



Enclosure 5a  
February 3, 2021

# RI's Accelerated College Credit Programs: New Research on Impacts

Rhode Island Board of Education

February 3, 2021



# Background

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## Dual enrollment, concurrent enrollment, and AP classes all provide opportunities for Rhode Island high school students to earn college credit.

- In 2013, the Rhode Island General Assembly passed legislation (RIGL 16-100) that called for the adoption of a statewide policy for dual enrollment that allows students to take college courses to earn credit at both the high school and the postsecondary institution.
- The RI Board of Education adopted regulations in April 2015 that provide all qualified RI high school students access to college-level coursework while still in high school.
- “Accelerated college credit program” means any of these three programs:
  - **Advanced Placement (AP) course:** A high school course that culminates in a standardized subject area assessment administered by the College Board. (College-level course based on a national exam, taught at the high school.)
  - **Concurrent enrollment program:** A program that allows high school students to take approved college courses taught by instructors on staff at a student’s high school. (College course, taught at the high school.)
  - **Dual enrollment program:** A program that allows high school students to attend college courses taught by college faculty on either a public or a private college campus. (College course, taught at the college.)

# Expanding College Credit – OPC's focus areas

- **PrepareRI Dual Enrollment Fund**
  - Makes both dual enrollment and concurrent enrollment courses free for students
  - Enrollment began in the 2015-16 academic year, and is administered by the Office of the Postsecondary Commissioner (OPC)
  - Expansion highlights include:
    - **41% increase** in student participation
    - **70% increase<sup>1</sup>** in dual enrollment credits earned
    - **15% increase<sup>1</sup>** in concurrent enrollment credits earned
  - Nearly **125,000 credits** earned by students since 2015-16
  - This fund has **saved Rhode Island families more than \$45 Million<sup>2</sup>** over the course of the program
- **Dual/concurrent program supports**
  - Revise and review list of concurrent courses, which the Council on Postsecondary Ed and Board of Ed approves
  - Consult with colleges to expand and promote dual offerings in high-need areas
  - Troubleshoot processes for potential barriers in participation
  - Partner with colleges to pilot listing dual enrollment classes on EnrollRI (RIDE's new statewide enrollment platform)

<sup>1</sup>Based on comparison of yearly enrollments since 2016-2017 academic year.

<sup>2</sup>Based on calculations using today's tuition costs at RIC, URI, and CCRI.

# Expanding College Credit – RIDE’s focus areas

Through the PrepareRI initiative, RIDE has expanded opportunities for high school students to earn college credit

- All Course Network (ACN)
  - Free courses offered statewide on the ACN currently include 23 credit-bearing college classes and 3 AP classes. This is now easier for students to access through the new EnrollRI platform.
- Expanding AP coursework
  - 40.3% of RI’s graduates took an AP exam in 2019. That’s a major increase from only 17.5% in 2010.
  - Computer Science for RI (CS4RI) has increased AP Computer Science participation 17-fold since 2016 (43 to 737 students)
- Diploma Plus
  - Added a “Diploma Plus” metric to School Report Cards to recognize schools’ success in helping students earn college credit and industry credentials
- Pathway Endorsements
  - Aligning Pathway Endorsements on high school diplomas with Guided Pathways at public colleges, so students can start working on the requirements for their college majors while still in high school

# Regional Educational Laboratory Northeast & Islands

**REL Northeast & Islands** is one of 10 Regional Educational Laboratories.

We work in partnership with educators and policymakers to develop/use research that improves academic outcomes for students.

What we do:

- Conduct research studies
- Disseminate research findings to those we serve
- Strategically engage with partners to use findings
- Design and deliver technical assistance focused on the use of data and research





# Research study questions

- What are the participation rates in Rhode Island's accelerated college credit programs overall and by each type of program?
  - How do student and school characteristics compare across each program type and between participants and non-participants?
- What is the impact of participation in any one of Rhode Island's three accelerated college credit programs on high school graduation, college enrollment, and college readiness?
  - Do these effects differ between economically disadvantaged students and their non-economically disadvantaged peers?
- How do these outcomes differ across students who participated in each type of program—by enrolling in dual or concurrent enrollment courses, or by taking AP tests—after controlling for student characteristics?

Sample: First-time 9<sup>th</sup> graders in 2013/14 (on-time graduation in spring 2017)

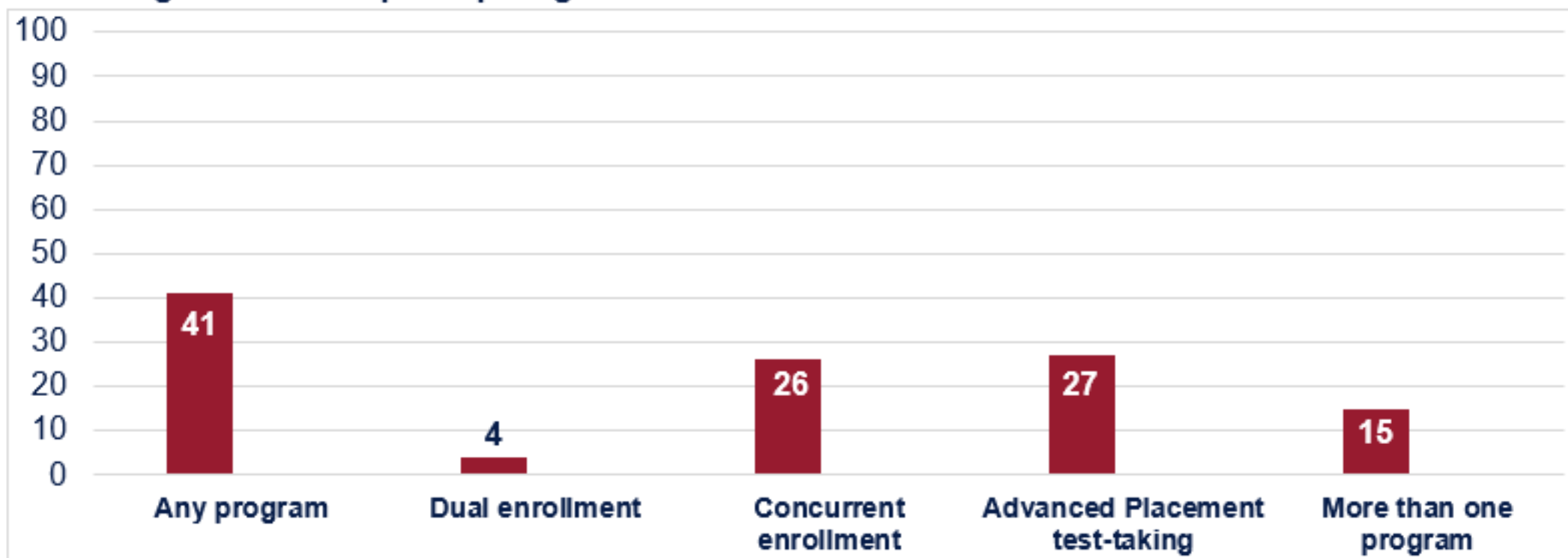


Part I.  
**Who takes accelerated  
college credit classes?**

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# Forty-one percent of students participated in one or more accelerated college credit programs

Percentage of students participating

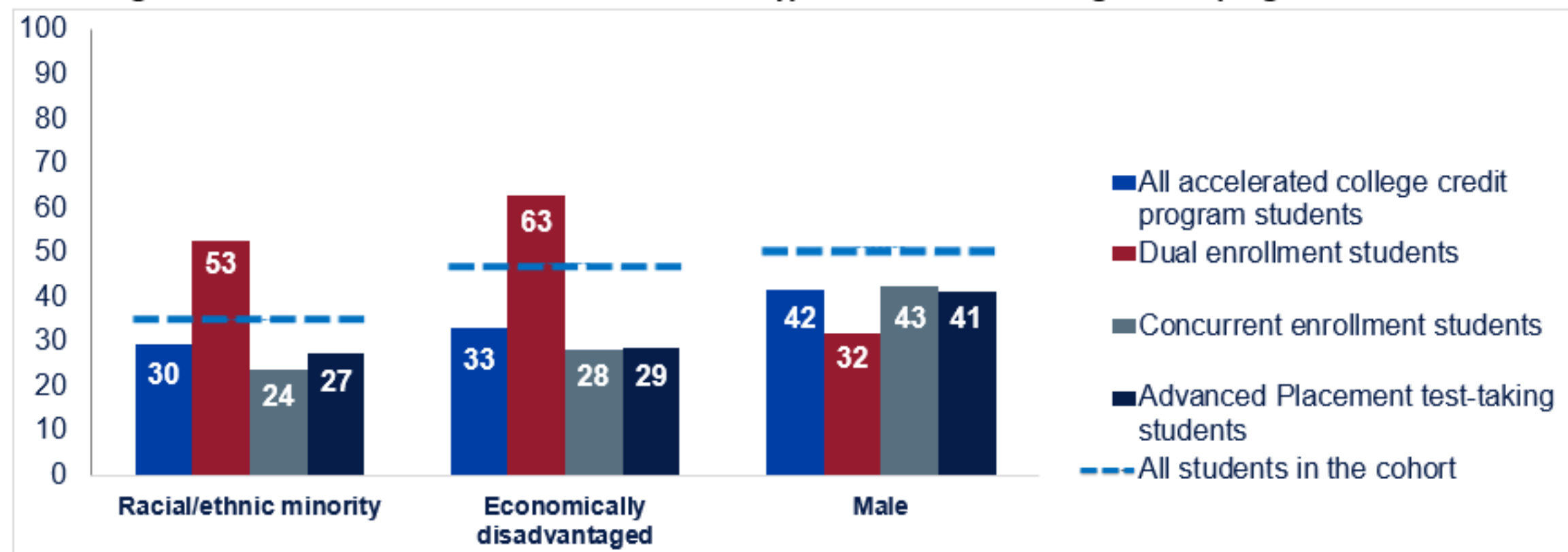


Note: The sample size is 8,726 students who were first-time 9th graders in Rhode Island public schools in 2013/14. Students could participate in more than one program. The percentages for dual enrollment, concurrent enrollment, and Advanced Placement test-taking displayed in the figure represent the percentage of students who participated in the given program, regardless of whether they also participated in any other programs. Source: Authors' analysis of data from RIDE.



Lower proportions of students participating in accelerated college credit programs were racial/ethnic minorities, male, or economically disadvantaged compared with the cohort as a whole

Percentage of students with each characteristic in each type of accelerated college credit program



Note: The sample size is 8,726 students who were first-time 9th graders in Rhode Island public schools in 2013/14. Source: Authors' analysis of data from RIDE.

Dual enrollment was primarily offered through CCRI;  
concurrent enrollment was primarily offered through RIC and URI

	Enrolled in <b>Concurrent</b>	Enrolled in <b>Dual</b>
Total students enrolled	2,223	336
RIC	76%	1%
URI	37%	3%
CCRI	2%	97%

Cohort of students who were in grade 9 in 2013/14. Percentages calculated from total number of students enrolled in the course type. Students could enroll in more than one program type and in more than one college.

# Accelerated program students by school characteristics

High school attended grade 9	Total	ANY College Credit Program	Ever Dual Enrollment	Ever Concurrent Enrollment	Took An AP Test
<i>Locale</i>					
Rural	10%	10%	6%	12%	10%
Suburban	67%	68%	38%	75%	69%
Urban	22%	21%	55%	12%	21%
Urban ring	2%	1%	2%	1%	1%
<i>Driving distance to nearest public college campus</i>					
<=1 mile (within walking distance)	6%	5%	29%	2%	2%
1-8 miles	64%	64%	55%	65%	63%
>8 miles	30%	32%	16%	33%	35%

Total N = 8,726. Cohort of students who were in grade 9 in 2013/14. Percentages calculated out of total in the accelerated program category.

Part II.  
**What are the impacts of  
accelerated college credit  
classes?**

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# This study compares students who were statistically similar in grade 8, before they had the chance to participate in these programs

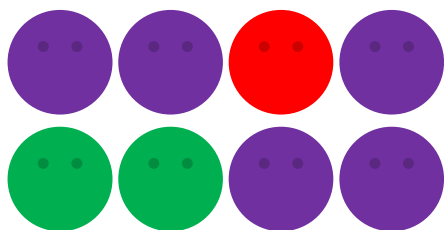
- Matched comparison between accelerated college credit program participants and non-participants who were similar to each other
  - To create similar groups for comparison, we limited analysis to approximately 3,900 students; program participants in this matched group are more like the average RI student. Results may be less applicable to high-performing program participants.
  - Analysis of the relationship of each individual program to outcomes used the same sample but a less rigorous design

# How this research study was designed

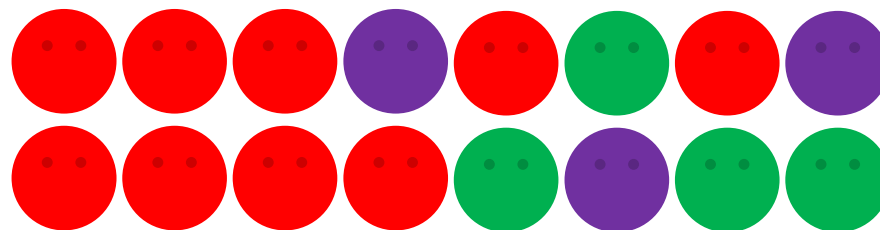
This study used “propensity score matching” to more accurately calculate the programs’ impact.

## Before matching

Participants



Non-participants



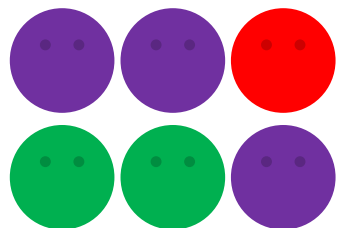
The participants are different from non-participants.

(Ex. More purples, fewer reds)

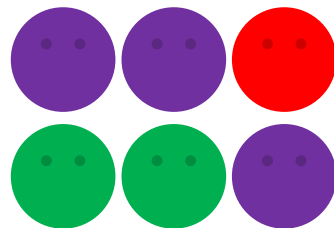


## After matching

Participants



Non-participants



Participants are matched to non-participants with similar characteristics. That allows for an apples-to-apples comparison between groups.

Students are matched by grade 8 test scores, demographics, absences, suspensions, and school characteristics.

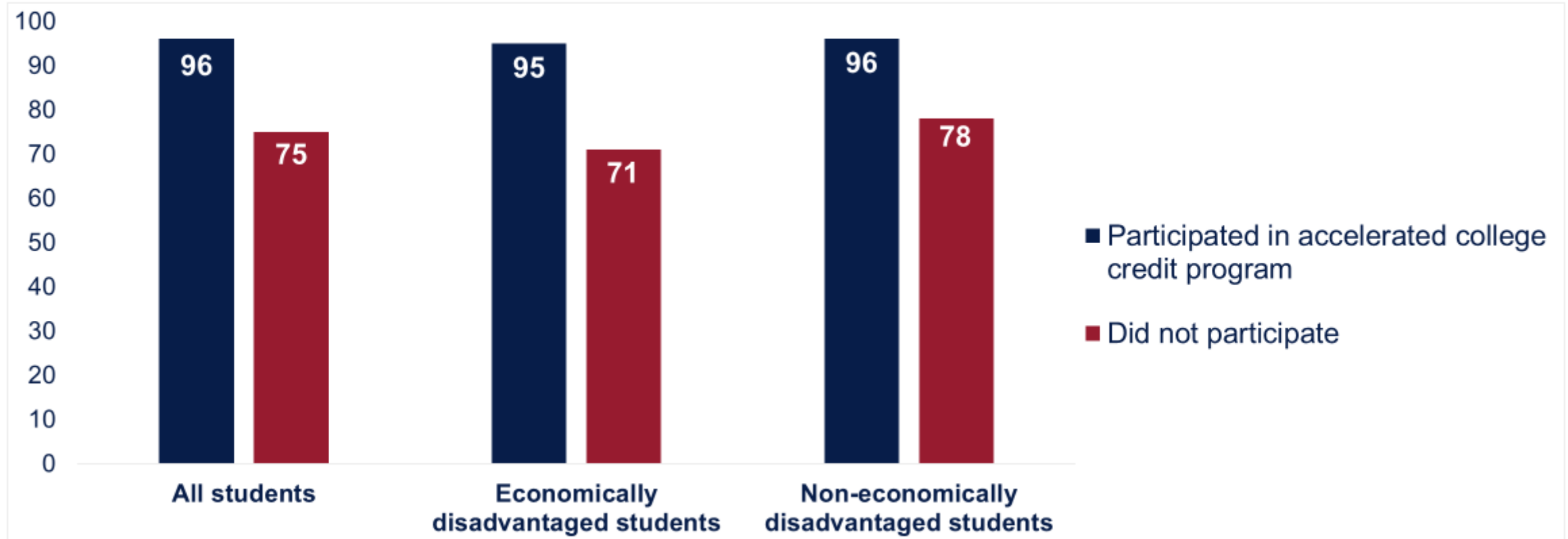


# Comparing accelerated college credit program participants with other similar students who did not take these programs:

- Accelerated college credit students are predicted to be **more likely** to:
  - Graduate high school
  - Enroll in college
  - Be college ready (avoid developmental education in a Rhode Island public college)
- The effect of participation on high school graduation, college enrollment, and college readiness are **similar** for **economically disadvantaged** students and their peers

# Accelerated college credit program participation has a positive impact on high school graduation

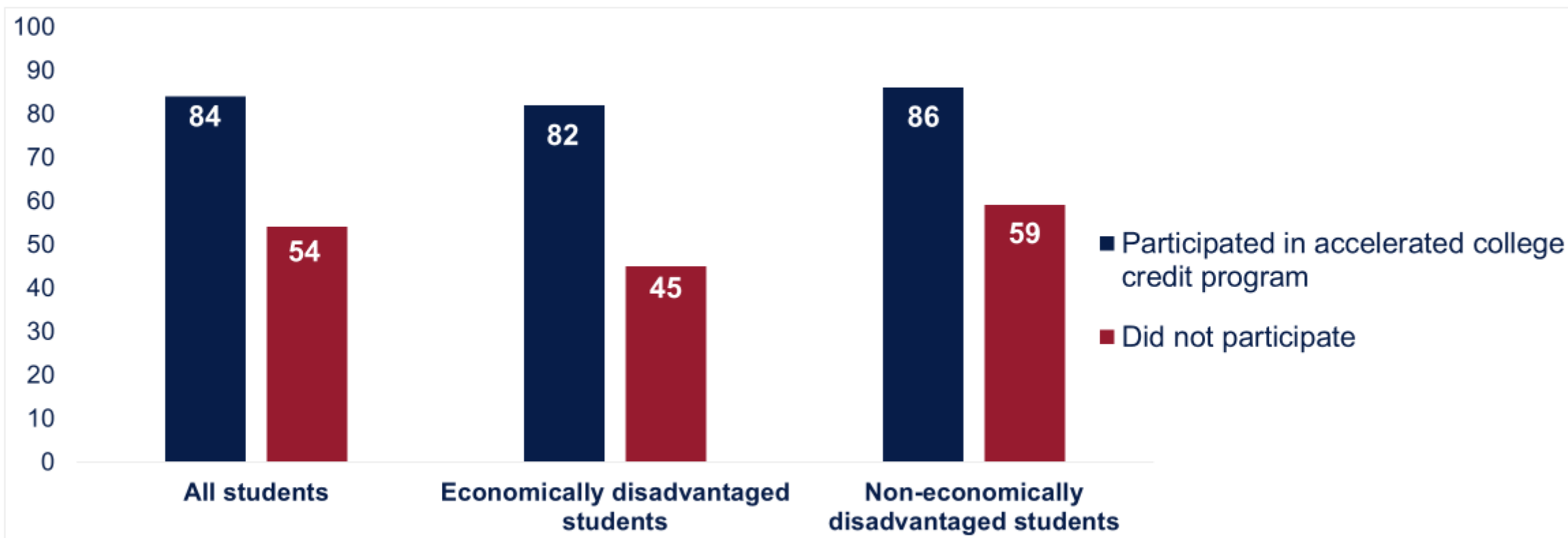
**Predicted probability of student graduating from high school (percent) based on model**



Note: The sample size is 3,916 students in a matched sample drawn from students who were first-time 9th graders in Rhode Island public schools in 2013/14. Predicted probabilities were estimated using a statistical model. Source: Authors' analysis of data from the Rhode Island Department of Education.

# Accelerated college credit program participation has a positive impact on enrolling in college within a year of graduating

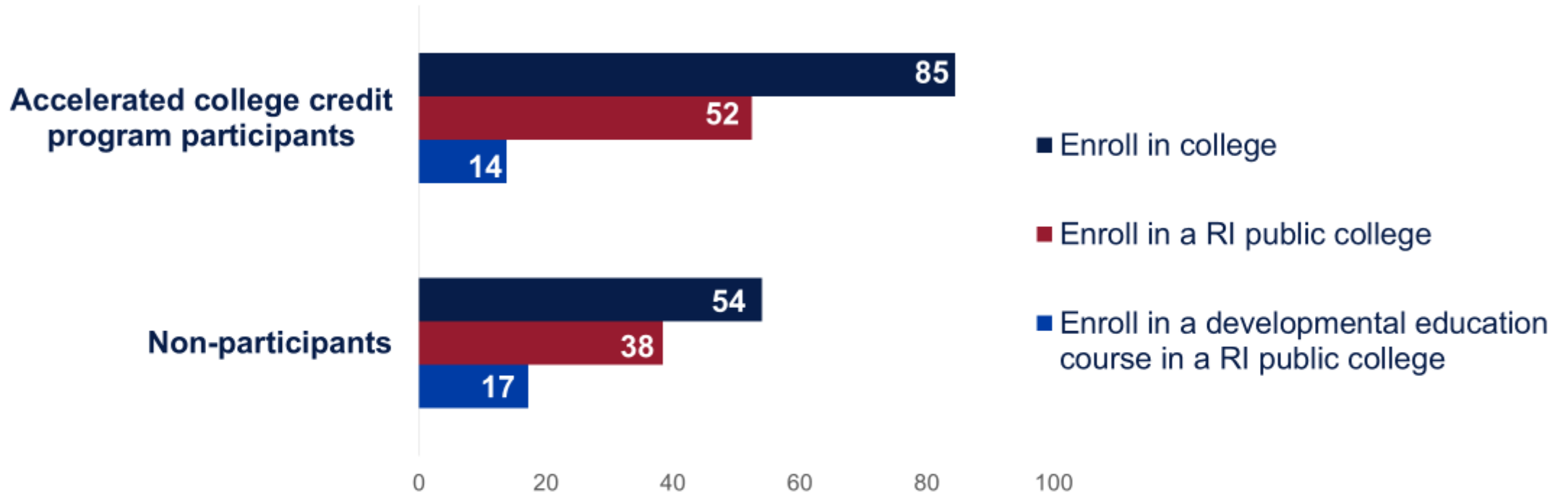
Predicted probability of student enrolling in college (percent) based on model



Note: The sample size is 3,916 students in a matched sample drawn from students who were first-time 9th graders in Rhode Island public schools in 2013/14. Predicted probabilities were estimated using a statistical model. Source: Authors' analysis of data from the Rhode Island Department of Education.

# Accelerated college credit program participation is associated with lower rates of enrollment in developmental education (college remediation) courses

**Predicted probability of student attaining each outcome (percent) based on model**



Note: The sample size is 3,916 students in a matched sample drawn from students who were first-time 9th graders in Rhode Island public schools in 2013/14. Developmental education course enrollment was available only for students who enrolled in a Rhode Island public college. Predicted probabilities were obtained using a statistical model to estimate the probability of four postsecondary outcomes on the full sample of 3,916 students: (a) enrolling in a Rhode Island public college and taking developmental education courses, (b) enrolling in a Rhode Island public college and not taking developmental education courses, (c) enrolling in another type of college, and (d) not enrolling in college. The predicted probabilities for enrolling in a Rhode Island public college shown in the figure are the sum of the predicted probabilities for (a) and (b); the predicted probabilities for enrolling in college are the sum of the predicted probabilities for (a), (b), and (c). Source: Authors' analysis of data from the Rhode Island Department of Education.

# Limitations

- This study is not based on a randomized experiment. Unmeasured differences between students who chose to participate in accelerated college credit programs and those who did not may account for the differences in outcomes.
  - Experimental studies have found the effects of dual enrollment courses in the range of 5–9 percentage point increases in high school graduation and 12–16 percentage point increases in college enrollment (Edmunds et al., 2017; Haxton et al., 2016).
- The study sample only included participants and non-participants who were similar to each other on average. As a result, many higher-achieving participants were excluded and the findings may not be accurate for such students.

# Conclusion

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**This research shows that our investments in accelerated college credit courses are working.**

**We should expand this work in coming years.**

- These programs are making a big difference in students' lives.
  - Graduation: +21 percentage points
  - College enrollment: +30 percentage points
  - College readiness: lower rate of needing developmental education (remediation) in college
- We should maintain—and, ideally, expand—the PrepareRI Dual Enrollment Fund
- We should expand these course options to schools that don't yet have them
  - For example, expanding AP and concurrent enrollment options in the urban core
  - A majority of states provide state funding to offset AP test-taking costs for students. RI does not.
- Future research through this partnership can help us learn more
  - We are continuing this research partnership in the coming year. Next, we will study how different features of accelerated college credit programs impact student outcomes, including: course length, course subject area, number of courses a student takes, etc.



# Learn More

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- Visit RIDE's accelerated college credit website:
  - <https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/DualEnrollment.aspx>
- Contact us:
  - Jessica Bailey, PhD – Research Scientist, Education Development Center, [jbailey@edc.org](mailto:jbailey@edc.org)
  - Katherine Shields, PhD – Research Scientist, Education Development Center, [kshields@edc.org](mailto:kshields@edc.org)
  - Tammy Warner – Assistant Commissioner, RI Office of the Postsecondary Commissioner, [tammy.warner@riopc.edu](mailto:tammy.warner@riopc.edu)
  - Spencer Sherman – Chief for Innovation, RI Department of Education, [spencer.sherman@ride.ri.gov](mailto:spencer.sherman@ride.ri.gov)

# Appendix

# Key terms

- **Accelerated college credit program.** A program that enables high school students to earn college credit. Three such programs were included in this study: dual and concurrent enrollment courses and AP courses.
- **Advanced Placement (AP) course.** A high school course that culminates in a standardized subject area assessment administered by the College Board.
- **Concurrent enrollment program.** A program that allows high school students to take approved college courses taught by instructors on staff at a student's high school.
- **Dual enrollment program.** A program that allows high school students to attend college courses taught by college faculty on either a public or a private college campus.
- **Predicted probability.** We used statistical models to predict how likely a student was to attain an outcome, after controlling for student and school characteristics. The probabilities shown in this report are based on those models.

# Program participation rates

	Number of Students in Class of 2017	ANY Accelerated College Credit Program	Specific Program Participation (Overlapping Groups)			
			Ever Dual Enrolled	Ever Concurrent Enrolled	Took An AP Test	Multiple Programs
Number	8,726	3,586	336	2,223	2,367	1,305
% of Class	100%	41%	4%	26%	27%	15%

N = 8,726. Cohort of students who were in grade 9 in 2013/14.

# Program participation rates: Mutually exclusive groups

			Specific Program Participation (Mutually Exclusive Groups)			
	Number of Students in Class of 2017	ANY College Credit Program	Dual Enrolled Only	Concurrent Enrolled Only	Took An AP Test Only	Multiple Programs
Number	8,726	3,586	229	950	1,102	1,305
% of Class	100%	41%	3%	11%	13%	15%

N = 8,726. Cohort of students who were in grade 9 in 2013/14.

# Accelerated program student characteristics, class of 2017

Characteristics in grade 8	Total	ANY College Credit Program	Ever Dual Enrollment	Ever Concurrent Enrollment	Took an AP Test
Male	51%	42%	32%	43%	41%
Racial/ethnic minority	35%	30%	53%	24%	27%
Free or reduced-price lunch eligible	48%	33%	63%	28%	29%
Attends urban high school	22%	21%	55%	12%	21%
College campus <=1 mile from high school	6%	5%	29%	2%	2%

Total N = 8,726. Cohort of students who were in grade 9 in 2013/14. Percentages calculated out of total in the accelerated program category. Students could participate in more than one program; categories are overlapping.

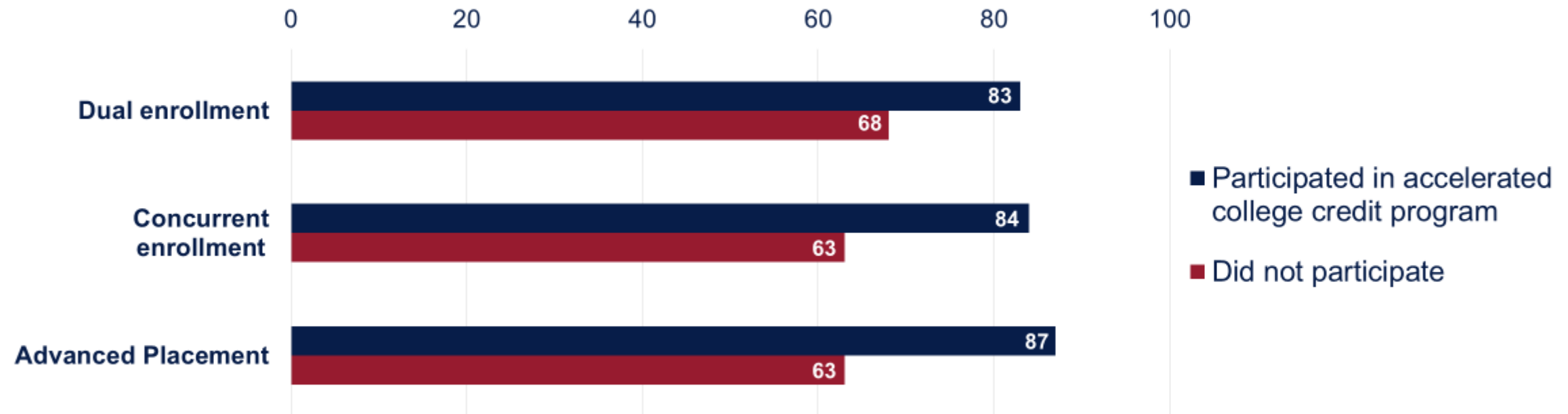


# Comparing dual enrollment vs concurrent enrollment vs AP

- Each of the three programs is associated with higher predicted rates of **high school graduation** and **college enrollment**, and with lower predicted rates of **developmental education course enrollment** at Rhode Island public colleges.
  - Findings were similar across the three programs for high school graduation and college readiness.
  - Although all three programs were associated with increased rates of college enrollment, AP test-taking was related to a larger increase than dual enrollment.
- **Note:** Because this analysis used a less rigorous method, this finding requires further research to confirm that program participation is responsible for these positive outcomes, so results should be interpreted with caution.

# Dual enrollment, concurrent enrollment, and Advanced Placement programs are each associated with increased predicted college enrollment rates compared with non-participation

**Predicted probability of student enrolling in college (percent) based on model**



Note: The sample size is 3,916 students in a matched sample drawn from students who were first-time 9th graders in Rhode Island public schools in 2013/14. Predicted probabilities were estimated using a statistical model. Participants in any accelerated college credit program were matched with non-participants; however, there were not separate matched groups representing each type of program. Fifteen percent of students participated in more than one type of program. Source: Authors' analysis of data from the Rhode Island Department of Education.

# References

Edmunds, J. A., Unlu, F., Glennie, E., Bernstein, L., Fesler, L., Furey, J., & Arshavsky, N. (2017). Smoothing the transition to postsecondary education: The impact of the early college model. *Journal of Research on Educational Effectiveness*, 10(2), 297–325. DOI: 10.1080/19345747.2016.1191574

Haxton, C., Song, M., Zeiser, K., Berger, A., Turk-Bicakci, L., Garet, M. S., et al. (2016). Longitudinal findings from the early college high school initiative impact study. *Educational Evaluation and Policy Analysis*, 38(2), 410–430.

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