Reimagining Developmental Education

CAPR \ 2019

CAPR's study of multiple measures placement in the State University of New York

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#CAPR2019

Agenda

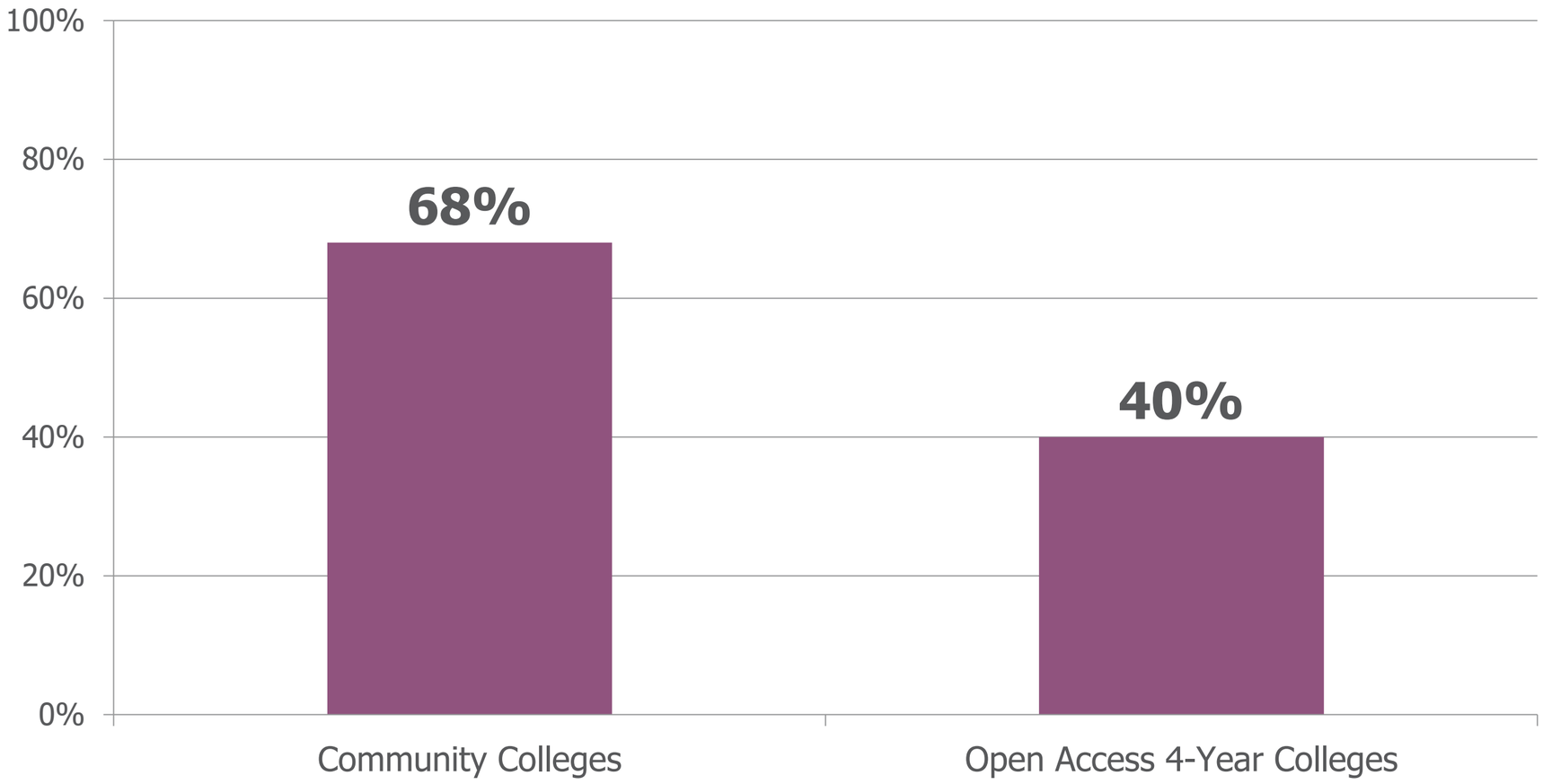
- Why use multiple measures for placement
- Selection of a multiple measures system
- Early results of the SUNY research
- What's next?

Definition of Multiple Measures Assessment

….a system that combines two or more measures to place students into appropriate courses and/or supports

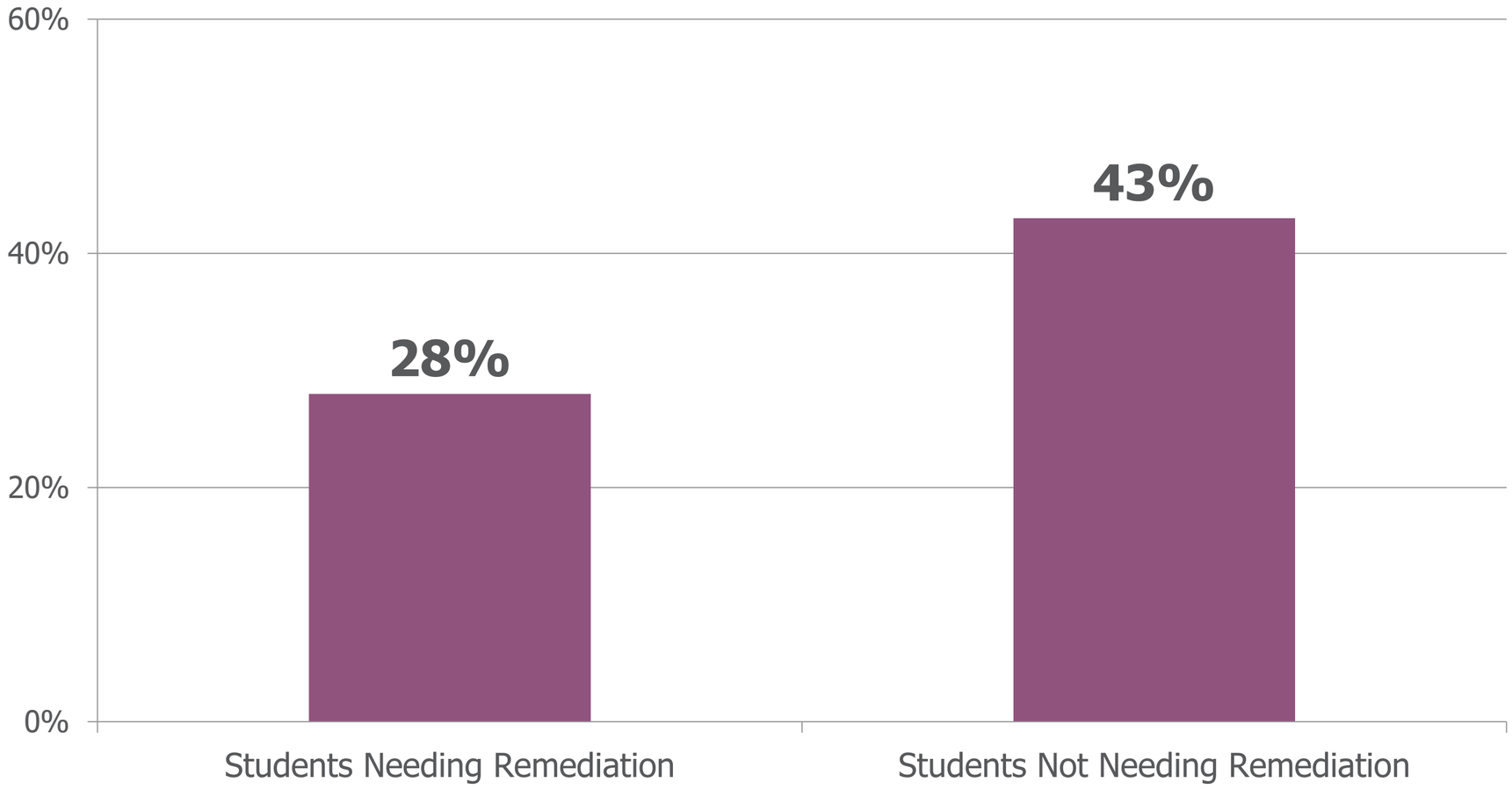
(Barnett and Reddy, 2017)

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



Community college 8-year graduation rates

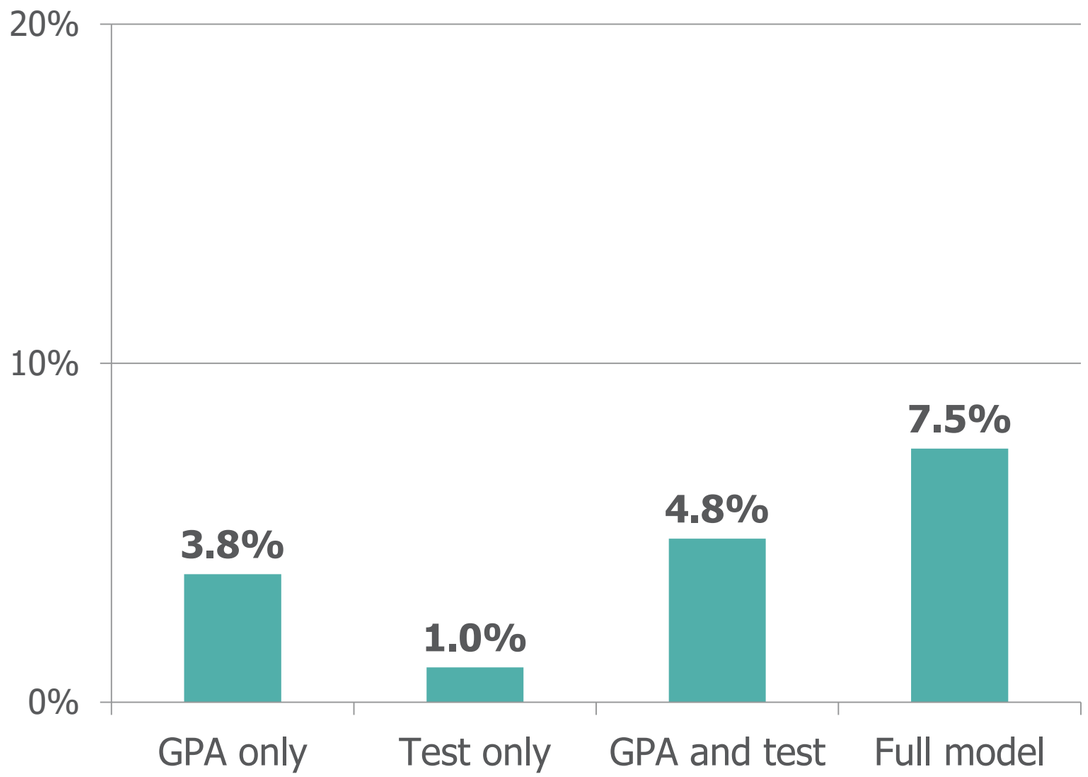
(Attewell, Lavin, Domina, and Levey, 2006)



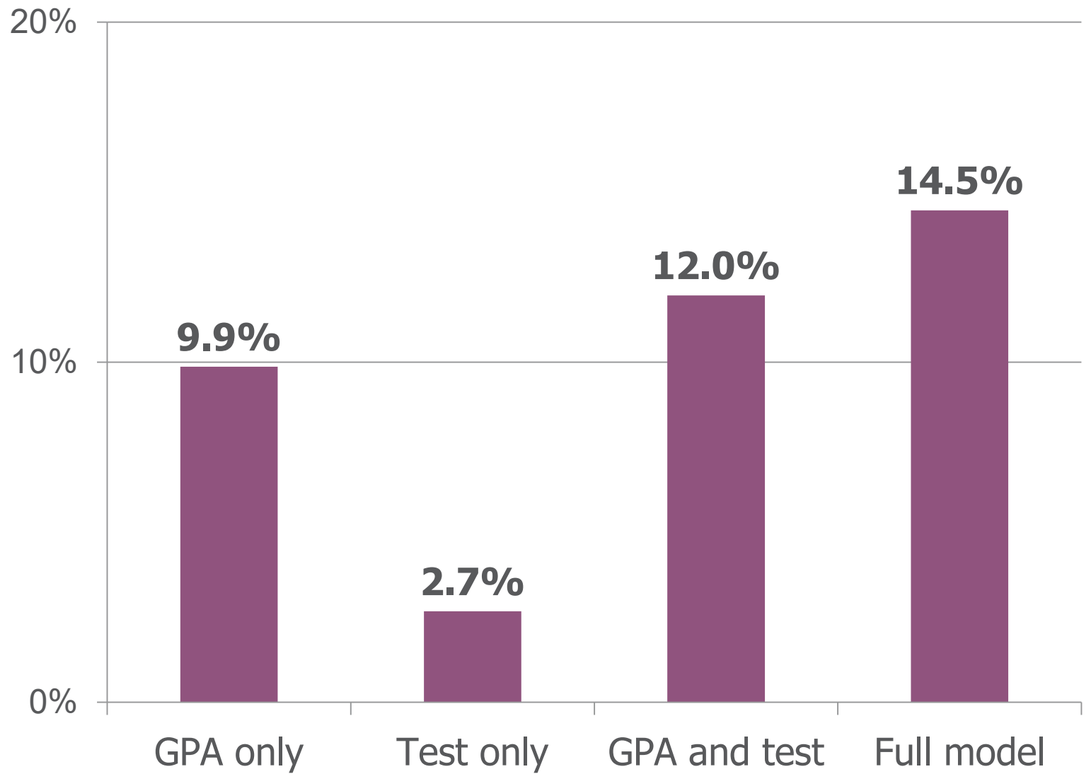
Under-placement and Over-placement

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

One College: English



One College: Math



Conclusions so far

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

Multiple Measures Assessment

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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.

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 3. Standardized test results (e.g., ACT, SAT, AP)	• Waiver system • Decision rules or bands • Placement formula (algorithm) • Directed self-placement	• Placement into traditional courses • Placement into alternative coursework • Placement into support services

Concerns about the HS GPA (with thanks to John Hetts and Brad Bostian)

- How are we going to get the HS GPA?
- *Our* test is different/better/more awesome.
- High school GPA is only predictive for recent graduates.
- Different high schools grade differently.

Sources of HS transcript data

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

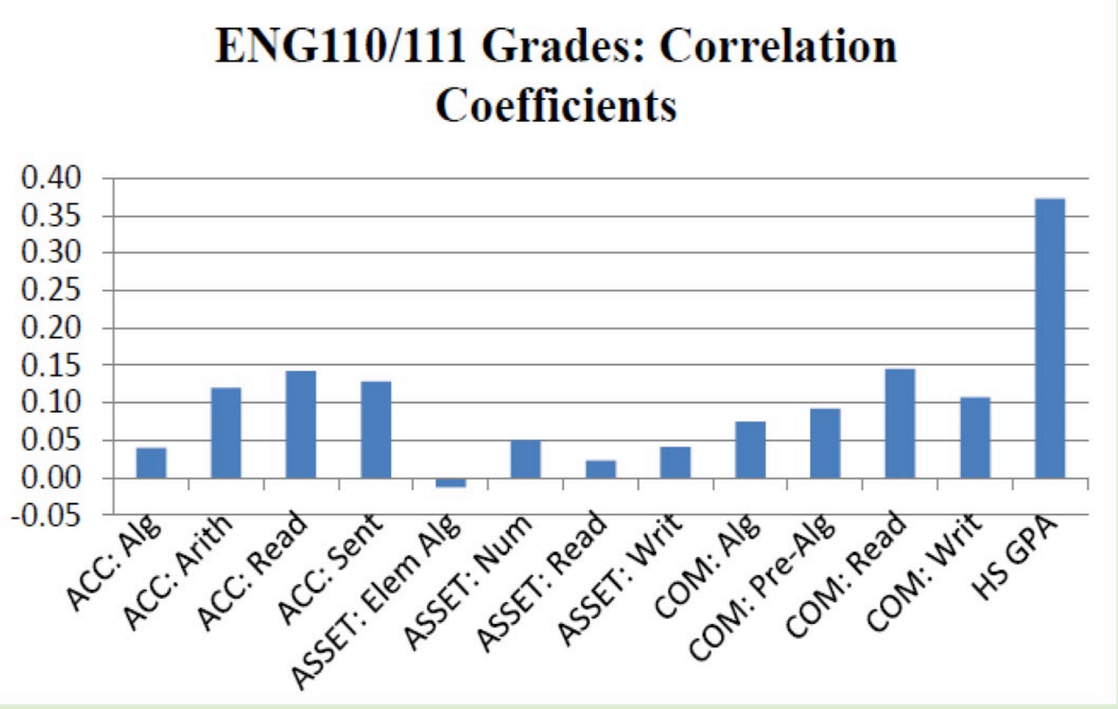
Note: Consider using the 11th grade GPA.

Self-report research

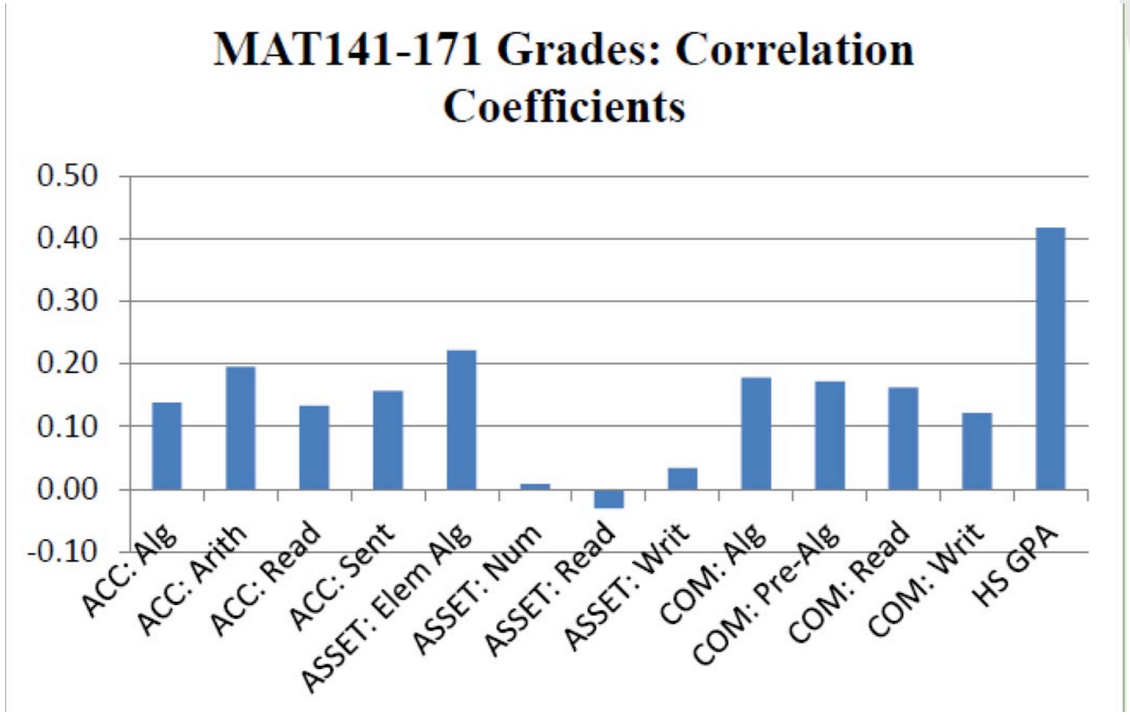
- UC admissions uses self-report but verifies after admission. In 2008, at 9 campuses, 60,000 students. No campus had >5 discrepancies b/w reported grades and student transcripts (Hetts, 2016)
- College Board: Shawn & Mattern, 2009: “Students are quite accurate in reporting their HSGPA”, r = .73.
- ACT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

None of the tests are that good for placement

North Carolina English

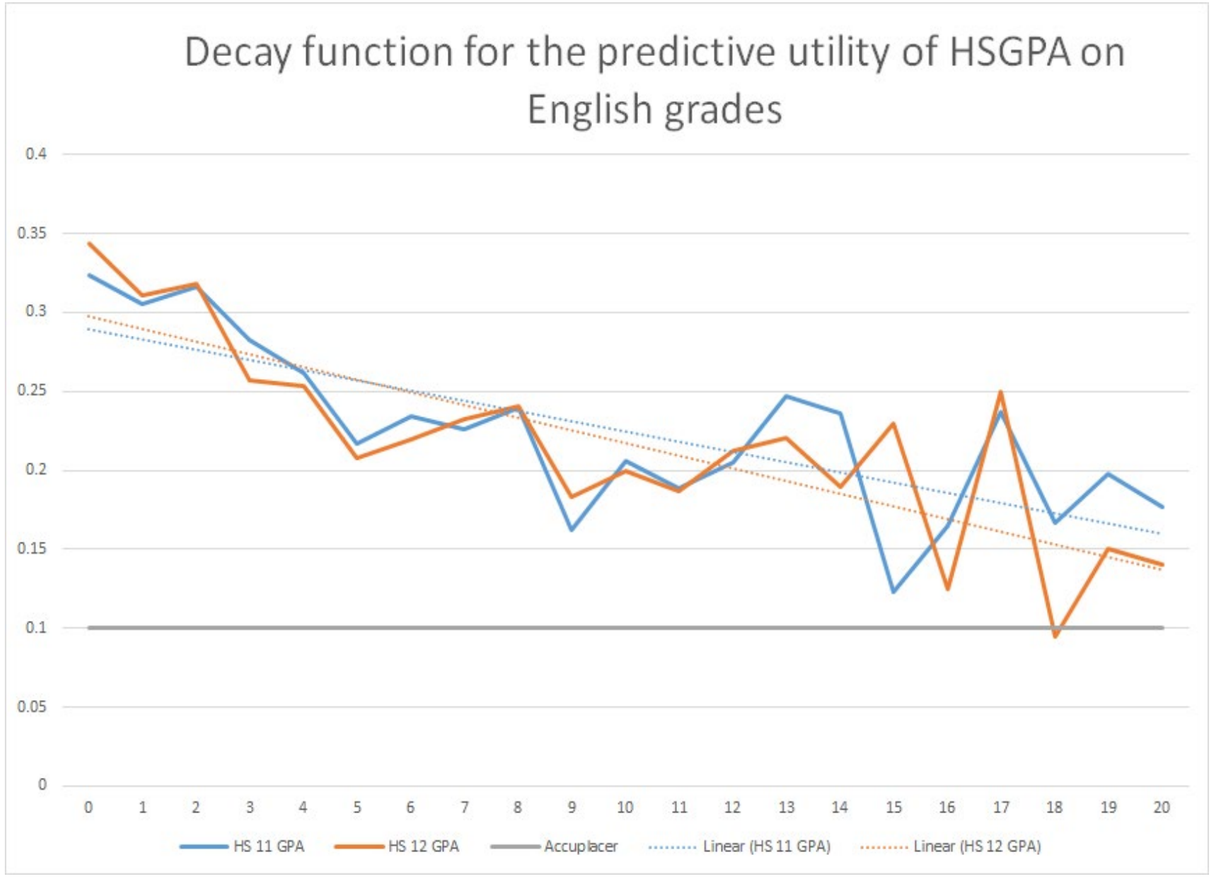


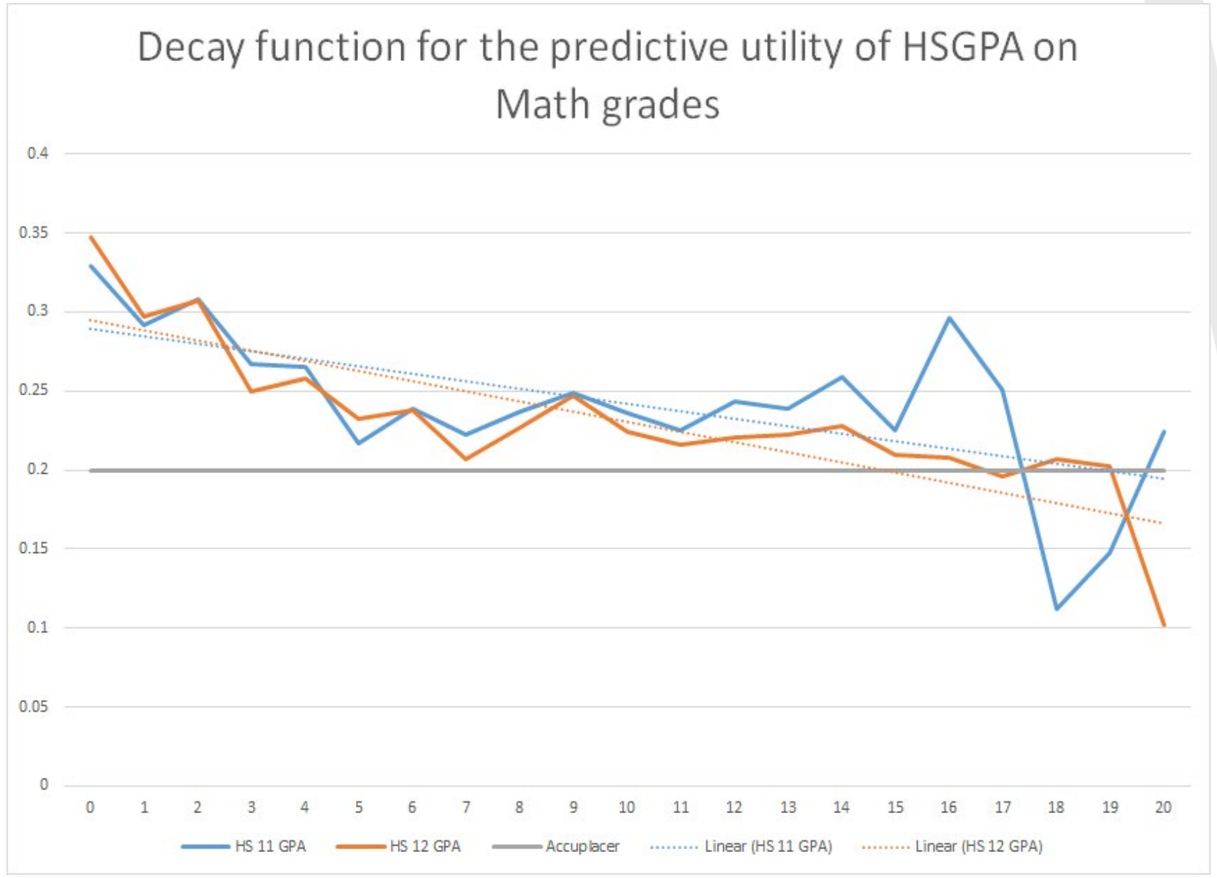
North Carolina Math



From Bostian (2016), North Carolina Waves GPA Wand, Students Magically College Ready; adapted from research of Belfield & Crosta, 2012)

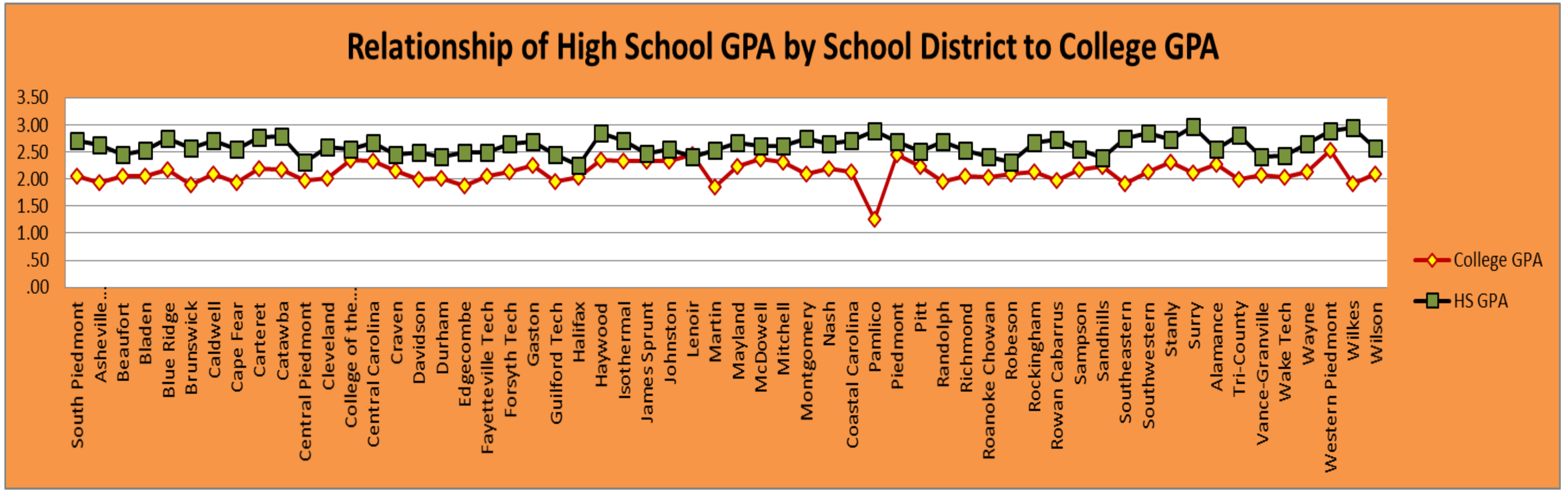
HS GPA is a better predictor than test results for long time (from Hetts, 2016)





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)



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

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)

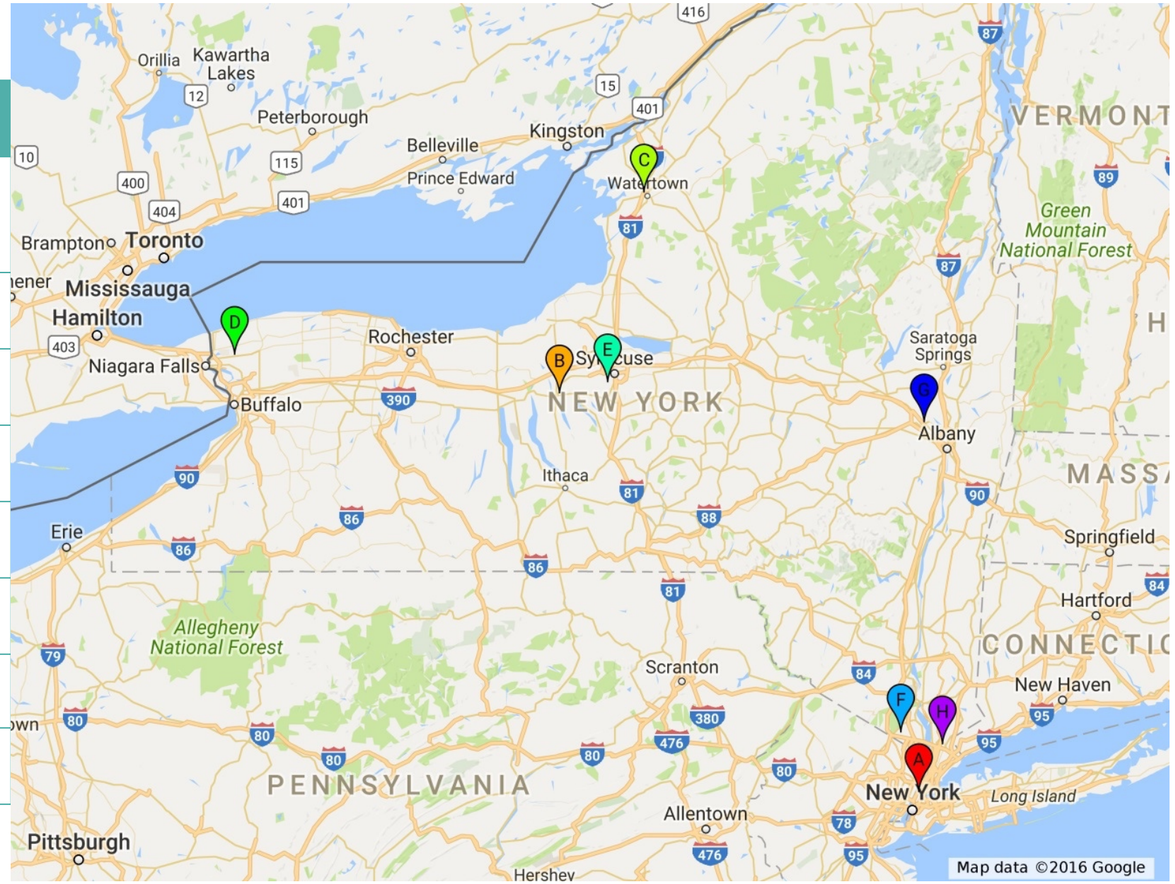
- 5 year project; 7 SUNY community colleges
- Evaluation of the use of predictive analytics in student placement decisions.
- Random assignment/implementation/cost study
- Current status: working on final analysis

Research Questions (Summary)

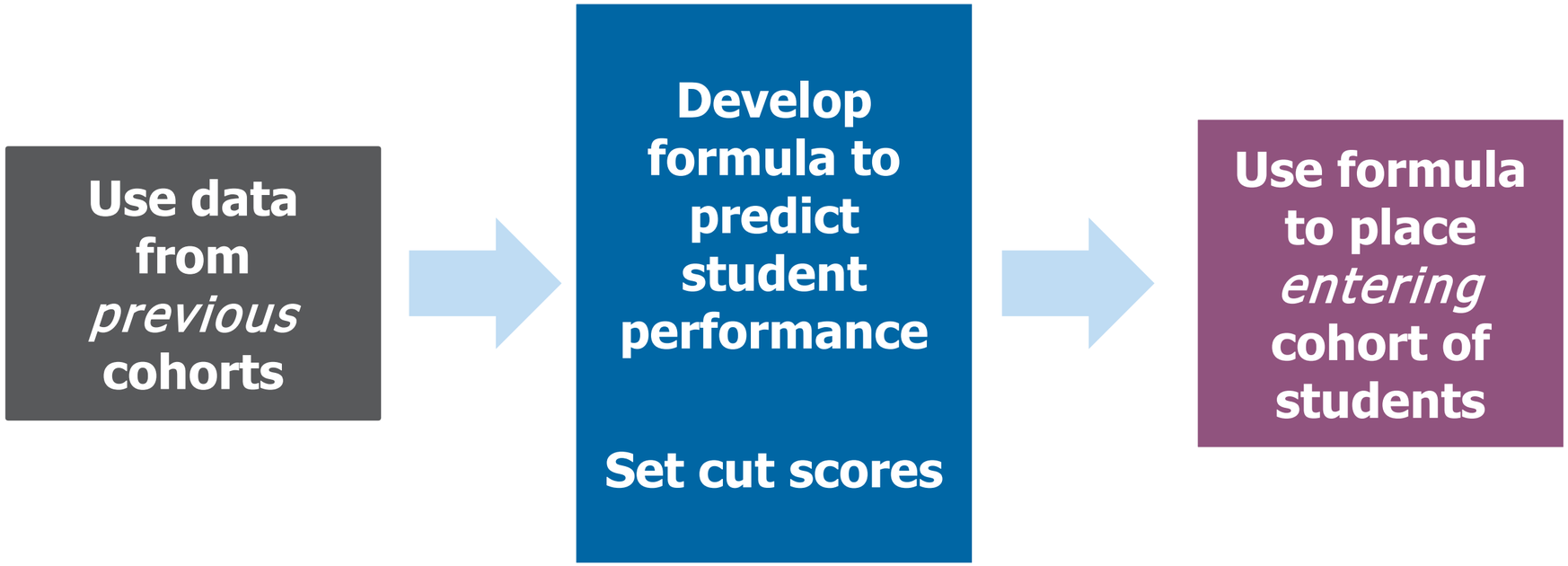
- Do student outcomes improve when they are placed using predictive analytics?
- How does each college adopt/adapt and implement such a system?

The State University of New York Sites

LOCATION
A – The Center for the Analysis of Postsecondary Readiness, Community College Research Center, MDRC
B – Cayuga Community College
C – Jefferson Community College
D – Niagara County Community College
E – Onondaga Community College
F – Rockland Community College
G – Schenectady County Community College
H – Westchester Community College



How Does the Predictive Analytics Placement Work?



Preliminary Results

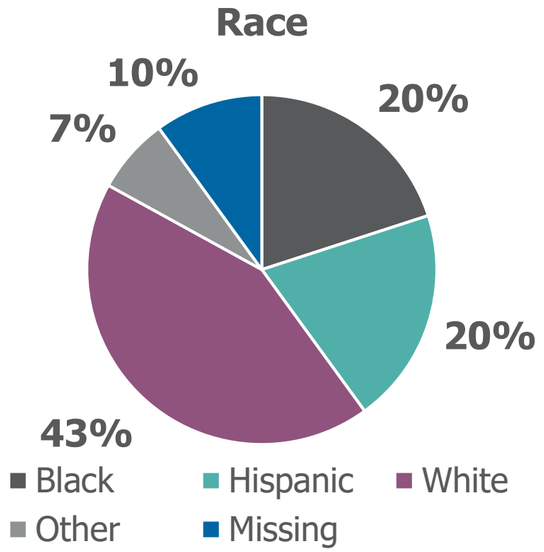
Final Analysis Sample

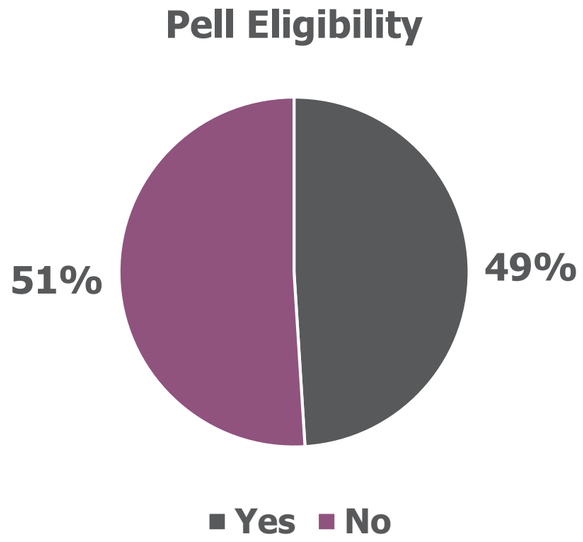
Final Analysis Sample

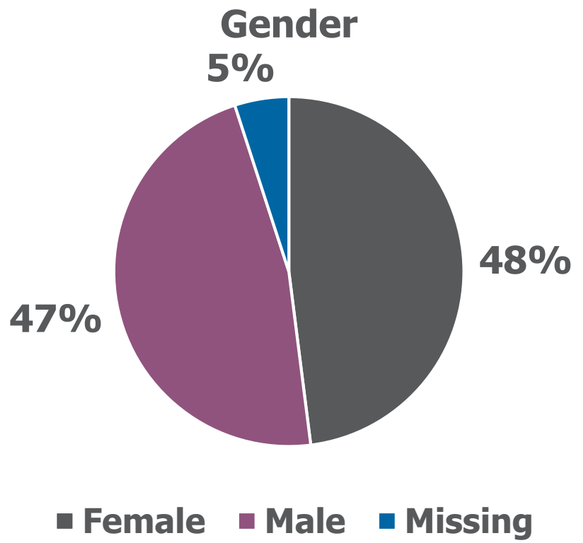
Sample = **12,971 students** across 7 colleges and 3 cohorts

- 49% students assigned to business-as-usual (n=6,589)
- 51% students assigned to treatment group (n=6,382)
- **86% enrolled** into at least one course after placement test (n=11,102)

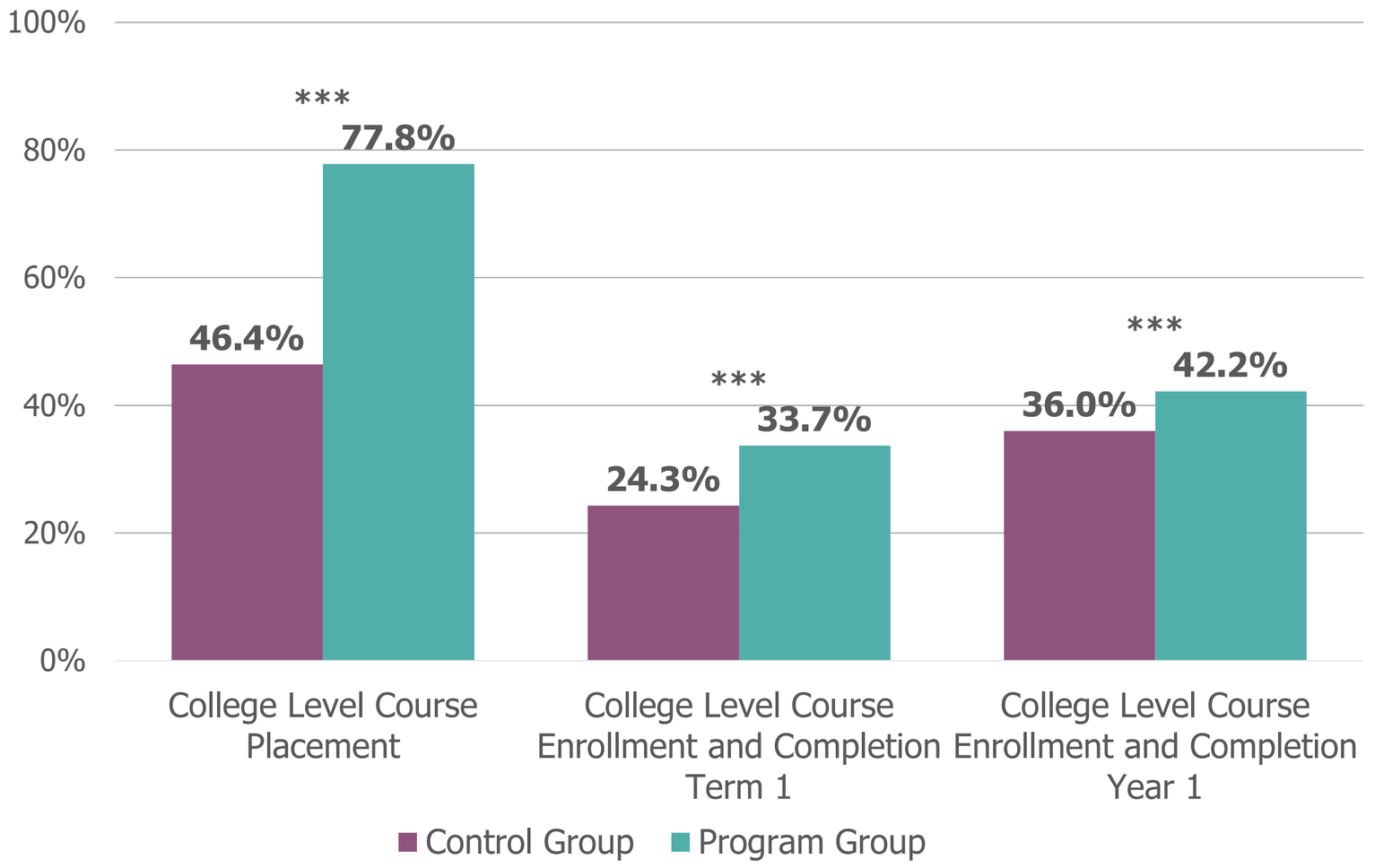
Demographic Characteristics



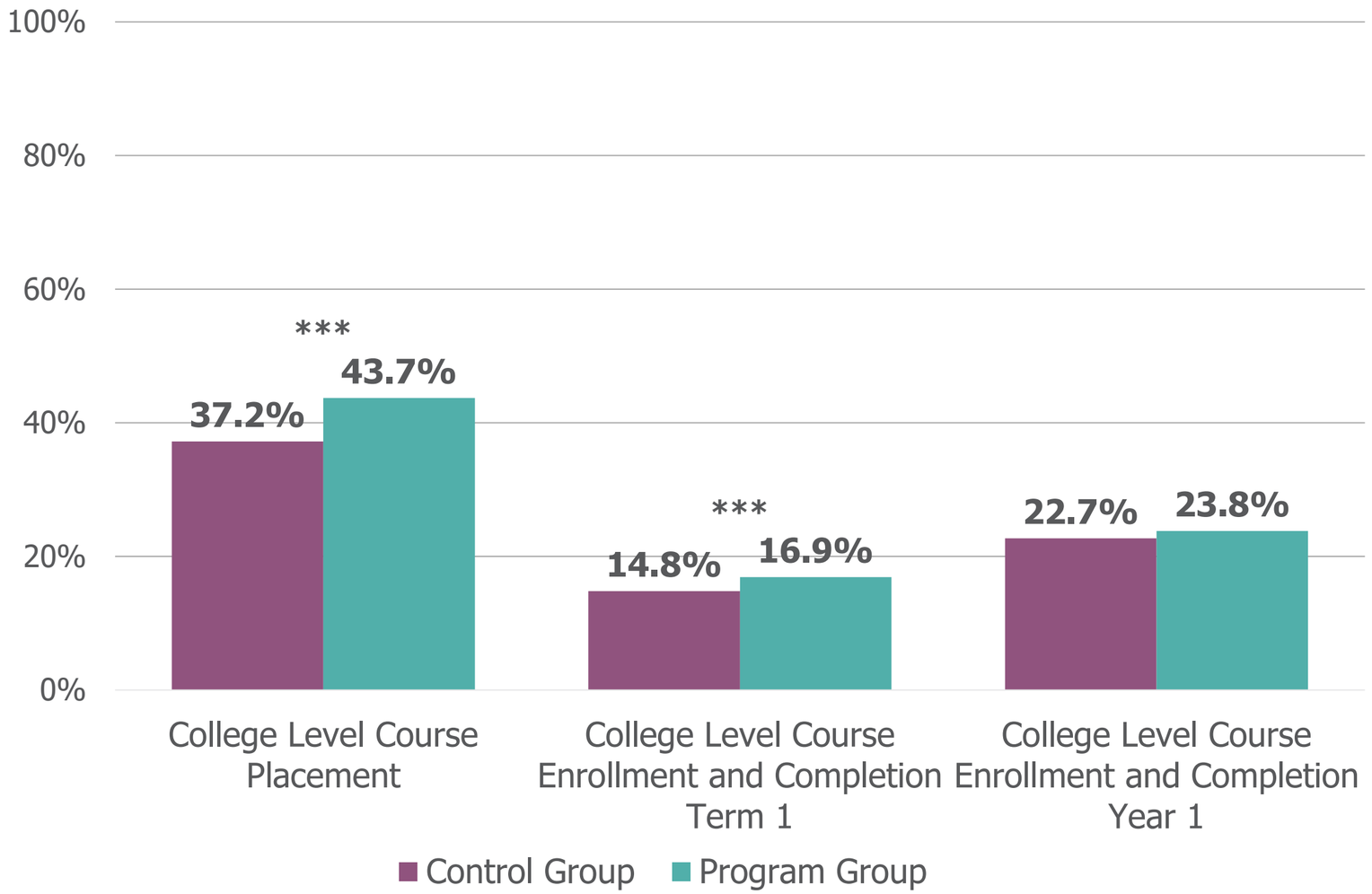




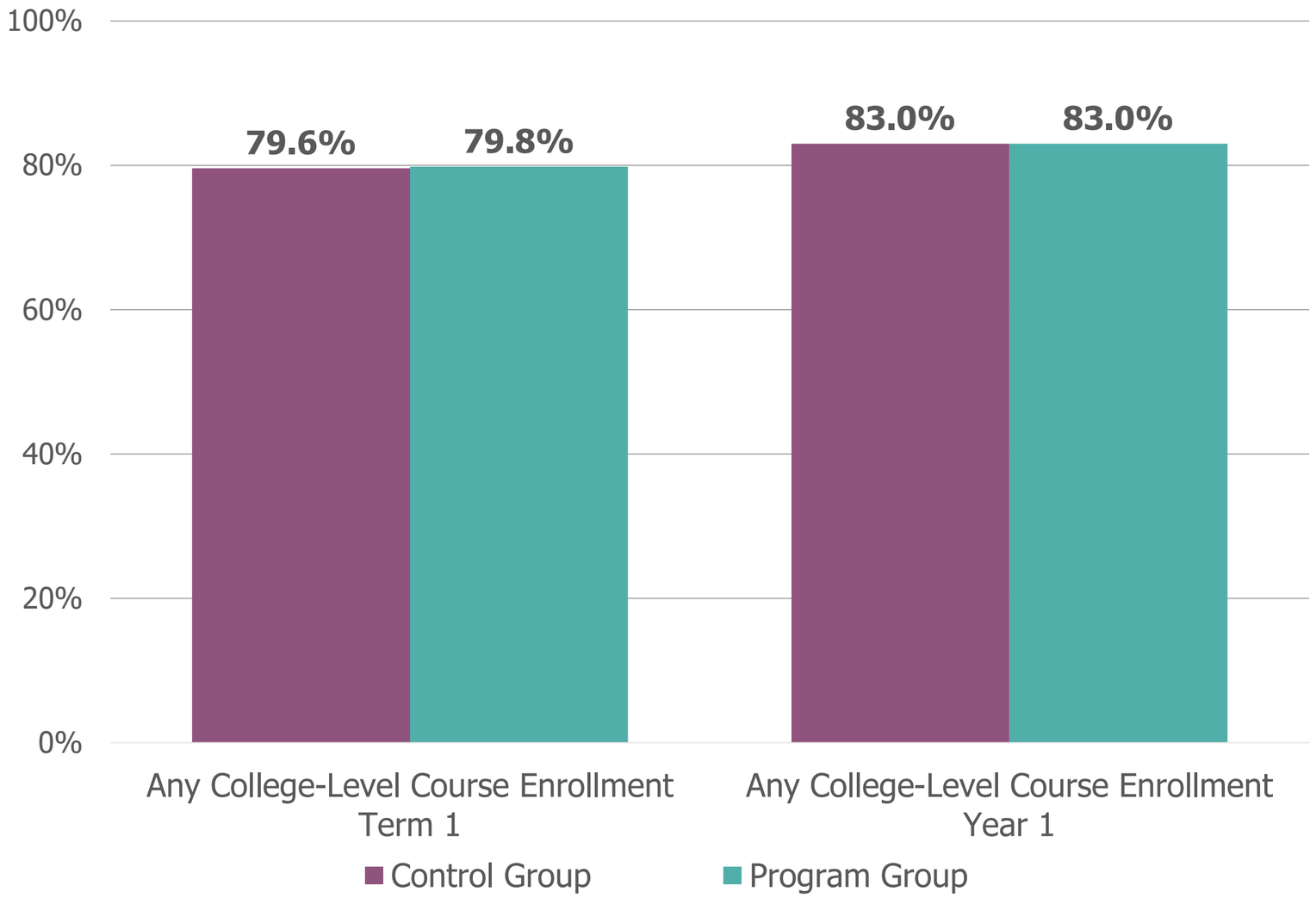
Treatment Effects: English (Stand-Alone Courses Only)



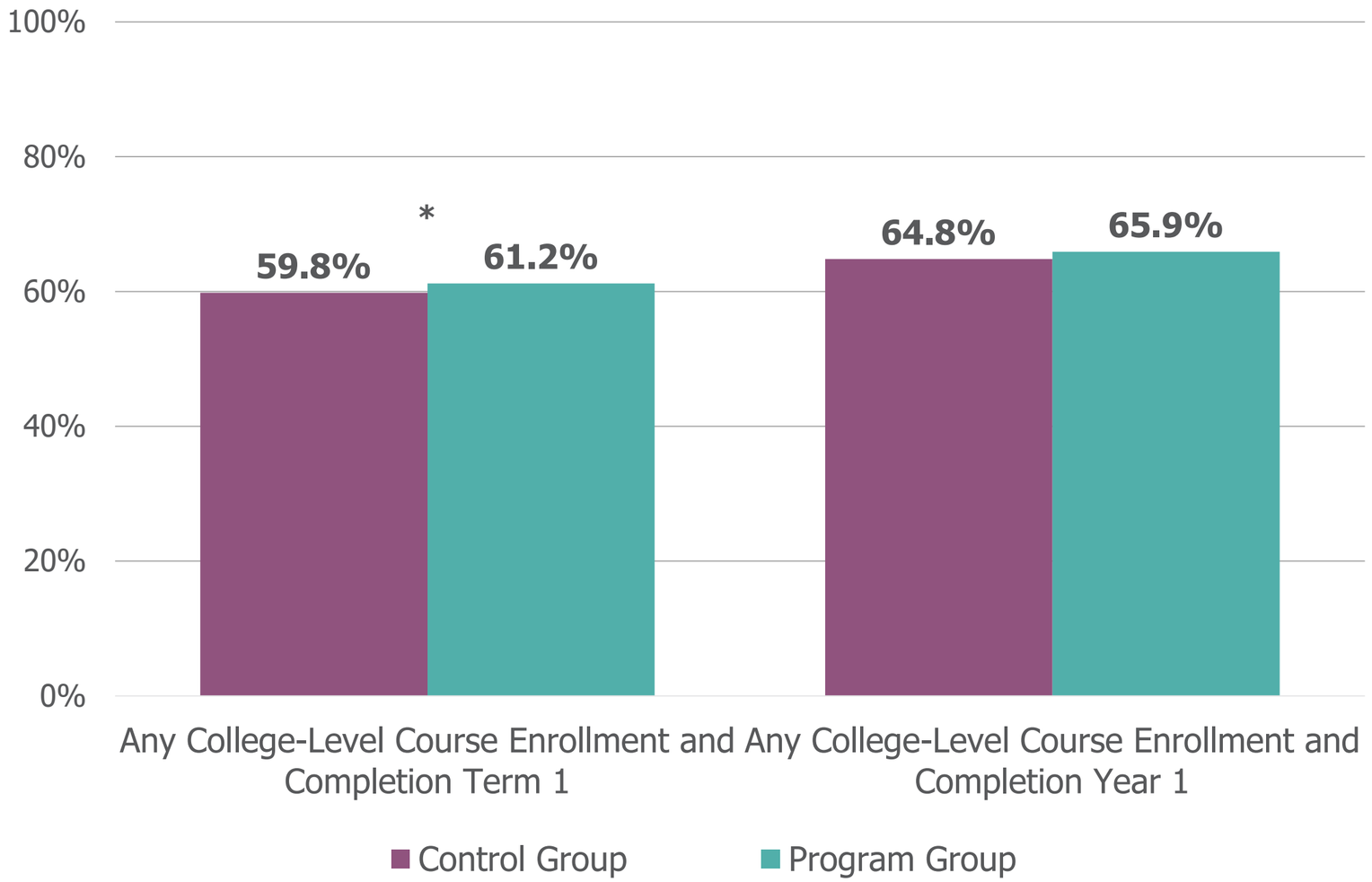
Treatment Effects: Math (Stand-Alone Courses Only)



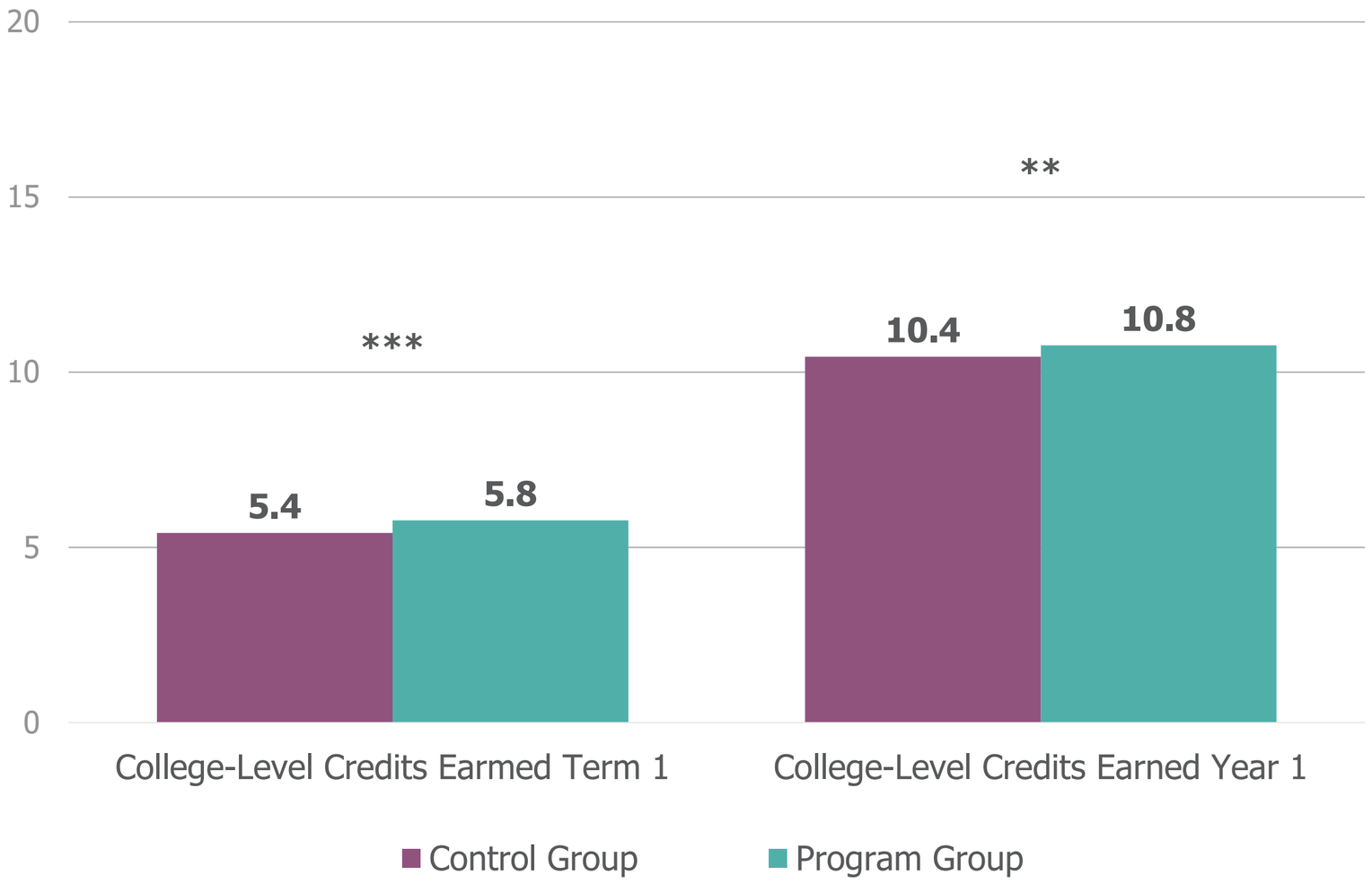
Treatment Effects: Any College-Level Course Enrollment



Treatment Effects: Any College-Level Course Enrollment and Completion



Treatment Effects: Total College-Level Credits Earned



Early Findings – Subgroup Analysis

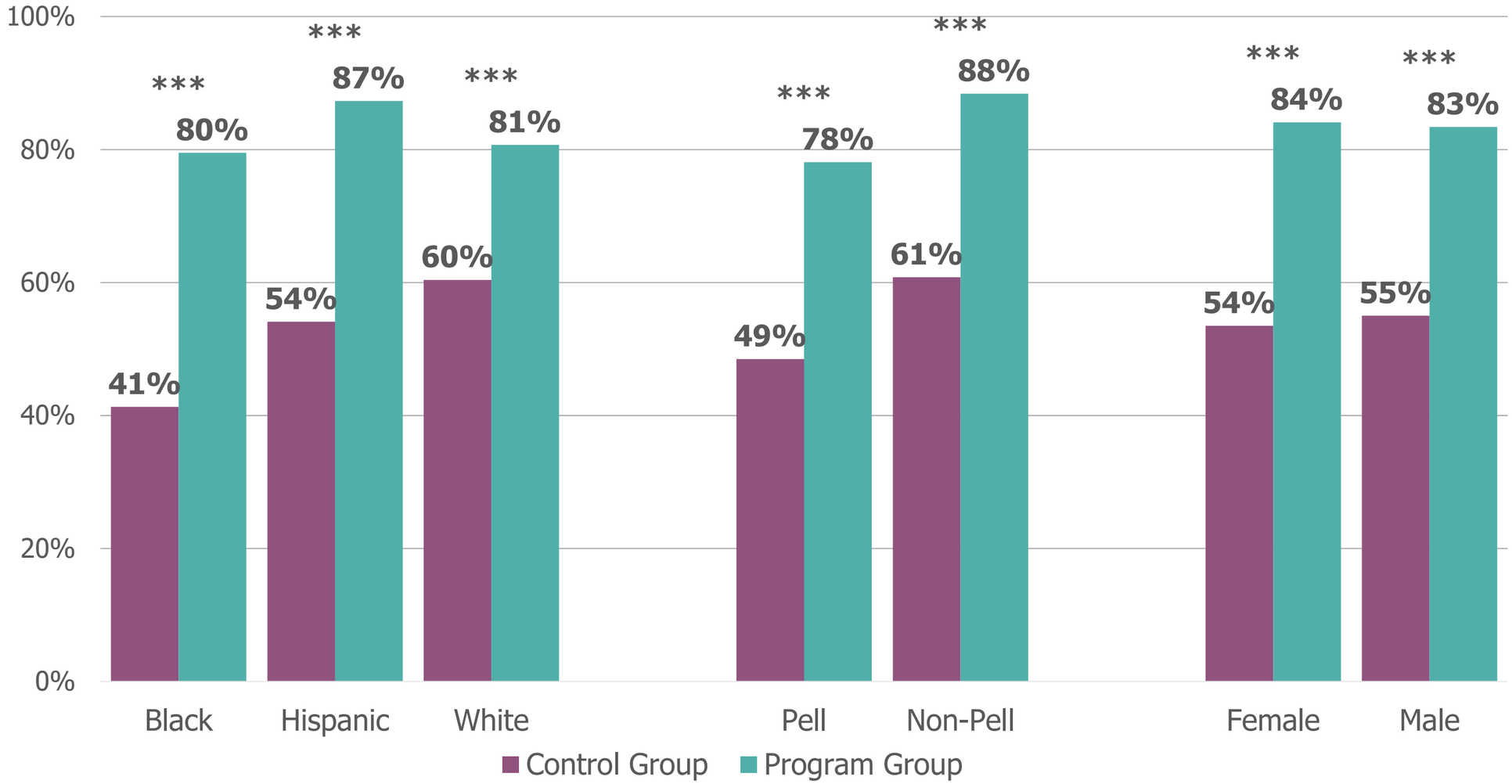
Fall 2016 Cohort (n= 4,729)

First Cohort – First Semester Sample (Fall 2016)

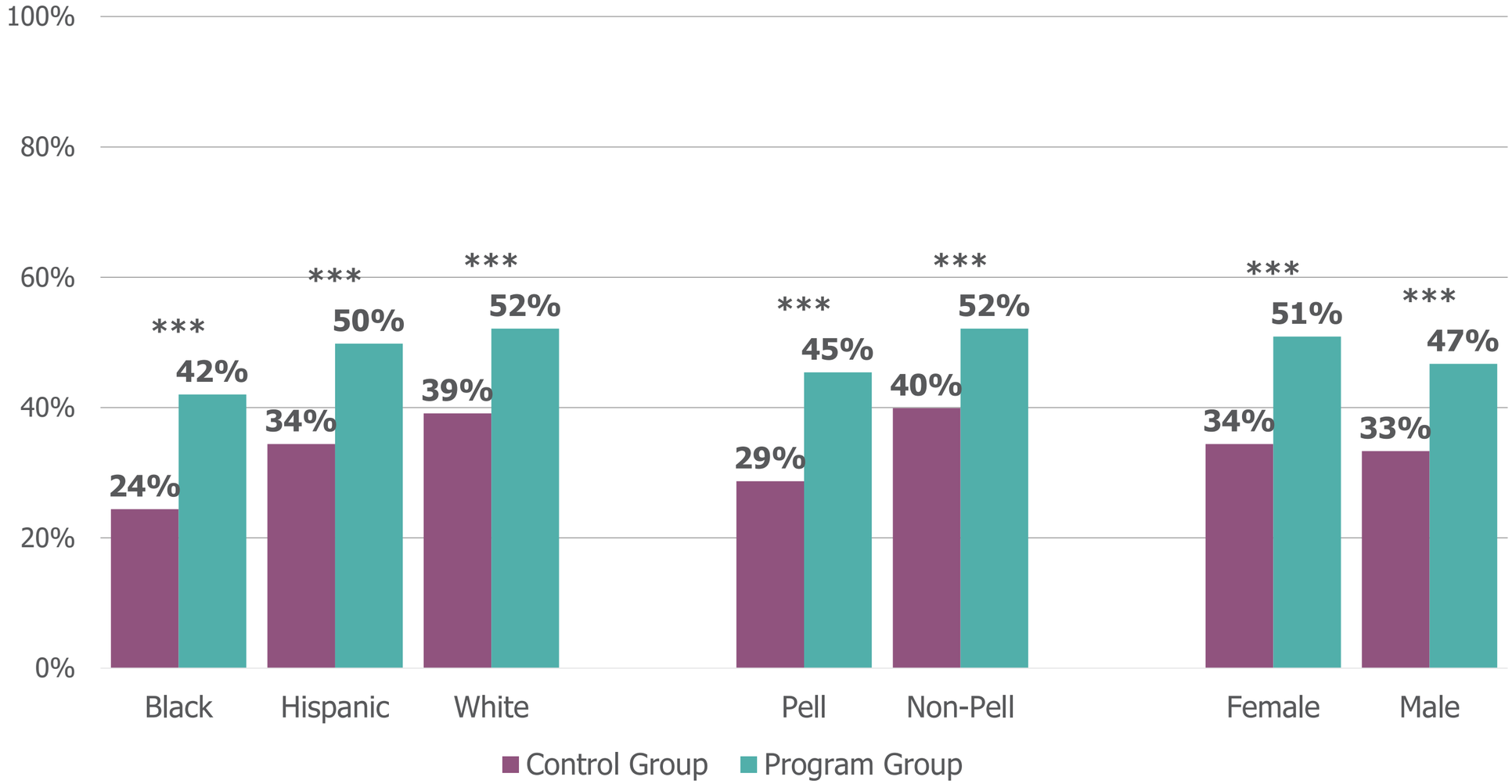
Sample = **4,729 students** across 5 colleges

- 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)

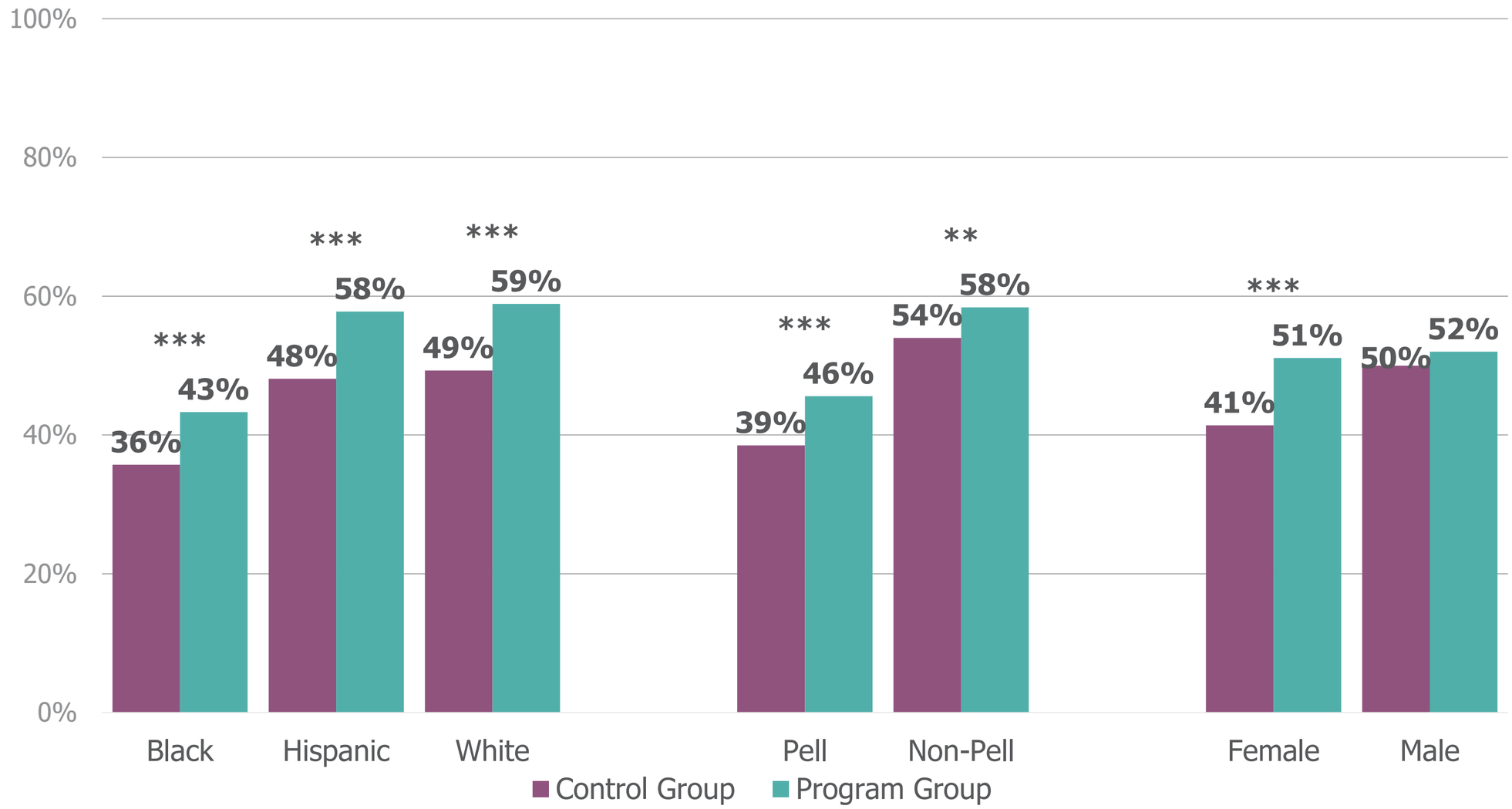
Treatment Effects: College Level English Placement



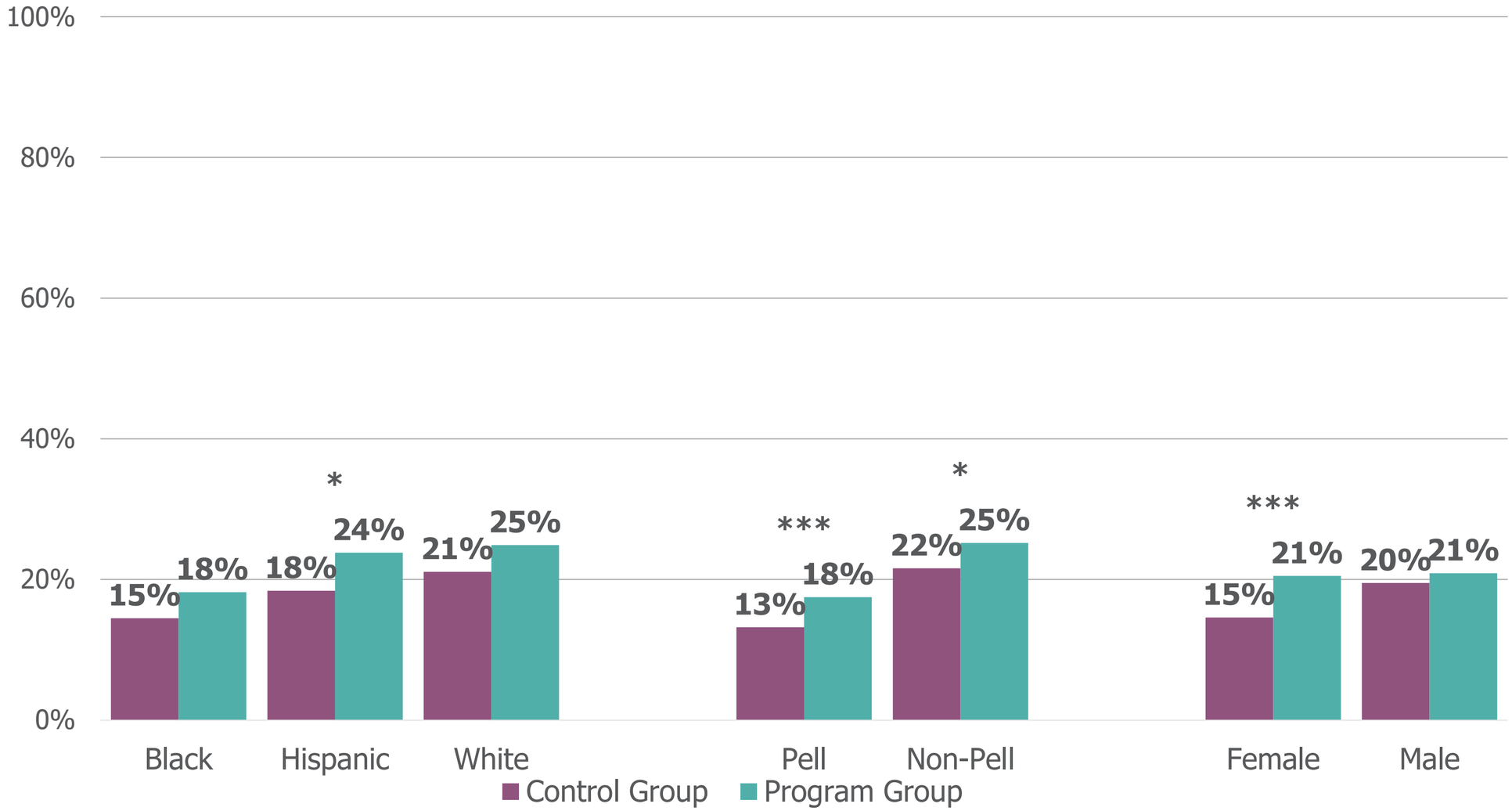
Treatment Effects: College Level English Completion



Treatment Effects: College Level Math Placement



Treatment Effects: College Level Math 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

Implementation – each college did this:

- Organized a group of people to take responsibility.
- Offered opportunities for the college community to learn about the new system.
- Compiled a historical dataset in order to develop an algorithm.
- Developed or improved processes for obtaining high school transcripts and entering data.
- Created procedures for uploading high school data into a data system where it could be combined with test data at the appropriate time.
- Changed IT systems to capture the placements.
- Changed registration pre-reqs.
- Created new placement reports.
- Provided training to testing staff and counselors on how to interpret the new placements and communicate with students about them.
- Conducted trial runs of the new processes before finalizing.
- Reviewed the need for changes in course sections offered.

Challenge 1: DATA

- 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: CONFIDENCE IN THE HS GPA

- 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

- 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: IMPACT ON COURSE OFFERINGS

- Changes requiring forethought
  - 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)

What's Ahead – Policy and Practice

- Legislative action
- Developmental education reform
- Guided pathways/Math pathways
- Lots of dual enrollment
- State data system improvements

What’s Ahead – Research

- Directed self-placement
- Placement into a range of courses or supports
- Placement as a messaging process

Questions?
Comments?

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Thank you!

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The Center for the Analysis of Postsecondary Readiness (CAPR) is funded through a grant (R305C140007) from the Institute of Education Sciences, U.S. Department of Education.

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