges with equitable math completion

Research

Fall 2025: Surveys to understand students' Calculus enrollment and completion experiences and college placement practices

Spring 2025: Faculty survey to understand current practices, challenges, and needs

Capacity-Building

2025-2026 Virtual and in-person learning spaces

Q & A

Resources

- AB 705 Memo ESS 25-64, Validation of Credit ESL Course Sequences (Sept. 2025)
- AB 1705 Implementation Guide (Nov. 2023)
- Chancellor's Office Equitable Placement, Support and Completion Memos and Resources webpage
- Chancellor's Office Equitable Placement, Support and Completion, AB 1705 Learning Series Webinars webpage
- Transfer-Level English, English as a Second Language and Math Completion Dashboard

Thank You For Attending!

The webinar and materials and recording will be posted to the Chancellor's Office Equitable Placement, Support and Completion webpage

Questions?
Email the Equitable Placement and Completion Team
AB1705@CCCCO.edu