Potential Impacts of AB 1705 on STEM Equity, Excellence, and Éxito

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MESA STEM Programs-get to know us!

- Top Majors: Biology, Engineering, Allied Health

- Headcount of Declared STEM Majors at Mesa
  - Fall 2022 data-Mesa HSI Equity Dashboard
  - 4331 headcount / 18,222 total headcount
  - **~37% of STEM students are Latinx**

Current Multiple Entrance Points to STEM Paths

Biology pathway:

- Math 116 (College & Matrix Algebra)→ Math 121 (Bio/Business-Calculus)
  - Chemistry sequence, Biology sequence, and Physics 180A/B

Engineering Pathway:

- Math 104 (Trig) → Math 141 (Pre-Calc) → Math 150 (Calculus) → Calc Based Physics (195 Sequence)→ ENGE sequence

We are supporting **STUDENT CHOICE**:

104x, 116x, 121x, 150x, 141x (Spring 2024)

What is AB 705 vs. 1705?

AB 705 - Intermediate Algebra is removed from curriculum at community colleges

a. Mesa College phased out Math 96

b. Currently no sections

c. Support Course Models “x” classes to refresh material

AB 1705 seeks to

a. Validate all mathematics courses before calculus

Business Calculus-Fall 2024

Science Calculus-Fall 2025

b. Validation metrics at State level not transparent

c. No ability for faculty to ask/question the statistical approach

d. The statistics do not focus on STEM majors or STEM curious yet

STEM E^3 Objectives

- Increase number of Hispanic/Latino seeking a STEM degree or transfer
- Increase number of Hispanic/Latino transferring to 4-year institutions in STEM
- Increase in Hispanic/Latino success rates in STEM gateway courses
- Decrease in average number of units accumulated by Hispanic/Latino associate STEM degree earners

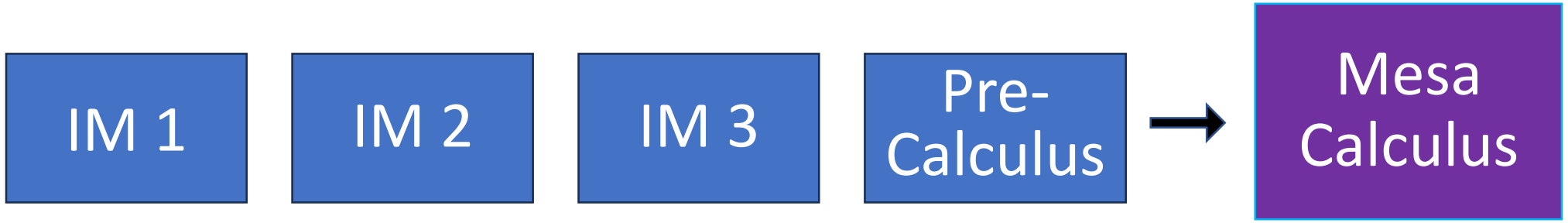
HSI Curriculum Work Group (20+ faculty)

Seeking to remove barriers for students and increase student retention

Some Projects that the CW is working on currently

- Curriculum Alignment Project
- Important topics for Physics & Chemistry (required for all STEM students)
- Five Major Areas identified:
  - Algebra, Logs/Natural Logs, Trigonometry, Vectors, & Graphing
- Canvas Shell for Interdisciplinary discussions

Future Implications of AB 1705-Entering Paths



FOUR YEARS OF HIGH SCHOOL MATH = M60 = Calculus

Future Implications of AB 1705-Entering Paths

THREE YEARS OF HIGH SCHOOL MATH = M50 =
Calculus + X course
8 hours for 150x = 5 units + 1 unit lab
6 hours for 121x = 3 units + 1 unit 15F

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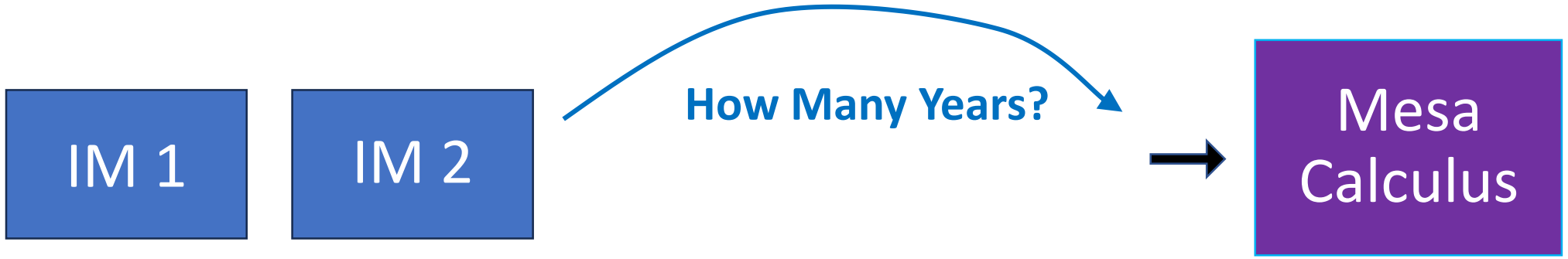

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Questions?

- **What percentage of students new to college only have three or two years of Math? Are they STEM majors?**
- **Returning adult students?**
- **What is the impact on race, ethnicity, gender, and age?**
- Articulation Issues?
- Student Voices?
- Which students are dropping?
- What is the impact on enrollment not only STEM but in General Education courses? Implications on Financial Aid?
- What are the effects of AB 705 + Pandemic Learning Loss on Success Rates in Science?

Searching for Equitable & Sensible Solutions

- **Support a ONE semester Pre-Calculus Course as a CHOICE for STEM students needing the prerequisite skills for Calculus**

- District Taskforce needed with IE Support (Connect with Regional and Statewide Groups)

- Support Continuing Education Math courses taught on Mesa College Campus as a **CHOICE** for students.