Using State Data to Motivate and Measure Guided Pathways Reforms

SHEEO State Community of Practice Workshop on Guided Pathways

April 18, 2019 | Seattle, WA

Tristan Denley, University System of Georgia

Davis Jenkins and **John Fink**, Community College Research Center, Teachers College, Columbia University
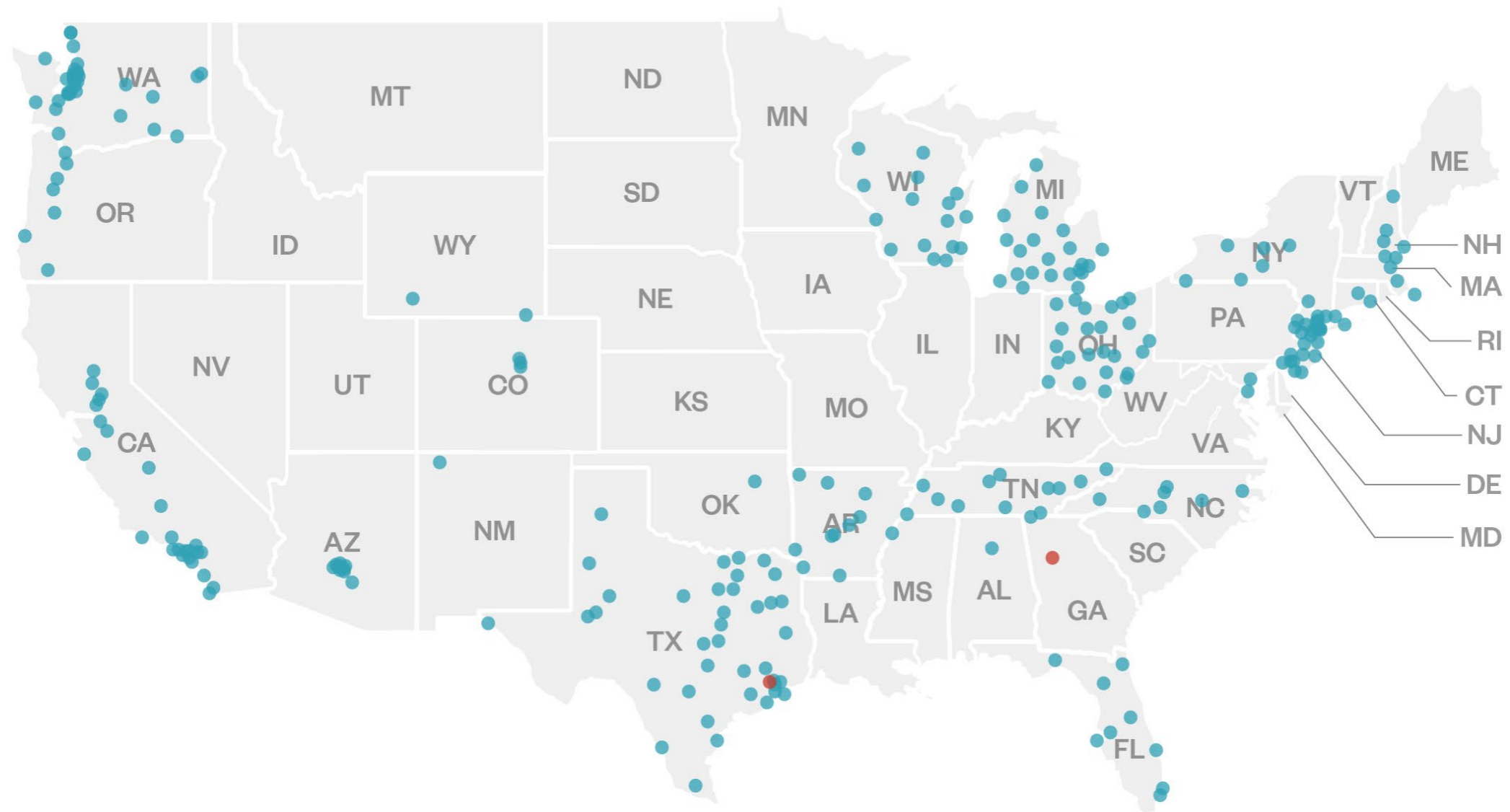
Agenda

1. Guided Pathways 101

2. Using Lagging and Leading Indicators to Motivate and Measure Whole-College Reforms

3. Developing a Strategy for Using Metrics to Motivate and Measure Whole-College Reforms

1. Guided Pathways 101

A National Movement:
Colleges Implementing Guided Pathways

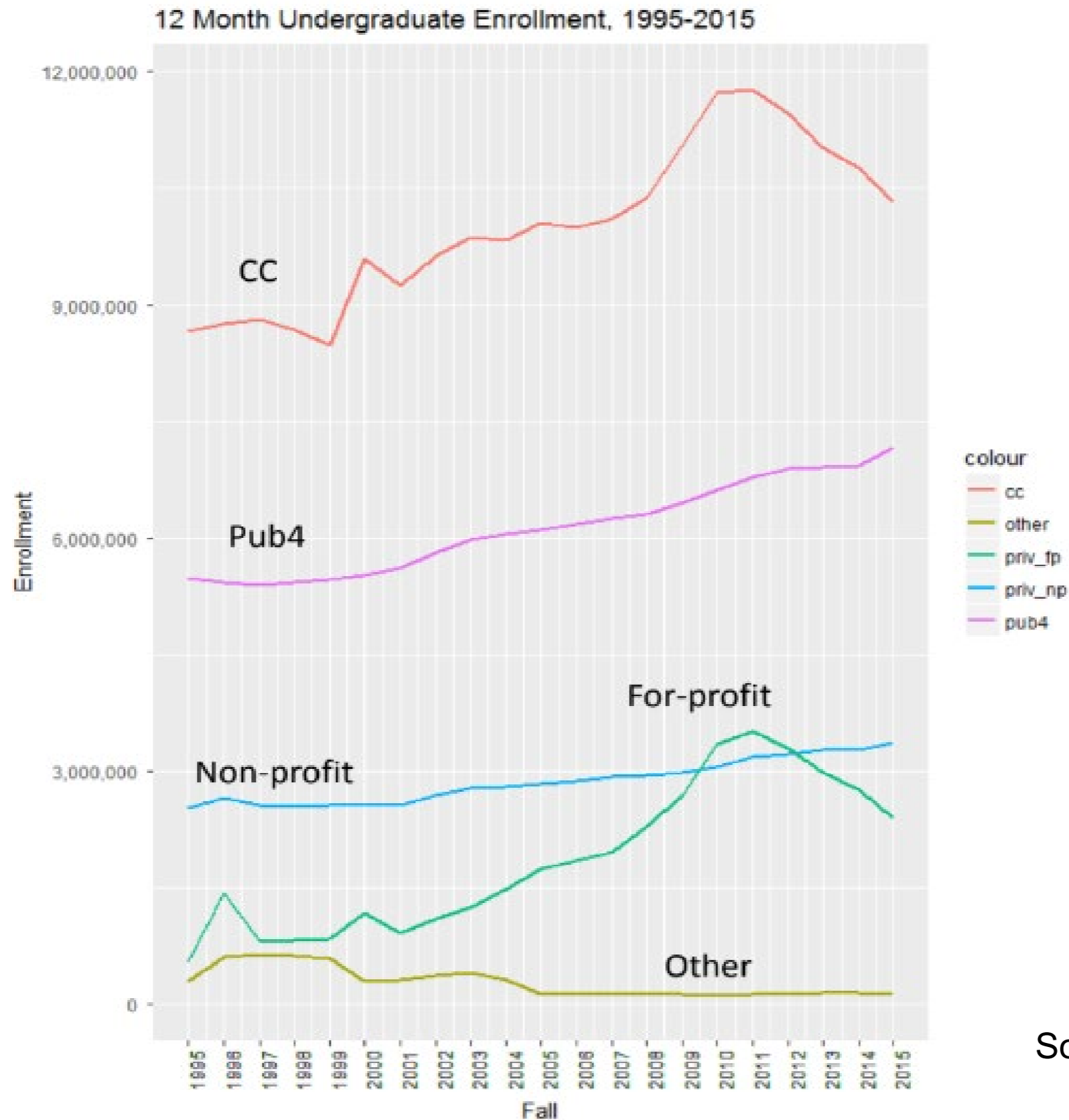# 12-Month Undergraduate Enrollment by Sector

12 Month Undergraduate Enrollment, 1995-2015

Source: IPEDS

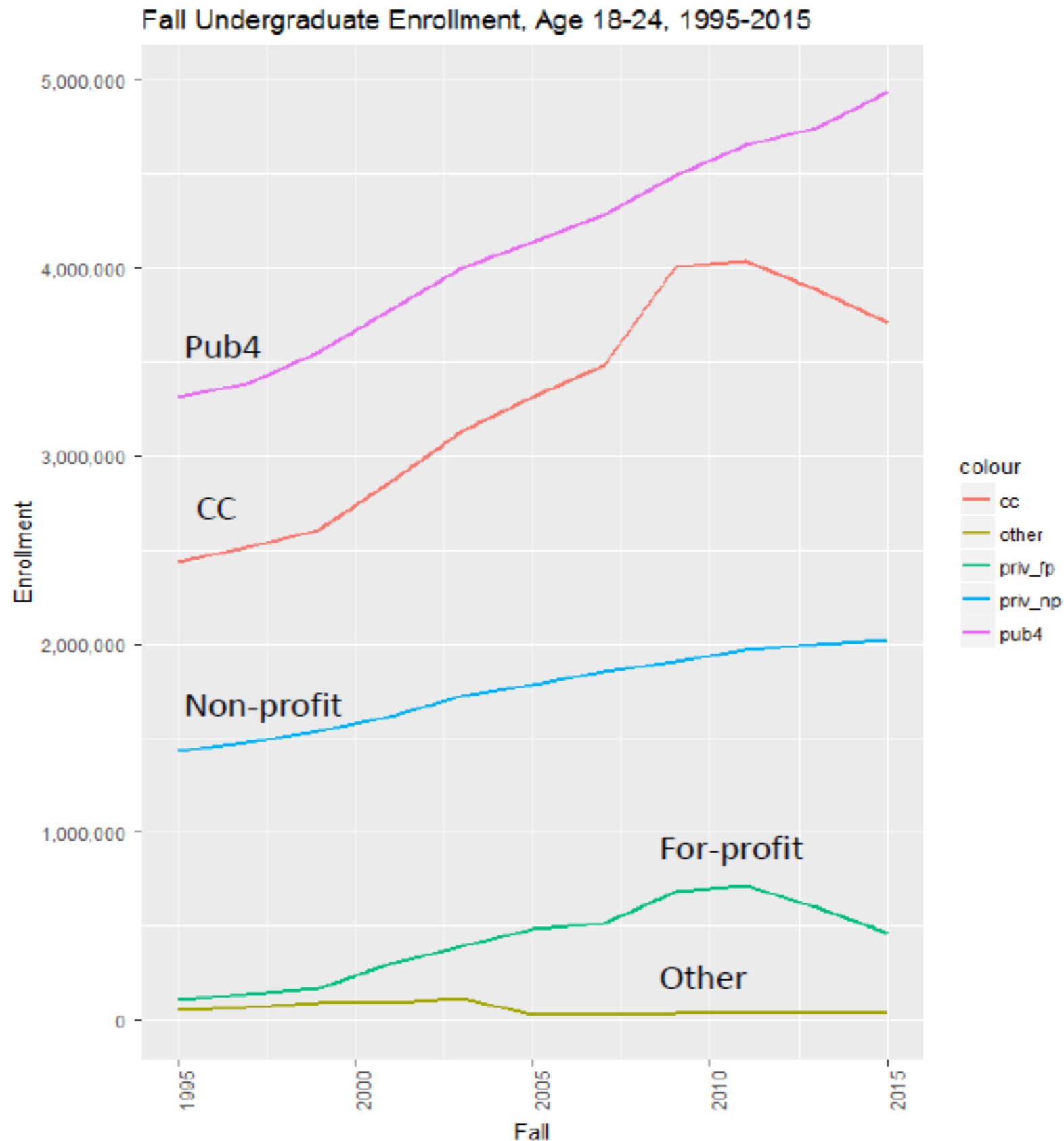Fall Undergraduate Enrollment by Sector, Age 25 or above
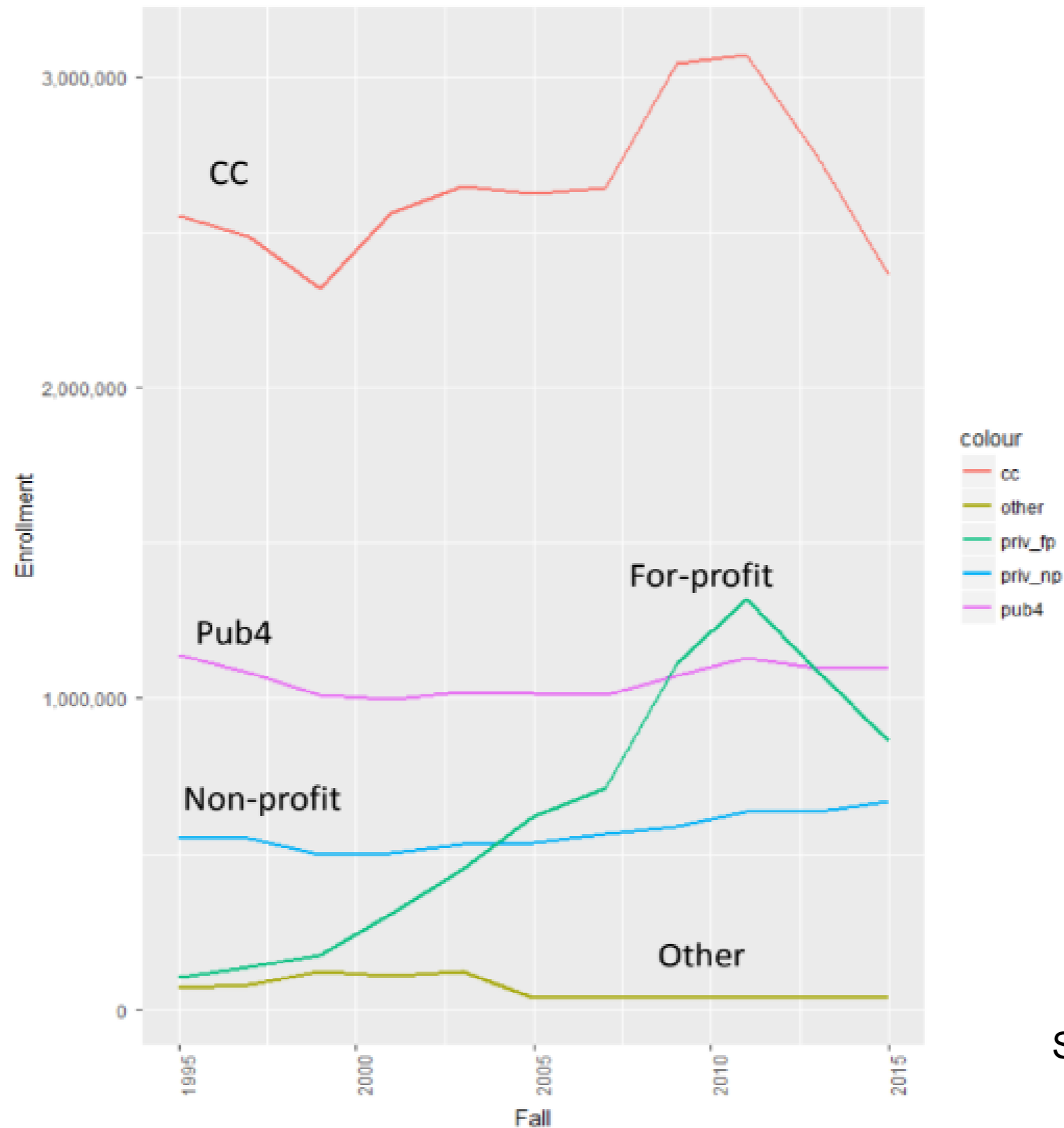
Source: IPEDS

Fall Undergraduate Enrollment by Sector, Age 18-24

Fall Undergraduate Enrollment, Age 18-24, 1995-2015

Source: IPEDS

Fall Undergraduate Enrollment by Sector, Age 17 or below
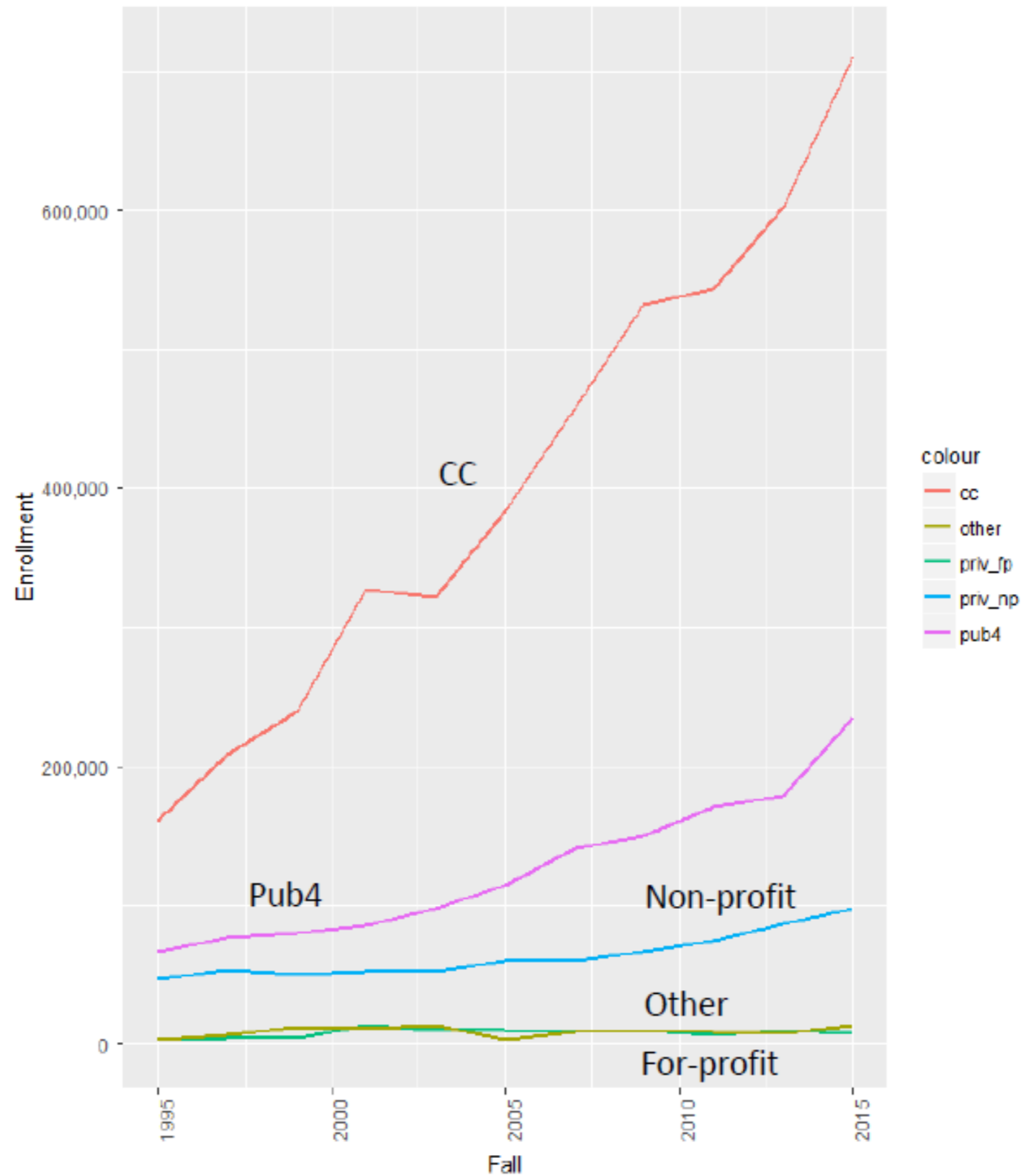
Fall Undergraduate Enrollment, Age 17 or below, 1995-2015

Source: IPEDS

New CC Business Environment

- State funding cuts → Tuition increases

- Performance funding

- Per FTE federal financial aid declining

- Traditional high school population declining; growing pools more poorly educated

- Declining returns to skill-training only; growing demand for degrees + skills + experience + contacts

- Increased competition (public 4-years, privates, on-line providers)

New CC Business Model

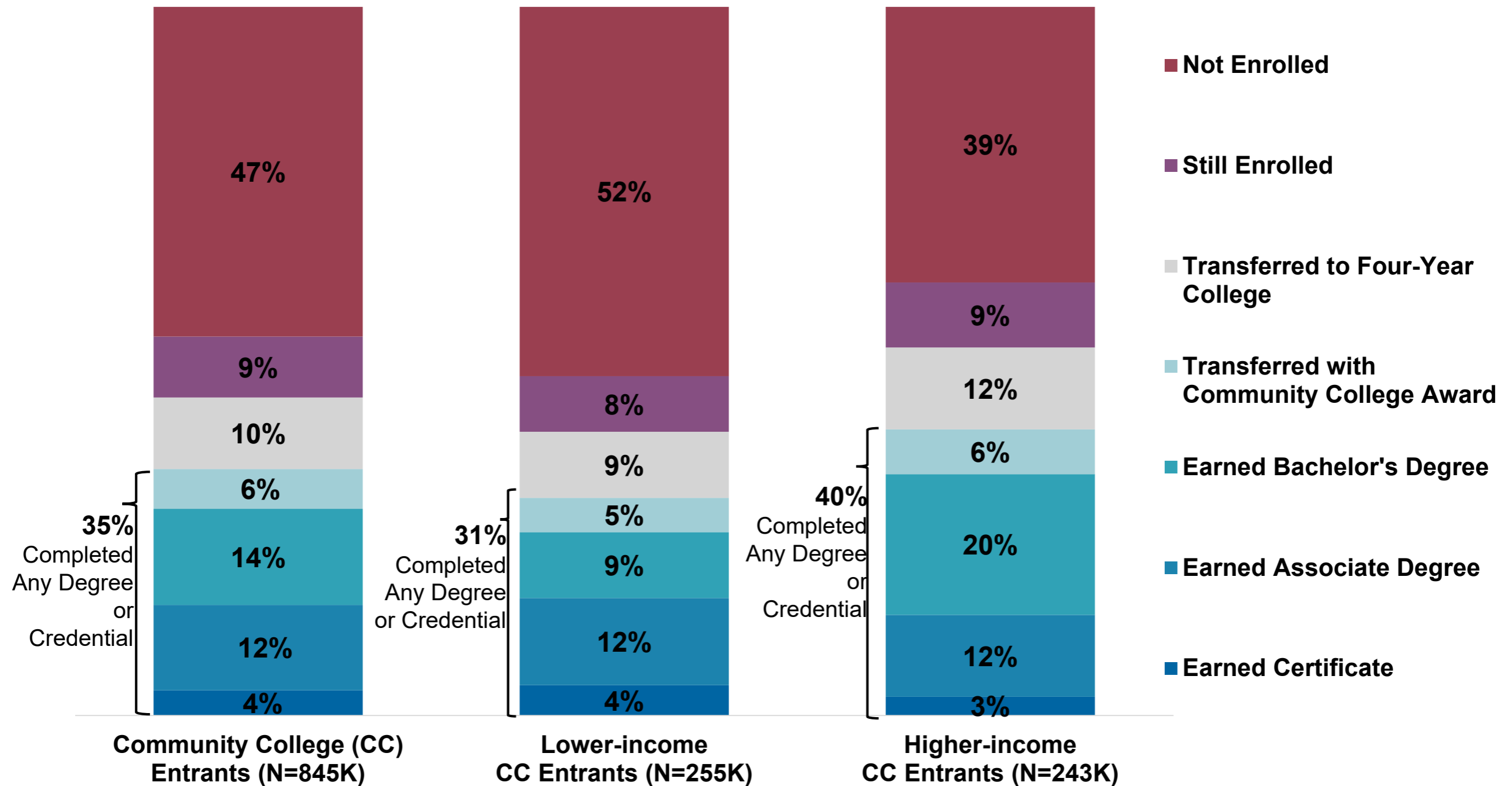**From:** Cheap, accessible college courses for **gen ed transfer or technical training**

To: Affordable, well-taught programs leading to **degrees + skills + experience + contacts** needed for livable wage, career-path employment
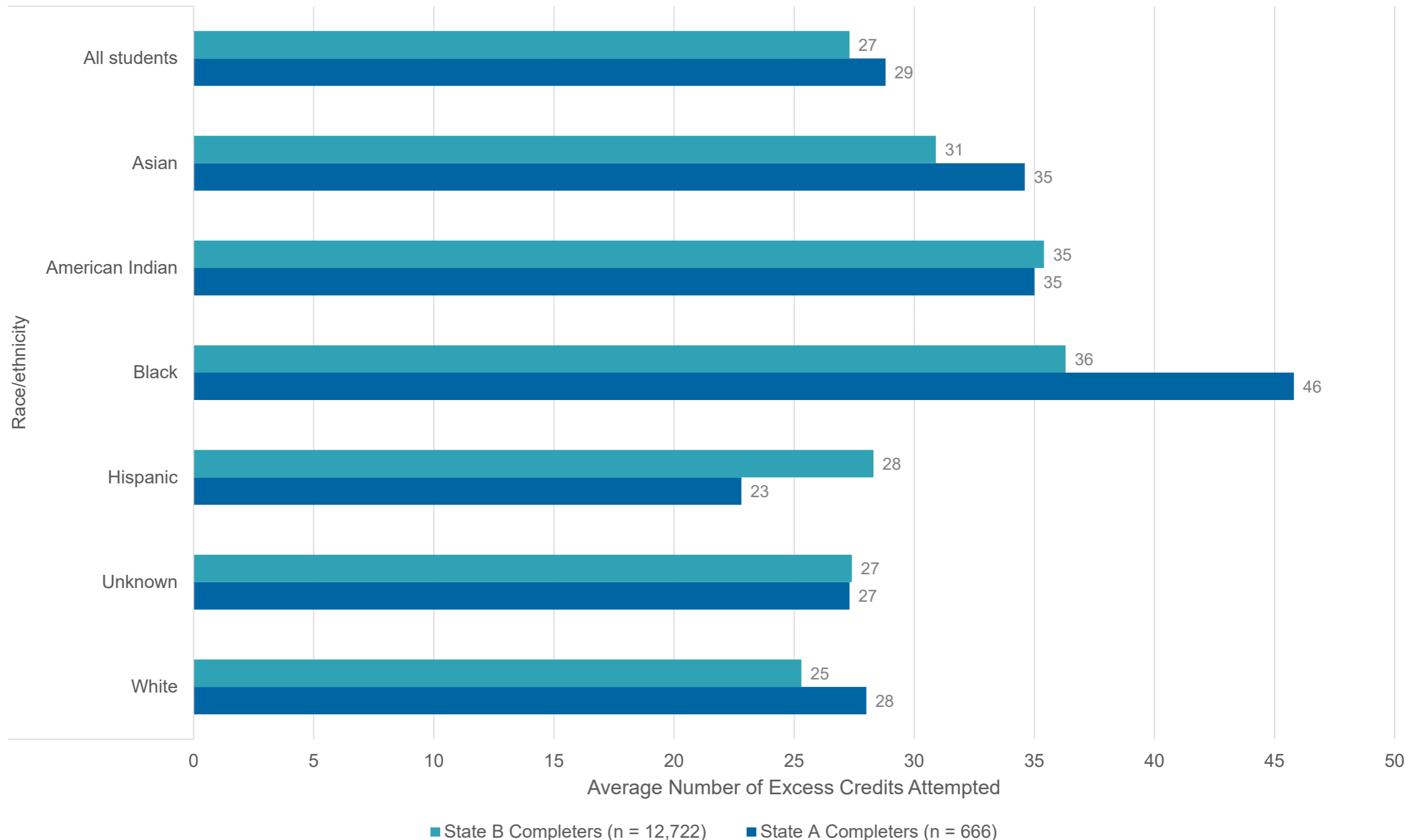
CC Practices that Drive Students Away

- Intake process discourages many students from enrolling

- Education paths to degrees, careers and transfer are unclear

- New students not helped to explore options/interests, develop a plan

- Pre-requisite dev ed sorts out students; fails to prepare for success in college-level courses

- Students' progress not monitored; advising grossly inadequate

- Colleges fail to schedule courses students need, when they need them

- Too many students experience abstract, rote instruction in subjects they see as irrelevant; too few experience active learning on issues of interest

- Too many poorly prepared students allowed to take fully on-line courses

- Instructors not systematically helped to adopt high-impact practices

- Students not helped to gain program-relevant experience

Highest Outcomes in Six Years by Income Among FTEIC Degree-Seeking Community College Students (Excluding Dual Enrollment Students)
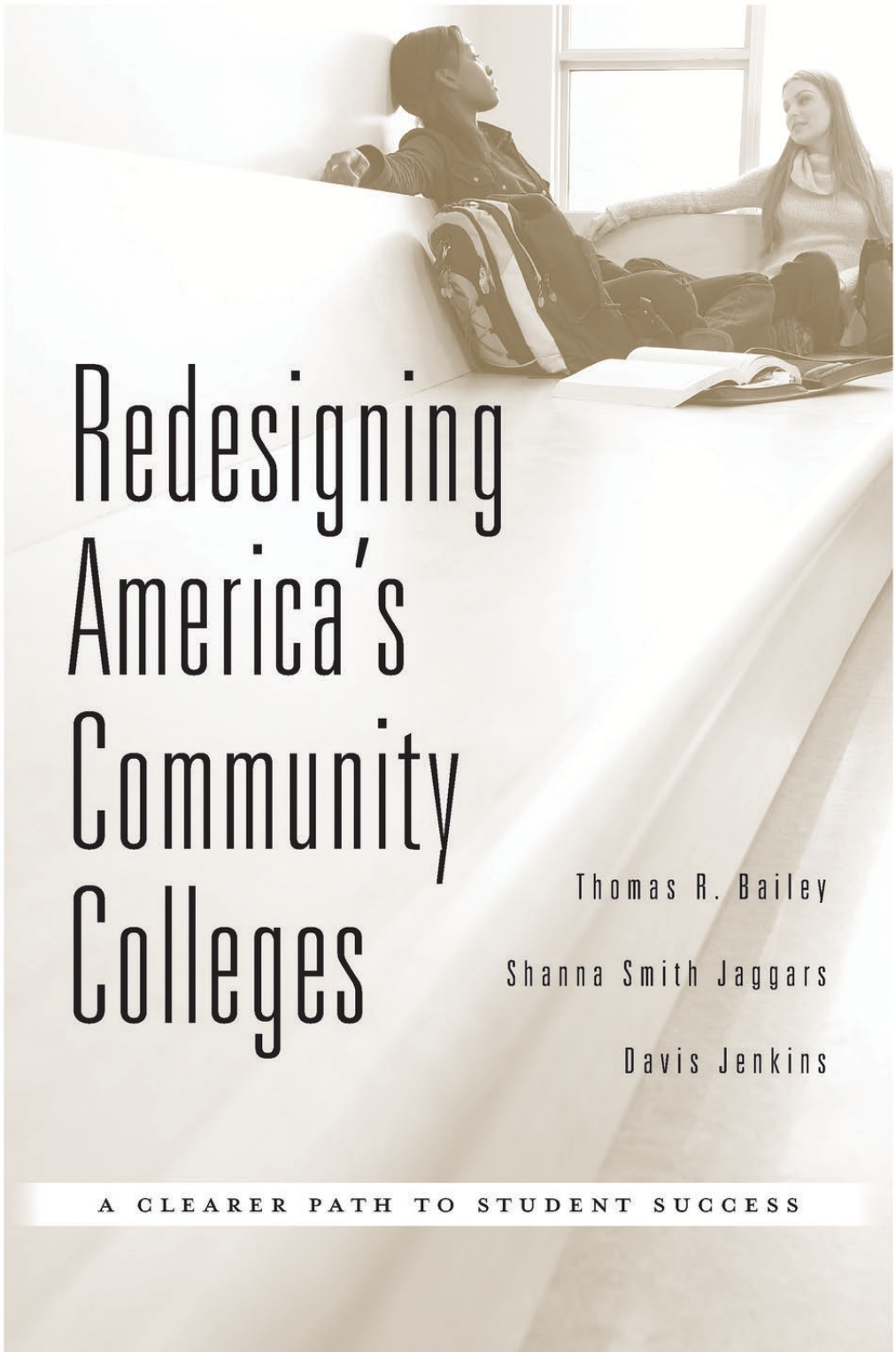
Legend:
- Not Enrolled
- Still Enrolled
- Transferred to Four-Year College
- Transferred with Community College Award
- Earned Bachelor's Degree
- Earned Associate Degree
- Earned Certificate

Community College (CC) Entrants (N=845K):
- Not Enrolled: 47%
- Still Enrolled: 9%
- Transferred to Four-Year College: 10%
- Transferred with Community College Award: 6%
- Earned Bachelor's Degree: 14%
- Earned Associate Degree: 12%
- Earned Certificate: 4%
- 35% Completed Any Degree or Credential

Lower-income CC Entrants (N=255K):
- Not Enrolled: 52%
- Still Enrolled: 8%
- Transferred to Four-Year College: 9%
- Transferred with Community College Award: 5%
- Earned Bachelor's Degree: 9%
- Earned Associate Degree: 12%
- Earned Certificate: 4%
- 31% Completed Any Degree or Credential

Higher-income CC Entrants (N=243K):
- Not Enrolled: 39%
- Still Enrolled: 9%
- Transferred to Four-Year College: 12%
- Transferred with Community College Award: 6%
- Earned Bachelor's Degree: 20%
- Earned Associate Degree: 12%
- Earned Certificate: 3%
- 40% Completed Any Degree or Credential

Source: CCRC analysis of NSC data on the fall 2010 FTEIC, degree-seeking community college cohort.

Excess Credits Attempted among CC Transfers who Completed a Bachelor's Degree

Average Number of Excess Credits Attempted

State B Completers (n = 12,722) State A Completers (n = 666)

Fink, Jenkins, Kopko, & Ran, (2018). Using Data Mining to Explore Why Community College Transfer Students Earn Bachelor's Degrees With Excess Credits. CCRC Working Paper No 100.

Community College Student Outcomes

- Many students (10-40%) who apply don't show up on day 1

- Over 40% of first-time students are gone from higher ed by start of year 2

- Too many students meander, earning credits that don't apply to a degree

- Most students transfer without earning cc credential; many students who transfer can't apply credits toward major

- Nearly half don't complete a credential; achievement gaps by race, income and age are stark

- Nearly 20% still enrolled or transferred with no credential after 6 years

- Few non-credit students enroll in credit programs
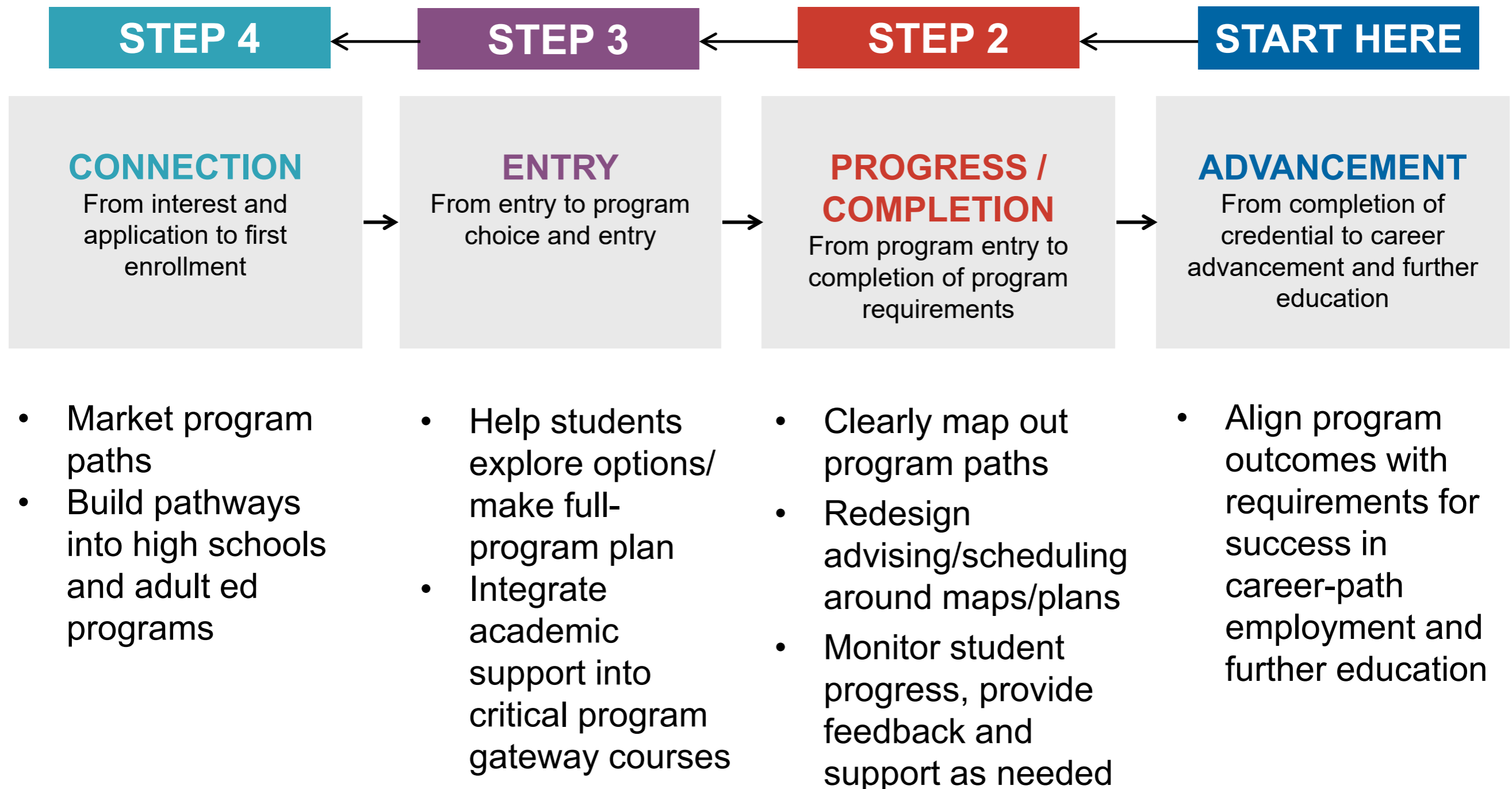
Redesigning
America's
Community
Colleges

Thomas R. Bailey

Shanna Smith Jaggars

Davis Jenkins

A CLEARER PATH TO STUDENT SUCCESS

Redesign, Starting with the End in Mind

STEP 4	←	STEP 3	←	STEP 2	←	START HERE

CONNECTION From interest and application to first enrollment	→	**ENTRY** From entry to program choice and entry	→	**PROGRESS / COMPLETION** From program entry to completion of program requirements	→	**ADVANCEMENT** From completion of credential to career advancement and further education

- Market program paths
- Build pathways into high schools and adult ed programs

- Help students explore options/ make full-program plan
- Integrate academic support into critical program gateway courses

- Clearly map out program paths
- Redesign advising/scheduling around maps/plans
- Monitor student progress, provide feedback and support as needed

- Align program outcomes with requirements for success in career-path employment and further education

Helping Students with Major Decisions on their Program Paths

CONNECTION From interest and application to first enrollment	**ENTRY** From entry to program choice and entry	**PROGRESS / COMPLETION** From program entry to completion of program requirements	**ADVANCEMENT** From completion of credential to career advancement and further education

- What careers would be a good fit for me?
- What jobs can I get with a degree from your college?
- How much will it cost, and how will I pay?

- Who can I talk to about my career and program options?
- What program is a good fit for me?
- What will I need to take?
- Will my credits transfer?
- How much will it cost, and how will I pay?

- How do I balance my other obligations?
- What if I'm struggling academically?
- What if I want to change majors?
- How do I get relevant work experience?
- How do I apply to transfer?
- How much time and money until I finish?

- How do I transfer successfully?
- What further education and training will help me advance in my career?
- How much will it cost and how much will I have to pay?

Guided Pathways Equity Focus

CONNECTION	ENTRY	PROGRESS / COMPLETION	ADVANCEMENT
From interest and application to first enrollment	From entry to program choice and entry	From program entry to completion of program requirements	From completion of credential to career advancement and further education

- Is the college reaching out to help underrepresented students in high schools, adult education, and non-credit programs explore the college's pathways and pursue a program of study?

- Are entering underrepresented students entering programs leading to higher remuneration degrees/fields?

- Do patterns of student program switching result in more or less equitable representation in programs leading to high-remuneration degrees and careers?
- Are high- and low-remuneration CC awards being conferred equitably?

- Are post-graduation employment outcomes equitable?
- Are transfer and bachelor's completion outcomes equitable?

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TEACHERS COLLEGE, COLUMBIA UNIVERSITY

What We Are Learn
About Guided Path

Part 1: A Reform Moves From
Theory to Practice

By Davis Jenkins, Hana Lahr, John Fink, and Elizabeth Ganga

In their 2015 book, *Redesigning America's Community Colleges: A Clearer
Success*, CCRC researchers Thomas Bailey, Shanna Smith Jaggars, and Davi
that for community colleges to substantially improve graduation rates and
completion among student groups, isolated programmatic interventions w
Synthesizing two decades of research on community colleges—and drawin
behavioral economics, organizational behavior, and cognitive science—Bai
Jenkins argued that colleges needed to fundamentally redesign their progra
services in ways that create clearer, more educationally coherent
pathways to credentials that in turn prepare students for success in the
workforce and further education in fields of economic importance to
their regions.

These "guided pathways" reforms address a fundamental problem
with how community colleges are organized: Because these colleges
were founded with the mission of providing broad access to higher educati
on attracting students with dozens or hundreds of programs. But students
their own devices to pick a course of study and piece together their schedul
confusing and incoherent class lists and program information. In these "ca
a majority of students do not complete a credential, and even those who do
time and money on courses that do not count toward a community college
bachelor's degree. Advising and other supports are available, but students
out, and the students who need these services most are often the least likel
Students from educationally and economically disadvantaged background
be disproportionately represented at community colleges, are often poorly
navigate the college experience, which exacerbates equity gaps.

At their core, guided pathways reforms involve clearly mapping programs
sequences, progress milestones, and program learning outcomes so that stu
what they need to do to prepare for a career and further education and trai
of interest. With program maps as guides, students are supported from the
of their college experience to explore career and academic options, choose
study, and develop a full-program educational plan. The program maps sin

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What We Are L
About Guided

Part 2: Case Studies

*By Davis Jenkins, Hana Lahr, John Fink, Elizabeth Ganga
Amy E. Brown, and Porshèa Patterson*

Guided pathways reforms require colleges to rethink ho
students. The case studies below examine how colleges
are transforming their programs and support services by
pathways practices: meta-majors, career exploration, an
colleges are participating in the American Association o
Project, which is supporting more than 40 colleges natio
pathways reforms at scale.[1]

How Cleveland State Commu
Using Meta-Majors

Meta-majors are clusters of programs in similar academic
students and others to understand a college's offerings—
programs—and help students explore, choose, and plan a
meta-majors aligned with local and regional labor market
for redesigning key aspects of the student experience, inc
first-year seminar courses, and academic advising. Meta-m
emerging as a framework for marketing and recruitment,
improvement, and professional development.

Cleveland State Community College in Tennessee develop
which it calls *career communities*, "from a student's perspe
programs into seven clusters based on students' career and
around the college's four preexisting academic divisions. T
technologies; arts and humanities; business; education; he
science, technology, engineering, and math (STEM). As th
communities, student services and institutional research s
to get feedback about the clusters and ensure that the categ

The college has organized its website around these care
community an icon and a color.[2] Students can browse th
or by specific program. Career communities also have be
materials. Welcome events, career fairs, and even comm

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APRIL 2018

What We Are Learning
About Guided Pathways

Part 3: Timeline and Tips for
Implementing Pathways Reforms

By Davis Jenkins, Hana Lahr, John Fink, and Elizabeth Ganga

Guided pathways reforms can take several years to implement at scale because
they require a thoroughgoing redesign of a college's major functions, including:

- organizing programs into career-focused meta-majors to enhance student
  recruitment and exploration and program improvement;
- mapping clear paths to degrees, employment, and further education in
  collaboration with employers and universities;
- structuring advising to help students choose, enter, and complete a program
  of study;
- rethinking academic support to enable students to take and pass critical
  program courses in their first year of college; and
- training faculty and staff to facilitate these reforms.

CCRC's research on the implementation of guided pathways
has revealed that these reforms often follow a similar pattern
of development. Figure 1 shows the general stages of this
process and an approximate timeline. In colleges where we
have seen substantial improvements in student progression and
completion, these improvements became noticeable after colleges
began to implement the essential elements of the model in
concert with one another.

> **In colleges where we have seen
> substantial improvements
> in student progression and
> completion, these improvements
> became noticeable after colleges
> began to implement the essential
> elements of the model in concert
> with one another.**

This visualization represents an idealized conceptualization of the process and
timeline based on our observations of colleges that were early adopters of the
pathways model. No college will follow these stages precisely as outlined here,
and the process is much messier (and probably less linear) in practice.

Early Adopters

Tennessee Community Colleges

REPORT | SEPTEMBER 2018

Building Guided Pathways to Community College Student Success

Promising Practices and Early Evidence From Tennessee

Davis Jenkins | Amy E. Brown | John Fink | Hana Lahr | Takeshi Yanagiura

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Tennessee Completion Practices

✓ Map all programs to career outcomes; include the "right" math on each map

✓ Redesign intake experience to help students explore, choose a major or focus area, develop full-program plan

✓ Require students with ACT of 13-18 to take "corequisite" math (aligned with math pathway), writing and/or reading

✓ Require students with ACT below 13 to develop learning plan and give them intensive support

✓ Increase exposure of all students to high-impact teaching practices

Cleveland State Community College (TN)

Elementary Education (K-5)

⌂ > Academics > Academic Programs > Programs >

Request More Information | Print Map

Transfer Teaching, Elementary Education (K-5)
Associate of Science in Teaching

A day in the life

Elementary education requires patience, creativity and a passion for helping students learn. Teachers are on their feet a lot and spend hours outside the classroom preparing lessons. Few professions are as rewarding.

Three reasons to consider this program.

1st Fall	1st Spring	2nd Fall	2nd Spring
EDU 101 Introduction to Teaching 🔑	EDU 111 Intro to Education of Exceptional Childr... 🔑	GEOG 2010 World Regional Geography	EDU 211 Educational Psychology 🔑
ENGL 1010 Composition I	ENGL 1020 Composition II	ENGL 2110 Survey of American Literature I 💲	HIST 2020 Survey of US History II
MATH 1530 Introductory Statistics 💲	BIOL 1110 General Biology I	HIST 2010 Survey of US History I	POLS 1030 American Government 💲
SPCH 1010 Fundamentals of Speech	ARTH 1030 Art Appreciation 💲	MATH 1420 Problem Solving Geometry	MSC 1012 Introduction to Physical Science
	MATH 1410 Number Concepts/Algebra Structures	GEOL 1040 Physical Geology 💲	Humanities Elective 💲

1st Fall

Nov
Register

Oct
See Coach/Advisor

FAFSA

Sept
EDU Advising Session

1st Spring

Apr
Register

Mar
See Coach/Advisor

Feb
EDU Advising Session

Decide Transfer Institution

2nd Fall

Nov
Praxis Core

Apply institution

Register

Oct
See Advisor

Praxis Core workshop

FAFSA

Sept
Apply to Graduate

EDU Advising session

2nd Spring

Feb
EDU Advising Session

Praxis Core workshop

Retake Praxis Core

Mar
Exit exam

Dispositions Due

🔑 Key Course: program faculty have identified this course as key to your success
💲 Recommended Elective: check catalog for other acceptable courses
This map assumes completion of course prerequisites

Roane State Community College
276 Patton Lane
Harriman, TN 37748-5011

Campus Maps
Roane State Police Department
President's Welcome

College Catalog
VP of Student Learning
Academic Divisions

About the College
Accreditation
Policies

CCRC

Program-Aligned Math Pathways

**Math Courses Taken by First-Time College Students:
Tennessee Community Colleges, Fall 2016**

- 18% — Algebra/Calculus
- 9% — Math for Liberal Arts
- 9% — Other
- 64% — Statistics

Source: CCRC Analysis of Tennessee Board of Regents data. N = 18,956.
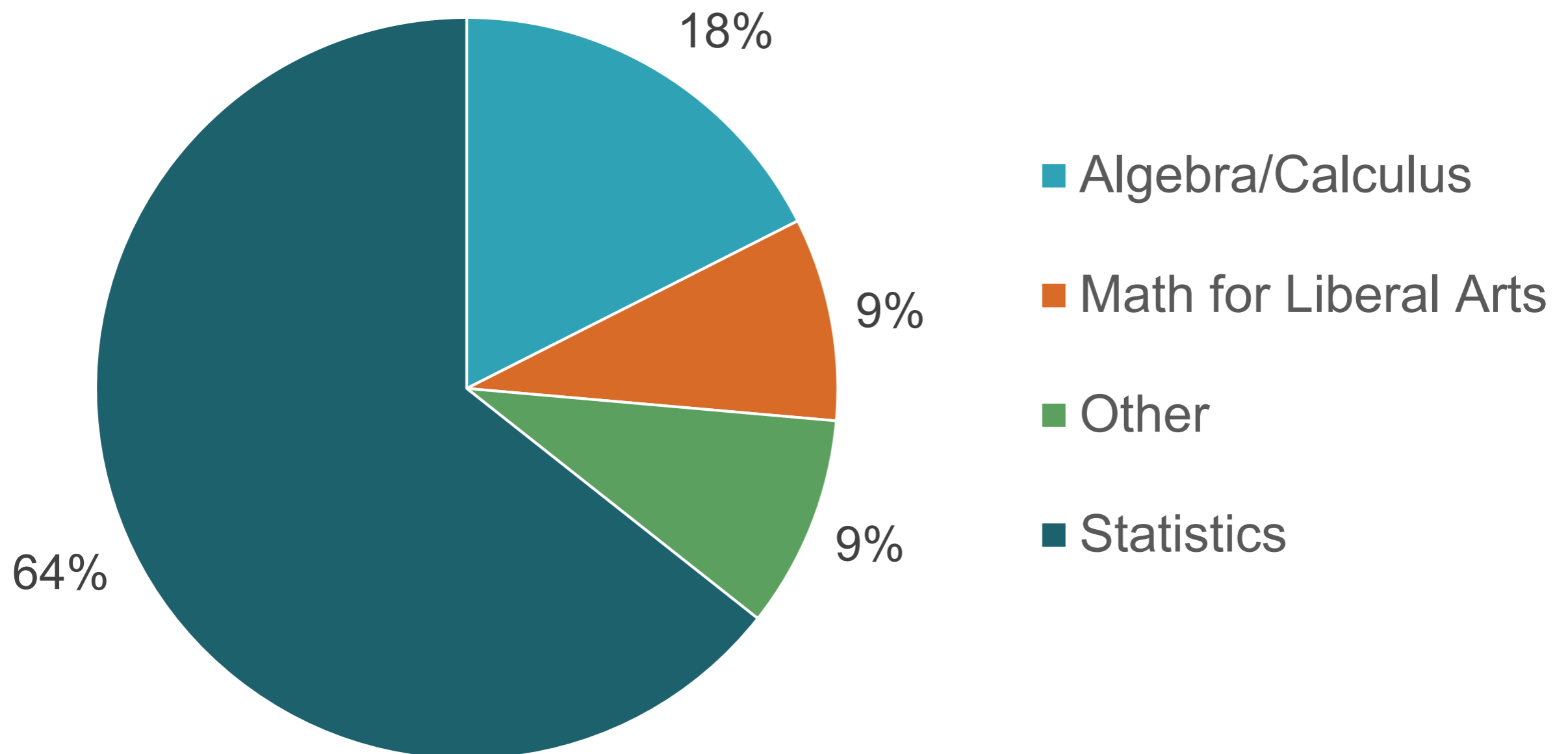
Tennessee co-requisite reform context

- ## Timeline
  - Before 2015: pre-requisite design (+ co-requisite pilot)
  - At scale in 2015: 10 institutions
  - At scale after 2015: 3 institutions
  - Some variations in writing/reading versus math

- ## Math pathways
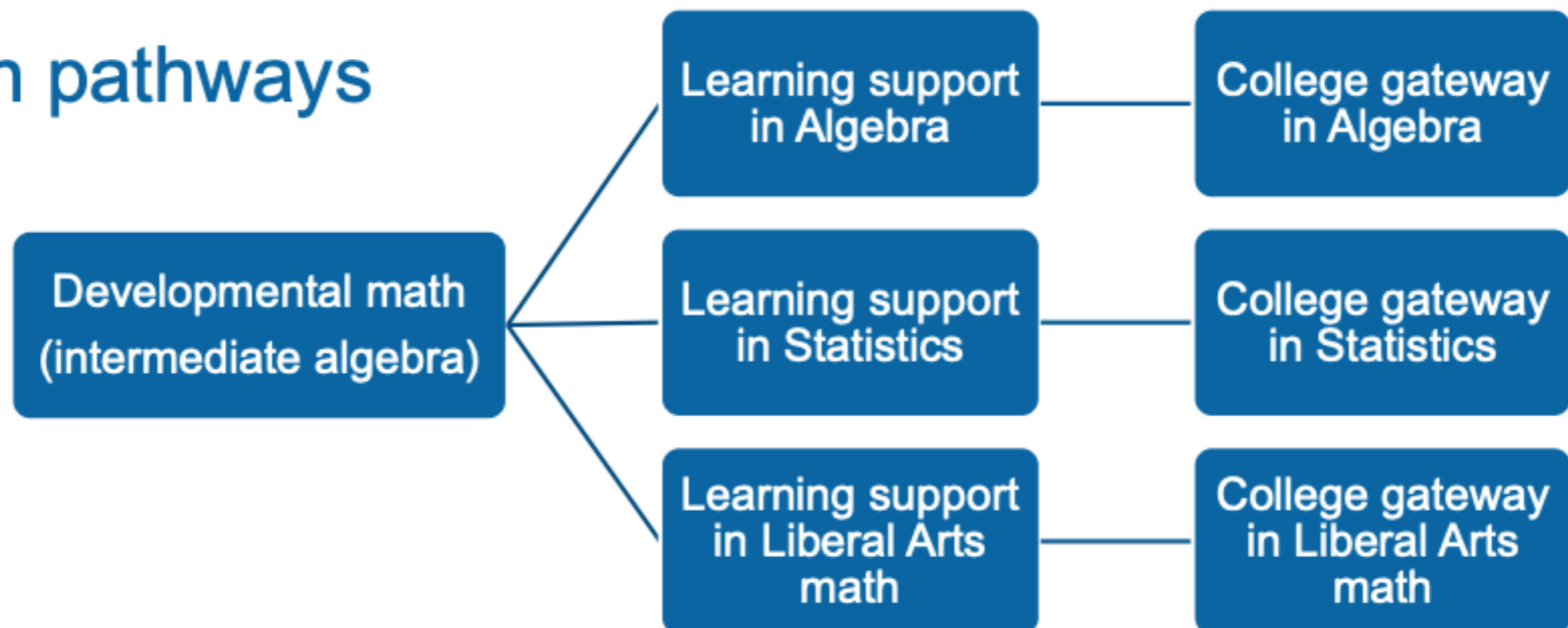
Developmental math (intermediate algebra)	Learning support in Algebra	College gateway in Algebra
	Learning support in Statistics	College gateway in Statistics
	Learning support in Liberal Arts math	College gateway in Liberal Arts math

Impacts of placing below college-ready on gateway completion overtime: Math

Ran, F. X., Lin, Y. (Forthcoming). Better Together? The effect of co-requisite remediation in TN Community Colleges.
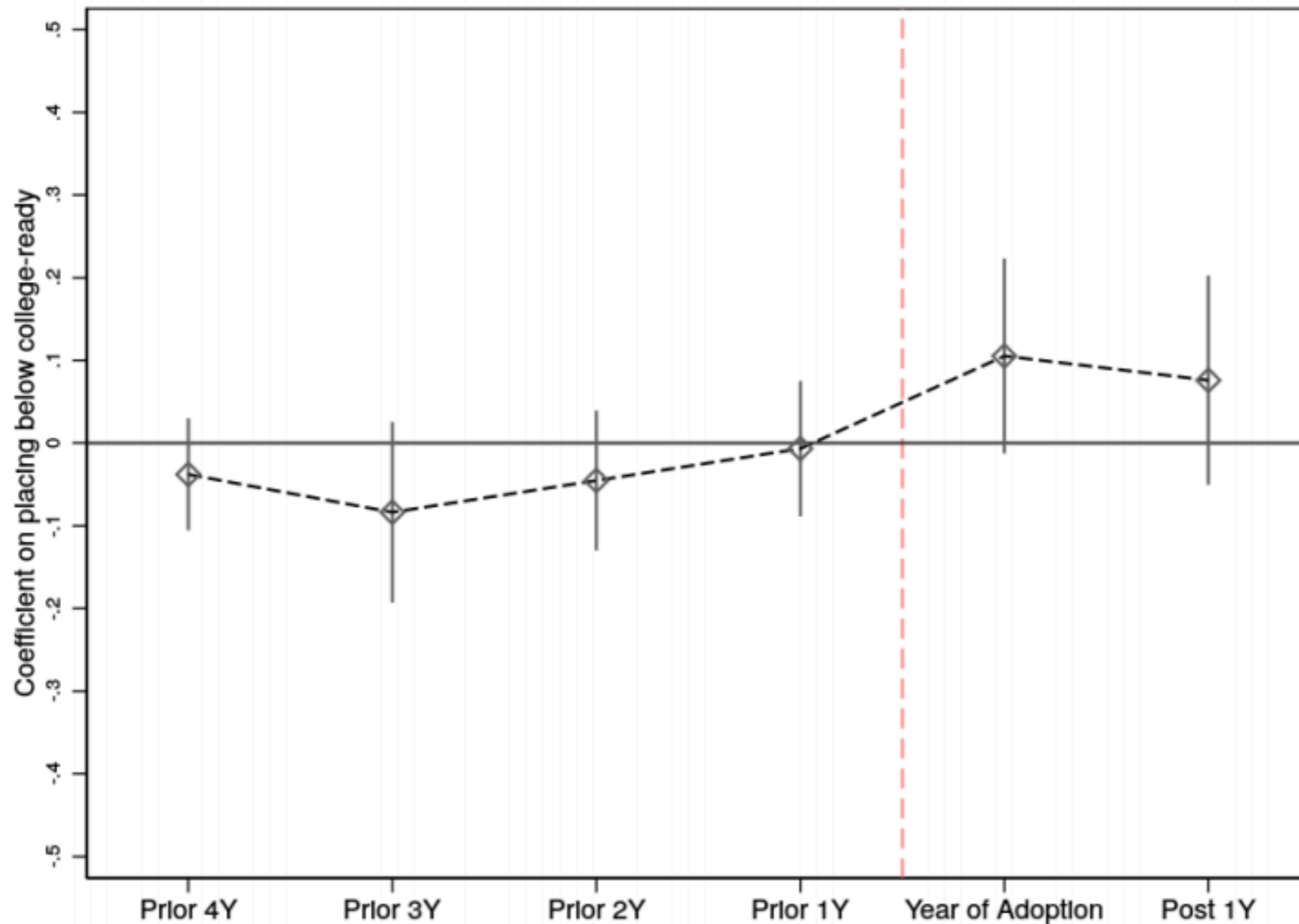
Impacts of placing below college-ready on gateway completion overtime: English

Ran, F. X., Lin, Y. (Forthcoming). Better Together? The effect of co-requisite remediation in TN Community Colleges.
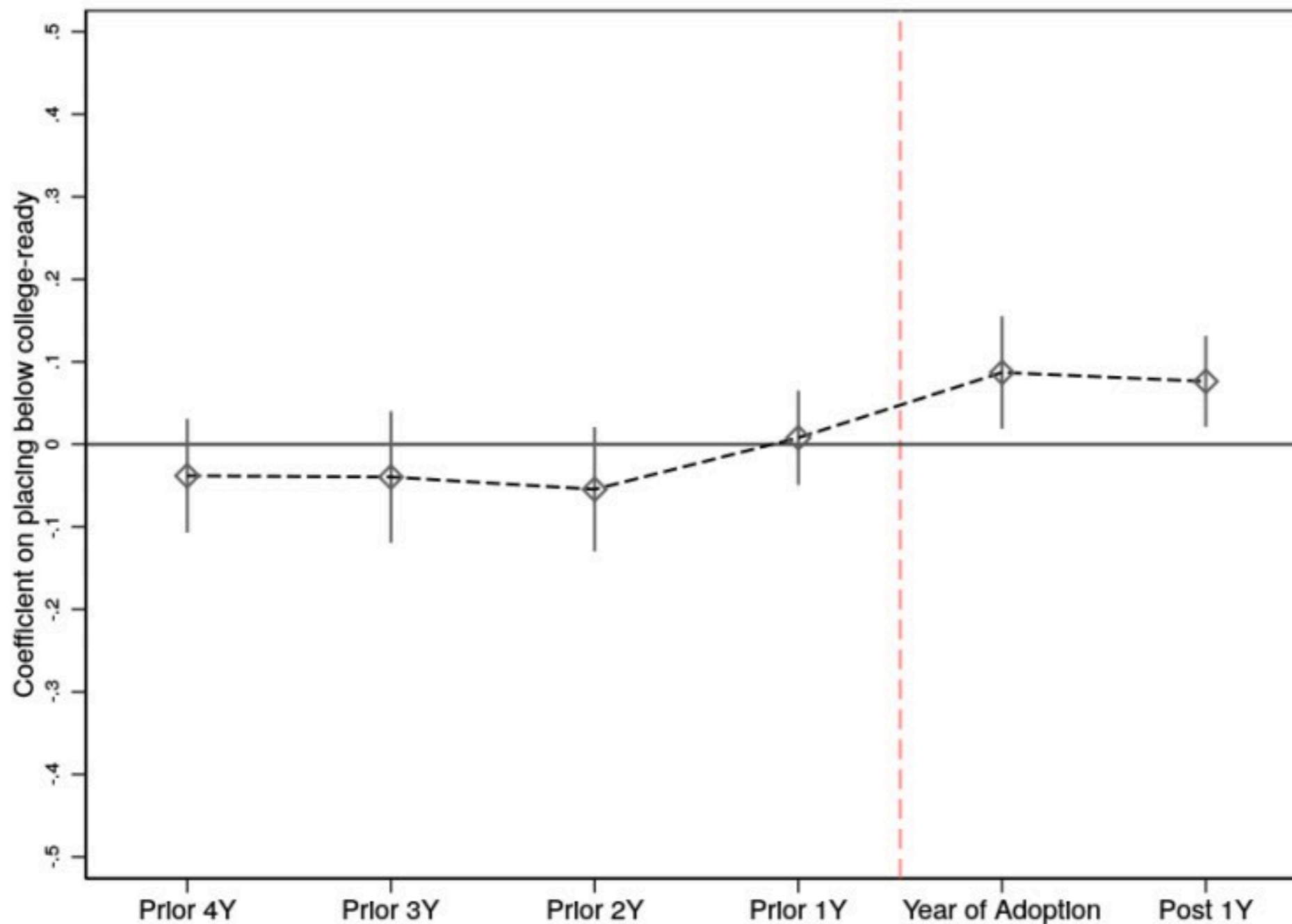
Large impacts on gateway completion

COMPLETE GATEWAY MATH

■ Y1 ■ Y2 ■ Y3

RD-DID: 0.155, 0.102, 0.084

PRE-REQ RD: -0.18, -0.118, -0.087

CO-REQ RD: 0.01, 0.026, 0.017
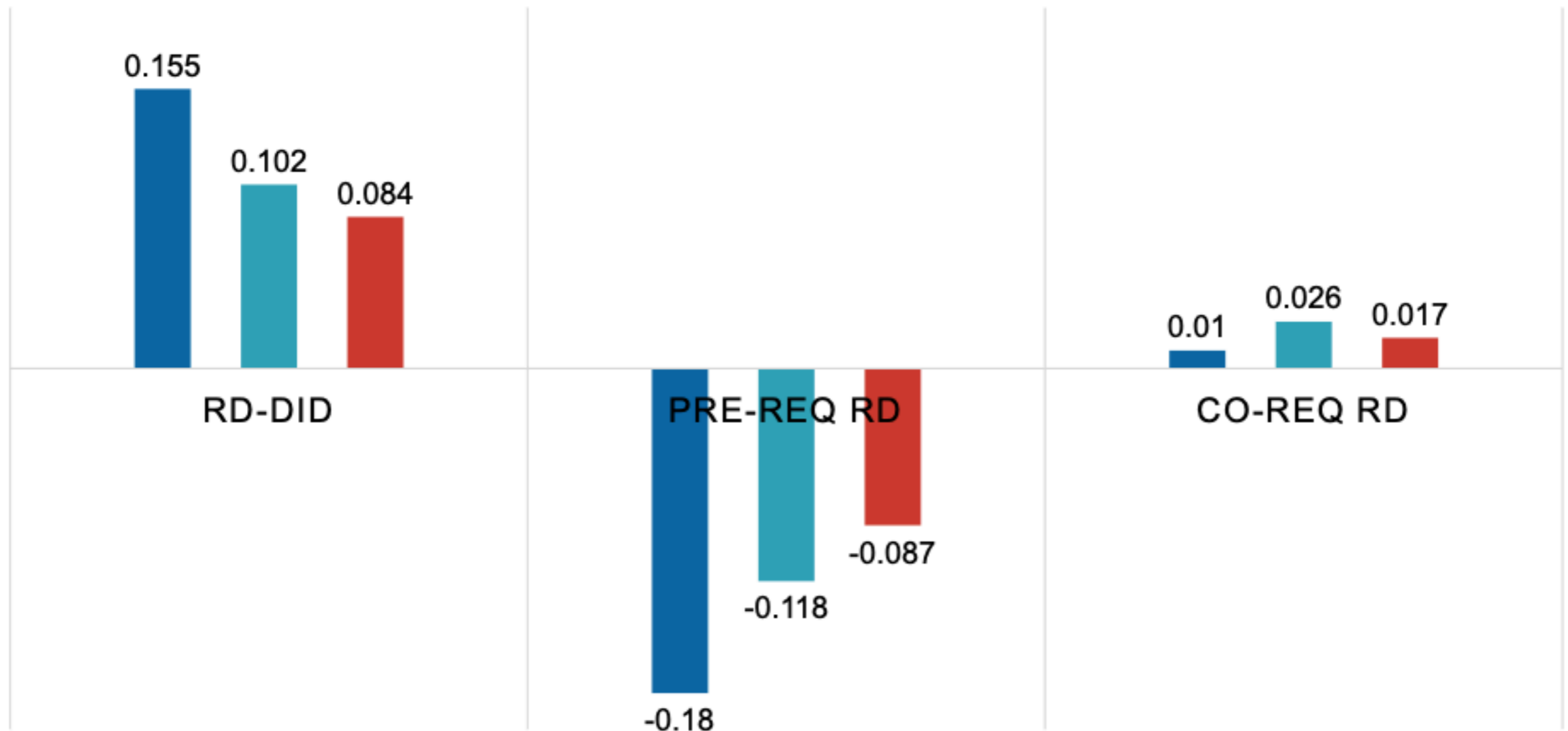
All coefficients of RD-DID and pre-req RD are significant at 1% level; coefficients on co-req RD are not significant.

Ran, F. X., Lin, Y. (Forthcoming). Better Together? The effect of co-requisite remediation in TN Community Colleges.

Fairly small impacts on credit attainment

COLLEGE-LEVEL CREDITS ENROLLMENT

■ Y1 ■ Y2 ■ Y3

	RD-DID	PRE-REQ RD	CO-REQ RD
Y1	0.988	-2.062	-0.48
Y2	1.521	-1.54	0.199
Y3	2.189	-0.839	-1.031
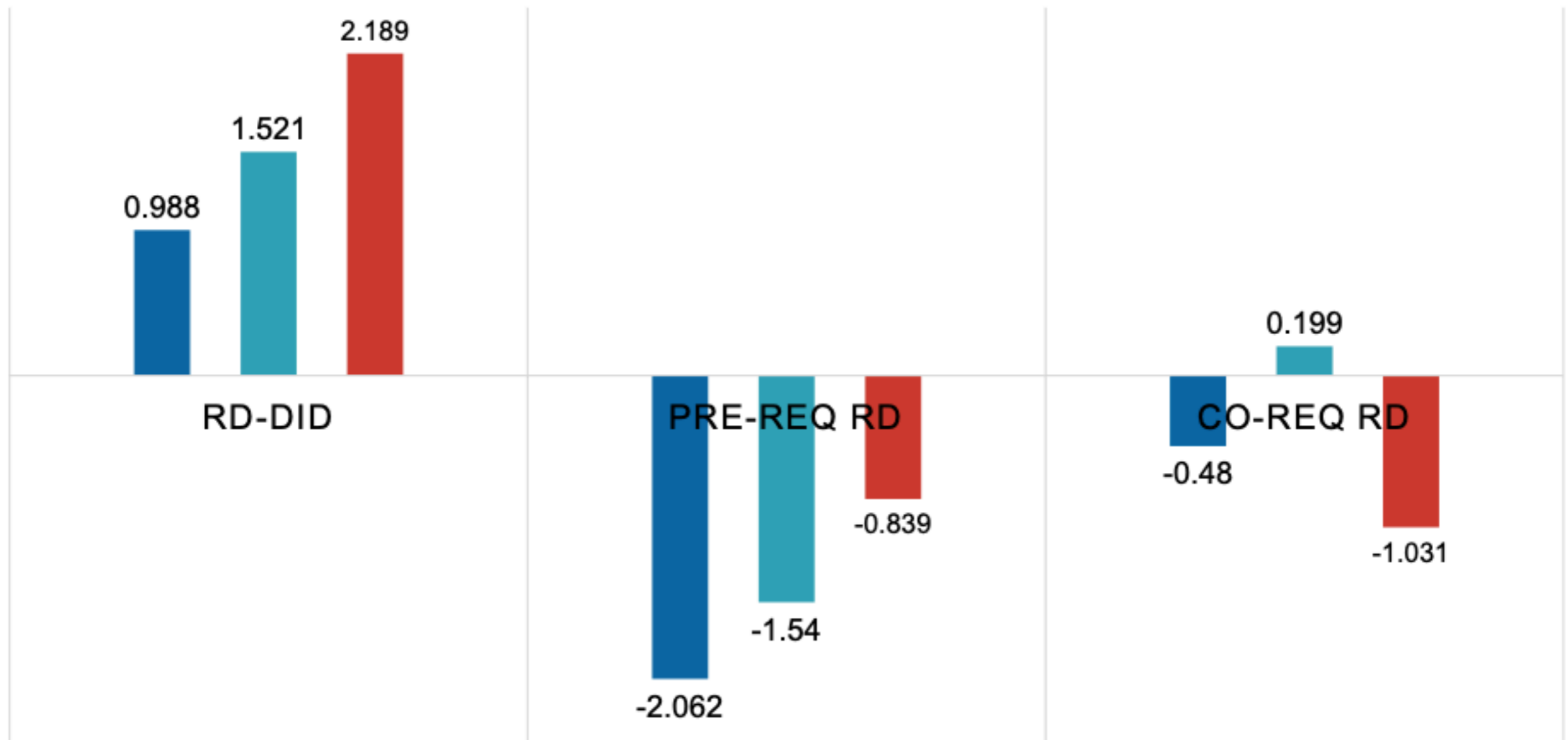
Coefficients of RD-DID & Pre-req RD for Y1 and Y2 are significant at 5% level; other coefficients are not significant.

Ran, F. X., Lin, Y. (Forthcoming). Better Together? The effect of co-requisite remediation in TN Community Colleges.

Math results are driven by pathway alignment

COMPLETE MATH GATEWAY BY Y1

■ Algebra ■ Statistics ■ Math for liberal arts

RD-DID: Algebra 0.072, Statistics 0.159, Math for liberal arts 0.192

PRE-REQ RD: Algebra -0.174, Statistics -0.148, Math for liberal arts -0.248

CO-REQ RD: Algebra -0.094, Statistics 0.003, Math for liberal arts -0.037
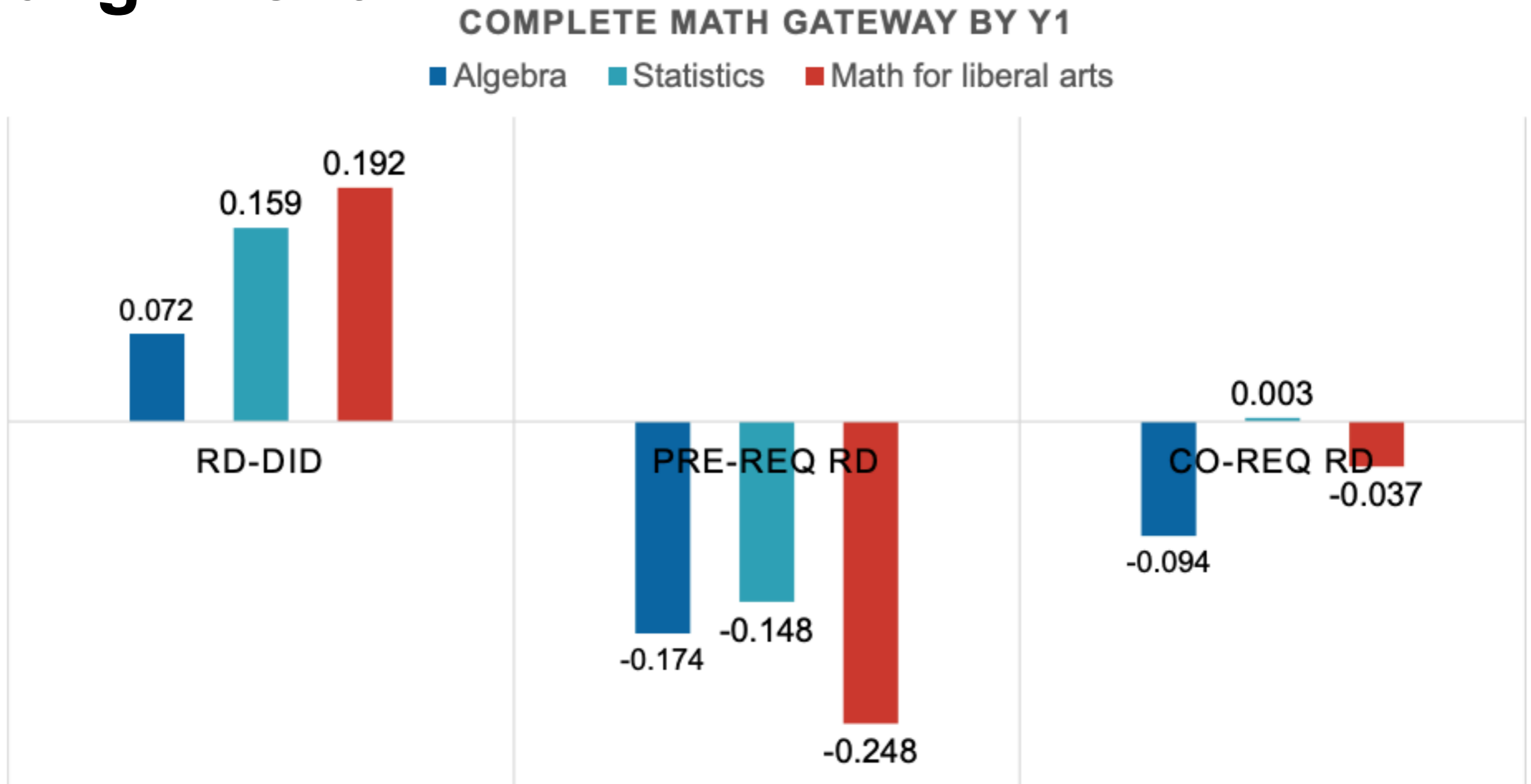
Coefficients for RD-DID for statistics and math for liberal arts are significant; all coefficients for pre-req RD are singificant

Ran, F. X., Lin, Y. (Forthcoming). Better Together? The effect of co-requisite remediation in TN Community Colleges.

TN CCs: First Term Credit Momentum KPIs

Source: CCRC Analysis of TBR Data

CCRC
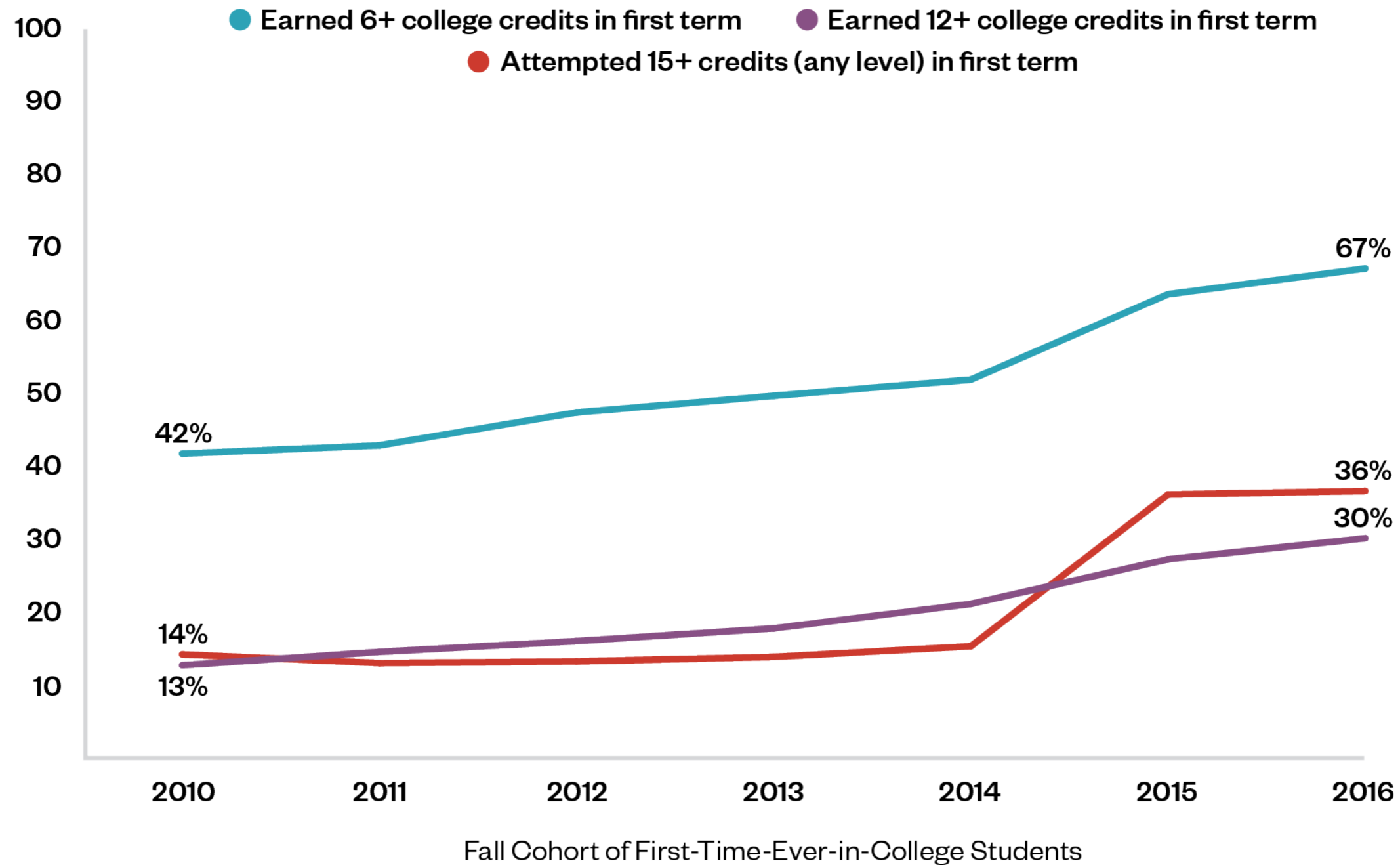
TN CCs: First-Year Gateway Course Completion

- Completed college English in first year
- Completed college math in first year
- Completed both college math and college English in first year

63%

43%

45%

40%

18%

15%

2010   2011   2012   2013   2014   2015   2016

Fall Cohort of First-Time-Ever-in-College Students

Source: CCRC Analysis of TBR Data
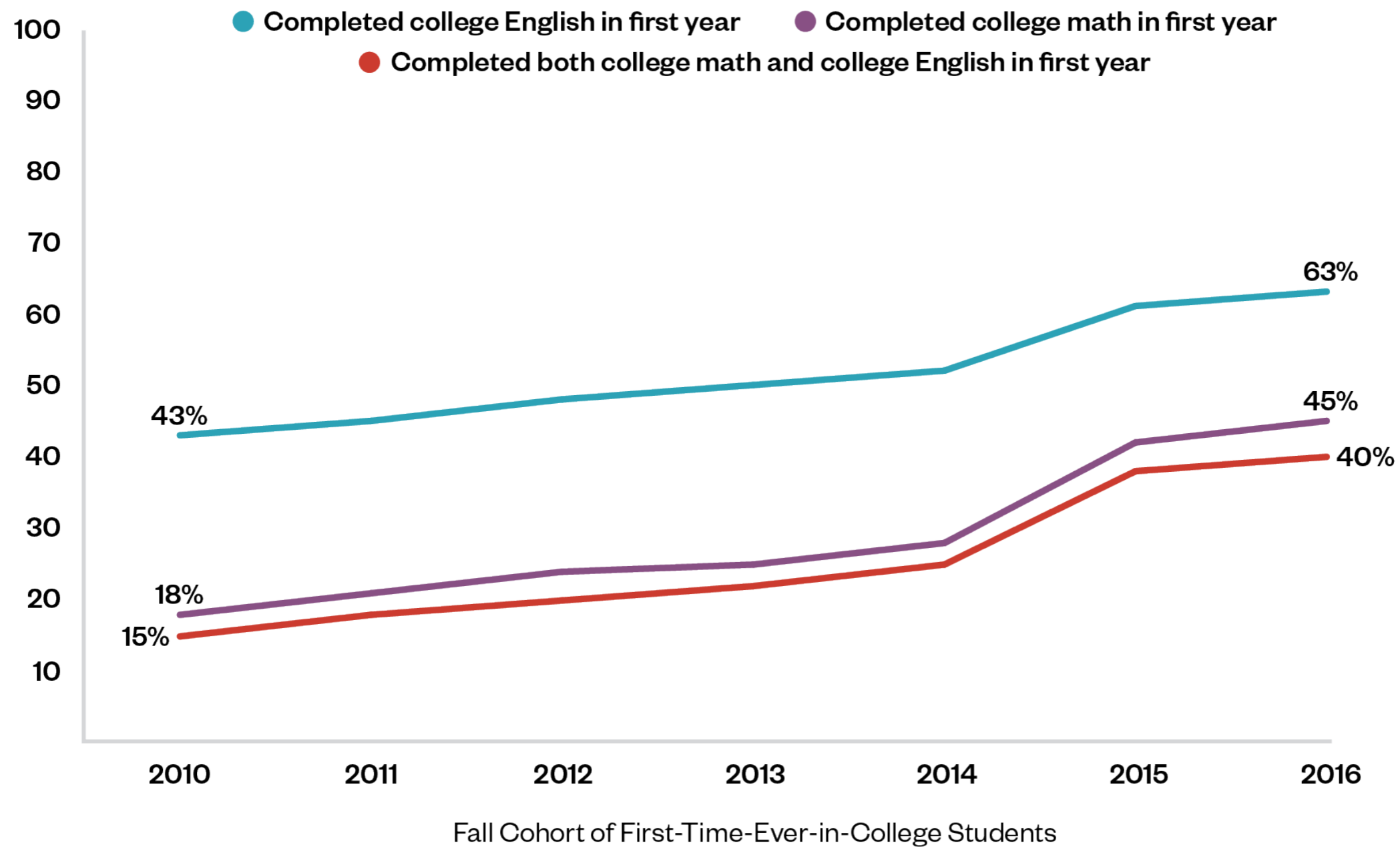
TBR CCs: Passed college math in year 1, by Age Groups and Race

Left chart (by Age Groups):
Legend: —18-19 —20-24 —25+

- 18-19: Fall 2010: 23%, Fall 2016: 47%
- 20-24: Fall 2010: 10%, Fall 2016: 38%
- 25+: Fall 2016: 34%

X-axis: Fall 2010, Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016

Fall FTEIC Cohort

Right chart (by Race):
Legend: —Black —Hispanic —White

- White: Fall 2010: 22%, Fall 2016: 49%
- Hispanic: Fall 2010: 19%, Fall 2016: 46%
- Black: Fall 2010: 6%, Fall 2016: 32%

X-axis: Fall 2010, Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016

Fall FTEIC Cohort

Source: CCRC Analysis of TBR Data

TBR CCs: Passed college English in year 1, by Age Groups and Race

Source: CCRC Analysis of TBR Data
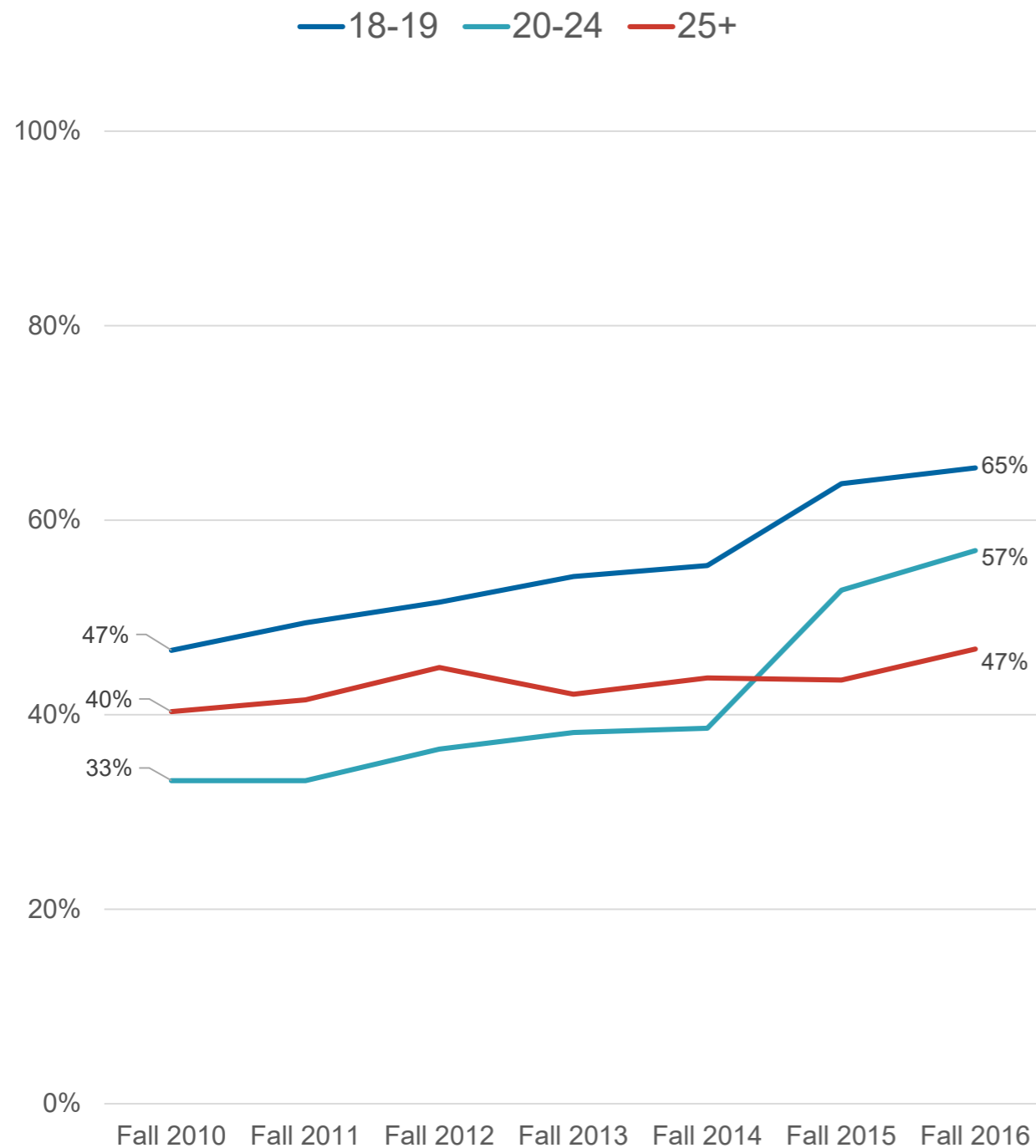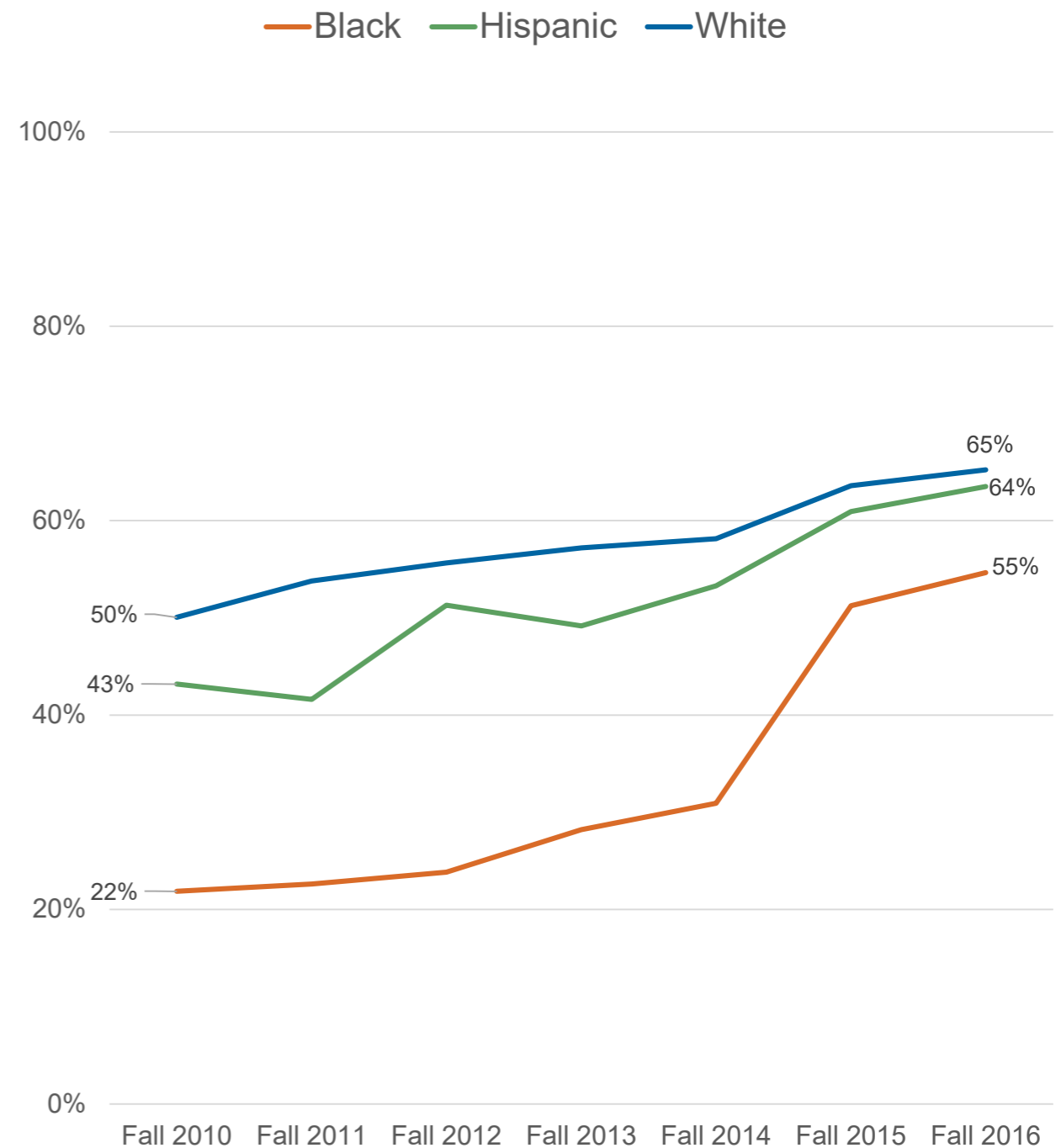
Guided Pathways at Scale

- ❑ Map <u>all</u> programs (including non-credit) to jobs and transfer

- ❑ Help all new students explore interests and options

- ❑ Ensure new students take an "awesome" course in term 1

- ❑ Replace prerequisite remediation with "co-requisite" support

- ❑ Help all new students develop a full-program plan in term 1

- ❑ Schedule courses and monitor progress based on plans

- ❑ Help dual enrollment students to explore options, develop a plan, take plan-related courses

- ❑ Engage area employer and university partners in building a "regional education mobility pathways partnership"

Idealized Timeline for Implementing Guided Pathways at Scale

LAYING THE GROUNDWORK

3+ Years Prior to Pathways
- Build capacity to collect, report, and use data
- Develop strategic goals and plan, focused on improving student outcomes
- Implement at least one major innovation at scale

BUILDING A SENSE OF URGENCY

Year 1
- Make the case for change
- Scrutinize current practice from student perspective

INTAKE AND ADVISING REDESIGN

Years 2-3
- Redesign intake to enable students to explore career/academic options and develop full-program plan by end of term 1
- Pilot integrated and contextualized academic support for program gateway courses
- Redesign scheduling and advising to support timely student advancement
- Plan upgrading of business process and IT systems and begin training staff

IMPROVED SCALE IMPLEMENTATION

Years 4-5
- Evaluate and improve pathways implementation
- Build academic and career communities within meta-majors
- Extend program pathways into high schools (start with dual enrollment) and adult ed programs

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |

MAPPING PROGRAM PATHWAYS

Year 2
- Organize programs into career-focused meta-majors
- Backward map all programs to jobs and transfer opportunities

INITIAL SCALE IMPLEMENTATION

Year 3
- Begin scale implementation of new student intake, planning, scheduling, and advising
- Reorganize learning outcomes assessment around meta-majors and maps
- Implement IT systems and business processes to support pathways
- Plan extension of program pathways into high schools and adult ed programs

ONGOING IMPROVEMENT

Ongoing
- Institutionalize program review, improvement, and professional development within and across meta-majors

Discussion Prompts

State Team Time #1

- What are your state's main current statewide student success/college performance strategies/policies/initiatives?

- To what extent do these efforts encourage and support whole-institution reforms?

- What more could your state do to promote whole-college reforms?

- What steps would be needed to do so? Are there currently plans in the works?

2. Using Lagging and Leading Indicators to Motivate and Measure Whole-College Reforms

"Momentum" Metrics: Metrics the University System of Georgia is using to measure and motivate reforms

Using Indicators for Formative Evaluation and Target-Setting

Idealized Timeline for Implementing Guided Pathways at Scale

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- Build academic and career communities within meta-majors
- Extend program pathways into high schools (start with dual enrollment) and adult ed programs

Year 1   Year 2   Year 3   Year 4   Year 5   Year 6

MAPPING PROGRAM PATHWAYS

Year 2
- Organize programs into career-focused meta-majors
- Backward map all programs to jobs and transfer opportunities

INITIAL SCALE IMPLEMENTATION

Year 3
- Begin scale implementation of new student intake, planning, scheduling, and advising
- Reorganize learning outcomes assessment around meta-majors and maps
- Implement IT systems and business processes to support pathways
- Plan extension of program pathways into high schools and adult ed programs

ONGOING IMPROVEMENT

Ongoing
- Institutionalize program review, improvement, and professional development within and across meta-majors

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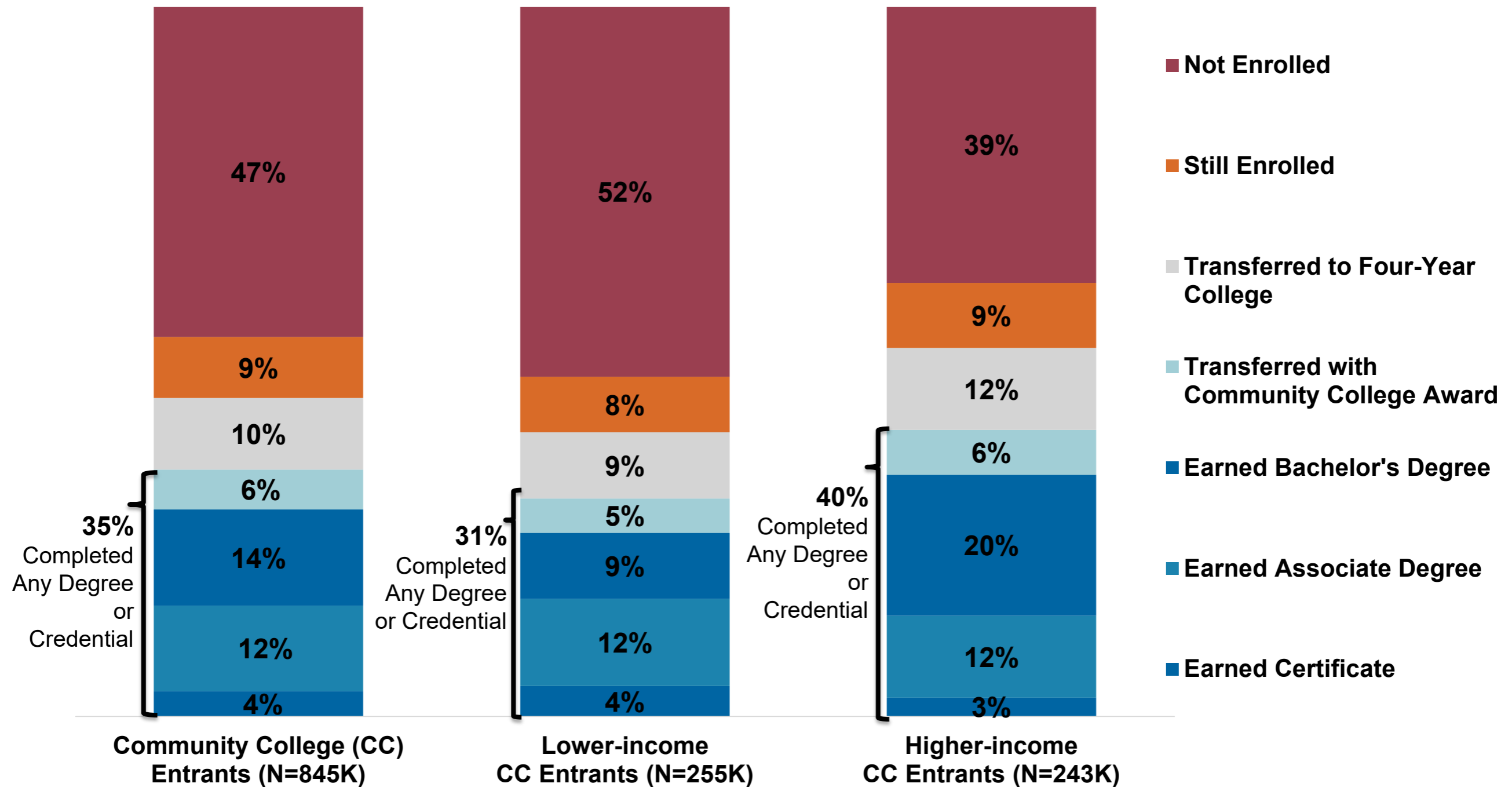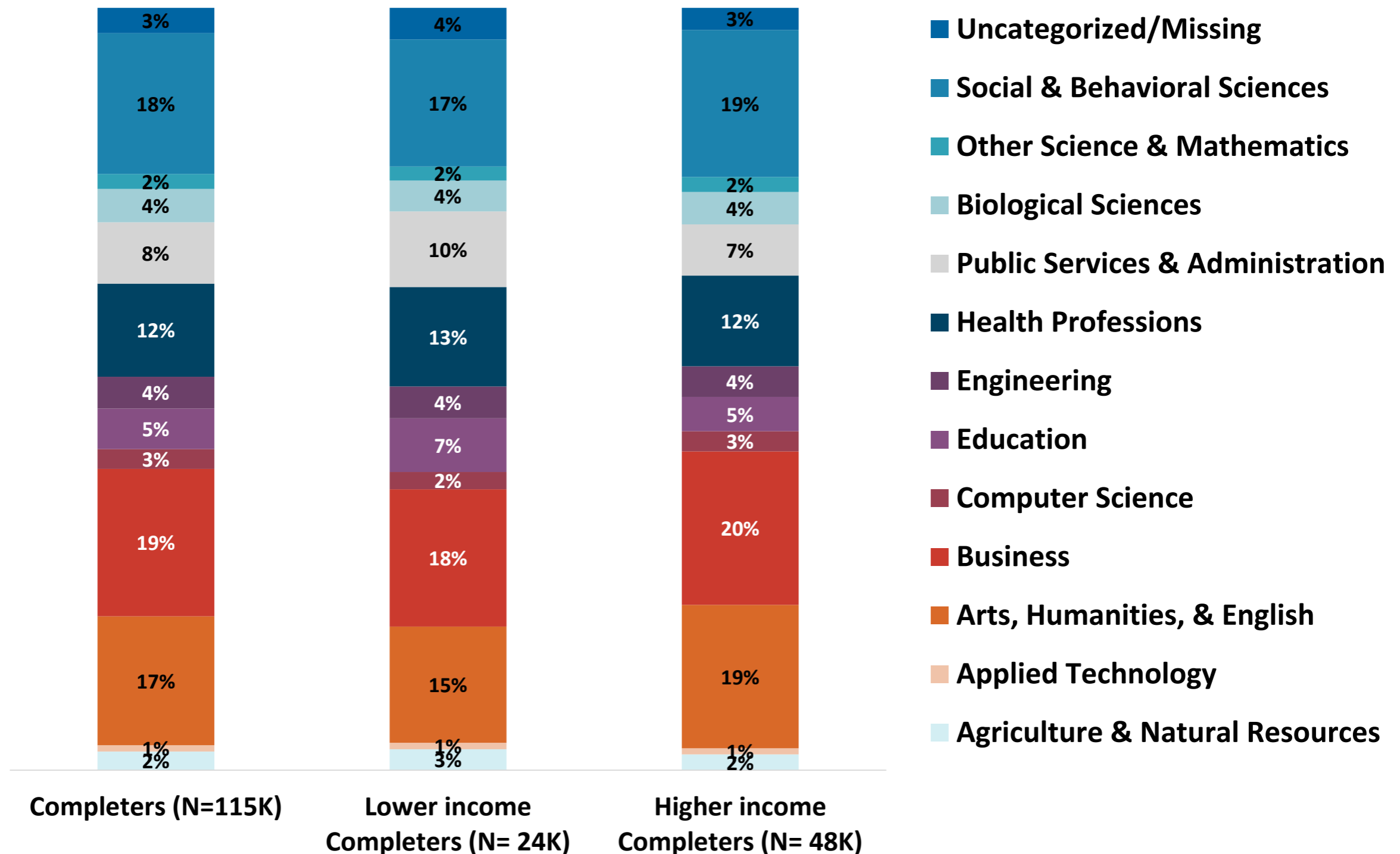| Leading Indicators	Lagging Indicators
Formative Assessment	Summative Assessment
Measurable in a short time period	Not measurable in a short time period
Primary Goal: Improvement (Internal)	Primary Goal: Accountability (External)
Predictive of the longer-term outcomes	Captures ultimate goals and outcomes
First year student momentum • Credit accumulation • Gateway course completion • Course completion and persistence through the first year • Program Momentum	**Student outcomes** • Transfer and credential completion • Cost and time to degree • Labor market outcomes

Highest Outcomes in Six Years by Income Among FTEIC Degree-Seeking Community College Students (Excluding Dual Enrollment Students)

Source: CCRC analysis of NSC data on the fall 2010 FTEIC, degree-seeking community college cohort.

Bachelor's Degree Completer Program Areas Among Community College Entrants (Fall 2010 FTEIC Cohort)

Completers (N=115K)
- 3%
- 18%
- 2%
- 4%
- 8%
- 12%
- 4%
- 5%
- 3%
- 19%
- 17%
- 1%
- 2%

Lower income Completers (N= 24K)
- 4%
- 17%
- 2%
- 4%
- 10%
- 13%
- 4%
- 7%
- 2%
- 18%
- 15%
- 1%
- 3%

Higher income Completers (N= 48K)
- 3%
- 19%
- 2%
- 4%
- 7%
- 12%
- 4%
- 5%
- 3%
- 20%
- 19%
- 1%
- 2%

Legend:
- Uncategorized/Missing
- Social & Behavioral Sciences
- Other Science & Mathematics
- Biological Sciences
- Public Services & Administration
- Health Professions
- Engineering
- Education
- Computer Science
- Business
- Arts, Humanities, & English
- Applied Technology
- Agriculture & Natural Resources

Source: CCRC analysis of NSC data on the fall 2010 FTEIC, degree-seeking community college cohort.

Metrics for Improvement: Student Momentum as Leading Indicator

- Leading indicators: Actionable and timely, predictive of longer-term (lagging) outcomes
  - Important for multi-year college reforms; if leading indicators do not improve, it is unlikely that longer-term outcomes improve
  - If equity gaps do not close in the short-term, it is unlikely that they will close in the long-term
- Current application in community colleges excludes dual enrollment students
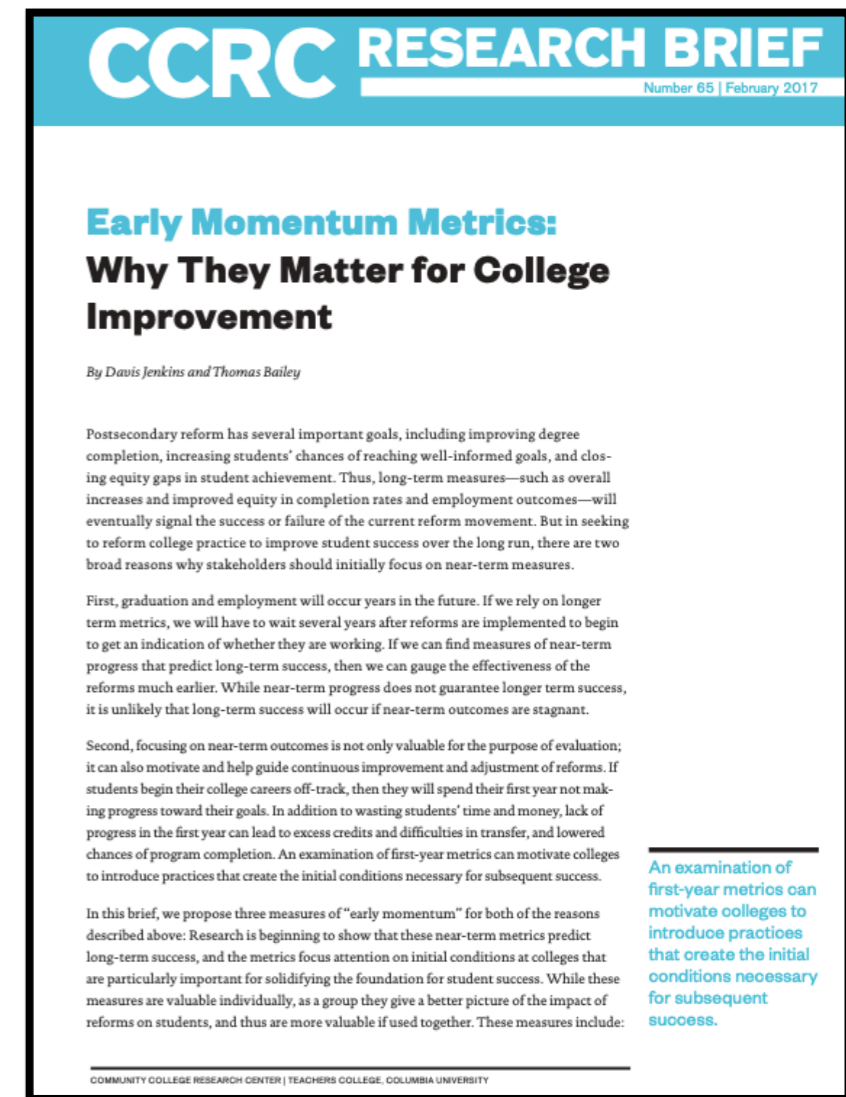
Momentum **Pays**

**Effects* of Momentum on Six-Year Outcomes
Tennessee Community Colleges, FTEIC Fall 2008 Cohort**

	1st semester momentum	1st year momentum
Additional credits earned		
Probability of degree attainment		*Momentum Students:*
Tuition and fees per degree	*Momentum Students:*	Attempted 30 credits in the first year
Expenditures per degree	Attempted 15 credits in the first semester	(Compared to attempting 12 in the first semester but not 30 in the first year)
Tuition and fees avg.	(Compared to attempting 12)	

*Adjusted results, controlling for student characteristics

Source: Belfield, Jenkins, Lahr, 2016.

GP Leading Indicators: Early Momentum

a) **Credit momentum** – % of FTEIC students who attempt 15/30 credits in one term/year

b) **Gateway momentum** – % of FTEIC students who pass college-level English/math (or both) in one year

c) **Program momentum** – % of FTEIC students who pass at least 9 college-credit hours in the student's field of study in one year

d) **Persistence** – % of FTEIC students who persist to term 2.

Early Momentum Mindsets

Credit momentum:

- From full-time vs. part-time to "on-plan" vs. "off-plan

Math and English gateway momentum:

- From academic assessment to holistic assessment
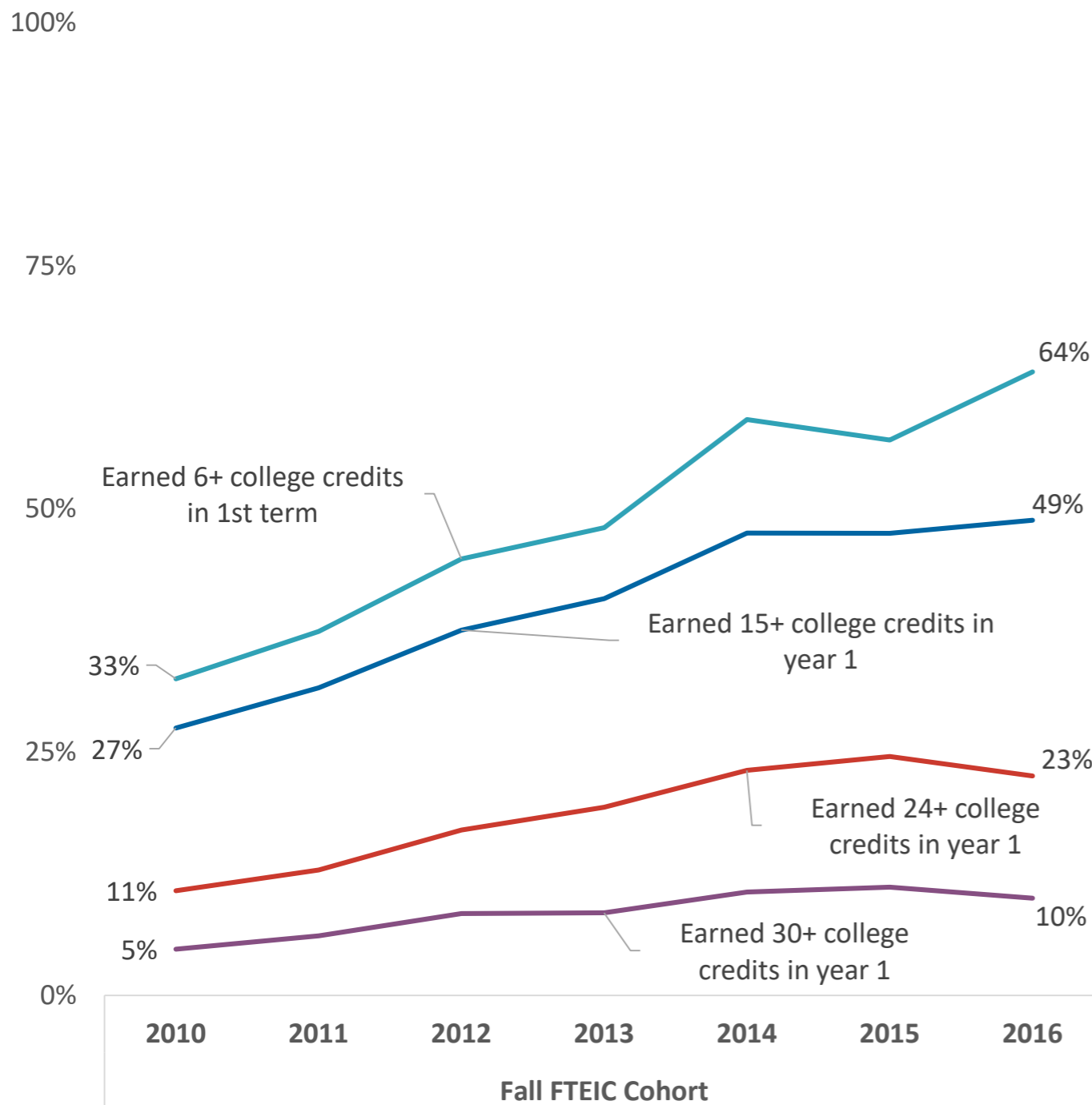- From pre-requisite remediation to co-requisite support

Program gateway momentum:

- From job/transfer help for near completers to career exploration and planning from the start
- From gen ed to meta-majors
- From algebra and English gateways to critical program courses
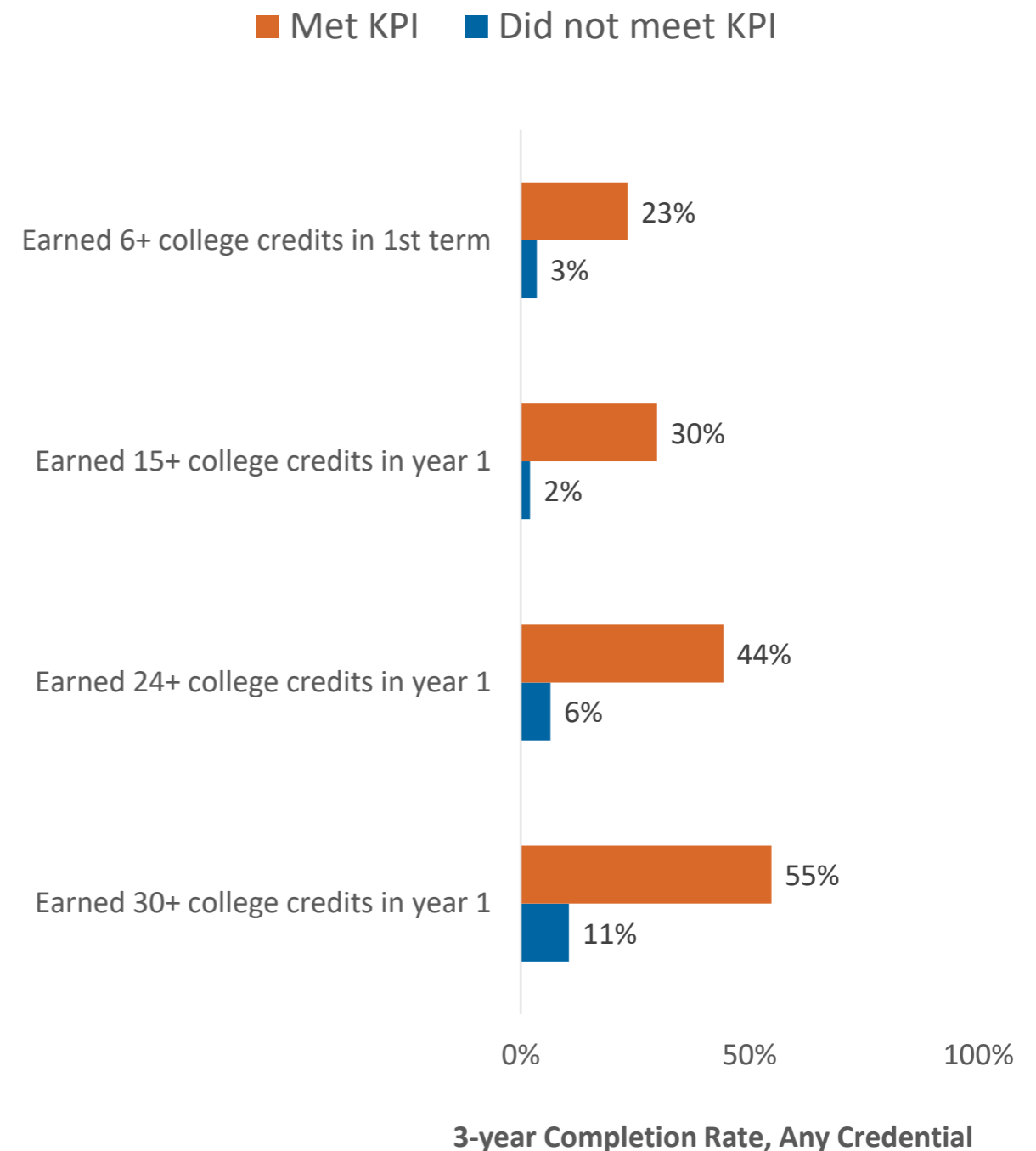
Persistence:

- From next term schedule to full program plan
- From scheduling available courses to scheduling plan courses
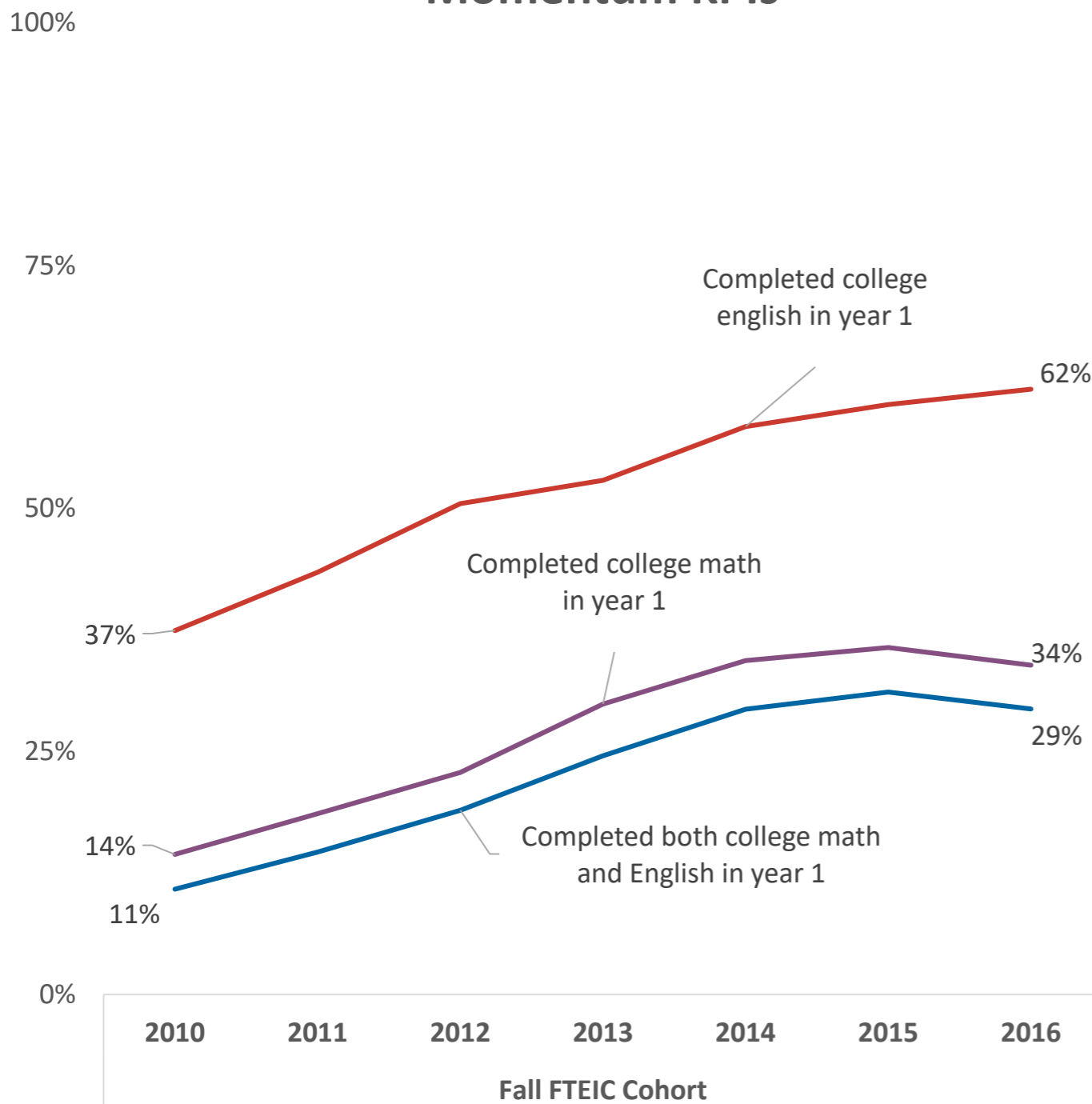
Alamo Colleges Credit Momentum KPIs

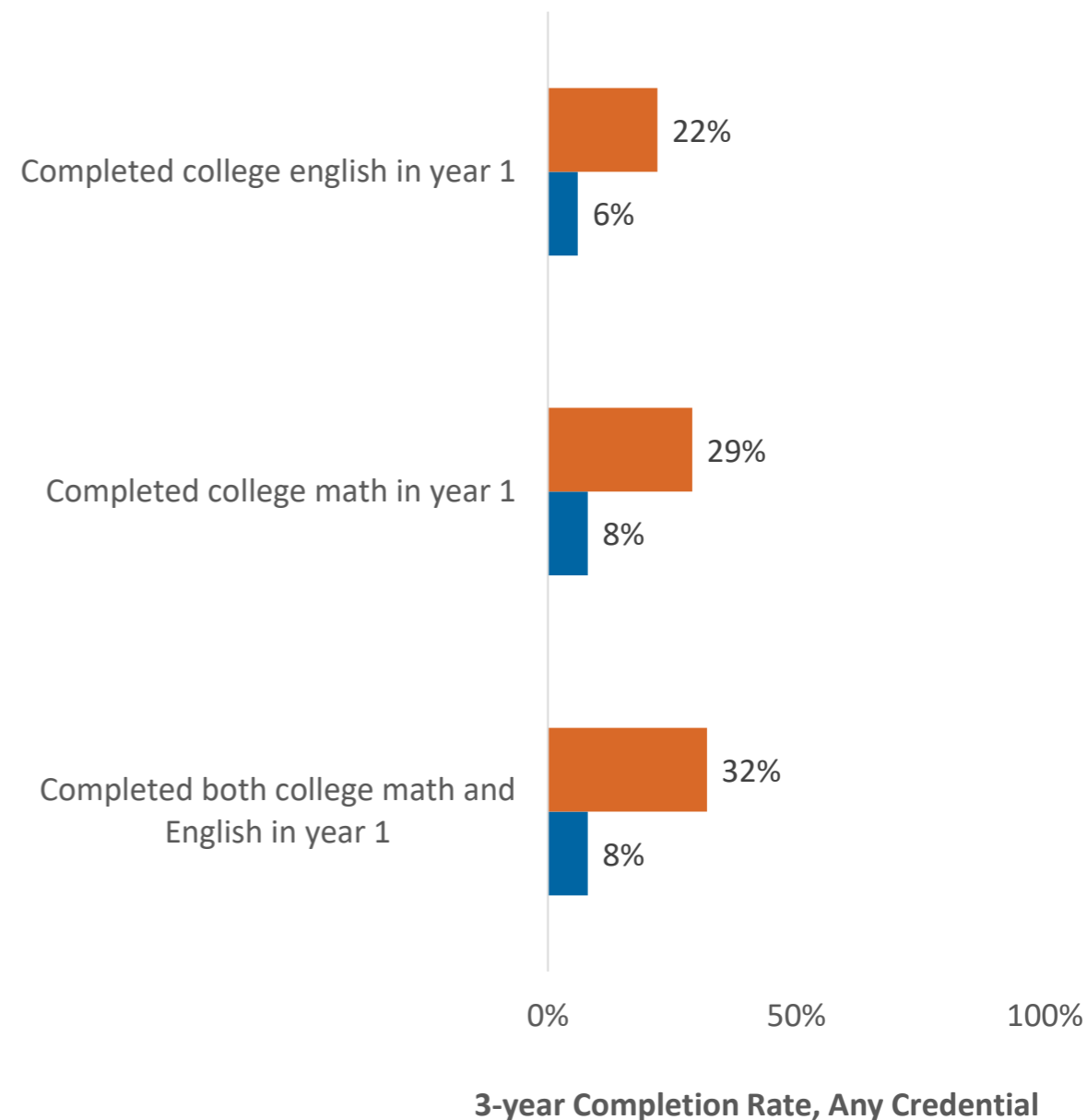**Alamo Colleges 3-year Completion Rates by KPI Status**

■ Met KPI   ■ Did not meet KPI

Earned 6+ college credits in 1st term — 23% / 3%

Earned 15+ college credits in year 1 — 30% / 2%

Earned 24+ college credits in year 1 — 44% / 6%

Earned 30+ college credits in year 1 — 55% / 11%

3-year Completion Rate, Any Credential

Left panel:
Earned 6+ college credits in 1st term — 33% to 64%
Earned 15+ college credits in year 1 — 27% to 49%
Earned 24+ college credits in year 1 — 11% to 23%
Earned 30+ college credits in year 1 — 5% to 10%

Fall FTEIC Cohort: 2010, 2011, 2012, 2013, 2014, 2015, 2016

Note. Trends in Alamo Colleges Credit Momentum KPIs are shown in the left panel. The right panel shows completion rates for fall 2014 FTEIC entrants at Alamo Colleges who completed any college credential (from any institution) within three years, disaggregated by whether or not students met the particular KPI definition in their first year.

Alamo Colleges Gateway Math & English Momentum KPIs

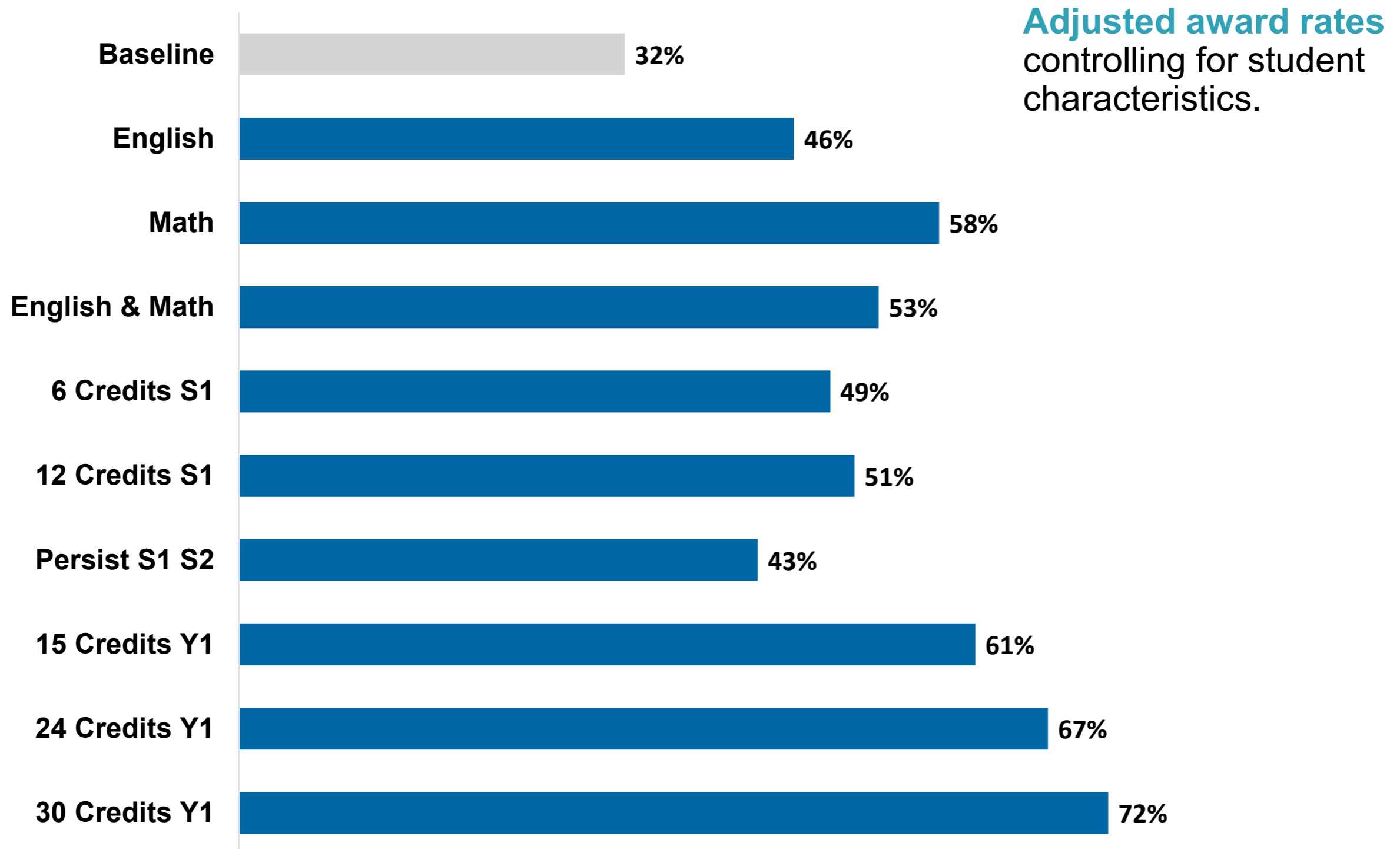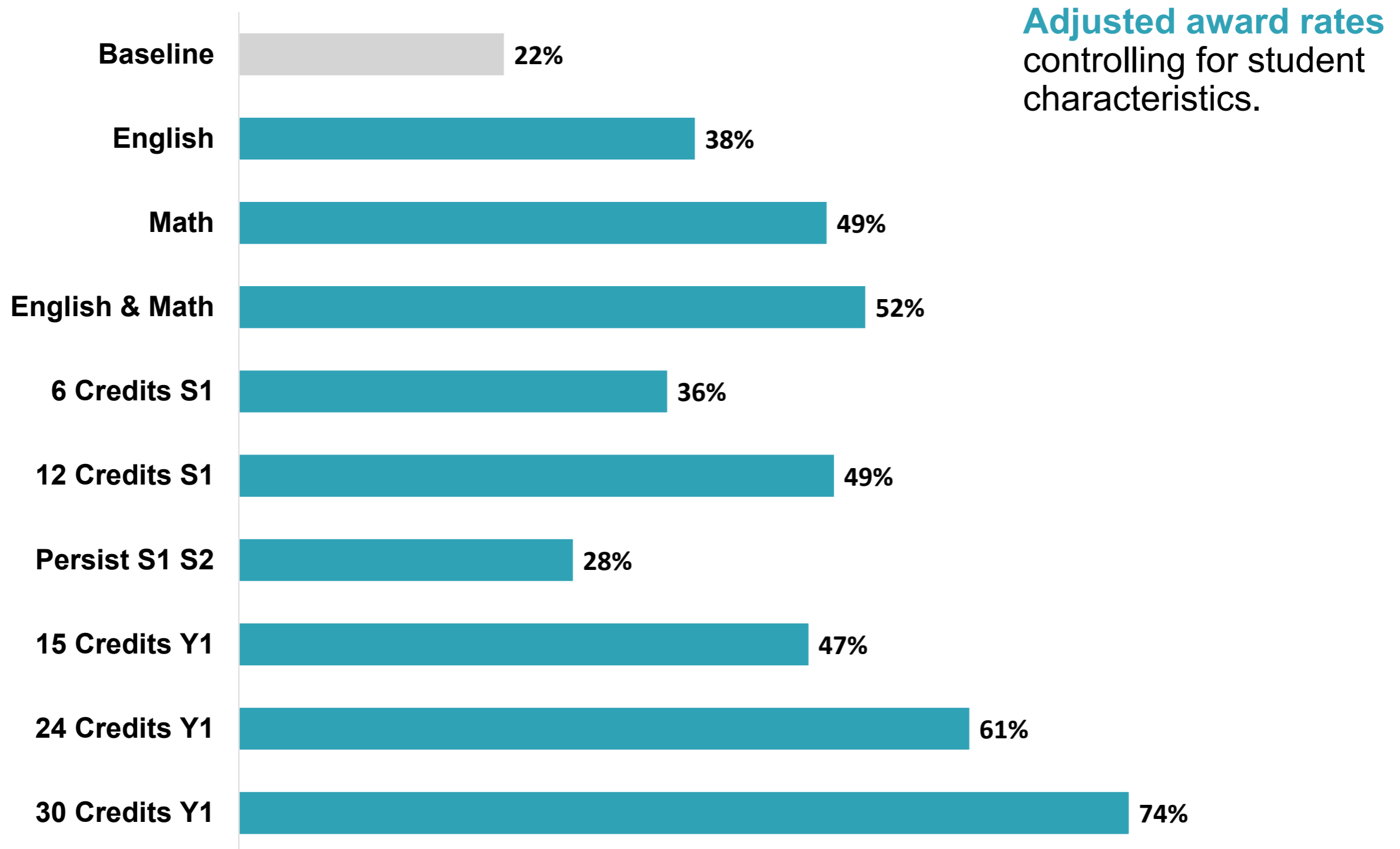**Alamo Colleges 3-year Completion Rates by KPI Status**

■ Met KPI ■ Did not meet KPI

Completed college english in year 1 — 62%
Completed college math in year 1 — 34%
Completed both college math and English in year 1 — 29%

37%
14%
11%

Fall FTEIC Cohort

Completed college english in year 1: 22% / 6%
Completed college math in year 1: 29% / 8%
Completed both college math and English in year 1: 32% / 8%

3-year Completion Rate, Any Credential

Note. Trends in Alamo Colleges Gateway Math and English Momentum KPIs are shown in the left panel. The right panel shows completion rates for fall 2014 FTEIC entrants at Alamo Colleges who completed any college credential (from any institution) within three years, disaggregated by whether or not students met the particular KPI definition in their first year.

First-Year Momentum Outcomes across 3 Community College Systems

English Y1	*Completed college English in the first year*
Math Y1	*Completed college math in the first year*
English & Math Y1	*Completed both college English & math in the first year*
6 Credits S1	*Completed 6+ college credits in the first term*
12 Credits S1	*Completed 12+ college credits in the first term*
Persist S1 S2	*Persisted from term 1 to term 2*
15 Credits Y1	*Completed 15+ college credits in the first year*
24 Credits Y1	*Completed 24+ college credits in the first year*
30 Credits Y1	*Completed 30+ college credits in the first year*

■ System X   ■ System Y   ■ System Z

System Y: Adjusted Six-Year Award Rate by Momentum Attainment in Year 1

Adjusted award rates controlling for student characteristics.

Category	Rate
Baseline	22%
English	38%
Math	49%
English & Math	52%
6 Credits S1	36%
12 Credits S1	49%
Persist S1 S2	28%
15 Credits Y1	47%
24 Credits Y1	61%
30 Credits Y1	74%

System Z: Adjusted Six-Year Award Rate by Momentum Attainment in Year 1

Adjusted award rates controlling for student characteristics.

Category	Rate
Baseline	30%
English	39%
Math	50%
English & Math	58%
6 Credits S1	42%
12 Credits S1	48%
Persist S1 S2	48%
15 Credits Y1	48%
24 Credits Y1	59%
30 Credits Y1	62%

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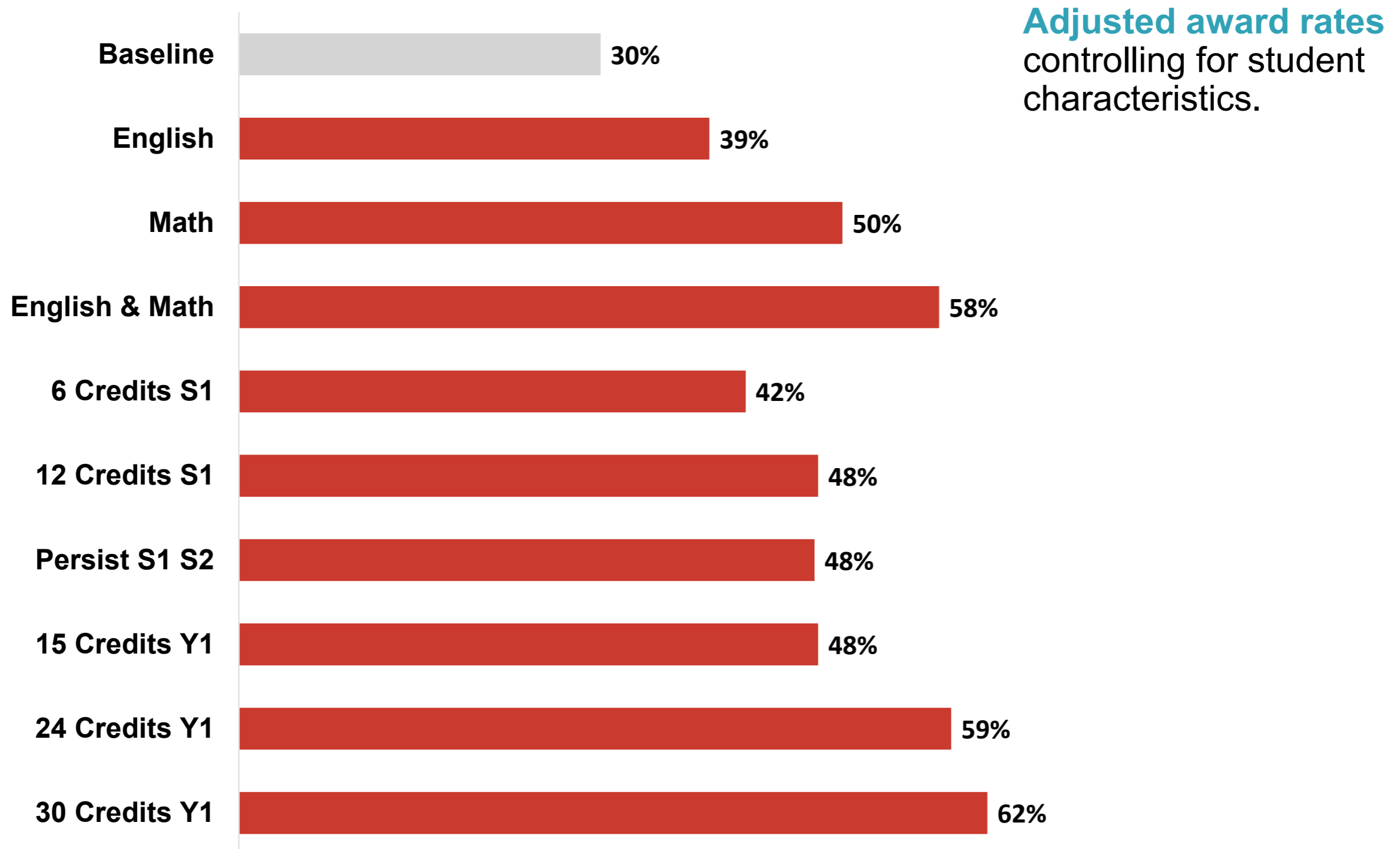
Predicted Percentage Point Change in 6-Year Award Rates if Leading Indicator Increases by 50%

Indicator	System X	System Y	System Z
English Y1	4%	6%	2%
Math Y1	2%	3%	2%
English & Math Y1	1%	3%	1%
6 Credits S1	5%	5%	5%
12 Credits S1	1%	2%	3%
15 Credits Y1	6%	6%	5%
24 Credits Y1	3%	3%	3%
30 Credits Y1	2%	1%	2%

For example, the rate of credential completion in 6-years is predicted to increase 6 percentage points in System Y if 50% more students completed 15 CL credits in year 1

■ System X ■ System Y ■ System Z
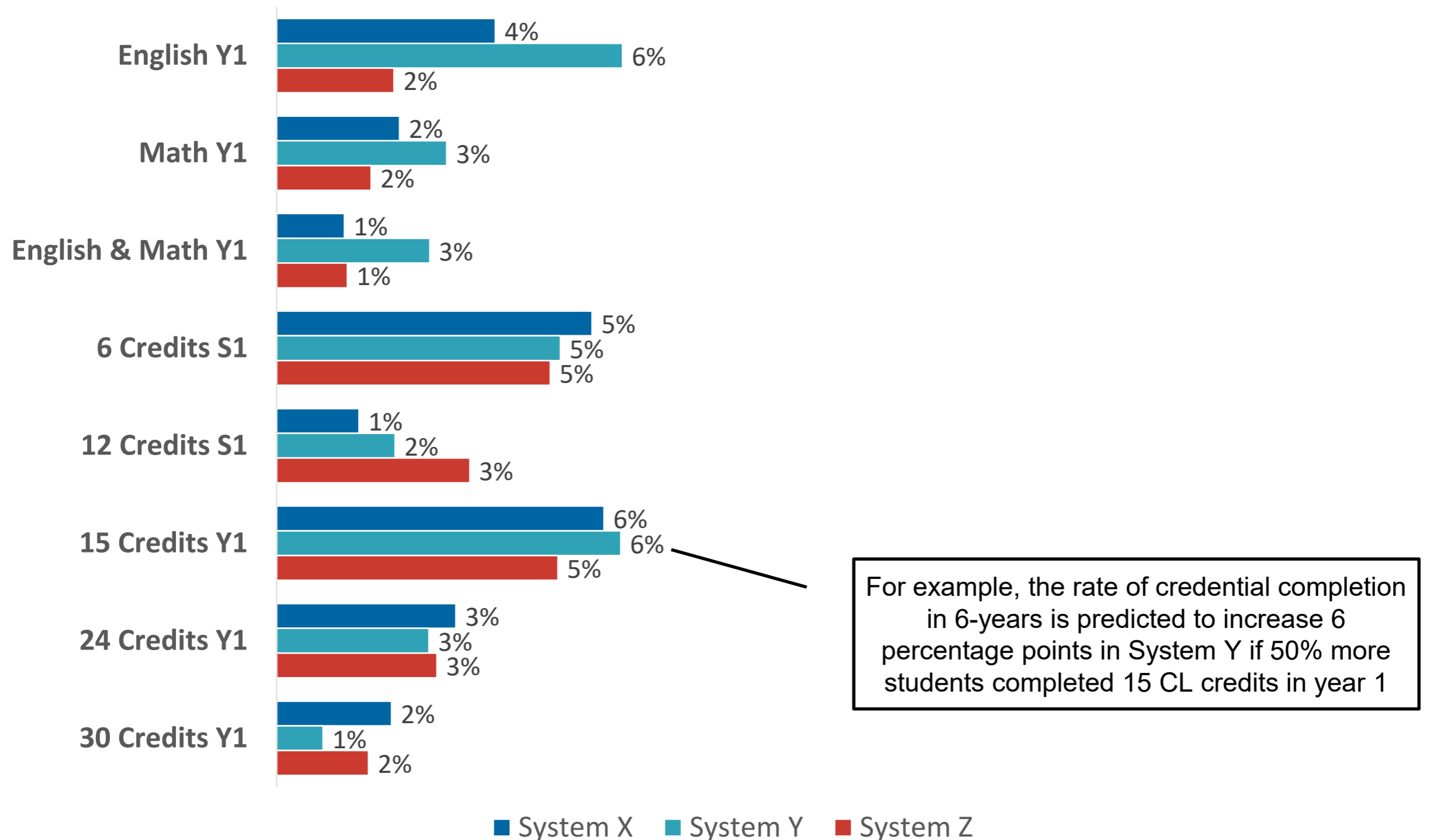
- INSERT SLIDE SHOWING TAKESHI'S FINDINGS USING RANDOM FORESTS TO PREDICT COMPLETION BASED ON KPIS

Summary

- Few students are "on track" with first-year momentum key performance indicators (KPIs)

- First-year momentum strongly predicts student success in subsequent years

- Improving first-year momentum should significantly improve student success, especially for disadvantaged groups

  - Students who meet KPIs do better, regardless of race or gender or socio-economic disadvantage

  - Key issue is equity gap in the rate at which students gain momentum in first year

Summary

- Award rates increase 1-6 percentage points if 50% more students meet each KPI

- Effects of meeting multiple KPIs are additive

To increase 6-Year Award Rates by 10 percent:

- For most KPIs, the rate of KPI attainment would have to double

- For most challenging KPIs – passing both gateway English and Math and having 30 credits after one year – the rate of KPI attainment would have to increase by a factor of four or more

Discussion Prompts

State Team Time #2

- What leading indicators do we already use? Are these aligned to our longer-term outcomes? Are there longer-term outcomes we don't have leading indicators for?

- How are colleges using leading and lagging indicators and how can the state support their formative assessment efforts to drive continuous improvement?

- How can the state support mindset shifts to focus effort on building students' early momentum?

3. Developing a Strategy for Using Metrics to Motivate and Measure Whole-College Reforms

Setting Targets for Improvement

Setting Targets for Improvement

Guiding Questions:

- Based on data from the most recent five years, what **amount of improvements** in student success could be expected in the next five years?

- Based on data from the most recent five years, what **amount of narrowing of equity gaps** could be expected in the next five years?

Setting Targets for Improvement: Recommended Approach

- Use historical data from the past five year to identify targets for the next five years

- Target setting should be done separately for each state, given unique state contexts
  - Perhaps even among peer-sets within states (e.g., small vs. large colleges; rural vs. urban, etc.)

- State goal setting should be designed to motivate colleges to set their own goals for improvement based on their historical baselines
  - Different colleges start at different baselines

Setting Targets for Improvement: Recommended Approach

Within states or other peer groupings, use historical data to rank colleges on their improvement to differentiate 'status quo' from aspirational improvement

- **Status quo**: Improvement demonstrated by the median college (50th percentile rank college)
- **Aspirational**: Improvement demonstrated by the 75th & 90th percentile ranked college

There is both within and across state variation in the extent to which community colleges have increased their IPEDS grad rates historically
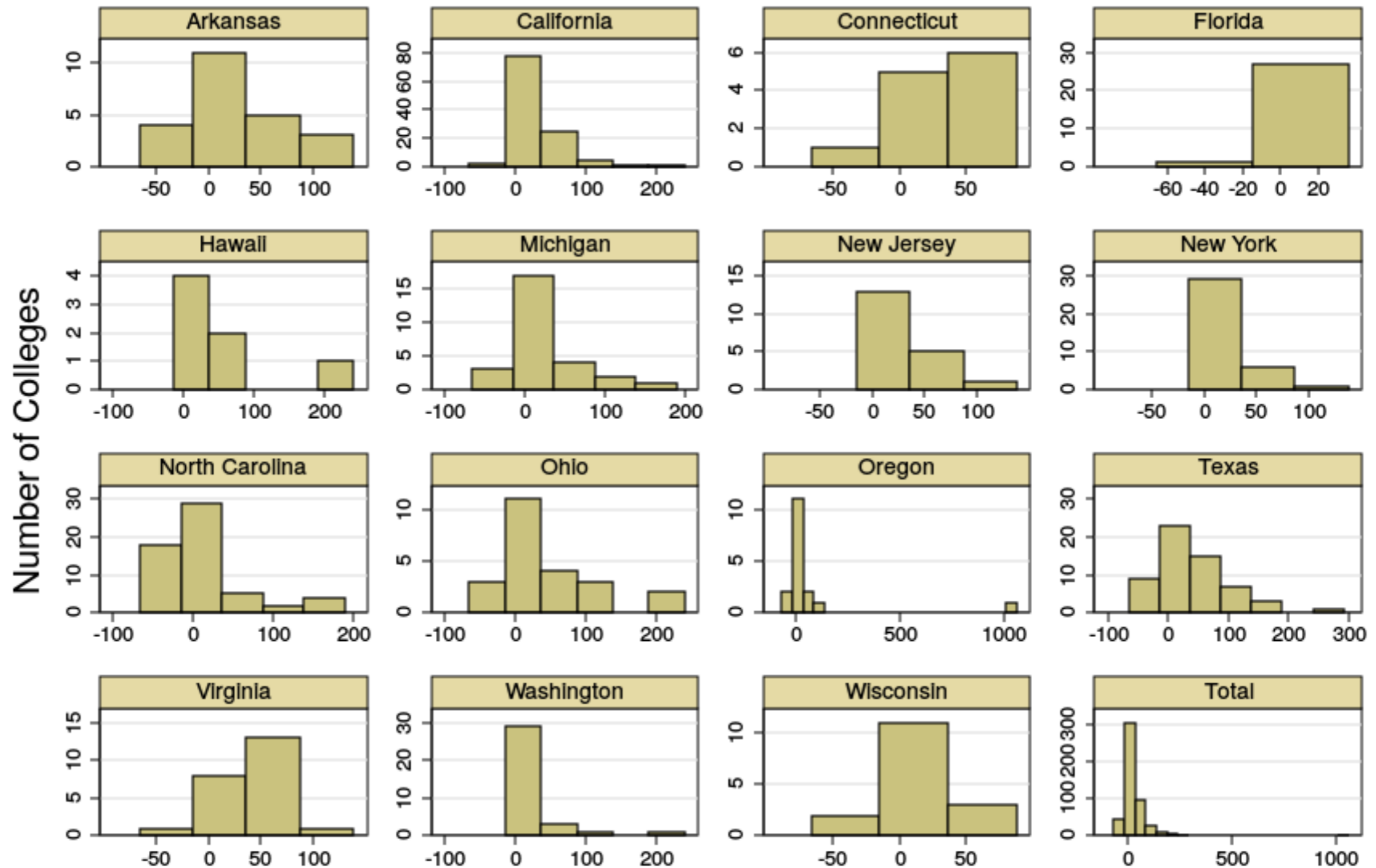
Percent Change 2012-16 in 150% IPEDS Grad Rate (for FTFT students)

Graphs by State

There is both within and across state variation in the extent to which community colleges have changed the racial equity gap in their IPEDS grad rates historically
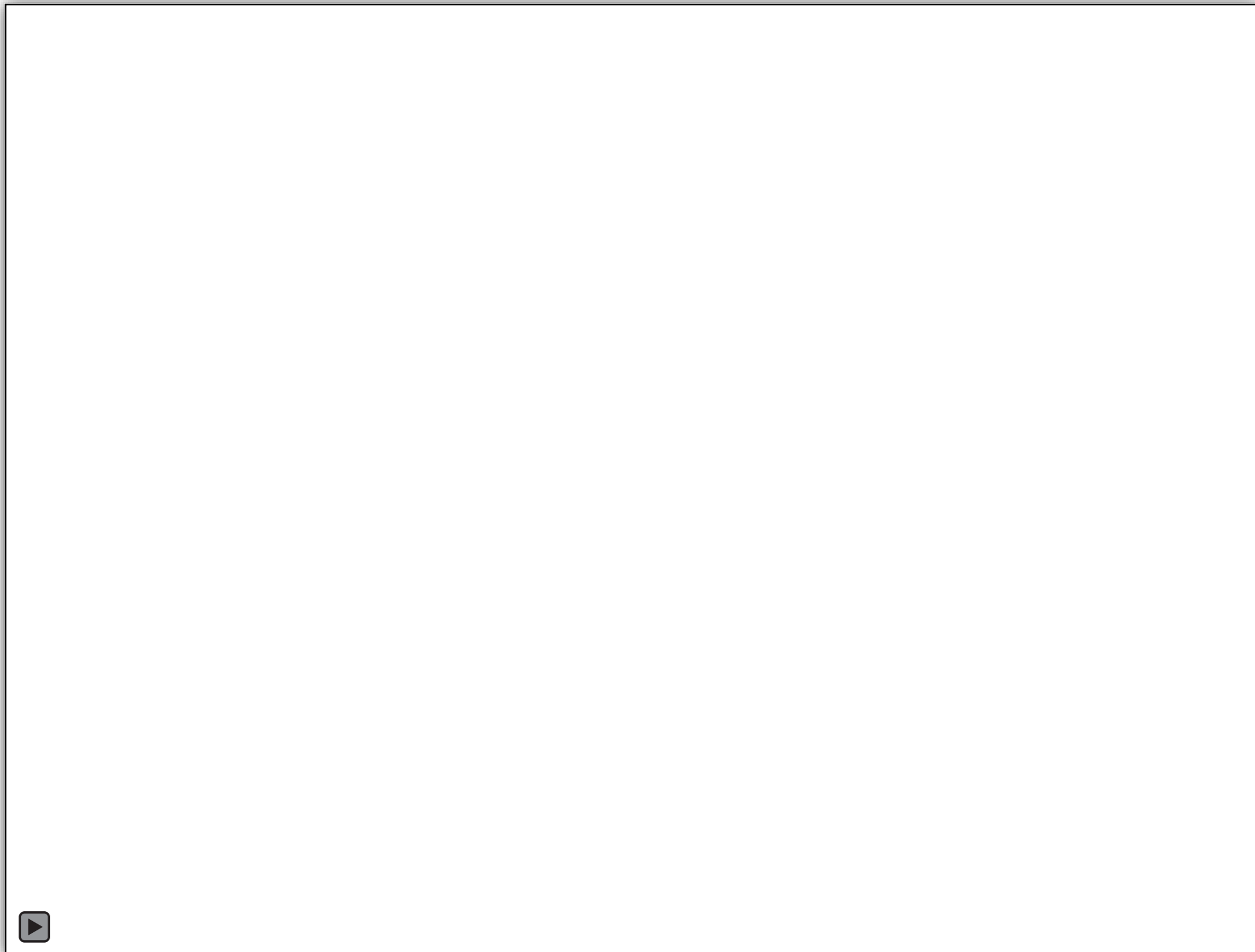
Percentage Point Change 2012-16 in 150% IPEDS Grad Rate Equity Gap

Graphs by State

Early Momentum Metrics: AACC Pathways 1.0 Colleges

AACC Pathways 1.0 Colleges Distribution in 2012-2017 Change in Early Momentum Metrics

AACC Pathways Colleges Percentage Point Change on Selected KPIs
2012 – 2017 FTEIC Fall Cohorts
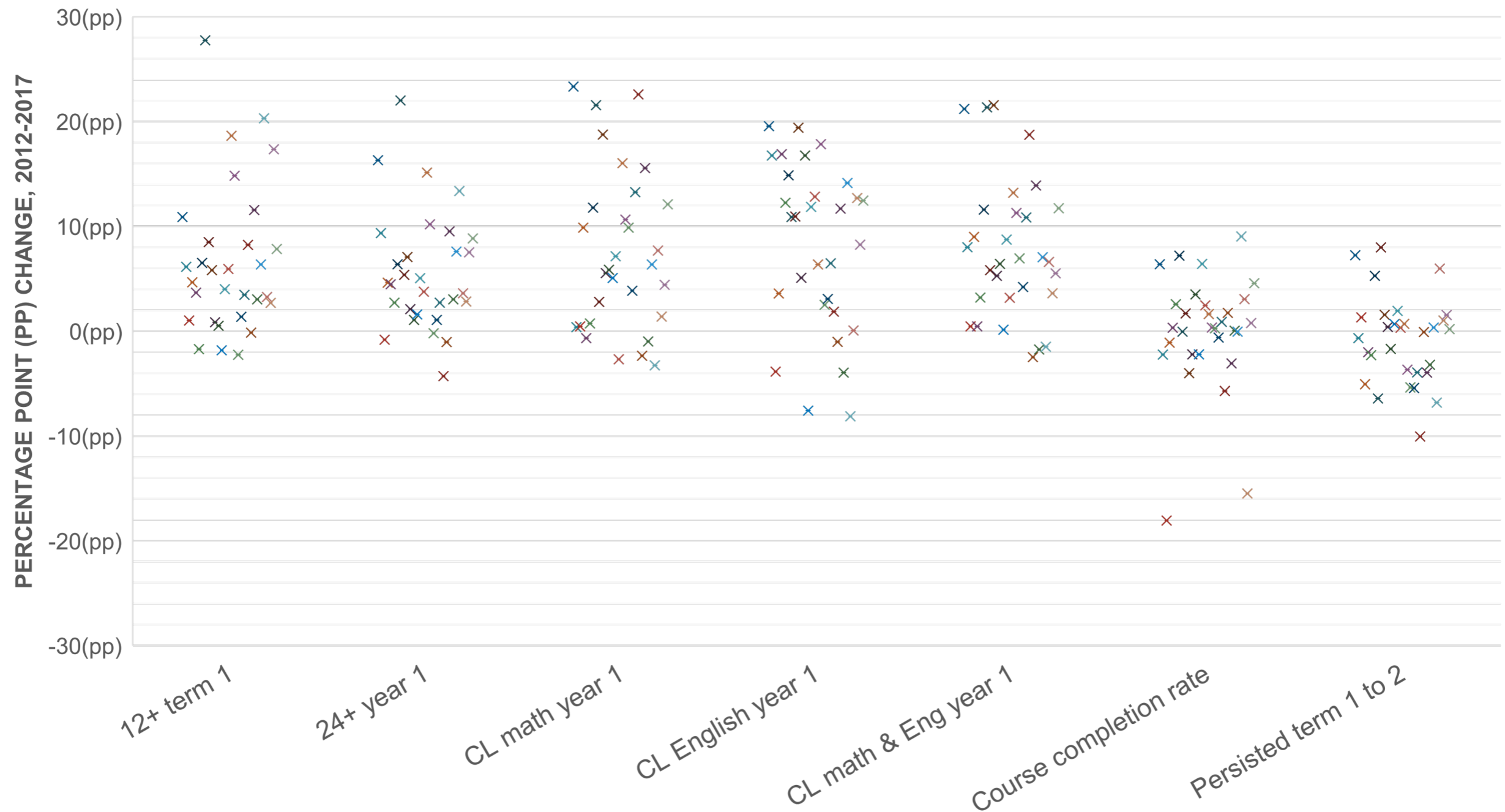
AACC Pathways 1.0 Colleges Distribution in 2012-2017 Change in Early Momentum Metrics

AACC Pathways Colleges Percentage Point Change on Selected KPIs
2012 – 2017 FTEIC Fall Cohorts
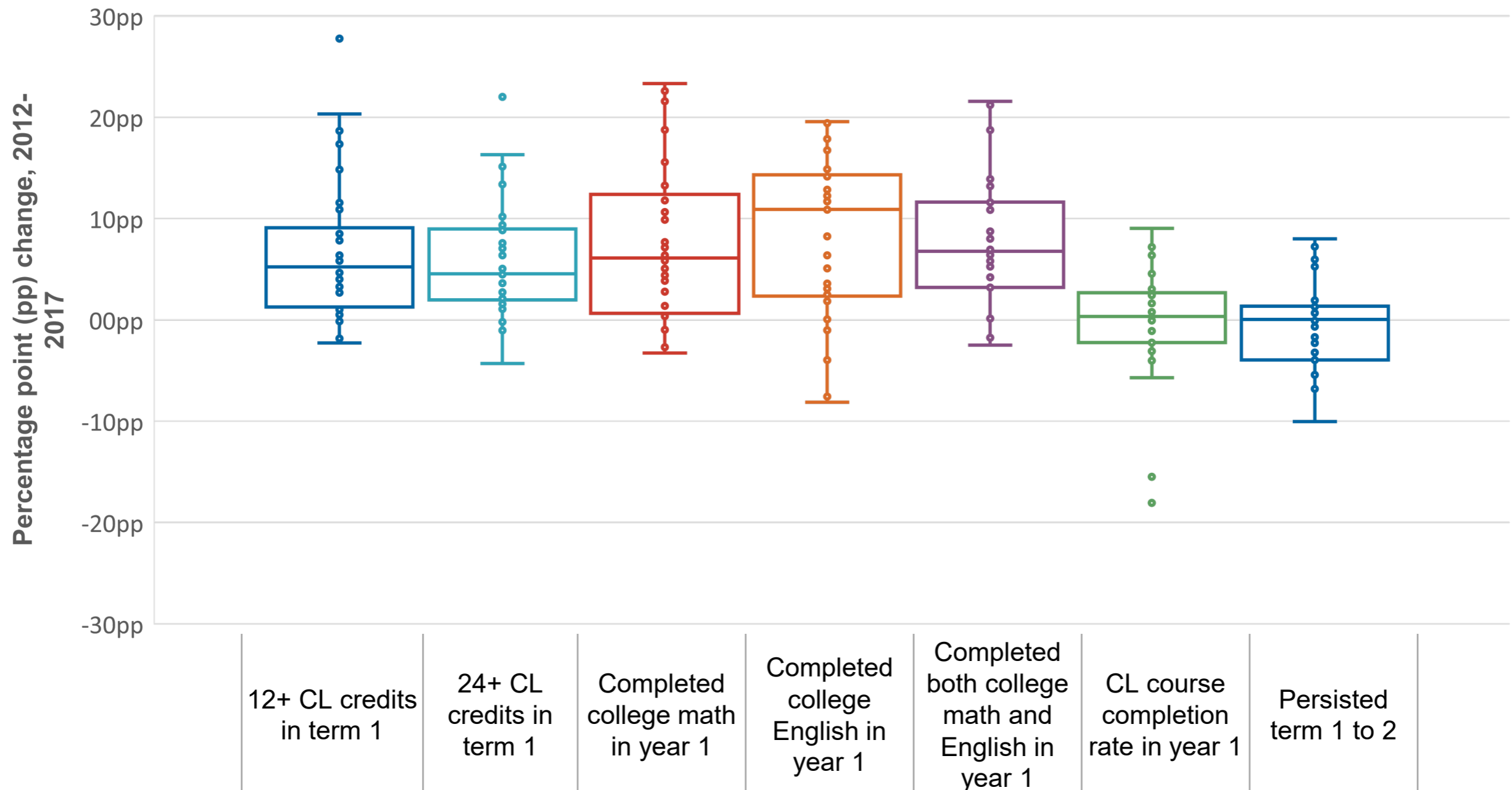
AACC Pathways 1.0 Colleges Distribution in 2012-2017 <u>White-Black</u> Equity Gap Change

AACC Pathways Colleges Percentage Point Change on Selected KPIs
2012 – 2017 FTEIC Fall Cohorts
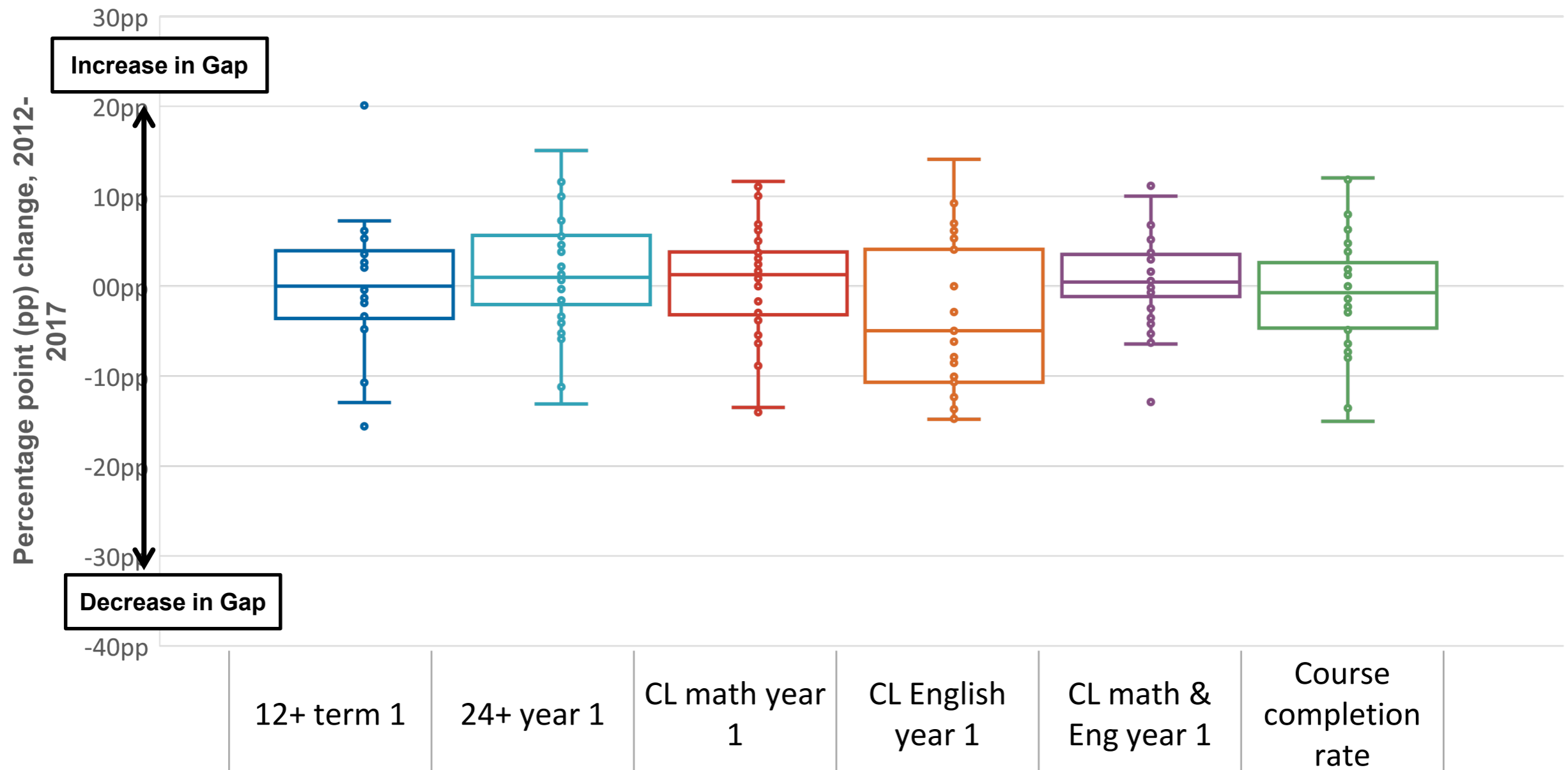
AACC Pathways 1.0 Colleges Distribution in 2012-2017 <u>White-Hispanic</u> Equity Gap Change

AACC Pathways Colleges Percentage Point Change on Selected KPIs
2012 – 2017 FTEIC Fall Cohorts
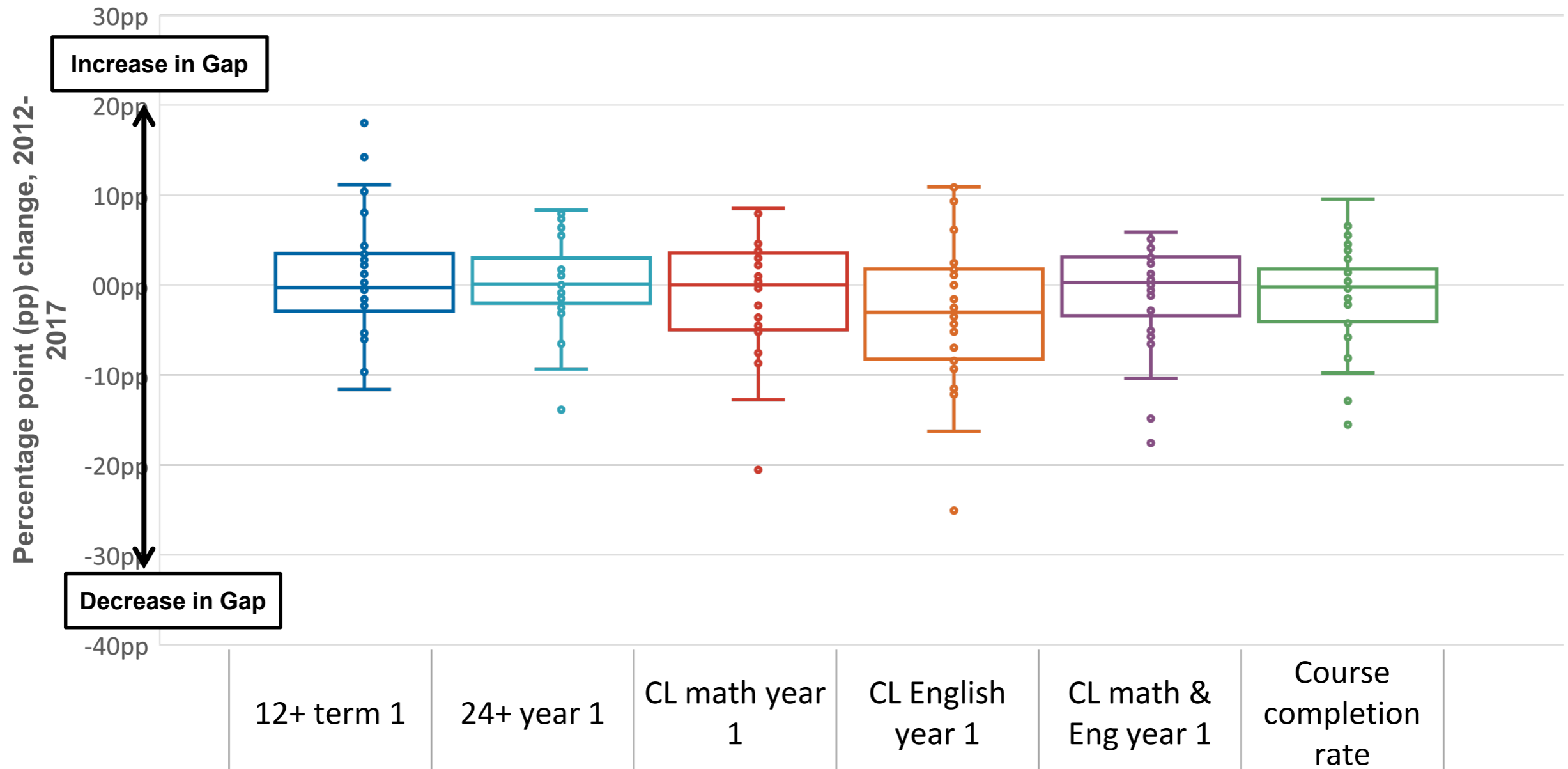
Using Historical Momentum Metrics to Inform Target Setting: Rate Increases

Using Historical Momentum Metrics to Inform Target Setting: Closing Gaps

Using Leading Indicators Monitor, Improve, and Set Targets for Whole-College Reform

✓ Chart trends in student momentum in the first year

✓ Disaggregate results by race, family income, age, etc.

✓ Disaggregate results by program or meta-major

✓ Use historical data to set achievable, yet ambitious targets

✓ Convene faculty and student services staff to discuss how to redesign new student experience to increase early momentum

✓ Hold similar discussions/planning by meta-major

✓ Scrutinize all changes through equity lens

Discussion Prompts

State Team Time #3

- What are our state targets and are they reasonable (too ambitious, not ambitious enough)? How do you know?

- How can the state help colleges to set and track reasonable targets for improvement, connected to the broader statewide goals?

Thank you!

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