

## Pell Access and Completion Series

**Part II: Public and Non-Profit Four-Year Universities**

JULY 2022

*The second brief in a three-part series on Pell Access and Completion by TICAS fellow Dr. Nick Hillman*

**INTRODUCTION**

Part I of this series examined Pell Grant access and completion rates among the nation's most accessible institutions of higher education – [community colleges](#). Part II shifts attention to some of the nation's most selective institutions – public and non-profit four-year universities. Nationwide, there are more than 2,000 public and non-profit four-year institutions (hereafter “universities”) enrolling 3 million Pell Grant recipients. To help contextualize this large sector of higher education, this brief classifies universities into four selectivity categories: highly selective; selective; moderately selective; and broad access. Organizing universities by selectivity helps distinguish the nation's most accessible universities from the least accessible, allowing us to see how admissions practices are linked to economic inequities.<sup>1</sup> The Pell Grant is a portable financial aid program that follows students to whichever eligible university they attend, regardless of the institution's selectivity level.<sup>2</sup> The Pell Grant is also the foundation of all other need-based financial aid, so universities can leverage their own financial aid on top of the Pell Grant to help students from lower- and moderate-income backgrounds pay for college.

This brief presents basic data trends that are surprisingly not well documented in the research and policy literature. It finds Pell Grant access and completion rates vary by selectivity. Pell Grant recipients attending the most selective universities tend to complete their degrees at higher rates; however, selective universities enroll the smallest shares of Pell Grant students while the least selective universities enroll the largest shares. It also finds Pell Grant completion rates have been steadily rising regardless of selectivity. These findings can be useful in many ongoing research and policy conversations; for example, it can help policymakers identify universities that serve high percentages of Pell Grant recipients while also having high Pell Grant completion rates. It could also help identify universities that improved the most on these key Pell Grant

metrics or to help enhance ongoing efforts among some of the universities serving large shares of Pell Grant students but with limited financial resources. Using data like this for ongoing improvement could contribute to state and federal policies aimed at improving access and completion rates for the nation's low- and moderate-income students.

**FOUR-YEAR UNIVERSITY CONTEXTS**

Universities included in this analysis enroll approximately 10 million undergraduate students, with 3 million being Pell Grant recipients.<sup>3</sup> While these universities enroll large numbers of Pell Grant recipients, the resources available to fund the education provided vary significantly and predictably. For example, broadly accessible universities that enroll disproportionately high shares of Pell Grant recipients have the least financial resources, while more selective universities enjoy significantly more resources and enroll the fewest Pell Grant recipients.<sup>4</sup> There are many reasons for these disparities and they have persisted for decades, exacerbated by the nation's wealthiest and most selective universities adopting enrollment management practices that favor and actively pursue more affluent students.<sup>5</sup> When these selective universities do recruit “high-achieving, low-income” students, they tend to cast a narrow net and draw from high schools located in just 15 metropolitan areas.<sup>6</sup> This results in a highly stratified system where – through the practice of selective admissions – universities with the greatest amount of resources tend to serve the smallest share of Pell Grant recipients from relatively narrow avenues of access.

Compounding these challenges is the fact that most undergraduates stay relatively close to home for college. According to the National Postsecondary Student Aid Survey, over half of all undergraduates attending universities are within just 50 miles from home.<sup>7</sup> Universities are connected to – and often have long and complex histories with – their local and regional communities.<sup>8</sup> For example, many of today's public universities started as regional teaching colleges and now have more comprehensive missions designed to meet a wide and diverse range of regional needs.<sup>9</sup> By virtue of their mission, many regional comprehen-

sive universities are seen as the workhorse of higher education serving large shares of under-represented students and doing so with the least resources.<sup>10</sup> While helping “high-achieving, low-income” students attend well-resourced selective universities is a worthwhile endeavor, it should not come at the expense of supporting broadly accessible universities that already serve the lion’s share of low- and moderate-income students. This analysis can help researchers and policymakers keep their focus on identifying, monitoring, and ultimately improving Pell Grant access and completion among the most accessible universities.

## DATA AND MEASURES

The following analysis draws from two U.S. Department of Education public data sources: College Scorecard and Pell Grant Volume reports.<sup>11</sup> The College Scorecard provides data on: (a) the predominant degree program and control of each institution;<sup>12</sup> (b) 12-month undergraduate unduplicated headcount;<sup>13</sup> and (c) completion rates for Pell Grant recipients.<sup>14</sup> Completion rates include students who completed a credential at either their original institution or a different institution within six years of first entry (i.e., 150 percent time).<sup>15</sup> In conjunction with other existing data sources, College Scorecard data enhances “estimates of institutional progression and completion related outcomes.”<sup>16</sup> The Pell Grant Volume reports provide data on: (d) total number of Pell Grant recipients during an award year and (e) total Pell Grant dollars disbursed during an award year.<sup>17</sup> In these two data sources, Pell recipients, disbursements, and degree completers are reported at the “main” (or “parent”) campus but 12-month enrollments are reported at each “child” location; to harmonize the two sources, this analysis sums all child enrollment data up to the main campus.<sup>18</sup> Taking this step allows for the full inclusion of all available years of data, beginning with the 1999-00 academic year and going through 2020-21, a period spanning two recessions and the first year of the COVID-19 pandemic.<sup>19</sup>

The key indicators of interest are the share of undergraduates receiving Pell Grants and 150 percent completion rate of Pell recipients.<sup>20</sup> Notably, Pell Grant completion rates are based on the U.S. Department of Education’s National Student Loan Data System (NSLDS). The NSLDS accounts for Pell Grant and federal loan disbursement records, making it a valid

and trustworthy source for key information on aided students. Using NSLDS for measuring completion rates is a relatively new use of these records, and one that has not been fully explored or discussed in policy and research conversations. When the federal government first released these records, they did so with the goal of helping the field “facilitate dialog [sic] about how these new data...can best enhance estimates of institutional progression and completion related outcomes.”<sup>21</sup> Accordingly, the completion rates reported in this brief should be interpreted with these caveats.

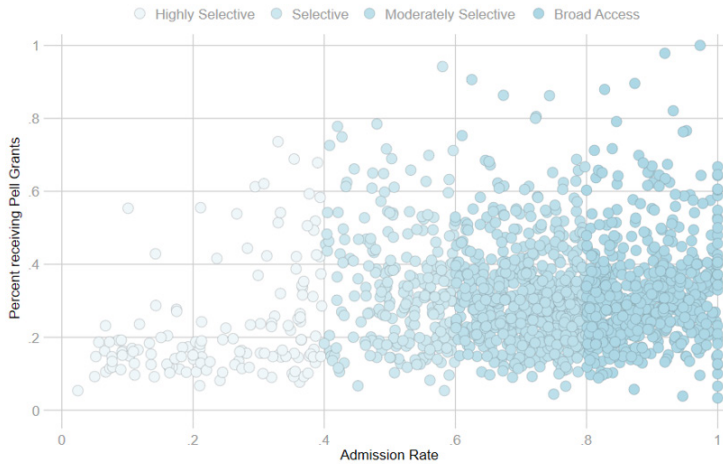
In addition to these measures, this analysis relies on admission rates reported in the College Scorecard.<sup>22</sup> I have coded all universities that admit fewer than 40 percent of their total applicants as “highly selective.” I then coded those with admission rates between 40 percent and 60 percent as “selective” and those between 60 percent and 80 percent as “moderately selective” universities. Following conventions of other researchers, I coded “broad access” universities as those admitting 80 percent or greater.<sup>23</sup> For example, many private liberal arts colleges are coded as “highly selective,” public research universities tend to be “selective,” and regional comprehensive universities are often “moderately selective” or “broad access.” I applied these thresholds for each year of data, where the Appendix summarizes the number of universities and Pell Grant recipients in each category for 2020-21.

## TRENDS IN PELL ACCESS

Today, approximately 3 million of the nation’s 6 million Pell Grant recipients attend public and non-profit universities. The vast majority of these students attend broad access and moderately selective institutions while relatively small shares attend highly selective and selective universities. Figure 1 illustrates this pattern by showing admission rates on the horizontal axis and the percent receiving Pell Grants on the vertical axis. While a handful of highly selective universities have high Pell Access rates, the majority have fewer than 20 percent of undergraduates receiving Pell Grants. Nationwide, most universities have at least 30 percent of their undergraduates receiving Pell Grants, making highly selective universities stand out as falling far behind national trends.

**FIGURE 1: ADMISSION RATES AND PELL GRANT ACCESS RATES AMONG UNIVERSITIES (2020-21)**

Admissions practices at highly selective universities reinforce inequality by limiting access among Pell Grant recipients.



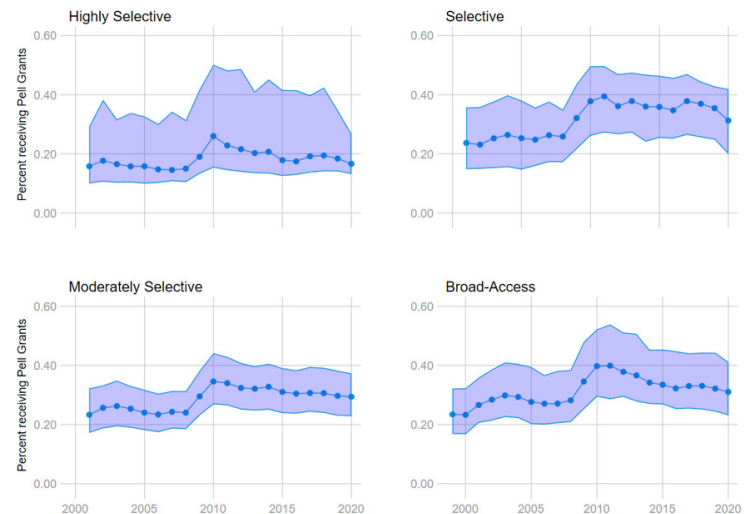
**Note:** Selectivity categories are based on the following admission thresholds: Highly Selective 0% to 40%; Selective 40% to 60%; Moderately Selective 60% to 80%; Broad Access 80% to 100%.

Source: Author's calculations using U.S. Department of Education's Office of Federal Student Aid Pell Volume data (for numerator) and U.S. Department of Education's College Scorecard admissions variable and 12-month unduplicated headcount (for denominator).

For additional context, Figure 2 provides Pell access trends across each of the four selectivity groups. Here, the solid line represents the share of undergraduates receiving Pell Grants at the median university; the area around the solid line represents the middle half of the distribution (i.e., the interquartile range). Displaying this range helps show how universities cluster together and can help assess when a university's Pell access rate is high or low when compared to other institutions.

**FIGURE 2: TRENDS IN PELL ACCESS RATES**

At all but highly selective universities, the share of undergraduates receiving Pell Grants hovers around 30% and is higher today than in the early 2000s; however, these trends are falling in recent years and will likely continue in the wake of the COVID-19 pandemic.



**Note:** The solid line represents the median university, the band represents the 25<sup>th</sup> to 75<sup>th</sup> percentile of universities. Selectivity categories are based on the following admission thresholds: Highly Selective 0% to 40%; Selective 40% to 60%; Moderately Selective 60% to 80%; Broad Access 80% to 100%.

Source: Author's calculations using U.S. Department of Education's Office of Federal Student Aid Pell Volume data (for numerator) and U.S. Department of Education's College Scorecard admissions variable and 12-month unduplicated headcount (for denominator).

Notably, universities in all categories *other than highly selective universities* have larger shares of Pell Grant recipients today than in the early 2000s. There was a surge of Pell Grant students during the Great Recession, where Pell access rates nearly doubled in all but the most selective universities. This suggests more accessible universities have become more economically diverse since before the recession; however, Figure 2 also shows steady declines over the past decade where universities are regressing to pre-Great Recession Pell Grant access levels. These trends are likely to be worsened because the same populations of individuals most negatively affected by the economic and public health consequences of the COVID-19 are often the same who would qualify for the Pell Grant. As these populations opt out of higher education, we can expect to see Pell Grant access rates continue to fall among the

nation's more accessible universities.

## TRENDS IN PELL COMPLETION

Shifting to Pell completion rates, Figure 3 provides the median (solid line) and interquartile range (blue area), for all years available in the dataset.<sup>24</sup> Here, completion rates are measured six-years after entry and most universities have steadily improved their Pell completion rates over time.<sup>25</sup> For example, the median Pell Grant completion rate at broad access universities nearly doubled between 2002-03 and 2018-19, rising from 34 percent to 60 percent. Unfortunately, it is unclear precisely “how much” of these improvements are driven by actual improvements versus improvements in NSLDS data quality; nevertheless, they are improvements that the research and policy community can learn from and examine for further research. One well-documented trend reflected in Figure 3 is that more selective universities tend to have higher completion rates; for example, the median Pell Grant completion rate among highly selective universities is around 80 percent.<sup>26</sup> The relationship between selectivity and completion rates is well documented in the research literature, where more selective universities recruit students based on prior academic success and tend to have greater resources to support their students through degree completion and the opposite is often true for more broadly accessible universities.

## FIGURE 3: TRENDS IN PELL COMPLETION RATES

**Completion rates for Pell Grant recipients attending public and non-profit universities are typically above 60% and have steadily risen over time, often increasing by at least one percentage point per year.**



**Note:** The solid line represents the median university, the band represents the 25<sup>th</sup> to 75<sup>th</sup> percentile of universities. Selectivity categories are based on the following admission thresholds: Highly Selective 0% to 40%; Selective 40% to 60%; Moderately Selective 60% to 80%; Broad Access 80% to 100%. Completions based on NSLDS data.<sup>27</sup>

Source: Author's calculations using U.S. Department of Education's College Scorecard Pell completion and admissions variables; completion rates include any credential from the student's original or transfer-out location within six years of entry (150% time).

## PELL ACCESS AND COMPLETION RATES

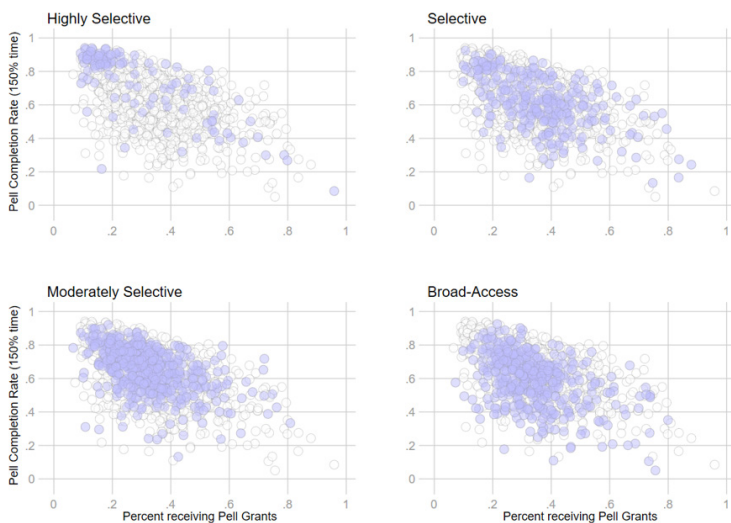
Figure 4 uses data from the 2018-19 reporting year (the most recent completion data available) to show the relationship between Pell access rates and Pell completion rates. Each circle represents a university and the vertical axis shows completion rates (150 percent time) for Pell Grant recipients, while the horizontal axis shows Pell access rates for public and non-profit universities. Figure 4 is arranged by selectivity, where the top-left panel shows how highly selective universities enroll small shares of Pell Grant recipients but tend to graduate Pell Grant recipients at very high rates. In each of the subsequent panels, there is a negative relationship between access and completion, which is consistent with the emerging research literature finding that more accessible universities tend to



have fewer resources and greater needs for supporting students through degree completion.<sup>28</sup> Accordingly, Figure 4 should be interpreted in that light where universities serving large shares of Pell Grant recipients are likely doing so with the fewest resources.

#### FIGURE 4: RELATIONSHIP BETWEEN PELL ACCESS AND COMPLETION RATE

**Universities enrolling small shares of Pell Grant students tend to have higher completion rates, likely because these same universities tend to be more selective and have greater resources to support students through degree completion.**



**Note:** Selectivity categories are based on the following admission thresholds: Highly Selective 0% to 40%; Selective 40% to 60%; Moderately Selective 60% to 80%; Broad Access 80% to 100%.

Source: Author’s calculations using U.S. Department of Education’s College Scorecard Pell completion and admissions variables; completion rates include any credential from the student’s original or transfer-out location within six years of entry (150% time). This also uses U.S. Department of Education’s Office of Federal Student Aid Pell Volume data (for numerator) and U.S. Department of Education’s College Scorecard admissions variable and 12-month unduplicated headcount (for denominator).

#### KEY TAKE-AWAYS

College access and completion rates among Pell Grant recipients is a topic not well documented in academic or policy research. Accordingly, this brief documented trends in these key metrics for public and non-profit four-year universities. Many of these institutions use selective admissions practices to limit who can attend and these practices often reinforce existing economic inequities in college access and completion. Among public and non-profit universities, this brief found:

- » Approximately half of the nation’s Pell Grant recipients attend public or non-profit four-year universities
- » Highly selective universities do the least in terms of expanding access to Pell Grant recipients; however, they tend to have some of the nation’s highest Pell Grant completion rates
- » Completion rates for Pell Grant recipients has steadily risen over time, with rates nearly doubling at broad access universities
- » The share of university students receiving Pell Grants has declined in recent years and risks falling even further in response to the COVID-19 pandemic

These baseline trends can help inform ongoing policy and research conversations by identifying universities that (a) enroll and complete large shares of Pell Grant recipients and (b) have experienced the greatest growth in these metrics over time. These tend to be moderately selective and broad access universities, and they can provide promising insights into the practices and programs universities use to recruit and retain Pell Grant recipients. It could also help inform research and outreach efforts to link students to colleges with high completion rates for Pell Grant recipients. Rather than expecting students to uproot and attend more selective universities far away, this report can help refocus attention on the institutions already serving the lion’s share of Pell Grant recipients. Ensuring these universities have adequate resources and capacity to fully support the needs of students from lower- and moderate-income backgrounds will be critical for closing inequities in college access and completion.<sup>29</sup>

## APPENDIX

### NUMBER OF INSTITUTIONS AND PELL GRANT RECIPIENTS, BY SECTOR AND SELECTIVITY (2020-21)

|                             | Institutions | Pell Grant recipients | Share of Pell Grant recipients |
|-----------------------------|--------------|-----------------------|--------------------------------|
| <b>PUBLIC</b>               |              |                       |                                |
| <i>Highly Selective</i>     | 26           | 129,320               | 4%                             |
| <i>Selective</i>            | 58           | 286,691               | 9%                             |
| <i>Moderately Selective</i> | 186          | 775,735               | 25%                            |
| <i>Broad Access</i>         | 299          | 1,012,761             | 32%                            |
| <b>Total</b>                | <b>569</b>   | <b>2,204,507</b>      | <b>70%</b>                     |
| <b>NON-PROFIT</b>           |              |                       |                                |
| <i>Highly Selective</i>     | 119          | 84,347                | 3%                             |
| <i>Selective</i>            | 184          | 135,979               | 4%                             |
| <i>Moderately Selective</i> | 415          | 291,864               | 9%                             |
| <i>Broad Access</i>         | 718          | 423,658               | 13%                            |
| <b>Total</b>                | <b>1,436</b> | <b>935,848</b>        | <b>30%</b>                     |
| <b>TOTAL</b>                |              |                       |                                |
| <i>Highly Selective</i>     | 145          | 213,667               | 7%                             |
| <i>Selective</i>            | 242          | 422,670               | 13%                            |
| <i>Moderately Selective</i> | 601          | 1,067,599             | 34%                            |
| <i>Broad Access</i>         | 1,017        | 1,436,419             | 46%                            |
| <b>Total</b>                | <b>2,005</b> | <b>3,140,355</b>      | <b>100%</b>                    |

## ENDNOTES

<sup>1</sup> See M. Bastedo & O. Jaquette (2011). *Running in Place: Low-Income Students and the Dynamics of Higher Education Stratification*. *Education Evaluation and Policy Analysis*, 33(3), 318-339. <https://journals.sagepub.com/doi/pdf/10.3102/0162373711406718>.

<sup>2</sup> See C. Dortch (2021). *Federal Pell Grant Program of the Higher Education Act: A Primer*. Congressional Research Service. Washington, DC. <https://crsreports.congress.gov/product/details?prodcode=R45418>.

<sup>3</sup> Institution count is based on "PREDEG" and "CONTROL" in the 2020-21 College Scorecard and enrollment is based on 12-month undergraduate unduplicated headcount ("UG12MN") from the 2020-21 College Scorecard. See also U.S. Department of Education (2022). *Digest of Education Statistics*, Table 317.10: Degree-Granting Postsecondary Institutions, by Control and Level of Institutions. [https://nces.ed.gov/programs/digest/d21/tables/dt21\\_317.10.asp?current=yes](https://nces.ed.gov/programs/digest/d21/tables/dt21_317.10.asp?current=yes).

<sup>4</sup> B. Taylor & B. Cantwell (2019, p. 113). *Unequal Higher Education: Wealth, Status, and Student Opportunity*. Rutgers University Press.

<sup>5</sup> See C. Clotfelter (2017, p. 162). *Unequal Colleges in the Age of Disparity*. Harvard University Press and C. Han; O. Jaquette; K. Salazar (2019). *Recruiting the Out-of-State University: Off-Campus Recruiting by Public Research Universities*. [https://emrresearch.org/sites/default/files/2019-03/joyce\\_report.pdf](https://emrresearch.org/sites/default/files/2019-03/joyce_report.pdf); D. Hoxsler & B. Bontrager (2014). *Handbook of Strategic Enrollment Management* and A. Nichols. (2020). *Segregation forever? The continued underrepresentation of Black and Latino undergraduates at the nation's 101 most selective public colleges and universities*. <https://edtrust.org/resource/segregation-forever/>.

<sup>6</sup> See C. Hoxby and C. Avery (2013, p. 39). *The Missing "One-Offs": the Hidden Supply of High-Achieving, Low-Income Students*. *Brookings Papers on Economic Activity*: [https://www.brookings.edu/wp-content/uploads/2016/07/2013a\\_hoxby.pdf](https://www.brookings.edu/wp-content/uploads/2016/07/2013a_hoxby.pdf).

<sup>7</sup> See N. Hillman & W. Boland (2019). *Geography of College Choice*. In *Contemporary Issues in Higher Education* (M. Gasman & A. Castro-Samayoa, Eds.). Routledge Press.

<sup>8</sup> See K. McClure; C. Orphan; A. Hicklin Fryar; & A. Korich (2021). *Strengthening Rural Anchor Institutions: Federal Policy Solutions for Rural Public Colleges and the Communities They Serve*. Alliance for Research on Regional Colleges; also see N. Hillman (2019). *Place Matters: A Closer Look at Education Deserts*. Third Way; Washington, DC. <https://www.third-way.org/report/place-matters-a-closer-look-at-education-deserts> and C. Clotfelter (2017, p. 45). *Unequal Colleges in the Age of Disparity*. Harvard University Press.

<sup>9</sup> See A. Hicklin-Fryar (2015). *The Comprehensive University: How It Came To Be And What It Is Now*. *The University Next Door: What is a Comprehensive University and can it Survive?* M. Schneider, K. Deane (Eds.). Teachers College Press.

<sup>10</sup> *Ibid*. Also see M. Titus, A. Vamosiu, & K. McClure (2017). *Are Public Master's Institutions Cost Efficient? A Stochastic Frontier and Spatial Analysis*. *Research in Higher Education*, 58, 469-496. <https://link.springer.com/article/10.1007/s11162-016-9434-y>.

<sup>11</sup> See <https://collegescorecard.ed.gov/data> and <https://studentaid.gov/data-center/student/title-iv>. Import code for College Scorecard data uses CJ Libassi's useful and publicly-accessible code, any errors or omissions are mine alone: [https://github.com/clibassi/scorecard\\_intake](https://github.com/clibassi/scorecard_intake).

<sup>12</sup> This analysis identifies universities as public and non-profit institutions (CONTROL) that are predominantly bachelor's degree granting (PREDEG).

<sup>13</sup> According to the College Scorecard's cohort map, reported 12-month headcount represent prior year's enrollment; therefore, this analysis lags College Scorecard's reported 12-month headcount one year (e.g., 2020-21 reported 12-month headcount measure enrollment from academic year 2019-20).

<sup>14</sup> The IPEDS Outcome Measures survey also includes completion rates for Pell Grant recipients, but this excludes transfer, so College Scorecard data tied to NSLDS records is preferred for examining completion rates. However, these are not without limitations, as NSLDS records are unau-

dated and may have data quality issues that are not fully understood (e.g., completion data are "being made available to the field to facilitate dialog about how these new data, in conjunction with other existing information, can best enhance estimates of institutional progression and completion related outcomes") see Executive Office of the President of the United States (2017). *Using Federal Data to Measure and Improve the Performance of U.S. Institutions of Higher Education*, p. 67. <https://collegescorecard.ed.gov/assets/UsingFederalDataToMeasureAndImprovePerformance.pdf>.

<sup>15</sup> This analysis sums the following variables to generate this rate: pell\_comp\_orig\_yr6\_rt; pell\_comp\_4yr\_trans\_yr6\_rt; and pell\_comp\_2yr\_trans\_yr6\_rt. Students who earn less than a bachelor's degree are included here; College Scorecard does not distinguish degree programs.

<sup>16</sup> U.S. Department of Education (2017). *Using federal data to measure and improve the performance of U.S. institutions of higher education*. <https://collegescorecard.ed.gov/assets/UsingFederalDataToMeasureAndImprovePerformance.pdf>.

<sup>17</sup> This analysis uses the "award year summary" for the fourth quarter of each award year, measuring the total number of recipients and dollars disbursed at the end of each respective award year.

<sup>18</sup> This is due to the Office of Federal Student Aid reporting at the six-digit OPEID level while IPEDS enrollments are reported using UNITID.

<sup>19</sup> Completion data are only reported through 2018-19 in the College Scorecard.

<sup>20</sup> Pell share is measured as the total number of Pell recipients in an award year divided by the 12-month undergraduate unduplicated headcount (or "d" divided by "b" from above) while Pell completion is measured by the share of students in a given cohort completing any credential (certificate or higher) within six years at any subsequent institution (or "c" from above). For example, the completion rate reported in 2018-19 represents the completion rate for the 2012-13 entry cohort.

<sup>21</sup> See Executive Office of the President of the United States (2017). *Using Federal Data to Measure and Improve the Performance of U.S. Institutions of Higher Education*, p. 29: <https://collegescorecard.ed.gov/assets/UsingFederalDataToMeasureAndImprovePerformance.pdf>.

<sup>22</sup> This uses the variable "adm\_rate\_all" which measures "admission rate for all campuses rolled up to the 6-digit OPE ID" according to College Scorecard's data dictionary: <https://collegescorecard.ed.gov/data/documentation/>.

<sup>23</sup> See G. Crisp, C. Horn, M. Kuczynski, Q. Zhou, & E. Cook (2019). *Describing and Differentiating Four-Year Broad Access Institutions: An Empirical Typology*. *Review of Higher Education*, 42(4) <https://muse.jhu.edu/article/729347>. Also see G. Crisp, K. McClure, & C. Orphan (2022). *Unlocking Opportunity through Broadly Accessible Institutions*. Routledge Press.

<sup>24</sup> Note the horizontal axis represents the reporting year, so completion rates in 2018-19 are for the cohort of students who entered six years prior (in 2012-13).

<sup>25</sup> NSLDS completion rates are "based on cohorts of students who are estimated to have begun their studies in the same "entry year" ... the date is estimated based on a combination of when the student is first observed receiving federal aid at an institution, and the student's self-reported grade level on the FAFSA form associated with that record." See Executive Office of the President of the United States (2017). *Using Federal Data to Measure and Improve the Performance of U.S. Institutions of Higher Education*, p. 29: <https://collegescorecard.ed.gov/assets/UsingFederalDataToMeasureAndImprovePerformance.pdf>

<sup>26</sup> For a review of this work, see L. Page & J. Scott-Clayton. "Improving college access in the United States: Barriers and policy responses." *Economics of Education Review*, vol. 51, 2016, pp. 4-22. and W. Bowen & M. Chingos (2009). *Crossing the Finish Line: Completing College at America's Public Universities*, Princeton, NJ: Princeton University Press.

<sup>27</sup> See endnotes 14, 15, and 16 above for more context on the strengths and limitations of the NSLDS completion data which has been published to facilitate conversations around improving these measures.

<sup>28</sup> See for example Taylor, B. & Cantwell, B. (2019). *Unequal Higher Education: Wealth, Status, and Student Opportunity*. Rutgers University Press;

Clotfelter, C. (2017). *Unequal Colleges in the Age of Disparity*. Harvard University Press, Cambridge, MA; J. Bound, M. Lovenheim, & S. Turner (2010). Why Have College Completion Rates Declined? An Analysis of Changing Student Preparation and Collegiate Resources. *American Economic Journal: Applied Economics*, 2(3), 129-157; J. Bound M. Lovenheim, & S. Turner. (2012). Increasing Time to Baccalaureate Degree in the United States. *Education Finance and Policy*, 7(4), 375-424.

<sup>29</sup> See for example N. Hillman (2020). Why Rich Colleges Get Richer & Poor Colleges Get Poorer. Third Way, Washington DC: <https://www.luminafoundation.org/resource/why-rich-colleges-get-richer-poor-colleges-get-poorer/> and S. Laderman (2022). Under Audit: Equity Audits in State Higher Education Finance. MDRC, Washington DC: <https://www.mdrc.org/publication/under-audit-equity-audits-state-higher-education-finance>.