ACCELERATION:
A POWERFUL EQUITY LEVER

THE CALIFORNIA ACCELERATION PROJECT

CONFERENCE ON ACCELERATION IN DEVELOPMENTAL EDUCATION

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What Can Colleges Do to Narrow Achievement Gaps for Under-Represented Students of color?

- Examination of disaggregated data to identify achievement gaps
- Learning communities targeting students in particular groups
  (e.g., Puente Project)
- Targeted support services and campus centers for particular groups
  (e.g., mentoring program for African-American males)
- Programs to orient new students' families to college life & expectations
- Graduation celebrations for affected groups
- Professional development for faculty/staff to improve institutional climate
  (e.g., culturally relevant pedagogy, equity-mindedness, asset-based teaching approaches)
- Curricula that feature diverse authors & multicultural issues
- Prioritizing ethnic/racial diversity in hiring practices

What Can Colleges Do to Narrow Achievement Gaps for Under-Represented Students of color?

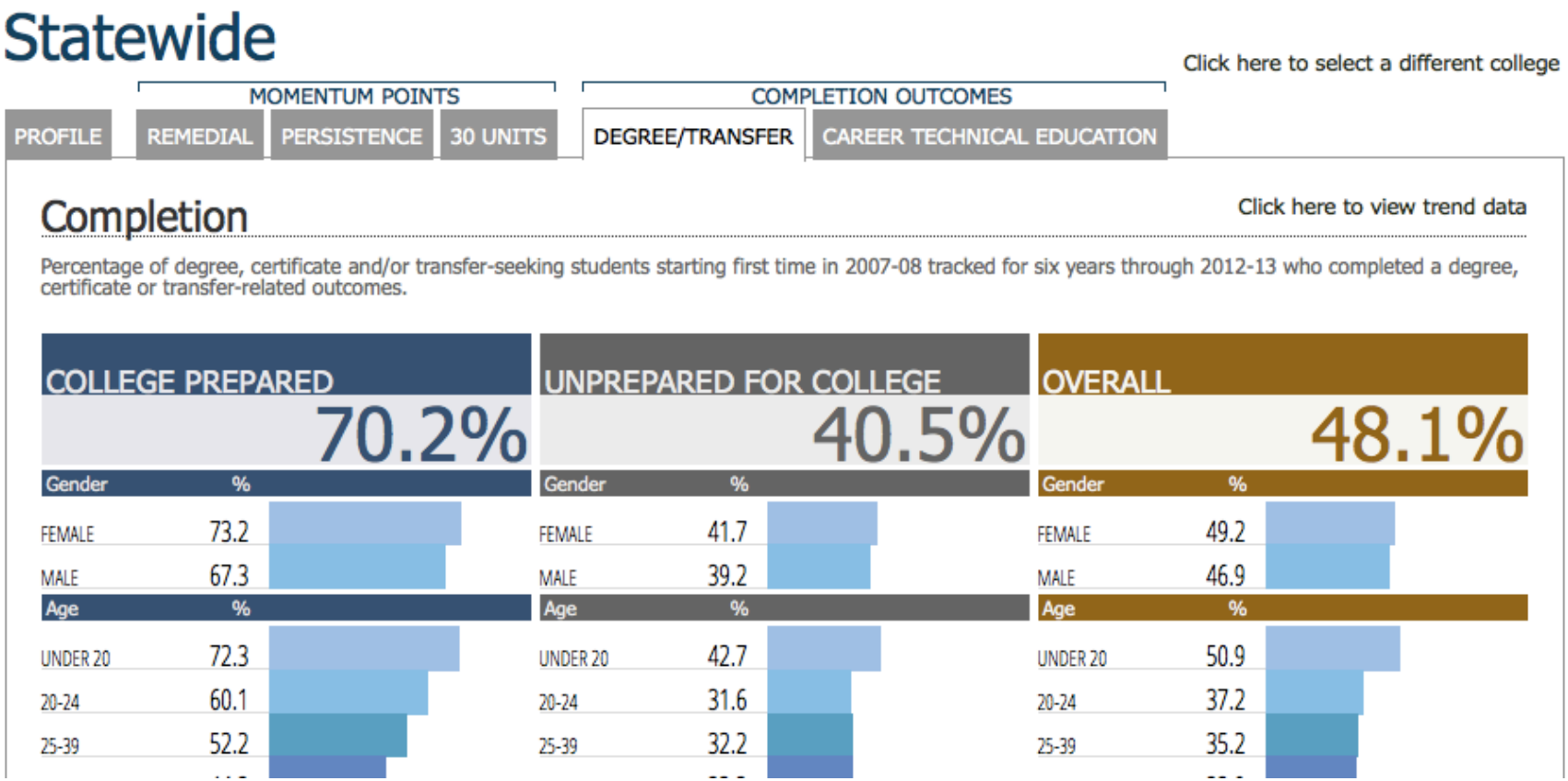
- Identifying specific policies and structures in our institution that are producing inequities, changing them
  - Placement policies
  - Remedial course sequences

The Problem

In California, more than 75% of incoming community college students are designated “unprepared for college” in English, math, or both and required to enroll in remedial courses.

Student Success Scorecards show that these students have significantly lower completion rates than those classified as “college prepared.”

Student Success Scorecard



The Unintended Consequence of Remediation Policies

The more levels of developmental courses a student must take, the less likely that student is to ever complete college English or Math.

Bailey, Thomas. (February 2009). Rethinking Developmental Education. *CCRC Brief*. Community College Research Center. Teachers College, Columbia University.

Disappearing Students: English-Writing in California

Students' Starting Placement English-Writing	% Completing Transfer-Level English in 3 Years
One Level Below	48%
Two Levels Below	34%
Three or more Levels Below	19%

Statewide data, Basic Skills Cohort Tracker, Fall 2009-Spring 2012

Disappearing Students: Mathematics in California

Students' Starting Placement Mathematics	% Completing Transfer-Level Math in 3 Years
One Level Below	35%
Two Levels Below	15%
Three or more Levels Below	6%

Statewide data, Basic Skills Cohort Tracker, Fall 2009-Spring 2012

Placement as an Equity Issue

Nationally, Black and Hispanic students are twice as likely as whites to have to take three or more remedial courses:

- 43% of Black and Hispanic students
- 22% of white students

2009 National Center for Education Statistics

Witham, K.; Malcom-Piqueux, L.E.; Dowd, A.C.; & Bensimon, E.M. (2015). *America's Unmet Promise: The Imperative for Equity in Higher Education.* Washington, DC: the American Association of Colleges and Universities.

Placement as an Equity Issue

- In California, Black and Latino community college students are much more likely to be placed 3-4 levels below college math:

Black students:	61%
Latino students:	53%
White students:	34%
Asian students:	32%

- All students of color are much more likely to be placed 3-4 levels below college English:

Black students:	25%
Asian students:	19%
Hispanic students:	18%
White students:	8%

Perry, M.; Bahr, P.R.; Rosin, M.; & Woodward, K.M. (2010). Course-taking patterns, policies, and practices in developmental education in the California Community Colleges. Mountain View, CA: EdSource.

Outcomes for Students Placed 3 Levels Below in Math

Basic Skills Progress Tracker - Parameter Selection Area

Select College: Cuyamaca | Select Cohort Term: Fall 2010 | Select End Term: Spring 2013 | Select Basic Skills Subject: Mathematics

Select Starting Cohort Level: ıree Levels Below Transfer | Customize cohort (Optional) | View Report

Export To -> Excel CSV Text | Records Per Page: 10 | Simple Layout Advanced Layout

Report Data & Format Area

Report Area

	Fall 2010-Spring 2013											
	Three Levels Below Transfer			Two Levels Below Transfer			One Level Below Transfer			Transferable		
	Students	Attempts	Success	Students	Attempts	Success	Students	Attempts	Success	Students	Attempts	Success
Cuyamaca Total												
Mathematics	175	190	131	107	126	87	66	79	55	15	19	10

Our Goals in CAP

To substantially increase the proportion of incoming students who complete college-level gateway courses in English and math and to narrow equity gaps between groups

Why this goal?

Studies have found this to be a critical early momentum point toward longer term degree completion & transfer.

Calcagno, J.C., Crosta, P.M., Bailey, T., & Jenkins, D. (2006). Stepping Stones to a Degree: The Impact of Enrollment Pathways and Milestones on Community College Student Outcomes. *CCRC Working Paper No. 4.* New York: Community College Research Center.

Attrition among Students Placed into Remediation: A Structural Problem

Students placed 2 levels below college English/ Math face 6 “exit points” where they fall away:

- Do they enroll in the first course?
- If they enroll, do they pass the first course?
- If they pass, do they enroll in the next course?
- If they enroll, do they pass the second course?
- If they pass, do they enroll in the college-level course?
- If they enroll, do they pass the college-level course?

Students placed 3 levels down face 8 exit points.

Illustration: Chabot College

Students beginning two levels below College English:

• Do they enroll in the first course?	??%
• If they enroll, do they pass the first course?	66%
• If they pass, do they enroll in the next course?	93%
• If they enroll, do they pass the second course?	75%
• If they pass, do they enroll in the college-level course?	91%
• If they enroll, do they pass the college-level course?	78%

(0.66)(0.93)(0.75)(0.91)(0.78)= 33%

Fall 2006 Cohort. Students tracked from their first developmental English enrollment and followed for all subsequent English enrollments for 3 years. Pass rates includes students passing on first or repeated attempts within timeframe. Basic Skills Cohort Tracker, DataMart.

A Thought experiment: What if more students passed the first course?

How many would complete the college level course?

$(0.66)(0.93)(0.75)(0.91)(0.78) =$ **33%**

If 75% passed the first course…

37%

If 80% passed the first course…

40%

If 90% passed the first course…

45%

What if 90% passed and persisted at each point?

(0.90)(0.90)(0.90)(0.90)(0.90) = 59%

BOTTOM LINE

Improving our results *within* the existing multi-level system will never be enough – we must eliminate or significantly reduce the exit points where we lose students in remediation.

Three High-Leverage Strategies

Changing placement policies:

Allowing more students to begin directly in college-level courses and making access to these courses more equitable across racial/ethnic groups.

Co-requisite models:

Students classified as “below college level” concurrently enroll in a college-level course and a remedial support course, saving them at least a semester of stand-alone remedial course work.

Accelerated remediation:

Multi-level remedial sequences in English and math are replaced with accelerated pathways, especially single-semester courses that are well-aligned with a college-level course and have no minimum placement test score.

Changing placement policies:

Allowing more students to begin directly in college-level courses and making access to these courses more equitable across racial/ethnic groups, by:

Adjusting cut scores

Using multiple measures more robustly

Using algebra-based testing and remediation only for access to math courses in the Calculus path

Directed self-placement and/or other strategies?

Under-Placement into Remediation

Study of a “Large, Urban Community College System” Scott-Clayton, CCRC, 2012

Statistical modeling predicts

- 61% of assessed incoming students could make a C or better in college English if placed directly (19% were eligible by placement test cut-offs)
- 50% of assessed incoming students could make a C or better in college math if placed directly (25% were eligible by placement test cut-offs)

The Invisible Problem of Under-Placement

"When a student is placed into college-level course and fails there (an over-placement error), the fact that there has been a placement mistake is painfully obvious to all." But "when a student does well in a remedial course, it is unlikely to be perceived as a problem."

Judith Scott-Clayton, 2012

"Do High Stakes Placement Exams Predict Success?"

http://ccrc.tc.columbia.edu/media/k2/attachments/high-stakes-predict-success.pdf

Placement in English:
How do we determine "college readiness"?

Sample Item: Accuplacer "Sentence Skills" Test

Writing a best seller had earned the author a sum of money and had freed him from the necessity of selling his pen for the political purposes of others.

Rewrite, beginning with The author was not obliged

The new sentence will include

A) consequently he earned

B) because he had earned

C) by earning

D) as a means of earning

Alternative Placement with Multiple Measures

Students qualify by test scores OR high school grades

Multiple Measures Assessment Project in California

Examined high school and community college transcript data from across the state and found that 72% of students could be placed into college English with an average grade of C+ using the following criteria:

- Overall high school GPA of B- or higher (2.7)

  OR

- C in AP English

  OR

- Overall GPA of C+ or higher (2.3) AND 12th grade English grade B- or higher

Changing Cut Scores to Broaden Access: Butte College

Access to college English increased from 23% to 48% of incoming students

Completion of College English in One Year

- Tripled for African American students (8% ➔ 23%)
- Doubled for Hispanic students (13% ➔ 27%)
- Doubled for Asian students (17% ➔ 35%)
- 1.6 times higher for White students (23% ➔ 37%)

Old policy:

Whites' completion nearly 3 times higher than African Americans'

New policy:

There's still a gap, but whites' completion now just 1.6 times higher than African Americans'

Placement in Math:
Are you "College Ready"?

VIII. Exponents & polynomials

Simplify and write answers with positive exponents.

. $(3x^2-5x-6)+(5x^2+4x+4)$

. $\dfrac{(2a^{-5}b^4c^3)^{-2}}{(3a^3b^{-7}c^3)^2}$

. $(3x^0y^5z^6)(-2xy^3z^{-2})$

. $(-a^5b^7c^9)^4$

. $(4x^2y^6z)^2(-x^{-2}y^3z^4)^6$

6. $\dfrac{24x^4-32x^3+16x^2}{8x^2}$

7. $(x^2-5x)(2x^3-7)$

8. $\dfrac{26a^2b^{-5}c^9}{-4a^{-6}bc^9}$

9. $(5a+6)^2$

A Pathways Approach in Math

Traditional math remediation:

All students must test out of -- or make it through -- the remedial algebra sequence, regardless of its relevance to their intended program of study

A pathways approach:

Colleges begin by asking *which* college-level math students will take for their program of study and whether algebra needed to be successful there.

Gross Curricular Misalignment between algebra and statistics

Algebra Skills needed for Statistics

Table of Contents from a traditional Elementary + Intermediate Algebra text

Virginia Community College System

A new placement test and different math competencies set for entry into college math for different academic paths

(intermediate algebra only required for STEM programs)

- Prior to the change, 19% qualified for college math.

  After the change, 43% qualified

Three times as many students completed college math in their first year.

Investigating Your Local Placement Policies

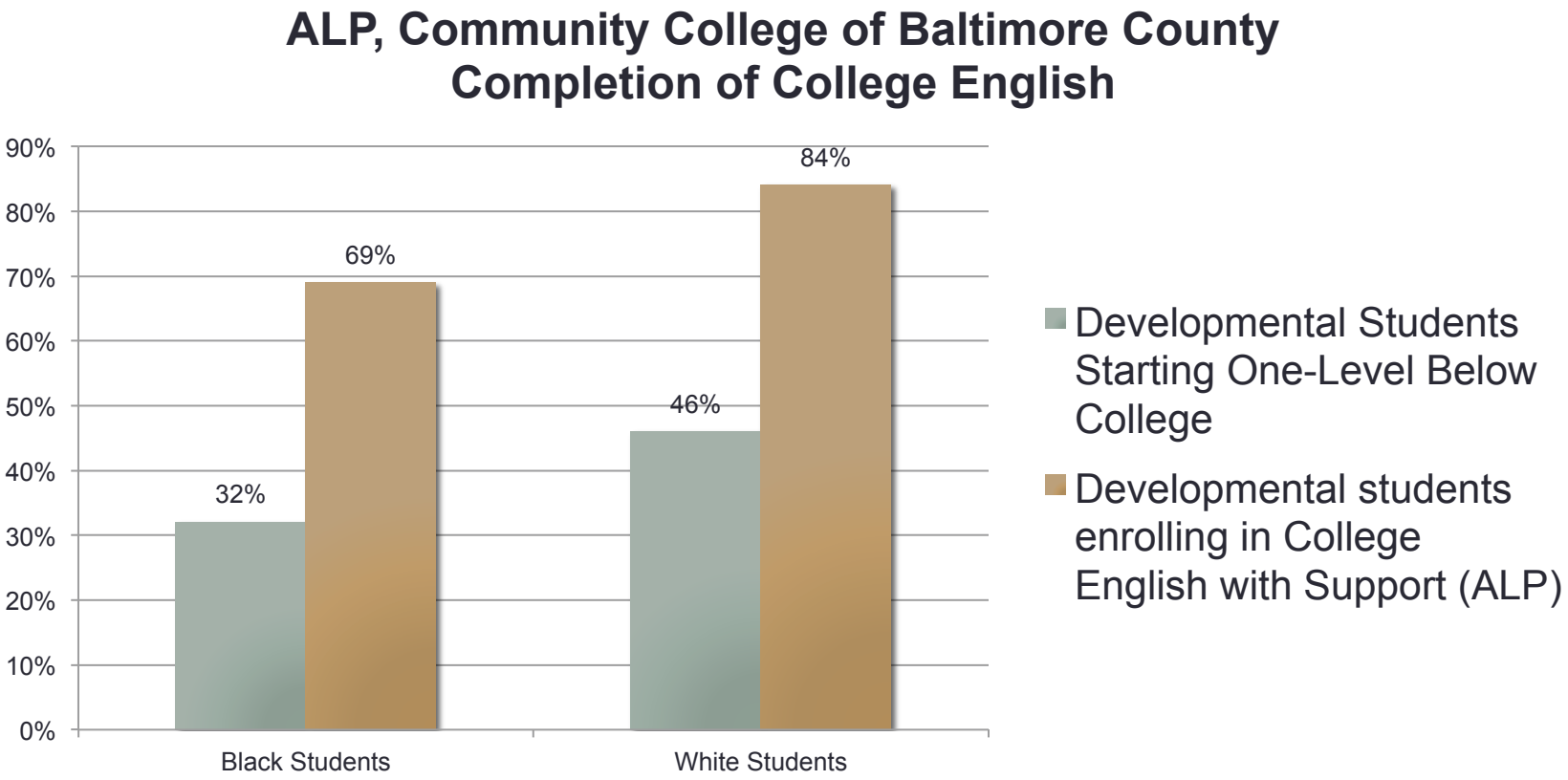
- What % of incoming students qualify for direct access to college-level English and math?
- How does this vary by race/ethnicity?
- To what extent is placement determined by students' score on Accuplacer/Compass/other test?
- Are multiple measures used in placement, especially overall high school GPA? If so, what % of students benefit from higher placement with multiple measures?
- Is a student's educational goal part of math placement? Are algebra tests blocking access to courses that require little to no algebra? (e.g, College Statistics)

Co-requisite models

Students classified as “below college level” concurrently enroll in a college-level course and a remedial support course, saving them at least a semester of stand-alone remedial course work.

Co-Requisite Models

Instead of stand-alone remedial courses



White students' completion 1.4 times higher than Blacks' in traditional developmental path – gap shrinks to 1.2 in ALP

Co-Requisite Models

Instead of stand-alone remedial courses

Randomized, controlled experiment with 721 CUNY students who placed into elementary algebra assigned to one of three treatments:

- Elementary algebra: 38% passed
- Elementary algebra with SI support: 45% passed
- College Statistics with SI support: 56% passed

One subgroup passed statistics at a rate of 68%. This group included students with placement test scores that would have placed them into pre-algebra at Santa Rosa JC (3 levels below college math).

Accelerated remediation:

Multi-level remedial sequences in English and math are replaced with accelerated pathways, especially single-semester courses that are well-aligned with a college-level course and have no minimum placement test score.

In math, this means tailoring remediation to the students' intended program of study (e.g., pre-Statistics course).

The California Acceleration Project
Supporting Colleges Statewide

59 colleges have worked with CAP to offer English and Statistics pathways that

- Reduce students' time in remediation by at least a semester
- Align remediation with college-level requirements, including offering a redesigned pathway for students taking Statistics
- Use high-challenge, high-support pedagogy
- Make no changes to rigorous, transfer-level course (only remediation is changed)

CAP Evaluation by the RP Group

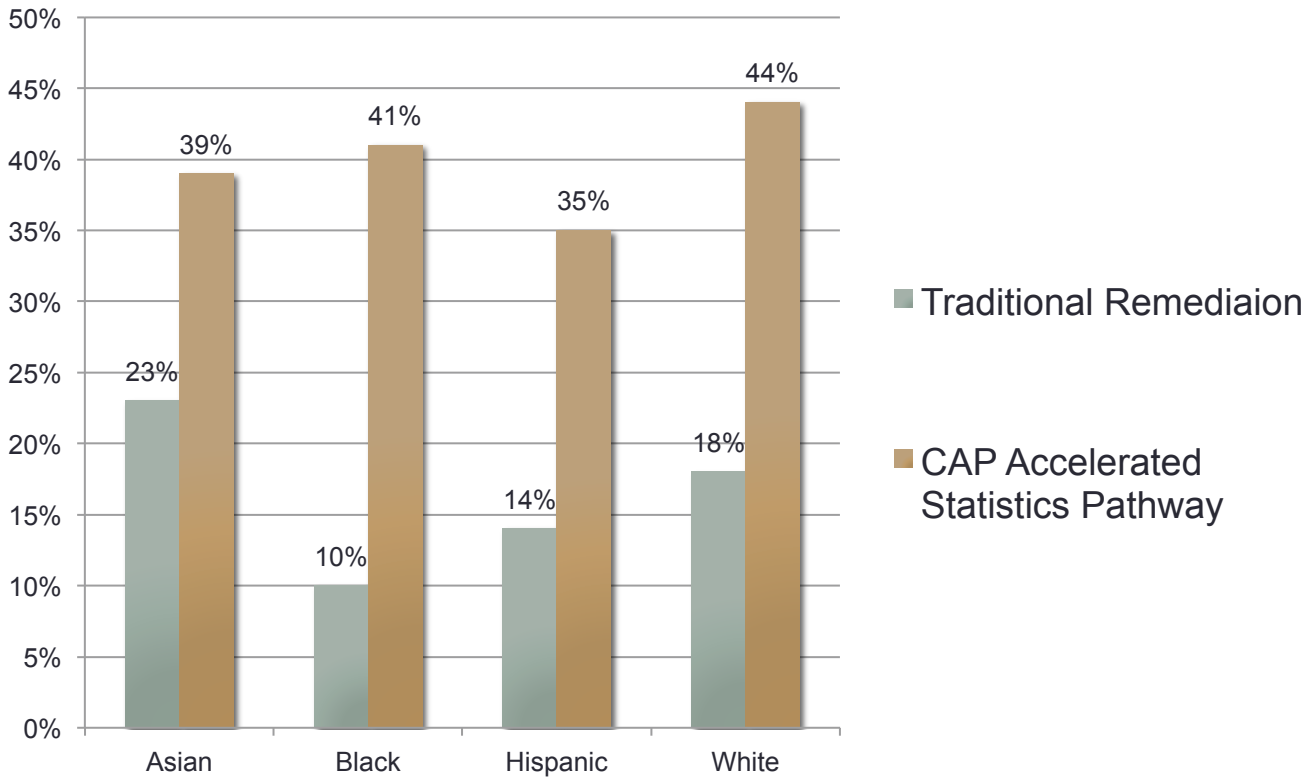
Examined the first 16 colleges offering accelerated pathways with CAP, using statistical methods to control for pre-existing differences in student characteristics. Key findings:

- Students' odds of completing college English were **2.3 times greater** in high-impact models of acceleration than students in traditional remediation.
- Students odds of completing a transferable math course were **4.5 times greater** in accelerated statistics pathways than in traditional remediation.

Eliminating Achievement Gaps in CAP Math Pathways

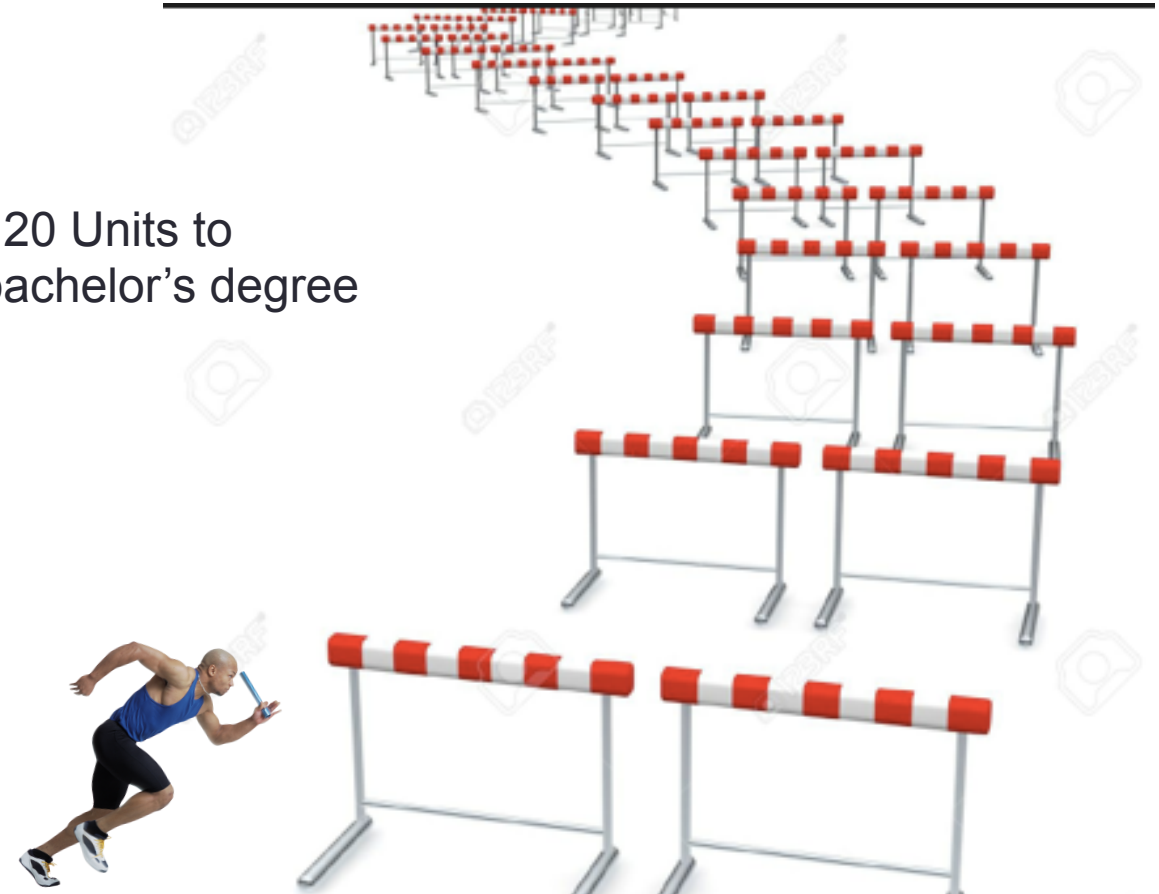
Completion of Transfer-Level Math within 1.5-2 years

(Follow up analysis by RP Group -- descriptive data, no statistical controls)



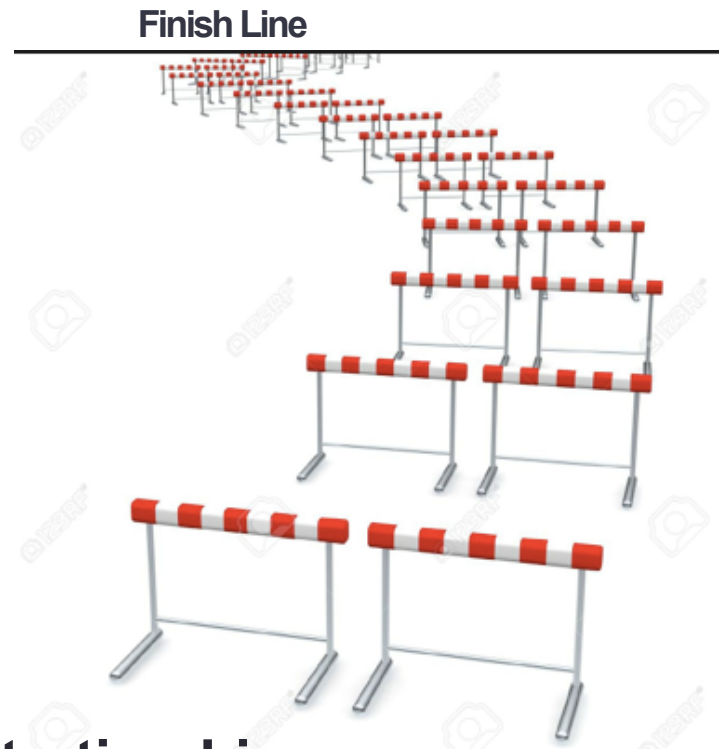
Finish Line

120 Units to
bachelor's degree



Starting Line

120 Units to bachelor's degree



Non-Credit Bearing Remedial Course

Non-Credit Bearing Remedial Course

Non-Credit Bearing Remedial Course

Placement & Remediation Reform: A Powerful, Under-Utilized Equity Lever

- Students of color are being disproportionately placed into multiple semesters of remediation based upon standardized tests that bear very little relation to their ability to succeed in college-level courses.
- Each layer of remediation required reduces a student's chance of completing college-level English and math and making progress toward degree/transfer.
- Reforms that enable students to avoid or accelerate remediation are producing large gains in student completion and narrowing achievement gaps.

We must “be willing to disrupt the current systems of higher education and take responsibility for those aspects of inequality that are under our control.”

Researchers from the Center for Urban Education

America’s Unmet Promise

AAC&U