



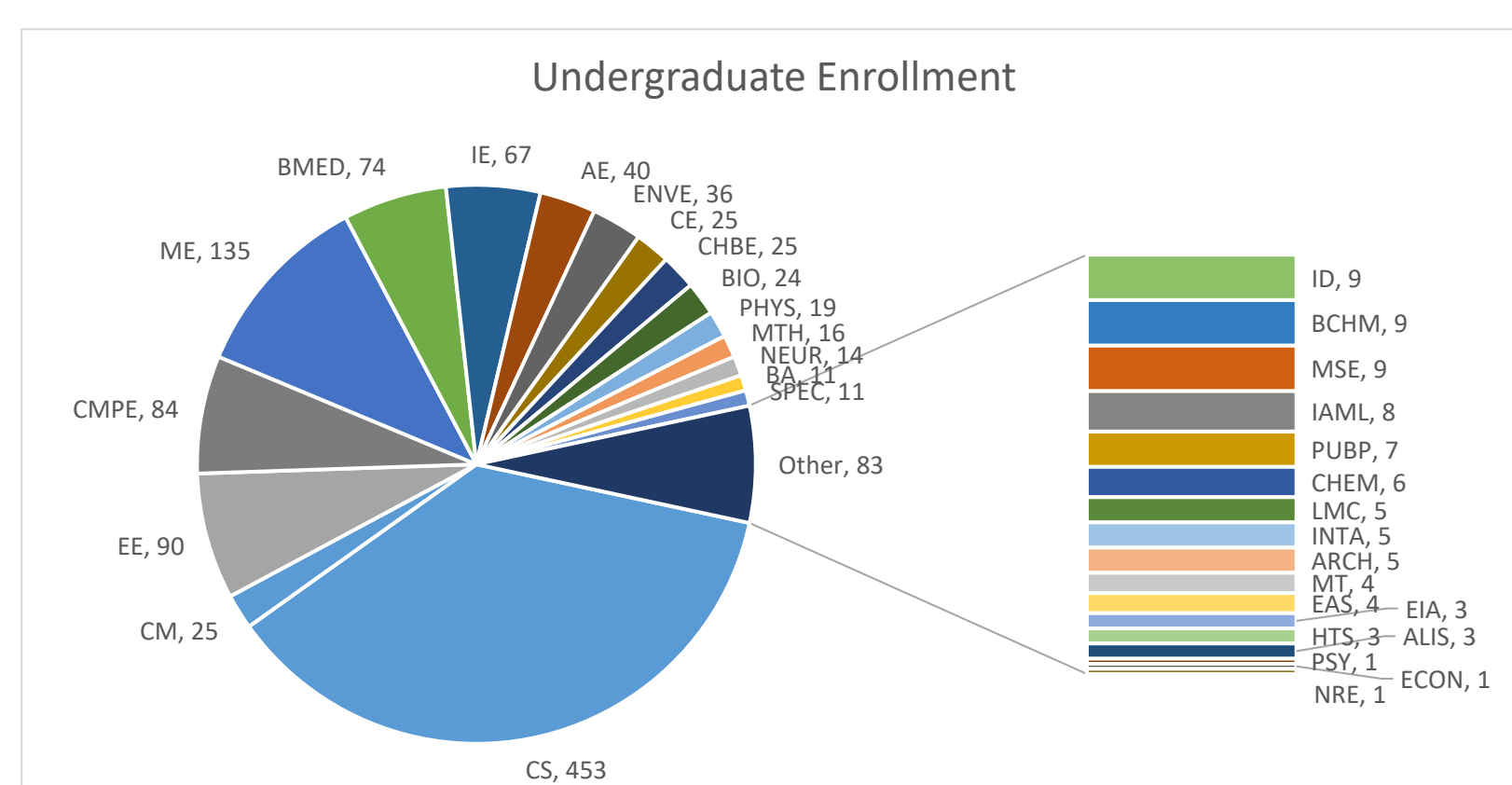
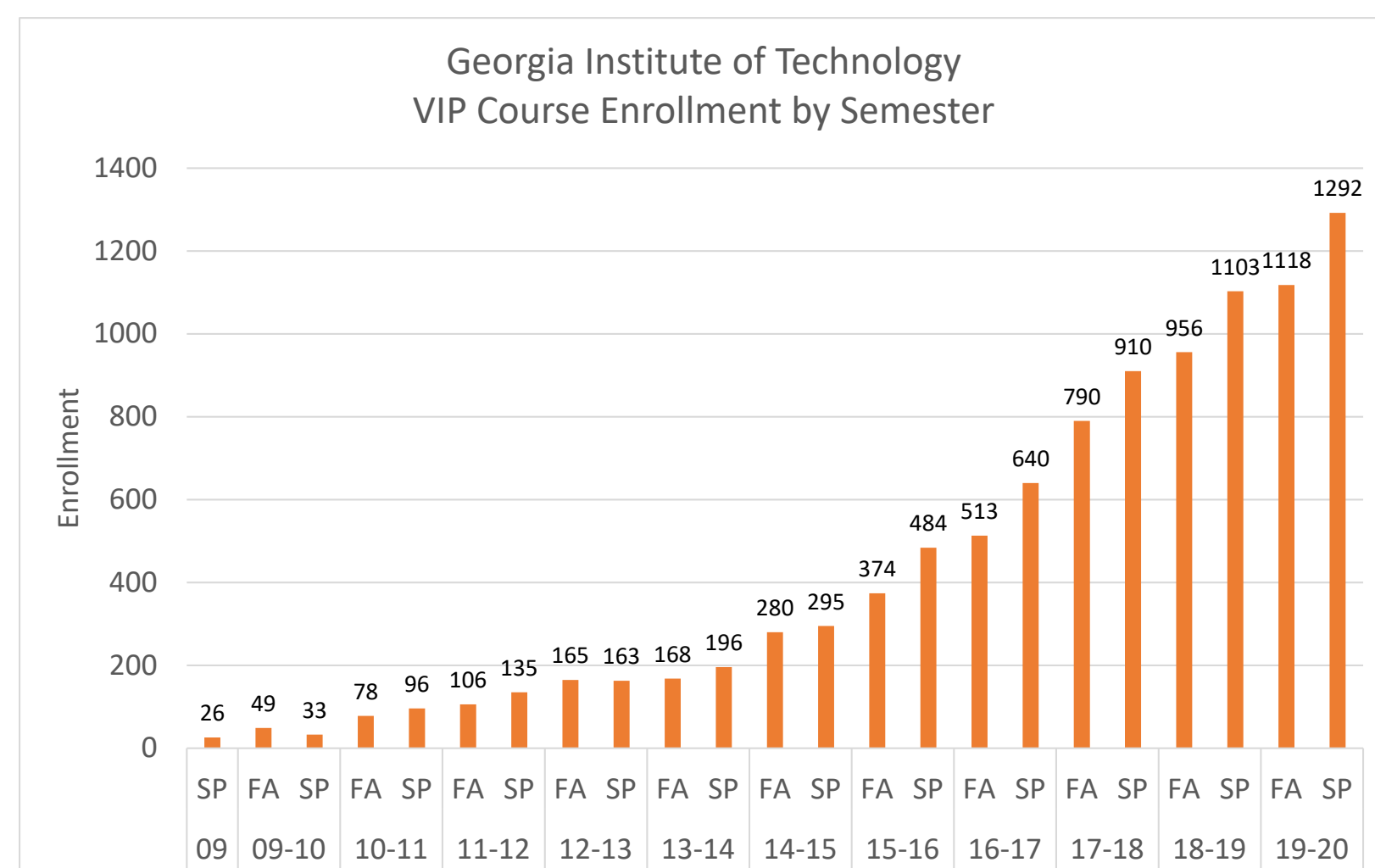
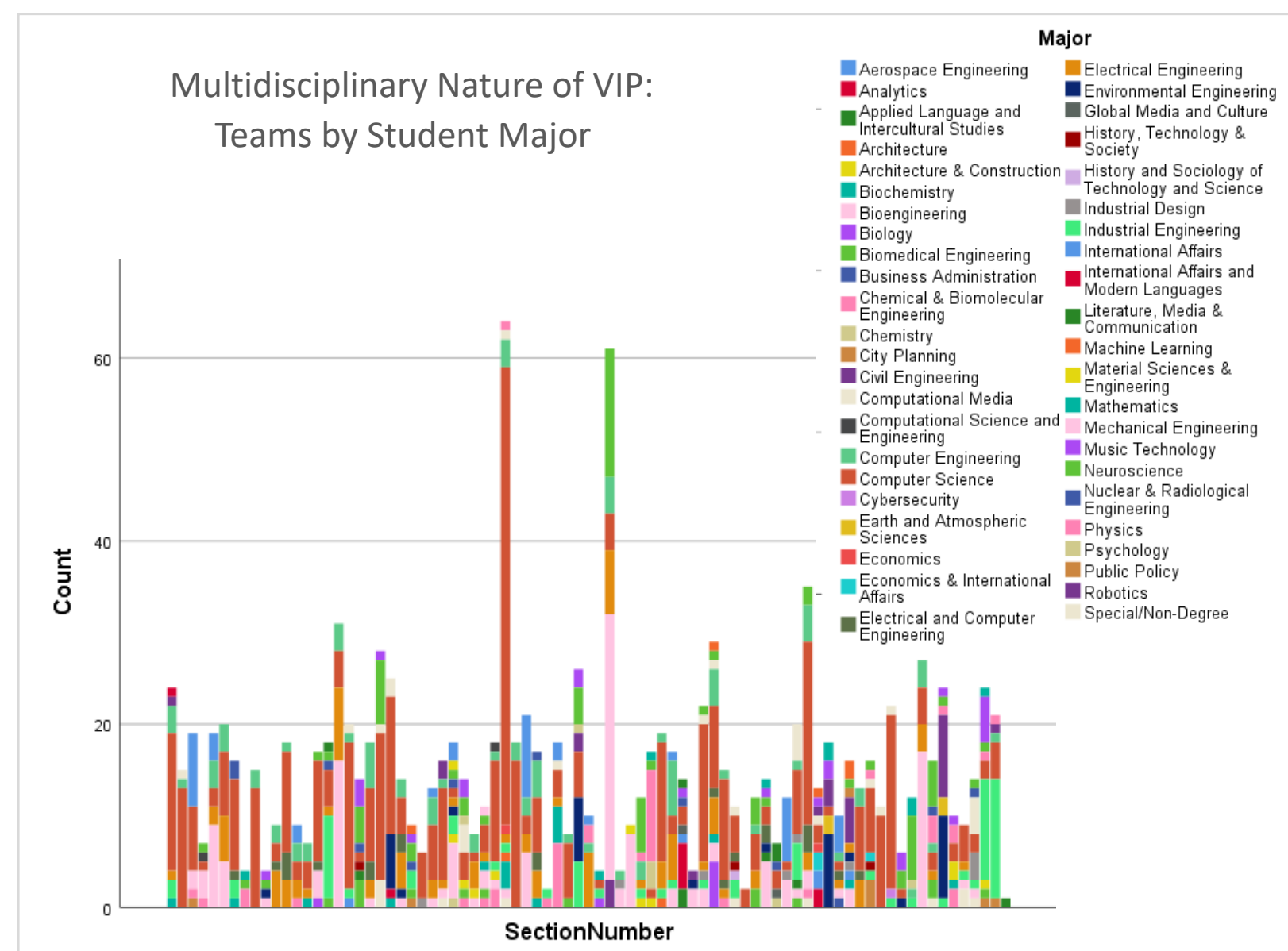
Policy, Persistence and Equity: Examinations of the VIP Program

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The VIP Program

The VIP Program combines faculty research and undergraduate education in a team-based context.

- Program:** Faculty lead student teams, with students making meaningful contributions to faculty research (or more broadly, scholarship and exploration).
- VIP Teams:** Multidisciplinary
10-20 students, (average = 16)
Faculty advisors, grad mentors
Meet weekly
- Students:** Sophomores, Juniors, Seniors, Graduate students
Earn 1-2 credits per semester
Can participate multiple semesters
Junior/Senior design options in some majors



Persistence by Credit Use Policy

Department policies on how VIP credits can count vary. Some incentivize multiple semesters of participation.

Research Question: Do different policies yield differing levels of persistence (multiple semesters of participation)?

Policy Example: If less than 5 VIP credits are earned, they all count as free electives
If 6 credits are earned, they all count as in-major electives

Studied 4 of 17 Policies

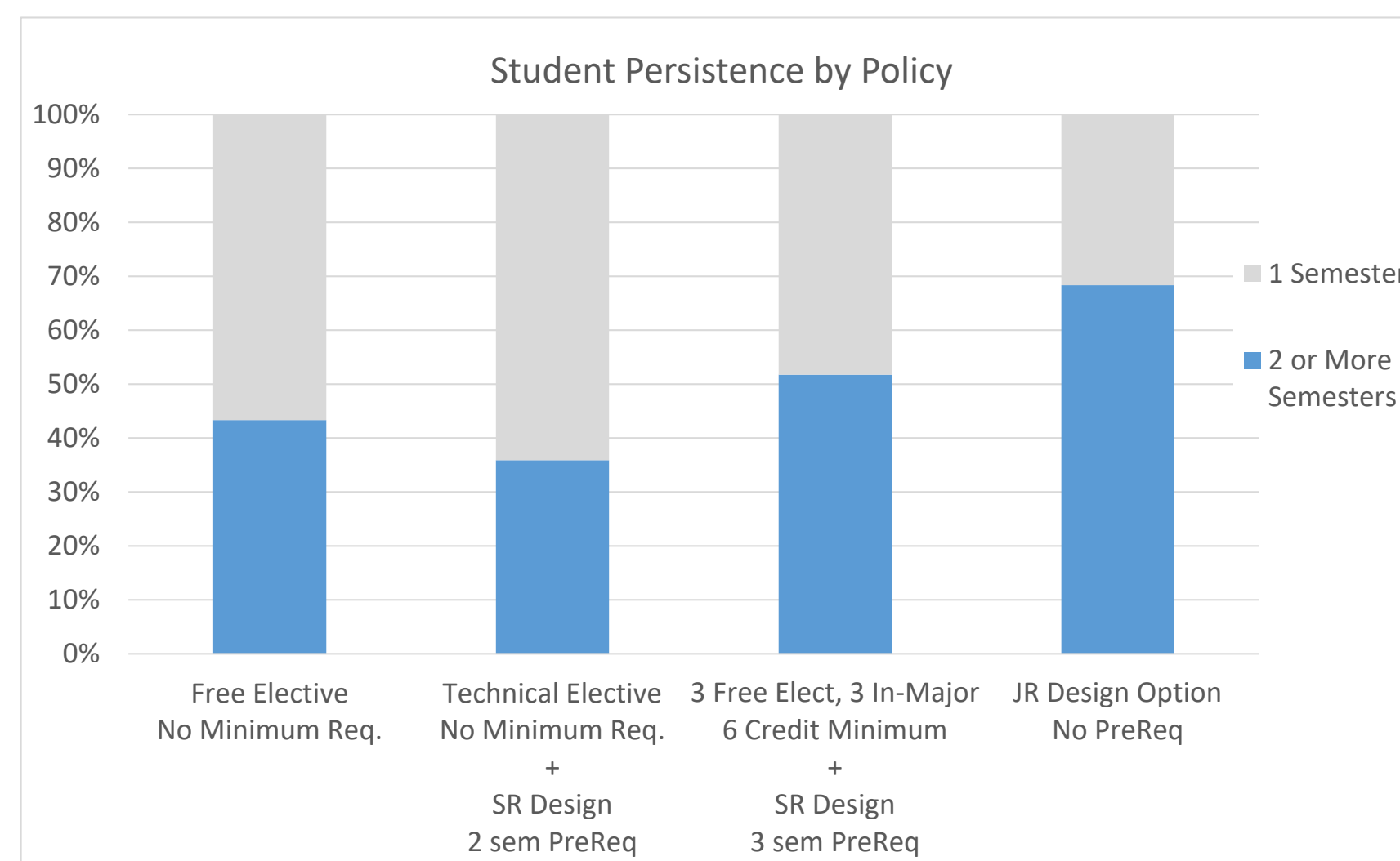
Policy selection for study:

- Policy in place during all semesters included in the study;
- No major policy changes between Fall 2014 and Spring 2017;
- A minimum of 100 students from the degree program across the cohorts studied.

Student Cohorts: Fall 2014 – Fall 2016

Policy	Students (N)
Free elective, <u>no</u> minimum	210
Technical elective, <u>no</u> minimum + Sr. Design with prerequisites	117
Partial in-major elective <u>with</u> minimum + Sr. Design with threshold	286
Jr. Design, 3 semesters, no threshold	256
Total	869

- ANOVA inappropriate (Levene's test for homogeneity sig.)
- Conducted Chi-Square analysis instead
 - Student groupings: Major
 - Outcome groupings: 1 semester, 2+ semesters
 - Significant (1 semester vs. 2+ semesters): $\chi^2(3, N = 869) = 45.891, p < .001$.



Conclusion: Different policies yield differing levels of persistence in the program.

Highest: Design sequence requiring no previous semesters of VIP
Lowest: In-major elective with no threshold

Persistence by Race/Ethnicity

Undergraduate research is one of 11 high impact experiences, defined by the AACU

- Correlated with higher graduation rates, higher GPAs, greater learning gains; As number of experiences increases, compensatory benefits for underrepresented groups
- Students who participate in undergraduate research are more likely to go into research-related careers

Nationally, black/African American and Hispanic/Latinx students participate in undergraduate research at lower rates than white and Asian students.

Category	Subgroup	Research with Faculty(%)
Race/Ethnicity	White	25
	Asian	23
	Hispanic or Latino	19
	Black or African American	18
First-generation status	Not first-generation	28
	First-generation	18
Transfer status	Started at institution	30
	Transfer student	15

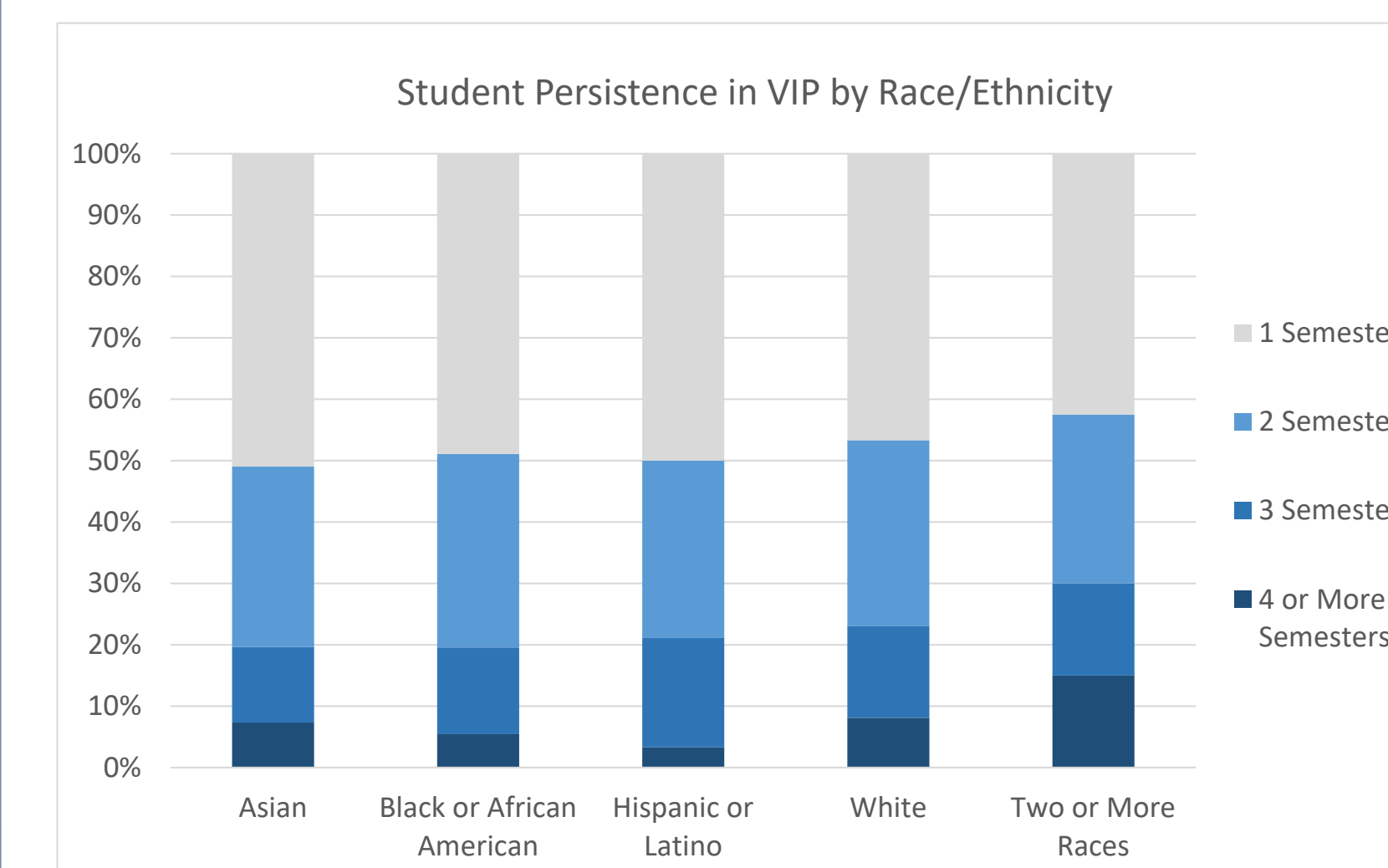
National Survey of Student Engagement, 2017

The VIP Program enrolls representative proportions of students from both groups, based on campus population.

Research Question: Does student persistence (number of semesters) in VIP differ by student race/ethnicity?

Student Cohorts: Spring 2009 - Fall 2015

- Allowed for enrollment data in three more semesters
Spring 2016 Fall 2016 Spring 2017
- Conducted analysis of variance
 - Met assumption for homogeneity of variance)
 - Not significant: $F(4, 1,251) = 1.54, p = .19$



N = 1256; 90 Hispanic/Latino, 92 Black/African American

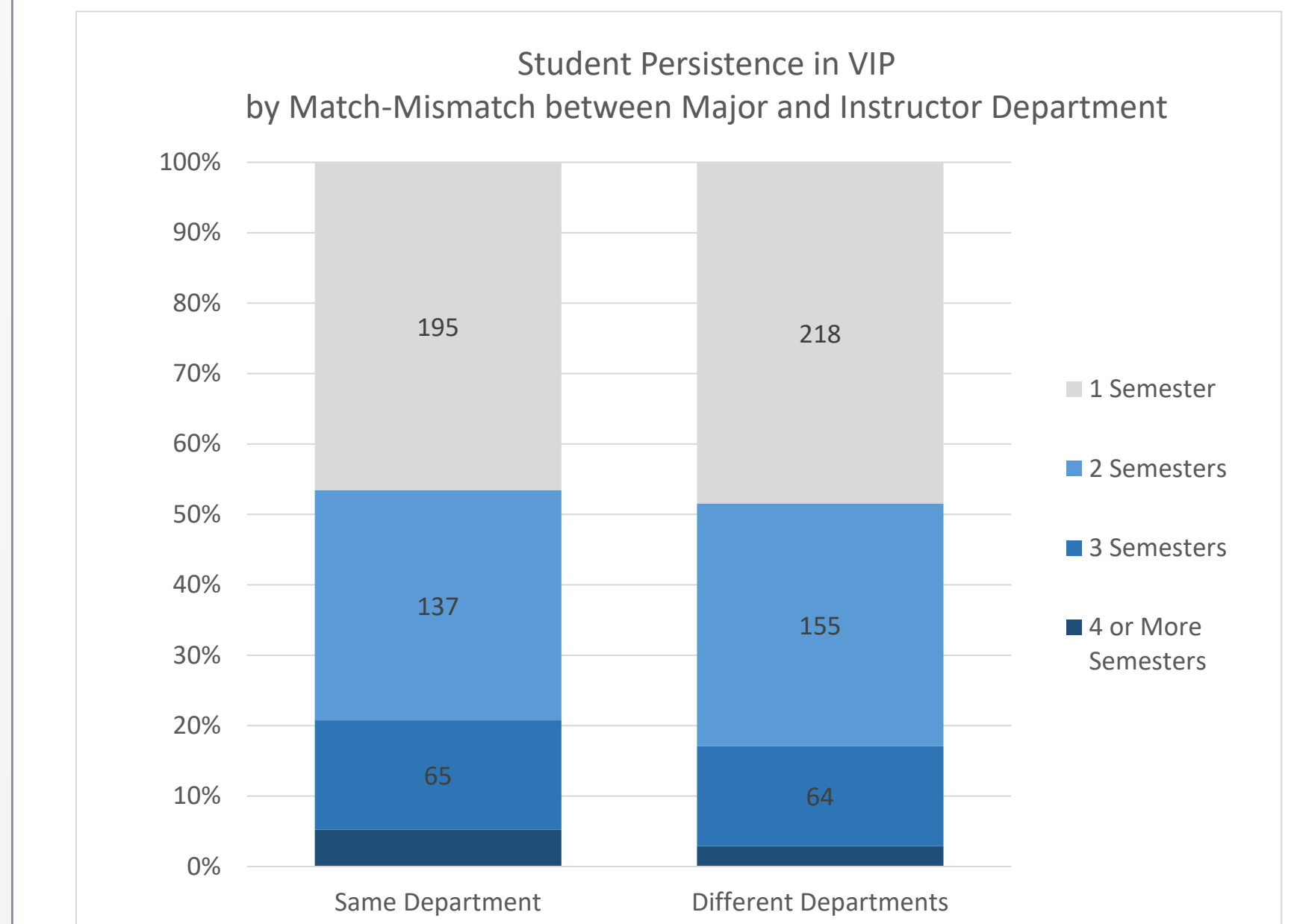
Conclusion: There is no correlation between student race/ethnicity and student persistence in VIP.

Persistence by Match-mismatch between Student Major and Instructor Department

VIP Teams are multidisciplinary.

Research Question: Does match-mismatch between student major and instructor department affect student persistence (number of semesters) in VIP?

- Student coding:
 - 0 - no instructors from home department
 - 1 - at least one instructor from student's department
- Conducted Analysis of Variance
 - Levene's test not significant
 - Not significant: $F(1, 867) = 1.99, p = .16$



Conclusion: Match or mismatch between student major and instructor department does not affect student persistence in the VIP Program.

This implies that VIP teams effectively engage students from a variety of majors, regardless of whether students are from the same department as their instructors.

Georgia Tech & the VIP Consortium

Georgia Tech is the lead partner institution in the VIP Consortium, with partner VIP programs at 36 institutions, with 25 in the U.S. and 11 outside the U.S.

