Students encounter various academic barriers as they transition from high school to community college to university. What challenge would you like to address with your local educational institutions?

https://padlet.com/kathmatics/2vzgucs2jhxx
Connecting Educational Segments:
Bridging the Gap between High School, Community College, and University Mathematics

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Students encounter various academic barriers as they transition from high school to community college to university. What challenge would you like to address with your local educational institutions?

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Local Context...

- **HS Perspective**: Algebra II is a requirement for graduation (in OUSD), why must so many retake Algebra in College?
- **PCCD**: 62% of incoming students are deemed in need of Math remediation
  - Only about 17% of students who start in remediation ever complete degrees or certificates
  - Only about 11% of students beginning in remediation complete a transfer level math course
- **CSUEB**: 54% of incoming students are deemed in need of Math remediation
  - They had one year to complete remediation and enroll in math general ed. class

Clearly there is a problem here that needs to be examined
Even though students are completing Algebra II in High School, many are not placing into the next sequential course upon entering PCCD nor CSUEB. Why?

- Students are not required to take a senior year math course
- Not enough preparation for the placement exam
- Students do not know or understand how the placement exam affects them
- Placement Exams are bad at measuring likely success in a course and the knowledge that one has acquired
- Students are not actually learning what they are supposed to in Algebra II (D is passing)
- Different definitions of “College Ready” - what does that mean?
Identifying Possible Interventions

- Multiple Measures Placement, Revision of Exam
- Articulated Courses
- Dual/Concurrent Enrollment
- Early College Credit
- Senior Year Math Course
- Statistics Pathways
PILOTS DEFINED

Creating momentum with college and career readiness

Pilot #1 - Early Math Placement
Pilot #3 - Articulated Placement and Early College Credit Opportunities
Pilot #4 - Guided MathPath

Gaining momentum from interest to enrollment

Pilot #2 - Math Dual Enrollment
Pilot #5 - QuickStart Math

Maintaining momentum to persist and complete credential

Enter into aligned program of study
Enroll in 12+ credits per term
Complete program of study prerequisites

Gaining momentum from interest to enrollment

Enter into aligned program of study
Enroll in 12+ credits per term
Complete program of study prerequisites
Pilot #1: Early Math Placement

<table>
<thead>
<tr>
<th>Cumulative GPA</th>
<th>Last Math Class Subject</th>
<th>Last Math Class Grade</th>
</tr>
</thead>
</table>

Math Placement Recommendation provided to students and families by end of 11th grade.
Sample Student Placement Report

Student Name: Patricia Murino
Cumulative GPA: 2.76
Current math class: Math 2
Current Grade: C

If Math 2 is passed, then first Community College math class is: Elementary Algebra

Number of classes to complete transfer requirements: 3

If you take and pass Math 3 in Grade 12, you will be able to complete a transfer degree with 2 more classes.
Dual enrollment effects my GPA in a very big way. I get to be advanced and ready for college level classes. I know that this class is a special class and not many people have the opportunity to take it - *Angel Macias*

Apart from understanding more complex math, this class has taught me how to communicate with the professor. - *Tania Martinez*

This class has helped me with a GPA boost and this class can potentially reduce number of math classes for college. - *Flecshaney Jackson*
<table>
<thead>
<tr>
<th>Course</th>
<th>Enrollment</th>
<th>Completion Rate</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 201: Elementary Algebra</td>
<td>25 students</td>
<td>96%</td>
<td>96% of students completed the course with a “C” or better</td>
</tr>
<tr>
<td>Math 203: Intermediate Algebra</td>
<td>29 students</td>
<td>66%</td>
<td>66% of students completed the course with a “C” or better; 5 students withdrew from the course</td>
</tr>
<tr>
<td>Math 206: Pre-Stats</td>
<td>23 students</td>
<td>100%</td>
<td>100% of students completed the course with a “C” or better</td>
</tr>
<tr>
<td>Math 13: Statistics (Transfer math)</td>
<td>21 students</td>
<td>91%</td>
<td>91% of students completed the course with a “C” or better; 1 student withdrew from the course; 1 student completed the course with an “F”</td>
</tr>
</tbody>
</table>
Pilot #3: Articulated Early College Placement

Who: Students enrolled in Math Studies course at BHS

What: Align Math Studies at BHS with Math 206 (Pre-Statistics) at Berkeley City College, pilot a placement of Math Studies students directly into Math 13 (Intro. to Statistics), and possibly offer a Math 206 Credit by Exam option so that students may place into Statistics at other community colleges in the region. (Pilot in Spring 2018)

Ready for Transfer Level Math
Pilot #4: Guided MathPath

11th Grade
- Interest Inventory HS pathway
- Algebra 2
- Guided Advising
- Math Analysis
- AP Calculus
- STEM Calculus
- 1st year college
- Summer Bridge

12th Grade
- Pre-Stats
- Prob/Stats
- Financial Algebra
- Social-Science Statistics
- Arts/Humanities Nature of Math
## Pilot #5: Quickstart Math

**Who:** Admitted students who require one quarter of developmental math

**What:** A two-week summer program to advance students through their developmental math

**When:** Summer 2017

**Where:** At CSUEB

**How:** The intensive summer experience will combine active learning strategies for teaching the math content with social and emotional learning to help prepare incoming freshman.
Quickstart Math

Reacting Math

Learning is more effective when it is an active rather than a passive process. — Kurt Lewin

[Diagram of SEL (Social, Emotional, and Learning) skills]

[Image of students working together]

[Image of math problems on a blackboard]
Together, we have:

- built strong relationships
- developed trust across segments and with each other
- created an intersegmental resource network
- have a shared understanding of the student experience and faculty challenges in math classrooms across segments
- have a better understanding of the transitions across segments
- researched “effective” programs regionally, across the state, and beyond

We are ready to raise the level of intersegmental work!
You identified an academic barrier in the beginning of this presentation. What ideas do you have (either similar or different to the ones you’ve heard today) that you want to bring back to your institution?
Questions?

Can we provide any additional information?