CAPR | CENTER FOR THE ANALYSIS OF POSTSECONDARY READINESS

Improving Student Placement Using Multiple Measures Assessment

Elisabeth Barnett
Community College Research Center

JMM Webinar
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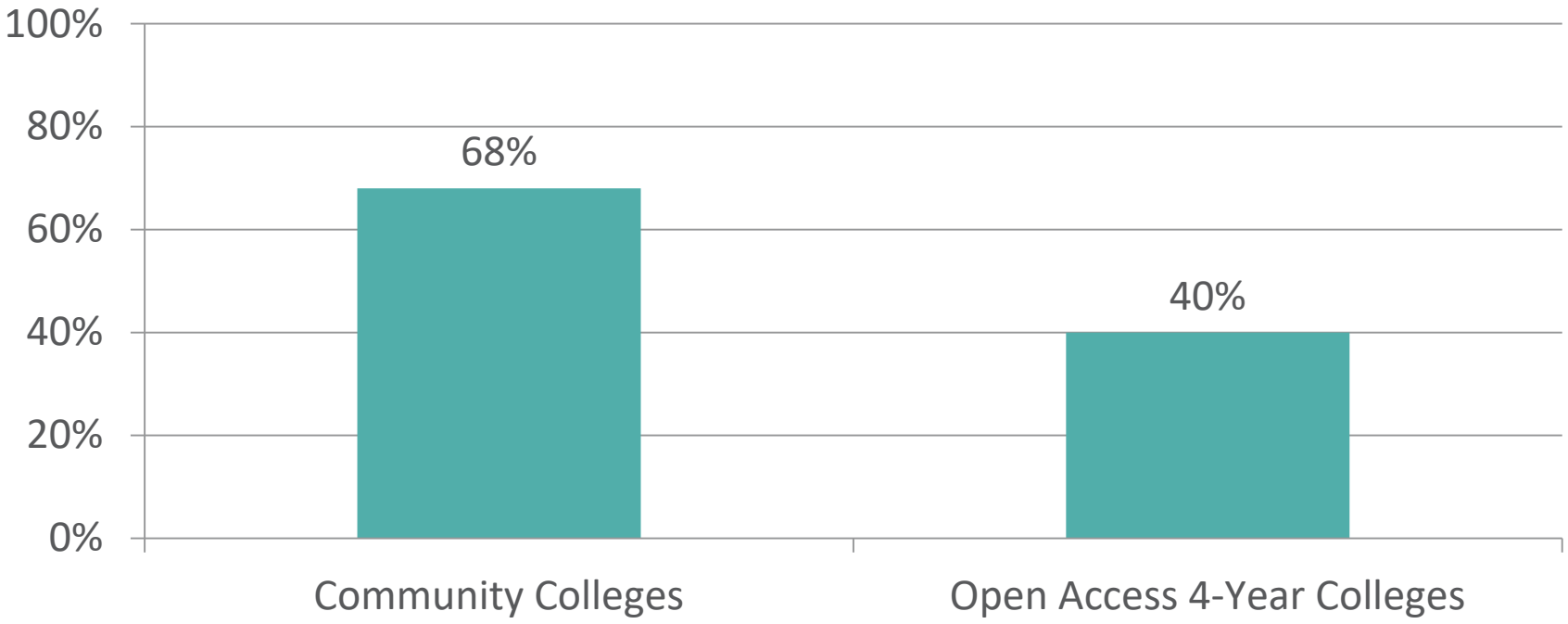
Agenda

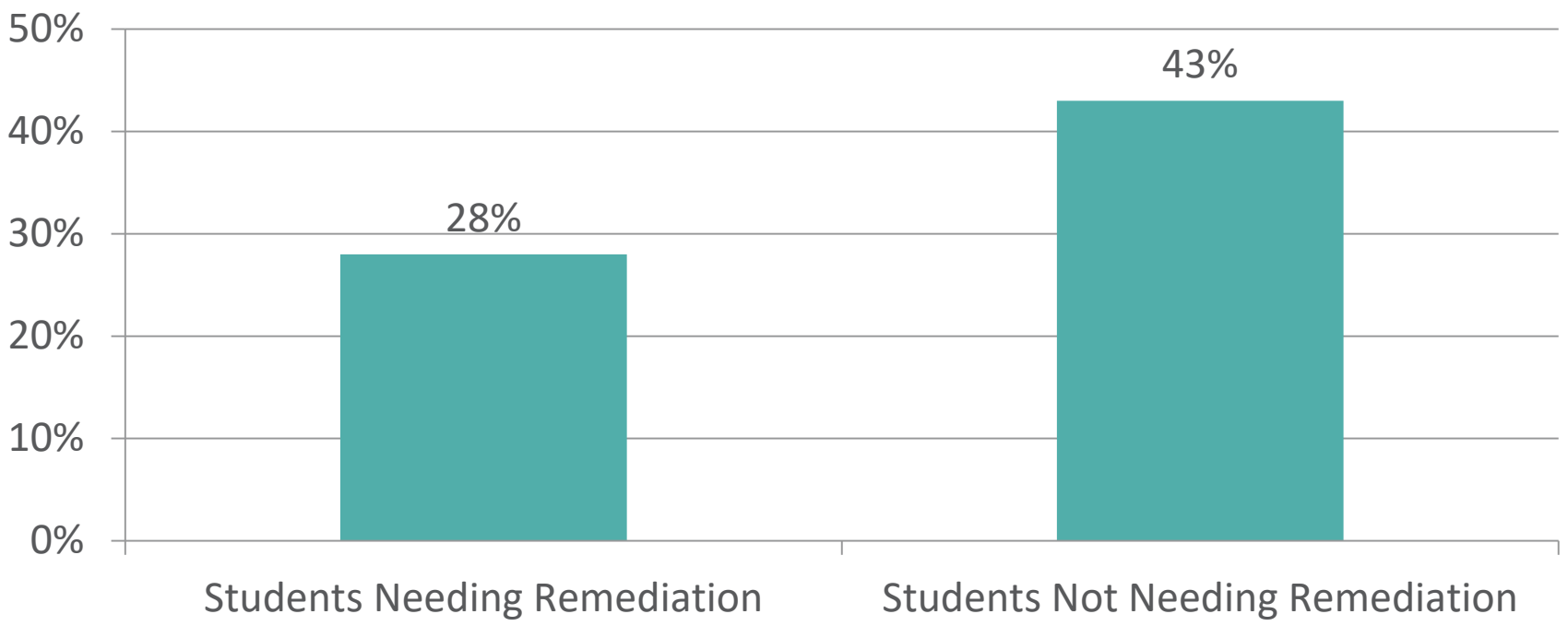
- Why use multiple measures for placement
- Selection of a multiple measures system
- Results of the SUNY research
- Discussion

Students needing 1+ developmental education course (NCES, 2013)



Community college 8-year graduation rates

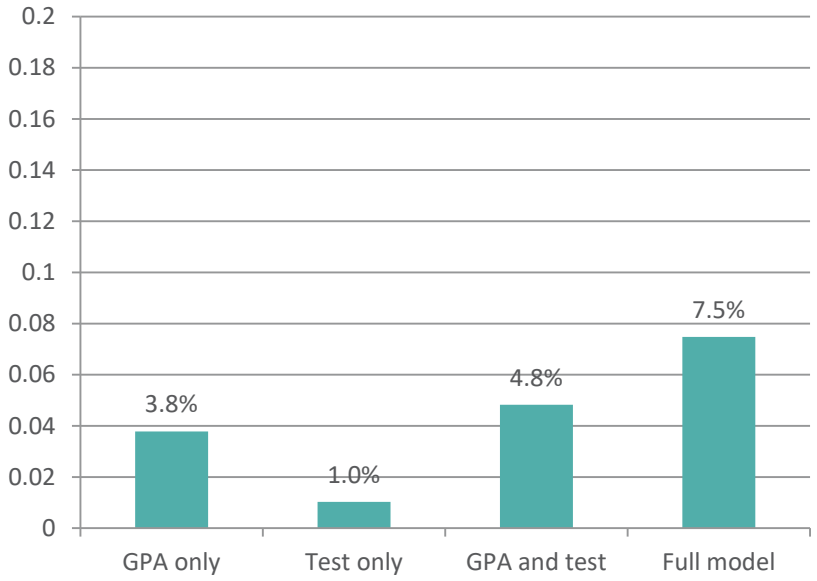
(Attewell, Lavin, Domina, and Levey, 2006)



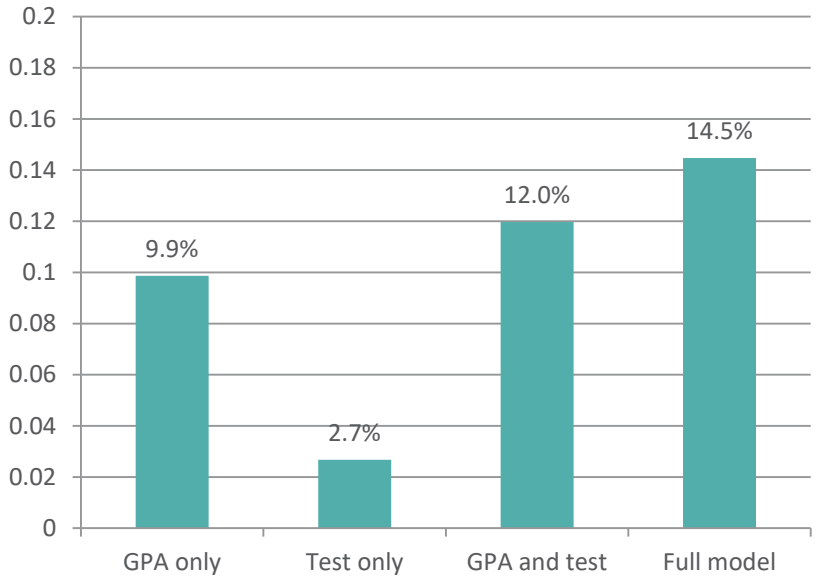
Under-placement and Over-placement

		Placement According to Exam	
		Developmental	College Level
Student Ability	Developmental	✓	***Over-placed*** ***(English – 5%)*** ***(Math – 6%)***
	College Level	***Under-placed*** ***(English – 29%)*** ***(Math – 18%)***	✓

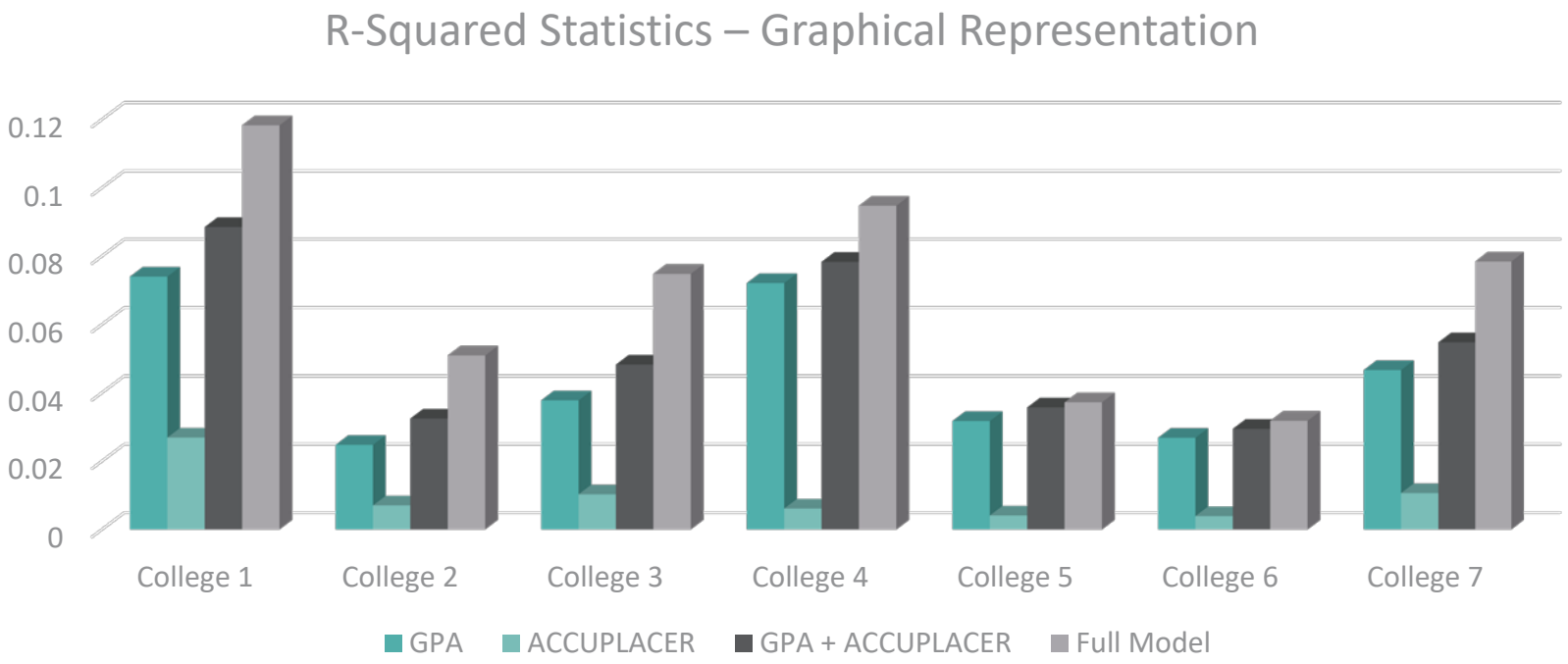
COLLEGE 2: ENGLISH



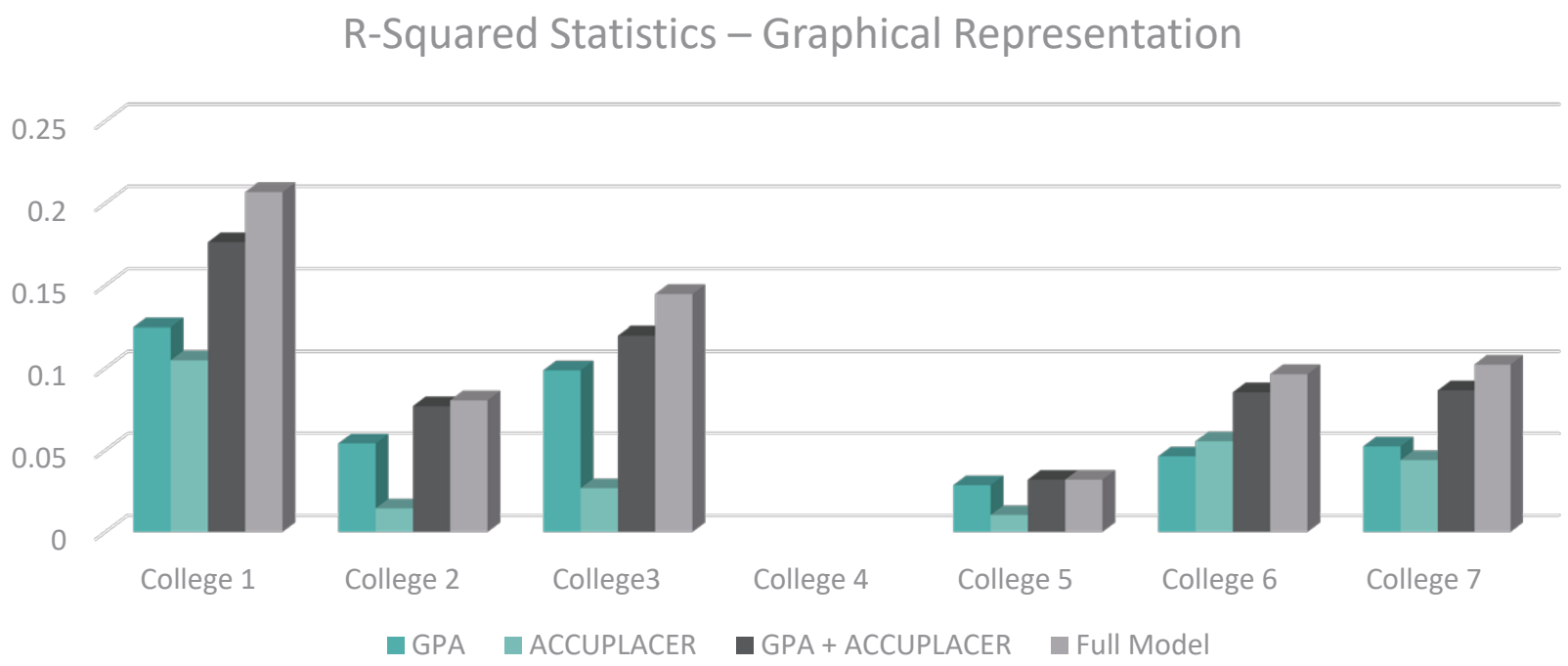
COLLEGE 2: MATH



Model R-Squared Statistics
English



Model R-Squared Statistics
Math



Conclusions so far

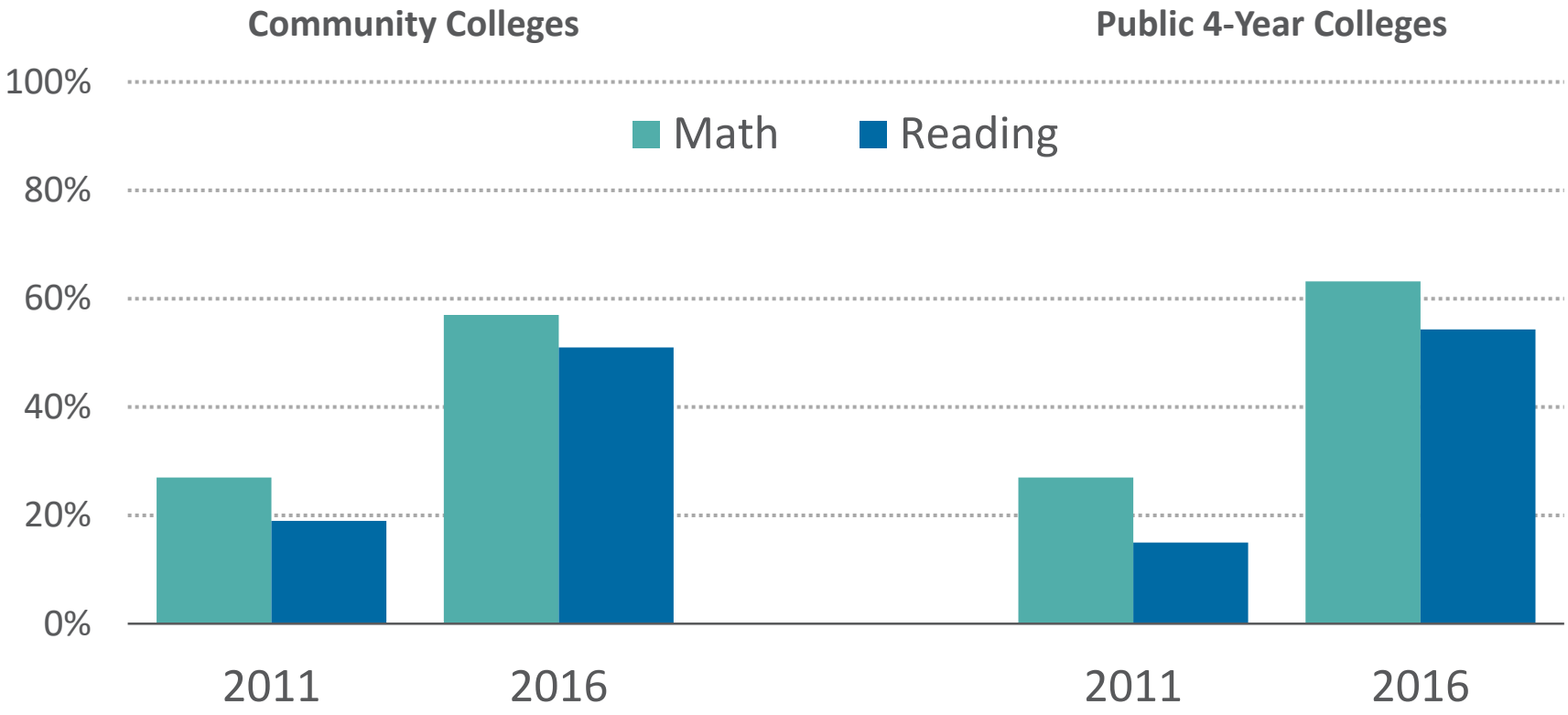
- Students placed into developmental education are less likely to complete.
- Better assessment systems are needed.
- HS GPA is the best predictor of success in college math and English.

Multiple Measures Assessment

Why Use Multiple Measures

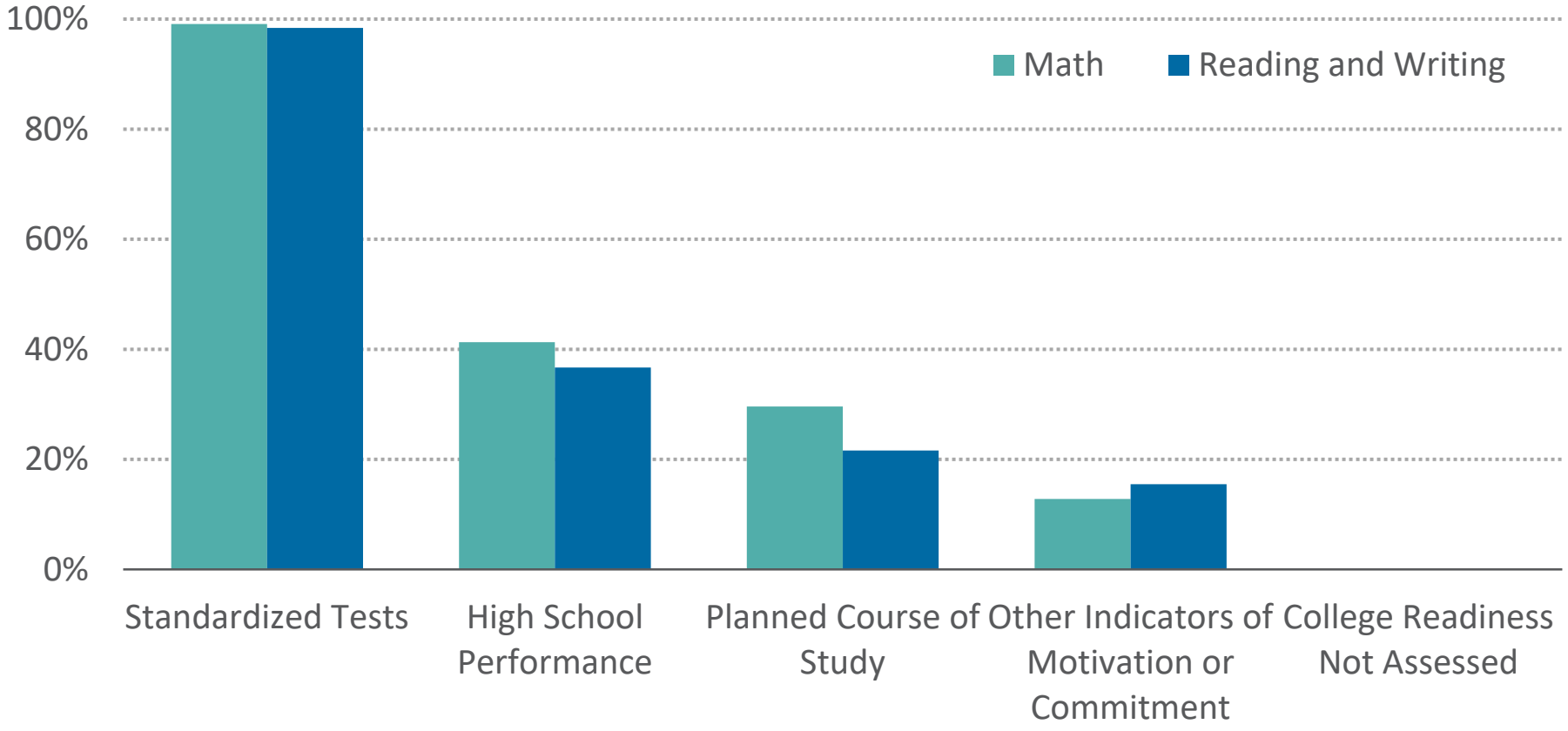
- Existing placement tests are not good predictors of success in college courses.
- More information improves most predictions.
- Different measures may be needed to best place specific student groups.

Percent of Colleges Using Measures Other than Standardized Tests for Assessment



SOURCES: 2011 data from Fields and Parsad (2012); 2016 data from the CAPR's institutional survey.
NOTE: The Fields and Parsad (2012) reading statistics are for reading placement only, whereas the CAPR survey data are for both reading and writing.

Processes Used to Determine College Readiness in Community Colleges



SOURCE: Data from CAPR's institutional survey.
NOTE: Categories are not mutually exclusive.

Multiple Measures Options

MEASURES	SYSTEMS OR APPROACHES	PLACEMENTS
<u>Administered by college</u>: 1. Traditional or alternative placement tests 2. Non-cognitive assessments 3. Computer skills or career inventory 4. Writing assessments 5. Questionnaire items <u>Obtained from elsewhere</u>: 1. High school GPA 2. Other HS transcript information (courses taken, course grades) 3. Standardized test results (e.g., ACT, SAT, Smarter Balanced)	• Waiver system • Decision bands • Placement formula (algorithm) • Decision rules • Directed self-placement	• Placement into traditional courses • Placement into alternative coursework • Placement into support services

Possible Measures

Type	Examples
Placement test	• Accuplacer • ALEKS
High school GPA, course grades, test scores	• Self-report • From transcript
Non-cognitive assessments	• GRIT Questionnaire • SuccessNavigator or Engage
Career inventory, computer skills	• Kuder Career Assessment • Home grown computer skills test
Writing examples	• Faculty-assessed portfolio • Home-grown writing assessment

Sources of HS transcript data

- The students bring a transcript.
- The high school sends.
- Obtained from state data files.
- Self report.

Note: Consider using the 11th grade GPA.

Self-report research

- UC admissions uses self-report but verifies after admission. In 2008, at 9 campuses, 60,000 students. No campus had >5 discrepancies b/w reported grades and student transcripts (Hetts, 2016)
- College Board: Shawn & Matten, 2009: "Students are quite accurate in reporting their HSGPA", r = .73.
- ACT research often uses self-reported GPA and generally find it to highly correlated with students actual GPA: ACT, 2013: *r* = .84.

Non-cognitive assessments

Development of non-cognitive skills promotes students' ability to think cogently about information, manage their time, get along with peers and instructors, persist through difficulties, and navigate the landscape of college...(Conley, 2010).

Non-cognitive assessments may be of particular value for:

- Nontraditional (older) students.
- Students without a high school record.
- Students close to the cut-off on a test.

NC 1: Success Navigator

Domains:

- Academic discipline, commitment, self-management, support, social supports

Academic Success Index, includes:

- Projected 1st year GPA
- Probability of returning next semester

Also, *Course Acceleration Indicator*

- Recommendation for math or English acceleration

NC 2: Engage

Domains:

- Motivation and skills, social engagement, self-regulation

Advisor report also has:

- Academic Success Index
- Retention Index

Correlation with GPA and retention, especially Motivation scale.

NC 3: Grit Scale

Domains:

- Grit and self-control.

Provides score 1-5 on level of grit, with 5 as maximum (extremely gritty) and 1 as lowest (not all gritty).

Correlation with GPA and conscientiousness

NC 4: Learning and Study Strategies Inventory (LASSI)

Domains

- Anxiety, attitude, concentration, information processing, motivation, selecting main ideas, self-testing, test strategies, time management, using academic resources.

Correlation with GPA and retention.

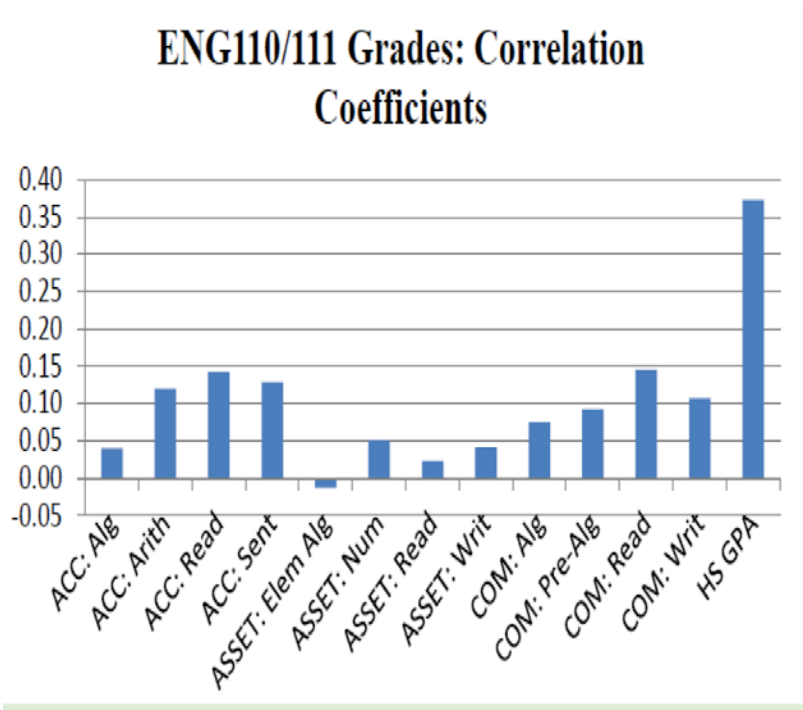
Concerns about the HS GPA

(with thanks to John Hetts, 2016)

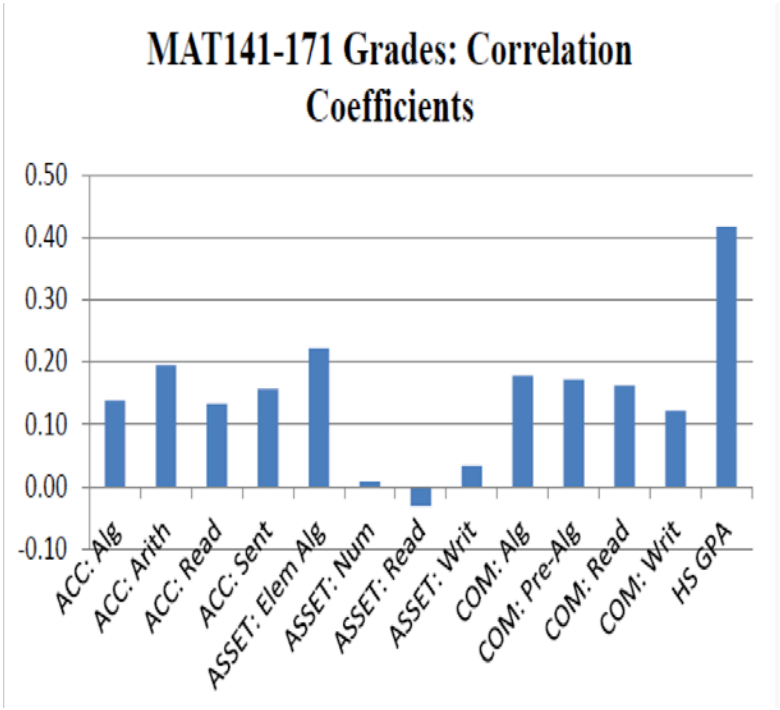
- ***Our*** test is different/better/more awesome.
- Students really need developmental education.
- High school GPA is only predictive for recent graduates.
- Different high schools grade differently.

Our test is different/better/more awesome.

NC ENGLISH



NC MATH

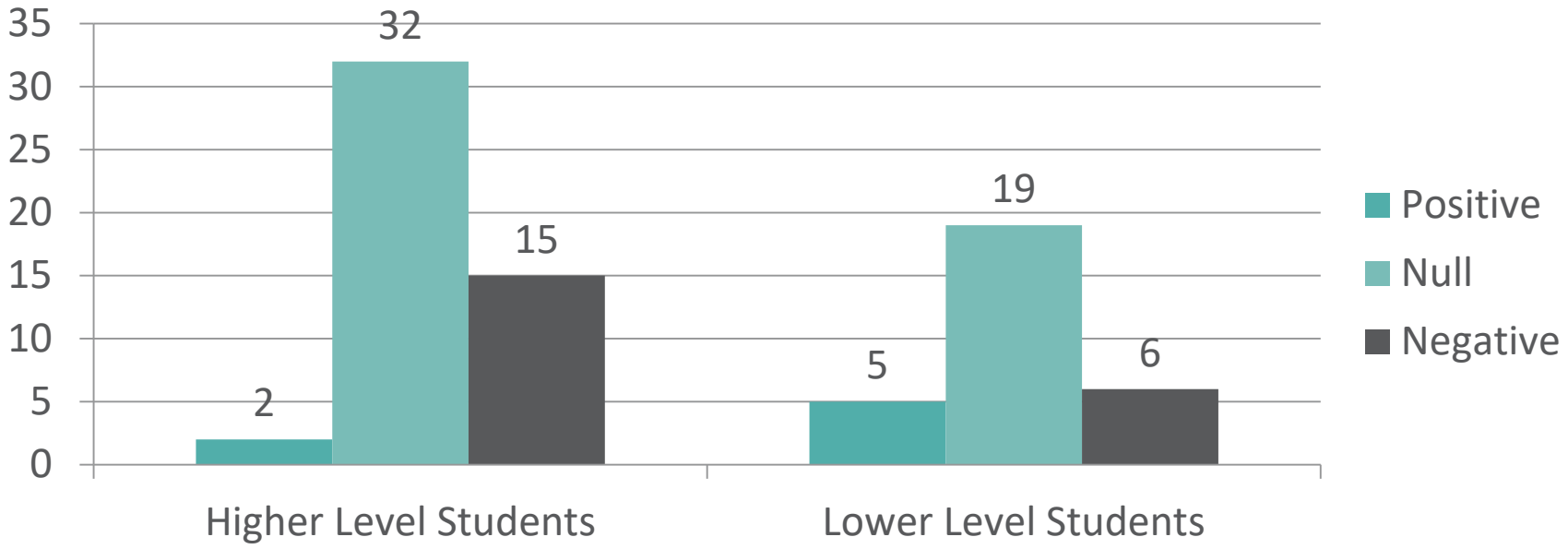


From Bostian (2016), North Carolina Waves GPA Wand, Students Magically College Ready adapted from research of Belfield & Crosta, 2012 – see also Table 1)

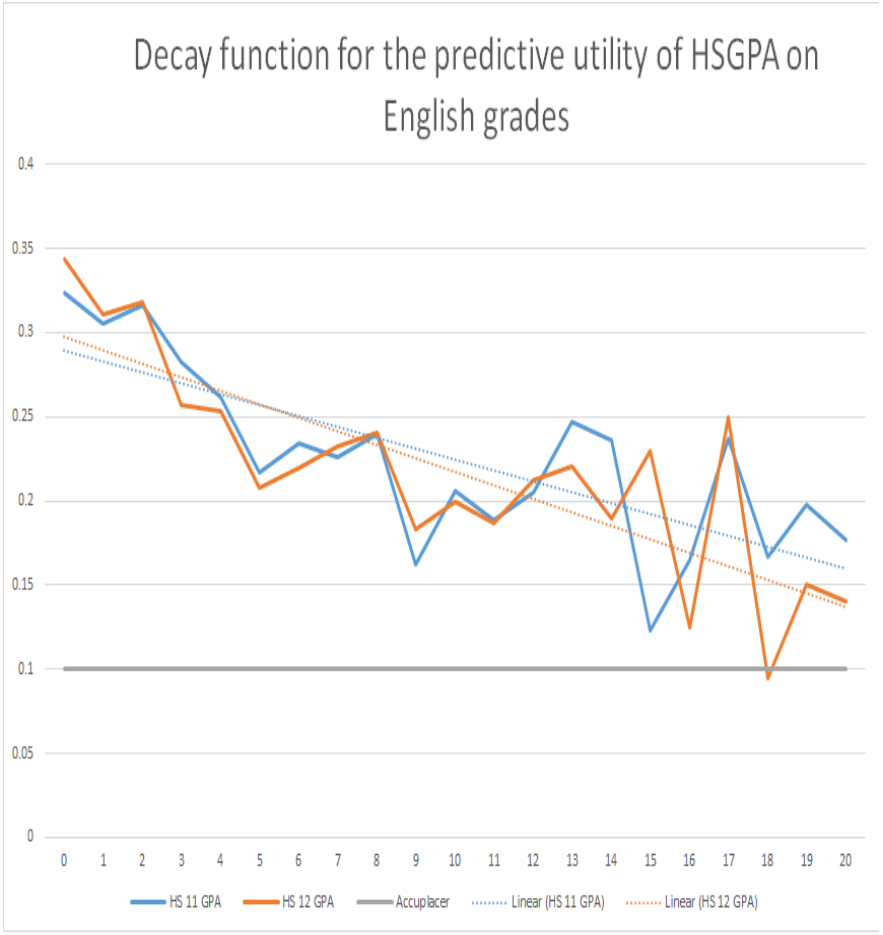
Students would be better off going through developmental education.

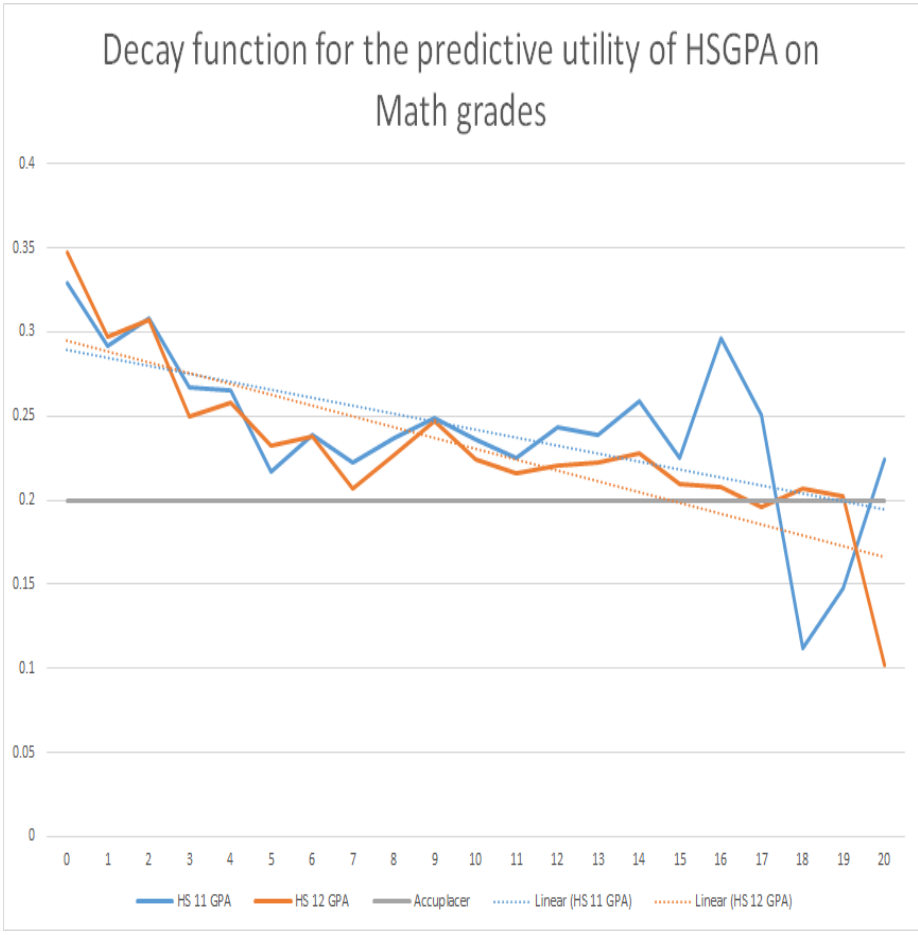
Developmental education student outcomes

(Results from 8 studies, CCRC analysis 2015)



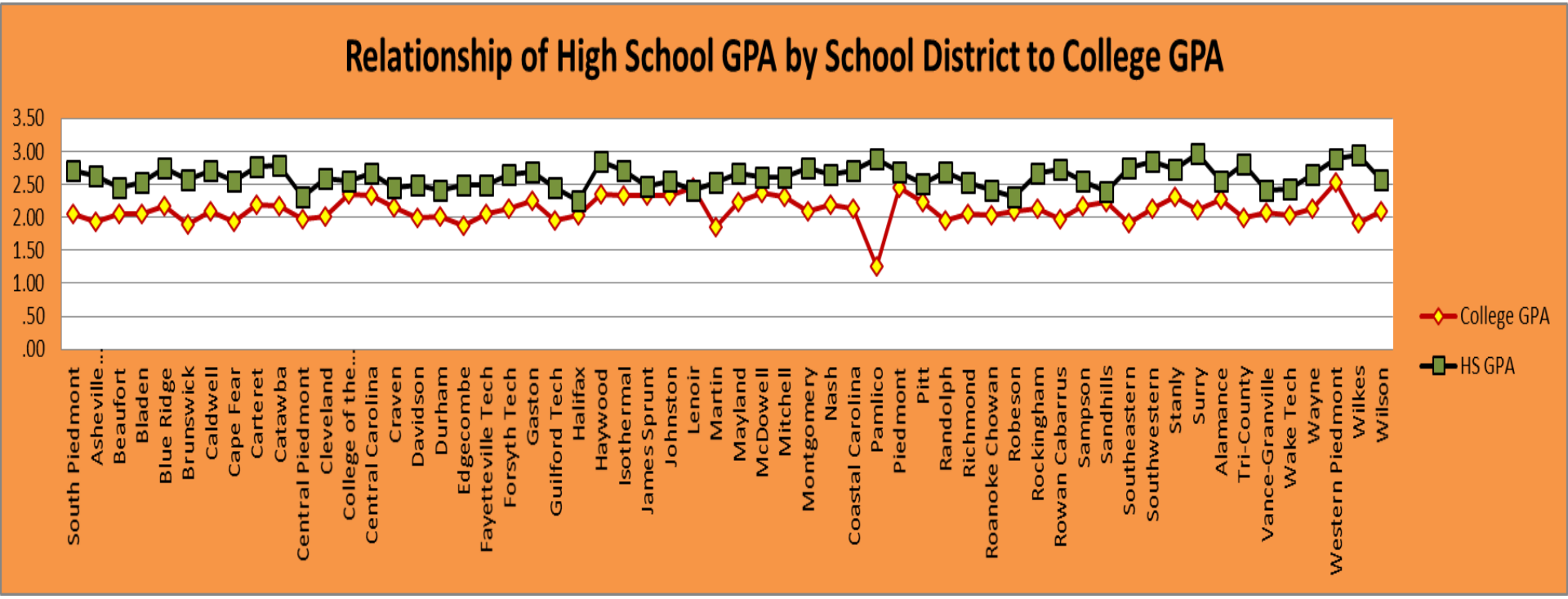
HS GPA is a better predictor than test results for long time (from Hetts, 2016)





MMAP (in preparation): correlations b/w predictor and success (C or better) in transfer-level course by # of semesters since HS

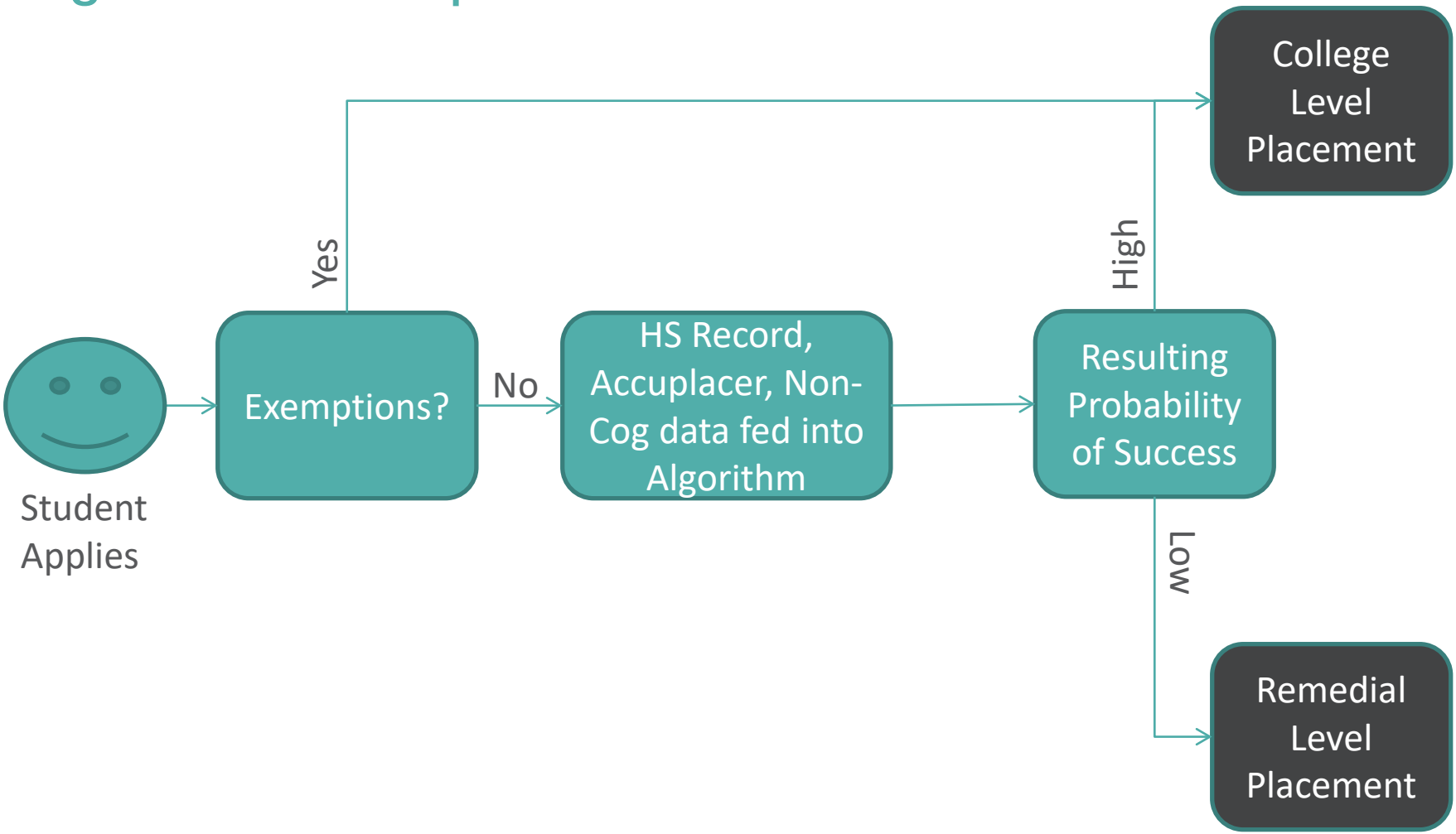
For the most part, college grades stay parallel with feeder high school grades. (Bostian, 2016)



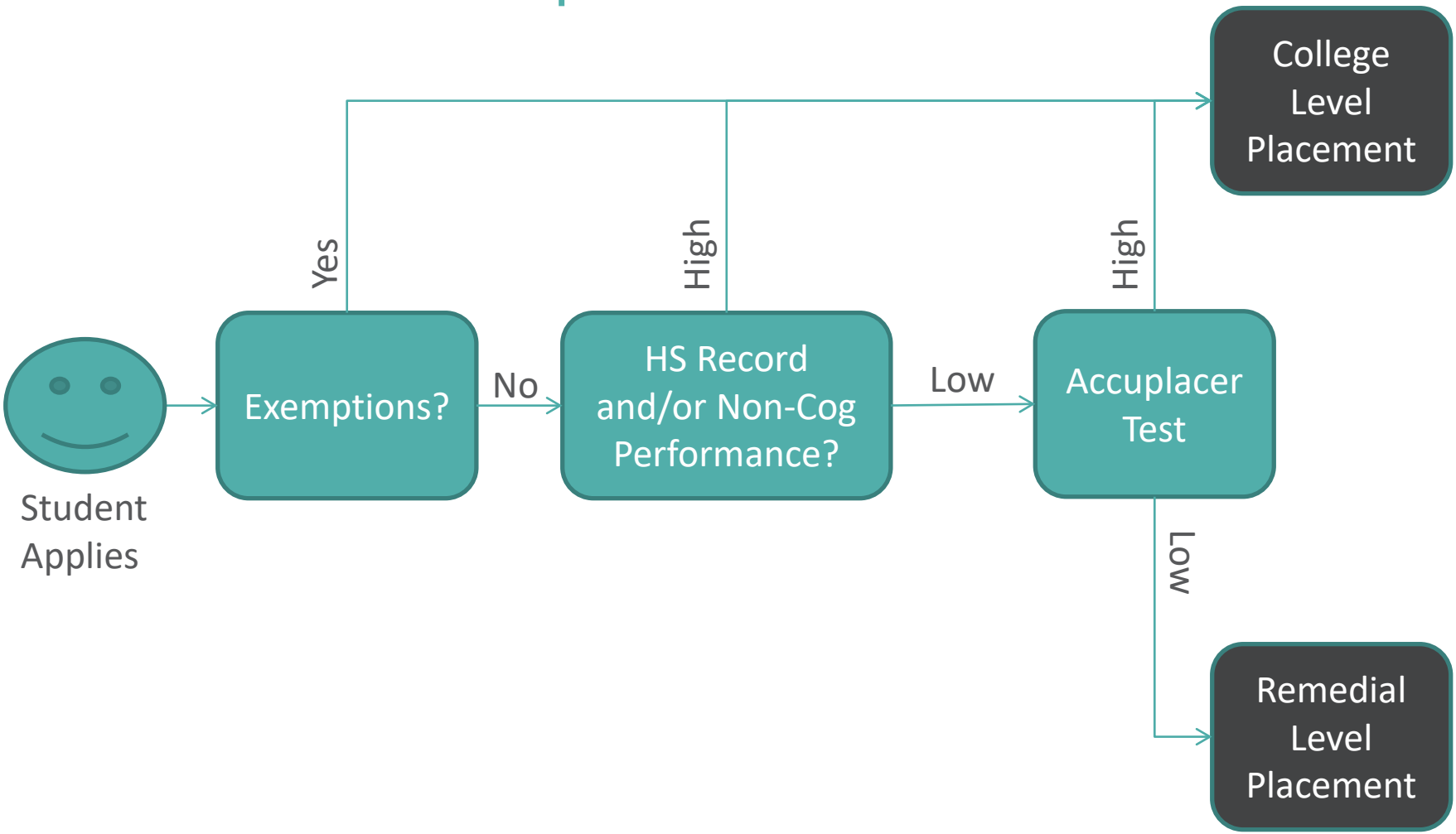
Ways to Combine Measures

- Algorithms:
  - Placement determined by predictive model
- Decision Rules:
  - New exemptions, cutoffs
- Decision Bands:
  - “Bumping up” those in a test score range
- Directed Self-placement:
  - Provide students with information; let them decide where they fit.

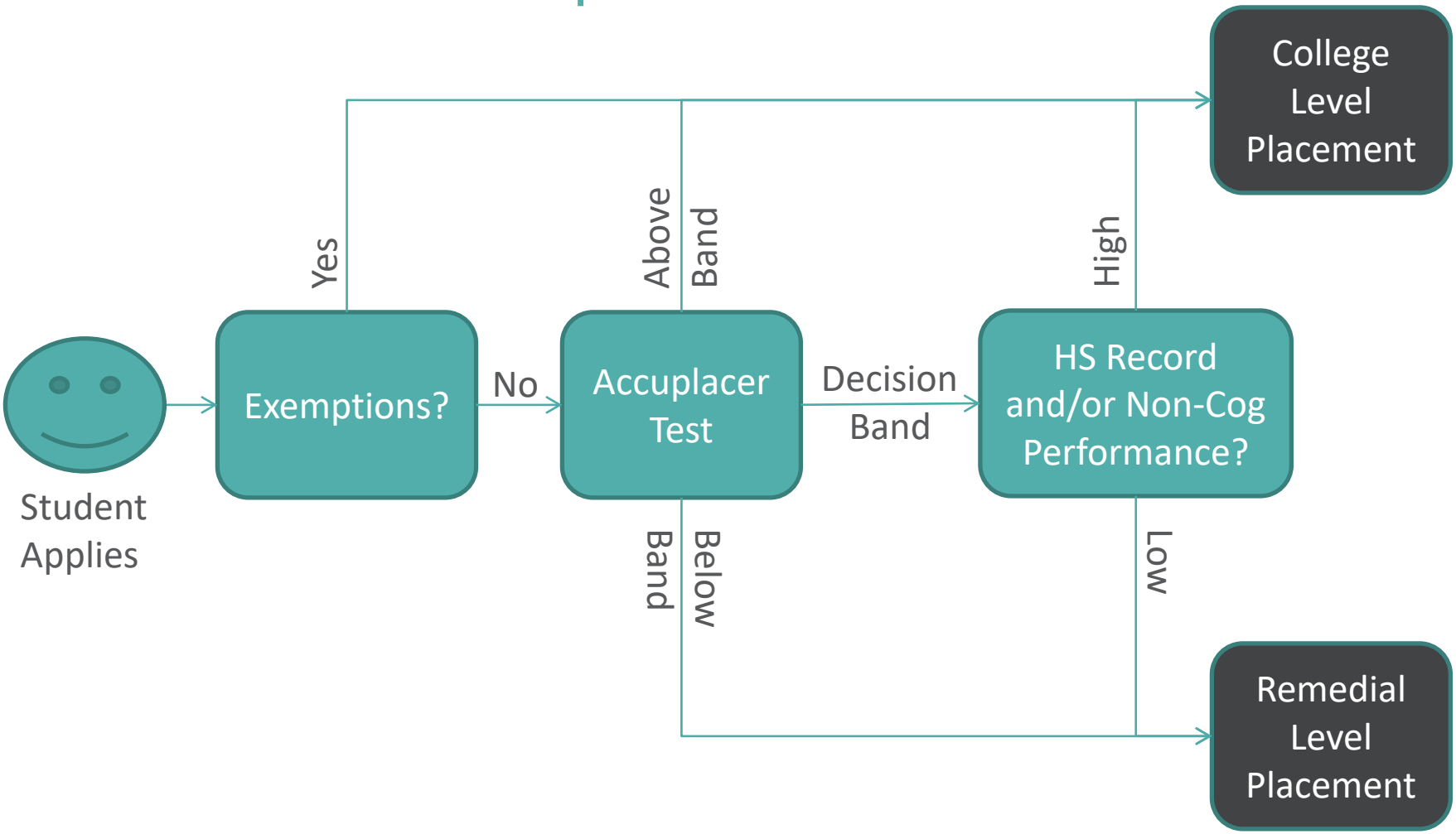
Algorithm Example



Decision-Rule Example



Decision-Band Example



The CAPR Assessment Study

Organization of CAPR

MDRC

CCRC

Descriptive Study of Developmental Education

Evaluation of The New Mathways Project (RCT in TX)

Evaluation of New Assessment Practices (RCT in NY)

Supplemental Studies

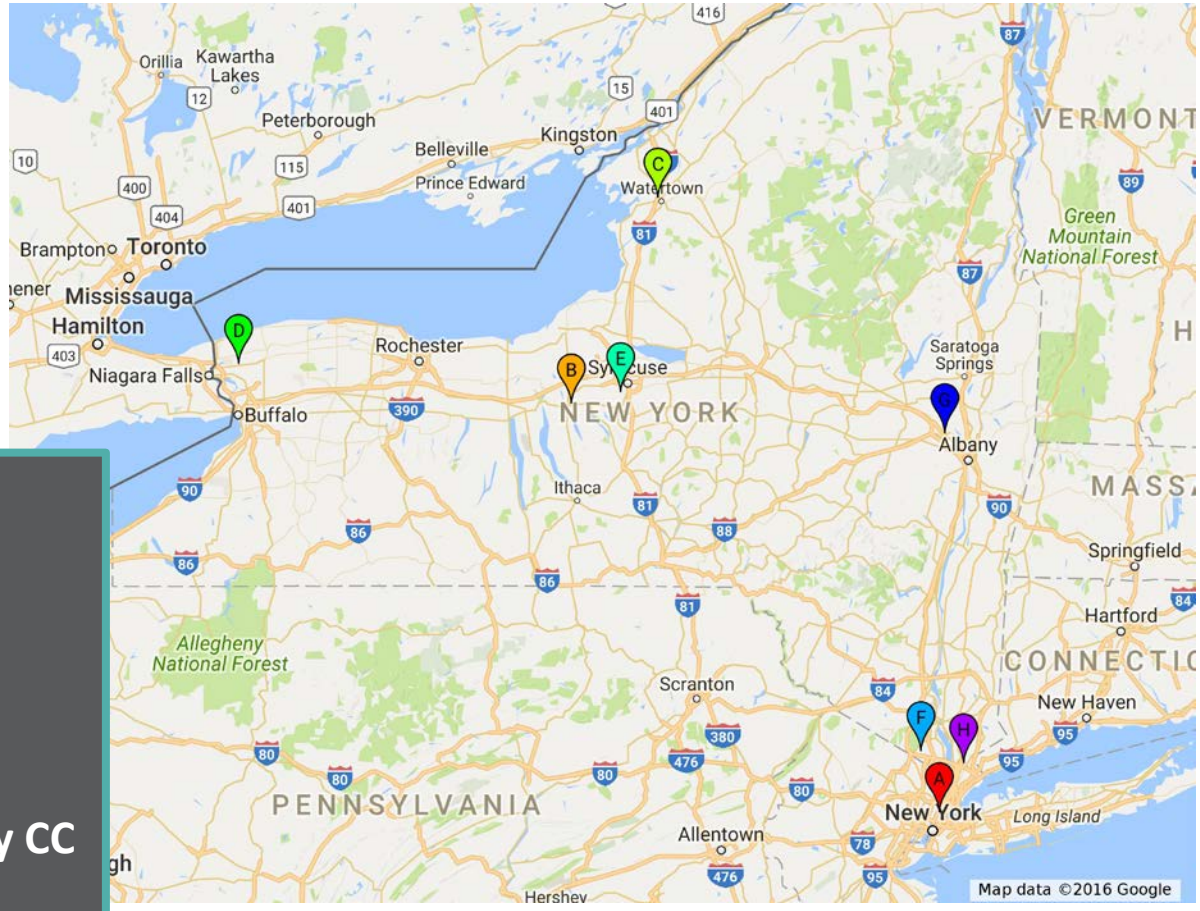
Research on Alternative Placement Systems (RAPS)

- 5 year project; 7 SUNY community colleges
- Evaluation of the use of predictive analytics in student placement decisions.
- Random assignment/implementation/cost study
- Current status: beginning to look at impact

Research Questions (Summary)

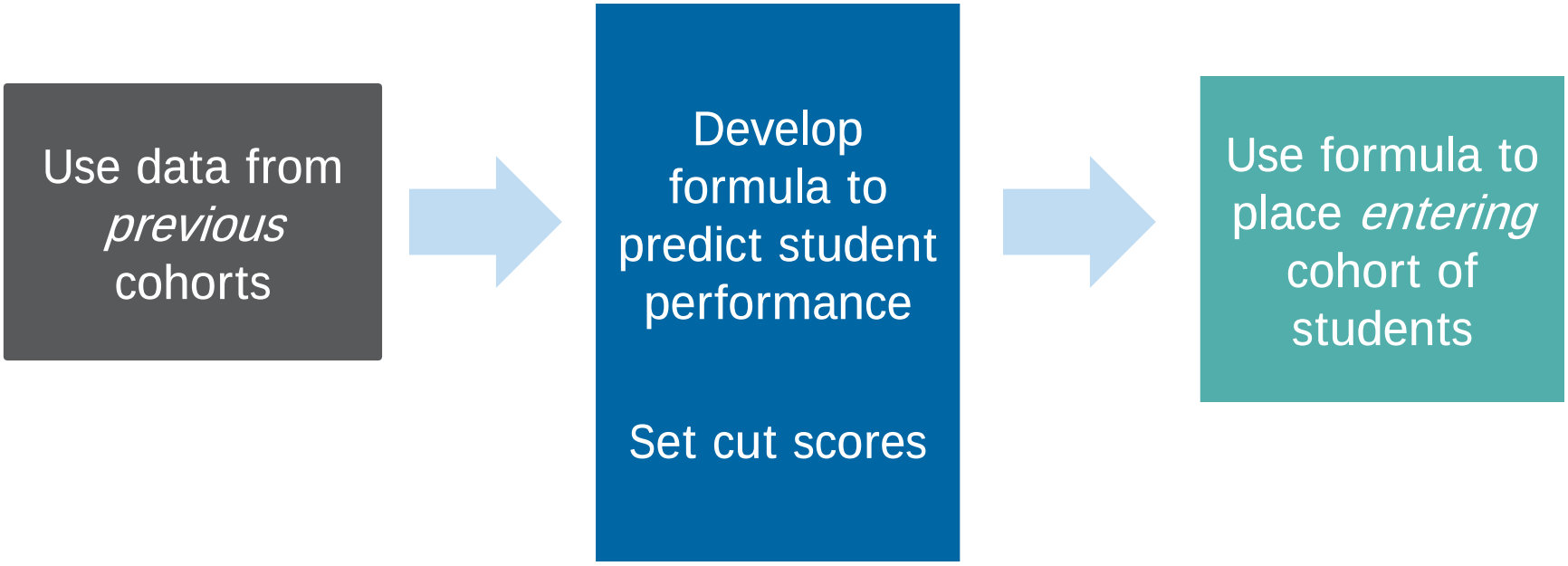
1. Do student outcomes improve when they are placed using predictive analytics?
2. How does each college adopt/adapt and implement such a system?

SUNY Partner Sites



A – CAPR/CCRC/MDRC
B – Cayuga CC
C – Jefferson CC
D – Niagara County CC
E – Onondaga CC
F – Rockland CC
G – Schenectady County CC
H – Westchester CC

How Does the Predictive Analytics Placement Work?



Early Findings

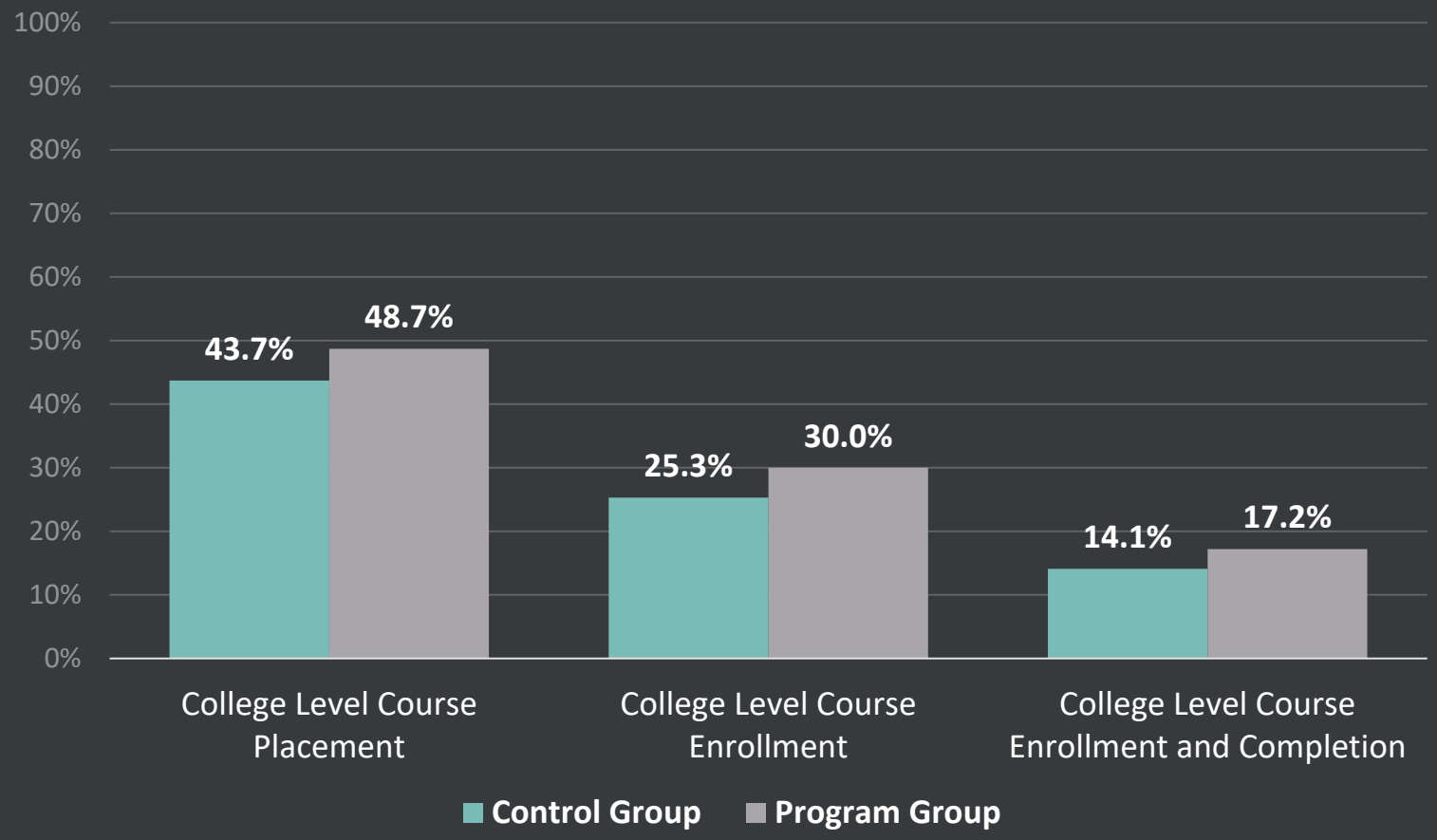
Fall 2017

First Cohort - First Semester (Fall 2016)

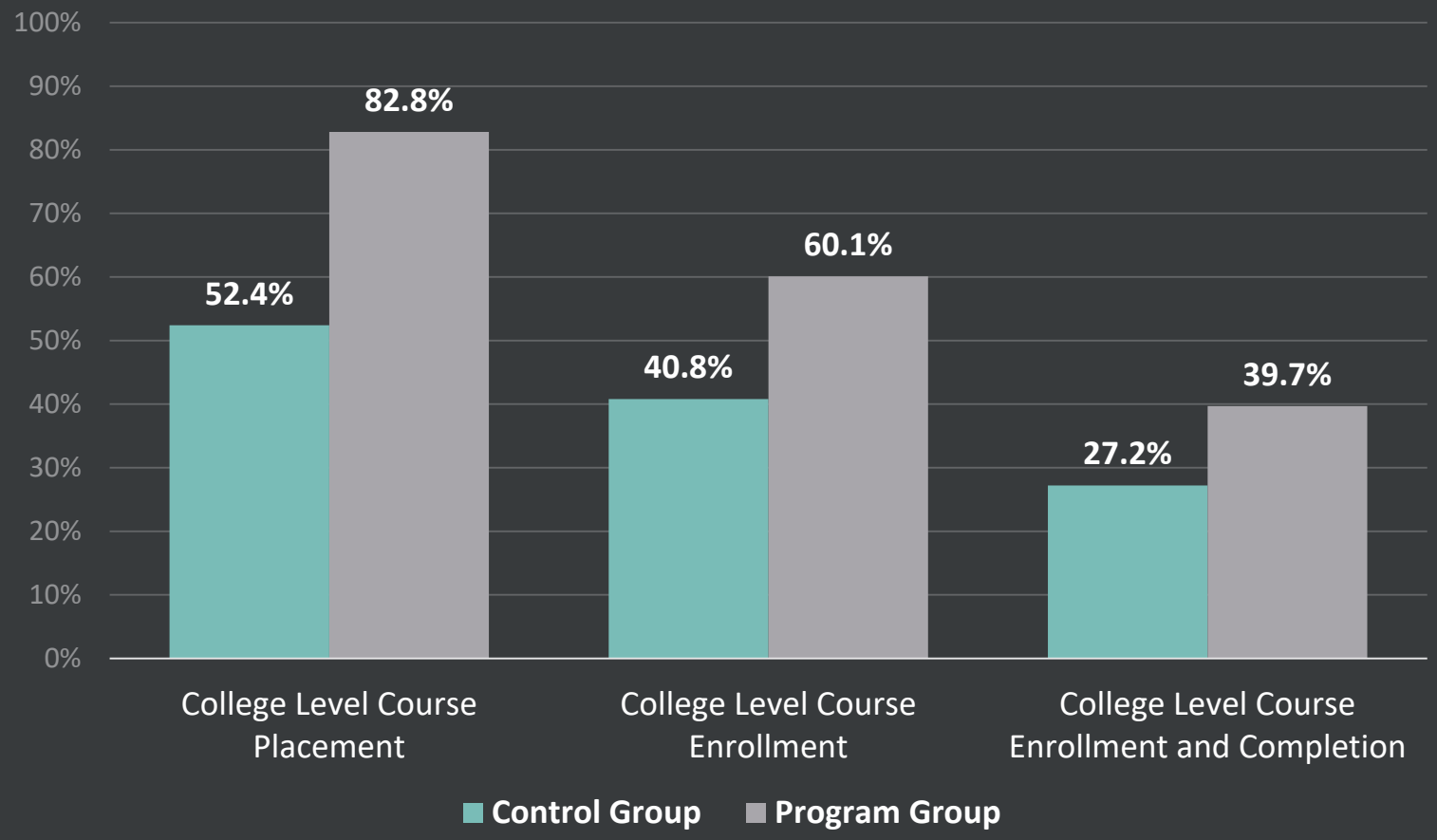
Sample = 4,729 first year students across 5 colleges

- 48% students assigned to business-as-usual (n=2,274)
- 52% students assigned to treatment group (n=2,455)
- 82% enrolled into at least one course in 2016 (n=3,865)

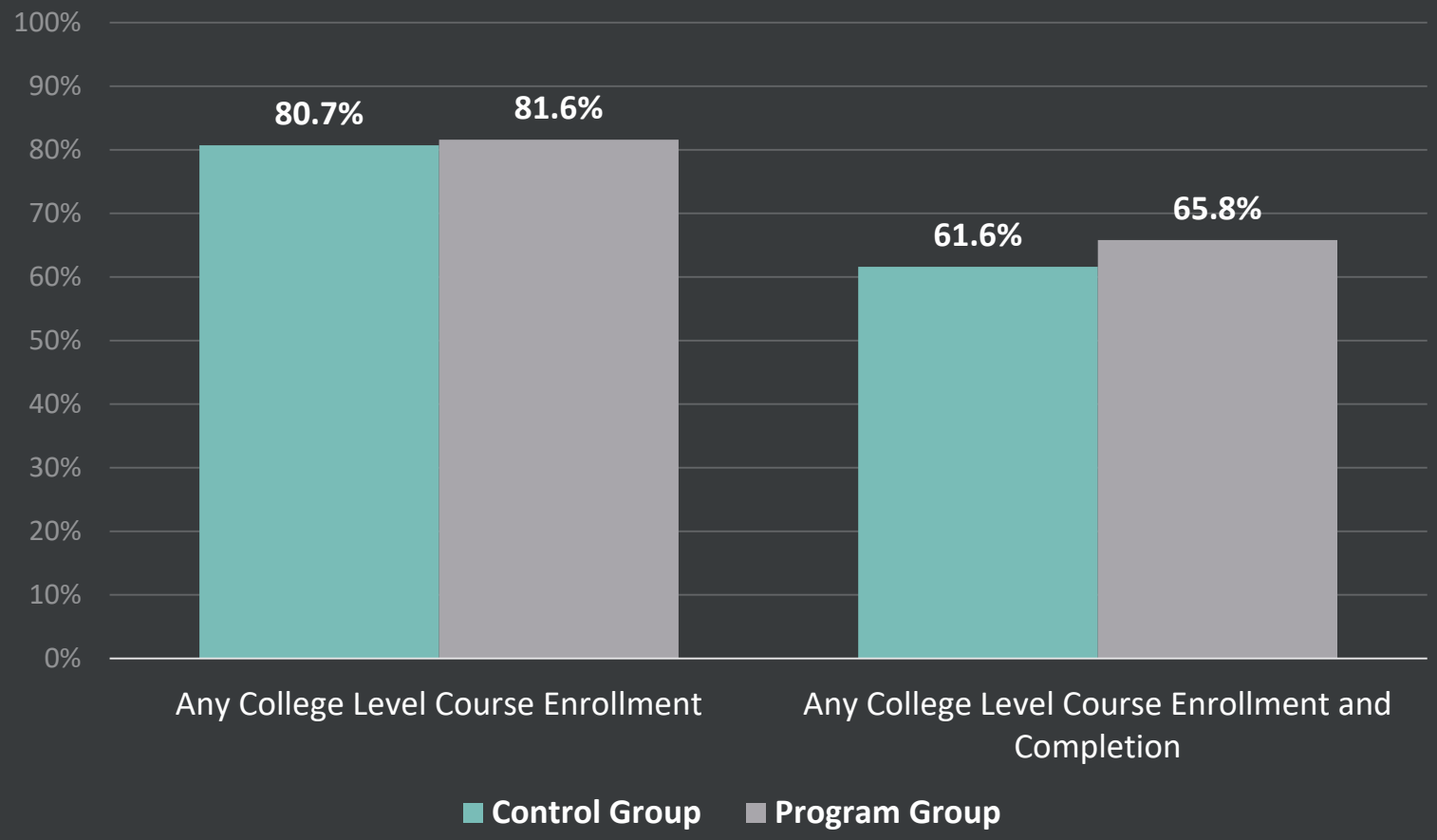
Treatment Effects: Math



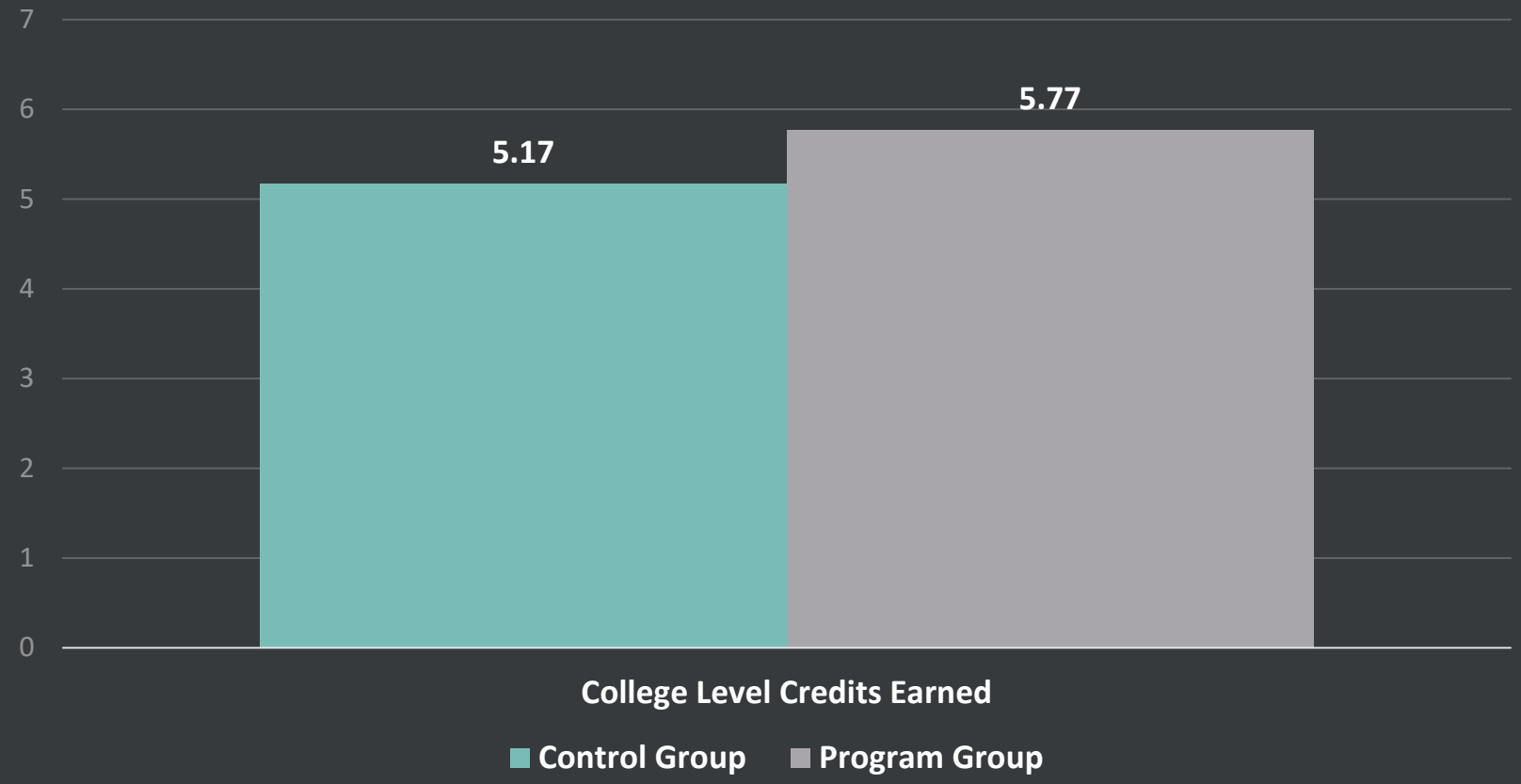
Treatment Effects: English



Treatment Effects: Any College Level Course



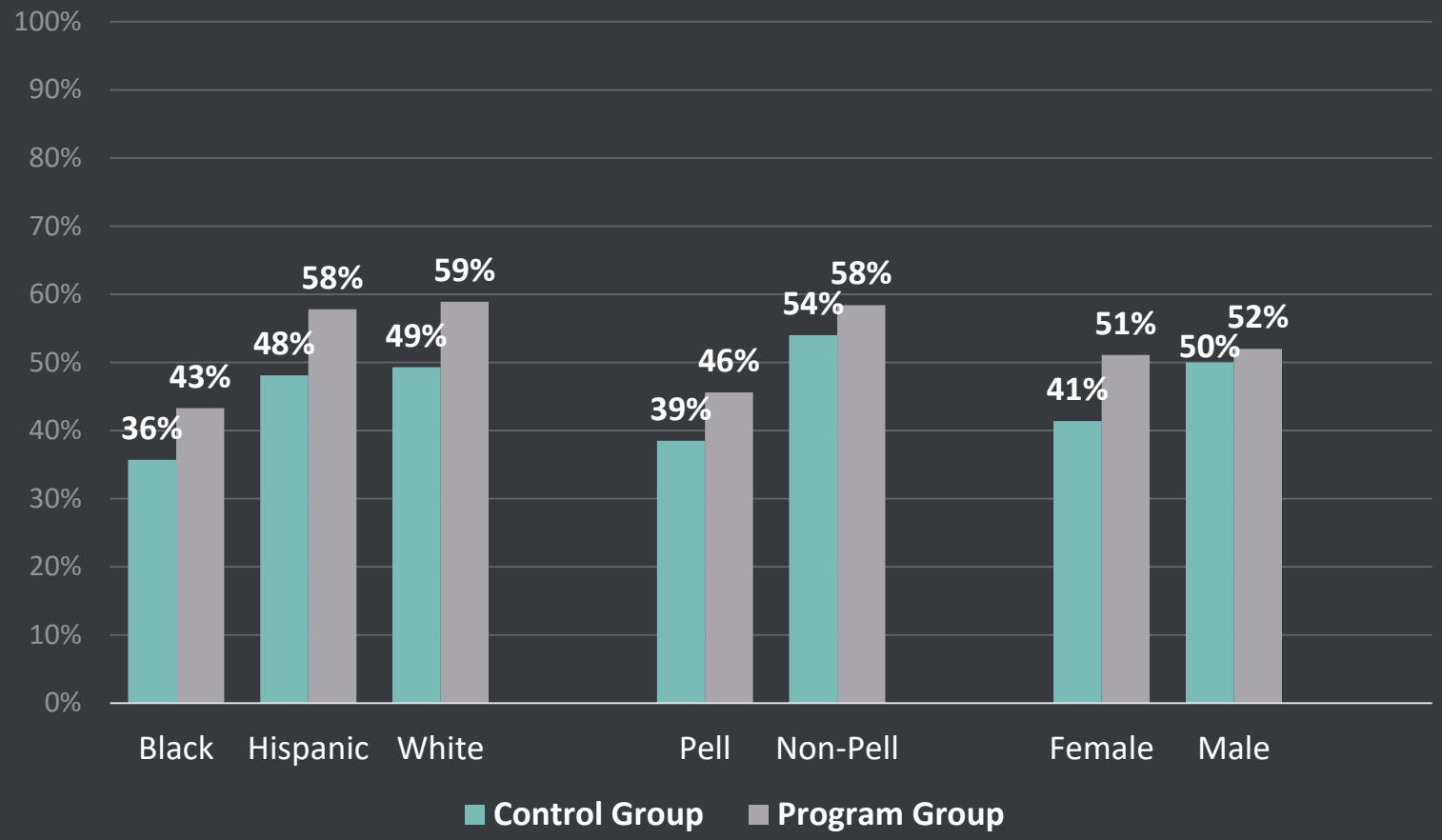
Treatment Effects: Total College Level Credits Earned



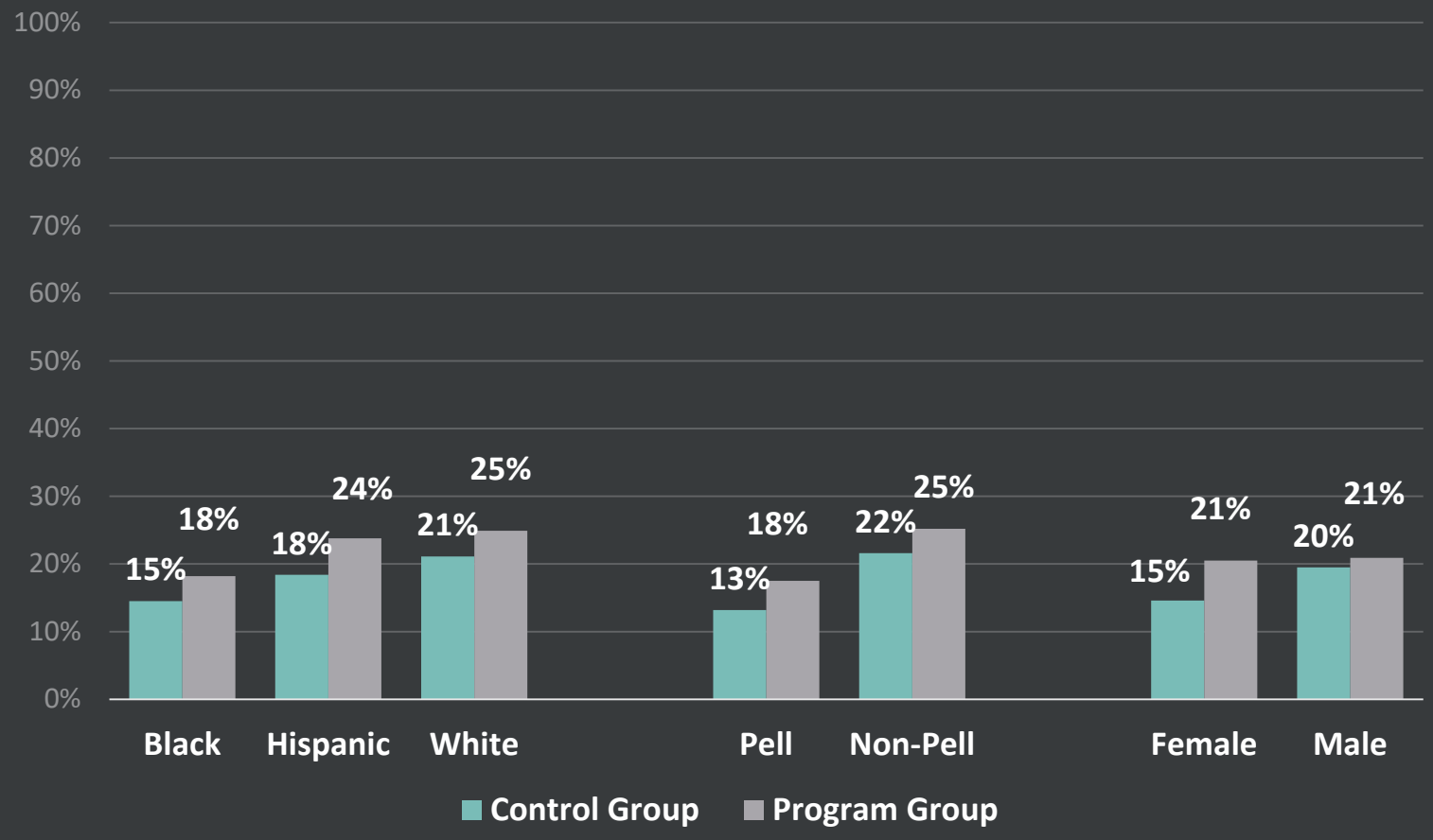
Early Findings – Subgroup Analysis

Fall 2016

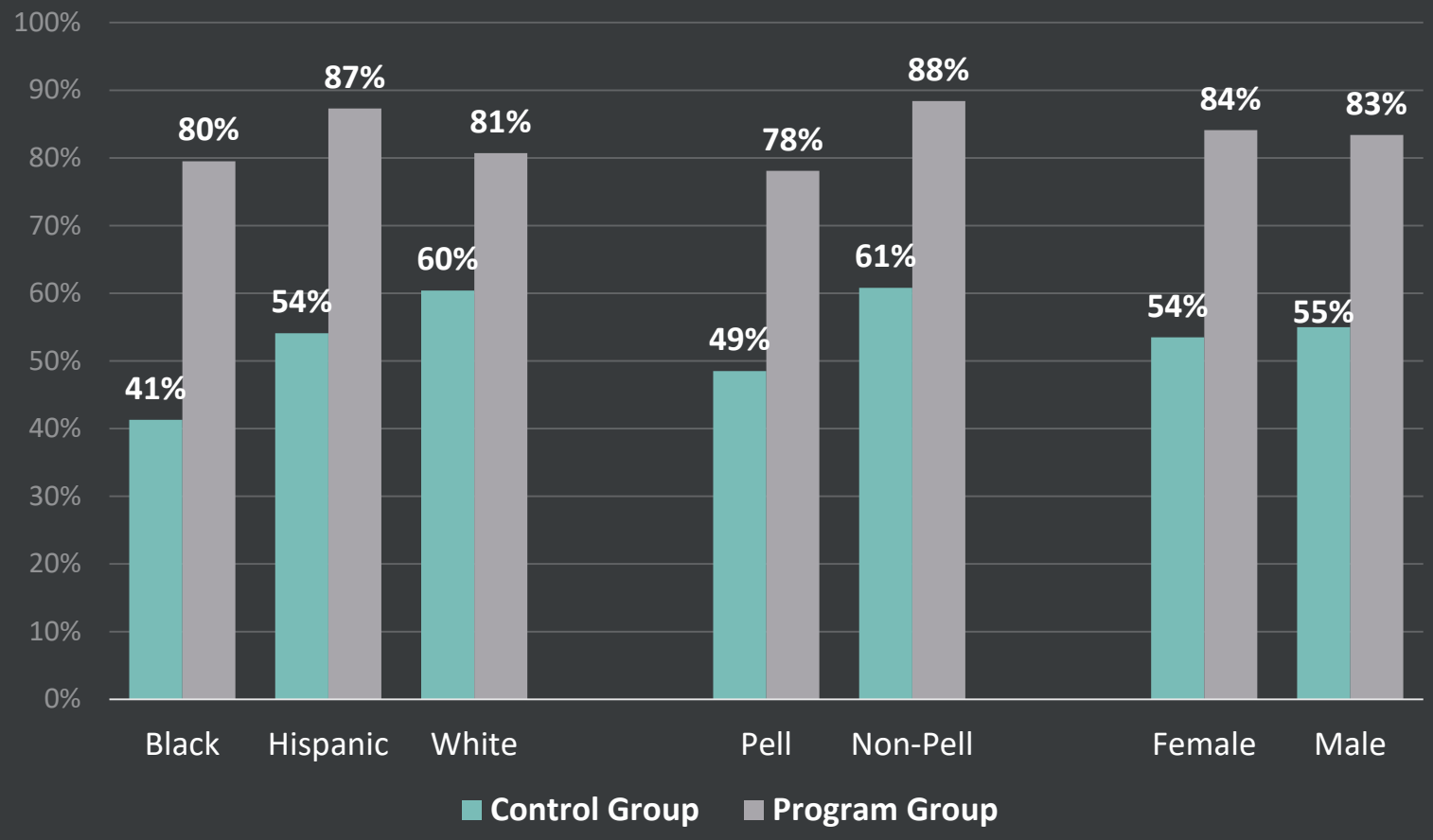
Treatment Effects: College Level Math Placement



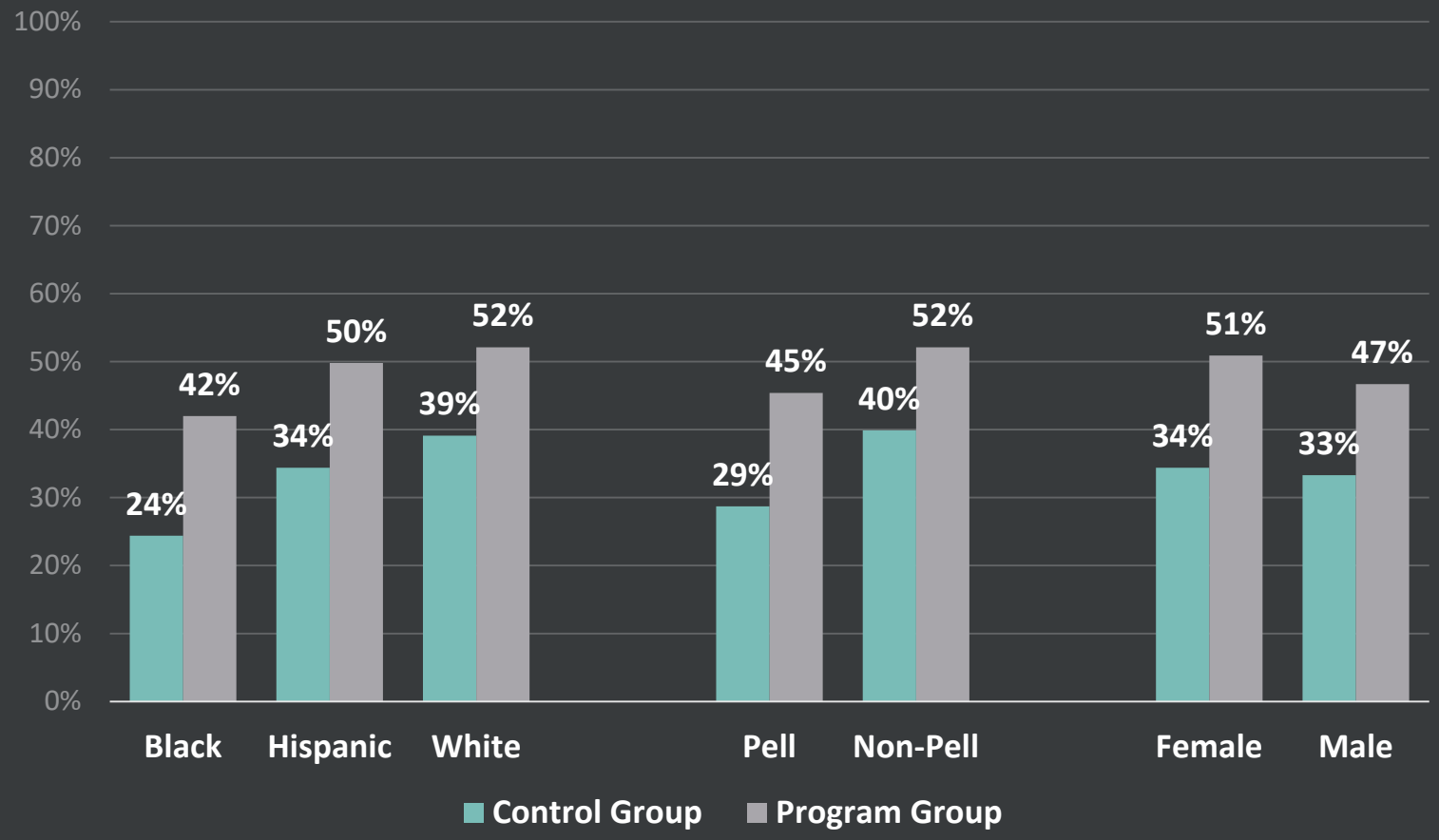
Treatment Effects: College Level Math Completion



Treatment Effects: College Level English Placement



Treatment Effects: College Level English Completion



Costs

- First fall-term costs were roughly $110 per student above status quo (Range: $70-$320)
- Subsequent fall-term costs were roughly $40 per student above status quo (Range: $10-$170)

Implementation Challenges

Challenge 1

- Lack of data for algorithm due to multiple reforms
  - Placement tests used
  - Course changes
  - Missing HS GPA

  “The seventh college in our sample had been using the COMPASS exam, which was discontinued by ACT shortly after this study began.” (report)

Challenge 2

- Concerns about the HS GPA
  - Availability
  - Mistrust of it as a valid predictor of college readiness

  Also, just one other thing is I'm wondering if the GPAs at the various schools can be really seen as being, quote, equal…. (interviewee)

Challenge 3

- Communications within colleges

Make sure you're involving the right parties. Make sure the decision makers are sitting around the table and make sure they understand the decisions they're making. (interviewee)

I think that's one of the key things that probably came out of all of this for all of us -- to know any kind of changes that we were planning to do with placement testing in general, you'd have to be planning so much further out. (interviewee)

Challenge 4

- Changes requiring forethought
  - IT time was needed
  - Classroom assignments might change
  - Needs for faculty might change

"Department chairs reported that they had to make changes based on different numbers of college developmental and college level sections needed." (report)

Challenge 5

- Delays in getting placement information to students

These students were used to getting the result, and they want the results right away, and we have to tell them, "You have to wait until the next business day." (interviewee)

Questions? Comments?

Contact Us

Elisabeth Barnett:
Barnett@tc.columbia.edu

Dan Cullinan:
Dan.Cullinan@mdrc.org

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525 West 120th Street, Box 174 New York, NY 10027 \ E-mail: ccrc@columbia.edu \ Telephone: 212.678.3091