
College Outcomes Following Pandemic-Induced Changes in College Admissions Policies

Focus on 2021-22 First-Year Outcomes

Ashley Edwards
Parker Goyer
Jessica Howell
Michael Hurwitz
Samuel Imlay
Greg Perfetto

April 2023

Executive Summary

The Admissions Research Consortium (ARC) is a collaborative research initiative that aims to help participating institutions gain insight into their own and their peers' admissions processes and outcomes, as well as changes in student behavior influenced by the covid-19 pandemic. Guided by a Core Advisory Committee (with representatives from the Association for Institutional Research [AIR], American Association of Collegiate Registrars and Admissions Officers [AACRAO], National Student Clearinghouse [NSC], and senior admission and enrollment practitioners) and a Research Advisory Committee composed of academic and institutional researchers, evidence and insights from ARC will inform future practice and policy in the years following the pandemic. Previously published research from this consortium examined changes in Fall 2021 applications, admissions, and enrollment, with a focus on students' test score disclosure choices and stability in the characteristics of the student body over time (Howell et al., 2022a). This new research presents initial findings on first-year college grades, credit accumulation, and retention into the second year for Fall 2021 first-year enrollees compared to prior cohorts of first-year students at ARC institutions. These findings can be leveraged to inform discussions on future admission policies and practices as well as student support services.

Approximately 60 colleges, representing more selective public and private four-year institutions in the U.S., provided College Board with data on their applications, admissions, enrollment, performance, credits, and retention from 2018-19 to 2021-22. This information was merged with College Board assessment data to enable research on how college-going trends and outcomes were affected by pandemic-related disruptions. The data and analyses presented in this Research Brief are meant to inform admissions practitioners of point-in-time trends across a subset of institutions. The evidence does not necessarily generalize to all higher education institutions, nor should the patterns documented in 2021-22 be viewed as definitively stable in future years given the potential on-going and evolving effects of the pandemic on both students and institutions. ARC will continue as a multi-year research initiative to better understand longer-term trends and outcomes. Our research efforts will continue to rely on data from ARC institutions, expand to examine data that more broadly represent all higher education institutions, and incorporate findings from other researchers working in this space.

Four themes emerged from the initial analyses of 2021-22 first-year student outcomes.

Theme 1: Average first-year grades rose in the 2019-20 and 2020-21 academic years. Average first-year grades fell in 2021-22 to a level similar to the 2018-19 pre-pandemic academic year.

- Average first-year GPAs (FYGPA) rose in the 2019-20 and 2020-21 academic years when pandemic related disruptions caused many colleges to adjust grading policies and practices. Average performance fell in 2021-22 and is more aligned to 2018-19 performance averages.
- Relative to pre-pandemic data, roughly half of ARC institutions experienced an increase in the proportion of first-year students earning FYGPAs below 2.5 and roughly half experienced a decrease.
- Enrolled first-year students in the 2021-22 academic year who disclosed their test scores earned average FYGPAs roughly 0.2 points higher, on average, than score non-disclosers.

Theme 2: Average first-year credit accumulation fell slightly during the two most recent academic years relative to prior cohorts.

- Across all ARC segments, average credits earned in the two most recent academic years (2021-22 and 2020-21) were lower than during academic years when credit loads were largely unaffected by the pandemic (2018-19 and 2019-20).
- Roughly two-thirds of ARC institutions experienced an increase in the proportion of first-year students earning credits below the typical (modal) number of credits in 2021-22 compared to 2018-19.
- Enrolled first-year students in the 2021-22 academic year who disclosed their test scores earned approximately 1-2 more first-year credits, on average, than score non-disclosers (based on a 30 credit per year scale).

Theme 3: Average retention rates into the second year of college were relatively flat between 2018-19 and 2021-22 cohorts.

- First to second year retention rates at ARC institutions were largely unchanged between the 2018-19 and 2021-22 first-year cohorts, ranging between 91.5% and 92.1%.
- Enrolled first-year students in the 2021-22 academic year who disclosed test scores had retention rates that were 3 percentage points higher than non-disclosers.

- Enrolled students with both lower performance (FYGPAs < 2.5) and below-typical credit accumulation had the lowest retention rates in all four ARC institutional segments, ranging from 66% to 80%. By contrast, students with higher performance and typical credit accumulation had the highest retention rates, exceeding 96% in all four ARC segments.
- First-year students in 2021-22 who had both lower performance and below-typical credit accumulation were less likely to have disclosed a test score than students with higher performance and/or typical credit accumulation. Because these students are not disclosing test scores, institutions have less visibility into the academic preparation of students with the greatest retention risk.

Theme 4: Across all ARC institutional segments, students who disclosed test scores have the strongest first-year outcomes, while students with no test or who withheld a test score have the weakest first-year outcomes. The SAT continues to be a valid predictor of all three first-year outcomes—grades, credits, and retention.

- Across all ARC institutional segments, average first-year outcomes in 2021-22 are strongest for students who disclosed their test scores. Compared to disclosers' outcomes, average FYGPAs, credits earned, and retention are slightly lower for students who withheld SAT scores and lower still for those with no test score or who withheld an ACT score.
- Among first-year students with the same high school grades, ARC students with higher SAT scores have higher average first-year grades, credit accumulation, and retention rates. The predictive validity of the SAT is consistently strong for both score disclosers and non-disclosers at ARC institutions.

Contents

- Executive Summary 2**
- The Admissions Research Consortium (ARC) 8**
 - Guiding Principles for Interpreting ARC Data 8
 - ARC Data Sample and Definitions 9
- Pre-Collegiate Academic Achievement Differences 12**
- Theme 1: First-Year Grades14**
 - Averages and Differences by Score Disclosure Status 14
 - Variation Across ARC Institutions 14
 - Variation by Intended College Major15
- Theme 2: First-Year Credit Accumulation 17**
 - Averages and Differences by Score Disclosure Status 17
 - Variation Across ARC Institutions 18
- Theme 3: First-Year Retention 19**
 - Averages and Differences by Score Disclosure Status 19
 - Variation Across ARC Institutions 20
 - Patterns Among Students with Retention Risk and Unretained Students 21
- Theme 4: Patterns Across All First-Year Outcomes 26**
- Conclusion 28**
- References 36**
- About College Board 37**
 - College Board Research 37

List of Tables and Figures

Figure 1: Distribution of High School Grades Among Enrolled First-Year Students at ARC Institutions, by Score Disclosure Status and ARC Segment (Fall 2021)

Figure 2: Distribution of SAT Scores Among Enrolled First-Year Students at ARC Institutions, by Score Disclosure Status and ARC Segment (Fall 2021)

Figure 3: Average First-Year GPA, by Cohort and Score Disclosure Status

Figure 4: Change in the Percentage of First-Year Enrollees with FYGPA<2.5, 2021-22 Relative to 2018-19 First-Year Students

Figure 5: Histogram of the Distribution of Average FYGPAs, by Score Disclosure Status and ARC Segment

Figure 6: Histogram of the Distribution of Average FYGPAs Among Students Intending to Major in STEM, by Score Disclosure Status and ARC Segment

Figure 7: Average First-Year Credit Accumulation, by Cohort and Score Disclosure Status

Figure 8: Change in the Percentage of First-Year Enrollees Earning Below Typical Number of Credits, 2021-22 Relative to 2018-19 First-Year Students

Figure 9: Average First-Year Retention Rate, by Cohort Score Disclosure Status

Figure 10: Change in the Percentage of First Year Class Retained to the Second Year, 2021-22 Relative to 2018-19 First-Year Student

Figure 11: First-Year Retention Rates in 2021-22, by Performance and Progress Risk and ARC Segment

Figure 12: Fall 2022 Transfer Patterns Among Unretained ARC Students from 2021-22 First-Year Class, by ARC Segment

Figure 13: All First-Year Student Outcomes, by ARC Segment and Score Disclosure Status

Figure 14: Relationship Between FYGPA and SAT Scores Among Students with the Same High School Grades, by Disclosure Status

Figure 15: Relationship Between Credit Accumulation and SAT Scores Among Students with the Same High School Grades, by Disclosure Status

Figure 16: Relationship Between Retention Rates and SAT Scores Among Students with the Same High School Grades, by Disclosure Status

Table 1: Average Characteristics of First-Year Enrollees, by Performance and Progress Risk Factors and ARC Segment

Table 2: Characteristics of Unretained and Retained 2021-22 First-Year Students at ARC Institutions

Appendix Figure A1: Average First-Year GPA, by Cohort, Score Disclosure Status, and ARC Segment

Appendix Figure A2: Average First-Year Credit Accumulation, by Cohort, Score Disclosure Status, and ARC Segment

Appendix Figure A3: Average First-Year Retention Rate, by Cohort, Score Disclosure Status, and ARC Segment

Appendix Figure A4: Fall 2019 Transfer Patterns Among Unretained ARC Students from 2018-19 First-Year Class, by ARC Segment

Appendix Figure A5: Relationship Between FYGPA and SAT Scores Among Students with the Same High School Grades

Appendix Figure A6: Relationship Between Credit Accumulation and SAT Scores Among Students with the Same High School Grades

Appendix Figure A7: Relationship Between Retention Rates and SAT Scores Among Students with the Same High School Grades

Appendix Table A1: Attributes of ARC Institutions and Institutional Segments

Appendix Table A2: Cohort Detail on Pandemic Disruptions Timing

The Admissions Research Consortium (ARC)

The Admissions Research Consortium (ARC) is a collaborative research initiative that aims to help participating institutions gain insight into their own and their peers' admissions processes and outcomes, as well as changes in student behavior influenced by the covid-19 pandemic. Guided by a Core Advisory Committee (with representatives from the Association for Institutional Research [AIR], American Association of Collegiate Registrars and Admissions Officers [AACRAO], National Student Clearinghouse [NSC], and senior admission and enrollment practitioners) and a Research Advisory Committee composed of academic and institutional researchers, evidence and insights from ARC will inform future practice and policy in the years following the pandemic. Previously published research from this consortium examined changes in Fall 2021 applications, admissions, and enrollment, with a focus on students' test score disclosure choices and stability in the characteristics of the student body over time (Howell et al., 2022a). This new research presents initial findings on first-year college grades, credit accumulation, and retention into the second year for Fall 2021 first-year enrollees compared to prior years. These findings can be leveraged to inform discussions on future admission policies and practices as well as student support services.

Approximately 60 colleges, representing more selective public and private four-year institutions in the US, provided College Board with data on their applications, admissions, enrollment, performance, credits, and retention from 2018-19 to 2021-22. This information was merged with College Board assessment data to enable research on how college-going trends and outcomes were affected by pandemic-related disruptions. The data and analyses presented in this Research Brief are meant to inform admissions practitioners of point-in-time trends across a subset of institutions. The evidence does not necessarily generalize to all higher education institutions, nor should the patterns documented in 2021-22 be viewed as definitively stable in future years given the potential on-going and lasting effects of the pandemic on both students and institutions. ARC will continue as a multi-year research initiative to better understand longer-term trends and outcomes. Our research efforts will continue to rely on data from ARC institutions, expand to examine data that more broadly represent all higher education institutions, and incorporate findings from other researchers working in this space.

Guiding Principles for Interpreting ARC Data

There has never been a college application cycle like Fall 2021. When examining changes brought about by the pandemic, it is critical to recognize the many things simultaneously affecting students and institutions: a global health crisis, a domestic economic crisis, learning losses, mental health challenges, changes in opportunities to take standardized assessments, and changes to college applications processes and practices including a near-universal shift to test optional admissions policies that allowed students the opportunity to choose whether to disclose or withhold their standardized test scores when applying. The ARC Core Advisory Committee and Research Advisory Committee members have

cautioned about the importance of interpreting all data with care according to three principles.

1. **Avoid causal interpretations of descriptive, correlational data as well as confirmation bias.** With so many factors changing simultaneously, the analyses in this Brief describe the combined effect of all factors on students and colleges and do not provide causal evidence on the impact of any one factor on students or colleges. The data in this Brief are presented in a straight-forward manner and without interpretation that confirms any perspective or belief. The data are intended to fuel discussion and further research, both quantitative and qualitative.
2. **Be clear about what is not measurable or not visible in the data and where it is impossible to ensure that analyses are comparing apples to apples.** The pandemic created disruptions to learning, mental health, physical health, opportunities to test, etc. in ways that were not uniformly experienced – geographically, socioeconomically, or demographically. Most of these factors are likely to influence choices and outcomes, yet impossible to measure in existing data and thus may conflate results.
3. **Recognize the dynamic nature of the moment and avoid the urge to craft a definitive narrative based on one point in time or a single data point.** Because the impacts of the covid-19 pandemic are multi-dimensional and not uniformly experienced, the data in this Brief must be viewed as part of a larger story that is still unfolding as we continue to study (a) how the 2021 cohort progresses through college, (b) how future cohorts of students navigate the college-going process, and (c) how college policies and practices continue to change. The student and college behavior documented in this Brief is still evolving in response to the pandemic, longstanding educational disparities, and the interaction of those factors.

ARC Data Sample and Definitions

ARC Data Sample

In 2021, ARC institutions shared administrative data on applications, admissions, enrollment, performance, credits, and retention from 2018-19 to 2021-22. These data, which also include a robust set of student demographic and academic variables, were merged to College Board assessment data to enable insight into students who disclosed and withheld SAT test scores in the first year of widespread test optional admissions policies brought on by the pandemic. This Research Brief provides initial evidence on first-year outcomes based on the combined dataset, which covers a sample of 59 four-year public and private nonprofit institutions.

We categorize these 59 institutions into four ARC institutional segments defined by institutions' sector and selectivity:¹

- **More Selective Private Colleges:** 21 private institutions with admit rates below 25%
- **Selective Private Colleges:** 18 private institutions with admit rates above 25%
- **More Selective Public Colleges:** 11 public institutions with admit rates below 60%
- **Selective Public Colleges:** 9 public institutions with admit rates above 60%

ARC colleges in the More Selective Private and More Selective Public segments are quite similar to all institutions in those same segments, while ARC colleges in the Selective Private and Selective Public segments tend to be more selective than non-ARC institutions in those same segments (see Appendix Table A1 for more detail).

Each of the four cohorts of first-year students (2018-19, 2019-20, 2020-21, and 2021-22) had a unique combination of high school and college experiences. The table below provides a brief description of how and when the pandemic disrupted students, which makes it clear that three of the past four cohorts experienced some amount of pandemic disruption to learning, transition to college, first year of college, and mental and physical health (see Appendix Table A2 for more detail), and that each cohort was impacted in different ways.

| Timing of Pandemic Disruptions by Cohort | | |
|---|--|--|
| Students who were <u>college freshmen</u> in... | Had these <u>high school</u> experiences... | Had these <u>college</u> experiences... |
| 2018-2019 | <ul style="list-style-type: none"> • No pandemic disruptions | <ul style="list-style-type: none"> • No pandemic disruptions |
| 2019-2020 | <ul style="list-style-type: none"> • No pandemic disruptions | <ul style="list-style-type: none"> • Pandemic disruptions began |
| 2020-2021 | <ul style="list-style-type: none"> • Pandemic disruptions began | <ul style="list-style-type: none"> • Substantial pandemic disruptions |
| 2021-2022 | <ul style="list-style-type: none"> • Substantial pandemic disruptions | <ul style="list-style-type: none"> • Minimal pandemic disruptions |

¹ Admit rates are based on data from ARC colleges and are calculated as a weighted average using Fall 2018-2020 application data.

ARC Data Definitions

Data from ARC institutions was merged with College Board assessment data to enable research insights into test score disclosure. Because the final dataset includes all observable test scores from either the institution or College Board, when considering SAT/ACT scores, we distinguish between disclosed SAT/ACT scores, withheld SAT scores, and students with no test score or a withheld ACT score. **Disclosed SAT/ACT scores** are SAT/ACT scores that students submitted to ARC colleges for consideration in the admissions process. **Withheld SAT scores** are SAT scores that applicants withheld from colleges, but that are observable in College Board administrative data. We define withheld SAT scores from College Board administrative data by the highest combination of SAT section scores from across all of a student's SAT scores. Finally, a third category of students, referred to as **No-Test / ACT Withheld scores**, are students who did not disclose an SAT or ACT score to the ARC institution, who do not have a recorded SAT score on file with College Board, and who may either have an ACT score that they withheld or no SAT or ACT score. In the figures below, we often display data for all three of these categories of students. Occasionally, the latter two categories are combined and referred to as **Non-Disclosers** to simplify the visual representation of the data.

Underrepresented Minority (URM) students are defined as students who are Black, Hispanic/Latinx, Native American, Native Hawaiian/Pacific Islander, and Two or More Races.

Parental education and **high school GPA** are self-reported by students on College Board questionnaires. **First generation** is defined as not having a parent who has completed a college degree.

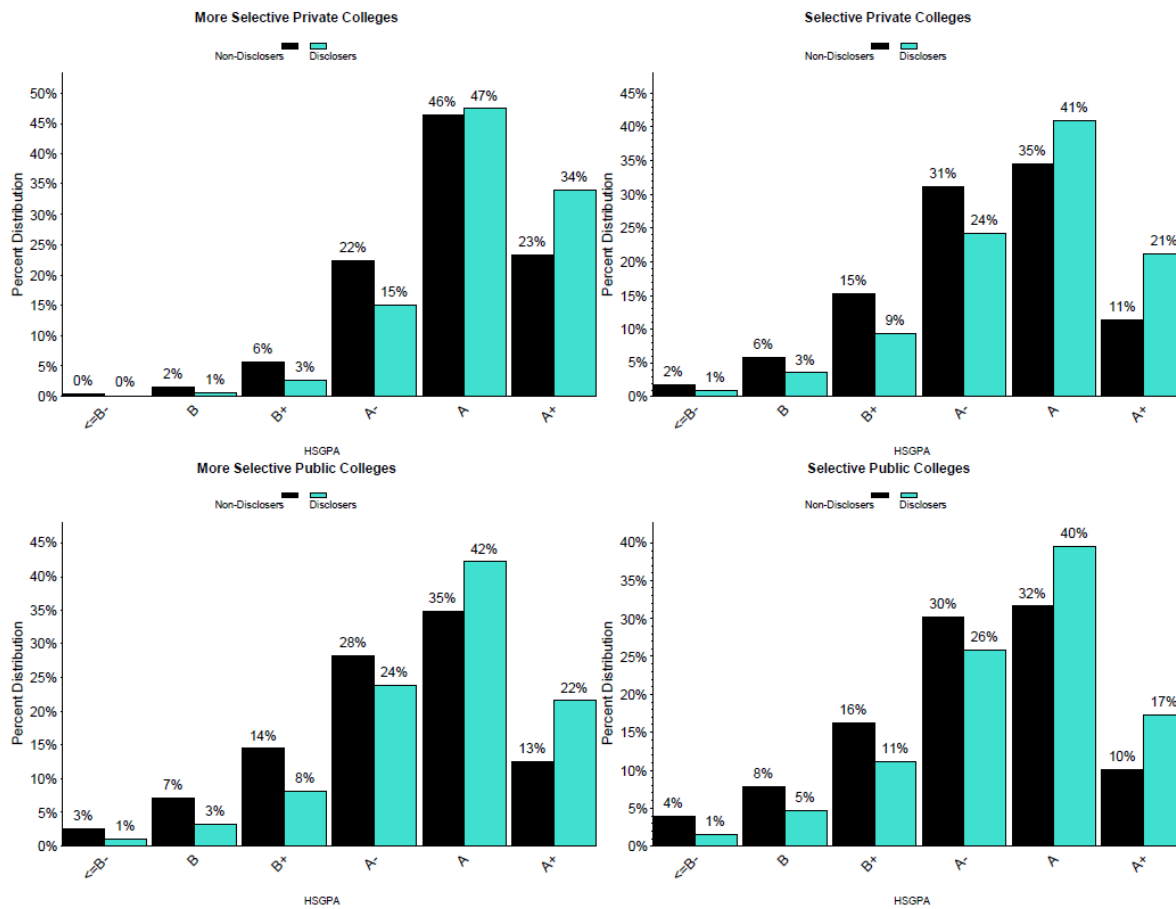
Neighborhood challenge is a neighborhood-level attribute constructed based on U.S. Census data and a nationally representative sample of high school graduates. It is a composite measure of factors known to be related to educational opportunities and outcomes and in this analysis, serves as a proxy for socioeconomic status. Neighborhood challenge is expressed on a 1 – 100 percentile scale, where higher values indicate higher levels of challenge related to educational opportunities and outcomes. For example, a neighborhood with a challenge level of 64 has a higher level of educational challenge than 64% of neighborhoods in the U.S. Likewise, 20% of U.S. neighborhoods fall into each quintile of neighborhood challenge. **High neighborhood challenge** is defined to be above the median value of 50.²

² For more data and methodology detail, see <https://secure-media.collegeboard.org/landscape/comprehensive-data-methodology-overview.pdf>.

Pre-Collegiate Academic Achievement Differences

Prior research demonstrates that nearly half of all applications to ARC institutions in Fall 2021 included a test score for consideration in admissions, and that applicants with higher scores were likely to disclose those higher scores, while applicants with lower scores were likely to withhold those scores from the institution (Howell et al., 2022a). This research showed that differences in score disclosure behavior are driven by differences in test scores, not differences in demographic attributes of the applicants. Applicants who disclose test scores look different on a variety of other academic measures (e.g., HSGPA) than applicants who withhold scores; not surprisingly, similar differences in academic measures of enrolled students also differ by score disclosure status. Figure 1 shows that enrolled first-year students who disclosed SAT/ACT scores are more likely to have higher HSGPAs and non-disclosers are more likely to have lower HSGPAs. This pattern is apparent in all four ARC institutional segments.

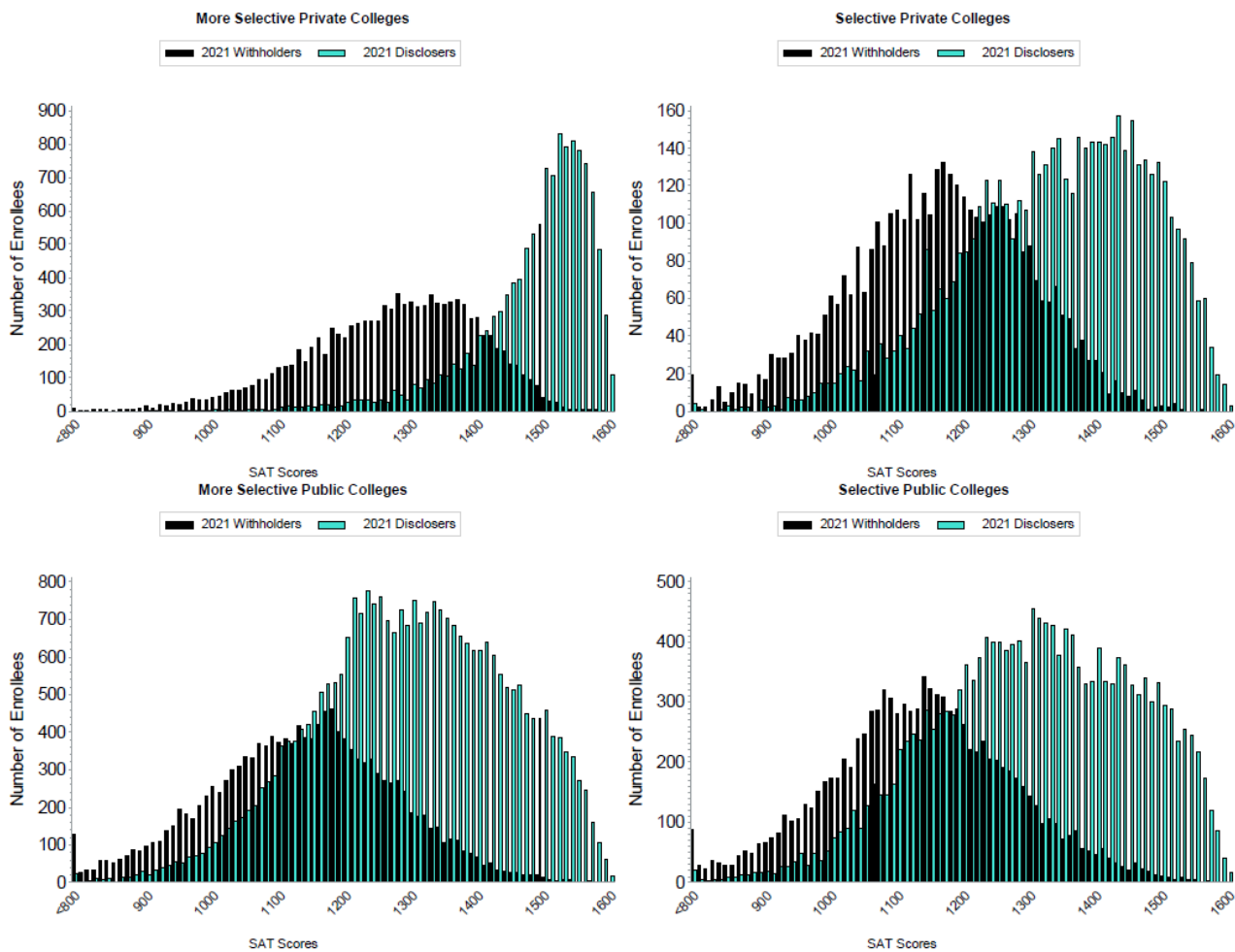
Figure 1: Distribution of High School Grades Among Enrolled First-Year Students at ARC Institutions, by Score Disclosure Status and ARC Segment (Fall 2021)



Note: High school GPA is self-reported by students on PSAT/SAT questionnaire. Students represented in this figure all took the PSAT and/or SAT.

Figure 2 shows that enrolled first-year students who disclosed SAT/ACT scores are more likely to have higher test scores and those who withheld scores are more likely to have lower test scores. This pattern, which is consistent with patterns observed in prior research (Howell et al., 2022a), is again apparent in all four ARC institutional segments.

Figure 2: Distribution of SAT Scores Among Enrolled First-Year Students at ARC Institutions, by Score Disclosure Status and ARC Segment (Fall 2021)



Note: Concorded ACT scores are not included. This figure shows SAT scores, whether disclosed or withheld, of students enrolled in ARC institutions.

Taken together, the data in Figures 1 and 2 suggest there are differences in the academic preparation of enrolled first-year students by score disclosure status. We examine whether these pre-collegiate differences translate into differences in first-year student outcomes by score disclosure status. Three student outcomes are examined: first-year grades, first-year credit accumulation, and retention rates into the second year of college.

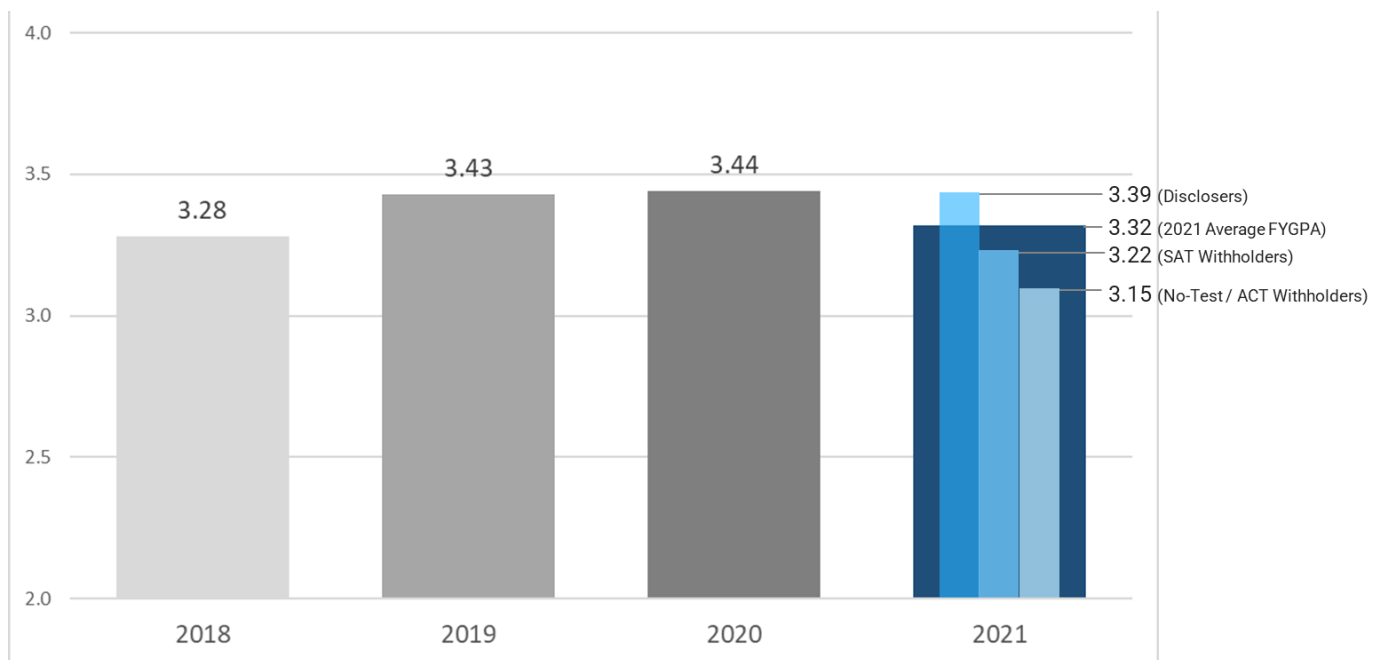
Theme 1: First-Year Grades

First-year GPA (FYGPA) is examined through the lens of averages over time, differences by score disclosure status and across ARC institutions, changes in low-performance among first-year students relative to pre-pandemic students, and performance among students intending to major in STEM.

Averages and Differences by Score Disclosure Status

Figure 3 shows that average first-year grades in 2021-22 are slightly lower after two years of relatively higher grades.³ We decompose 2021-22 FYGPA to show the average grades of SAT/ACT disclosers (3.39), SAT withholders (3.22), and students who had no test or who withheld an ACT score (3.15). These patterns exist across all four ARC institutional segments (see Appendix Figure A1).

Figure 3: Average First-Year GPA, by Cohort and Score Disclosure Status



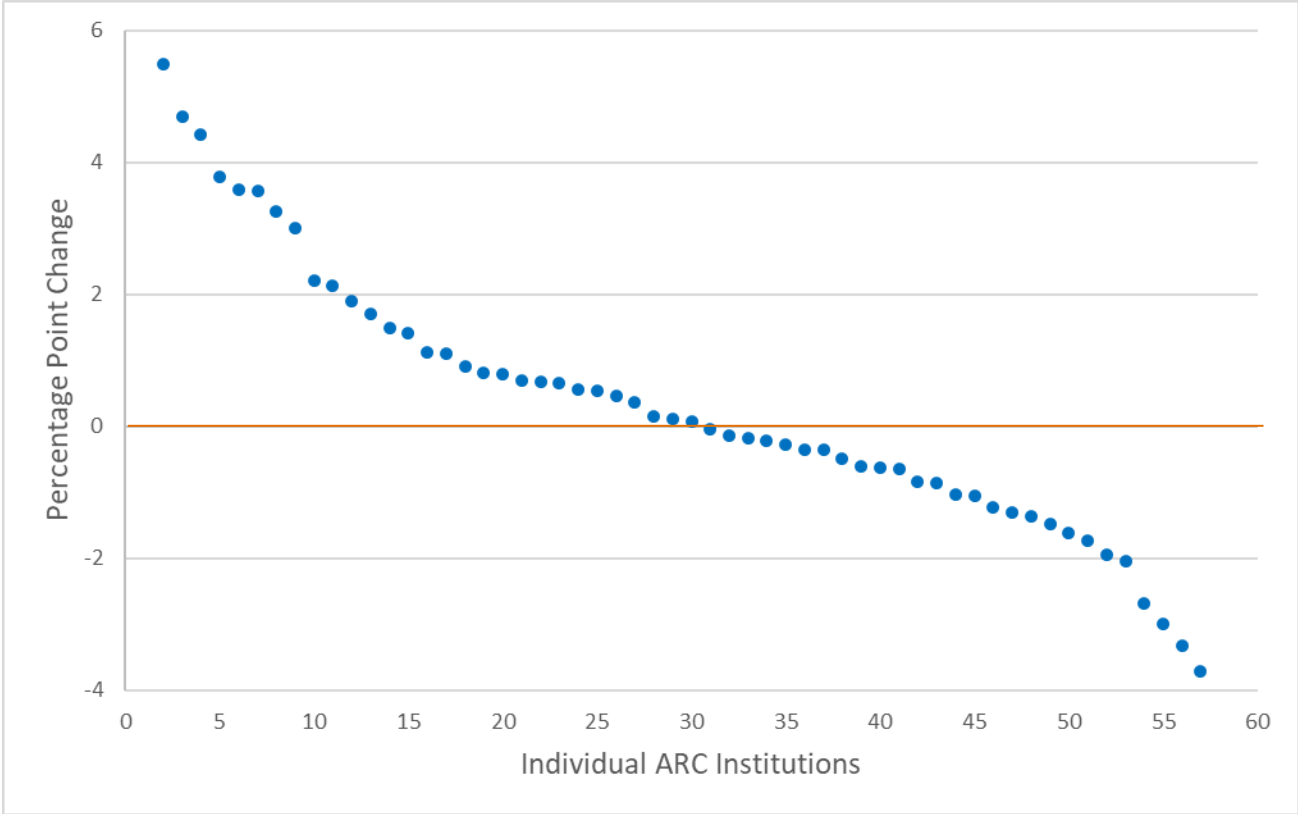
Variation Across ARC Institutions

Averages in Figure 3 mask interesting variation across the different ARC institutions. In order to capture that institutional heterogeneity and draw attention to first-year students at-risk of low performance, we compare the proportion of first-year students with FYGPAs

³ See Retta (2020), Svrluga (2020), and Tamez-Robledo (2021) for evidence of accommodative college grading policies and practices during the pandemic.

below 2.5 in both 2021-22 and 2018-19. The differences in these proportions, displayed in Figure 4 for each ARC institution, demonstrate that roughly half of ARC campuses have a larger fraction of their first-year class at-risk of low performance in 2021-22 compared to the pre-pandemic cohort (2018-19).

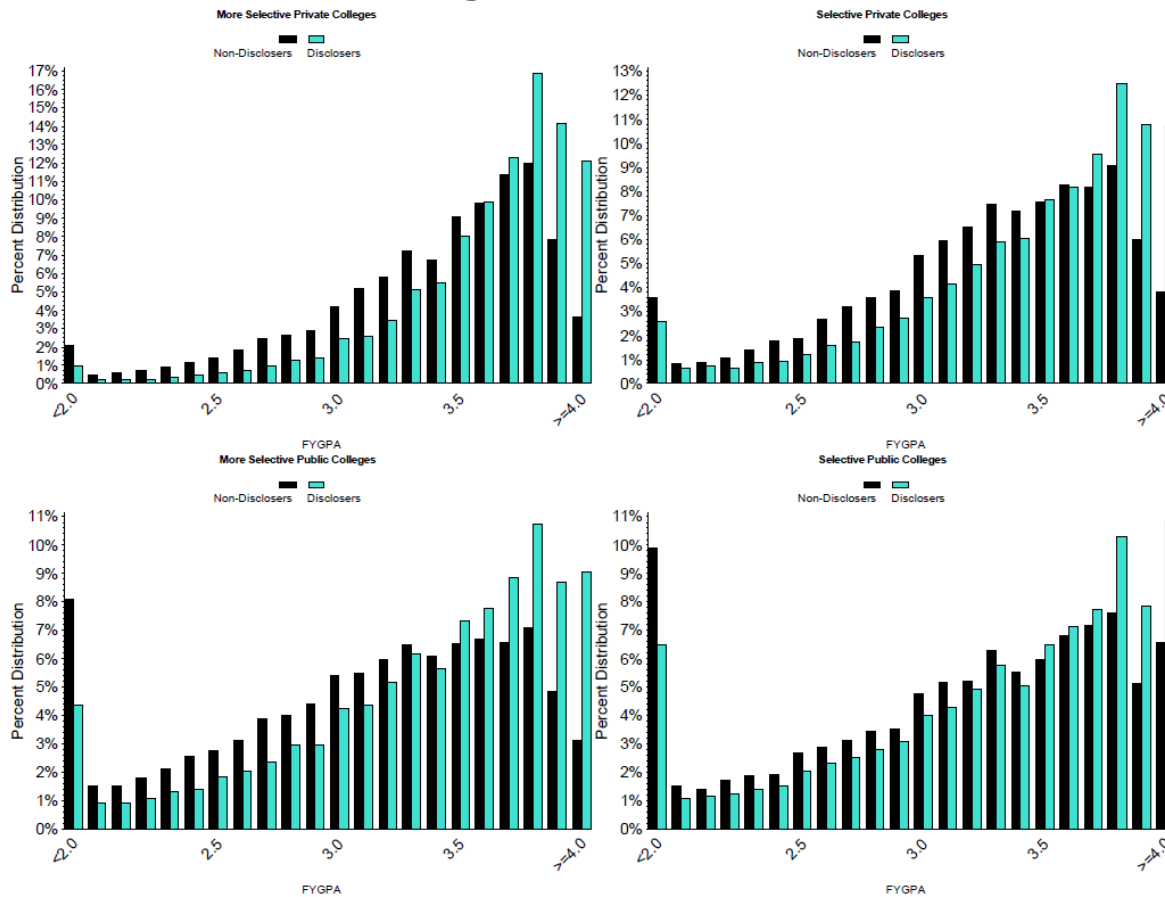
Figure 4: Change in the Percentage of First-Year Enrollees with FYGPA < 2.5, 2021-22 Relative to 2018-19 First-Year Students



Variation by Intended College Major

While Figures 3 and 4 convey data on averages, the histogram in Figure 5 shows the distribution of average FYGPAs. Figure 5 reveals that first-year students who earned higher FYGPAs were more likely to be score disclosers than non-disclosers, while those who earned lower FYGPAs were more likely to be non-disclosers. For example, among students at More Selective Public ARC institutions who disclosed scores, 9% of first-year students earned 4.0 FYGPAs compared to 3% among students who did not disclose scores. For students in the More Selective Public segment with a 3.0 or lower FYGPA, the share of non-disclosers with FYGPAs below 3.0 (36%) substantially exceeds the share of disclosers with FYGPAs below 3.0 (22%)—a 14 percentage point gap by disclosure status in the share of students earning a 3.0 or lower.

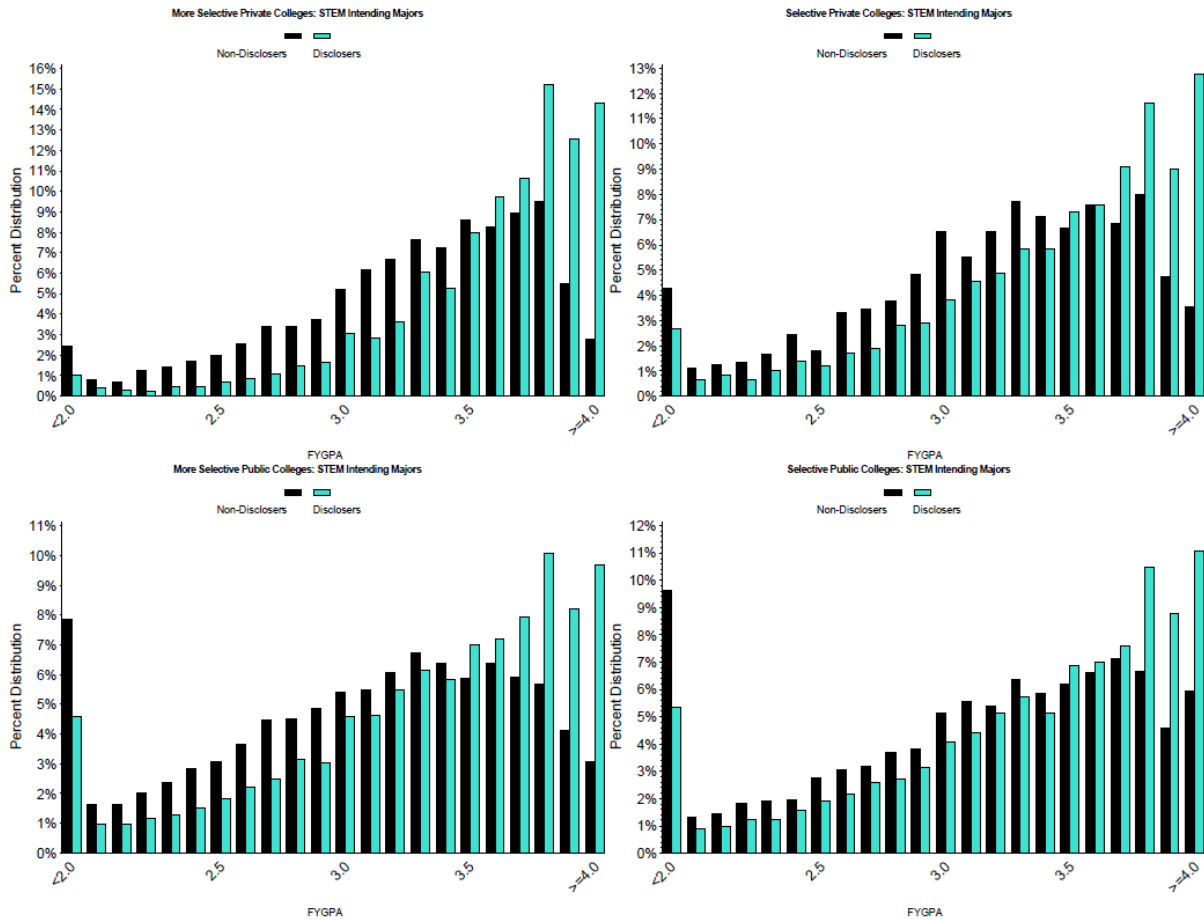
Figure 5: Histogram of the Distribution of Average FYGPAs, by Score Disclosure Status and ARC Segment



Note: In each panel, the height of the black bars sum to 100% and the height of the blue bars sum to 100%.

Survey data on students' intended college major can highlight whether performance differences by score disclosure status revealed in Figure 5 vary by intended major. Figure 6 shows that STEM-intending students who disclosed an SAT/ACT score are more likely to have higher FYGPAs than STEM-intending students who did not disclose a test score in the admissions process. For example, among STEM-intending students at More Selective Public ARC institutions who disclosed scores, 10% of first-year students earned 4.0 FYGPAs compared to 3% among STEM-intending students who did not disclose scores. For STEM-intending students in the More Selective Public segment with a 3.0 or lower FYGPA, the share of non-disclosers with FYGPAs below 3.0 (39%) substantially exceeds the share of disclosers with FYGPAs below 3.0 (23%)—a 16 percentage point gap by disclosure status in the share of STEM-intending students earning a 3.0 or lower. These differences are more pronounced among STEM students than in the overall histograms presented in Figure 5. The performance differences visible in the histogram in Figure 5 suggest that score non-disclosers may benefit from additional academic supports if they intend to major in the STEM fields.

Figure 6: Histogram of the Distribution of Average FYGPAs Among Students Intending to Major in STEM, by Score Disclosure Status and ARC Segment



Note: In each panel, the height of the black bars sum to 100% and the height of the blue bars sum to 100%.

Theme 2: First-Year Credit Accumulation

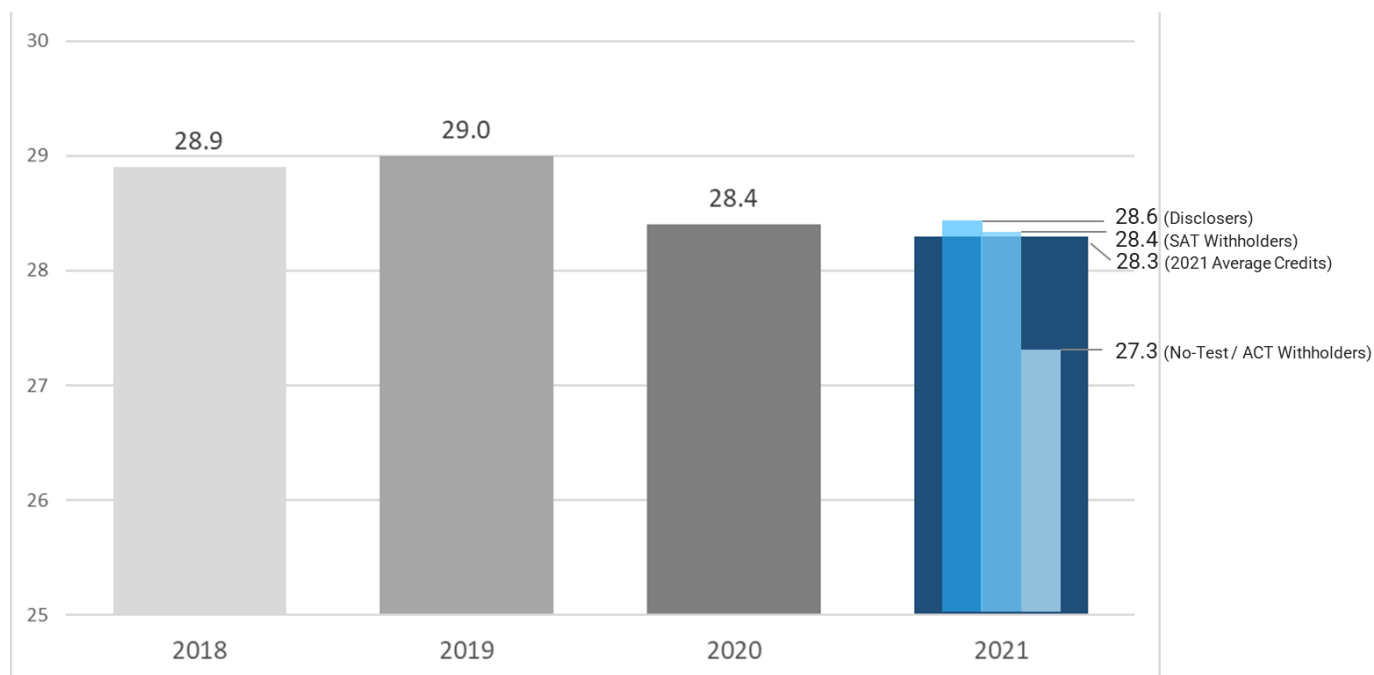
First-year credit accumulation is examined through the lens of averages over time, differences by score disclosure status and across ARC institutions, and changes in below-typical credit accumulation among first-year students relative to pre-pandemic students.

Averages and Differences by Score Disclosure Status

Figure 7 shows that average first-year credit accumulation in 2021-22 is slightly lower than pre-pandemic. We decompose 2021-22 FYGPA to show the average first-year credits of SAT/ACT disclosers (28.6), SAT withholders (28.4), and students who had no test or who

withheld an ACT score (27.3).⁴ Credits have been normalized to 30 credits per year since many institutions require 120 credits (30 credits per year for four years) to graduate. These patterns exist across all four ARC institutional segments (see Appendix Figure A2).

Figure 7: Average First-Year Credit Accumulation, by Cohort and Score Disclosure Status



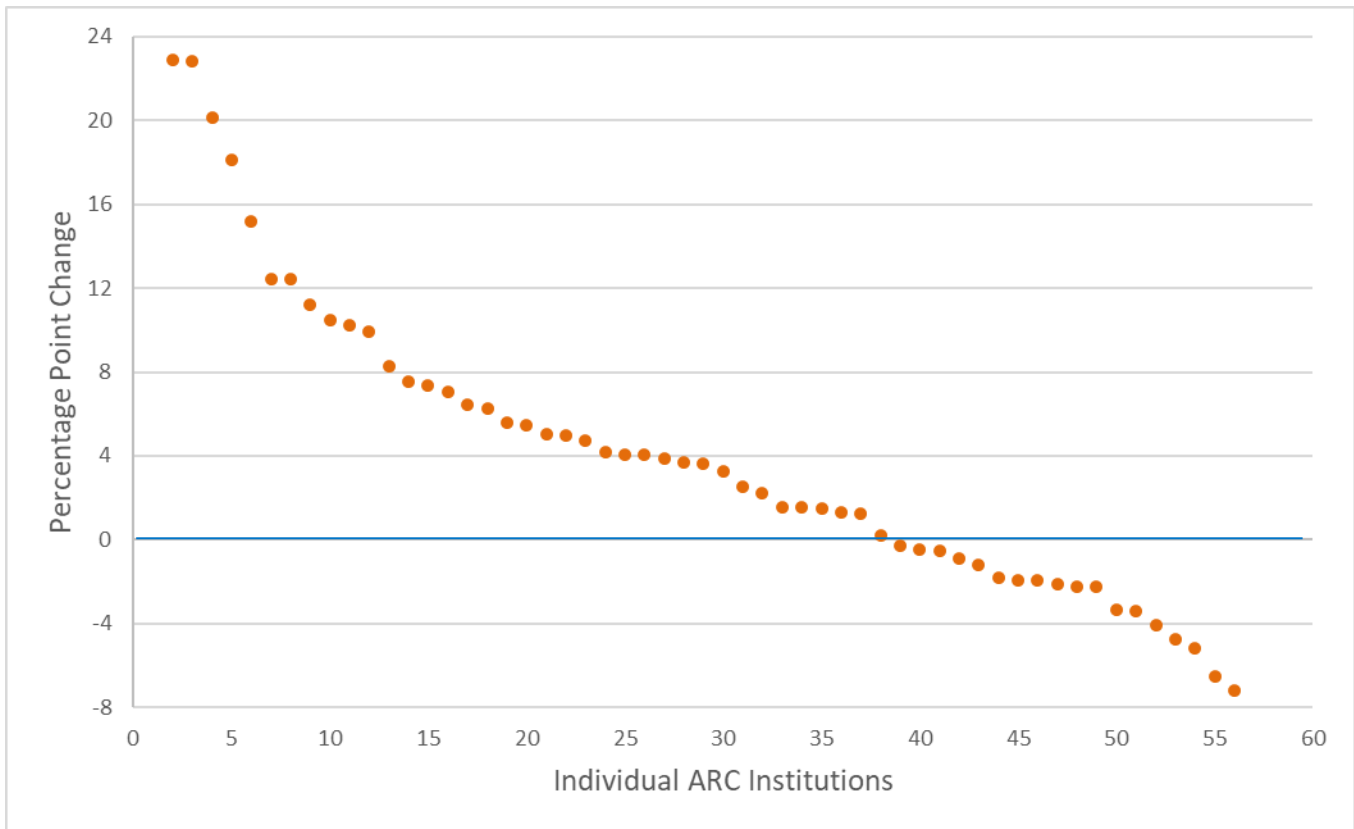
Note: Data are normalized to 30 credits per year.

Variation Across ARC Institutions

Averages in Figure 7 mask interesting variation across the different ARC institutions. In order to capture that institutional heterogeneity and draw attention to first-year students at-risk of slower progress toward a degree, we compare the proportion of first-year students with first-year credits in 2021-22 to what was typical pre-pandemic (2018-19). The differences in these proportions, displayed in Figure 8 for each ARC institution, demonstrate that roughly two-thirds of ARC campuses have a larger fraction of their first-year class at-risk of slow progress toward a degree in 2021-22 compared to the pre-pandemic cohort (2018-19).

⁴ Changes in credit accumulation likely have spillover effects on first-year grades. The pandemic's effect on first-year grades in 2021-22 may be muted by students dropping courses in which their performance lagged or taking a lighter course load to begin with.

Figure 8: Change in the Percentage of First-Year Enrollees Earning Below Typical Number of Credits, 2021-22 Relative to 2018-19 First-Year Students



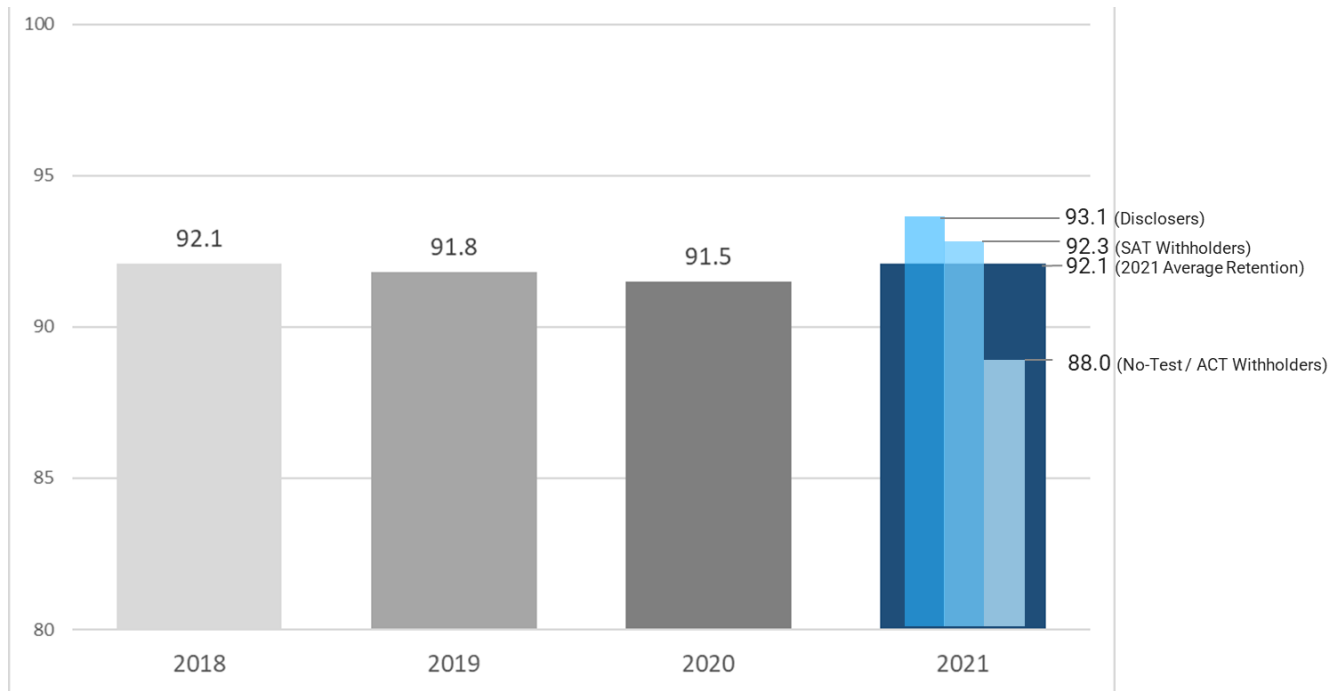
Theme 3: First-Year Retention

First-year retention (into the second year of college) is examined through the lens of averages over time, differences by score disclosure status and across ARC institutions, and with regard to both performance and progress risk among 2021-22 first-year students relative to pre-pandemic students.

Averages and Differences by Score Disclosure Status

Figure 9 shows that average first-year retention rates in 2021-22 are the same as pre-pandemic retention rates at ARC institutions. We decompose 2021-22 retention to show the average first-year retention rates of SAT/ACT disclosers (93.1%), SAT withholders (92.3%), and students who had no test or who withheld an ACT score (88.0%). These patterns exist across all four ARC institutional segments (see Appendix Figure A3).

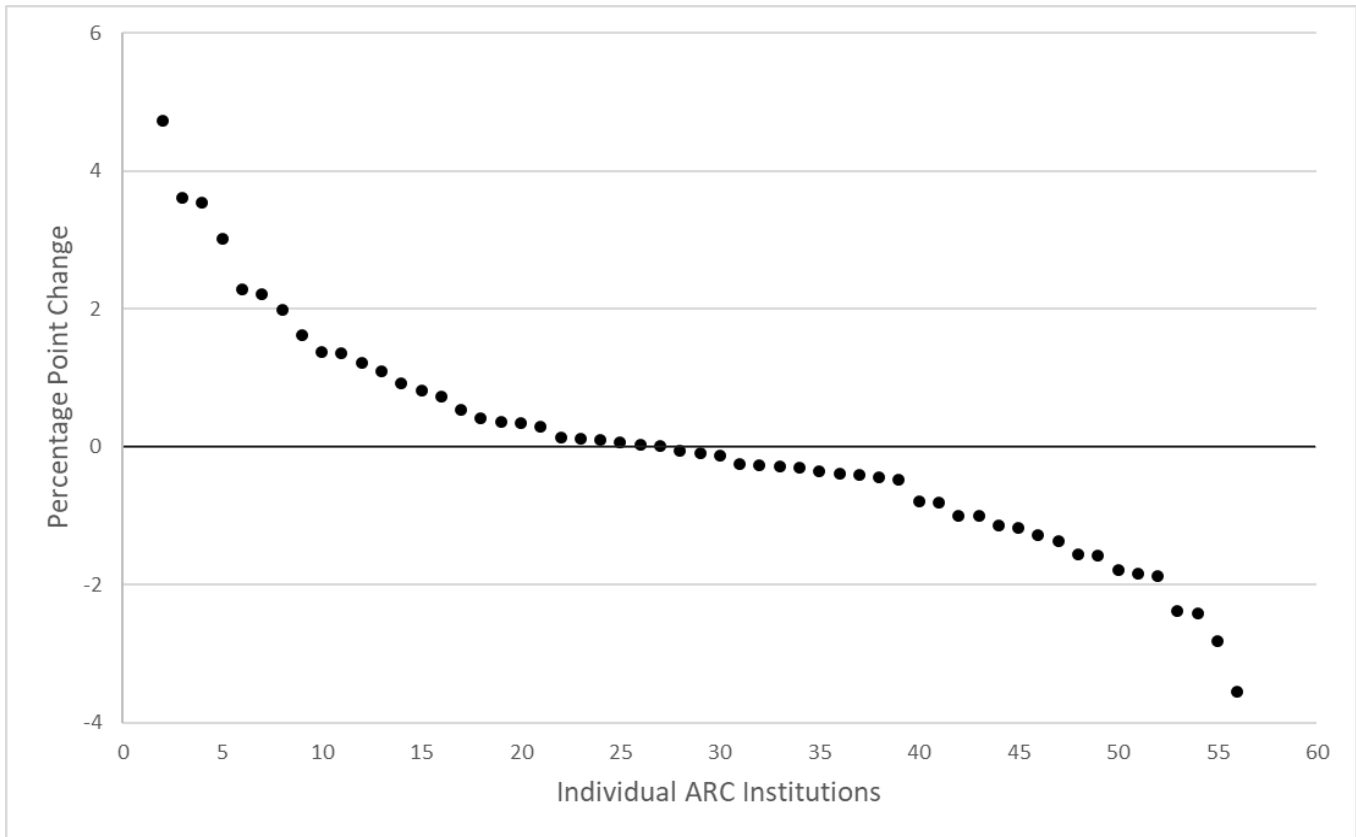
Figure 9: Average First-Year Retention Rate, by Cohort and Score Disclosure Status



Variation Across ARC Institutions

Averages in Figure 89 mask interesting variation across the different ARC institutions. In order to capture that institutional heterogeneity, we compare the proportion of first-year students from 2021-22 who are retained to the second year to the proportion of first-year students from 2018-19 who were retained to the second year. The differences in these proportions, displayed in Figure 10 for each ARC institution, demonstrate that roughly half of ARC campuses have lower retention rates among 2021-22 first-year students compared to the pre-pandemic cohort (2018-19).

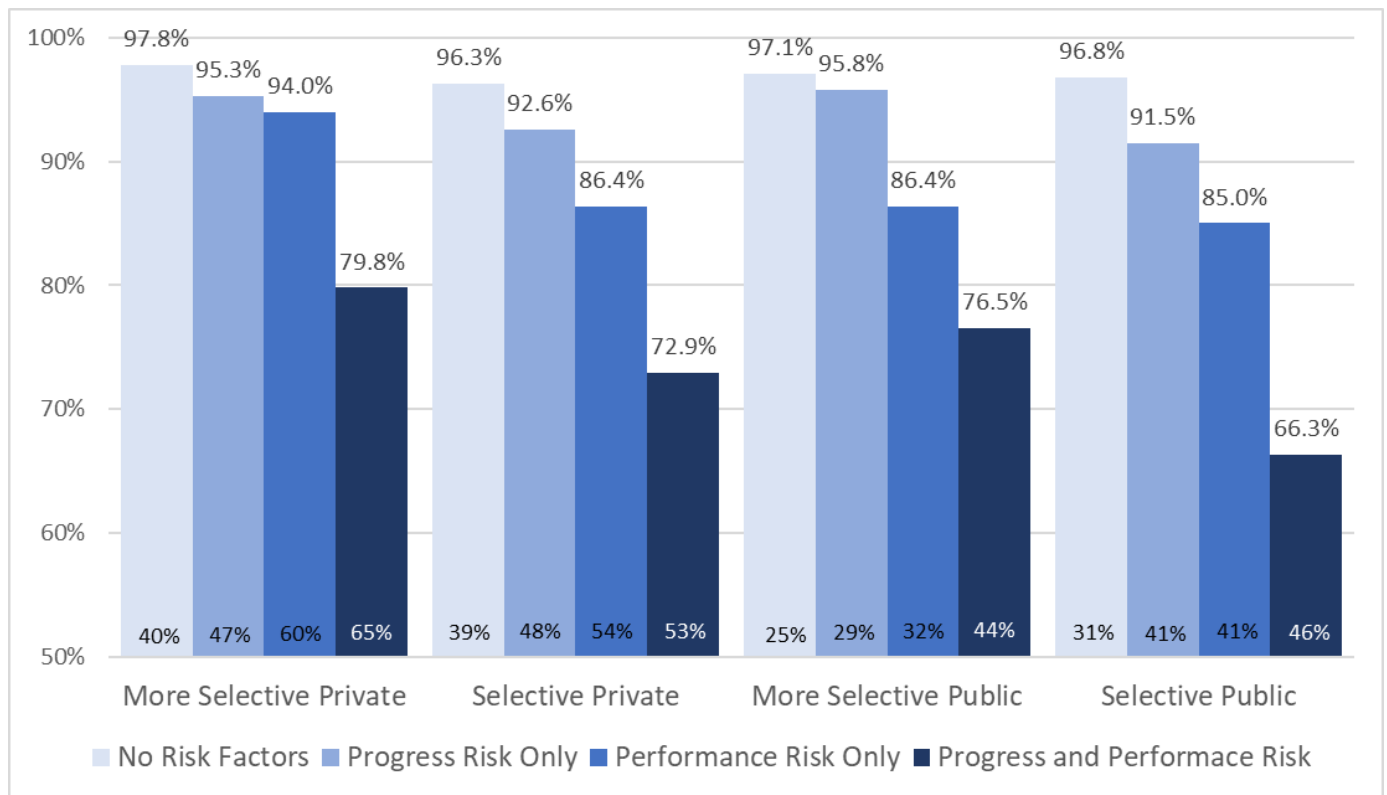
Figure 10: Change in the Percentage of First Year Class Retained to the Second Year, 2021-22 Relative to 2018-19 First-Year Students



Patterns Among Students with Retention Risk and Unretained Students

Figures 4 and 8 revealed that at least half of ARC institutions have a greater proportion of first-year students in 2021-22 who demonstrate lower performance and slower progress toward a degree compared to their peers in the pre-pandemic cohort. Figure 11 shows that students with both performance and progress risk—operationalized as FYGPAs below 2.5 and earning fewer credits than was typical prior to the pandemic—have retention rates 20-30 points below students without these risk factors. For example, among students without performance or progress risk, retention rates exceed 96% in all ARC segments, but retention rates are between 66% and 80% among students with both performance and progress factors. Figure 11 also shows that students with a single risk factor have lower retention rates into the second year of college than students with no risk factors. Finally, the percentages in the base of each bar in Figure 11 represent the fraction of that group who did not disclose a test score. The data in Figure 11 show that students with both progress and performance risk factors are more likely to be score non-disclosers and have the lowest retention rates. Because these students are not disclosing test scores, institutions have less visibility into the academic preparation of students with the greatest retention risk.

Figure 11: First-Year Retention Rates and Score Non-Disclosure Rates in 2021-22, by Performance and Progress Risk and ARC Segment



Note: Percentages at the base of each bar are the fraction of that group who did not disclose a test score. Institutional visibility into students' academic preparation decreases as retention risk increases.

The first-year students with performance and progress risk that results in substantially lower retention rates in Figure 11 (navy blue bars) are more likely to be from traditionally underserved groups. Table 1 shows that first-year students with lower retention rates on ARC campuses are disproportionately underrepresented minority students, first generation students, and students from more challenging neighborhood environments. Table 1 also shows that students with the lowest retention rates are much less likely to have disclosed an SAT/ACT score for consideration in admissions, reducing institutions' visibility into retention risk at the point of enrollment (data points that are also visible in the bottom of each bar in Figure 11).

Table 1: Average Characteristics of First-Year Enrollees, by Performance and Progress Risk Factors and ARC Segment

| | More Selective Private | Selective Private | More Selective Public | Selective Public |
|---|------------------------|-------------------|-----------------------|------------------|
| % Underrepresented Minority Students | | | | |
| No Risk Factors | 24.2% | 19.1% | 20.7% | 16.3% |
| Progress Risk Only | 33.1% | 30.6% | 26.1% | 22.2% |
| Performance Risk Only | 47.0% | 41.9% | 36.2% | 29.7% |
| Progress & Perf. Risk | 49.5% | 39.4% | 46.7% | 36.0% |
| % First Generation Students | | | | |
| No Risk Factors | 13.6% | 11.2% | 15.2% | 14.7% |
| Progress Risk Only | 18.5% | 13.2% | 18.7% | 18.3% |
| Performance Risk Only | 26.7% | 19.7% | 27.2% | 21.7% |
| Progress & Perf. Risk | 32.2% | 19.2% | 32.1% | 26.0% |
| % High Challenge Neighborhood | | | | |
| No Risk Factors | 13.3% | 11.2% | 13.6% | 13.9% |
| Progress Risk Only | 18.9% | 15.8% | 18.5% | 17.2% |
| Performance Risk Only | 32.1% | 19.0% | 27.6% | 21.2% |
| Progress & Perf. Risk | 35.8% | 20.5% | 31.8% | 28.0% |
| % Non-Disclosed Scores | | | | |
| No Risk Factors | 40.0% | 39.0% | 25.5% | 30.8% |
| Progress Risk Only | 47.4% | 47.8% | 29.5% | 40.9% |
| Performance Risk Only | 60.4% | 53.9% | 31.8% | 40.9% |
| Progress & Perf. Risk | 65.0% | 53.1% | 44.0% | 45.6% |

Note: Progress Risk is defined as FYGPA<2.5. Performance Risk is defined as fewer credits than the modal number at an institution pre-pandemic. A high challenge neighborhood is defined as challenge above the median of 50.

We can go beyond assessing retention *risk* and directly examine first-year students at ARC institutions who were not retained to their second year. Table 2 describes the characteristics of first-year students who were unretained and retained, revealing that unretained students are more likely than their retained peers to come from historically underserved groups.

Across all ARC institutions, unretained students among Fall 2021 first-year enrollees are 7.8 percentage points more likely to be underrepresented minority students, 6.3 percentage points more likely to be first generation students, and 8.6 percentage points more likely to come from high challenge neighborhood environments. Unretained students are also 8.4 percentage points more likely to be score non-disclosers.

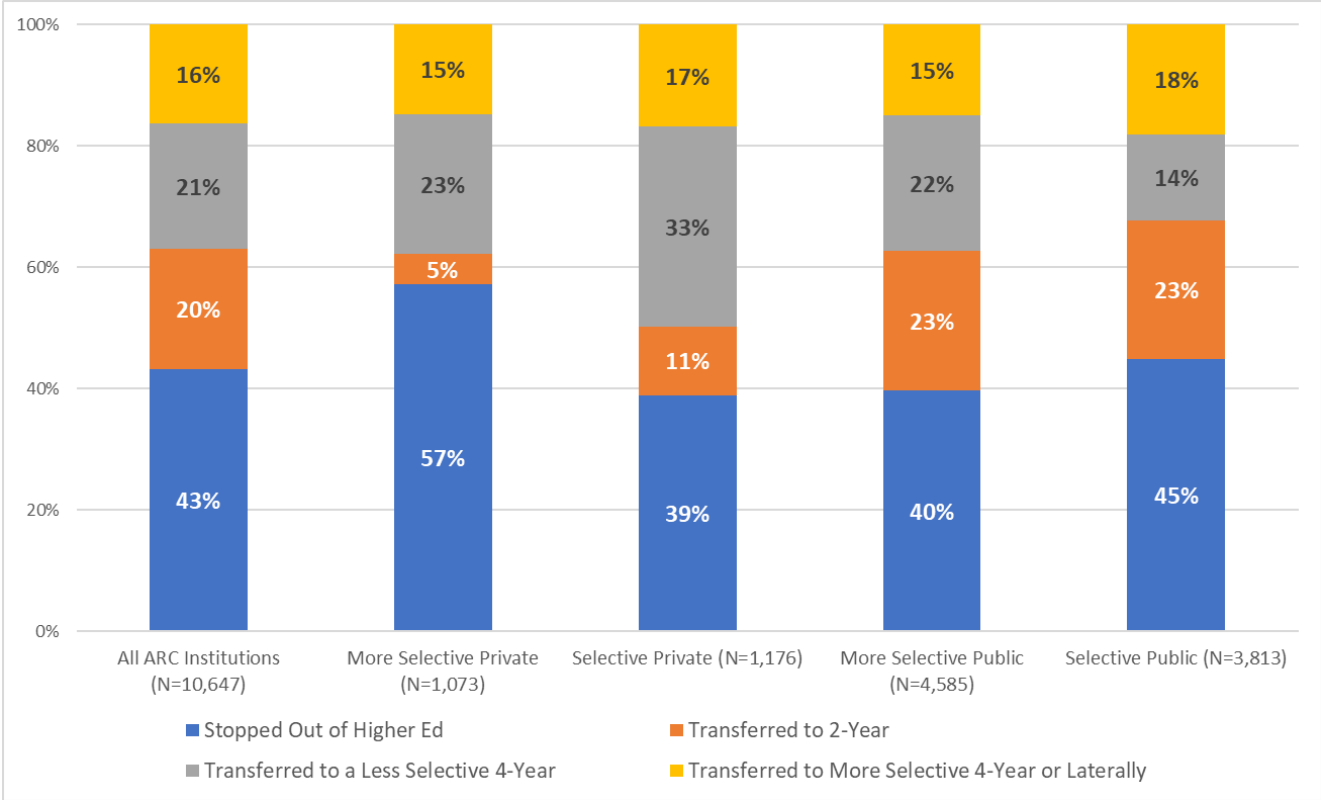
Table 2: Characteristics of Unretained and Retained 2021-22 First-Year Students at ARC Institutions

| | Unretained Students | Retained Students | Percentage Point Difference |
|--------------------------------------|---------------------|-------------------|-----------------------------|
| % Underrepresented Minority Students | 32.1% | 24.3% | 7.8 pp |
| % First Generations Students | 24.9% | 16.3% | 6.3 pp |
| % High Challenge Neighborhood | 23.1% | 16.7% | 8.6 pp |
| % Non-Disclosed Scores | 43.6% | 35.2% | 8.4 pp |

Using data from the National Student Clearinghouse, unretained first-year students from the 2021-22 academic year at ARC institutions are followed into Fall 2022 to identify where they have transferred or whether they have stopped out of higher education. Figure 12 describes the decomposition of transfer and stop-out behavior among these unretained first-year students. Across all ARC institutions, 43% of unretained first-year students were not enrolled in any institution of higher education in the fall of 2022 (stop-outs), 20% transferred to a two-year institution, 21% transferred to a less selective four-year institution, and 16% transferred to a more or similarly selective four-year institution.⁵ Differences across ARC segments are visible in Figure 12. Stop-out is most prevalent among unretained students at More Selective Private ARC institutions, transfer to a two-year institution is more common among unretained students at public ARC institutions, and transfer to a less selective four-year is most prevalent among unretained students at Selective Private ARC institutions. Transfer to a more or equally selective four-year institution is equally prevalent across the ARC segments, occurring among 15% to 18% of unretained students.

⁵ NSC includes most institutions and thus covers 96% of enrolled students, but some stopped-out students could be enrolled at a non-NSC-participating institution. College selectivity in these transfer patterns is proxied by institutions' admit rates.

Figure 12: Fall 2022 Transfer Patterns Among Unretained ARC Students from 2021-22 First-Year Class, by ARC Segment



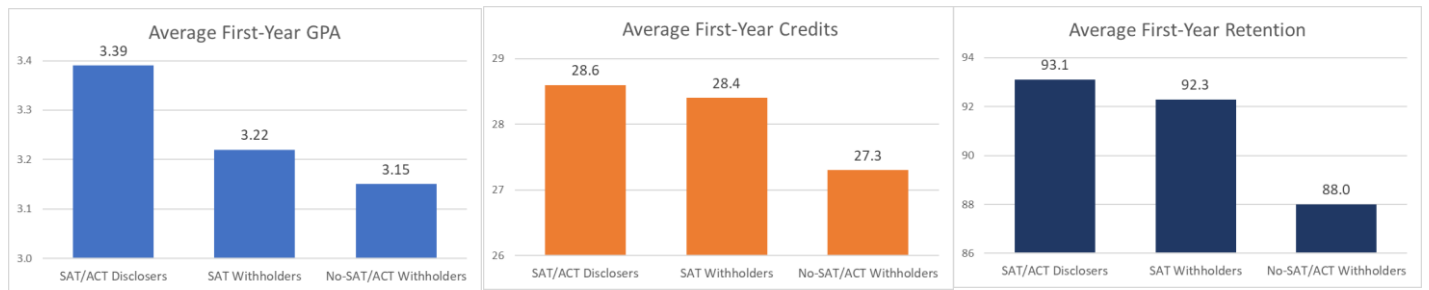
Transfer patterns among unretained 2021-22 first-year students are quite similar to patterns among pre-pandemic students at ARC institutions, although there are several notable differences (see Appendix Figure A4 for a version of Figure 12 for the 2018-19 cohort). First, transfer to a two-year college among unretained students at ARC institutions is less common among 2021-22 first-year students than among their pre-pandemic peers. This result is evident across unretained students in all four ARC segments and is consistent with research documenting nationwide declines in enrollment and retention rates in the two-year sector (Howell et al., 2022b; Causey et al., 2022). Second, unretained 2021-22 first-year students from Selective Private and Selective Public ARC institutions are more likely to stop-out (39% and 45%, respectively, from Figure 12) than unretained 2018-19 first-year students (33% and 42%, respectively, from Appendix Figure A4).⁶

⁶ Future research will explore differences in transfer patterns among students with different measured academic achievement. For example, among unretained students at ARC institutions, high-scoring 2021-22 students were more likely than high-scoring 2018-19 students to transfer to a more selective college. By contrast, lower-scoring 2021-22 students were less likely than lower-scoring 2018-19 students to leave the four-year sector.

Theme 4: Patterns Across All First-Year Outcomes

Across all ARC segments, average first-year outcomes are strongest for students who disclose their SAT/ACT scores. Compared to score disclosers' outcomes, average FYGPAs and credits earned are slightly lower for students who withheld SAT scores and lower still for those with no test score or who withheld an ACT score. These patterns are evident in Figures 3, 7, and 8, but replicated below in Figure 13.

Figure 13: All First-Year Student Outcomes, by ARC Segment and Score Disclosure Status



Relationships Between the SAT and First-Year Outcomes

Figures 14, 15, and 16 show that, among 2021-22 first-year students enrolled at ARC institutions who had the same high school grades, those with higher SAT scores—regardless of their decision to disclose or withhold their test scores—have higher average first-year grades, credit accumulation, and retention rates, respectively.⁷ The SAT predicts student outcomes for score disclosers and score withholders. Appendix Figures A5, A6, and A7 show the predictive validity of the SAT remains strong for all students, which is consistent with prior research on the predictive validity of the SAT (Westrick et al., 2019).

⁷ In all figures, data for groups of fewer than 10 observations are suppressed.

Figure 14: Relationship Between FYGPA and SAT Scores Among Students with the Same High School Grades, by Score Disclosure Status

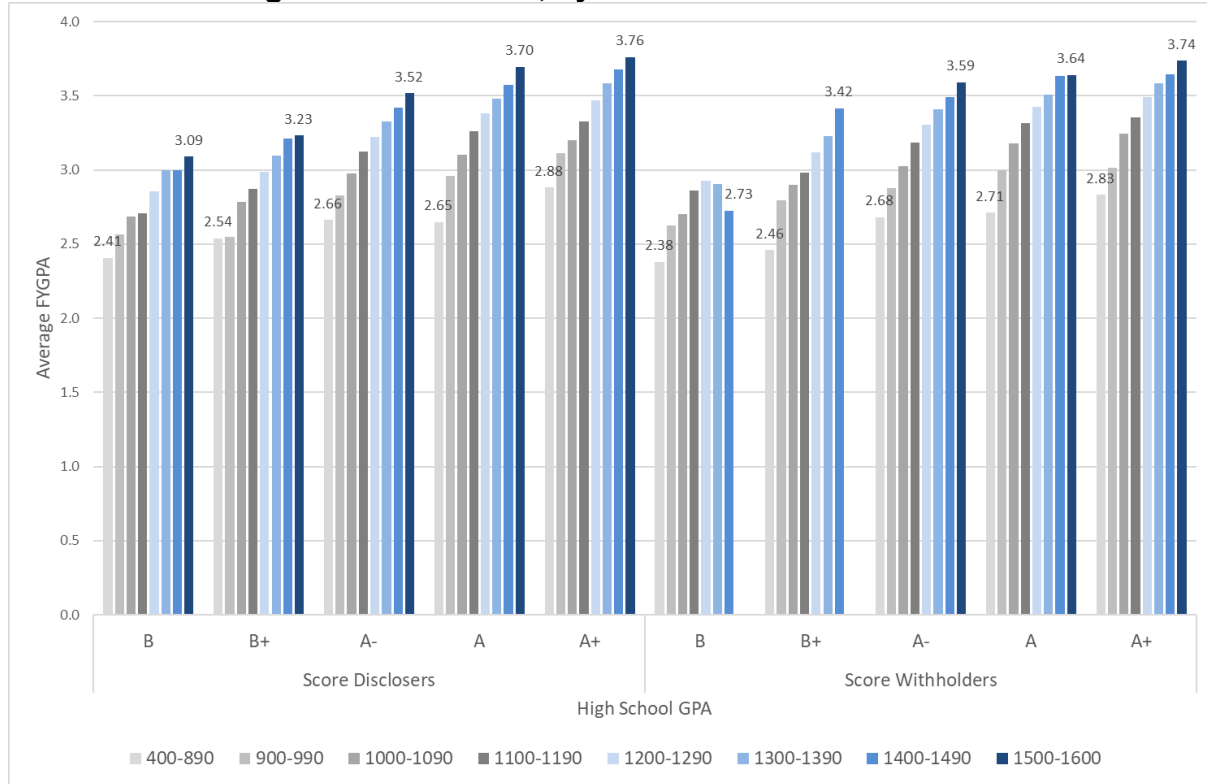


Figure 15: Relationship Between First-Year Credits and SAT Scores Among Students with the Same High School Grades, by Score Disclosure Status

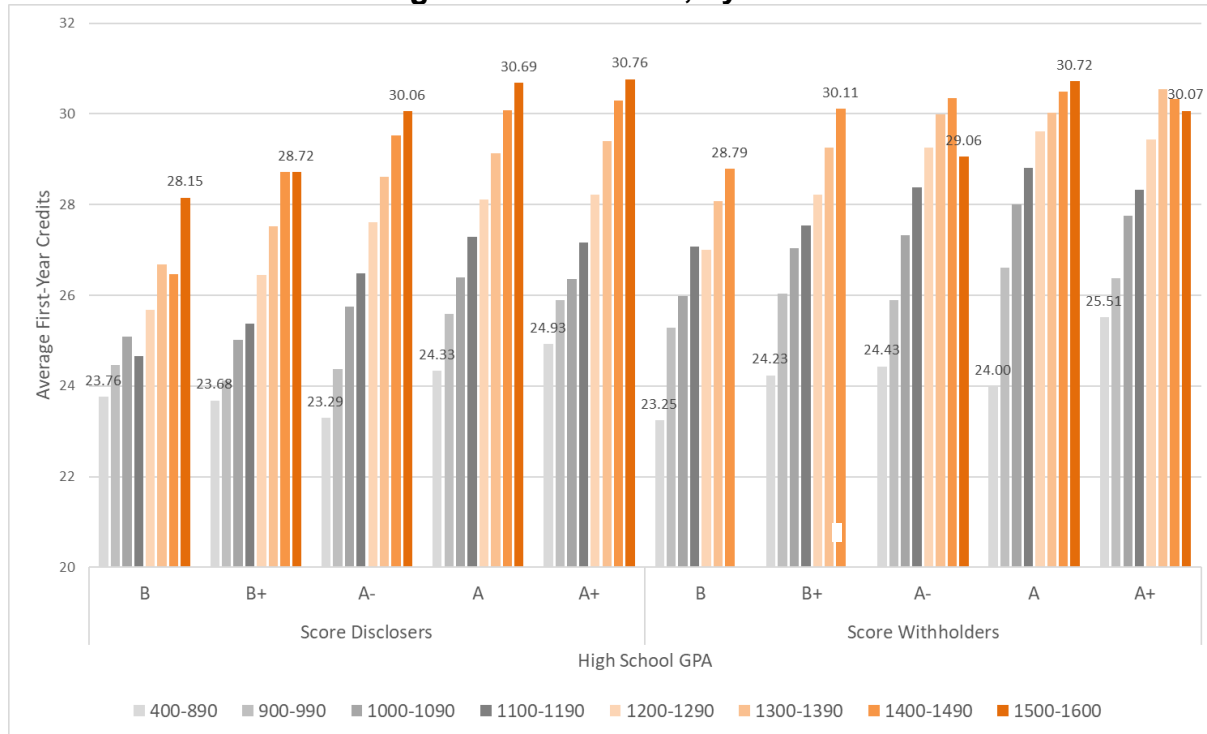
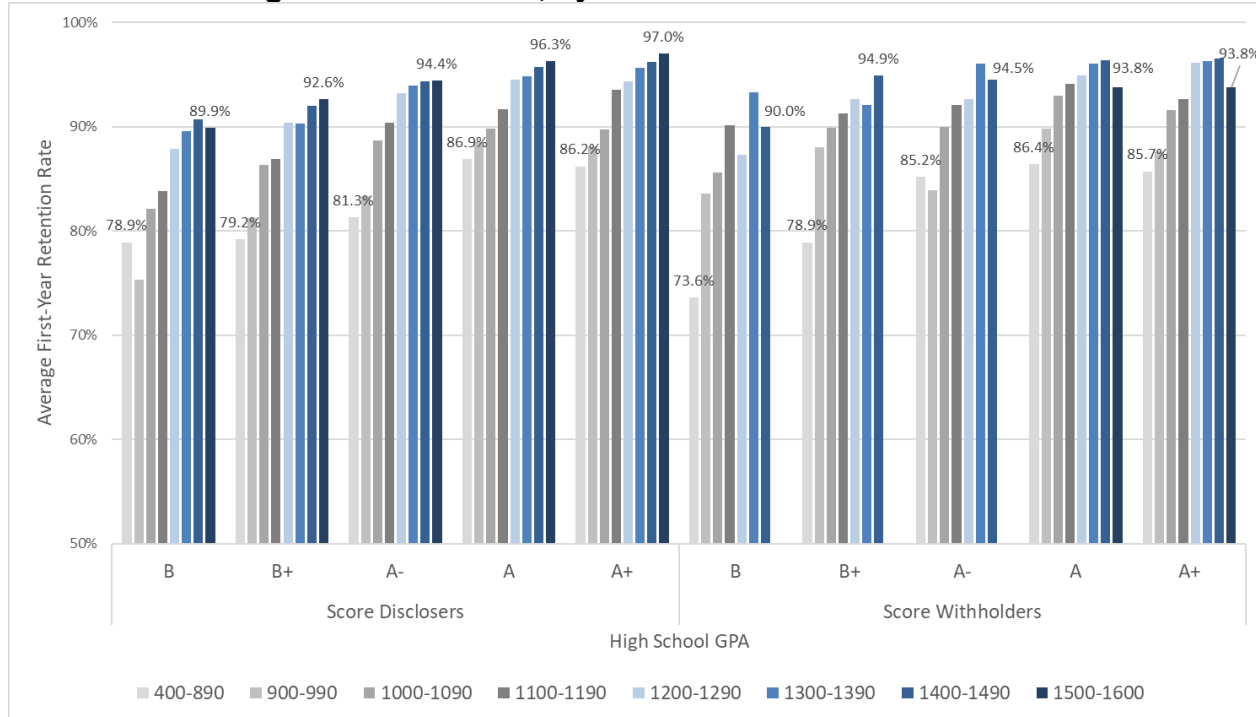


Figure 16: Relationship Between Retention and SAT Scores Among Students with the Same High School Grades, by Score Disclosure Status



Conclusion

The ARC initiative enabled a unique set of data and analyses to better understand changes in college and student behavior influenced by the covid-19 pandemic. This Research Brief provides initial evidence based on nearly 60 ARC institutions on first-year grades, credit accumulation, and retention into the second year of college for first-year students in 2021-22 relative to prior cohorts. Four key themes emerged from the initial analyses of first-year student outcomes:

1. Average first-year grades rose in the 2019-20 and 2020-21 academic years. Average first-year grades fell in 2021-22 to a level similar to the 2018-19 pre-pandemic academic year.
2. Average first-year credit accumulation fell slightly during the two most recent academic years relative to prior cohorts.
3. Average retention rates into the second year of college were relatively flat between 2018-19 and 2021-22 cohorts.
4. Across all ARC institutional segments, students who disclosed test scores have the strongest first-year outcomes, while students with no test or who withheld an ACT score have the weakest first-year outcomes. The SAT continues to be a valid predictor of all three first-year outcomes—grades, credits, and retention.

The first-year student outcomes examined in this research hold important implications for long-term student success. First-year college GPA is a significant predictor of a student's cumulative college GPA, which, in turn, shapes students' post-baccalaureate and early-career opportunities. For example, research demonstrates that students with FYGPAs below 2.9 have less than a 50% chance of completing their college degree with a 3.0 cumulative GPA or higher or completing their degree in four-years (Westrick et al., 2023). The odds of on-time degree completion with a final college GPA above 3.0 are even more slim for students with FYGPAs below 2.5. Yet, median undergraduate GPAs among applicants to medical school, law school, and top graduate programs all exceed 3.5, often substantially.

While the three student outcomes that are the focus of this research—grades, credits, and retention—are compellingly linked to longer run outcomes, there are potentially other important shifts among students on U.S. college campuses that also have long run consequences but have yet to be studied. For example, the evidence presented above only touches upon the importance of college major choices and performance within those majors, and yet, shifts in students' interests and major choices might have important ramifications for campus planning. Shifts in students' major fields of study may affect the distribution of grades on campuses (e.g., a shift away from more rigorously graded majors like STEM could increase grades, on average), but also eventually have the power to impact institutional staffing decisions, programmatic offerings, and the workforce pipeline into specific industries and occupations.

Finally, as the evidence in this brief focused heavily on college student success, it is worth noting that an essential element to student success is the timely identification of students who would benefit from additional academic supports and/or advising. The data presented here show that ARC institutions enrolled a substantial proportion of their first-year class in 2021-22 with less information about students' academic preparation when some students exercised their option to withhold test scores in the admissions process or when students had no test score as a result of test center closures during the pandemic. The reduced visibility into these students' academic preparation, which is demonstrated to have ramifications for first-year retention, can be improved by colleges collecting additional information from students at the point of enrollment. Such a solution does not alter students' flexibility around the consideration of test scores at the point of admissions and does not reduce institutions' ability to direct student support resources to the most at-risk students.

The Admissions Research Consortium will continue as a multi-year research initiative to further unpack and understand longer-term trends and outcomes. The next ARC Research Brief will explore trends in the enrollment pipeline, by examining whether application, admission, and enrollment patterns documented in Fall 2021 (Howell et al., 2022a) have changed in Fall 2022. As more data become available through nationally-representative datasets, evidence from ARC institutions will also be situated in context of broader trends affecting all higher education institutions.

Appendix

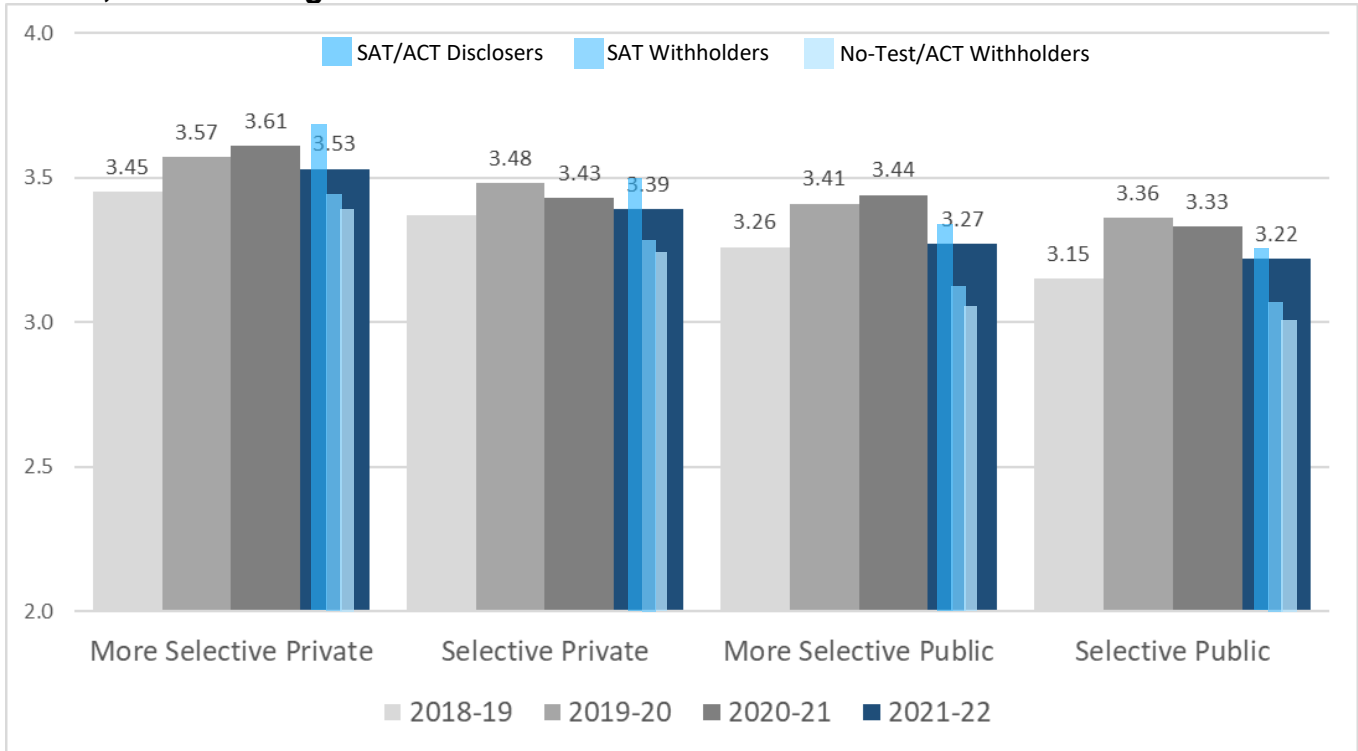
Appendix Table A1: Attributes of ARC Institutions and Institutional Segments

| | More Selective Private Colleges | | Selective Private Colleges | | More Selective Public Colleges | | Selective Public Colleges | |
|---|---------------------------------|----------|----------------------------|----------|--------------------------------|----------|---------------------------|---------|
| | ARC | Non-ARC | ARC | Non-ARC | ARC | Non-ARC | ARC | Non-ARC |
| Number of Institutions | 21 | 42 | 18 | 1003 | 11 | 65 | 9 | 431 |
| First-Year Enrollment | 1,916 | 898 | 1,121 | 405 | 7,442 | 2,722 | 6,223 | 1,755 |
| Admit Rate | 12% | 12% | 49% | 75% | 58% | 43% | 71% | 84% |
| Yield Rate | 49% | 56% | 21% | 32% | 28% | 32% | 24% | 26% |
| First-Year Pell Share | 18% | 19% | 17% | 39% | 24% | 39% | 22% | 41% |
| Percent In-State | 17% | 20% | 33% | 59% | 76% | 71% | 54% | 81% |
| Tuition and Fees | \$59,644 | \$53,191 | \$52,791 | \$31,468 | \$13,343 | \$10,024 | \$13,308 | \$9,948 |
| Graduation Rate | 92% | 87% | 82% | 56% | 80% | 66% | 75% | 53% |
| First-Year Racial/Ethnic Composition | | | | | | | | |
| Native American | 0% | 0% | 0% | 1% | 0% | 1% | 0% | 1% |
| Asian American | 18% | 14% | 8% | 3% | 15% | 12% | 11% | 5% |
| Black/African American | 8% | 10% | 4% | 13% | 9% | 17% | 6% | 15% |
| Hispanic | 13% | 13% | 12% | 12% | 14% | 20% | 11% | 16% |
| Native Hawaiian | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| White | 40% | 42% | 62% | 58% | 52% | 40% | 62% | 54% |
| Two Or More Races | 7% | 7% | 5% | 4% | 4% | 5% | 4% | 5% |
| Unknown | 3% | 2% | 1% | 5% | 2% | 2% | 2% | 2% |
| International | 12% | 12% | 7% | 4% | 3% | 4% | 4% | 2% |

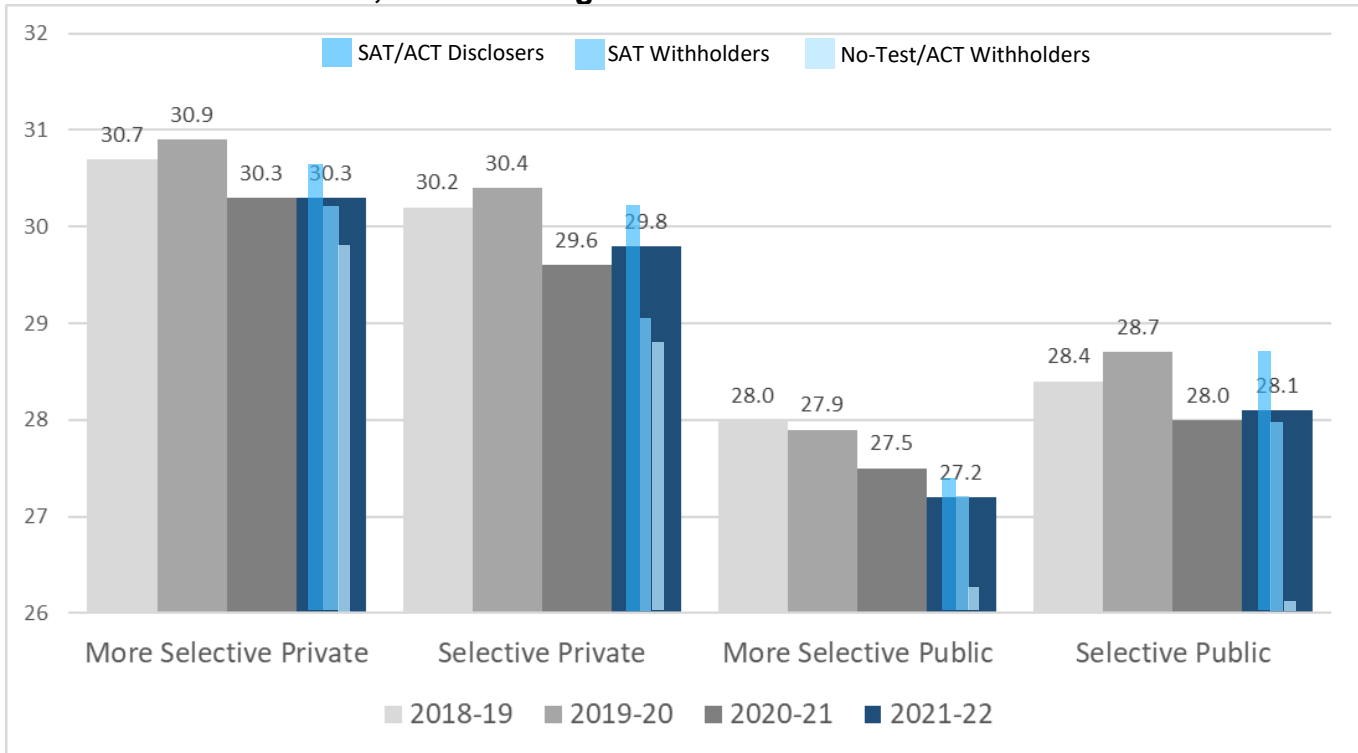
Appendix Table A2: Cohort Detail on Pandemic Disruptions Timing

| Students who were <u>college freshmen</u> in... | Had these <u>high school</u> experiences... | Had these <u>college</u> experiences... |
|---|---|---|
| 2018-2019 | <ul style="list-style-type: none"> • 2018 high school grads; took SAT/ACT in 2017 • No pandemic disruptions to testing, learning • SAT/ACT required at most institutions | <ul style="list-style-type: none"> • Normal transition to college • Normal freshman year of college |
| 2019-2020 | <ul style="list-style-type: none"> • 2019 high school grads; took SAT/ACT in 2018 • No pandemic disruptions to testing, learning • SAT/ACT required at most institutions | <ul style="list-style-type: none"> • Normal transition to college • End of freshman year disrupted by start of pandemic; accommodating grading practices begin |
| 2020-2021 | <ul style="list-style-type: none"> • 2020 high school grads; took SAT/ACT in 2019 • No pandemic disruptions to testing • End of senior year disrupted by start of pandemic • SAT/ACT required at most institutions | <ul style="list-style-type: none"> • Transition to college may have been disrupted by start of pandemic • Freshman year very disrupted by pandemic; accommodating grading practices continue |
| 2021-2022 | <ul style="list-style-type: none"> • 2021 high school grads; took SAT/ACT in 2020 • Pandemic disruptions to testing (for those who could test, scores reflect learning prior to pandemic) • Whole senior year disrupted by pandemic (learning loss) • SAT/ACT optional at most institutions | <ul style="list-style-type: none"> • Transition to college disrupted by pandemic and changes in admissions policies/practices • Unclear whether grading practices have returned to pre-pandemic |

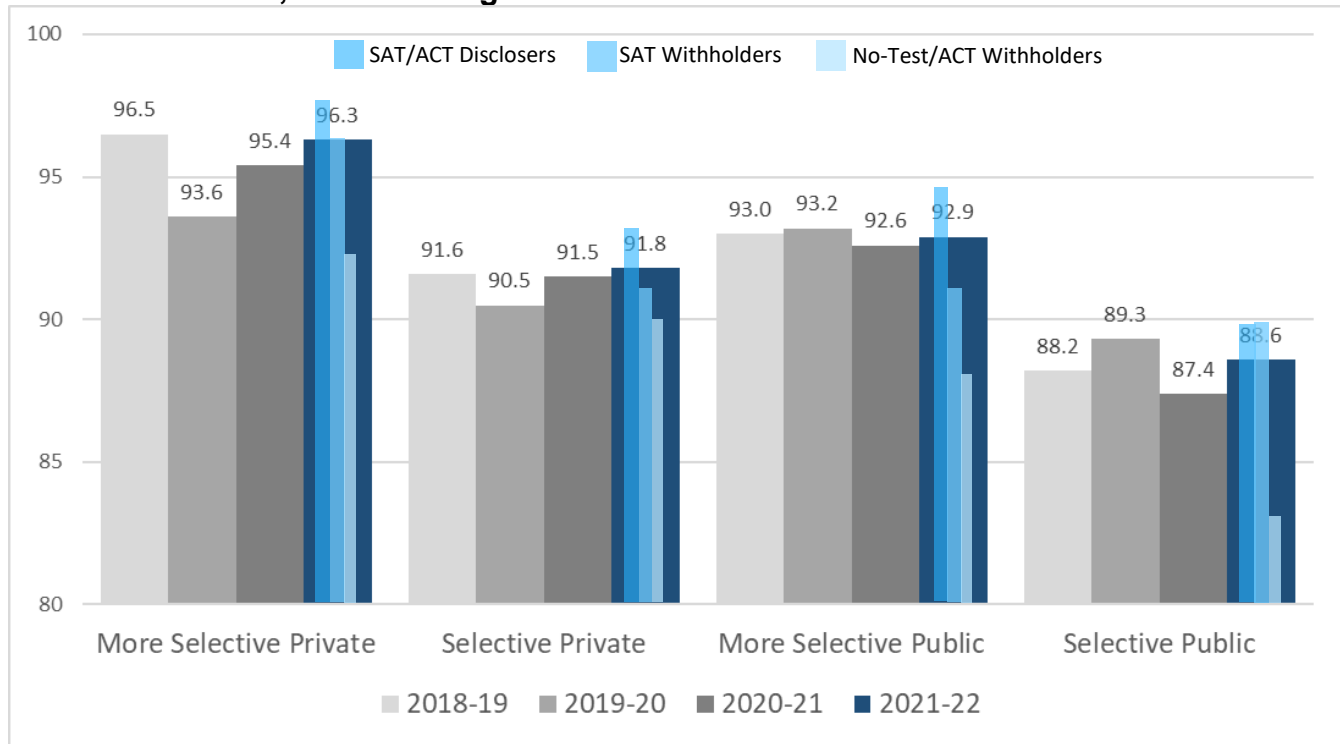
Appendix Figure A1: Average First-Year GPA, by Cohort, Score Disclosure Status, and ARC Segment



Appendix Figure A2: Average First-Year Credit Accumulation, by Cohort, Score Disclosure Status, and ARC Segment



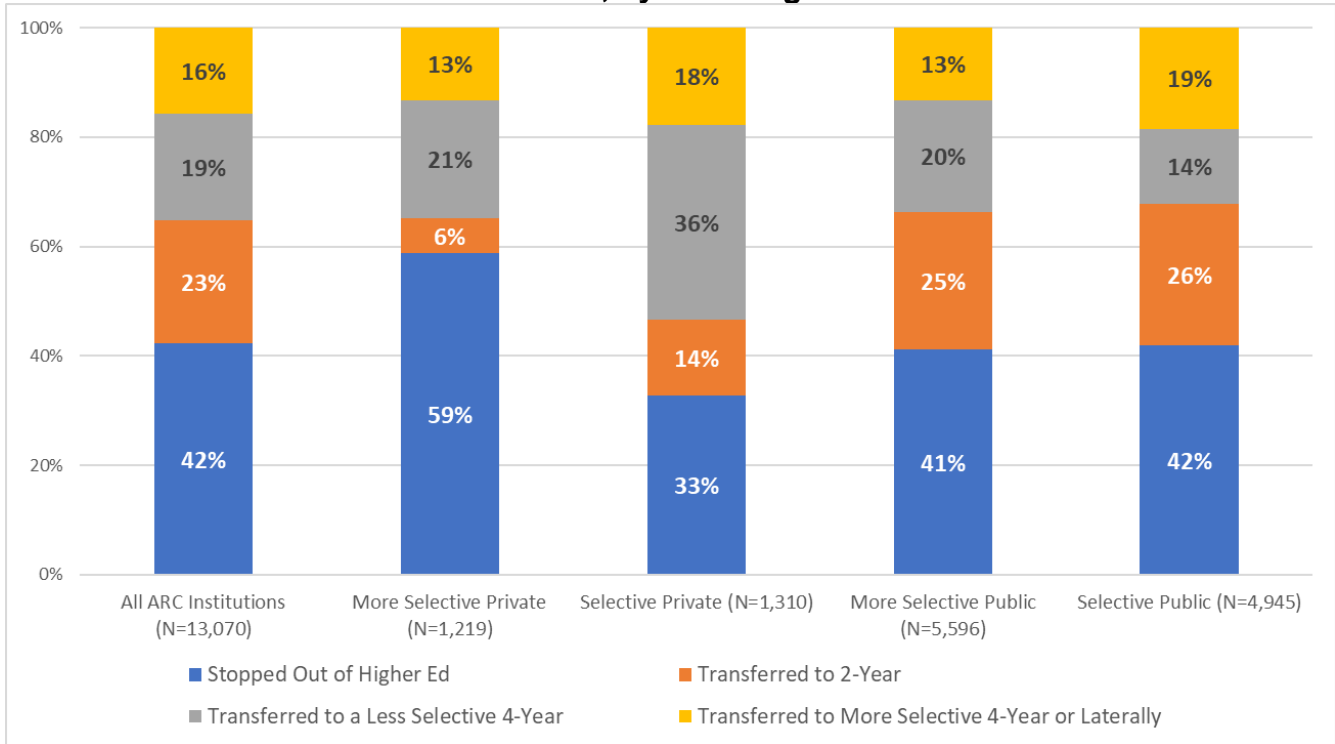
Appendix Figure A3: Average First-Year Retention Rate, by Cohort, Score Disclosure Status, and ARC Segment



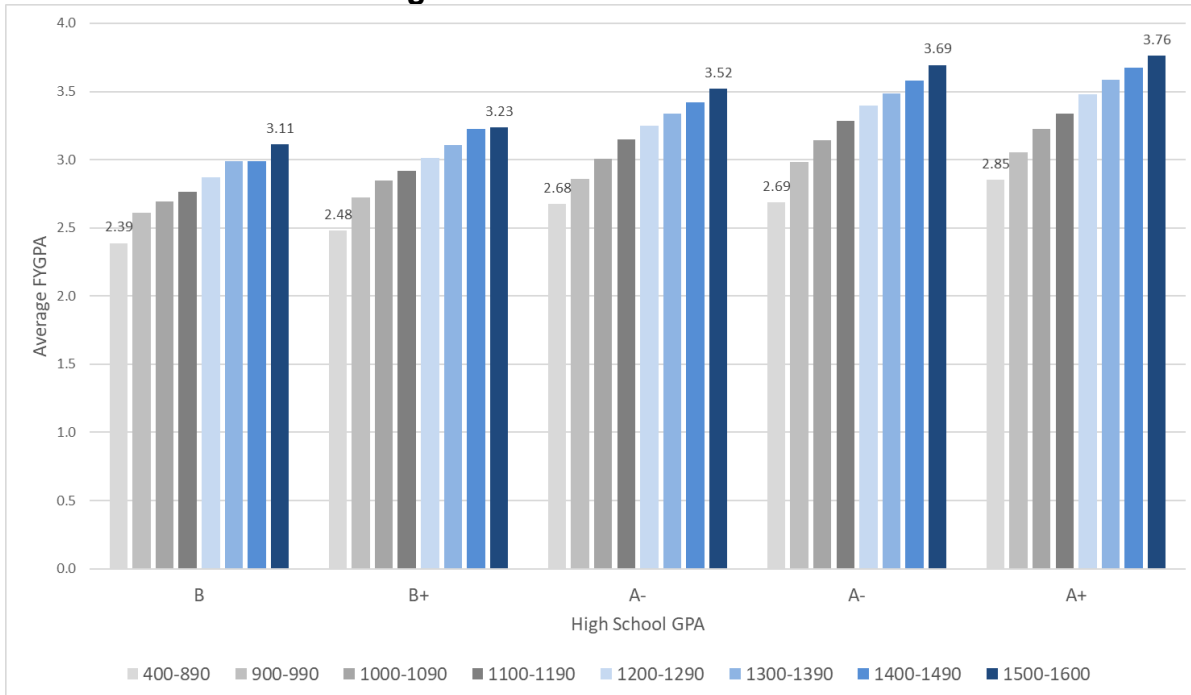
Data Detail on SAT/ACT Disclosers, SAT Withholders, No-Test/ACT Withholders in Appendix Figures A1, A2, and A3

| | More Selective Private ARC Institutions | Selective Private ARC Institutions | More Selective Public ARC Institutions | Selective Public ARC Institutions |
|-------------------------------|---|------------------------------------|--|-----------------------------------|
| Average FYGPA | | | | |
| SAT/ACT Disclosers | 3.62 | 3.47 | 3.35 | 3.29 |
| SAT Withholders | 3.40 | 3.29 | 3.13 | 3.17 |
| No-Test/ACT Withholders | 3.41 | 3.27 | 3.06 | 3.04 |
| Average FY Credits | | | | |
| SAT/ACT Disclosers | 30.5 | 30.3 | 27.4 | 28.7 |
| SAT Withholders | 30.1 | 29.0 | 27.2 | 28.0 |
| No-Test/ACT Withholders | 29.7 | 28.9 | 26.2 | 25.9 |
| Average Retention Rate | | | | |
| SAT/ACT Disclosers | 96.8 | 92.6 | 94.1 | 89.6 |
| SAT Withholders | 96.3 | 91.1 | 91.5 | 90.4 |
| No-Test/ACT Withholders | 94.5 | 90.1 | 88.2 | 83.0 |

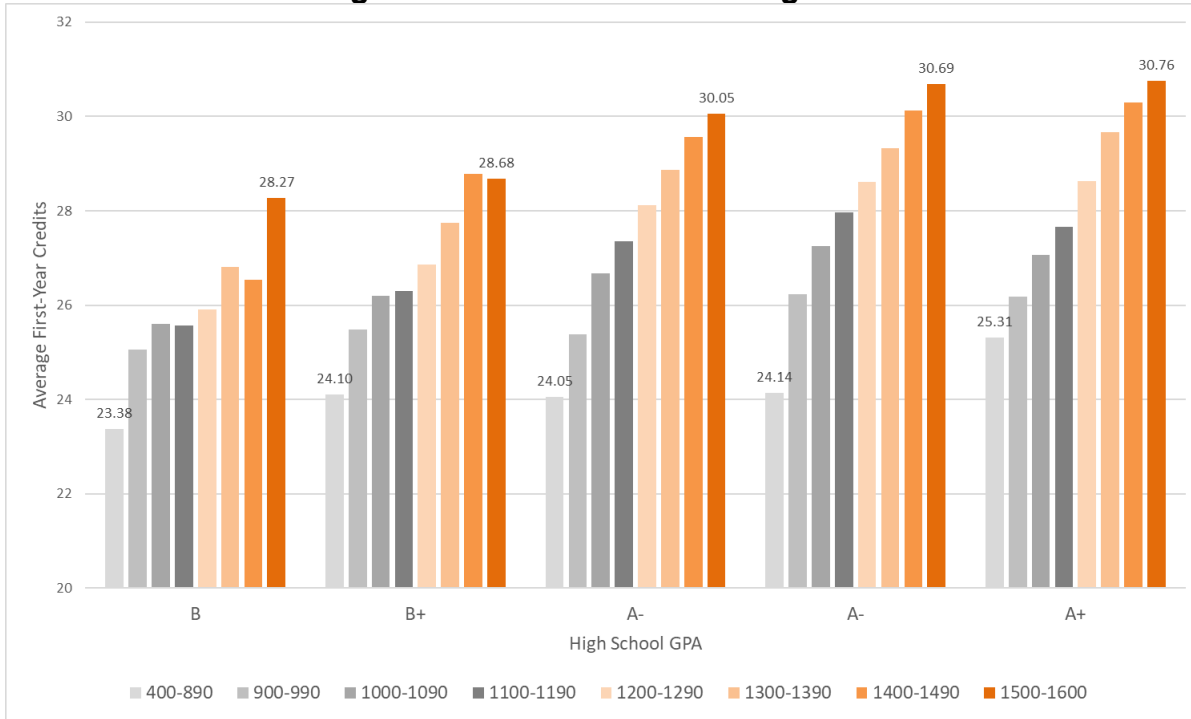
Appendix Figure A4: Fall 2019 Transfer Patterns Among Unretained ARC Students from 2018-19 First-Year Class, by ARC Segment



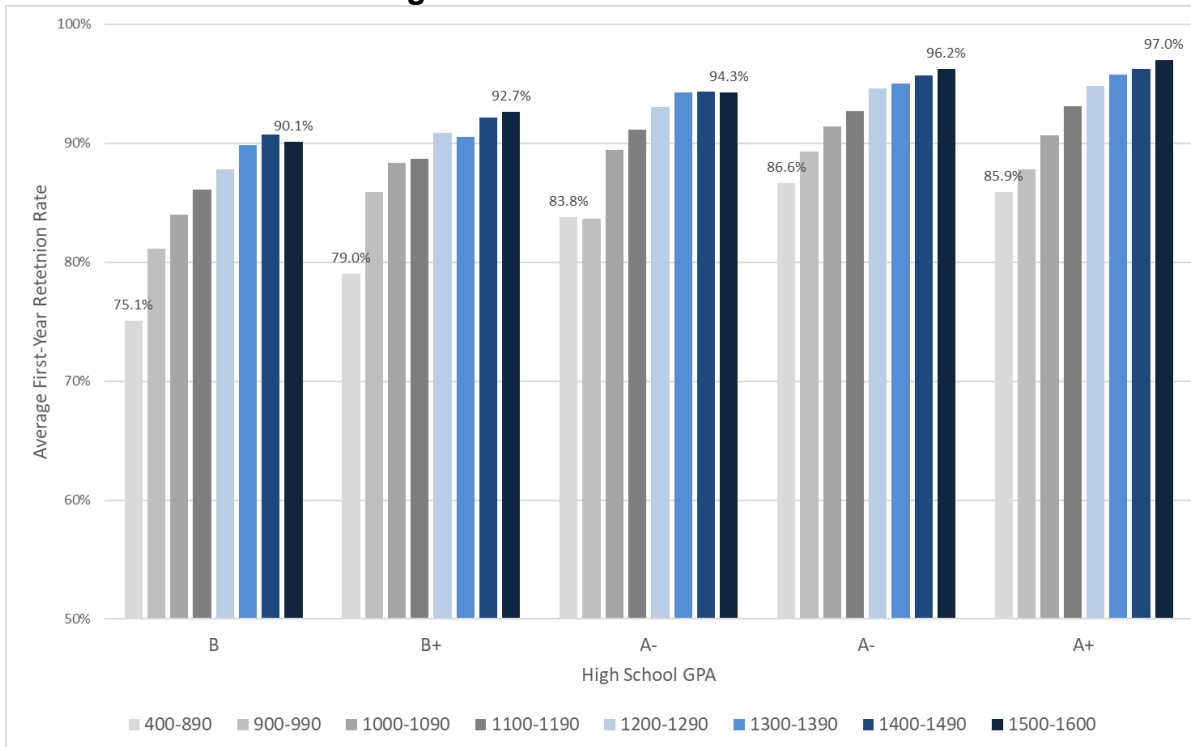
Appendix Figure A5: Relationship Between FYGPA and SAT Scores Among Students with the Same High School Grades



Appendix Figure A6: Relationship Between First-Year Credit Accumulation and SAT Scores Among Students with the Same High School Grades



Appendix Figure A7: Relationship Between Retention and SAT Scores Among Students with the Same High School Grades



References

- Causey, J., A. Gardner, H. Kim, S. Lee, A. Pevitz, M. Ryu, A. Scheetz, and D. Shapiro. 2022. Covid-19 Transfer, Mobility, and Progress, the 9th in the Series. National Student Clearinghouse Research Center: Herndon, VA. September 2022. Retrieved from <https://nscresearchcenter.org/wp-content/uploads/COVIDTransfer2YrofPandemic.pdf>.
- Howell, J., M. Hurwitz, S. Imlay, G. Perfetto. 2022a. New evidence on recent changes in college applications, admissions, and enrollments. College Board: New York, NY. July 2022. Retrieved from <https://research.collegeboard.org/media/pdf/ARC-Research-Brief.pdf>.
- Howell, J., M. Hurwitz, J. Ma, G. Perfetto, J. Wyatt, and L. Young. 2022b. College enrollment and retention in the era of covid: 2021 Update. College Board: New York, NY. October 2022. Retrieved from https://research.collegeboard.org/media/pdf/enrollment_retention_covid2021_post.pdf.
- Retta, M. 2020. How Colleges Are Grading Students During Coronavirus. NPR, April 10, 2020. Retrieved from <https://www.npr.org/2020/04/10/830622398/how-colleges-are-grading-students-during-coronavirus>.
- Svrluga, S. 2020. Colleges are ditching letter grades this spring, but not all students are on board with 'ungrading'. Washington Post, April 6, 2020. Retrieved from <https://www.washingtonpost.com/education/2020/04/06/college-grading-coronavirus/>.
- Tamez-Robledo, N. 2021. Pass/Fail Grding Was an Act of Pandemic Compassion. Is it Here to Stay? EdSurge, May 26, 2021. Retrieved from <https://www.edsurge.com/news/2021-05-26-pass-fail-grading-was-an-act-of-pandemic-compassion-is-it-here-to-stay>.
- Westrick, P., J. Marini, and E. Shaw. 2023. 2.00 and Go? Implications of a Low But Acceptable First-Year GPA. College Board: New York, NY. In publication; available at www.research.collegeboard.org.
- Westrick, P., J. Marini, L. Young, H. Ng, D. Shmueli, and E. Shaw. 2019. Validity of the Sat for Predicting First-year Grades and Retention to the Second Year. College Board: New York, NY. May 2018. Retrieved from <https://satsuite.collegeboard.org/media/pdf/national-sat-validity-study.pdf>.

About the College Board

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of over 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success — including the SAT[®] and the Advanced Placement Program[®]. The organization also serves the education community through research and advocacy on behalf of students, educators and schools. For further information, visit www.collegeboard.org.

College Board Research

The Research Department generates data and evidence on the impact of educational programs, assessments, and initiatives on students and various education stakeholders. For further information and publications, visit <https://research.collegeboard.org>.