Brief agenda for 1 Apr 2020; 4-5 pm; Zoom
HSI STEM Steering Committee

1. Welcome and a few announcements (5 mins)

2. Update on response for PBLC students (current & prospective) in light of COVID-19 (15 mins)

3. Report and discussion of re-formed developmental math pathway for first-year students (40 mins)

Current Students:

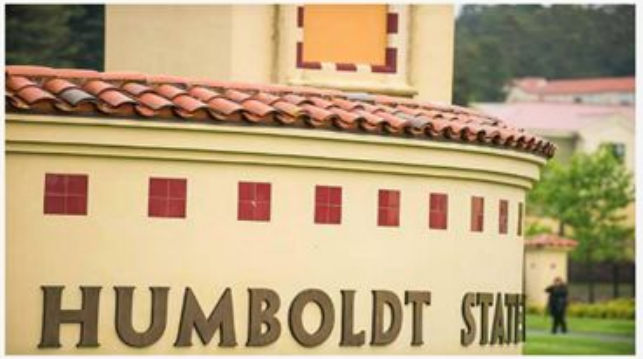
- Keep the community strong
- Spring service events with the tribes cancelled
- Peer Mentoring in an online format
- Tutoring services online
- Increased social media announcements
- Aim and hope is that social connections, belonging, & ongoing support will help them return to HSU

Prospective Students:

- How do we engage prospective students? How will Covid-19 impact enrollment?
- Creative substitutes for Spring Preview
- Working with Admissions on tailored outreach
- Added challenge with predicting enrollment numbers and class seats
- Block enrolling already conducted via virtual communication, not a concern
- Worst case scenario: no immersion

Place-Based Learning Communities

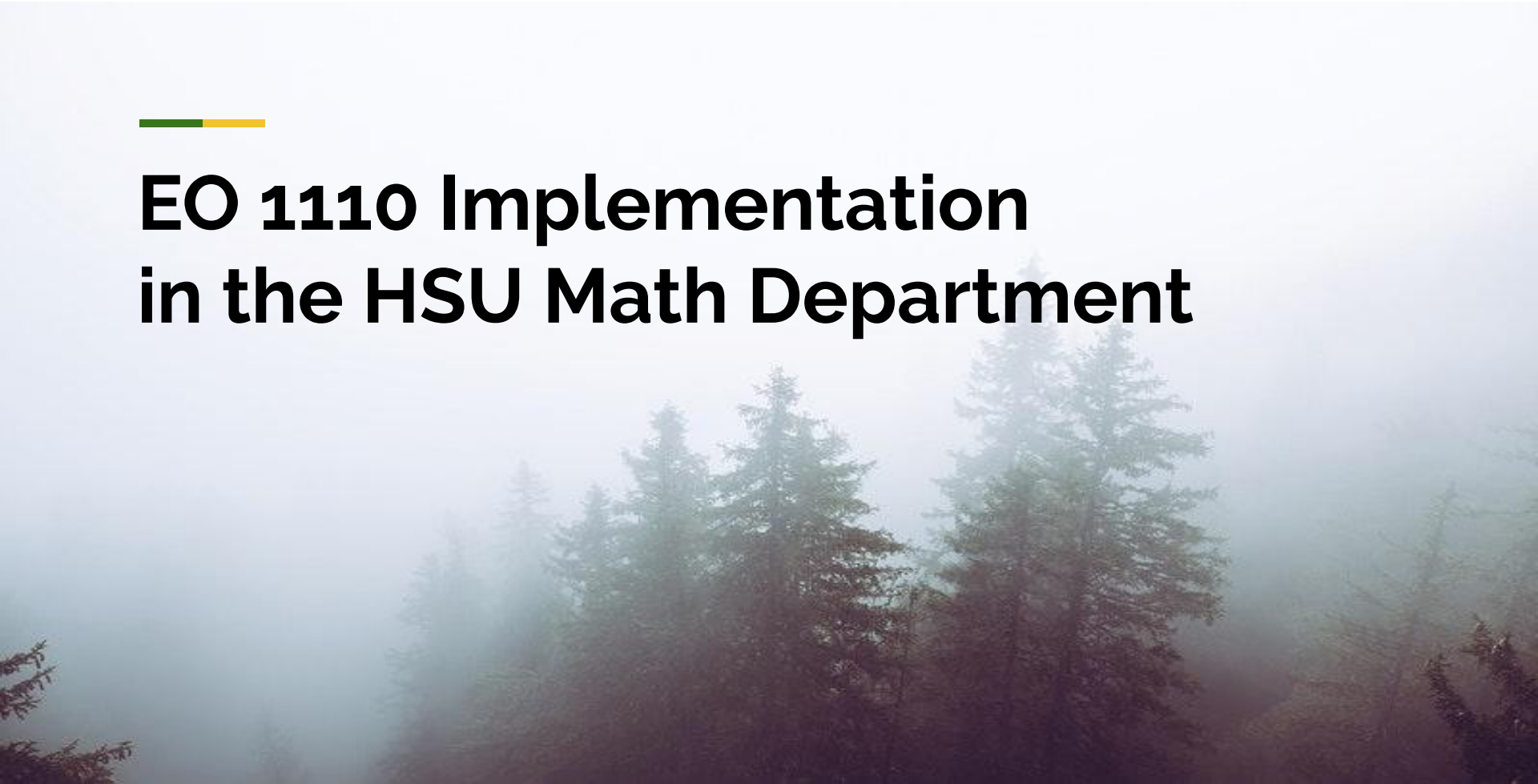
New Pathways for Transfer Students



Expanded Tutoring Services

Reformed Math Instruction

EO 1110 Implementation in the HSU Math Department



AGENDA

1. EO 1110 Implementation
2. Assessment
3. Discussion and Input

AGENDA

- EO 1110 Implementation
  - Pre-EO Context
  - Background
  - Curriculum
  - Placement
  - Student support
- Evaluating where we are
  - Assessment methods
  - Results
- Next steps
  - Broadening how “success” is defined and measured
  - Identify most effective student supports
  - Coordination and cooperation with other CSUs (and nationally)

EO 1110 Implementation - Curriculum

- **Historically**, remedial students took **up to two semesters of remedial courses** prior to GE coursework.
- HSI-STEM **pilot** (AY ‘17-’18): Students with **one semester of remediation** were able to take **GE course and a co-requisite support** courses.
- Post EO-1110: **all** incoming students **enroll in GE-level coursework appropriate for chosen major** or field of interest

EO 1110 - Fundamental change in instruction for students needing support

1. System-wide “multiple measures placement”
   a. Cat 1: GE complete
   b. Cat 2: GE-ready
   c. Cat 3: GE-ready w/ support
   d. Cat 4: GE-ready w/ support & Early Start Required
2. Changes to Early Start
   Must carry baccalaureate units
3. Unit-load & remediation
   All students take GE Math in first year and limit on pre-bacc units

EO 1110 Curriculum - New Structure

1. Category 1 & 2 students will take regular GE courses for 3 units (one or two semesters; “single” or “stretch”), class sizes vary from 35 to 48

2. Category 3 & 4 students take new supported courses from Fall 2018
    - 4 units: 3 bacc + 1 pre-bacc units; 5 days/week; class size 25; “cohorted” model.
    - cover the same material as the stretch courses but offer more instructor support and review.

Enrollment Category and Required Mathematics	Category I	Category 2	Category 3	Category 4
Group A: Biology; Botany; Chemistry; Computer Science; Environmental Resources Engineering; Environmental Science and Management; Fisheries Biology; Geology; Mathematics; Oceanography; Physics; Rangeland Resource; Wildlife; Zoology	Area B GE satisfied Check major requirements and take placement test to enroll in appropriate course for the major.	Area B GE ready Take Math 101 (first of a 2-sem. sequence) OR Math 102 (1-sem., intensive course), OR an optional placement test.	Take Math 101 (regular GE course) OR Math 101i/1 (supported GE) to satisfy Area B GE. Take more Math courses as needed for major.	Take Math 101i/1 (supported GE course) to satisfy Area B GE. Take more Math courses as need for major.
Group B: Business Administration, Rec. Administration	Area B GE satisfied Check with academic advisor whether to take Math 104 Finite Mathematics.	Area B GE ready Take Math 104 Finite Mathematics to satisfy Area B GE and major requirement.	Take Math 104 (regular GE course) OR Math 104i/4 (supported GE course) to satisfy Area B GE and major requirement.	Take Math 104i/4 (supported GE course) to satisfy Area B GE and major requirement.
Group C: Criminology and Justice Studies; Economics; Environmental Studies; Forestry; Geography; Kinesiology; Political Science; Psychology; Social Work, Sociology	Area B GE satisfied Check with academic advisor whether to take Stat 108 Elementary Statistics.	Area B GE ready Take Stat 108 Elementary Statistics to satisfy Area B GE and major requirement.	Take Stat 108 (regular GE course) OR Stat 108i/8 (supported GE course) to satisfy Area B GE and major requirement.	Take Stat 108i/8 (supported GE course) to satisfy Area B GE and major requirement.
Group D: Anthropology; Art; Child Development; Communications; Critical Race, Gender and Sexuality Studies; Dance Studies; Liberal Studies; English; Film; French and Francophone Studies; History; International Studies; Journalism; Music; Native American Studies; Philosophy; Religious Studies; Spanish; Theater Arts	Area B GE satisfied No further Mathematics or Statistics coursework is required by major.	Area B GE ready Take Math 103 Mathematics as a Liberal Art to satisfy Area B GE requirement.	Take Math 103 (regular GE course) OR Math 103i/3 (supported GE course) to satisfy Area B GE requirement.	Take Math 103i/3 (supported GE course) to satisfy Area B GE requirement.

STEM: 109, 105, 102, 101 or 101i/1

Business: 104 or 104i/4

Soc. Sci.: S108 or S108i/8

Arts & Hum.: 103 or 103i/3

MAKING MATH RELEVANT - Linking content to each PBLC theme

- Data analysis lab based on Klamath water quality experiments (Excel-based data fitting lab in all 101i, 101, 102 & 105)
- pH worksheet and ocean acidification example (101i, 101, 102)
- CO_2 emission lab (101i, 101 & 102)
- Sea level rise in Humboldt Bay (101i, 101 & 102)

PBLC Math Content Coordinator: Sonja Manor

Relevance, civic engagement

- Develop "modules" for use 1st year Math courses that link PBLC themes to mathematical topics in the course. ***Each PBLC student will have some linked content in their math course.***
- PBLC design enables us to connect the thematic content to social and environmental and/or justice, with this thread often picked up in other courses (e.g., Botany, Chemistry, Science 100, Native American studies).
  - Klamath Connection: Blue-green algae, harmful algal blooms, environmental impacts, impact to Yurok, Hupa, and Karuk ceremony
  - Stars to Rocks: accumulation of atmospheric carbon dioxide
  - Rising Tides: sea level rise
  - Among Giants: under development
  - [Math & CS]: Basket design (under development)

PLACEMENT - Option to “test up” for all categories

- Cat 2 students deemed college ready select an entry-level course (MATH 101 or 102) *or* participate in ALEKS to gain eligibility to MATH 105, MATH 109, or STAT 109.
- Cat 3 students: Directed Self-Placement to choose regular or supported entry-level course*.
- Cat 4 students with required placement in a supported GE course must select supported entry-level courses. Cat 4 students who are successful in Early Start at HSU may tests (using ALEKS) to Cat 3 status.

Assessment

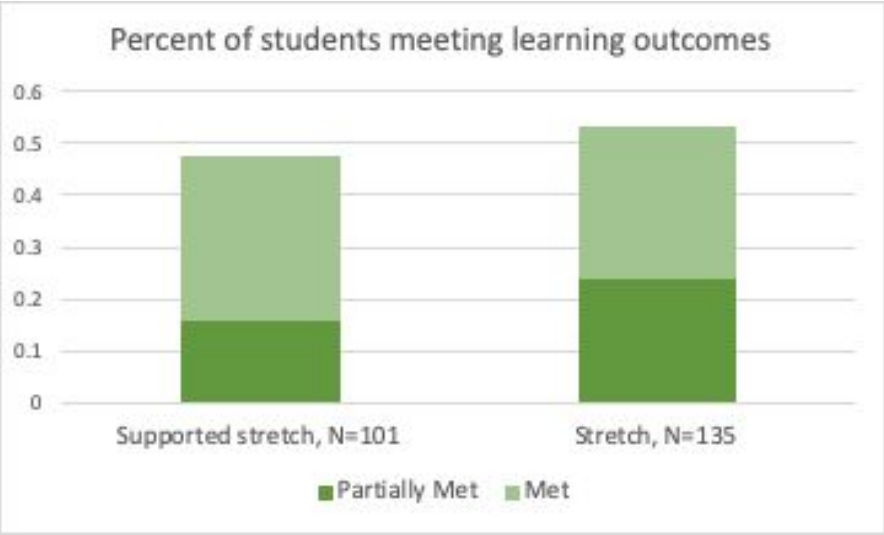
ASSESSMENT - Questions by HSI STEM Math Taskforce

A. Learning outcomes: stretch vs supported stretch
B. QR and Area B GE
C. Opportunity gaps
D. Success in subsequent courses
E. Student attitudes

ASSESSMENTS - Learning and content

A. Supported vs. Stretch

Common final exam questions:



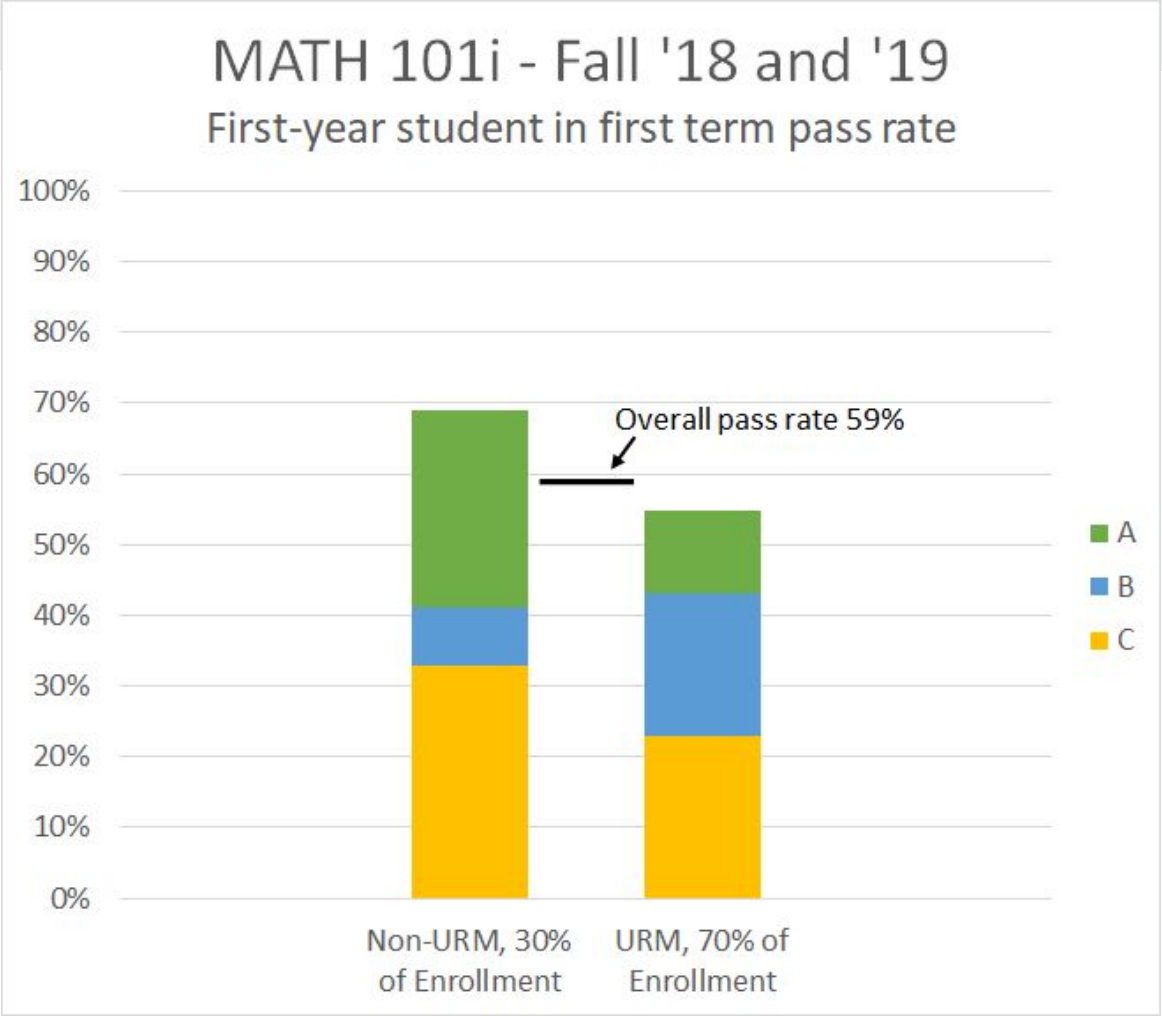
B. GE - QR

- GE assessment framework at HSU has shifted in the last couple of years
- Math has piloted different GE assessments in ‘18-’19 and ‘19-’20
- Some limited preliminary data available
- Work w/ GEAR committee on this

C. Supported Math Pathway

Historical pass rate: 24%

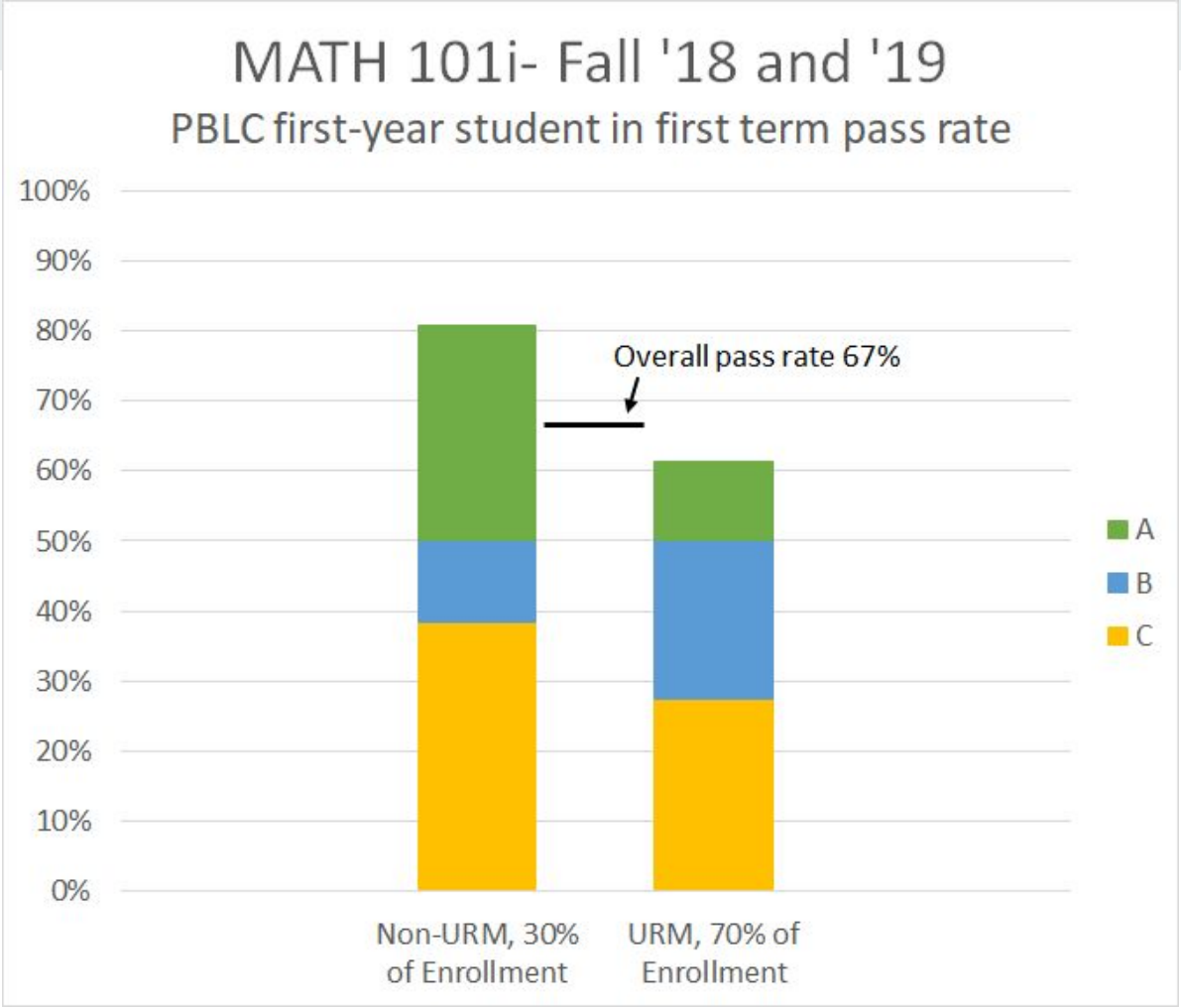
Main point: Much better pass rate that historical, but a gap persists



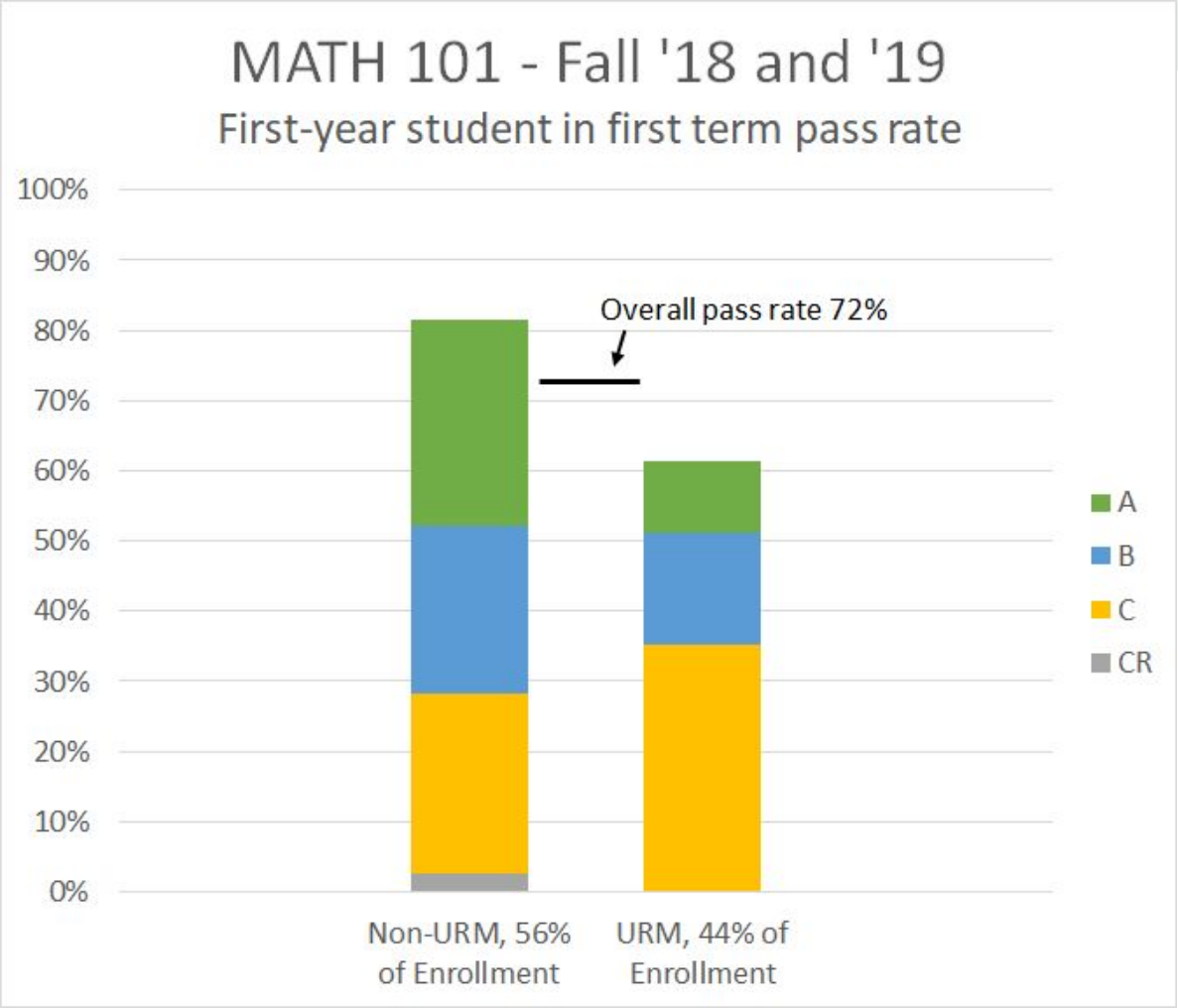
C. Supported Math Pathway

Historical pass rate: 24%

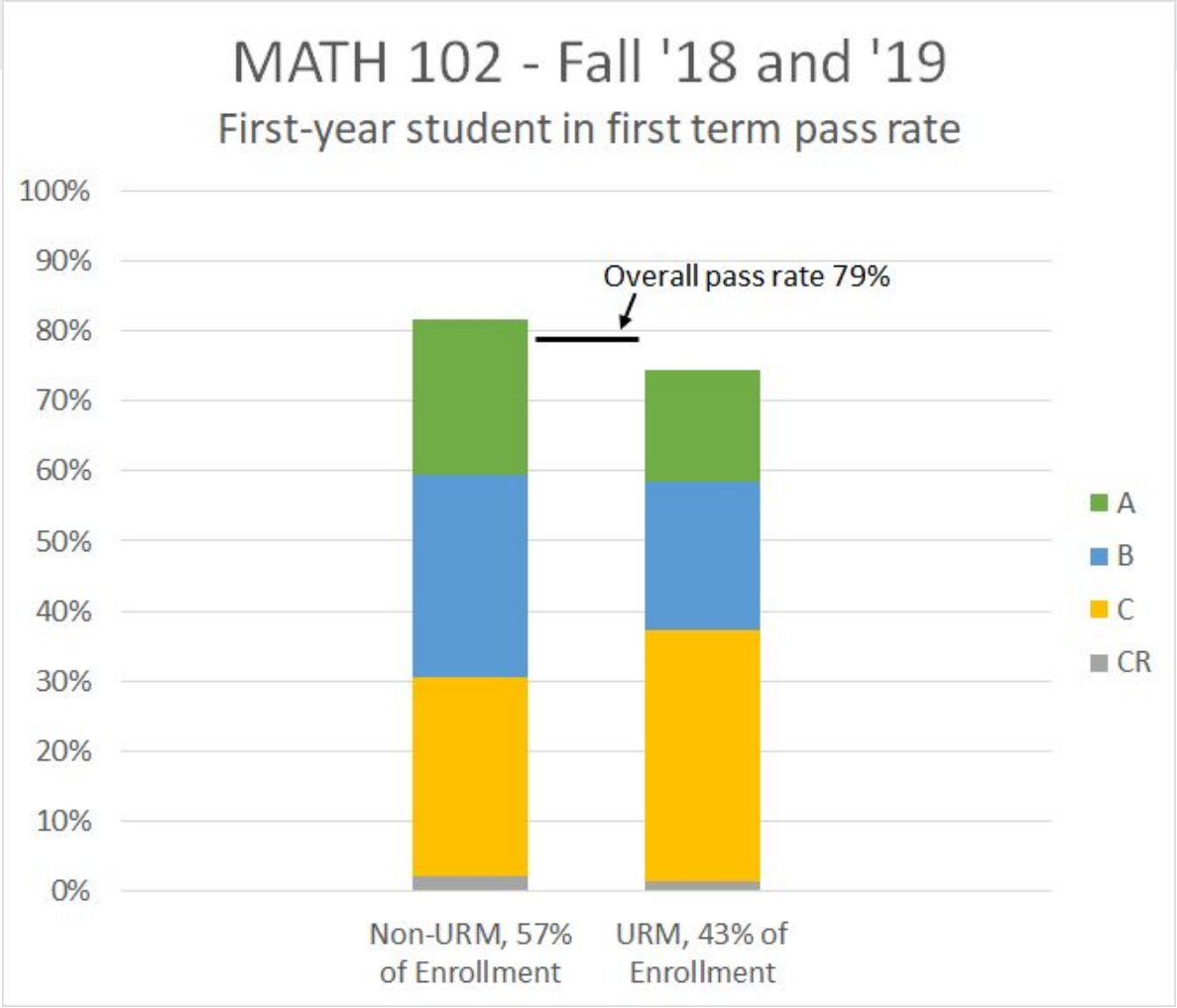
Main point: PBLC participants have a higher Pass Rate but the gap is not changed



C. Stretch Math Pathway

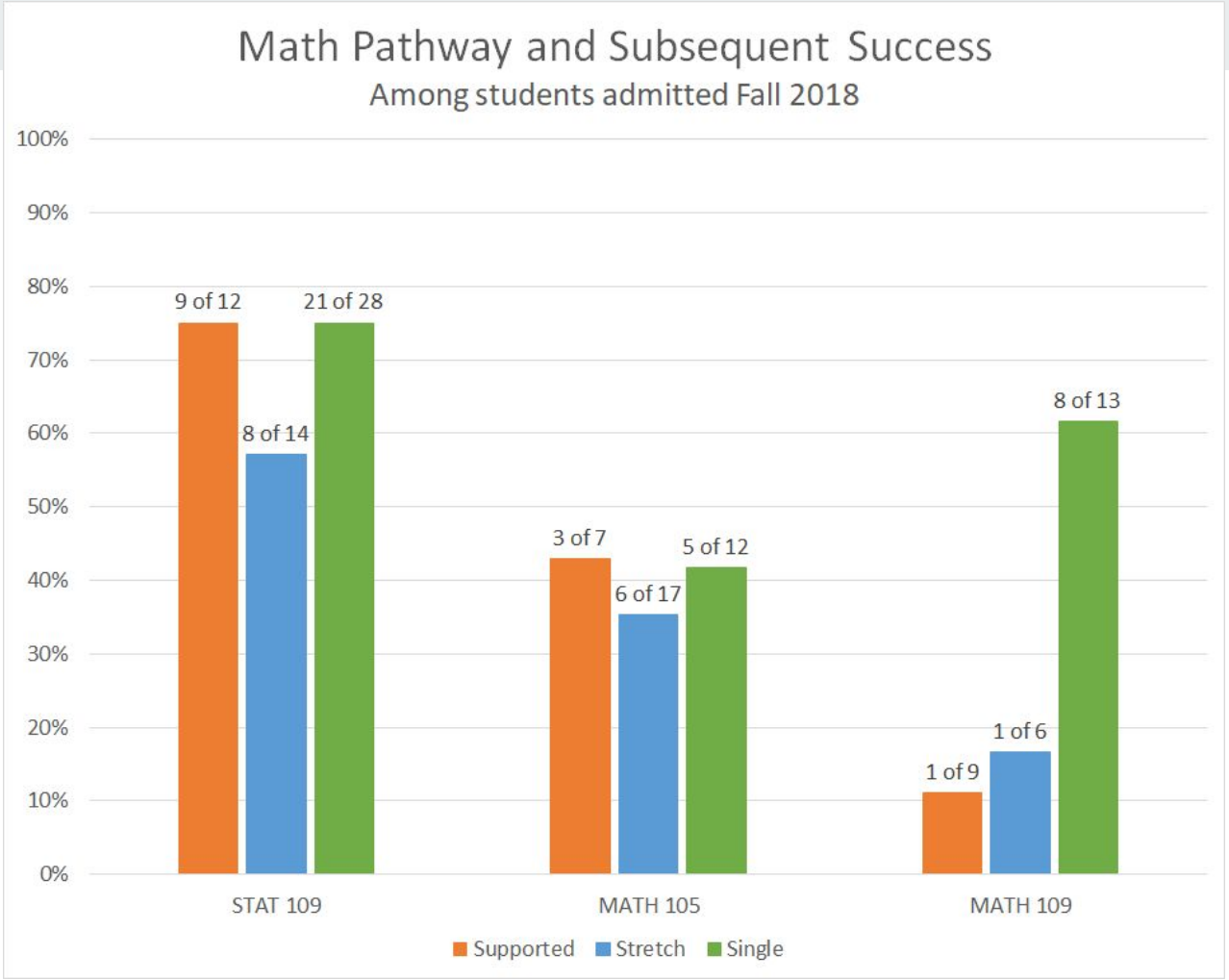


C. Single Math Pathway



D. Subsequent Success

Main point: Too early to draw conclusions, but some evidence for supported pathway to STAT 109 & Math 105, but not MATH 109



Discussion and Input

STUDENT SUPPORT

- Evolving support structure reflecting what works (at HSU/CSUs)
- F’ 18 - S’ 19: SI instruction for Math 101, 101T, 104 and Stat 108 (target audience: Cat. 3 students taking regular GE course) - no/low participation*
- F’ 19 - S’ 20: SI instruction (Math 101, 101T, Stat 108) and “embedded tutoring” (Math 101i, 101, 109 and Stat 108i)**

PROFESSIONAL DEVELOPMENT

- ESCALA summer workshop (4 math faculty so far; 1 completed ESCALA certification)
- Mandatory departmental professional development for faculty teaching supported courses - led by Math Education specialist (AY ‘18-19, ‘19-’20)
- Collaboration w/ CTL on professional development starting Fall 2020

IMPROVING INTRODUCTORY MATH

- Professional development (collaboration with CTL; leverage ESCALA training)
- Student support: collaborate with Learning Center, CTL, OIE & HSI STEM to determine most effective student support structures and implement them
- Assessment:
  - Update departmental protocols (institutional GE framework)
  - Broaden how we define and measure “success” of introductory courses
- Project oversight and support - how to maintain / increase institutional capacity after HSI STEM grant (and EO 1110 funds)*
- Share with and learn from CSU and national leaders**
- Potential curricular changes / course redesign***

SOLICITING INPUT

1. Assessment
    a. Sustaining Assessment - who, how, when?
    b. How can we improve assessment and evaluation?
    c. Input on (E): Is there a shift in the attitudes towards and confidence in students' mathematical abilities before and after a supported course?
2. Strategies to close the gaps
    a. How do we ensure that all students receive equitable support that efficiently meets student needs?
    b. Professional Development