

Appendix Material to Accompany

CROSSING THE FINISH LINE

COMPLETING COLLEGE AT AMERICA'S
PUBLIC UNIVERSITIES

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APPENDIX B

Data Collection, Cleaning, and Imputation

THIS STUDY RELIES HEAVILY on two new databases created by research staff at The Andrew W. Mellon Foundation: (1) a “Flagships Database,” and (2) a “State Systems Database.” We describe each in this appendix. We first describe the data collection process and the restrictions imposed to create as much uniformity across institutions as possible in the students included in our study (first-time, full-time freshmen and full-time transfer students of traditional college-going age). We then turn to the creation of composite variables from multiple data sources and the imputation of missing values of two key variables: family income quartile and high school GPA. Finally, we briefly discuss further restrictions imposed on the sample of students due to missing data.

The Flagships Database was assembled between September 2005 and August 2006. The core of the database is an institutional file that contains detailed demographic, academic, and financial aid data on essentially every student who entered one of 21 selective public universities in the fall of 1999 (although most universities excluded from their data students who began their studies on a part-time basis).¹ The institutional file is linked with secondary data files provided by the College Board, ACT, the National Student Clearinghouse, and the Higher Education Research Institute (HERI). Additionally, the home addresses of the students have been matched to their corresponding geographical codes (“geocodes”) and can be linked to census data down to the block level.

The State Systems Database, which covers a wider range of institutions in four states—Maryland, North Carolina, Ohio, and Virginia—was assembled between June 2006 and June 2008. This database, also on the 1999 entering cohort, includes institutional files from every public university in Maryland, North Carolina, and Ohio as well as every public and private college and university in Virginia.² Additionally, we have data on every North Carolina student who was a high school senior in 1999. These

1. A handful of students were not included, such as those who explicitly forbade the release of their educational records for research purposes (or any purpose), as well as, at one school, those who were not at least 18 years of age on the first day of classes in fall 1999.

2. The Ohio file includes only students at the main campuses of its public universities; those at branch campuses are excluded.

files are linked with secondary data files provided by the College Board and the National Student Clearinghouse, and the students' home addresses have been linked to their corresponding geocodes.

As in the case of the College and Beyond Database, the Foundation's confidentiality agreements with the universities and secondary data providers mandate that these databases be maintained with "restricted access." The next three sections focus on the Flagships Database, after which we briefly return to the State Systems Database, which is similar in construction but different in scope.

THE SELECTION OF FLAGSHIP UNIVERSITIES AND DATA COLLECTION

The flagship universities in our study were selected from among the membership of the Association of American Universities (AAU), an organization whose members are the leading research-intensive universities in the United States, both public and private. In August 2005, Nils Haselmo, then president of the AAU, sent a message to the presidents and chancellors of the member universities informing them of the Mellon Foundation's proposed study of opportunity and the related data collection effort. Shortly thereafter, William G. Bowen, then president of the Foundation, wrote to the presidents and chancellors of the 21 public universities that were selected in an effort to obtain data from a representative group based on factors such as geography, enrollment, graduation rates, and selectivity.³

Within a month of receipt of this invitation, 24 universities had agreed to participate. At their annual retreat in mid-September, the trustees of the Foundation strongly endorsed the new research agenda and proposed data collection. Around the same time, a meeting of data contacts from a handful of the participating universities was convened by the Foundation to discuss exactly which variables should be included in the data request. The final data request was submitted to the universities shortly thereafter.

Ultimately, three of the institutions declined to participate because of state laws, institutional mandates, or other policies that prohibited them from contributing the necessary data. Additionally, two of the invited par-

3. Of the 21 universities invited to participate, 5 had previously contributed data to the College and Beyond Database. Pennsylvania State University contributed data on the 1951, 1976, 1989, and 1995 cohorts; the University of Michigan–Ann Arbor and the University of North Carolina–Chapel Hill contributed data on the 1951, 1976, and 1989 cohorts; and the University of California–Los Angeles, the University of Illinois at Urbana-Champaign, and the University of Virginia contributed data on the 1995 cohort.

ticipants (the University of Texas–Austin and the University of Washington) later decided to submit only “directory information,” data on a limited set of variables that universities are explicitly permitted to release under federal law without students’ consent. Data on many of the variables missing from the two “directory information” schools were obtained by incorporating data from secondary sources (described later), but the lack of any financial aid or academic performance data forced us to exclude these schools from some parts of our analysis. Thus, the final set of universities includes 19 full participants and 2 partial participants.

With the cooperation of numerous institutional researchers, attorneys, provosts, presidents, and other administrators, we were able to complete data collection from the 21 institutions in August 2006. The resulting new database is one of a kind and serves as a testament to the commitment of the participating institutions, along with the Foundation, to a common research agenda that, we hope, will provide benefits to both the participating institutions and society at large.

THE INSTITUTIONAL FILE

The institutional data file contains information on a uniquely rich set of variables for 95,923 first-time freshmen and 29,719 transfer students at the 21 flagship universities. The data fall into three main categories: personal characteristics, which are constant across time; academic enrollment and performance measures, which were collected for every semester the student was enrolled; and financial aid data, which were collected for every year the student applied for aid and/or received it.

The personal characteristics file includes information about the students’ demographics, pre-college characteristics, and academic outcomes. Demographic variables include gender, race/ethnicity, citizenship status, country of residence or citizenship, state of residence (for purposes of calculating tuition), and home town, state, and zip code. Pre-college characteristics include SAT scores, ACT scores, name and College Board code of the student’s high school, high school rank-in-class, high school grade point average (GPA), and college credits upon arrival (e.g., from Advanced Placement courses). Additionally, data were collected on the previous institutions attended by incoming transfer students and their academic performance at those institutions, as measured by grades received and degree(s) attained. Academic outcomes variables include graduation status, graduation date, graduation honors, and final cumulative college GPA.

The academic enrollment and performance data include, for each semester, information on whether the student was enrolled, the name of the sub-unit of the university he or she attended (e.g., arts and sciences, engineering, nursing), whether the student was enrolled in an honors

program or college, the name(s) and Classification of Instructional Programs code(s) of the student's major(s) and minor(s), the number of credit hours the student attempted (and his or her corresponding full- or part-time status), the number of credit hours the student successfully completed, and whether the student was living in a residence hall. A few schools also were able to provide data on whether the student was studying abroad as well as, for students who did not live on campus, the zip code of the student's off-campus address.

The financial aid data include information from two main sources: the student's and parents' responses to the Free Application for Federal Student Aid (FAFSA) and the amounts of aid disbursed by source and type. The FAFSA responses are available only for students who applied for financial aid and include data on the student's independent or dependent status, parents' income and assets, student's income and assets, expected family contribution (EFC), student's budget (cost of attendance), and student's calculated need (budget minus EFC). Some schools also were able to provide information on the student's and parents' marital status and each parent's educational attainment from the FAFSA form. The data on aid amounts are available primarily for students who applied for aid but also for some students who did not fill out the FAFSA but received purely merit-based aid.⁴ In addition to information on the total amount of financial aid received, the following breakdowns are included: (1) grants and scholarships, loans, and work-study earnings; (2) need-based and non-need-based aid;⁵ and (3) federal, state, institutional, and private aid. Data were also collected on the amount of federal Pell Grants and Supplementary Educational Opportunity Grants the student received as a possible metric for comparisons across universities. Finally, data were collected on whether the student paid resident (in-state) or non-resident (out-of-state) tuition each year.⁶

SECONDARY DATA SOURCES

The institutional file is linked to data from four secondary sources: the College Board, ACT, the National Student Clearinghouse, and the HERI.⁷

4. The FAFSA is primarily an application for need-based aid, although it is also required for some non-need-based federal loan programs.

5. Only aid based purely on need is included in the need-based category; aid based on a mix of merit and need is included in the non-need-based category.

6. Some schools reported the resident versus non-resident tuition data by semester.

7. The organizations that provided the secondary data matched the institutional records to their records using the student's name, Social Security number,

The College Board and ACT data provide vital demographic information not available from the institutions, such as self-reported family income and parental education.⁸ For the two universities that provided only directory information (discussed earlier), we relied on the secondary data sources for essentially all of the demographic information, including race/ethnicity and gender. The College Board and ACT also provided extensive survey responses about the students' academic preparation in high school (e.g., courses taken, grades received, rank-in-class), extracurricular activities in high school, educational aspirations, and plans for college (e.g., intended major, type of college most interested in).⁹ The HERI file contains responses to a survey administered during the freshman year to students at six of the universities in our study.¹⁰ These survey data include responses to a broad range of questions regarding the student's first-year college experience.

The students' home addresses at the time they took the SAT and/or the ACT were matched to the corresponding geocodes so that students could be linked with the characteristics of the neighborhoods in which they lived during high school (and, in many cases, where they grew up). We are able to match students to census data down to the block level, although the variable of which we make the most use, median family income, is available beginning at only the block group level.

The Student Clearinghouse data allow us to track students who left the institution where they began their studies without graduating and enrolled in another institution. The Clearinghouse file contains the name and type (two- versus four-year and public versus private) of every institution the student attended after August 1, 1999, as well as the dates of

and date of birth (the College Board and ACT also employed a small number of other variables in their matching algorithm, such as high school attended and home zip code). Not all schools provided Social Security numbers; the match rates were lower, on average, for the schools that did not provide Social Security numbers than for those that did. All names and Social Security numbers were stripped from the database and destroyed after the matching was completed. One school (Rutgers) made the matches on its own in cooperation with the College Board and the Clearinghouse (ACT data were not obtained, which was not particularly problematic because most Rutgers students took the SAT) and provided de-identified data to Mellon.

8. Data on parental education are available only from the College Board; ACT does not collect this information.

9. The College Board survey, also called the Student Descriptive Questionnaire, is filled out when students take the SAT. The ACT survey is filled out when students register to take the test, which they must do at least three weeks prior to taking the test.

10. These six universities are Iowa State, Michigan, Ohio State, Stony Brook, UCLA, and UNC-Chapel Hill.

each period for which he or she was enrolled. At the time we completed the matches, the institutions that submitted enrollment data to the Clearinghouse represented 91 percent of post-secondary enrollment in the United States. The Clearinghouse data also include information on degrees received (name and type of institution granting the degree and degree title), but the coverage of the degree data is only about half that of the enrollment data.¹¹

THE DATA FROM THE FOUR STATE SYSTEMS

The State Systems Database is structured in a fashion similar to the Flags Database, with separate institutional and secondary data files for each state. The Maryland file, which includes data maintained by the University System of Maryland as well as information submitted by the individual institutions solely for this study, contains data on 10,565 freshmen and 6,824 incoming transfer students at nine public universities. The availability of data on the variables that were not incorporated in the system data varies substantially across institutions.

The North Carolina university file, which is maintained by the University of North Carolina System, contains records for 27,465 freshmen and 10,052 transfer students at 16 public universities. The North Carolina pre-college file, which is maintained by the North Carolina Education Research Data Center, contains records for 61,322 students who were high school seniors in 1999, of which 17,389 are also among the incoming freshmen in the university file. The pre-college file includes data on students' high school, race/ethnicity, gender, and standardized test scores.¹²

The Ohio file, which is maintained by the Ohio Board of Regents, contains data on 35,726 freshmen and 12,288 transfers at the main campuses of 13 public universities (branch campuses are not included).

The Virginia file, which is maintained by the State Council of Higher Education for Virginia, contains data on 34,195 freshmen and 13,043 transfer students at 42 public and private colleges and universities. Several of these institutions had incomplete data or matriculated a small number of students, so our analysis considers only a sub-set of the origi-

11. At the time we completed the matches, the institutions that submitted degree data to the Clearinghouse represented approximately half of postsecondary enrollment in the United States.

12. Scores on tests administered to eighth-graders in reading and math as well as on "end-of-course" exams administered to high school students in algebra, biology, U.S. history, and English are available for a majority of students in these data.

nal 42 institutions. (The next section of this appendix explains in detail which institutions were excluded and the effects of these exclusions on the database.)

The institutional records from all four states include data on a total of 107,951 freshmen and 42,207 transfer students (as well as the North Carolina high school seniors) and contain information on variables similar to those included in the Flagships Database. The data from Maryland, North Carolina, and Virginia were matched to the databases maintained by the College Board and the National Student Clearinghouse.¹³ The matched records obtained from these organizations are identical in structure to those described for the flagships. Staff of the Ohio Board of Regents provided us with the College Board and ACT records corresponding to the Ohio state system data (although Clearinghouse data were not available). However, these matched records were available only for Ohio residents.

THE INITIAL RESTRICTION OF THE SAMPLE

Our main data set has been restricted to include only first-time, full-time freshmen as well as full-time transfer students who first matriculated at one of the universities in our database in the fall of 1999. Some students actually started during the summer of 1999 but are included in our data because their institution considers them part of the fall entering cohort.

Thus, students in the '99 cohort who began their studies on a part-time basis were excluded. We also excluded the small number of students who appear in the demographic file but not in the enrollment file. These students either have erroneous records or dropped out so soon after enrolling that they are not captured in the enrollment data.

We also imposed an age cut-off of 24 in order to try to restrict the sample to traditional college-age (i.e., dependent) students. Students' actual dependency status is available only for students who applied for financial aid, and we did not want to restrict our sample based on this limited information. Although it is possible for students who are younger than 24 to be independent (e.g., by being married or a veteran of the armed services), the number who fall into this category is probably small.

Finally, we excluded the small number of students who were neither citizens nor permanent residents of the United States, because their socioeconomic status (SES) is difficult to measure and compare to that of their classmates due to the varied countries in which they grew up.

13. Most college-bound students in these three states take the SAT, so we did not match the institutional records to the ACT (as we did for the flagships).

APPENDIX TABLE B.1

Number of Freshmen and Transfer Students Dropped at Each Stage
of Sample Restriction and Reasons Dropped

| <i>Reason Dropped</i> | <i>Flagships</i> | | <i>State Systems (Total)</i> | |
|---|-------------------------------|------------------|------------------------------|------------------|
| | <i>Freshmen</i> | <i>Transfers</i> | <i>Freshmen</i> | <i>Transfers</i> |
| Not Observed in Enrollment Data | 457 | 472 | 156 | 116 |
| Not Enrolled in Fall 1999 | 313 | 395 | 91 | 66 |
| Part-Time in Fall 1999 | 3,497 | 3,643 | 8,543 | 10,861 |
| Not a Citizen or Permanent Resident of the United States | 1,810 | 1,452 | 1,078 | 874 |
| Born before January 1, 1976 | 119 | 4,158 | 1,231 | 6,994 |
| <i>Total Dropped</i> | <i>6,196</i> | <i>10,120</i> | <i>11,099</i> | <i>18,911</i> |
| | <i>State Systems by State</i> | | | |
| <i>Reason Dropped</i> | <i>Maryland</i> | | <i>North Carolina</i> | |
| | <i>Freshmen</i> | <i>Transfers</i> | <i>Freshmen</i> | <i>Transfers</i> |
| Not Observed in Enrollment Data | 29 | 84 | 35 | 10 |
| Not Enrolled in Fall 1999 | 43 | 64 | 0 | 0 |
| Part-Time in Fall 1999 | 193 | 1,245 | 2,897 | 2,196 |
| Not a Citizen or Permanent Resident of the United States | 75 | 151 | 238 | 192 |
| Born before January 1, 1976 | 77 | 1,030 | 251 | 2,096 |
| <i>Total Dropped</i> | <i>417</i> | <i>2,574</i> | <i>3,421</i> | <i>4,494</i> |
| <i>Reason Dropped</i> | <i>Ohio</i> | | <i>Virginia</i> | |
| | <i>Freshmen</i> | <i>Transfers</i> | <i>Freshmen</i> | <i>Transfers</i> |
| Not Observed in Enrollment Data | 92 | 22 | 0 | 0 |
| Not Enrolled in Fall 1999 | 48 | 2 | 0 | 0 |
| Part-Time in Fall 1999 | 2,278 | 3,293 | 3,175 | 4,127 |
| Not a Citizen or Permanent Resident of the United States | 211 | 251 | 554 | 280 |
| Born before January 1, 1976 | 621 | 1,380 | 282 | 2,488 |
| <i>Total Dropped</i> | <i>3,250</i> | <i>4,948</i> | <i>4,011</i> | <i>6,895</i> |

Source: Flagships Database and State Systems Database.

Notes: The conditions are imposed in the order listed; the numbers would not be the same if the order were changed (e.g., if students over age 24 were dropped before part-time students were dropped rather than after). Students in the Virginia state system are not dropped based on the first two criteria due to the fact that several institutions did not report any enrollment data, and dropping based on missing enrollment data would have caused them to be dropped from the analysis.

The original Flagships Database included 95,923 freshmen and 29,719 incoming transfer students (there were also 6 students who were not identified as either freshmen or transfers, so they were excluded). After imposing the restrictions described earlier, the sample was reduced to 89,727 freshmen and 19,599 transfers. The number of students dropped at each point in the restriction of the sample is shown in Appendix Table B.1. It is important to remember that the conditions were imposed in the order listed; the numbers would not be exactly the same if the order were changed (e.g., students above age 24 were dropped before part-time students were dropped rather than after).

The age restriction clearly had a large impact on the pool of transfer students. Although this restriction proved to be useful in that it allowed us to compare freshmen to transfers who were similar to them at least in terms of age, future researchers working with these data may want to analyze the college outcomes of older transfer students due to the sizable part of the transfer pool that they comprise. Also, it should be noted that the part-time freshmen were concentrated at a small number of institutions (at the flagships, 60 percent of part-time freshmen were from two institutions), because most institutions submitted data only on their first-time, full-time freshmen (the part-time students were dropped to allow for cleaner comparisons across schools).

The State Systems Database was subjected to the same restrictions, as shown in Appendix Table B.1. In addition, we dropped schools that enrolled fewer than 200 first-time, full-time freshmen in the fall of 1999 (which led us to exclude an additional 172 freshmen in North Carolina and 989 freshmen in Virginia). For Virginia, we also dropped five schools with substantially missing or erroneous data on important variables such as graduation rates and full-time status (leading us to exclude an additional 2,001 freshmen). After imposing all of these restrictions, the remaining numbers of freshmen are 10,148 at 8 universities in Maryland, 23,872 at 15 universities in North Carolina, 32,376 at 13 universities in Ohio, and 27,194 at 28 colleges and universities in Virginia.¹⁴ Among the remaining students in Virginia, 21,786 were enrolled in the public institutions that are the focus of our study (although we also examine the private colleges and universities in Chapter 10).¹⁵

14. For the transfers file, we also dropped schools that enrolled fewer than 100 full-time transfer students in Virginia and North Carolina but did not impose this restriction in Maryland and Ohio. This minor inconsistency was the result of changes made over the course of data collection and analysis. After all restrictions were imposed, the number of remaining transfer students was 4,250 in Maryland, 5,398 in North Carolina, 7,340 in Ohio, and 4,682 in Virginia.

15. The private colleges and universities in Virginia remaining in the data are Bridgewater College, Eastern Mennonite University, Ferrum College, Hampton

CREATION OF COMPOSITE VARIABLES

In order to make the maximum use of our data, we created composite variables when we had information on the same characteristic (e.g., race/ethnicity) from multiple sources. Variables were coded as follows (note that, among the state systems, ACT data were collected only for Ohio):

- For race and gender, we first used data provided by the institution, then filled in missing values with data from the following sources (listed in the order in which we filled in the missing values): the SAT questionnaire, the ACT questionnaire, and the Advanced Placement (AP) questionnaire. In practice, the vast majority of values were from the institution, the SAT, or the ACT.
- For home state, we first used the students' address when they took the SAT or ACT, then filled in missing values with the home state provided by the institution.
- We calculated students' state residency status using primarily data provided by their institutions on whether they paid resident or non-resident tuition in their first semester or year of college. Non-resident students who paid resident tuition under a tuition reciprocity agreement were coded as in-state students. Missing values of the state residency status variable were filled in based on whether the students' home state matched the state in which their institution is located.
- For test scores, we first used the students' most recent SAT scores as provided by the College Board. We then filled in missing values using their most recent ACT scores as provided by the ACT (converted to the SAT scale using concordance tables published by the College Board). We then filled in missing values using the SAT and ACT scores provided by the institutions. The coding was done in this way to reflect our preference for the most recent scores (which is what the College Board and ACT provided us) rather than the highest score on each section (which is what many institutions use, in keeping with their admissions policies).
- High school GPA was provided by many, but not all, institutions. We filled in missing values using the imputation procedure described later.

University, Hollins University, Lynchburg College, Mary Baldwin College, Marymount University, Roanoke College, Shenandoah University, the University of Richmond, Virginia Wesleyan College, and Washington and Lee University. The public universities in Virginia, the other state systems, and the flagships are all listed in Tables 1.1 and 1.2.

- We identified students' high schools by their College Entrance Examination Board codes, first using data provided by the institution and then using data from the SAT, ACT, and AP databases.
- We calculated family income quartile using the students' family income as reported on their FAFSA. Missing values were filled in using the imputation procedure described later.
- Parental education was available from only a small number of institutions, and we filled in missing values using data first from the HERI freshmen survey and then from the SAT questionnaire (the ACT questionnaire does not include questions about parental education). Because several of the universities in our study are located in states where most students do not take the SAT, we excluded these universities from all parts of our analysis that include data on parental education.¹⁶

THE IMPUTATION OF MISSING FAMILY INCOME DATA

Our database contains a rich set of measures of students' SES, including measures of family income, parental education, and the characteristics of the neighborhoods where the students lived when they were in high school. Perhaps most central to the purposes of our study is the measurement of family income, which is important for college outcomes in terms of both its short-run impact on a family's ability to pay for college and its long-run effects on the student's academic preparation, motivation, and other factors correlated with success in college.

We were able to measure the family income of 92 percent of the first-time, full-time freshmen at the flagship universities by drawing on three sources of income data: the incomes that students' families reported when they filled out the FAFSA, the family incomes that students reported on the survey that accompanies the SAT and the ACT, and the median family income of the census block group where the students' family lived at the time the student took the SAT or ACT (usually during the junior or senior year of high school).¹⁷ The FAFSA incomes are most likely to

16. The flagship universities without sufficient parental education data are the University of Illinois at Urbana-Champaign, the University of Iowa, the University of Minnesota–Twin Cities, the University of Nebraska–Lincoln, and the University of Wisconsin–Madison. We also exclude the Ohio system from the parental education analyses for the same reason. We are able to include Iowa State due to the availability of data from the Higher Education Research Institute's freshman survey.

17. Hereafter, the median family income of the student's census block group will be referred to as "census income." According to the U.S. Census Bureau,

be accurate, because they are usually reported with the aid of parents and are subject to random audits by the federal government.¹⁸ However, FAFSA incomes are observed only for students who apply for financial aid. Thus, non-applicants are not observed, and in our data, FAFSA incomes are not observed for any students at a small number of schools that were unable or unwilling to provide these data.

We begin this section by describing the imputation procedure used at the flagship universities. We will then describe any differences in the procedures used for the state systems, which are very similar and differ at all only due to data limitations.

We based our measure of “actual” income primarily on FAFSA data from the students’ freshman year (which are based on earnings in 1998), although we also filled in missing values using the same data from the students’ sophomore year (based on earnings in 1999).¹⁹ We did this using predicted values from a linear regression of family income in the sophomore year on family income in the freshman year. This procedure was intended to capture overall changes in students’ family income from freshman to sophomore year (among those who applied for aid in both years), including inflation, nationwide economic changes, and systematic changes that resulted from having to finance a college education.

We then calculated predicted incomes in a series of steps that we will describe in the order that they were used (i.e., if a predicted income was successfully calculated in the first step, we used that prediction rather than a prediction from later steps). We first calculated imputed incomes

block groups are “geographic subdivisions of census tracts; their primary purpose is to provide a geographic summary unit for census block data. A block group must comprise a reasonably compact and contiguous cluster of census blocks. Each census tract contains a minimum of one block group and may have a maximum of nine block groups.” Census tracts are “small, relatively permanent geographic subdivisions of a county or equivalent entity. The primary purpose of census tracts is to provide a nationwide set of geographic units that have stable boundaries.” See <http://www.census.gov/geo/www/psapage.html>.

18. Although the FAFSA incomes are clearly the most accurate measure of a student’s parents’ income (as reported on their tax return) for the year for which they are reported, they are not necessarily the best measure of a family’s long-run SES. For example, a family that is able to hide a large portion of its income from the IRS will appear to have a smaller income than it actually does. Random fluctuations in true income (e.g., due to temporary leave or layoffs) might also misrepresent SES.

19. This was done mainly to accommodate income data from one institution that were available for 2000–2001 but not 1999–2000, but it was also applied to the other institutions in the interest of consistency. The correlation between incomes for these two years is 0.86.

using data on the student's expected family contribution, which is calculated by the federal government based on the data provided on the FAFSA.²⁰ Incomes were imputed as the predicted values from a linear regression of the natural logarithm of family income (as reported on the FAFSA) on the natural logarithm of EFC.²¹

We had real incomes for 55 percent of freshmen. The EFC imputation procedure added another 6 percent of students. For the remainder of students we imputed income quartiles for those for whom we had self-reported data from the HERI, SAT, or ACT surveys. First we classified the students for whom we had actual incomes into income quartiles based on the national distribution of family incomes of families with 16-year-old children.²² We then ran an ordered probit regression of the actual income quartile on dummy variables corresponding to the responses to the survey question on family income as well the natural logarithm of the median family income in the student's census block group (recall that we matched students to the census block of the address where they resided when they took the SAT or ACT).²³ The predicted values from an ordered probit regression indicate the probability that the student falls into each of the quartiles. Their imputed quartile was selected as the quartile with the maximum predicted probability. Imputed quartiles were filled in sequentially using the following combinations of predictor variables:

1. HERI self-reported income and the natural logarithm of census income
2. HERI self-reported income

20. This procedure was used only because there were three flagship universities that provided data on EFC but not family income for a substantial number of their first-year students. We applied it to all universities in the interest of consistency.

21. We used a log-log specification to improve fit. The correlation between the untransformed income and EFC measures is 0.72, whereas for the logged measured it is 0.77. In the prediction regression we dropped as outliers students with EFCs greater than \$100,000.

22. The income quartiles are taken from the national income distribution of families with 16-year-old children in the IPUMS (Integrated Public Use Microdata Series) sample of 1 percent of the 2000 Census. The incomes for the quartiles were as follows: bottom quartile, less than \$29,344 (in 1998 dollars); second quartile, \$29,344–52,053; third quartile, \$52,054–82,288; and top quartile, more than \$82,288.

23. We chose an ordered probit model because it produced a better in-sample fit than did the other models we tried, including Heckman selection models and ordinary least squares regressions. We also found that including a larger number of predictors in the equation (such as additional characteristics of the neighborhood where the student grew up) did not improve the in-sample fit.

3. SAT self-reported income and the natural logarithm of census income
4. SAT self-reported income
5. ACT self-reported income and the natural logarithm of census income
6. ACT self-reported income

The survey questions we gave preference in this list were those that had a larger number of possible responses, each of which corresponded to a smaller range of incomes and thus made the question a better predictor of income quartile. We also ran equations without census income included in order to be able to predict incomes for students for whom census income data were not available (e.g., their home address could not be matched to a census block group) but for whom self-reported incomes were available.²⁴ These students represented a minority of the sample, and we found that the prediction equation with census income excluded was almost as accurate as the prediction equation with census income included.²⁵

We generated predicted incomes for all students for whom self-reported income data were available, including both those with and without FAFSA incomes available. The predicted incomes of students for whom FAFSA incomes were available allowed us to measure the accuracy of the in-sample predictions. A cross-tabulation between FAFSA income quartile and predicted income quartile (among the 48,311 students for whom we had both measures) demonstrates the accuracy of the predictions for these students (Appendix Table B.2). If the prediction were perfect, all of the off-diagonal numbers on the table would be zero. Although this is not the case, the prediction algorithm is generally quite accurate. For example, among students in the top income quartile, 66 percent were predicted to be in the top quartile and another 33 percent were predicted to be in the third quartile. Among those in the bottom quartile, 58 percent were predicted to be in the bottom quartile and another 31 percent were predicted to be in the second quartile. In general, the predicted quartile is usually

24. Census data alone are not reliable in predicting FAFSA income, so we did not predict incomes for students for whom census income data were available but self-reported income data were not.

25. The measure of self-reported income mapped fairly closely to that of FAFSA income when quartiles were generated from both (i.e., students generally had a reasonably good sense of their parents' income). Among students for whom FAFSA income data were not available (the ones for whom we relied on predicted income data), we found that our measure of predicted income yielded higher incomes on average than did the measure of raw self-reported income. This finding suggests that students tend to underreport their family incomes (of course we cannot say whether this is deliberate) and is consistent with the literature on this issue (McPherson and Reischl, correspondence with Bowen et al., cited in Bowen, Kurzweil, and Tobin, p. 327).

APPENDIX TABLE B.2
Actual versus Predicted Income Quartiles of Freshmen, Flagships

| <i>Predicted Quartile</i> | <i>Actual Quartile</i> | | | | <i>Total</i> |
|-------------------------------|------------------------|---------------|--------------|------------|--------------|
| | <i>Bottom</i> | <i>Second</i> | <i>Third</i> | <i>Top</i> | |
| Bottom | 4,751 | 892 | 56 | 25 | 5,724 |
| Second | 2,593 | 6,266 | 1,812 | 94 | 10,765 |
| Third | 621 | 2,686 | 10,506 | 5,159 | 18,972 |
| Top | 287 | 340 | 1,835 | 10,388 | 12,850 |
| <i>Total</i> | 8,252 | 10,184 | 14,209 | 15,666 | 48,311 |

Source: Flagships Database.

within one quartile of the actual quartile (so high-income students are rarely predicted to be low-income and vice versa).

Such a comparison of predicted and actual incomes was obviously not possible for the students for whom FAFSA incomes were not available. A simple tabulation of predicted income quartile shows that, as one would expect, these students were predominantly high-income: 6 percent were (predicted) to be in the bottom quartile, 8 percent in the second quartile, 23 percent in the third quartile, and 64 percent in the top quartile.²⁶ Excluding students at the four institutions that did not provide FAFSA income data for any students, so that not having a FAFSA income in the data is synonymous with not applying for financial aid, the pattern is even more pronounced: 3 percent were in the (predicted) bottom quartile, 4 percent in the second quartile, 19 percent in the third quartile, and 74 percent in the top quartile. These numbers support the contention that very few low-income students at these selective universities failed to apply for financial aid (for which they would almost certainly have been eligible).

The measure of a student's family income quartile used throughout our analysis was based primarily on the FAFSA income and was then filled in with the predicted income quartile for the students for whom FAFSA incomes were not available.²⁷ Although using exclusively predicted incomes would provide a more consistent measure, we believe that using FAFSA incomes wherever possible allows for a more accurate, if marginally less consistent, measure.

26. The percentages do not add to 100 percent due to rounding.

27. The composite income measure is the FAFSA income for 60 percent and the predicted income for 40 percent of the students in our sample for whom at least one of these measures is available. Students without a real or predicted income, who make up 8 percent of our sample, are excluded from all parts of the analysis that consider family income.

We used the same procedure for transfer students (with the equations run separately from those for the freshmen), except that HERI survey data were not used because the HERI survey is given only to freshmen.

For students in the Maryland state system, several versions of the estimating equation were all found to produce very noisy results that did not line up well with actual income quartiles (likely because of the smaller number of students in the Maryland state system compared to those in the flagships and the other state systems). Predicted income quartiles for both freshmen and transfers in Maryland were taken directly from the SAT survey responses, which were matched as closely as possible to the income quartile bands.

For students in the North Carolina state system, actual family incomes were available only for financial aid applicants at the University of North Carolina–Chapel Hill, but EFCs were available for aid applicants at all institutions. We estimated the relationship between family income quartile and EFC in an ordered probit regression of income quartile on EFC and its square using data from the Virginia state system, then used the estimated parameters to predict family income quartile using the EFCs in the North Carolina data. We repeated this procedure (using the Virginia data) to estimate the relationship between income quartile and self-reported income on the SAT survey (both with and without using the natural logarithm of census income as a predictor) in order to fill in remaining missing values. We then repeated this procedure for the North Carolina transfers (using the Virginia transfers to estimate the parameters of the prediction equations).

The procedure used for freshmen and transfers in Ohio was identical to that used for the flagships, except HERI and census income data were not available for any students in that state system. The procedure used in Virginia was also similar to that used for the flagships, except EFC, HERI, and ACT data were not used. Only self-reported incomes from the SAT survey and census incomes were used to predict family income quartile in Virginia. The cross-tabulations of actual and predicted income quartiles of freshmen at each of the four state systems are shown in Appendix Table B.3. It is difficult to draw any conclusions based on the numbers for Maryland and North Carolina, where actual incomes were available only for financial aid applicants at the flagships. However, the numbers for Ohio and Virginia resemble those for the flagships in showing a reasonably good fit.

THE IMPUTATION OF MISSING HIGH SCHOOL GPA DATA

Another vitally important variable used throughout our study is high school GPA, which we find to be an incredibly powerful predictor of out-

APPENDIX TABLE B.3

Actual versus Predicted Income Quartiles of Freshmen, State Systems

| <i>Maryland</i> | | | | | |
|-------------------------------|------------------------|---------------|--------------|--------------|---------------|
| <i>Predicted Quartile</i> | <i>Actual Quartile</i> | | | | <i>Total</i> |
| | <i>Bottom</i> | <i>Second</i> | <i>Third</i> | <i>Top</i> | |
| Bottom | 429 | 129 | 18 | 14 | 590 |
| Second | 167 | 359 | 111 | 26 | 663 |
| Third | 64 | 391 | 272 | 116 | 843 |
| Top | 29 | 156 | 170 | 190 | 545 |
| <i>Total</i> | <i>689</i> | <i>1,035</i> | <i>571</i> | <i>346</i> | <i>2,641</i> |
| <i>North Carolina</i> | | | | | |
| <i>Predicted Quartile</i> | <i>Actual Quartile</i> | | | | <i>Total</i> |
| | <i>Bottom</i> | <i>Second</i> | <i>Third</i> | <i>Top</i> | |
| Bottom | 100 | 11 | 6 | 1 | 118 |
| Second | 54 | 119 | 37 | 2 | 212 |
| Third | 32 | 91 | 228 | 47 | 398 |
| Top | 15 | 19 | 72 | 219 | 325 |
| <i>Total</i> | <i>201</i> | <i>240</i> | <i>343</i> | <i>269</i> | <i>1,053</i> |
| <i>Ohio</i> | | | | | |
| <i>Predicted Quartile</i> | <i>Actual Quartile</i> | | | | <i>Total</i> |
| | <i>Bottom</i> | <i>Second</i> | <i>Third</i> | <i>Top</i> | |
| Bottom | 1,992 | 436 | 27 | 16 | 2,471 |
| Second | 1,419 | 3,184 | 1,289 | 39 | 5,931 |
| Third | 245 | 1,092 | 5,303 | 2,169 | 8,809 |
| Top | 35 | 93 | 572 | 2,584 | 3,284 |
| <i>Total</i> | <i>3,691</i> | <i>4,805</i> | <i>7,191</i> | <i>4,808</i> | <i>20,495</i> |
| <i>Virginia</i> | | | | | |
| <i>Predicted Quartile</i> | <i>Actual Quartile</i> | | | | <i>Total</i> |
| | <i>Bottom</i> | <i>Second</i> | <i>Third</i> | <i>Top</i> | |
| Bottom | 1,288 | 497 | 75 | 22 | 1,882 |
| Second | 452 | 1,529 | 639 | 98 | 2,718 |
| Third | 220 | 872 | 2,525 | 842 | 4,459 |
| Top | 87 | 211 | 793 | 3,538 | 4,629 |
| <i>Total</i> | <i>2,047</i> | <i>3,109</i> | <i>4,032</i> | <i>4,500</i> | <i>13,688</i> |

Source: State Systems Database.

Notes: Sample sizes are very small in Maryland and North Carolina because actual incomes are available only for financial aid applicants at the flagships in those states.

comes in college (Chapter 6). Among the flagship universities, 12 provided high school GPAs for more than 90 percent of their freshmen, 1 provided it for about half of its entering class, and another 8 did not provide this information. All told, we have actual high school GPAs for 51 percent of the freshmen in our data set. Fortunately, we were able to impute high school GPAs for an additional 41 percent of the students using self-reported information from the College Board and ACT surveys as well as data on the number of AP exams taken. We first describe the imputation procedure used for the freshmen at the flagships, then discuss any differences in the procedures used to estimate high school GPA for the transfers and the students in the state systems.

The SAT survey contained more detailed questions relating to students' academic experiences in high school than did the ACT, so for students who took the SAT and filled out the survey we imputed high school GPA as the predicted values from a linear regression of actual high school GPA on the following set of variables:

- A continuous variable indicating the number of AP exams taken by the student, as computed from data provided by the College Board (the only non-self-reported measure used to impute high school GPA).²⁸
- Dummy variables corresponding to the student's self-reported cumulative high school GPA (A+, A, A-, B+, B, B-, C+, C, C-, D+, D, E, or F). Students who did not respond to this question were excluded from the imputation procedure.
- Dummy variables corresponding to the student's self-reported high school rank (highest tenth, second tenth, second fifth, middle fifth, fourth fifth, lowest fifth, or no response).
- Dummy variables corresponding to the student's self-reported average grade (excellent, good, fair, passing, failing, or no response) in each of the following subjects: social sciences/history, natural sciences, mathematics, foreign and classical languages, English, and arts and music.
- Dummy variables corresponding to whether the student reported taking at least one AP, accelerated, or honors course in each of the subjects just listed.
- Dummy variables corresponding to the number of years the student reported taking courses (none, 0.5 year, 1 year, 2 years, 3 years, 4 years, more than 4 years, or no response) in each of the subjects just listed.

28. Data on AP exams taken were not available for one university (Rutgers), so the imputation algorithm was run separately with all variables except the number of AP exams.

Among the 31,616 freshmen with both an actual high school GPA and a predicted high school GPA from the SAT data available, the correlation between the two measures was 0.79.

We next imputed high school GPAs as the predicted values from a linear regression of actual high school GPAs on the number of AP exams taken and the following variables from the ACT survey:

- Dummy variables corresponding to the student's self-reported overall high school GPA (A- to A, B to B+, B- to B, C to B-, C- to C, D to C-, or D- to D).
- Dummy variables corresponding to the student's best estimate of his or her high school rank (top quarter, second quarter, third quarter, or fourth quarter).
- Dummy variables corresponding to the program of high school courses taken by the student (business or commercial, vocational-occupational, college preparatory, or "other or general").
- Dummy variables corresponding to the number of years of courses taken by the student (none, 0.5 year, 1 year, 1.5 years, 2 years, 2.5 years, 3 years, 3.5 years, or 4 years or more) in each of the following subjects: English, mathematics, social studies (history, civics, geography, economics), natural sciences (biology, chemistry, physics), Spanish, German, French, another foreign language, business or commercial, and vocational-occupational.
- Dummy variables corresponding to whether the student reported taking at least one AP, accelerated, or honors course in each of the following subjects: English, mathematics, social studies, natural sciences, and foreign language.

Among the 20,165 students with both an actual high school GPA and a predicted high school GPA (from the ACT data) available, the correlation between the two measures was 0.76. Combining the two measures (first using the SAT predictions, then the ACT predictions to fill in missing values) yielded a correlation between actual and imputed high school GPA of 0.80 among the 41,371 students for whom both measures were available.

For some students in the database we have an actual high school GPA but could not predict a high school GPA (due to missing SAT and ACT survey data). Although we often use a measure of high school GPA that is a combination of actual and predicted values, we sometimes use only the predicted values because they comprise the only measure that is consistent across universities. In order to increase the number of students for whom we have a predicted high school GPA, we used the actual GPAs at each university to create a "pseudo-predicted" high school GPA. This was calculated as the predicted values from a linear regression of predicted

high school GPA on actual high school GPA interacted with university dummies (in order to reflect the fact that the different high school GPA scales at each university likely lead to different relationships between actual and predicted high school GPA). As a result, both our “combined” (actual and predicted) and “adjusted” (predicted and pseudo-predicted) measures are available for the same number of students: 82,775 freshmen, or about 92 percent of the sample.

We used the same procedure to impute missing high school GPAs of the transfer students at the flagships. We also used it for freshmen and transfer students in Maryland and North Carolina and for freshmen in Virginia, with the exception that we used only SAT data. Actual high school GPAs were not available for any transfers in Virginia, so the North Carolina transfers data were used to estimate the parameters of the prediction equation, which we then used to predict high school GPAs for the Virginia transfers.

The same imputation procedure that we used for the flagships was used for freshmen and transfers in Ohio using both SAT and ACT data, with the exception that we used the parameters estimated from the equation using the flagships data to impute the Ohio high school GPAs due to the absence of any actual high school GPAs in the Ohio data. The Ohio prediction equation also included a continuous variable indicating the number of specific subject areas (out of 35 total) in which the student reported taking at least one AP, accelerated, or honors course.²⁹

The correlation coefficients between actual and predicted high school GPAs (not including the “pseudo-predicted” high school GPAs, because they are strongly correlated with actual high school GPAs by construction) are shown in Appendix Table B.4. The correlations are all in the 0.80–0.90 range with only one exception (0.73 for Maryland freshmen).

EXCLUSION OF CASES WITH MISSING DATA

The restricted sample described earlier (with missing values of family income quartile and high school GPA filled in using the imputation procedures just described) forms the core data file analyzed in our study—although other data files, such as the North Carolina high school file, are

29. A version of this variable was also used to predict high school GPA at the flagships and in the other three state systems. However, a coding error (not discovered until the conclusion of the analysis) resulted in the miscalculation of this variable at the flagships and non-Ohio state systems. This led the variable to have a coefficient very close to zero in the prediction equations, and thus the results are essentially the same as if we had omitted it from the equations entirely.

APPENDIX TABLE B.4

Correlation Coefficients between Actual and Predicted High School GPAs,
Freshmen and Transfer Students

| | <i>Freshmen</i> | <i>Transfers</i> |
|-----------------------|-----------------|------------------|
| Flagships | 0.80 | 0.88 |
| | 41,371 | 2,190 |
| Maryland System | 0.73 | 0.84 |
| | 3,164 | 212 |
| North Carolina System | 0.86 | 0.86 |
| | 19,486 | 1,467 |
| Ohio System | — | — |
| | 0 | 0 |
| Virginia System | 0.89 | — |
| | 13,353 | 0 |

Source: Flagships Database and State Systems Database.

Notes: Correlation coefficients are computed using data on students for whom both actual and predicted high school GPAs are available, the number of whom appears beneath each coefficient.

also used. Throughout the study we use various subsets of this file, each of which drops students with missing values on variables used in a particular part of the analysis.

The analysis of patterns of educational attainment presented in Chapters 3 and 4 excludes students with missing data on the variables of interest (SES, race/ethnicity, and gender) as well as the control variables (state residency status, SAT/ACT scores, and high school GPA). These restrictions were made throughout (as opposed to just when absolutely necessary) so that the raw and regression-adjusted results are based on identical sets of students and thus can be compared. For the flagships, dropping students with missing values of state residency status, race/ethnicity, gender, or SAT/ACT scores excluded 2,174 freshmen, 63 percent of whom were at the two universities that provided only directory information (thus requiring us to rely on SAT/ACT survey data for almost all of the key variables, including race/ethnicity and gender). Dropping students with missing high school GPAs excluded another 5,335 freshmen. Dropping students with missing data on family income quartile excluded an additional 4,333 freshmen. Finally, dropping students with missing parental education (at the 16 flagships where information on this variable was widely available) excluded 3,978 freshmen. (Keep in mind that these numbers apply only when the restrictions are imposed in this order.)

The file used for the flagships analysis in Chapters 3 and 4 includes 73,907 out of the original 89,727 students, or about 82 percent. Missing

data were only slightly more common in the data for the four state systems. Imposing the same restrictions as earlier reduced the number of students from 88,282 to 68,700 (about 78 percent of the original data).³⁰ Although we do not believe that the dropped students at the flagships and in the state systems are a random sample of all students, exploratory analyses gave us confidence that excluding them does not significantly bias our results.³¹

A sample similar to the one described earlier is used elsewhere in the study, because the key variables are similar throughout. However, the use of additional variables (such as high school characteristics in Chapter 5 and financial aid data in Chapter 9) often requires us to exclude additional students with missing data on these variables. In situations in which we focus on a smaller number of variables, such as in the analysis of the predictive power of SAT/ACT scores and high school GPAs in Chapter 6, we include students with missing data on variables not needed for that particular analysis. Finally, we sometimes exclude entire institutions for which we do not have data on a key variable, such as college grades, as is the case for the two flagships that were able to provide only directory information. Such restrictions are noted in the main text or in notes.

30. Essentially none of the non-resident students in the Ohio system were matched to the SAT and ACT records, so we were not able to impute the high school GPA or family income quartile for these students (and recall that we do not have any actual high school GPAs from Ohio). As a result, most of our analyses exclude these students.

31. For example, we calculated graduation rates by income quartile for all students for whom data on this variable are available and obtained results qualitatively similar to those presented in Chapter 3, where we exclude students with missing values on any of the control variables.

APPENDIX C

High School Data (the National High School Database and the North Carolina High School Senior Database)

IN THIS APPENDIX to Chapter 5, we first describe the National High School Database that research staff at The Andrew W. Mellon Foundation assembled from various sources. We then describe the unusually rich data we have for the 1999 graduating cohort of high school seniors in North Carolina and the definition of the high school level variable used in Chapter 5.

DESCRIPTION OF THE NATIONAL HIGH SCHOOL DATABASE

We assembled data describing every high school in the United States from various sources. (A high school is defined as any school that listed its highest grade offered as 12th grade.) Data on the total enrollment, location, and racial composition of public schools are from the National Center for Education Statistics (NCES) Common Core of Data Public Elementary/Secondary School Universe Survey Data for 1998–1999 (the year that most of the first-time freshmen in our study were high school seniors). The same data on private schools are from the NCES Private School Universe Survey for 1999–2000. This year was chosen because the private school survey is conducted only every other year.

Data on the number of students at each high school who took the SAT, their average SAT score, and AP test-taking patterns were provided by the College Board. Similar data on ACT test-taking at each high school were provided by the ACT. (We calculate the percentage taking the SAT/ACT as the maximum of the percentage taking the SAT and the percentage taking the ACT because we do not know which students took both.) The address of each high school was matched to its corresponding census block group, which was in turn matched to the median family income in that block group in 2000 U.S. Census data.

High schools in the Common Core of Data and Private School Universe Survey are identified by an NCES code. Our Flagships Database and State Systems Database, as well as the College Board and ACT records,

identify high schools by their College Entrance Examination Board (CEEB) code. The NCES and CEEB codes were linked using a crosswalk created by researchers at the Mellon Foundation for the purposes of this study.¹

Summaries of the characteristics of high schools attended by various student populations are provided in Table 5.1.

NORTH CAROLINA HIGH SCHOOLS IN 1999

Thanks to the cooperation of the North Carolina Department of Public Instruction, the University of North Carolina System, the North Carolina Education Research Data Center, and the keepers of a number of national databases, it was possible to assemble a remarkable set of data describing the characteristics of more than 300 public high schools in North Carolina and the characteristics of the roughly 60,000 graduating seniors in 1999. The College Board contributed data on national test-taking behavior—both SAT scores and AP grades—and on family background characteristics such as family income and parental education for those students who took the SAT. (We do not have comparable family background data for other high school seniors, who amount to roughly half of the total high school population.) Data from the Common Core of Data for all U.S. high schools were used to identify the location of the schools and to obtain information on a variety of school characteristics, including size, percentage of minority students, and student-teacher ratios. School addresses were then used to match individual schools to the neighborhoods in which they are located—and thus to obtain census data on the average family income of the neighborhoods. Finally, records for individual seniors were matched with records maintained by the National Student Clearinghouse so that we could see if graduating seniors went on to college and, if so, to which college or university. Institutional records provided by public four-year colleges and universities in North Carolina allowed us to determine which matriculants graduated and how successful they were in college.

Appendix Table 5.10 contains descriptive data on the distribution of 1999 seniors among high schools in North Carolina with varying characteristics. It can be compared with Table 5.1, which contains comparable national data.

1. This crosswalk was built on previous versions of such a crosswalk provided to us by Edward Freeland and Jesse Rothstein at Princeton University as well as staff at the College Board.

As explained in the text, we assigned each high school to one of three academic levels (I, II, III) on the basis of how they scored on a combination of four measures: percentage of seniors taking the SAT, average SAT scores of the students who took the SAT, “adjusted” SAT scores for all students,² and number of Advanced Placement courses taken by students. We put schools in the Level I category if they scored well (in the top third of the distribution of high schools) on at least three out of the four measures, in Level III if they were in the bottom third of the distribution on three of the four measures, and in Level II if they did not meet the criteria for inclusion in either Level I or Level III.³ As implied by Appendix Table 5.10, this procedure placed 13,739 students in Level I schools, 32,412 students in Level II, and 14,473 students in Level III.

There is one major complication. In North Carolina, families have some opportunity to select the high school their children attend. They exercise this choice first by deciding where to live—in a district with excellent high schools or elsewhere. Then, within school districts, we are told that policies vary widely. In some districts, parents are given some choice as to which public high school within the district their child will attend. In other districts, there is less or no choice. We cannot begin to plumb the depths of this set of complications. All we can do is note the direction of bias in the results that we now report. Because there is some degree of parental choice as to the high school attended, we assume that those parents most concerned about their children’s educational future will opt, in general and to the extent that they can, for their children to go to Level I schools. So whatever evidence we find suggesting that attendance at Level I schools has a positive effect on subsequent outcomes should be understood as a “maximum” estimate, driven in part by the unobservable characteristics of the students attracted to the Level I schools.

2. “Adjusted” SAT scores are calculated by combining the actual SAT scores for those students who took the SAT (roughly half of all seniors) and predicted SAT scores for the other students based on Algebra I and English I examinations taken by students in their freshman or sophomore year of high school, which were available for almost all students.

3. More precisely, Level I schools met the following criteria on at least three of the four measures: 57–80 percent of the students took the SAT, the average SAT score among those who took the test was in the 1005–1490 range, the predicted SAT score was in the 944–1490 range, and AP tests were taken in 18–30 courses. Level III schools met the following criteria on at least three of the four measures: fewer than 46.3 percent of the students took the SAT, the average SAT score among those who took the test was below 955, the predicted SAT score was below 887, and AP tests were taken in fewer than 12 courses. Level II schools are all those that did not meet the criteria for inclusion in either Level I or Level III.

APPENDIX D

Financial Aid Data**THE DATA IN CHAPTER 8**

IN THE MAIN, the data presented in Chapter 8 are taken directly from the *Trends in College Pricing* and *Trends in Student Aid* publications of the College Board, available online at www.collegeboard.com/trends. Both publications use data from the College Board's Annual Survey of Colleges, a survey of 3,500 postsecondary institutions across the country. We supplement this information with data from the National Postsecondary Student Aid Study, a widely used federal source of student aid research. Both sources are nationally representative.

THE DATA IN CHAPTER 9

The data used in Chapter 9 come exclusively from the Flagships Database and the State Systems Database used in the rest of this volume. However, we are restricted to a subset of institutions for which we have varying degrees of detail regarding students' financial aid information. In all analyses we also restrict our sample to in-state, dependent, non-transfer students. Throughout the chapter we keep flagships and state system selectivity cluster (SEL) A institutions separate from state system SEL B institutions.

Our broadest analyses use only data on students' total grants (and, consequently, net price), which are available for 20 flagship and SEL A institutions and for 15 SEL B institutions. Information on students' total loans is available for the same flagship and SEL A institutions but not for the SEL B institutions. Instead, we use total federal loan data for the 8 SEL B institutions in Virginia and, due to inconsistencies, exclude the remaining 7 SEL B institutions. In practice, total federal loans (including both student and parent loans) approximate the total loan figure because of the importance of federal loan programs in financing millions of students' higher education; Figures 9.9a and 9.9b show this for our data.

Detailed financial aid data are available for some institutions, allowing us to perform more specific analyses. We have grant and loan data for 11 flagships by source, distinguishing between federal, state, institutional, and private aid. For 7 of these flagships, we also have information on the

type of federal loan, whether subsidized Stafford loan, unsubsidized Stafford loan, or Parent Loan for Undergraduate Students.

For our analysis of net price and graduation, we use adjusted graduation rates to control for student demographic and academic characteristics within each university. There are just two differences between these adjusted graduation rates and those used in Chapter 10: these are estimated separately by income quartile and exclude independent students (as reported in the Free Application for Federal Student Aid; we therefore assume that all independent students apply for aid).

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APPENDIX TABLE 1.1
 Characteristics of 21 Flagship Universities by Selectivity Cluster

| <i>Cluster</i> | <i>University</i> | <i>Size</i> | <i>Average SAT/ACT</i> | <i>White</i> | <i>Black</i> | <i>Hispanic</i> | <i>Asian</i> | <i>Out-of-State</i> | <i>Transfers</i> |
|----------------|---|-------------|------------------------|--------------|--------------|-----------------|--------------|---------------------|------------------|
| | | | | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> | <i>%</i> |
| SEL I | University of California—Berkeley | 3,619 | 1315 | 31 | 4 | 9 | 45 | 10 | 31 |
| | University of California—Los Angeles | 4,131 | 1285 | 34 | 4 | 13 | 40 | 5 | 35 |
| | University of Maryland—College Park | 3,892 | 1240 | 64 | 14 | 5 | 13 | 33 | 36 |
| | University of Michigan | 5,515 | 1240 | 68 | 7 | 4 | 14 | 28 | 13 |
| | University of North Carolina—Chapel Hill | 3,390 | 1245 | 81 | 11 | 2 | 5 | 21 | 17 |
| | University of Virginia | 2,922 | 1310 | 76 | 10 | 3 | 10 | 30 | 16 |
| SEL II | Pennsylvania State University | 5,061 | 1205 | 86 | 5 | 4 | 5 | 33 | 5 |
| | Rutgers, The State University of New Jersey | 5,291 | 1180 | 56 | 9 | 9 | 21 | 11 | 19 |
| | University of Florida | 3,717 | 1265 | 70 | 11 | 12 | 6 | 5 | 33 |
| | University of Illinois at Urbana-Champaign | 6,466 | 1200 | 71 | 8 | 6 | 13 | 7 | 14 |
| | University of Texas—Austin | 6,925 | 1195 | 64 | 4 | 14 | 18 | 4 | 22 |
| | University of Washington | 4,622 | 1160 | 54 | 2 | 3 | 26 | 15 | 30 |
| | University of Wisconsin—Madison | 5,215 | 1220 | 78 | 3 | 4 | 6 | 40 | 17 |

| | | | | | | | | | |
|---------|--|--------|------|----|----|---|----|----|----|
| SEL III | Iowa State University | 4,032 | 1110 | 89 | 4 | 2 | 2 | 24 | 29 |
| | Ohio State University | 6,056 | 1125 | 81 | 10 | 2 | 6 | 13 | 22 |
| | Purdue University | 6,834 | 1100 | 91 | 4 | 2 | 3 | 25 | 12 |
| | Stony Brook University–State University of New York | 2,309 | 1120 | 36 | 11 | 9 | 30 | 3 | 37 |
| | University of Iowa | 3,810 | 1125 | 87 | 2 | 2 | 3 | 37 | 25 |
| | University of Minnesota–Twin Cities | 4,456 | 1125 | 81 | 4 | 2 | 10 | 41 | 29 |
| | University of Nebraska–Lincoln | 3,599 | 1110 | 92 | 2 | 2 | 2 | 15 | 20 |
| | University of Oregon | 2,454 | 1115 | 79 | 2 | 3 | 7 | 28 | 35 |
| | Total/Average | 94,316 | 1188 | 71 | 6 | 5 | 13 | 20 | 22 |

Source: College Board Annual Survey of Colleges.

Notes: “Size” indicates the number of entering full-time, first-time freshmen. For universities where more students submitted SAT scores than submitted ACT scores, “Average SAT/ACT” is calculated as the average of the 25th and 75th percentiles of the math score distribution plus the same average for the verbal score distribution. For universities where more students submitted ACT scores, “Average SAT/ACT” is calculated as the SAT-scale equivalent of the average of the 25th and 75th percentiles of the ACT composite score distribution. “Percent Transfers” is calculated as the total number of entering transfer students divided by the total number of entering students (with part-time students included in both numbers). All data describe the 1999 entering cohort except the following (with cohort year used in parentheses): all Rutgers data (2000); percent transfers at the University of California–Los Angeles (2000); percent out-of-state at Pennsylvania State University (2000); number of full-time freshmen and percent transfers at the University of Washington (2000); number of full-time freshmen, race/ethnicity breakdown, and percent transfers at the University of Wisconsin (1998, 2006, and 2000, respectively); and number of full-time freshmen and percent transfers at Stony Brook University (2000).

APPENDIX TABLE 1.2
 Characteristics of Universities in Four State Systems by Selectivity Cluster or HBCU Status

| <i>State</i> | <i>Cluster</i> | <i>University</i> | <i>Size</i> | <i>Average SAT/ACT</i> | <i>% White</i> | <i>% Black</i> | <i>% Hispanic</i> | <i>% Asian</i> | <i>% Out-of-State</i> | <i>% Transfers</i> |
|-------------------------|----------------|---|---|------------------------|----------------|----------------|-------------------|----------------|-----------------------|--------------------|
| Maryland | SEL A | University of Maryland– Baltimore County | 1,400 | 1165 | 63 | 14 | 2 | 20 | 12 | 43 |
| | SEL B | Frostburg State University | 938 | 975 | 77 | 16 | 3 | 2 | 10 | 26 |
| | | Salisbury University | 856 | 1115 | 88 | 4 | 1 | 2 | 23 | 40 |
| | HBCU | Towson University | 2,084 | 1070 | 82 | 9 | 2 | 3 | 27 | 46 |
| Bowie State University | | 339 | 895 | 7 | 88 | 3 | 2 | 11 | 51 | |
| Coppin State University | | 440 | 825 | 0 | 98 | 1 | 0 | 11 | 29 | |
| | | University of Maryland–Eastern Shore | 570 | 965 | 4 | 89 | 1 | 1 | 26 | 14 |
| North Carolina | SEL A | North Carolina State University | 3,528 | 1175 | 84 | 10 | 2 | 4 | 11 | 23 |
| | | University of North Carolina– Asheville | 456 | 1155 | 92 | 2 | 2 | 2 | 16 | 38 |
| | | Appalachian State University | 2,199 | 1085 | 94 | 4 | 1 | 1 | 13 | 25 |
| | SEL B | East Carolina University | 3,257 | 1010 | 80 | 14 | 2 | 2 | 21 | 24 |
| | | University of North Carolina– Charlotte | 2,078 | 1030 | 77 | 15 | 2 | 5 | 15 | 42 |
| | | | University of North Carolina– Greensboro | 1,911 | 1030 | 73 | 20 | 1 | 3 | 13 |
| | | University of North Carolina– Pembroke | 475 | 975 | 58 | 16 | 2 | 3 | 5 | 41 |
| | | University of North Carolina– Wilmington | 1,650 | 1080 | 93 | 4 | 1 | 2 | 17 | 35 |
| | | Western Carolina University | 1,151 | 990 | 91 | 6 | 1 | 1 | 9 | 26 |

| | | | | | | | | | | |
|----------|--------------------------------|-----------------------------------|-------|------|----|----|---|----|----|----|
| Ohio | HBCU | Elizabeth City State University | 402 | 805 | 18 | 81 | 1 | 0 | 48 | 20 |
| | | Fayetteville State University | 799 | 860 | 7 | 89 | 2 | 1 | 16 | 30 |
| | | North Carolina A&T University | 1,538 | 905 | 2 | 96 | 0 | 0 | 20 | 17 |
| | | North Carolina Central University | 624 | 865 | 2 | 97 | 0 | 0 | 11 | 29 |
| | Winston-Salem State University | 476 | 945 | 3 | 96 | 0 | 0 | 9 | 28 | |
| | SEL A | Miami University | 3,586 | 1180 | 89 | 4 | 2 | 2 | 27 | 8 |
| | SEL B | Bowling Green State University | 3,516 | 1030 | 89 | 4 | 3 | 1 | 6 | 15 |
| | | Cleveland State University | 1,049 | 910 | 64 | 20 | 4 | 3 | 4 | 52 |
| | | Kent State University | 3,317 | 970 | 87 | 8 | 1 | 1 | 10 | 21 |
| | | Ohio University | 3,436 | 1090 | 95 | 3 | 1 | 1 | 10 | 13 |
| | | Shawnee State University | 528 | 890 | 90 | 3 | 0 | 1 | 7 | 25 |
| | | University of Akron | 3,002 | 970 | 80 | 15 | 1 | 2 | 2 | 24 |
| | | University of Cincinnati | 3,710 | 1050 | 78 | 15 | 1 | 3 | 0 | 22 |
| | | University of Toledo | 2,701 | 1060 | 76 | 15 | 3 | 2 | 3 | 25 |
| | | Wright State University | 2,132 | 1030 | 86 | 12 | 1 | 1 | 2 | 29 |
| | | Youngstown State University | 1,933 | 970 | 84 | 8 | 2 | 1 | 9 | 20 |
| | HBCU | Central State University | 304 | 830 | 10 | 89 | 1 | 0 | 26 | 18 |
| Virginia | SEL A | College of William and Mary | 1,299 | 1320 | 86 | 4 | 3 | 7 | 44 | 10 |
| | | James Madison University | 3,039 | 1170 | 90 | 4 | 2 | 5 | 29 | 17 |
| | | University of Mary Washington | 812 | 1205 | 91 | 3 | 3 | 3 | 35 | 18 |
| | | Virginia Tech | 4,653 | 1165 | 88 | 4 | 2 | 6 | 28 | 15 |
| | SEL B | Christopher Newport University | 693 | 1030 | 81 | 14 | 2 | 3 | 3 | 41 |
| | | George Mason University | 2,035 | 1055 | 66 | 8 | 7 | 18 | 12 | 49 |
| | | Longwood University | 818 | 1045 | 87 | 9 | 1 | 3 | 10 | 21 |
| | | Old Dominion University | 1,505 | 1025 | 60 | 29 | 3 | 8 | 11 | 45 |

(continued)

APPENDIX TABLE 1.2 (Continued)

| State | Cluster | University | Size | Average SAT/ACT | % White | % Black | % Hispanic | % Asian | % Out-of-State | % Transfers |
|----------|---------|--|--------|-----------------|---------|---------|------------|---------|----------------|-------------|
| Virginia | | Radford University | 1,655 | 975 | 89 | 8 | 2 | 2 | 15 | 28 |
| | | University of Virginia's College at Wise | 300 | 995 | 92 | 5 | 2 | 1 | 6 | 35 |
| | | Virginia Commonwealth University | 2,409 | 1020 | 59 | 25 | 3 | 10 | 5 | 35 |
| | | Virginia Military Institute | 398 | 1135 | 85 | 5 | 4 | 6 | 47 | 7 |
| | HBCU | Norfolk State University | 1,098 | 815 | 3 | 95 | 1 | 1 | 31 | 18 |
| | | Virginia State University | 942 | 805 | 0 | 98 | 1 | 0 | 40 | 15 |
| | | Total/Average | 78,041 | 1048 | 75 | 18 | 2 | 3 | 15 | 25 |

Source: College Board Annual Survey of Colleges.

Notes: "Size" indicates the number of entering full-time, first-time freshmen. For universities where more students submitted SAT scores than submitted ACT scores, "Average SAT/ACT" is calculated as the average of the 25th and 75th percentiles of the math score distribution plus the same average for the verbal score distribution. For universities where more students submitted ACT scores, "Average SAT/ACT" is calculated as the SAT-scale equivalent of the average of the 25th and 75th percentiles of the ACT composite score distribution. "Percent Transfers" is calculated as the total number of entering transfer students divided by the total number of entering students (with part-time students included in both numbers). All data describe the 1999 entering cohort except the following (with cohort year used in parentheses): average SAT/ACT at Coppin State University (2000); number of full-time freshmen, race/ethnicity breakdown, and percent transfers at University of Maryland-Eastern Shore (1998, 2006, and 1998, respectively); percent out-of-state at Shawnee State University (2000); percent out-of-state at the University of Cincinnati (2006); number of full-time freshmen and percent transfers at the University of Toledo (1998); race/ethnicity breakdown at Wright State University (2000); race/ethnicity breakdown at George Mason University (2000); number of full-time freshmen, average SAT/ACT, and percent transfers at Norfolk State University (2000).

APPENDIX TABLE 3.1aSix-Year Graduation Rates by Socioeconomic Status and Selectivity Cluster,
1999 Entering Cohort, Flagships

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|--------------|------------|--------------------|--------------------|--------------------|
| Unadjusted | Middle SES | 0.049 [0.018]** | 0.070 [0.012]** | 0.043 [0.024] |
| | High SES | 0.103 [0.021]** | 0.145 [0.015]** | 0.135 [0.029]** |
| Adjusted | Middle SES | 0.039 [0.013]** | 0.046 [0.010]** | 0.033 [0.023] |
| | High SES | 0.086 [0.014]** | 0.117 [0.013]** | 0.119 [0.029]** |
| Observations | | 20,077 | 17,755 | 15,699 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (low-SES students), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.1bSix-Year Graduation Rates by Socioeconomic Status and Selectivity Cluster,
1999 Entering Cohort, State Systems

| | | <i>Maryland</i> | | <i>North Carolina</i> | | <i>Virginia</i> | |
|--------------|------------|--------------------|--------------------|-----------------------|--------------------|--------------------|--------------------|
| | | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> |
| Unadjusted | Middle SES | 0.048 [0.004]** | 0.076 [0.001]** | 0.051 [0.016]** | 0.052 [0.018]** | 0.071 [0.004]** | 0.054 [0.020]** |
| | High SES | 0.153 [0.024]** | 0.100 [0.030]** | 0.149 [0.020]** | 0.114 [0.012]** | 0.126 [0.009]** | 0.074 [0.020]** |
| Adjusted | Middle SES | 0.029 [0.011]** | 0.087 [0.012]** | 0.035 [0.014]* | 0.070 [0.010]** | 0.066 [0.007]** | 0.067 [0.021]** |
| | High SES | 0.110 [0.007]** | 0.117 [0.006]** | 0.112 [0.017]** | 0.145 [0.011]** | 0.110 [0.008]** | 0.105 [0.021]** |
| Observations | | 4,039 | 2,855 | 6,371 | 9,750 | 9,696 | 6,416 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (low-SES students), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.2a
Six-Year Graduation Rates by Parental Education and Selectivity Cluster,
1999 Entering Cohort, Flagships

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|----------------------------|-----------------|--------------------|--------------------|--------------------|
| Unadjusted | Some College | 0.019 [0.012] | 0.027 [0.014] | 0.002 [0.018] |
| | College Degree | 0.071 [0.013]** | 0.109 [0.005]** | 0.104 [0.025]** |
| | Graduate Degree | 0.095 [0.012]** | 0.125 [0.009]** | 0.114 [0.030]** |
| Adjusted without Income | Some College | 0.012 [0.011] | 0.020 [0.009]* | 0.001 [0.016] |
| | College Degree | 0.054 [0.010]** | 0.088 [0.006]** | 0.086 [0.026]** |
| | Graduate Degree | 0.072 [0.007]** | 0.103 [0.010]** | 0.102 [0.026]** |
| Adjusted with Income | Some College | 0.004 [0.011] | 0.010 [0.009] | -0.005 [0.015] |
| | College Degree | 0.034 [0.009]** | 0.066 [0.007]** | 0.072 [0.021]** |
| | Graduate Degree | 0.047 [0.005]** | 0.075 [0.008]** | 0.080 [0.020]** |
| Observations | | 20,077 | 17,755 | 15,699 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (students whose parents had no education beyond high school), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.2b
Six-Year Graduation Rates by Parental Education and Selectivity Cluster,
1999 Entering Cohort, State Systems

| | | <i>Maryland</i> | | <i>North Carolina</i> | | <i>Virginia</i> | |
|-------------------------------|-----------------|-----------------|---------------|-----------------------|---------------|-----------------|---------------|
| | | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> |
| Unadjusted | Some College | 0.049 | 0.016 | -0.002 | -0.011 | -0.007 | 0.030 |
| | | [0.040] | [0.035] | [0.012] | [0.009] | [0.031] | [0.024] |
| | College Degree | 0.131 | 0.075 | 0.074 | 0.067 | 0.060 | 0.073 |
| | | [0.027]** | [0.024]** | [0.002]** | [0.012]** | [0.016]** | [0.016]** |
| | Graduate Degree | 0.153 | 0.090 | 0.121 | 0.098 | 0.081 | 0.063 |
| | | [0.038]** | [0.031]** | [0.019]** | [0.017]** | [0.022]** | [0.011]** |
| Adjusted without Income | Some College | 0.053 | 0.011 | -0.027 | 0.005 | -0.007 | 0.034 |
| | | [0.047] | [0.044] | [0.016] | [0.009] | [0.031] | [0.025] |
| | College Degree | 0.112 | 0.073 | 0.039 | 0.087 | 0.052 | 0.090 |
| | | [0.020]** | [0.037]* | [0.007]** | [0.013]** | [0.016]** | [0.019]** |
| | Graduate Degree | 0.120 | 0.098 | 0.064 | 0.116 | 0.060 | 0.086 |
| | | [0.018]** | [0.051] | [0.015]** | [0.013]** | [0.016]** | [0.012]** |
| Adjusted with Income | Some College | 0.045 | 0.006 | -0.036 | -0.001 | -0.013 | 0.029 |
| | | [0.041] | [0.045] | [0.016]* | [0.009] | [0.029] | [0.024] |
| | College Degree | 0.092 | 0.062 | 0.015 | 0.070 | 0.033 | 0.077 |
| | | [0.011]** | [0.042] | [0.008] | [0.012]** | [0.015]* | [0.017]** |
| | Graduate Degree | 0.096 | 0.084 | 0.030 | 0.091 | 0.035 | 0.069 |
| | | [0.006]** | [0.058] | [0.015]* | [0.014]** | [0.016]* | [0.012]** |
| Observations | | 4,039 | 2,855 | 6,371 | 9,750 | 9,696 | 6,416 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (students whose parents had no education beyond high school), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.3a
Six-Year Graduation Rates by Family Income and Selectivity Cluster,
1999 Entering Cohort, Flagships

| | | <i>All 21 Universities</i> | | | <i>16 Universities with Parental Education Data</i> | | |
|--|-----------------|----------------------------|--------------------|--------------------|---|--------------------|--------------------|
| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
| Unadjusted | Second Quartile | 0.012 [0.023] | 0.060 [0.013]** | 0.027 [0.018] | 0.012 [0.023] | 0.057 [0.022]** | 0.011 [0.022] |
| | Third Quartile | 0.049 [0.030] | 0.095 [0.012]** | 0.065 [0.020]** | 0.049 [0.030] | 0.103 [0.017]** | 0.057 [0.018]** |
| | Top Quartile | 0.087 [0.025]** | 0.139 [0.011]** | 0.117 [0.025]** | 0.087 [0.025]** | 0.134 [0.019]** | 0.101 [0.029]** |
| Adjusted without Parental Education | Second Quartile | 0.016 [0.013] | 0.029 [0.013]* | 0.010 [0.018] | 0.016 [0.013] | 0.025 [0.017] | -0.003 [0.024] |
| | Third Quartile | 0.049 [0.017]** | 0.059 [0.013]** | 0.041 [0.019]* | 0.049 [0.017]** | 0.069 [0.014]** | 0.036 [0.021] |
| | Top Quartile | 0.075 [0.017]** | 0.104 [0.012]** | 0.096 [0.024]** | 0.075 [0.017]** | 0.100 [0.016]** | 0.086 [0.030]** |
| Adjusted with Parental Education | Second Quartile | | | | 0.010 [0.013] | 0.016 [0.017] | -0.009 [0.023] |
| | Third Quartile | | | | 0.036 [0.016]* | 0.051 [0.013]** | 0.022 [0.019] |
| | Top Quartile | | | | 0.055 [0.016]** | 0.068 [0.015]** | 0.056 [0.025]* |
| Observations | | 20,077 | 27,987 | 25,843 | 20,077 | 17,755 | 15,699 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (students from families in the bottom income quartile), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.3b
Six-Year Graduation Rates by Family Income and Selectivity Cluster, 1999 Entering Cohort, State Systems

| | Maryland | | North Carolina | | Ohio | | Virginia | |
|-------------------------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs |
| Unadjusted | 0.055 [0.085] | 0.053 [0.062] | -0.011 [0.024] | -0.021 [0.046] | 0.011 [0.024] | 0.096 [0.020]** | 0.029 [0.015] | 0.030 [0.018] |
| Third Quartile | 0.124 [0.073] | 0.106 [0.027]** | 0.071 [0.016]** | 0.028 [0.046] | 0.099 [0.032]** | 0.154 [0.017]** | 0.070 [0.016]** | 0.053 [0.015]** |
| Top Quartile | 0.157 [0.077]* | 0.063 [0.063] | 0.122 [0.006]** | 0.054 [0.041] | 0.168 [0.054]** | 0.210 [0.031]** | 0.109 [0.014]** | 0.056 [0.026]* |
| Adjusted without Parental Education | 0.018 [0.078] | 0.035 [0.074] | 0.024 [0.027] | 0.003 [0.038] | -0.010 [0.018] | 0.055 [0.017]** | 0.021 [0.013] | 0.026 [0.015] |
| Third Quartile | 0.070 [0.060] | 0.107 [0.024]** | 0.080 [0.027]** | 0.057 [0.039] | 0.066 [0.030]* | 0.093 [0.009]** | 0.058 [0.016]** | 0.058 [0.017]** |
| Top Quartile | 0.096 [0.062] | 0.070 [0.031]* | 0.119 [0.022]** | 0.106 [0.035]** | 0.118 [0.051]* | 0.125 [0.014]** | 0.092 [0.014]** | 0.084 [0.023]** |
| Adjusted with Parental Education | 0.010 [0.076] | 0.026 [0.069] | 0.023 [0.026] | 0.000 [0.034] | 0.023 [0.034] | 0.016 [0.013] | 0.016 [0.013] | 0.020 [0.015] |
| Third Quartile | 0.050 [0.061] | 0.086 [0.015]** | 0.073 [0.025]** | 0.046 [0.036] | 0.086 [0.025]** | 0.048 [0.016]** | 0.048 [0.016]** | 0.045 [0.016]** |
| Top Quartile | 0.065 [0.065] | 0.036 [0.023] | 0.103 [0.015]** | 0.079 [0.032]* | 0.079 [0.032]* | 0.074 [0.013]** | 0.074 [0.013]** | 0.059 [0.022]** |
| Observations | 4,039 | 2,855 | 6,371 | 9,750 | 6,770 | 17,559 | 9,696 | 6,416 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (students from families in the bottom income quartile), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.4

Six-Year Graduation Rates by SES, Stepwise Regressions, 1999 Entering Cohort,
16 Flagships and Three State Systems

| <i>16 Flagships</i> | | | | | |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|
| Middle SES | 0.052 [0.012]** | 0.057 [0.008]** | 0.039 [0.009]** | 0.049 [0.010]** | 0.038 [0.010]** |
| High SES | 0.144 [0.017]** | 0.151 [0.014]** | 0.114 [0.010]** | 0.122 [0.011]** | 0.107 [0.011]** |
| Race/Ethnicity, Gender, and State Residency? | No | Yes | Yes | Yes | Yes |
| High School GPA, SAT/ACT Scores? | No | No | Yes | No | Yes |
| University Dummies? | No | No | No | Yes | Yes |
| Observations | 53,531 | 53,531 | 53,531 | 53,531 | 53,531 |
| <i>Three State Systems</i> | | | | | |
| Middle SES | 0.076 [0.009]** | 0.076 [0.008]** | 0.068 [0.008]** | 0.052 [0.006]** | 0.061 [0.007]** |
| High SES | 0.180 [0.016]** | 0.180 [0.015]** | 0.148 [0.007]** | 0.109 [0.009]** | 0.125 [0.007]** |
| State Dummies? | Yes | Yes | Yes | No | No |
| Race/Ethnicity, Gender, and State Residency? | No | Yes | Yes | Yes | Yes |
| High School GPA, SAT/ACT Scores? | No | No | Yes | No | Yes |
| University Dummies? | No | No | No | Yes | Yes |
| Observations | 39,127 | 39,127 | 39,127 | 39,127 | 39,127 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (low SES).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.5

Six-Year Graduation Rates by Race/Ethnicity and Gender, Stepwise Regressions,
1999 Entering Cohort, 21 Flagships and Four State Systems

| <i>21 Flagships</i> | | | | | |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Black Males | -0.160 | -0.118 | -0.016 | -0.169 | -0.060 |
| | [0.015]** | [0.014]** | [0.010] | [0.018]** | [0.014]** |
| Hispanic Males | -0.086 | -0.052 | -0.043 | -0.103 | -0.066 |
| | [0.021]** | [0.018]** | [0.015]** | [0.013]** | [0.012]** |
| White Females | 0.045 | 0.048 | 0.045 | 0.043 | 0.040 |
| | [0.006]** | [0.006]** | [0.007]** | [0.007]** | [0.008]** |
| Black Females | -0.028 | 0.016 | 0.076 | -0.028 | 0.039 |
| | [0.019] | [0.017] | [0.012]** | [0.017] | [0.014]** |
| Hispanic Females | 0.010 | 0.042 | 0.053 | -0.006 | 0.029 |
| | [0.019] | [0.018]* | [0.014]** | [0.014] | [0.015] |
| Income and State Residency? | No | Yes | Yes | Yes | Yes |
| High School GPA, SAT/ACT Scores? | No | No | Yes | No | Yes |
| University Dummies? | No | No | No | Yes | Yes |
| Observations | 73,907 | 73,907 | 73,907 | 73,907 | 73,907 |
| <i>Four State Systems</i> | | | | | |
| Black Males | -0.148 | -0.105 | -0.002 | -0.105 | -0.028 |
| | [0.021]** | [0.019]** | [0.017] | [0.023]** | [0.017] |
| Hispanic Males | -0.100 | -0.078 | -0.057 | -0.101 | -0.078 |
| | [0.018]** | [0.018]** | [0.020]** | [0.021]** | [0.020]** |
| White Females | 0.053 | 0.062 | 0.046 | 0.063 | 0.041 |
| | [0.007]** | [0.007]** | [0.006]** | [0.005]** | [0.006]** |
| Black Females | -0.058 | 0.000 | 0.068 | 0.024 | 0.057 |
| | [0.023]* | [0.021] | [0.018]** | [0.019] | [0.014]** |
| Hispanic Females | -0.003 | 0.030 | 0.051 | 0.028 | 0.036 |
| | [0.022] | [0.021] | [0.022]* | [0.019] | [0.019] |
| State Dummies? | Yes | Yes | Yes | No | No |
| Income and State Residency? | No | Yes | Yes | Yes | Yes |
| High School GPA, SAT/ACT Scores? | No | No | Yes | No | Yes |
| University Dummies? | No | No | No | Yes | Yes |
| Observations | 63,456 | 63,456 | 63,456 | 63,456 | 63,456 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (white males).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.6a

Six-Year Graduation Rates by Race/Ethnicity, Gender, and Selectivity Cluster,
1999 Entering Cohort, Flagships

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|------------------|---------------------|---------------------|---------------------|---------------------|
| Unadjusted | Black Males | -0.199 [0.018]** | -0.199 [0.023]** | -0.166 [0.027]** |
| | Hispanic Males | -0.125 [0.016]** | -0.125 [0.027]** | -0.122 [0.024]** |
| | Asian Males | 0.009 [0.017] | -0.015 [0.014] | -0.024 [0.053] |
| | White Females | 0.032 [0.011]** | 0.048 [0.008]** | 0.037 [0.013]** |
| | Black Females | -0.046 [0.029] | -0.069 [0.028]* | -0.064 [0.027]* |
| | Hispanic Females | -0.030 [0.013]* | -0.037 [0.020] | -0.012 [0.029] |
| | Asian Females | 0.057 [0.019]** | 0.047 [0.016]** | 0.044 [0.046] |
| | Adjusted | Black Males | -0.071 [0.019]** | -0.053 [0.027]* |
| Hispanic Males | -0.070 [0.009]** | -0.054 [0.016]** | -0.046 [0.026] | |
| Asian Males | 0.004 [0.012] | 0.010 [0.010] | 0.019 [0.070] | |
| White Females | 0.026 [0.007]** | 0.054 [0.010]** | 0.032 [0.015]* | |
| Black Females | 0.027 [0.020] | 0.043 [0.022] | 0.034 [0.038] | |
| Hispanic Females | 0.020 [0.007]** | 0.026 [0.017] | 0.060 [0.057] | |
| Asian Females | 0.054 [0.012]** | 0.075 [0.015]** | 0.079 [0.052] | |
| Observations | | 20,077 | 27,987 | 25,843 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (white males), holding all control variables at their respective means. Adjusted differences control for family income quartile, SAT/ACT scores, high school GPA, state residency, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.6b
Six-Year Graduation Rates by Race, Gender, and Selectivity Cluster, 1999 Entering Cohort, State Systems

| | Maryland | | North Carolina | | Ohio | | Virginia | |
|---------------|-----------|-----------|----------------|-----------|-----------|-----------|-----------|-----------|
| | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs |
| Unadjusted | -0.115 | -0.147 | -0.188 | -0.013 | -0.190 | -0.208 | -0.122 | -0.032 |
| Black Males | [0.039]** | [0.053]** | [0.020]** | [0.041] | [0.063]** | [0.036]** | [0.017]** | [0.030] |
| White Females | 0.058 | 0.101 | 0.070 | 0.061 | 0.061 | 0.066 | 0.038 | 0.079 |
| Black Females | [0.025]* | [0.026]** | [0.007]** | [0.015]** | [0.019]** | [0.009]** | [0.019]* | [0.032]** |
| | 0.022 | 0.048 | 0.033 | 0.061 | -0.098 | -0.160 | 0.055 | 0.020 |
| | [0.058] | [0.035] | [0.030] | [0.039] | [0.045]* | [0.032]** | [0.022]* | [0.038] |
| Adjusted | -0.027 | -0.076 | -0.096 | 0.086 | -0.020 | -0.067 | -0.063 | -0.013 |
| Black Males | [0.022] | [0.035]* | [0.009]** | [0.034]* | [0.033] | [0.032]* | [0.017]** | [0.022] |
| White Females | 0.041 | 0.066 | 0.034 | 0.020 | 0.047 | 0.047 | 0.019 | 0.044 |
| Black Females | [0.009]** | [0.030]* | [0.013]** | [0.014] | [0.020]* | [0.008]** | [0.011] | [0.026] |
| | 0.082 | 0.081 | 0.059 | 0.118 | 0.047 | -0.022 | 0.055 | 0.026 |
| | [0.035]* | [0.014]** | [0.025]* | [0.032]** | [0.001]** | [0.021] | [0.016]** | [0.026] |
| Observations | 4,039 | 2,855 | 6,371 | 9,750 | 6,770 | 17,559 | 9,696 | 6,416 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (white males), holding all control variables at their respective means. Adjusted differences control for family income quartile, SAT/ACT scores, high school GPA, state residency, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.7a

Transfer Graduation Rates by Socioeconomic Status and Selectivity Cluster,
1999 Entering Cohort, 16 Flagships and Three State Systems (Percent)

| | <i>All</i> | <i>Low SES</i> | <i>Middle SES</i> | <i>High SES</i> |
|-------------------------|------------|----------------|-------------------|-----------------|
| Flagship SEL Is | 3.3 | 2.6 | 3.5 | 3.4 |
| Flagship SEL IIs | 4.6 | 4.1 | 4.9 | 4.6 |
| Flagship SEL IIIs | 3.9 | 4.3 | 4.1 | 3.7 |
| State System SEL As | 7.0 | 7.2 | 7.5 | 6.8 |
| State System SEL Bs | 14.2 | 11.6 | 13.6 | 16.1 |
| All 16 Flagships | 3.9 | 3.7 | 4.2 | 3.8 |
| All Three State Systems | 10.5 | 10.2 | 11.1 | 10.3 |

Source: Flagships Database and State Systems Database.

Notes: Each cell indicates the percentage of all students in a given subgroup who appear in the Clearinghouse data as having received a four-year degree but did not graduate from their original institution. Ohio is excluded from state systems because Clearinghouse data are not available. The five flagships without parental education data available are excluded.

APPENDIX TABLE 3.7b

Transfer Graduation Rates by Race, Gender, and Selectivity Cluster, 1999
Entering Cohort, 21 Flagships and Three State Systems (Percent)

| | <i>All</i> | <i>White Males</i> | <i>Black Males</i> | <i>White Females</i> | <i>Black Females</i> |
|-------------------------|------------|--------------------|--------------------|----------------------|----------------------|
| Flagship SEL I | 3.3 | 3.0 | 3.2 | 4.5 | 3.1 |
| Flagship SEL IIs | 5.0 | 4.7 | 4.5 | 5.7 | 5.6 |
| Flagship SEL IIIs | 6.3 | 5.4 | 3.8 | 7.2 | 4.6 |
| State System SEL As | 7.0 | 6.2 | 7.0 | 8.1 | 5.1 |
| State System SEL Bs | 14.2 | 14.4 | 11.7 | 15.2 | 10.1 |
| All Flagships | 5.0 | 4.6 | 3.8 | 6.0 | 4.4 |
| All Three State Systems | 10.5 | 9.9 | 9.4 | 11.7 | 8.2 |

Source: Flagships Database and State Systems Database.

Notes: Each cell indicates the percentage of all students in a given subgroup that appear in the Clearinghouse data as having received a four-year degree but did not graduate from their original institution. Ohio is excluded from state systems because Clearinghouse data are not available.

APPENDIX TABLE 3.8
Six-Year Graduation Rates by First-Year GPA and Selectivity Cluster,
1999 Entering Cohort, Flagships and State System SEL Bs

| | <i>Flagship SEL Is</i> | | <i>Flagship SEL IIs</i> | |
|----------------|--------------------------|--------------------|----------------------------|--------------------|
| First-Year GPA | 0.150 [0.003]** | 0.140 [0.005]** | 0.205 [0.009]** | 0.197 [0.009]** |
| Controls? | No | Yes | No | Yes |
| Observations | 19,495 | 19,495 | 20,529 | 20,529 |
| | <i>Flagship SEL IIIs</i> | | <i>State System SEL Bs</i> | |
| First-Year GPA | 0.313 [0.017]** | 0.304 [0.017]** | 0.298 [0.018]** | 0.287 [0.015]** |
| Controls? | No | Yes | No | Yes |
| Observations | 24,383 | 24,383 | 33,404 | 33,404 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) associated with increasing first-year GPA by 1 point, holding all control variables at their respective means. All regressions include university dummy variables. Controls include race/ethnicity, gender, SAT/ACT scores, high school GPA, state residency status, and family income quartile.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.9
Six-Year Graduation Rates by Family Income, 1999 Entering Cohort,
Flagships and State System SEL Bs

| | <i>Flagships</i> | | <i>State System SEL Bs</i> | |
|--------------------|--------------------|--------------------|----------------------------|--------------------|
| Second Quartile | 0.016 [0.009] | 0.019 [0.007]* | 0.036 [0.014]* | 0.023 [0.012] |
| Third Quartile | 0.042 [0.010]** | 0.037 [0.008]** | 0.079 [0.011]** | 0.062 [0.010]** |
| Top Quartile | 0.079 [0.010]** | 0.063 [0.007]** | 0.105 [0.011]** | 0.085 [0.010]** |
| Standard Controls? | Yes | Yes | Yes | Yes |
| First-Year GPA? | No | Yes | No | Yes |
| Observations | 64,407 | 64,407 | 33,404 | 33,404 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (students from families in the bottom income quartile), holding all control variables at their respective means. Standard controls include SAT/ACT scores, high school GPA, state residency, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 3.10
Six-Year Graduation Rates by Race/Ethnicity and Gender, 1999 Entering
Cohort, Flagships and State System SEL Bs

| | <i>Flagships</i> | | <i>State System SEL Bs</i> | |
|--------------------|---------------------|---------------------|----------------------------|-------------------|
| Black Males | -0.076 [0.013]** | -0.060 [0.015]** | -0.026 [0.024] | -0.017 [0.020] |
| Hispanic Males | -0.066 [0.014]** | -0.037 [0.012]** | -0.074 [0.036]* | -0.062 [0.037] |
| White Females | 0.040 [0.008]** | -0.002 [0.009] | 0.047 [0.008]** | 0.002 [0.008] |
| Black Females | 0.023 [0.013] | 0.017 [0.014] | 0.037 [0.021] | 0.035 [0.020] |
| Hispanic Females | 0.024 [0.016] | 0.004 [0.016] | 0.029 [0.027] | 0.008 [0.028] |
| Standard Controls? | Yes | Yes | Yes | Yes |
| First-Year GPA? | No | Yes | No | Yes |
| Observations | 64,407 | 64,407 | 33,404 | 33,404 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (white males), holding all control variables at their respective means. Standard controls include SAT/ACT scores, high school GPA, state residency, family income quartile, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.1a
Adjusted Major at Graduation by Socioeconomic Status, 1999 Entering Cohort, Flagships

| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Communications and Education</i> | <i>Business</i> | <i>Professional and Other</i> |
|--------------|---|----------------------|--------------------|------------------------|---|--------------------|-----------------------------------|
| Middle SES | -0.010 [0.007] | 0.002 [0.006] | 0.017 [0.006]** | -0.027 [0.009]** | 0.009 [0.004]* | 0.018 [0.006]** | -0.009 [0.006] |
| High SES | -0.006 [0.007] | -0.006 [0.005] | 0.014 [0.005]* | -0.036 [0.008]** | 0.015 [0.004]** | 0.036 [0.006]** | -0.016 [0.006]** |
| Observations | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 |

Source: Flagships Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (low-SES students), holding all control variables constant at their means. Control variables include high school GPA, SAT/ACT scores, race/ethnicity, gender, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.1b
Adjusted Major at Graduation by Socioeconomic Status and Selectivity Cluster, 1999 Entering Cohort, State Systems

SEL As

| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Communications and Education</i> | <i>Business</i> | <i>Professional and Other</i> |
|--------------|---|----------------------|-------------------|------------------------|---|--------------------|-----------------------------------|
| Middle SES | 0.013 [0.014] | 0.003 [0.011] | 0.010 [0.013] | -0.039 [0.017]* | -0.001 [0.007] | 0.010 [0.013] | 0.004 [0.009] |
| High SES | 0.003 [0.013] | -0.002 [0.010] | 0.003 [0.012] | -0.045 [0.016]** | 0.007 [0.007] | 0.033 [0.012]** | 0.001 [0.008] |
| Observations | 15,021 | 15,021 | 15,021 | 15,021 | 15,021 | 15,021 | 15,021 |

SEL Bs

| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Communications and Education</i> | <i>Business</i> | <i>Professional and Other</i> |
|--------------|---|----------------------|--------------------|------------------------|---|-------------------|-----------------------------------|
| Middle SES | -0.006 [0.007] | 0.006 [0.005] | 0.022 [0.011]* | -0.027 [0.012]* | -0.006 [0.010] | 0.002 [0.013] | 0.009 [0.011] |
| High SES | -0.008 [0.007] | 0.007 [0.005] | 0.044 [0.011]** | -0.029 [0.012]* | -0.011 [0.010] | -0.003 [0.013] | -0.001 [0.011] |
| Observations | 9,940 | 9,940 | 9,940 | 9,940 | 9,940 | 9,940 | 9,940 |

Source: State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (low-SES students), holding all control variables constant at their means. Control variables include high school GPA, SAT/ACT scores, race/ethnicity, gender, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.2a
Adjusted Major at Graduation by Parental Education, 1999 Entering Cohort, Flagships

| | <i>Communications and Education</i> | | | | | <i>Business</i> | <i>Professional and Other</i> |
|-----------------|---|----------------------|--------------------|------------------------|------------------|-------------------|-----------------------------------|
| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Education</i> | | |
| Some College | 0.003 [0.009] | 0.005 [0.006] | -0.001 [0.006] | 0.000 [0.010] | 0.001 [0.005] | -0.012 [0.008] | 0.004 [0.007] |
| College Degree | 0.009 [0.008] | -0.004 [0.006] | 0.021 [0.006]** | -0.032 [0.009]** | 0.008 [0.005] | 0.003 [0.007] | -0.005 [0.006] |
| Graduate Degree | -0.014 [0.008] | 0.012 [0.006]* | 0.025 [0.006]** | -0.009 [0.009] | 0.002 [0.005] | -0.007 [0.007] | -0.009 [0.006] |
| Observations | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 |

Source: Flagships Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (students whose parents never attended college), holding all control variables constant at their means. Control variables include family income quartile, high school GPA, SAT/ACT scores, race/ethnicity, gender, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.2b
Adjusted Major at Graduation by Parental Education and Selectivity Cluster, 1999 Entering Cohort, State Systems

SEL As

| | <i>Engineering, Math, and Physical Sciences</i> | | <i>Life Sciences</i> | | <i>Humanities</i> | | <i>Social Sciences</i> | | <i>Communications and Education</i> | | <i>Business</i> | | <i>Professional and Other</i> | |
|-----------------|---|-------------------|----------------------|-------------------|-------------------|-------------------|------------------------|--|---|--|-----------------|--|-----------------------------------|--------|
| | | | | | | | | | | | | | | |
| Some College | -0.017 [0.016] | 0.029 [0.012]* | 0.001 [0.013] | 0.006 [0.018] | -0.003 [0.015] | -0.007 [0.015] | -0.009 [0.010] | | | | | | | |
| College Degree | -0.021 [0.014] | 0.010 [0.010] | 0.018 [0.011] | -0.003 [0.017] | 0.000 [0.007] | 0.000 [0.014] | -0.009 [0.009] | | | | | | | |
| Graduate Degree | -0.033 [0.015]* | 0.022 [0.010]* | 0.031 [0.012]** | 0.003 [0.017] | 0.004 [0.007] | -0.018 [0.014] | -0.009 [0.009] | | | | | | | |
| Observations | 15,021 | 15,021 | 15,021 | 15,021 | 15,021 | 15,021 | 15,021 | | | | | | | 15,021 |

SEL Bs

| | <i>Engineering, Math, and Physical Sciences</i> | | <i>Life Sciences</i> | | <i>Humanities</i> | | <i>Social Sciences</i> | | <i>Communications and Education</i> | | <i>Business</i> | | <i>Professional and Other</i> | |
|-----------------|---|-------------------|----------------------|-------------------|-------------------|---------------------|------------------------|--|---|--|-----------------|--|-----------------------------------|-------|
| | | | | | | | | | | | | | | |
| Some College | -0.001 [0.008] | -0.002 [0.006] | 0.023 [0.012] | 0.002 [0.014] | -0.001 [0.011] | -0.014 [0.015] | -0.007 [0.012] | | | | | | | |
| College Degree | -0.008 [0.007] | 0.004 [0.006] | 0.037 [0.012]** | -0.025 [0.013] | 0.005 [0.011] | -0.021 [0.014] | 0.007 [0.012] | | | | | | | |
| Graduate Degree | 0.000 [0.008] | 0.006 [0.006] | 0.054 [0.013]** | -0.010 [0.014] | 0.003 [0.012] | -0.050 [0.015]** | -0.003 [0.013] | | | | | | | |
| Observations | 9,940 | 9,940 | 9,940 | 9,940 | 9,940 | 9,940 | 9,940 | | | | | | | 9,940 |

Source: State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (students whose parents never attended college), holding all control variables constant at their means. Control variables include family income quartile, high school GPA, SAT/ACT scores, race/ethnicity, gender, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.3a
Adjusted Major at Graduation by Family Income, 1999 Entering Cohort, Flagships

| | Engineering, Math, and Physical Sciences | | | Communications and Education | | | Business | | Professional and Other |
|-----------------|--|--------------------|--------------------|------------------------------------|--------------------|---------------------------|--------------------|---------------------------|---------------------------|
| | Life Sciences | Humanities | Social Sciences | Education | Business | Professional and Other | Business | Professional and Other | |
| Second Quartile | -0.002 [0.008] | 0.012 [0.008] | -0.011 [0.010] | 0.015 [0.005]** | -0.006 [0.007] | -0.003 [0.007] | -0.006 [0.007] | -0.003 [0.007] | |
| Third Quartile | 0.013 [0.008] | 0.002 [0.007] | -0.023 [0.009]* | 0.016 [0.005]** | 0.005 [0.007] | -0.003 [0.006] | 0.005 [0.007] | -0.003 [0.006] | |
| Top Quartile | 0.000 [0.007] | -0.015 [0.006]* | -0.017 [0.009] | 0.019 [0.005]** | 0.038 [0.007]** | -0.010 [0.006] | 0.038 [0.007]** | -0.010 [0.006] | |
| Observations | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 | 40,539 | |

Source: Flagships Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (students from families in the bottom income quartile), holding all control variables constant at their means. Control variables include parental education, high school GPA, SAT/ACT scores, race/ethnicity, gender, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.3b
Adjusted Major at Graduation by Family Income and Selectivity Cluster, 1999 Entering Cohort, State Systems

SEL As

| | <i>Communications and Education</i> | | | | <i>Business</i> | <i>Professional and Other</i> |
|-----------------|---|----------------------|---------------------|------------------------|--------------------|-------------------------------|
| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | | |
| Second Quartile | 0.010 [0.016] | -0.016 [0.014] | -0.014 [0.018] | 0.025 [0.021] | -0.017 [0.016] | 0.000 [0.011] |
| Third Quartile | 0.026 [0.015] | -0.016 [0.013] | -0.021 [0.017] | -0.008 [0.019] | -0.004 [0.015] | 0.011 [0.010] |
| Top Quartile | 0.020 [0.015] | -0.014 [0.013] | -0.047 [0.016]** | -0.016 [0.019] | 0.044 [0.015]** | 0.000 [0.010] |
| Observations | 15,021 | 15,021 | 15,021 | 15,021 | 15,021 | 15,021 |

SEL Bs

| | <i>Communications and Education</i> | | | | <i>Business</i> | <i>Professional and Other</i> |
|-----------------|---|----------------------|--------------------|------------------------|-------------------|-------------------------------|
| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | | |
| Second Quartile | -0.018 [0.009]* | -0.002 [0.007] | 0.015 [0.014] | -0.008 [0.015] | -0.020 [0.016] | 0.024 [0.014] |
| Third Quartile | -0.020 [0.009]* | -0.002 [0.007] | 0.036 [0.014]** | -0.010 [0.015] | -0.014 [0.016] | 0.016 [0.014] |
| Top Quartile | -0.013 [0.009] | -0.001 [0.007] | 0.014 [0.014] | -0.009 [0.015] | 0.025 [0.017] | -0.002 [0.014] |
| Observations | 9,940 | 9,940 | 9,940 | 9,940 | 9,940 | 9,940 |

Source: State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (students from families in the bottom income quartile), holding all control variables constant at their means. Control variables include parental education, high school GPA, SAT/ACT scores, race/ethnicity, gender, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.4a
 Unadjusted Major at Graduation by Race/Ethnicity and Gender, 1999 Entering Cohort, Flagships

| | <i>Engineering, Math, and Physical Sciences</i> | | | <i>Life Sciences</i> | | | <i>Humanities</i> | | | <i>Social Sciences</i> | | | <i>Communications and Education</i> | | | <i>Business</i> | | | <i>Professional and Other</i> | | | | |
|------------------|---|-----------|--|----------------------|-----------|--|-------------------|-----------|--|------------------------|-----------|--|---|-----------|--|-----------------|-----------|--|-----------------------------------|-----------|--|--|--|
| | | | | | | | | | | | | | | | | | | | | | | | |
| Black Males | -0.114 | [0.014]** | | -0.010 | [0.008] | | 0.006 | [0.010] | | 0.101 | [0.015]** | | 0.023 | [0.009]* | | -0.039 | [0.011]** | | 0.032 | [0.011]** | | | |
| Hispanic Males | -0.076 | [0.013]** | | 0.012 | [0.008] | | 0.022 | [0.009]* | | 0.072 | [0.013]** | | 0.007 | [0.008] | | -0.032 | [0.011]** | | -0.004 | [0.008] | | | |
| Asian Males | 0.089 | [0.009]** | | 0.044 | [0.006]** | | -0.046 | [0.004]** | | 0.009 | [0.007] | | -0.045 | [0.003]** | | -0.040 | [0.006]** | | -0.011 | [0.005]* | | | |
| White Females | -0.237 | [0.004]** | | 0.017 | [0.003]** | | 0.057 | [0.003]** | | 0.020 | [0.004]** | | 0.111 | [0.003]** | | -0.051 | [0.003]** | | 0.082 | [0.003]** | | | |
| Black Females | -0.253 | [0.007]** | | -0.005 | [0.006] | | 0.045 | [0.008]** | | 0.108 | [0.011]** | | 0.071 | [0.008]** | | -0.075 | [0.007]** | | 0.109 | [0.009]** | | | |
| Hispanic Females | -0.244 | [0.008]** | | 0.012 | [0.007] | | 0.059 | [0.009]** | | 0.131 | [0.012]** | | 0.054 | [0.009]** | | -0.075 | [0.008]** | | 0.063 | [0.009]** | | | |
| Asian Females | -0.166 | [0.007]** | | 0.080 | [0.006]** | | 0.002 | [0.005] | | 0.068 | [0.008]** | | 0.004 | [0.004] | | -0.031 | [0.006]** | | 0.042 | [0.006]** | | | |
| Observations | 55,342 | | | 55,342 | | | 55,342 | | | 55,342 | | | 55,342 | | | 55,342 | | | 55,342 | | | | |

Source: Flagships Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (white males).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.4b
Adjusted Major at Graduation by Race/Ethnicity and Gender, 1999 Entering Cohort, Flagships

| | <i>Communications and Education</i> | | | | | | | <i>Professional and Other</i> |
|------------------|---|----------------------|---------------------|------------------------|---------------------|---------------------|--------------------|---------------------------------------|
| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Education</i> | <i>Business</i> | | |
| Black Males | 0.070 [0.020]** | 0.015 [0.012] | -0.023 [0.009]** | -0.027 [0.014]* | -0.013 [0.006]* | -0.021 [0.013] | -0.001 [0.009] | |
| Hispanic Males | 0.014 [0.015] | 0.020 [0.010]* | 0.009 [0.010] | -0.009 [0.013] | -0.001 [0.007] | -0.014 [0.012] | -0.019 [0.008]* | |
| Asian Males | 0.036 [0.009]** | 0.034 [0.006]** | -0.045 [0.005]** | -0.022 [0.009]* | -0.030 [0.004]** | 0.026 [0.009]** | 0.001 [0.006] | |
| White Females | -0.175 [0.004]** | 0.018 [0.003]** | 0.045 [0.004]** | -0.002 [0.005] | 0.088 [0.003]** | -0.050 [0.004]** | 0.076 [0.004]** | |
| Black Females | -0.098 [0.014]** | 0.031 [0.010]** | 0.017 [0.008]* | -0.005 [0.011] | 0.024 [0.006]** | -0.040 [0.010]** | 0.071 [0.009]** | |
| Hispanic Females | -0.137 [0.012]** | 0.032 [0.010]** | 0.049 [0.010]** | 0.038 [0.013]** | 0.035 [0.008]** | -0.055 [0.010]** | 0.038 [0.009]** | |
| Asian Females | -0.133 [0.006]** | 0.056 [0.006]** | -0.006 [0.006] | -0.015 [0.008] | 0.033 [0.006]** | 0.033 [0.009]** | 0.032 [0.006]** | |
| Observations | 55,342 | 55,342 | 55,342 | 55,342 | 55,342 | 55,342 | 55,342 | |

Source: Flagships Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (white males), holding all control variables constant at their means. Control variables include family income quartile, high school GPA, SAT/ACT scores, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.5a
 Unadjusted Major at Graduation by Race, Gender, and Selectivity Cluster, 1999 Entering Cohort, State Systems

SEL As

| | <i>Engineering, Math, and Physical Sciences</i> | | <i>Communications and Education</i> | | | <i>Professional and Other</i> |
|---------------|---|--------------------|---|--------------------|---------------------|-----------------------------------|
| | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Education</i> | <i>Business</i> | |
| Black Males | -0.075 [0.020]** | 0.010 [0.013] | 0.089 [0.020]** | 0.028 [0.013]* | -0.080 [0.015]** | 0.046 [0.014]** |
| White Females | -0.229 [0.006]** | 0.056 [0.005]** | 0.025 [0.006]** | 0.084 [0.005]** | -0.056 [0.006]** | 0.098 [0.005]** |
| Black Females | -0.234 [0.010]** | 0.030 [0.011]** | 0.094 [0.015]** | 0.090 [0.012]** | -0.085 [0.011]** | 0.098 [0.012]** |
| Observations | 19,923 | 19,923 | 19,923 | 19,923 | 19,923 | 19,923 |

SEL Bs

| | <i>Engineering, Math, and Physical Sciences</i> | | <i>Communications and Education</i> | | | <i>Professional and Other</i> |
|---------------|---|--------------------|---|--------------------|---------------------|-----------------------------------|
| | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Education</i> | <i>Business</i> | |
| Black Males | -0.077 [0.016]** | 0.016 [0.016] | 0.033 [0.016]* | -0.009 [0.015] | 0.026 [0.022] | 0.020 [0.016] |
| White Females | -0.164 [0.005]** | 0.052 [0.006]** | 0.021 [0.005]** | 0.121 [0.006]** | -0.134 [0.007]** | 0.098 [0.006]** |
| Black Females | -0.149 [0.008]** | 0.010 [0.011] | 0.082 [0.012]** | 0.015 [0.011] | -0.084 [0.013]** | 0.116 [0.013]** |
| Observations | 18,293 | 18,293 | 18,293 | 18,293 | 18,293 | 18,293 |

Source: State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (white males).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.5b
Adjusted Major at Graduation by Race, Gender, and Selectivity Cluster, 1999 Entering Cohort, State Systems

SEL As

| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Communications and Education</i> | <i>Business</i> | <i>Professional and Other</i> |
|---------------|---|----------------------|--------------------|------------------------|---|---------------------|-----------------------------------|
| Black Males | 0.081 [0.027]** | 0.003 [0.016] | -0.005 [0.014] | -0.001 [0.021] | -0.015 [0.008] | -0.064 [0.018]** | 0.001 [0.009] |
| White Females | -0.164 [0.006]** | 0.022 [0.005]** | 0.047 [0.006]** | 0.001 [0.008] | 0.063 [0.005]** | -0.058 [0.007]** | 0.090 [0.005]** |
| Black Females | -0.084 [0.018]** | 0.045 [0.014]** | 0.009 [0.012] | 0.001 [0.016] | 0.020 [0.008]* | -0.031 [0.017] | 0.040 [0.010]** |
| Observations | 19,923 | 19,923 | 19,923 | 19,923 | 19,923 | 19,923 | 19,923 |

SEL Bs

| | <i>Engineering, Math, and Physical Sciences</i> | <i>Life Sciences</i> | <i>Humanities</i> | <i>Social Sciences</i> | <i>Communications and Education</i> | <i>Business</i> | <i>Professional and Other</i> |
|---------------|---|----------------------|--------------------|------------------------|---|---------------------|-----------------------------------|
| Black Males | 0.002 [0.019] | 0.002 [0.010] | -0.001 [0.016] | 0.001 [0.016] | -0.019 [0.015] | 0.020 [0.024] | -0.006 [0.015] |
| White Females | -0.113 [0.005]** | -0.002 [0.003] | 0.043 [0.006]** | 0.015 [0.006]* | 0.109 [0.007]** | -0.145 [0.008]** | 0.093 [0.007]** |
| Black Females | -0.073 [0.011]** | 0.025 [0.009]** | -0.002 [0.011] | 0.051 [0.013]** | 0.012 [0.012] | -0.090 [0.016]** | 0.076 [0.013]** |
| Observations | 18,293 | 18,293 | 18,293 | 18,293 | 18,293 | 18,293 | 18,293 |

Source: State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of choosing a given major between the listed group and the reference group (white males), holding all control variables constant at their means. Control variables include family income quartile, high school GPA, SAT/ACT scores, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.6a

Probability of Finishing on Time by Socioeconomic Status and Selectivity Cluster, 1999 Entering Cohort, Flagships, Unadjusted and Adjusted

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|--------------|------------|--------------------|--------------------|--------------------|
| Unadjusted | Middle SES | 0.111 [0.014]** | 0.062 [0.022]** | 0.008 [0.028] |
| | High SES | 0.183 [0.020]** | 0.124 [0.031]** | 0.016 [0.042] |
| Adjusted | Middle SES | 0.040 [0.005]** | 0.043 [0.019]* | 0.022 [0.014] |
| | High SES | 0.068 [0.006]** | 0.096 [0.021]** | 0.039 [0.012]** |
| Observations | | 17,279 | 13,760 | 10,588 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in the probability of finishing on time (from a probit model) between the listed group and the reference group (low-SES students), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.6b

Probability of Finishing on Time by Socioeconomic Status and Selectivity Cluster,
1999 Entering Cohort, State Systems, Unadjusted and Adjusted

| | | <i>Maryland</i> | | <i>North Carolina</i> | | <i>Virginia</i> | |
|--------------|------------|-----------------|---------------|-----------------------|---------------|-----------------|---------------|
| | | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> |
| Unadjusted | Middle SES | 0.092 | 0.055 | 0.033 | 0.008 | 0.005 | 0.010 |
| | | [0.019]** | [0.019]** | [0.005]** | [0.023] | [0.021] | [0.030] |
| | High SES | 0.188 | 0.129 | 0.094 | 0.025 | 0.055 | 0.034 |
| | | [0.011]** | [0.038]** | [0.008]** | [0.024] | [0.013]** | [0.022] |
| Adjusted | Middle SES | 0.065 | 0.047 | 0.032 | 0.013 | -0.005 | 0.012 |
| | | [0.025]** | [0.023]* | [0.005]** | [0.024] | [0.021] | [0.039] |
| | High SES | 0.118 | 0.104 | 0.057 | 0.031 | 0.026 | 0.025 |
| | | [0.019]** | [0.034]** | [0.009]** | [0.018] | [0.015] | [0.038] |
| Observations | | 2,935 | 1,655 | 4,847 | 5,072 | 7,794 | 3,303 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in the probability of finishing on time (from a probit model) between the listed group and the reference group (low-SES students), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.7a

Probability of Finishing on Time by Parental Education and Selectivity Cluster, 1999 Entering Cohort, Flagships, Unadjusted and Adjusted

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|-----------------------------------|-----------------|--------------------|--------------------|--------------------|
| Unadjusted | Some College | 0.084 [0.017]** | 0.020 [0.016] | -0.028 [0.024] |
| | College Degree | 0.149 [0.016]** | 0.076 [0.021]** | 0.006 [0.032] |
| | Graduate Degree | 0.170 [0.020]** | 0.087 [0.018]** | 0.018 [0.032] |
| Adjusted without Family Income | Some College | 0.029 [0.009]** | -0.003 [0.012] | -0.029 [0.014]* |
| | College Degree | 0.052 [0.009]** | 0.050 [0.016]** | 0.019 [0.011] |
| | Graduate Degree | 0.058 [0.008]** | 0.050 [0.014]** | 0.019 [0.016] |
| Adjusted with Family Income | Some College | 0.018 [0.008]* | -0.013 [0.011] | -0.030 [0.014]* |
| | College Degree | 0.031 [0.009]** | 0.028 [0.014] | 0.016 [0.010] |
| | Graduate Degree | 0.030 [0.009]** | 0.020 [0.011] | 0.015 [0.017] |
| Observations | | 17,279 | 13,760 | 10,588 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in the probability of finishing on time (from a probit model) between the listed group and the reference group (students whose parents had no education beyond high school), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.7b

Probability of Finishing on Time by Parental Education and Selectivity Cluster, 1999 Entering Cohort, State Systems, Unadjusted and Adjusted

| | | <i>Maryland</i> | | <i>North Carolina</i> | | <i>Virginia</i> | |
|---|-----------------|-----------------|---------------|-----------------------|---------------|-----------------|---------------|
| | | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> |
| Unadjusted | Some College | 0.031 | 0.049 | 0.033 | -0.015 | 0.004 | 0.045 |
| | | [0.043] | [0.062] | [0.032] | [0.023] | [0.022] | [0.027] |
| | College Degree | 0.124 | 0.108 | 0.079 | 0.007 | 0.020 | 0.040 |
| | | [0.023]** | [0.041]** | [0.030]** | [0.025] | [0.020] | [0.027] |
| | Graduate Degree | 0.162 | 0.123 | 0.130 | 0.043 | 0.053 | 0.067 |
| | | [0.014]** | [0.057]* | [0.018]** | [0.026] | [0.011]** | [0.025]** |
| Adjusted without Family Income | Some College | 0.014 | 0.038 | 0.002 | -0.011 | -0.014 | 0.051 |
| | | [0.033] | [0.081] | [0.026] | [0.020] | [0.023] | [0.028] |
| | College Degree | 0.077 | 0.087 | 0.038 | 0.011 | -0.005 | 0.042 |
| | | [0.008]** | [0.059] | [0.025] | [0.022] | [0.020] | [0.034] |
| | Graduate Degree | 0.101 | 0.109 | 0.033 | 0.040 | 0.007 | 0.066 |
| | | [0.007]** | [0.082] | [0.026] | [0.027] | [0.020] | [0.018]** |
| Adjusted with Family Income | Some College | 0.007 | 0.035 | -0.006 | -0.011 | -0.018 | 0.051 |
| | | [0.032] | [0.082] | [0.020] | [0.022] | [0.021] | [0.028] |
| | College Degree | 0.055 | 0.077 | 0.025 | 0.012 | -0.014 | 0.041 |
| | | [0.008]** | [0.062] | [0.017] | [0.026] | [0.021] | [0.031] |
| | Graduate Degree | 0.073 | 0.090 | 0.016 | 0.040 | -0.005 | 0.066 |
| | | [0.008]** | [0.084] | [0.014] | [0.032] | [0.023] | [0.019]** |
| | Observations | 2,935 | 1,655 | 4,847 | 5,072 | 7,794 | 3,303 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in the probability of finishing on time (from a probit model) between the listed group and the reference group (students whose parents had no education beyond high school), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.8a
Probability of Finishing on Time by Family Income and Selectivity Cluster,
1999 Entering Cohort, Flagships, Unadjusted and Adjusted

| | | <i>All 21 Universities</i> | | | <i>16 Universities with Parental Education Data</i> | | |
|--|-----------------|----------------------------|--------------------|--------------------|---|--------------------|--------------------|
| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
| Unadjusted | Second Quartile | 0.044 [0.010]** | 0.015 [0.019] | 0.016 [0.011] | 0.091 [0.017]** | 0.006 [0.017] | -0.018 [0.024] |
| | Third Quartile | 0.049 [0.006]** | 0.062 [0.017]** | 0.020 [0.014] | 0.132 [0.024]** | 0.078 [0.019]** | -0.023 [0.039] |
| | Top Quartile | 0.081 [0.004]** | 0.087 [0.017]** | 0.030 [0.010]** | 0.189 [0.013]** | 0.109 [0.023]** | -0.011 [0.045] |
| Adjusted without Parental Education | Second Quartile | 0.044 [0.010]** | 0.016 [0.019] | 0.015 [0.011] | 0.044 [0.010]** | -0.009 [0.017] | 0.011 [0.010] |
| | Third Quartile | 0.049 [0.006]** | 0.062 [0.017]** | 0.019 [0.013] | 0.049 [0.006]** | 0.058 [0.016]** | 0.010 [0.013] |
| | Top Quartile | 0.081 [0.004]** | 0.087 [0.017]** | 0.029 [0.010]** | 0.081 [0.004]** | 0.079 [0.017]** | 0.023 [0.009]** |
| Adjusted with Parental Education | Second Quartile | | | | 0.039 [0.010]** | -0.012 [0.016] | 0.009 [0.011] |
| | Third Quartile | | | | 0.041 [0.007]** | 0.051 [0.014]** | 0.006 [0.014] |
| | Top Quartile | | | | 0.070 [0.006]** | 0.067 [0.014]** | 0.013 [0.010] |
| Observations | | 17,279 | 22,068 | 17,083 | 17,279 | 13,760 | 10,588 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in the probability of finishing on time (from a probit model) between the listed group and the reference group (students from families in the bottom income quartile), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.8b
 Probability of Finishing on Time by Family Income and Selectivity Cluster,
 1999 Entering Cohort, State Systems, Unadjusted and Adjusted

| | Maryland | | North Carolina | | Ohio | | Virginia | |
|-----------------|-----------|-----------|----------------|----------|-----------|-----------|-----------|-----------|
| | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs |
| Unadjusted | 0.076 | 0.026 | -0.002 | -0.075 | 0.043 | 0.027 | 0.009 | 0.067 |
| | [0.018]** | [0.014] | [0.050] | [0.035]* | [0.032] | [0.019] | [0.030] | [0.026]* |
| Second Quartile | | | | | | | | |
| Third Quartile | 0.130 | 0.070 | 0.021 | -0.046 | 0.053 | 0.057 | 0.046 | 0.057 |
| | [0.010]** | [0.073] | [0.029] | [0.044] | [0.029] | [0.025]* | [0.023]* | [0.039] |
| Top Quartile | 0.200 | 0.132 | 0.056 | -0.051 | 0.131 | 0.109 | 0.071 | 0.066 |
| | [0.005]** | [0.076] | [0.050] | [0.037] | [0.044]** | [0.028]** | [0.017]** | [0.025]** |
| Adjusted | 0.054 | 0.015 | 0.068 | -0.056 | -0.001 | 0.019 | 0.002 | 0.028 |
| without | [0.022]* | [0.028] | [0.040] | [0.027]* | [0.006] | [0.020] | [0.033] | [0.028] |
| Parental | 0.078 | 0.046 | 0.070 | -0.034 | -0.013 | 0.050 | 0.037 | 0.027 |
| Education | [0.016]** | [0.050] | [0.015]** | [0.030] | [0.014] | [0.018]** | [0.031] | [0.043] |
| Top Quartile | 0.121 | 0.097 | 0.087 | -0.027 | 0.032 | 0.086 | 0.044 | 0.026 |
| | [0.014]** | [0.015]** | [0.040]* | [0.025] | [0.011]** | [0.017]** | [0.031] | [0.037] |
| Adjusted | 0.046 | 0.005 | 0.067 | -0.056 | | | 0.003 | 0.026 |
| with | [0.020]* | [0.032] | [0.037] | [0.027]* | | | [0.033] | [0.028] |
| Parental | 0.059 | 0.026 | 0.066 | -0.036 | | | 0.038 | 0.019 |
| Education | [0.014]** | [0.054] | [0.013]** | [0.030] | | | [0.031] | [0.041] |
| Top Quartile | 0.093 | 0.065 | 0.080 | -0.038 | | | 0.044 | 0.014 |
| | [0.009]** | [0.007]** | [0.038]* | [0.027] | | | [0.032] | [0.035] |
| Observations | 2,935 | 1,655 | 4,847 | 5,072 | 4,902 | 8,353 | 7,794 | 3,303 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in the probability of finishing on time (from a probit model) between the listed group and the reference group (students from families in the bottom income quartile), holding all control variables at their respective means. Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.9a

Probability of Finishing on Time by Race/Ethnicity, Gender, and Selectivity Cluster, 1999 Entering Cohort, Flagships, Unadjusted and Adjusted

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|------------------|---------------------|---------------------|---------------------|---------------------|
| Unadjusted | Black Males | -0.241 [0.059]** | -0.124 [0.042]** | -0.129 [0.028]** |
| | Hispanic Males | -0.229 [0.041]** | -0.073 [0.044] | -0.058 [0.026]* |
| | Asian Males | -0.106 [0.058] | 0.015 [0.037] | 0.083 [0.067] |
| | White Females | 0.094 [0.022]** | 0.152 [0.018]** | 0.172 [0.016]** |
| | Black Females | -0.022 [0.039] | 0.009 [0.051] | 0.075 [0.069] |
| | Hispanic Females | -0.152 [0.038]** | 0.097 [0.057] | 0.153 [0.031]** |
| | Asian Females | -0.001 [0.026] | 0.112 [0.035]** | 0.188 [0.048]** |
| | Adjusted | Black Males | -0.143 [0.038]** | -0.057 [0.032] |
| Hispanic Males | -0.098 [0.017]** | -0.070 [0.025]** | -0.094 [0.034]** | |
| Asian Males | -0.015 [0.045] | 0.003 [0.021] | 0.014 [0.027] | |
| White Females | 0.094 [0.015]** | 0.132 [0.010]** | 0.130 [0.011]** | |
| Black Females | 0.076 [0.033]* | 0.056 [0.027]* | 0.049 [0.035] | |
| Hispanic Females | 0.022 [0.021] | 0.093 [0.039]* | 0.065 [0.026]* | |
| Asian Females | 0.084 [0.010]** | 0.087 [0.015]** | 0.076 [0.013]** | |
| Observations | | 17,279 | 22,068 | 17,083 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in the probability of finishing on time (from a probit model) between the listed group and the reference group (white males), holding all control variables at their respective means. Adjusted differences control for family income quartile, SAT/ACT scores, high school GPA, state residency status, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.9b
 Probability of Finishing on Time by Race, Gender, and Selectivity Cluster,
 1999 Entering Cohort, State Systems, Unadjusted and Adjusted

| | Maryland | | North Carolina | | Ohio | | Virginia | |
|---------------|---------------------|--------------------|---------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs |
| Unadjusted | -0.257 [0.048]** | -0.268 [0.122]* | -0.143 [0.032]** | -0.070 [0.029]* | -0.202 [0.101]* | -0.110 [0.069] | -0.090 [0.096] | -0.165 [0.054]** |
| White Females | 0.133 [0.023]** | 0.123 [0.034]** | 0.199 [0.060]** | 0.163 [0.013]** | 0.206 [0.059]** | 0.202 [0.027]** | 0.157 [0.070]* | 0.087 [0.054] |
| Black Females | -0.006 [0.000]** | 0.082 [0.140] | 0.157 [0.025]** | 0.120 [0.056]* | -0.062 [0.084] | 0.053 [0.026]* | 0.136 [0.061]* | -0.003 [0.072] |
| Adjusted | -0.158 [0.042]** | -0.140 [0.081] | -0.100 [0.014]** | 0.014 [0.039] | -0.076 [0.035]* | -0.059 [0.066] | -0.088 [0.069] | -0.069 [0.033]* |
| White Females | 0.106 [0.050]* | 0.129 [0.039]** | 0.141 [0.014]** | 0.127 [0.011]** | 0.172 [0.019]** | 0.166 [0.016]** | 0.100 [0.011]** | 0.082 [0.030]** |
| Black Females | 0.103 [0.037]** | 0.227 [0.069]** | 0.144 [0.047]** | 0.158 [0.056]** | 0.046 [0.016]** | 0.160 [0.036]** | 0.086 [0.009]** | 0.113 [0.035]** |
| Observations | 2,935 | 1,655 | 4,847 | 5,072 | 4,902 | 8,353 | 7,794 | 3,303 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in the probability of finishing on time (from a probit model) between the listed group and the reference group (white males), holding all control variables at their respective means. Adjusted differences control for family income quartile, SAT/ACT scores, high school GPA, state residency status, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.10a

Rank-in-Class at Graduation by Socioeconomic Status and Selectivity Cluster,
1999 Entering Cohort, Flagships, Unadjusted and Adjusted

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|--------------|------------|-----------------|----------------|-----------------|
| Unadjusted | Middle SES | 6.3 [1.0]** | 4.9 [0.7]* | 3.3 [0.9]* |
| | High SES | 12.6 [0.8]** | 9.0 [1.7]* | 7.5 [1.5]** |
| Adjusted | Middle SES | -0.9 [0.8] | 0.6 [0.1]* | -0.4 [0.9] |
| | High SES | 1.1 [1.1] | 3.3 [0.4]* | 1.7 [0.9] |
| Observations | | 17,170 | 8,550 | 10,626 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (low-SES students). Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.10b

Rank-in-Class at Graduation by Socioeconomic Status and Selectivity Cluster,
1999 Entering Cohort, State Systems, Unadjusted and Adjusted

| | | <i>Maryland</i> | | <i>North Carolina</i> | | <i>Virginia</i> | |
|------------|--------------|-----------------|---------------|-----------------------|---------------|-----------------|---------------|
| | | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> |
| Unadjusted | Middle SES | 6.0 | -0.2 | 6.8 | 3.9 | 2.7 | 0.5 |
| | | [2.7] | [3.5] | [2.2] | [1.7] | [1.7] | [1.5] |
| | High SES | 10.5 | -1.3 | 13.0 | 4.2 | 8.1 | 1.9 |
| | | [4.0] | [2.3] | [3.7] | [2.1] | [1.8]* | [2.2] |
| Adjusted | Middle SES | 2.4 | -0.5 | 0.5 | 2.5 | 0.2 | -0.4 |
| | | [0.5] | [2.5] | [1.5] | [1.1] | [1.2] | [0.7] |
| | High SES | 4.5 | 1.0 | 2.1 | 2.8 | 3.6 | -0.4 |
| | | [1.4] | [1.5] | [0.8] | [1.3] | [1.3] | [0.7] |
| | Observations | 2,936 | 1,656 | 4,847 | 5,072 | 7,872 | 3,428 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (low-SES students). Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.11a

Rank-in-Class at Graduation by Parental Education and Selectivity Cluster,
1999 Entering Cohort, Flagships, Unadjusted and Adjusted

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|---|-----------------|-----------------|----------------|-----------------|
| Unadjusted | Some College | 2.8 [0.5]** | -0.6 [2.2] | 0.7 [1.3] |
| | College Degree | 8.5 [0.6]** | 5.3 [0.4]** | 5.2 [1.2]* |
| | Graduate Degree | 13.4 [1.0]** | 6.0 [0.8]* | 8.2 [2.2]* |
| Adjusted without Family Income | Some College | -2.6 [0.5]** | -0.8 [2.0] | -0.8 [1.3] |
| | College Degree | -0.9 [1.0] | 2.7 [0.9] | 0.7 [0.9] |
| | Graduate Degree | 2.0 [0.9] | 2.6 [0.2]** | 2.8 [1.5] |
| Adjusted with Family Income | Some College | -2.3 [0.5]** | -0.9 [2.0] | -0.7 [1.2] |
| | College Degree | -0.6 [0.7] | 2.3 [0.7] | 0.7 [0.7] |
| | Graduate Degree | 2.0 [0.6]* | 1.9 [0.4]* | 2.7 [1.4] |
| Observations | | 17,170 | 8,550 | 10,626 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (no college). Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.11b

Rank-in-Class at Graduation by Parental Education and Selectivity Cluster, 1999 Entering Cohort, State Systems, Unadjusted and Adjusted

| | | <i>Maryland</i> | | <i>North Carolina</i> | | <i>Virginia</i> | |
|---|-----------------|-----------------|---------------|-----------------------|---------------|-----------------|---------------|
| | | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> | <i>SEL As</i> | <i>SEL Bs</i> |
| Unadjusted | Some College | -0.5 | 5.1 | 3.0 | 0.3 | -1.1 | 0.4 |
| | | [3.3] | [1.4] | [0.6]* | [1.0] | [1.8] | [1.5] |
| | College Degree | 4.8 | 2.4 | 8.7 | 2.7 | 3.9 | 0.8 |
| | | [3.5] | [2.3] | [2.9] | [1.4] | [1.4]* | [2.3] |
| | Graduate Degree | 7.8 | 3.1 | 14.2 | 5.7 | 7.2 | 3.4 |
| | | [4.2] | [0.5]* | [3.0]* | [1.5]** | [2.9] | [2.4] |
| Adjusted without Family Income | Some College | -1.5 | 2.5 | -1.3 | -0.7 | -2.9 | -0.2 |
| | | [2.1] | [2.3] | [1.2] | [0.8] | [1.2] | [1.0] |
| | College Degree | 1.9 | 0.5 | 0.9 | 1.1 | 0.7 | -0.2 |
| | | [1.7] | [2.1] | [0.9] | [1.0] | [0.6] | [1.7] |
| | Graduate Degree | 3.4 | 2.5 | 2.9 | 3.2 | 3.2 | 0.3 |
| | | [1.8] | [0.9] | [0.7] | [1.2]* | [1.1]* | [1.3] |
| Adjusted with Family Income | Some College | -1.5 | 2.4 | -1.3 | -0.7 | -2.9 | -0.1 |
| | | [2.0] | [2.4] | [1.2] | [0.7] | [1.2] | [1.0] |
| | College Degree | 1.6 | 0.2 | 0.8 | 1.2 | 0.4 | 0.0 |
| | | [1.3] | [2.1] | [1.0] | [1.1] | [0.4] | [1.8] |
| | Graduate Degree | 3.1 | 2.0 | 2.6 | 3.3 | 2.7 | 0.6 |
| | | [1.2] | [2.0] | [0.9] | [1.2]* | [1.0] | [1.5] |
| | Observations | 2,936 | 1,656 | 4,847 | 5,072 | 7,872 | 3,428 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (no college). Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.12a

Rank-in-Class at Graduation by Family Income and Selectivity Cluster,
1999 Entering Cohort, Flagships, Unadjusted and Adjusted

| | | <i>19 Universities</i> | | | <i>14 Universities with Parental Education Data</i> | | |
|--|-----------------|------------------------|----------------|-----------------|---|----------------|-----------------|
| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
| Unadjusted | Second Quartile | 2.3 [1.1] | 3.8 [1.0]* | 1.2 [1.3] | 2.3 [1.1] | 2.2 [0.3]* | 0.3 [1.5] |
| | Third Quartile | 4.7 [0.8]** | 6.1 [0.7]** | 2.4 [1.2] | 4.7 [0.8]** | 5.3 [0.9]* | 2.7 [1.5] |
| | Top Quartile | 10.4 [1.0]** | 8.9 [1.2]** | 4.5 [1.5]* | 10.4 [1.0]** | 7.6 [1.0]* | 4.5 [1.6] |
| Adjusted without Parental Education | Second Quartile | -1.7 [1.0] | -0.1 [1.0] | -1.2 [1.2] | -1.7 [1.0] | -1.4 [1.2] | -2.4 [1.3] |
| | Third Quartile | -2.5 [1.0] | -0.1 [0.5] | -1.5 [0.8] | -2.5 [1.0] | -0.3 [1.0] | -1.6 [1.1] |
| | Top Quartile | 0.2 [0.9] | 2.0 [0.6]* | 0.4 [1.0] | 0.2 [0.9] | 1.6 [0.8] | -0.2 [1.4] |
| Adjusted with Parental Education | Second Quartile | | | | -1.7 [1.0] | -1.6 [1.3] | -2.5 [1.3] |
| | Third Quartile | | | | -2.8 [0.9]* | -0.8 [1.0] | -2.0 [1.1] |
| | Top Quartile | | | | -0.8 [0.7] | 0.6 [1.3] | -1.1 [1.3] |
| Observations | | 17,170 | 16,858 | 17,121 | 17,170 | 8,550 | 10,626 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (bottom quartile). Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.12b

Rank-in-Class at Graduation by Family Income and Selectivity Cluster, 1999 Entering Cohort,
State Systems, Unadjusted and Adjusted

| | Maryland | | | North Carolina | | | Ohio | | | Virginia | | |
|-----------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--|
| | SEL As | SEL Bs | SEL As | SEL As | SEL Bs | SEL As | SEL As | SEL Bs | SEL As | SEL As | SEL Bs | |
| Unadjusted | 1.1 [0.1] | 4.2 [2.6] | 5.9 [3.0] | 5.9 [3.0] | -3.3 [3.5] | 2.5 [1.2] | 2.5 [1.2] | 5.1 [0.9]** | 1.4 [2.7] | 1.4 [2.7] | 3.9 [2.3] | |
| Third Quartile | 5.8 | 3.0 | 6.7 | 6.7 | -1.4 | 5.6 | 5.6 | 4.6 | 3.7 | 3.7 | 3.8 | |
| Top Quartile | 8.3 [3.2] | 4.3 [-0.2] | 12.5 [4.1] | 12.5 [4.1] | 4.4 [-1.9] | 7.5 [0.7] | 7.5 [0.7] | 5.7 [1.2]** | 6.9 [2.0]* | 6.9 [2.0]* | 2.8 [2.7] | |
| Adjusted without | -1.5 [1.2] | 1.2 [3.4] | 0.7 [1.9] | 0.7 [1.9] | -2.3 [1.7] | -0.3 [1.7] | -0.3 [1.7] | 0.8 [0.6] | -1.4 [1.7] | -1.4 [1.7] | 0.7 [1.6] | |
| Parental Education | 0.2 [0.1] | 3.0 [4.6] | -0.5 [0.2] | -0.5 [0.2] | -1.5 [2.4] | 0.5 [1.1] | 0.5 [1.1] | 0.0 [0.8] | -0.6 [0.7] | -0.6 [0.7] | 0.1 [1.0] | |
| Top Quartile | 1.4 | 1.8 | 1.5 | 1.5 | -1.0 | 1.4 | 1.4 | 1.0 | 1.6 | 1.6 | -0.3 | |
| Adjusted with | 1.0 [-1.8] | 4.7 [1.3] | 1.5 [0.7] | 1.5 [0.7] | 2.2 [-2.3] | 1.0 [1.0] | 1.0 [1.0] | 0.7 [0.7] | 0.6 [-1.4] | 0.6 [-1.4] | 1.1 [0.7] | |
| Second Quartile | 1.1 | 3.7 | 1.9 | 1.9 | 1.5 | 1.9 | 1.9 | 1.5 | 1.7 | 1.7 | 1.5 | |
| Parental Education | -0.6 [0.1] | 2.9 [5.1] | -0.9 [0.3] | -0.9 [0.3] | -1.7 [2.2] | 0.3 [1.1] | 0.3 [1.1] | -1.7 [2.2] | -1.0 [0.8] | -1.0 [0.8] | 0.1 [1.0] | |
| Top Quartile | 0.0 [1.0] | 1.6 [5.6] | 0.5 [1.5] | 0.5 [1.5] | -1.8 [2.1] | 0.4 [1.1] | 0.4 [1.1] | 0.4 [2.1] | 0.4 [0.4] | 0.4 [0.4] | -0.4 [1.1] | |
| Observations | 2,936 | 1,656 | 4,847 | 4,847 | 5,072 | 4,902 | 4,902 | 8,353 | 7,872 | 7,872 | 3,428 | |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (bottom quartile). Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, race/ethnicity, gender, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.13a

Rank-in-Class at Graduation by Race/Ethnicity, Gender, and Selectivity Cluster, 1999 Entering Cohort, Flagships, Unadjusted and Adjusted

| | | <i>SEL Is</i> | <i>SEL IIs</i> | <i>SEL IIIs</i> |
|------------------|------------------|------------------|------------------|------------------|
| Unadjusted | Black Males | -26.1 [1.8]** | -20.8 [1.7]** | -19.7 [1.2]** |
| | Hispanic Males | -14.7 [1.3]** | -9.5 [3.8] | -11.1 [1.5]** |
| | Asian Males | -7.6 [1.7]** | -1.8 [0.4]** | -2.5 [2.0] |
| | White Females | 7.3 [1.2]** | 10.2 [0.6]** | 8.2 [0.7]** |
| | Black Females | -19.9 [2.6]** | -15.3 [3.4]* | -9.2 [3.0]* |
| | Hispanic Females | -8.7 [1.0]** | -3.1 [2.6] | -1.8 [3.0] |
| | Asian Females | 0.1 [1.3] | 4.0 [1.2]* | 1.5 [2.0] |
| | Adjusted | Black Males | -7.7 [1.1]** | -3.2 [1.4] |
| Hispanic Males | | -7.6 [1.5]** | -1.8 [1.9] | -5.8 [1.8]* |
| Asian Males | | -8.3 [1.8]** | -3.6 [0.3]** | -2.9 [1.0]* |
| White Females | | 8.3 [1.1]** | 9.3 [0.9]** | 6.5 [0.6]** |
| Black Females | | -2.6 [2.4] | 0.6 [1.6] | 0.0 [2.1] |
| Hispanic Females | | 3.9 [1.8] | 4.7 [1.3]* | 2.6 [2.1] |
| Asian Females | | 0.1 [1.7] | 3.1 [1.9] | 0.9 [1.3] |
| Observations | | 17,170 | 16,858 | 17,121 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (white males). Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, family income quartile, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.13b

Rank-in-Class at Graduation by Race, Gender, and Selectivity Cluster, 1999 Entering Cohort,
State Systems, Unadjusted and Adjusted

| | Maryland | | North Carolina | | Ohio | | Virginia | | |
|--------------|---------------|----------------|-----------------|----------------|------------------|----------------|------------------|------------------|------------------|
| | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs | SEL As | SEL Bs | |
| Unadjusted | Black Males | -21.5 [3.4] | -15.4 [3.9] | -23.9 [6.6] | -14.0 [2.3]** | -22.5 [1.9] | -21.0 [1.7]** | -20.9 [0.9]** | -13.2 [2.4]** |
| | White Females | 11.4 [2.4] | 14.4 [1.1]** | 6.2 [1.1]* | 13.9 [0.7]** | 9.5 [4.3] | 11.2 [1.4]** | 8.9 [2.2]* | 9.0 [1.5]** |
| | Black Females | -7.5 [2.5] | -2.0 [4.5] | -17.9 [4.3] | -2.5 [2.9] | -14.3 [1.2] | -10.5 [2.2]** | -16.9 [3.0]** | -6.0 [4.3] |
| Adjusted | Black Males | -7.2 [0.9] | -5.2 [3.2] | -5.0 [1.5] | -3.7 [0.7]** | -4.6 [0.7] | -9.1 [1.4]** | -4.3 [1.2]* | -8.1 [1.5]** |
| | White Females | 10.8 [3.8] | 11.4 [1.6]* | 8.6 [1.0]* | 9.0 [0.5]** | 9.5 [2.9] | 7.3 [1.4]** | 8.4 [1.1]** | 4.7 [0.8]** |
| | Black Females | 5.1 [2.6] | 6.3 [6.2] | -0.3 [0.9] | 2.8 [3.0] | 1.6 [3.0] | -0.8 [1.6] | -0.3 [1.7] | -2.8 [1.9] |
| Observations | 2,936 | 1,656 | 4,847 | 5,072 | 4,902 | 8,353 | 7,872 | 3,428 | |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (white males). Adjusted differences control for SAT/ACT scores, high school GPA, state residency status, family income quartile, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.14a
 Predicting Rank-in-Class at Graduation by Race/Ethnicity, Gender, and Selectivity Cluster, 1999 Entering Cohort, Flagships

| | SEL Is | | | SEL IIs | | | SEL IIIs | | | | | | | |
|--------------------|------------------|------------------|------------------|------------------|-----------------|------------------|-----------------|-----------------|-----------------|------------------|------------------|-----------------|------------------|-----------------|
| Black Males | -26.1 [1.8]** | -23.9 [1.8]** | -12.0 [1.6]** | -15.3 [1.1]** | -7.7 [1.1]** | -19.4 [1.6]** | -8.9 [1.0]** | -8.2 [1.9]* | -3.2 [1.4] | -19.7 [1.2]** | -18.3 [1.4]** | -8.1 [2.2]** | -11.3 [1.4]** | -7.2 [1.8]** |
| Hispanic Males | -14.7 [1.3]** | -14.0 [1.6]** | -8.0 [2.3]* | -12.0 [1.1]** | -7.6 [1.5]** | -8.6 [3.7] | -3.4 [2.5] | -4.6 [2.7] | -1.8 [1.9] | -11.1 [1.5]** | -10.9 [2.1]** | -5.8 [2.6] | -7.9 [1.5]** | -5.8 [1.8]** |
| Asian Males | -7.6 [1.7]** | -7.6 [1.9]** | -8.1 [1.8]** | -8.1 [1.8]** | -8.3 [1.8]** | -1.9 [0.8] | -2.8 [0.6]** | -3.4 [0.6]** | -3.6 [0.3]** | -2.5 [2.0] | -4.6 [2.9] | -3.6 [2.3] | -3.6 [0.9]** | -2.9 [1.0]** |
| White Females | 7.3 [1.2]** | 7.6 [1.2]** | 10.3 [1.2]** | 5.9 [1.0]** | 8.3 [1.1]** | 10.2 [0.9]** | 12.2 [0.7]** | 7.5 [1.2]** | 9.3 [0.9]** | 8.2 [0.7]** | 9.3 [0.7]** | 10.8 [0.5]** | 4.7 [0.5]** | 6.5 [0.6]** |
| Black Females | -19.9 [2.6]** | -17.3 [2.7]** | -4.2 [2.9] | -11.7 [2.3]** | -2.6 [2.4] | -13.4 [3.1]* | -0.9 [1.9] | -6.5 [2.5] | 0.6 [1.6] | -9.2 [3.0]* | -7.1 [2.0]** | 3.9 [1.3]* | -5.8 [2.7] | 0.0 [2.1] |
| Hispanic Females | -8.7 [1.0]** | -7.3 [1.8]** | 4.1 [2.4] | -4.6 [1.4]* | 3.9 [1.8] | -2.3 [2.8] | 5.6 [1.7]** | -0.3 [2.1] | 4.7 [1.3]* | -1.8 [3.0] | -0.1 [2.3] | 7.2 [1.8]** | -1.8 [2.0] | 2.6 [2.1] |
| Asian Females | 0.1 [1.3] | -0.3 [1.9] | 1.9 [2.0] | -2.1 [1.5] | 0.1 [1.7] | 3.5 [1.9] | 6.0 [2.1]* | 0.7 [1.9] | 3.1 [1.9] | 1.5 [2.0] | 1.6 [1.6] | 5.4 [1.0]** | -2.5 [1.5] | 0.9 [1.3] |
| Standard Controls? | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| SAT/ACT Scores? | No | No | Yes | No | Yes | No | Yes | No | Yes | No | No | Yes | No | Yes |
| High School GPA? | No | No | No | Yes | Yes | No | No | Yes | Yes | No | No | No | Yes | Yes |
| Observations | 17,170 | 17,170 | 17,170 | 17,170 | 17,170 | 16,858 | 16,858 | 16,858 | 16,858 | 17,121 | 17,121 | 17,121 | 17,121 | 17,121 |
| R-squared | 0.08 | 0.11 | 0.22 | 0.20 | 0.27 | 0.06 | 0.08 | 0.20 | 0.24 | 0.04 | 0.06 | 0.22 | 0.26 | 0.31 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (white males). Standard controls include state residency status, family income quartile, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.14b
 Predicting Rank-in-Class at Graduation by Race, Gender, and Selectivity Cluster, 1999 Entering Cohort, State Systems

| | SELAs | | | | | | | | | | SELBs | | |
|--------------------|------------------|------------------|-----------------|------------------|-----------------|------------------|------------------|-----------------|------------------|-----------------|-------|--|--|
| Black Males | -22.0 [1.7]** | -20.3 [1.5]** | -8.4 [0.9]** | -11.4 [1.0]** | -4.9 [0.5]** | -15.7 [1.3]** | -15.6 [1.2]** | -6.9 [0.8]** | -10.4 [1.0]** | -6.7 [0.9]** | | | |
| White Females | 8.6 [1.3]** | 10.3 [1.1]** | 12.8 [1.1]** | 6.8 [0.9]** | 9.3 [0.9]** | 11.9 [0.8]** | 11.2 [0.7]** | 13.0 [0.7]** | 5.8 [0.7]** | 7.9 [0.7]** | | | |
| Black Females | -14.3 [2.3]** | -11.5 [2.0]** | 2.1 [1.6] | -6.9 [1.7]** | 1.7 [1.4] | -5.2 [1.7]** | -5.4 [1.7]** | 6.1 [1.4]** | -6.1 [1.4]** | 0.5 [1.4] | | | |
| Standard Controls? | No | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | | | |
| SAT/ACT Scores? | No | No | Yes | No | Yes | No | No | Yes | No | Yes | | | |
| High School GPA? | No | No | No | Yes | Yes | No | No | No | Yes | Yes | | | |
| Observations | 20,557 | 20,557 | 20,557 | 20,557 | 20,557 | 18,509 | 18,509 | 18,509 | 18,509 | 18,509 | | | |
| R-squared | 0.06 | 0.08 | 0.21 | 0.22 | 0.28 | 0.06 | 0.09 | 0.24 | 0.30 | 0.34 | | | |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. Coefficients indicate the predicted difference in rank-in-class (in percentile points) relative to the reference group (white males). Standard controls include state residency status, family income quartile, major, and university attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.15a

Summary Outcomes by Socioeconomic Status, 1999 Entering Cohort,
Flagships and State System SEL As, Unadjusted and Adjusted

| | | <i>Best</i> | <i>2nd</i> | <i>3rd</i> | <i>Disappointing</i> |
|--------------|------------|--------------------|--------------------|---------------------|----------------------|
| Unadjusted | Middle SES | 0.067 [0.006]** | 0.025 [0.006]** | -0.032 [0.006]** | -0.060 [0.006]** |
| | High SES | 0.163 [0.005]** | 0.049 [0.006]** | -0.060 [0.005]** | -0.152 [0.005]** |
| Adjusted 1 | Middle SES | 0.050 [0.006]** | 0.024 [0.007]** | -0.023 [0.006]** | -0.051 [0.006]** |
| | High SES | 0.121 [0.006]** | 0.052 [0.006]** | -0.042 [0.005]** | -0.132 [0.006]** |
| Adjusted 2 | Middle SES | 0.031 [0.007]** | 0.029 [0.007]** | -0.009 [0.005] | -0.051 [0.006]** |
| | High SES | 0.086 [0.006]** | 0.050 [0.007]** | -0.017 [0.005]** | -0.118 [0.006]** |
| Observations | | 55,605 | 55,605 | 55,605 | 55,605 |

Source: Flagships Database and State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of being in a given summary outcome group between the listed subgroup and the reference group (low-SES students), holding all control variables constant at their means. Control variables include high school GPA and SAT/ACT scores; "Adjusted 2" also includes race/ethnicity, gender, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.15b

Summary Outcomes by Socioeconomic Status, 1999 Entering Cohort,
State System SEL Bs, Unadjusted and Adjusted

| | | <i>Best</i> | <i>2nd</i> | <i>3rd</i> | <i>Disappointing</i> |
|--------------|------------|--------------------|--------------------|--------------------|----------------------|
| Unadjusted | Middle SES | 0.038 [0.008]** | 0.026 [0.008]** | 0.011 [0.008] | -0.076 [0.010]** |
| | High SES | 0.076 [0.008]** | 0.050 [0.008]** | 0.017 [0.008]* | -0.144 [0.010]** |
| Adjusted 1 | Middle SES | 0.039 [0.008]** | 0.036 [0.009]** | 0.016 [0.008] | -0.090 [0.011]** |
| | High SES | 0.083 [0.008]** | 0.072 [0.009]** | 0.023 [0.008]** | -0.178 [0.011]** |
| Adjusted 2 | Middle SES | 0.040 [0.008]** | 0.038 [0.009]** | 0.018 [0.008]* | -0.095 [0.011]** |
| | High SES | 0.080 [0.008]** | 0.074 [0.009]** | 0.029 [0.009]** | -0.183 [0.011]** |
| Observations | | 16,315 | 16,315 | 16,315 | 16,315 |

Source: State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of being in a given summary outcome group between the listed subgroup and the reference group (low SES students), holding all control variables constant at their means. Control variables include SAT/ACT scores and high school GPA; "Adjusted 2" also includes race/ethnicity, gender, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.16a

Summary Outcomes by Race/Ethnicity and Gender, 1999 Entering Cohort,
Flagships and State System SEL As, Unadjusted and Adjusted

| | | <i>Best</i> | <i>2nd</i> | <i>3rd</i> | <i>Disappointing</i> |
|------------|------------------|---------------------|---------------------|---------------------|----------------------|
| Unadjusted | Black Males | -0.175 [0.007]** | -0.087 [0.010]** | 0.085 [0.011]** | 0.177 [0.012]** |
| | Hispanic Males | -0.115 [0.009]** | -0.022 [0.012] | 0.052 [0.012]** | 0.086 [0.012]** |
| | Asian Males | 0.002 [0.007] | 0.015 [0.008]* | 0.013 [0.007] | -0.030 [0.006]** |
| | White Females | 0.151 [0.004]** | 0.018 [0.004]** | -0.108 [0.003]** | -0.060 [0.003]** |
| | Black Females | -0.090 [0.007]** | 0.042 [0.009]** | 0.013 [0.008] | 0.035 [0.008]** |
| | Hispanic Females | -0.011 [0.011] | 0.033 [0.012]** | -0.010 [0.010] | -0.012 [0.010] |
| | Asian Females | 0.100 [0.008]** | 0.055 [0.008]** | -0.065 [0.006]** | -0.089 [0.005]** |
| | Adjusted 1 | Black Males | -0.102 [0.010]** | -0.033 [0.012]** | 0.053 [0.011]** |
| | Hispanic Males | -0.097 [0.009]** | -0.018 [0.013] | 0.044 [0.012]** | 0.070 [0.012]** |
| | Asian Males | -0.051 [0.006]** | -0.003 [0.008] | 0.037 [0.008]** | 0.018 [0.008]* |
| | White Females | 0.166 [0.004]** | 0.020 [0.004]** | -0.121 [0.003]** | -0.065 [0.003]** |
| | Black Females | 0.011 [0.010] | 0.077 [0.011]** | -0.046 [0.008]** | -0.041 [0.007]** |
| | Hispanic Females | 0.041 [0.012]** | 0.041 [0.012]** | -0.043 [0.010]** | -0.040 [0.009]** |
| | Asian Females | 0.053 [0.007]** | 0.059 [0.008]** | -0.056 [0.007]** | -0.056 [0.006]** |
| Adjusted 2 | Black Males | -0.098 [0.010]** | -0.065 [0.013]** | 0.065 [0.012]** | 0.098 [0.011]** |
| | Hispanic Males | -0.083 [0.010]** | -0.029 [0.013]* | 0.039 [0.012]** | 0.073 [0.012]** |
| | Asian Males | -0.029 [0.007]** | 0.002 [0.009] | 0.032 [0.008]** | -0.005 [0.007] |
| | White Females | 0.160 [0.004]** | 0.015 [0.004]** | -0.117 [0.003]** | -0.058 [0.003]** |
| | Black Females | 0.021 [0.011]* | 0.047 [0.011]** | -0.034 [0.009]** | -0.034 [0.007]** |
| | Hispanic Females | 0.065 [0.013]** | 0.021 [0.013] | -0.052 [0.010]** | -0.035 [0.009]** |
| | Asian Females | 0.081 [0.008]** | 0.051 [0.009]** | -0.065 [0.007]** | -0.067 [0.006]** |
| | Observations | | 76,573 | 76,573 | 76,573 |

Source: Flagships Database and State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicated the predicted difference in the probability of being in a given summary outcome group between the listed subgroup and the reference group (white males), holding all control variables constant at their means. Control variables include SAT/ACT scores and high school GPA; "Adjusted 2" also includes income quartile, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 4.16b
 Summary Outcomes by Race and Gender, 1999 Entering Cohort,
 State System SEL Bs, Unadjusted and Adjusted

| | | <i>Best</i> | <i>2nd</i> | <i>3rd</i> | <i>Disappointing</i> |
|------------|---------------|---------------------|---------------------|---------------------|----------------------|
| Unadjusted | Black Males | -0.073 [0.007]** | -0.064 [0.010]** | 0.024 [0.013] | 0.113 [0.015]** |
| | White Females | 0.126 [0.005]** | 0.035 [0.005]** | -0.077 [0.005]** | -0.085 [0.006]** |
| | Black Females | 0.007 [0.007] | -0.013 [0.008] | -0.027 [0.009]** | 0.032 [0.011]** |
| Adjusted 1 | Black Males | -0.031 [0.009]** | -0.031 [0.013]* | 0.012 [0.013] | 0.051 [0.016]** |
| | White Females | 0.099 [0.004]** | 0.043 [0.005]** | -0.074 [0.005]** | -0.068 [0.007]** |
| | Black Females | 0.053 [0.009]** | 0.014 [0.010] | -0.044 [0.009]** | -0.023 [0.012] |
| Adjusted 2 | Black Males | -0.029 [0.008]** | -0.023 [0.014] | 0.011 [0.014] | 0.041 [0.017]* |
| | White Females | 0.081 [0.004]** | 0.044 [0.006]** | -0.075 [0.005]** | -0.050 [0.007]** |
| | Black Females | 0.059 [0.009]** | 0.031 [0.011]** | -0.048 [0.010]** | -0.043 [0.013]** |
| | Observations | 33,874 | 33,874 | 33,874 | 33,874 |

Source: State Systems Database.

Notes: Standard errors appear in brackets. The reported coefficients are marginal effects from a multinomial logit model, which indicate the predicted difference in the probability of being in a given summary outcome group between the listed subgroup and the reference group (white males), holding all control variables constant at their means. Control variables include high school GPA and SAT/ACT scores; "Adjusted 2" also includes income quartile, state residency status, and institution attended.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.1
Six-Year Graduation Rates by Mean SAT/ACT Score of High School,
National Data

| <i>Flagships and State System SEL As</i> | | | | |
|---|--------------------|--------------------|--------------------|-------------------|
| Mean SAT/ACT Score | 0.044 [0.004]** | 0.033 [0.004]** | 0.021 [0.004]** | 0.009 [0.004]* |
| Controls for High School Size and Neighborhood Wealth? | No | Yes | Yes | Yes |
| Standard Controls Excluding SAT/ACT? | No | No | Yes | Yes |
| Standard Controls Including SAT/ACT? | No | No | No | Yes |
| Observations | 61,640 | 61,640 | 61,640 | 61,640 |
| <i>State System SEL Bs</i> | | | | |
| Mean SAT/ACT Score | 0.042 [0.006]** | 0.039 [0.007]** | 0.027 [0.006]** | 0.011 [0.006] |
| Controls for High School Size and Neighborhood Wealth? | No | Yes | Yes | Yes |
| Standard Controls Excluding SAT/ACT? | No | No | Yes | Yes |
| Standard Controls Including SAT/ACT? | No | No | No | Yes |
| Observations | 28,527 | 28,527 | 28,527 | 28,527 |

Source: Flagships Database, State Systems Database, and National High School Database.

Notes: Robust standard errors adjusted for clustering at the high school level appear in brackets. Coefficients indicate the increase in six-year graduation rates associated with every 100-point increase in the mean SAT/ACT score of the high school. Standard controls include race/ethnicity, gender, university dummy variables, and family income.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.2
Six-Year Graduation Rates by High School Rank, National Data

| <i>Flagships and State System SEL As</i> | | | | |
|---|-----------|-----------|-----------|-----------|
| Rank 2 | 0.048 | 0.030 | 0.042 | 0.029 |
| | [0.008]** | [0.008]** | [0.007]** | [0.007]** |
| Rank 1 | 0.105 | 0.069 | 0.059 | 0.034 |
| | [0.009]** | [0.010]** | [0.009]** | [0.008]** |
| Controls for High School Size and Neighborhood Wealth? | No | Yes | Yes | Yes |
| Standard Controls Excluding SAT/ACT? | No | No | Yes | Yes |
| Standard Controls Including SAT/ACT? | No | No | No | Yes |
| Observations | 61,640 | 61,640 | 61,640 | 61,640 |
| <i>State System SEL Bs</i> | | | | |
| Rank 2 | 0.073 | 0.068 | 0.042 | 0.033 |
| | [0.011]** | [0.012]** | [0.010]** | [0.010]** |
| Rank 1 | 0.100 | 0.089 | 0.049 | 0.024 |
| | [0.015]** | [0.016]** | [0.015]** | [0.014] |
| Controls for High School Size and Neighborhood Wealth? | No | Yes | Yes | Yes |
| Standard Controls Excluding SAT/ACT? | No | No | Yes | Yes |
| Standard Controls Including SAT/ACT? | No | No | No | Yes |
| Observations | 28,527 | 28,527 | 28,527 | 28,527 |

Source: Flagships Database, State Systems Database, and National High School Database.

Notes: Robust standard errors adjusted for clustering at the high school level appear in brackets. Coefficients indicate the predicted difference in six-year graduation rates between each high school rank group and the reference group (here, Rank 3 high schools). Here high school rank is built from mean SAT/ACT scores and the percentage of seniors taking the SAT/ACT. Standard controls include race/ethnicity, gender, university dummy variables, and family income.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.3
Four-Year College Attendance by Academic Level of High School,
North Carolina

| | | | | |
|--|---------------------|---------------------|---------------------|---------------------|
| High School Academic Level II | -0.185 [0.013]** | -0.183 [0.014]** | -0.118 [0.014]** | -0.055 [0.019]** |
| High School Academic Level III | -0.254 [0.015]** | -0.244 [0.015]** | -0.143 [0.016]** | -0.053 [0.024]* |
| Control for Race/Ethnicity and Gender? | No | Yes | Yes | Yes |
| Control for Eighth-Grade Test Scores? | No | No | Yes | Yes |
| Control for Other High School Characteristics? | No | No | No | Yes |
| Pseudo <i>R</i> -squared | 0.02 | 0.03 | 0.22 | 0.22 |
| Observations | 37,859 | 37,859 | 37,859 | 37,859 |

Source: North Carolina High School Seniors Database.

Notes: Robust standard errors adjusted for clustering at the high school level appear in brackets. Coefficients indicate the predicted difference in four-year college attendance rates between the listed group and the reference group (Level I). Level I is defined as 18–30 AP courses offered, 1005–1490 observed SAT, 944–1490 predicted SAT, 57.32–80.04 percent taking the SAT, or three of the four categories. Level III is defined as fewer than 12 AP courses offered, below 955 observed SAT, below 887 predicted SAT, fewer than 46.3 percent taking the SAT, or three of the four categories. Level II is defined as a school that does not fit into Level I or Level III. Other high school characteristics include number of seniors, location, and wealth of the neighborhood in which the high school is located.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.4

Six-Year Graduation Rates by Academic Level of High School, North Carolina

| <i>SEL As</i> | | | | | |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| High School Academic Level II | -0.039 [0.005]** | -0.036 [0.005]** | -0.041 [0.015]** | -0.025 [0.014] | -0.005 [0.013] |
| High School Academic Level III | -0.060 [0.048] | -0.042 [0.043] | -0.061 [0.062] | -0.034 [0.061] | -0.001 [0.056] |
| Control for Eighth-Grade Test Scores? | No | Yes | Yes | Yes | Yes |
| Control for Race/Ethnicity and Gender? | No | No | Yes | Yes | Yes |
| Control for Family Income and Parental Education? | No | No | No | Yes | Yes |
| Control for Other High School Characteristics? | No | No | No | No | Yes |
| Pseudo <i>R</i> -squared | 0.00 | 0.01 | 0.06 | 0.06 | 0.07 |
| Observations | 2,990 | 2,990 | 2,990 | 2,990 | 2,990 |
| <i>SEL Bs</i> | | | | | |
| High School Academic Level II | -0.052 [0.007]** | -0.048 [0.006]** | -0.043 [0.009]** | -0.028 [0.010]** | -0.040 [0.014]** |
| High School Academic Level III | -0.049 [0.014]** | -0.037 [0.013]** | -0.040 [0.024] | -0.017 [0.025] | -0.030 [0.034] |
| Control for Eighth-Grade Test Scores? | No | Yes | Yes | Yes | Yes |
| Control for Race/Ethnicity and Gender? | No | No | Yes | Yes | Yes |
| Control for Family Income and Parental Education? | No | No | No | Yes | Yes |
| Control for Other High School Characteristics? | No | No | No | No | Yes |
| Pseudo <i>R</i> -squared | 0.00 | 0.01 | 0.03 | 0.03 | 0.04 |
| Observations | 5,281 | 5,281 | 5,281 | 5,281 | 5,281 |

Source: North Carolina High School Seniors Database.

Notes: Robust standard errors adjusted for clustering at the high school level appear in brackets. Coefficients indicate the predicted difference in six-year graduation rates between the listed group and the reference group (Level I). Level I is defined as 18–30 AP courses offered, 1005–1490 observed SAT, 944–1490 predicted SAT, 57.32–80.04 percent taking the SAT, or three of the four categories. Level III is defined as fewer than 12 AP courses offered, below 955 observed SAT, below 887 predicted SAT, fewer than 46.3 percent taking the SAT, or three of the four categories. Level II is defined as a school that does not fit into Level I or Level III. Other high school characteristics include number of seniors and location and wealth of the neighborhood in which the high school is located.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.5

Six-Year Graduation Rates by Academic Level of High School and within University-Reported High School GPA Ranges, North Carolina

| <i>SEL As</i> | | | | | | |
|--------------------------------|---------------------|---------------------|-------------------|-------------------|---------------------|---------------------|
| | <i>All Students</i> | | <i>2.5–2.99</i> | <i>3.0–3.49</i> | <i>3.5–4.0</i> | <i>Above 4.0</i> |
| High School Academic Level II | –0.039 [0.005]** | –0.006 [0.013] | — | 0.076 [0.053] | –0.009 [0.051] | –0.014 [0.008] |
| High School Academic Level III | –0.062 [0.046] | –0.003 [0.055] | — | 0.152 [0.075]* | 0.053 [0.077] | –0.077 [0.016]** |
| Standard Controls? | No | Yes | — | Yes | Yes | Yes |
| Pseudo <i>R</i> -Squared | 0.00 | 0.07 | — | 0.14 | 0.07 | 0.05 |
| Observations | 2,996 | 2,996 | — | 200 | 1,092 | 1,655 |
| <i>SEL Bs</i> | | | | | | |
| | <i>All Students</i> | | <i>Below 2.5</i> | <i>2.5–2.99</i> | <i>3.0–3.49</i> | <i>3.5–4.0</i> |
| High School Academic Level II | –0.052 [0.007]** | –0.042 [0.014]** | –0.050 [0.138] | –0.028 [0.036] | –0.093 [0.030]** | –0.045 [0.030] |
| High School Academic Level III | –0.050 [0.014]** | –0.033 [0.034] | –0.065 [0.133] | –0.088 [0.085] | –0.103 [0.074] | –0.037 [0.033] |
| Standard Controls? | No | Yes | Yes | Yes | Yes | Yes |
| Pseudo <i>R</i> -Squared | 0.00 | 0.04 | 0.18 | 0.04 | 0.05 | 0.04 |
| Observations | 5,310 | 5,310 | 147 | 792 | 1,799 | 2,556 |

Source: North Carolina High School Seniors Database.

Notes: Robust standard errors adjusted for clustering at the high school level appear in brackets. Coefficients indicate the predicted difference in six-year graduation rates between the listed group and the reference group (Level I). Level I is defined as 18–30 AP courses offered, 1005–1490 observed SAT, 944–1490 predicted SAT, 57.32–80.04 percent taking the SAT, or three of the four categories. Level III is defined as fewer than 12 AP courses offered, below 955 observed SAT, below 887 predicted SAT, fewer than 46.3 percent taking the SAT, or three of the four categories. Level II is defined as a school that does not fit into Level I or Level III. Standard controls include race/ethnicity, gender, eighth-grade test scores, family income, parental education, indicators for university attended, the number of seniors in the high school, the wealth of the neighborhood of the high school, and the location of the high school.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.6

Undermatch Rates by Parental Education and Family Income, North Carolina

| <i>Parental Education</i> | | | | | |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| Some College | -0.114 [0.022]** | -0.119 [0.022]** | -0.109 [0.023]** | -0.107 [0.023]** | -0.084 [0.024]** |
| College Degree | -0.203 [0.022]** | -0.205 [0.022]** | -0.175 [0.021]** | -0.159 [0.022]** | -0.106 [0.023]** |
| Graduate Degree | -0.300 [0.021]** | -0.296 [0.021]** | -0.258 [0.022]** | -0.225 [0.023]** | -0.142 [0.024]** |
| Control for Race/Ethnicity and Gender? | No | Yes | Yes | Yes | Yes |
| Control for High School Characteristics and Academic Level? | No | No | Yes | Yes | Yes |
| Control for SAT Scores and High School GPA? | No | No | No | Yes | Yes |
| Control for Family Income? | No | No | No | No | Yes |
| Pseudo <i>R</i> -squared | 0.03 | 0.04 | 0.05 | 0.08 | 0.09 |
| Observations | 5,211 | 5,211 | 5,211 | 5,211 | 5,211 |
| <i>Family Income</i> | | | | | |
| Second Quartile | -0.037 [0.025] | -0.042 [0.025] | -0.039 [0.026] | -0.041 [0.026] | -0.029 [0.026] |
| Third Quartile | -0.169 [0.023]** | -0.177 [0.024]** | -0.163 [0.024]** | -0.154 [0.025]** | -0.123 [0.025]** |
| Top Quartile | -0.308 [0.023]** | -0.313 [0.023]** | -0.283 [0.024]** | -0.267 [0.024]** | -0.224 [0.025]** |
| Control for Race/Ethnicity and Gender? | No | Yes | Yes | Yes | Yes |
| Control for High School Characteristics and Academic Level? | No | No | Yes | Yes | Yes |
| Control for SAT Scores and High School GPA? | No | No | No | Yes | Yes |
| Control for Parental Education? | No | No | No | No | Yes |
| Pseudo <i>R</i> -squared | 0.04 | 0.05 | 0.06 | 0.09 | 0.09 |
| Observations | 5,211 | 5,211 | 5,211 | 5,211 | 5,211 |

Source: North Carolina High School Seniors Database.

Notes: Robust standard errors adjusted for clustering at the high school level appear in brackets. Coefficients indicate the predicted difference in the undermatch rate between the listed group and the reference group (no college in the case of parental education and bottom quartile in the case of family income). High school characteristics include number of seniors, location, and the wealth of the neighborhood in which the high school is located.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.7

Undermatch Rates by Academic Level of High School, North Carolina

| | | | | | |
|---|--------------------|--------------------|--------------------|------------------|-------------------|
| High School Academic Level II | 0.150 [0.022]** | 0.145 [0.021]** | 0.076 [0.020]** | 0.042 [0.025] | 0.020 [0.025] |
| High School Academic Level III | 0.185 [0.036]** | 0.173 [0.036]** | 0.075 [0.037]* | 0.025 [0.042] | -0.016 [0.041] |
| Control for Race/Ethnicity and Gender? | No | Yes | Yes | Yes | Yes |
| Control for Family Income and Parental Education? | No | No | Yes | Yes | Yes |
| Other High School Characteristics? | No | No | No | Yes | Yes |
| Control for SAT Scores and High School GPA? | No | No | No | No | Yes |
| Pseudo <i>R</i> -squared | 0.02 | 0.03 | 0.06 | 0.07 | 0.09 |
| Observations | 5,211 | 5,211 | 5,211 | 5,211 | 5,211 |

Source: North Carolina High School Seniors Database.

Notes: Robust standard errors adjusted for clustering at the high school level appear in brackets. Coefficients indicate the predicted difference in the undermatch rate between the listed group and the reference group (Level I). Level I is defined as 18–30 AP courses taken, 1005–1490 observed SAT, 944–1490 predicted SAT, 57.32–80.04 percent taking the SAT, or three of the four categories. Level III is defined as fewer than 12 AP courses taken, below 955 observed SAT, below 887 predicted SAT, fewer than 46.3 percent taking the SAT, or three of the four categories. Level II is defined as a school that does not fit into Level I or Level III. High school characteristics include number of seniors, location, and the wealth of the neighborhood in which the high school is located.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.8
 Graduation Rates by Undermatch Status, North Carolina

| <i>Six-Year Graduation Rates</i> | | | | |
|---|---------------------|---------------------|---------------------|---------------------|
| Undermatched from a SEL A to a SEL B (0/1) | -0.143 [0.017]** | -0.107 [0.017]** | -0.091 [0.017]** | -0.084 [0.019]** |
| Include Standard Controls? | No | Yes | Yes | Yes |
| Control for Family Income and Parental Education? | No | No | Yes | Yes |
| High School Fixed Effects? | No | No | No | Yes |
| Pseudo <i>R</i> -squared | 0.02 | 0.06 | 0.07 | 0.13 |
| Observations | 3,608 | 3,608 | 3,608 | 3,439 |
| <i>Four-Year Graduation Rates</i> | | | | |
| Undermatched from a SEL A to a SEL B (0/1) | -0.149 [0.018]** | -0.117 [0.020]** | -0.097 [0.020]** | -0.099 [0.022]** |
| Include Standard Controls? | No | Yes | Yes | Yes |
| Control for Family Income and Parental Education? | No | No | Yes | Yes |
| High School Fixed Effects? | No | No | No | Yes |
| Pseudo <i>R</i> -squared | 0.01 | 0.07 | 0.08 | 0.14 |
| Observations | 3,608 | 3,608 | 3,608 | 3,521 |

Source: North Carolina High School Seniors Database.

Notes: Standard errors adjusted for clustering at the university level appear in brackets. Standard controls include SAT scores, adjusted high school GPA, race/ethnicity, and gender. These regressions are run only on students who attended a SEL A or a SEL B and had the academic qualifications to be presumed eligible for a SEL A.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 5.9

College-Going Patterns of Students in the Top Quartile of the
Eighth-Grade Test Score Distribution by Academic Level
of High School, North Carolina (Percent)

| | <i>Enrolled at a Two-Year College</i> | <i>No College Enrollment</i> | <i>Sub-Totals</i> |
|-----------------------|---|----------------------------------|-------------------|
| Level I High School | 5 | 15 | 20 |
| Level II High School | 13 | 18 | 31 |
| Level III High School | 15 | 23 | 38 |
| All Levels | 11 | 18 | 29 |

Source: North Carolina High School Seniors Database.

Notes: Level I is defined as 18–30 AP courses offered, 1005–1490 observed SAT, 944–1490 predicted SAT, 57.32–80.04 percent taking the SAT, or three of the four categories. Level III is defined as fewer than 12 AP courses offered, below 955 observed SAT, below 887 predicted SAT, fewer than 46.3 percent taking the SAT, or three of the four categories. Level II is defined as a school that does not fit into Level I or Level III.

APPENDIX TABLE 5.10
Summary Statistics, North Carolina High Schools

| <i>All Students (Percent)</i> | |
|---|--------------|
| Number of AP Courses Offered | |
| Fewer than 10 | 19 |
| 10–14 | 35 |
| 15–19 | 22 |
| 20–30 | 24 |
| Percent Taking the SAT | |
| Under 50 | 43 |
| 50–66.4 | 37 |
| 66.5 percent or more | 20 |
| SAT Scores (Based on Observed Data) | |
| Below 900 | 14 |
| 900–999 | 50 |
| 1000–1099 | 34 |
| 1100 and above | Fewer than 1 |
| SAT Scores (Based on Predicted Values) | |
| Below 900 | 40 |
| 900–999 | 44 |
| 1000–1099 | 14 |
| 1100 and above | Fewer than 1 |
| Academic Level of High School | |
| Level I | 23 |
| Level II | 53 |
| Level III | 24 |
| Size (Number of Seniors in Database) | |
| Fewer than 100 | 8 |
| 100–300 | 67 |
| More than 300 | 25 |
| Location | |
| Town and Rural | 55 |
| Urban Fringe | 16 |
| City | 29 |
| Wealth of Neighborhood (Average Family Income) | |
| Less than 50K | 62 |
| 50K–69.9K | 28 |
| 70K–107K | 10 |
| Percent Black | |
| Fewer than 10 | 20 |
| 10–19.9 | 19 |
| 20–49.9 | 45 |
| 50– 66.6 | 10 |
| 66.7 and above | 6 |

Source: North Carolina High School Seniors Database.

Note: Predicted SAT scores are based on end-of-course English I and Algebra I examinations taken by North Carolina students in their freshman or sophomore year or on their actual SAT score if they took the SAT.

APPENDIX TABLE 6.1
 Graduation Rates by SAT/ACT Scores and Adjusted High School GPA, 1999 Entering Cohort, Flagships

Six-Year Graduation Rates

| | SEL Is | | SEL IIs | | SEL IIIs | |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| SAT/ACT (Standardized) | 0.018 [0.003]** | 0.018 [0.002]** | 0.009 [0.002]** | 0.016 [0.004]** | 0.010 [0.005] | 0.013 [0.005]** |
| Adjusted High School GPA (Standardized) | 0.045 [0.004]** | 0.044 [0.004]** | 0.039 [0.004]** | 0.067 [0.003]** | 0.062 [0.003]** | 0.109 [0.006]** |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Restricted? | No | Yes | Yes | Yes | Yes | Yes |
| Controls Included? | No | No | Yes | No | Yes | No |
| Observations | 21,923 | 20,541 | 20,541 | 31,569 | 29,247 | 28,115 |

Four-Year Graduation Rates

| | SEL Is | | SEL IIs | | SEL IIIs | |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| SAT/ACT (Standardized) | 0.043 [0.004]** | 0.044 [0.004]** | 0.029 [0.002]** | 0.021 [0.007]** | 0.024 [0.008]** | 0.017 [0.009] |
| Adjusted High School GPA (Standardized) | 0.074 [0.006]** | 0.075 [0.006]** | 0.073 [0.006]** | 0.085 [0.006]** | 0.077 [0.006]** | 0.087 [0.007]** |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes |
| Controls Included? | No | No | Yes | No | Yes | No |
| Observations | 21,923 | 20,541 | 20,541 | 31,569 | 29,247 | 28,115 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster. Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT/ACT scores or high school GPA by one standard deviation, holding all control variables at their respective means. "Sample Restricted" indicates that observations with missing values on any of the control variables are excluded. Control variables are state residency status, race/ethnicity, gender, and family income quartile.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.2
 Graduation Rates by SAT/ACT Scores and Adjusted High School GPA, 1999 Entering Cohort, State Systems

Six-Year Graduation Rates

| | SEL As | | SEL Bs | | HBCUs | | |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| SAT/ACT (Standardized) | 0.012 [0.004]** | 0.011 [0.004]** | 0.007 [0.004] | 0.012 [0.008] | 0.012 [0.007] | -0.007 [0.006] | 0.007 [0.006] |
| Adjusted High School GPA (Standardized) | 0.072 [0.007]** | 0.073 [0.007]** | 0.068 [0.006]** | 0.116 [0.008]** | 0.115 [0.008]** | 0.108 [0.012]** | 0.104 [0.011]** |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Restricted? | No | Yes | Yes | No | Yes | No | Yes |
| Controls Included? | No | No | Yes | No | Yes | No | Yes |
| Observations | 30,301 | 28,083 | 28,083 | 41,573 | 38,382 | 6,481 | 6,122 |

Four-Year Graduation Rates

| | SEL As | | SEL Bs | | HBCUs | | |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| SAT/ACT (Standardized) | 0.011 [0.011] | 0.011 [0.011] | 0.016 [0.009] | 0.009 [0.005] | 0.018 [0.005]** | 0.015 [0.006]** | 0.026 [0.006]** |
| Adjusted High School GPA (Standardized) | 0.108 [0.009]** | 0.108 [0.009]** | 0.094 [0.010]** | 0.104 [0.004]** | 0.095 [0.004]** | 0.093 [0.005]** | 0.084 [0.004]** |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Restricted? | No | Yes | Yes | No | Yes | No | Yes |
| Controls Included? | No | No | Yes | No | Yes | No | Yes |
| Observations | 30,301 | 28,083 | 28,083 | 41,573 | 38,382 | 6,481 | 6,122 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster. Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT/ACT scores or high school GPA by one standard deviation, holding all control variables at their respective means. "Sample Restricted" indicates that observations with missing values on any of the control variables are excluded. Control variables are state residency status, race/ethnicity, gender, and family income quartile.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.3
 Graduation Rates by SAT Scores, ACT Scores, and Adjusted High School GPA, 1999 Entering Cohort

| | <i>Flagships</i> | | | |
|---|----------------------------------|--------------------|-----------------------------------|--------------------|
| | <i>Six-Year Graduation Rates</i> | | <i>Four-Year Graduation Rates</i> | |
| Adjusted High School GPA (Standardized) | 0.070 [0.005]** | 0.067 [0.005]** | 0.069 [0.005]** | 0.067 [0.006]** |
| SAT Scores (Standardized) | 0.011 [0.004]** | 0.007 [0.004] | 0.020 [0.009]* | 0.088 [0.006]** |
| ACT Scores (Standardized) | | 0.014 [0.005]** | 0.008 [0.005] | 0.030 [0.008]** |
| Additional Controls? | No | Yes | No | Yes |
| Observations | 25,046 | 24,083 | 25,046 | 24,083 |
| <i>Ohio SEL Bs</i> | | | | |
| | <i>Six-Year Graduation Rates</i> | | <i>Four-Year Graduation Rates</i> | |
| Adjusted High School GPA (Standardized) | 0.152 [0.012]** | 0.148 [0.010]** | 0.154 [0.013]** | 0.152 [0.012]** |
| SAT Scores (Standardized) | 0.010 [0.009] | 0.006 [0.010] | 0.013 [0.008] | 0.106 [0.006]** |
| ACT Scores (Standardized) | | 0.007 [0.008] | -0.001 [0.007] | 0.007 [0.007] |
| Additional Controls? | No | Yes | No | Yes |
| Observations | 7,533 | 7,326 | 7,533 | 7,311 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT scores, ACT scores, and high school GPA are standardized to have a mean of zero and a standard deviation of one separately for the flagships and Ohio SEL Bs. Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT scores, ACT scores, or high school GPA by one standard deviation, holding all control variables at their respective means. All regressions include university indicators and are based only on students who took both the SAT and the ACT. "Additional Controls" include race/ethnicity, gender, state residency status, and family income quartile.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.4
 Graduation Rates by SAT/ACT Scores and High School GPA,
 1999 Entering Cohort, Flagship SEL Is

| <i>Six-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|---|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 3.33</i> | <i>3.33–3.66</i> | <i>3.67–3.99</i> | <i>4.00–4.19</i> | <i>4.20+</i> | <i>Totals</i> |
| Below 1000 | 61.0 | 73.3 | 76.2 | 80.8 | 81.0 | 71.5 |
| Observations | 356 | 315 | 382 | 125 | 21 | 1,199 |
| 1000–1090 | 72.5 | 79.0 | 83.7 | 83.4 | 79.7 | 80.6 |
| Observations | 305 | 477 | 777 | 325 | 69 | 1,953 |
| 1100–1190 | 72.6 | 79.3 | 86.2 | 89.4 | 93.7 | 84.7 |
| Observations | 390 | 831 | 1,816 | 962 | 223 | 4,222 |
| 1200–1290 | 71.1 | 81.0 | 86.8 | 89.0 | 94.2 | 86.1 |
| Observations | 350 | 926 | 2,283 | 1,585 | 479 | 5,623 |
| 1300 and Above | 68.2 | 80.8 | 89.5 | 91.6 | 93.1 | 89.6 |
| Observations | 223 | 851 | 3,012 | 2,975 | 1,865 | 8,926 |
| Totals | 69.1 | 79.6 | 86.9 | 89.9 | 92.9 | 86.0 |
| Observations | 1,624 | 3,400 | 8,270 | 5,972 | 2,657 | 21,923 |

| <i>Four-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|--|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 3.33</i> | <i>3.33–3.66</i> | <i>3.67–3.99</i> | <i>4.00–4.19</i> | <i>4.20+</i> | <i>Totals</i> |
| Below 1000 | 31.7 | 45.4 | 44.2 | 50.4 | 52.4 | 41.6 |
| Observations | 356 | 315 | 382 | 125 | 21 | 1,199 |
| 1000–1090 | 38.4 | 55.1 | 59.3 | 59.7 | 47.8 | 54.7 |
| Observations | 305 | 477 | 777 | 325 | 69 | 1,953 |
| 1100–1190 | 44.6 | 58.1 | 64.1 | 70.1 | 68.2 | 62.7 |
| Observations | 390 | 831 | 1,816 | 962 | 223 | 4,222 |
| 1200–1290 | 45.4 | 60.2 | 65.6 | 70.2 | 72.9 | 65.4 |
| Observations | 350 | 926 | 2,283 | 1,585 | 479 | 5,623 |
| 1300 and Above | 43.0 | 58.2 | 68.4 | 74.5 | 76.5 | 70.5 |
| Observations | 223 | 851 | 3,012 | 2,975 | 1,865 | 8,926 |
| Totals | 40.6 | 57.1 | 64.7 | 71.3 | 74.2 | 64.7 |
| Observations | 1,624 | 3,400 | 8,270 | 5,972 | 2,657 | 21,923 |

Source: Flagships Database.

Note: Adjusted high school GPAs are used.

APPENDIX TABLE 6.5
 Graduation Rates by SAT/ACT Scores and High School GPA,
 1999 Entering Cohort, Flagship SEL IIs

| <i>6-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|---|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 3.33</i> | <i>3.33–3.66</i> | <i>3.67–3.99</i> | <i>4.00–4.19</i> | <i>4.20+</i> | <i>Totals</i> |
| Below 1000 | 58.0 | 70.0 | 73.6 | 83.3 | | 67.6 |
| Observations | 1,045 | 820 | 954 | 156 | | 2,975 |
| 1000–1090 | 65.9 | 75.0 | 79.5 | 84.1 | 83.3 | 76.2 |
| Observations | 865 | 1,274 | 2,052 | 428 | 48 | 4,667 |
| 1100–1190 | 67.6 | 78.3 | 82.4 | 86.6 | 87.5 | 80.2 |
| Observations | 1,039 | 1,941 | 4,077 | 1,055 | 160 | 8,272 |
| 1200–1290 | 67.0 | 78.8 | 82.4 | 87.7 | 87.1 | 81.5 |
| Observations | 697 | 1,544 | 3,841 | 1,478 | 317 | 7,877 |
| 1300 and Above | 59.9 | 72.2 | 83.7 | 87.9 | 93.6 | 83.2 |
| Observations | 421 | 1,049 | 3,196 | 2,128 | 980 | 7,774 |
| Totals | 63.9 | 75.8 | 81.7 | 87.1 | 91.2 | 79.5 |
| Observations | 4,067 | 6,628 | 14,120 | 5,245 | 1,505 | 31,565 |

| <i>Four-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|--|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 3.33</i> | <i>3.33–3.66</i> | <i>3.67–3.99</i> | <i>4.00–4.19</i> | <i>4.20+</i> | <i>Totals</i> |
| Below 1000 | 26.4 | 40.6 | 46.0 | 50.0 | | 37.8 |
| Observations | 1,045 | 820 | 954 | 156 | | 2,975 |
| 1000–1090 | 37.0 | 48.2 | 51.4 | 58.6 | 60.4 | 48.6 |
| Observations | 865 | 1,274 | 2,052 | 428 | 48 | 4,667 |
| 1100–1190 | 39.7 | 47.8 | 54.4 | 62.6 | 66.9 | 52.3 |
| Observations | 1,039 | 1,941 | 4,077 | 1,055 | 160 | 8,272 |
| 1200–1290 | 37.4 | 49.2 | 53.9 | 61.4 | 66.9 | 53.4 |
| Observations | 697 | 1,544 | 3,841 | 1,478 | 317 | 7,877 |
| 1300 and Above | 34.4 | 44.5 | 54.8 | 63.2 | 71.9 | 56.8 |
| Observations | 421 | 1,049 | 3,196 | 2,128 | 980 | 7,774 |
| Totals | 34.8 | 46.8 | 53.3 | 61.8 | 70.0 | 51.8 |
| Observations | 4,067 | 6,628 | 14,120 | 5,245 | 1,505 | 31,565 |

Source: Flagships Database.

Notes: Adjusted high school GPAs are used. Blank cells indicate that there were data on fewer than 15 students.

APPENDIX TABLE 6.6
 Graduation Rates by SAT/ACT Scores and High School GPA,
 1999 Entering Cohort, Flagship SEL IIIs

| <i>Six-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|---|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 3.00</i> | <i>3.00–3.32</i> | <i>3.33–3.66</i> | <i>3.67–3.99</i> | <i>4.00+</i> | <i>Totals</i> |
| Below 900 | 46.1 | 54.8 | 57.1 | 70.7 | | 53.7 |
| Observations | 794 | 935 | 387 | 215 | | 2,331 |
| 900–990 | 47.7 | 58.1 | 65.0 | 70.3 | 79.5 | 60.1 |
| Observations | 994 | 1,893 | 1,080 | 988 | 39 | 4,994 |
| 1000–1090 | 49.1 | 60.0 | 66.0 | 72.0 | 82.9 | 63.7 |
| Observations | 913 | 1,872 | 1,503 | 1,773 | 105 | 6,166 |
| 1100–1190 | 46.4 | 58.6 | 64.9 | 75.3 | 79.9 | 66.9 |
| Observations | 668 | 1,708 | 1,636 | 3,172 | 314 | 7,498 |
| 1200 and Above | 43.7 | 52.4 | 64.6 | 78.6 | 86.7 | 73.6 |
| Observations | 311 | 911 | 1,354 | 4,107 | 1,531 | 8,214 |
| Totals | 47.1 | 57.6 | 64.6 | 75.5 | 85.3 | 65.9 |
| Observations | 3,680 | 7,319 | 5,960 | 10,255 | 1,989 | 29,203 |

| <i>Four-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|--|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 3.00</i> | <i>3.00–3.32</i> | <i>3.33–3.66</i> | <i>3.67–3.99</i> | <i>4.00+</i> | <i>Totals</i> |
| Below 900 | 15.9 | 21.8 | 28.7 | 32.6 | | 21.9 |
| Observations | 794 | 935 | 387 | 215 | | 2,331 |
| 900–990 | 17.6 | 26.8 | 33.1 | 36.4 | 33.3 | 28.3 |
| Observations | 994 | 1,893 | 1,080 | 988 | 39 | 4,994 |
| 1000–1090 | 20.0 | 27.1 | 33.5 | 38.1 | 47.6 | 31.1 |
| Observations | 913 | 1,872 | 1,503 | 1,773 | 105 | 6,166 |
| 1100–1190 | 18.6 | 25.9 | 32.5 | 39.6 | 47.5 | 33.4 |
| Observations | 668 | 1,708 | 1,636 | 3,172 | 314 | 7,498 |
| 1200 and Above | 13.8 | 20.2 | 31.3 | 42.9 | 53.3 | 39.3 |
| Observations | 311 | 911 | 1,354 | 4,107 | 1,531 | 8,214 |
| Totals | 17.7 | 25.2 | 32.3 | 40.2 | 51.7 | 32.8 |
| Observations | 3,680 | 7,319 | 5,960 | 10,255 | 1,989 | 29,203 |

Source: Flagships Database.

Notes: Adjusted high school GPAs are used. Blank cells indicate that there were data on fewer than 15 students.

APPENDIX TABLE 6.7

Graduation Rates by SAT/ACT Scores and High School GPA,
1999 Entering Cohort, State System SEL Bs

| <i>Six-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|---|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 2.67</i> | <i>2.67–2.99</i> | <i>3.00–3.32</i> | <i>3.33–3.66</i> | <i>3.67+</i> | <i>Totals</i> |
| Below 800 | 25.8 | 29.4 | 39.4 | 45.3 | 46.9 | 33.5 |
| Observations | 516 | 1,333 | 775 | 298 | 113 | 3,035 |
| 800–890 | 32.1 | 39.5 | 49.2 | 53.7 | 61.9 | 45.3 |
| Observations | 731 | 1,998 | 1,907 | 894 | 367 | 5,897 |
| 900–990 | 33.6 | 40.0 | 52.4 | 57.9 | 62.4 | 49.5 |
| Observations | 949 | 3,051 | 3,590 | 2,021 | 1,321 | 10,932 |
| 1000–1090 | 34.7 | 43.1 | 53.5 | 58.8 | 66.4 | 54.2 |
| Observations | 616 | 1,948 | 2,935 | 2,322 | 2,033 | 9,854 |
| 1100 and Above | 34.5 | 38.7 | 51.0 | 57.0 | 71.5 | 58.9 |
| Observations | 385 | 1,373 | 2,458 | 2,782 | 4,857 | 11,855 |
| Totals | 32.3 | 38.9 | 51.0 | 57.0 | 68.2 | 51.5 |
| Observations | 3,197 | 9,703 | 11,665 | 8,317 | 8,691 | 41,573 |

| <i>Four-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|--|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 2.67</i> | <i>2.67–2.99</i> | <i>3.00–3.32</i> | <i>3.33–3.66</i> | <i>3.67+</i> | <i>Totals</i> |
| Below 800 | 7.6 | 9.8 | 15.4 | 23.2 | 26.5 | 12.8 |
| Observations | 516 | 1,333 | 775 | 298 | 113 | 3,035 |
| 800–890 | 11.4 | 14.0 | 21.6 | 30.1 | 35.1 | 19.9 |
| Observations | 731 | 1,998 | 1,907 | 894 | 367 | 5,897 |
| 900–990 | 13.8 | 15.6 | 24.7 | 31.2 | 37.8 | 24.0 |
| Observations | 949 | 3,051 | 3,590 | 2,021 | 1,321 | 10,932 |
| 1000–1090 | 12.2 | 17.7 | 27.0 | 32.5 | 42.4 | 28.7 |
| Observations | 616 | 1,948 | 2,935 | 2,322 | 2,033 | 9,854 |
| 1100 and Above | 13.0 | 16.3 | 24.9 | 31.0 | 45.0 | 33.2 |
| Observations | 385 | 1,373 | 2,458 | 2,782 | 4,857 | 11,855 |
| Totals | 11.8 | 15.0 | 24.2 | 31.1 | 42.6 | 26.3 |
| Observations | 3,197 | 9,703 | 11,665 | 8,317 | 8,691 | 41,573 |

Source: State Systems Database.

Note: Adjusted high school GPAs are used.

APPENDIX TABLE 6.8
 Graduation Rates by SAT/ACT Score and High School GPA,
 1999 Entering Cohort, State System HBCUs

| <i>Six-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|---|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 2.67</i> | <i>2.67–2.99</i> | <i>3.00–3.32</i> | <i>3.33–3.66</i> | <i>3.67+</i> | <i>Totals</i> |
| Below 800 | 32.9 | 37.7 | 43.2 | 50.3 | 68.6 | 38.0 |
| Observations | 1,132 | 811 | 563 | 169 | 35 | 2,710 |
| 800–890 | 29.0 | 36.9 | 45.1 | 49.5 | 60.6 | 38.1 |
| Observations | 628 | 534 | 408 | 186 | 66 | 1,822 |
| 900–990 | 28.8 | 36.2 | 45.0 | 56.1 | 67.8 | 42.2 |
| Observations | 264 | 307 | 282 | 173 | 87 | 1,113 |
| 1000–1090 | 26.0 | 27.8 | 43.4 | 47.5 | 72.6 | 43.9 |
| Observations | 77 | 126 | 136 | 120 | 106 | 565 |
| 1100 and Above | 26.9 | 28.0 | 50.9 | 52.0 | 65.9 | 49.4 |
| Observations | 26 | 50 | 57 | 50 | 88 | 271 |
| Totals | 30.9 | 36.3 | 44.4 | 51.1 | 67.5 | 39.8 |
| Observations | 2,127 | 1,828 | 1,446 | 698 | 382 | 6,481 |

| <i>Four-Year Graduation Rates (Percent) by GPA</i> | | | | | | |
|--|-------------------|------------------|------------------|------------------|--------------|---------------|
| <i>SAT/ACT Score/ No. Observations</i> | <i>Below 2.67</i> | <i>2.67–2.99</i> | <i>3.00–3.32</i> | <i>3.33–3.66</i> | <i>3.67+</i> | <i>Totals</i> |
| Below 800 | 11.5 | 16.0 | 23.1 | 27.8 | 51.4 | 16.8 |
| Observations | 1,132 | 811 | 563 | 169 | 35 | 2,710 |
| 800–890 | 11.1 | 18.2 | 26.0 | 31.2 | 33.3 | 19.4 |
| Observations | 628 | 534 | 408 | 186 | 66 | 1,822 |
| 900–990 | 9.8 | 18.2 | 27.3 | 40.5 | 55.2 | 24.9 |
| Observations | 264 | 307 | 282 | 173 | 87 | 1,113 |
| 1000–1090 | 15.6 | 12.7 | 29.4 | 36.7 | 51.9 | 29.6 |
| Observations | 77 | 126 | 136 | 120 | 106 | 565 |
| 1100 and Above | 15.4 | 20.0 | 26.3 | 38.0 | 52.3 | 34.7 |
| Observations | 26 | 50 | 57 | 50 | 88 | 271 |
| Totals | 11.4 | 16.9 | 25.4 | 34.1 | 49.5 | 20.8 |
| Observations | 2,127 | 1,828 | 1,446 | 698 | 382 | 6,481 |

Source: State Systems Database.

Note: Adjusted high school GPAs are used.

APPENDIX TABLE 6.9a
 Graduation Rates by SAT/ACT Score and Adjusted High School GPA, 1999 Entering Cohort, Flagships

| | | <i>Six-Year Graduation Rates</i> | | | | | | | | |
|---|--------------------|----------------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--|
| | | <i>SEL Is</i> | | | <i>SEL IIs</i> | | | <i>SEL IIIs</i> | | |
| SAT/ACT (Standardized) | 0.009 [0.002]** | 0.014 [0.003]** | -0.014 [0.005]** | 0.010 [0.005] | 0.009 [0.006] | -0.013 [0.007] | 0.011 [0.006] | 0.009 [0.006] | -0.007 [0.008] | |
| Adjusted High School GPA (Standardized) | 0.040 [0.004]** | 0.047 [0.005]** | 0.074 [0.005]** | 0.062 [0.003]** | 0.068 [0.004]** | 0.096 [0.007]** | 0.107 [0.006]** | 0.111 [0.007]** | 0.142 [0.007]** | |
| Controls Included? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | |
| High School Dummies? | No | No | Yes | No | No | Yes | No | No | Yes | |
| Observations | 20,531 | 13,673 | 13,673 | 29,184 | 23,635 | 23,635 | 28,097 | 24,281 | 24,281 | |

| | | <i>Four-Year Graduation Rates</i> | | | | | | | | |
|---|--------------------|-----------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--|
| | | <i>SEL Is</i> | | | <i>SEL IIs</i> | | | <i>SEL IIIs</i> | | |
| SAT/ACT (Standardized) | 0.029 [0.002]** | 0.028 [0.005]** | 0.001 [0.007] | 0.024 [0.008]** | 0.016 [0.009] | -0.001 [0.012] | 0.017 [0.009] | 0.014 [0.010] | 0.009 [0.012] | |
| Adjusted High School GPA (Standardized) | 0.073 [0.006]** | 0.078 [0.006]** | 0.116 [0.005]** | 0.077 [0.006]** | 0.084 [0.007]** | 0.112 [0.009]** | 0.087 [0.007]** | 0.096 [0.007]** | 0.118 [0.007]** | |
| Controls Included? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | |
| High School Dummies? | No | No | Yes | No | No | Yes | No | No | Yes | |
| Observations | 20,531 | 16,793 | 16,793 | 29,184 | 25,672 | 25,672 | 28,097 | 24,122 | 24,122 | |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster (before the sample is restricted). Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT/ACT scores or high school GPA by one standard deviation, holding all control variables at their respective means. Control variables are university dummies, state residency status, race/ethnicity, gender, and family income quartile. In all three columns, the sample is restricted to students with non-missing values on all control variables. "Sample Restricted" indicates that the sample is restricted to students that came from high schools (1) that sent at least two students to the universities and (2) whose students did not all either graduate or fail to graduate.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.9b
 Graduation Rates by SAT/ACT Scores and Adjusted High School GPA, 1999 Entering Cohort, State Systems

| | | Six-Year Graduation Rates | | | | | | |
|---|--------------------|---------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | | SEL As | | SEL Bs | | HBCUs | | |
| SAT/ACT (Standardized) | 0.007 [0.004] | 0.006 [0.004] | -0.013 [0.005]** | 0.012 [0.007] | 0.011 [0.007] | -0.007 [0.007] | 0.004 [0.007] | -0.013 [0.011] |
| Adjusted High School GPA (Standardized) | 0.068 [0.006]** | 0.074 [0.007]** | 0.097 [0.006]** | 0.115 [0.008]** | 0.119 [0.008]** | 0.147 [0.009]** | 0.100 [0.010]** | 0.130 [0.011]** |
| Controls Included? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes | No | Yes |
| High School Dummies? | No | No | Yes | No | No | Yes | No | Yes |
| Observations | 28,067 | 24,344 | 24,344 | 38,352 | 36,559 | 36,559 | 6,114 | 5,172 |

| | | Four-Year Graduation Rates | | | | | | |
|---|--------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | | SEL As | | SEL Bs | | HBCUs | | |
| SAT/ACT (Standardized) | 0.016 [0.009] | 0.013 [0.009] | -0.009 [0.009] | 0.018 [0.005]** | 0.015 [0.005]** | 0.005 [0.005] | 0.027 [0.006]** | 0.014 [0.009] |
| Adjusted High School GPA (Standardized) | 0.094 [0.010]** | 0.099 [0.010]** | 0.132 [0.010]** | 0.095 [0.004]** | 0.102 [0.004]** | 0.119 [0.004]** | 0.084 [0.004]** | 0.110 [0.009]** |
| Controls Included? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes | No | Yes |
| High School Dummies? | No | No | Yes | No | No | Yes | No | Yes |
| Observations | 28,067 | 25,335 | 25,335 | 38,352 | 35,668 | 35,668 | 6,114 | 4,646 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster (before the sample is restricted). Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT/ACT scores or high school GPA by one standard deviation, holding all control variables at their respective means. Control variables are university dummies, state residency status, race/ethnicity, gender, and family income quartile. In all three columns, the sample is restricted to students with non-missing values on all control variables. "Sample Restricted" indicates that the sample is restricted to students that came from high schools (1) that sent at least two students to the universities and (2) whose students did not all either graduate or fail to graduate.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.9c

Six-Year Graduation Rates by SAT/ACT Scores and Actual or Adjusted High School GPA, 1999
Entering Cohort

| <i>Flagships</i> | | | | | | |
|--|---------------|-----------|----------------|-----------|-----------------|-----------|
| | <i>SEL Is</i> | | <i>SEL IIs</i> | | <i>SEL IIIs</i> | |
| SAT/ACT | 0.016 | 0.018 | 0.016 | 0.016 | 0.005 | 0.007 |
| (Standardized) | [0.003]** | [0.002]** | [0.006]** | [0.004]** | [0.008] | [0.009] |
| Actual High School GPA (Standardized) | 0.062 | | 0.057 | | 0.119 | |
| | [0.006]** | | [0.006]** | | [0.031]** | |
| Adjusted High School GPA (Standardized) | | 0.045 | | 0.050 | | 0.100 |
| | | [0.004]** | | [0.005]** | | [0.016]** |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 17,358 | 17,358 | 12,458 | 12,458 | 10,174 | 10,174 |
| <i>State Systems</i> | | | | | | |
| | <i>SEL As</i> | | <i>SEL Bs</i> | | <i>HBCUs</i> | |
| SAT/ACT | 0.010 | 0.015 | -0.014 | -0.011 | -0.029 | -0.016 |
| (Standardized) | [0.010] | [0.006]* | [0.007] | [0.008] | [0.014]* | [0.011] |
| Actual High School GPA (Standardized) | 0.089 | | 0.115 | | 0.159 | |
| | [0.011]** | | [0.007]** | | [0.016]** | |
| Adjusted High School GPA (Standardized) | | 0.066 | | 0.088 | | 0.132 |
| | | [0.005]** | | [0.006]** | | [0.012]** |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 9,518 | 9,518 | 16,190 | 16,190 | 2,880 | 2,880 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster. Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT/ACT scores or high school GPA by one standard deviation, holding all control variables at their respective means. Universities where both actual and adjusted high school GPAs were available for fewer than 70 percent of students are excluded, as are all students for whom both measures of high school GPA are not available. The only control variables included are university dummies.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.10

Six-Year Graduation Rates by University-Reported High School GPA and Level of High School, 1999 North Carolina High School Seniors

| <i>SEL A Graduation Rates (Percent) by Level</i> | | | |
|--|----------------|-----------------|------------------|
| <i>GPA/No. Observations</i> | <i>Level I</i> | <i>Level II</i> | <i>Level III</i> |
| Below 2.5 | | | |
| Observations | | | |
| 2.5–2.99 | 36.7 | 37.9 | |
| Observations | 30 | 29 | |
| 3.0–3.49 | 63.6 | 54.1 | 52.3 |
| Observations | 176 | 172 | 44 |
| 3.5–4.0 | 71.5 | 65.3 | 68.8 |
| Observations | 755 | 864 | 263 |
| Above 4.0 | 88.7 | 83.4 | 75.1 |
| Observations | 1,113 | 1,308 | 333 |
| <i>SEL B Graduation Rates (Percent) by Level</i> | | | |
| <i>GPA/No. Observations</i> | <i>Level I</i> | <i>Level II</i> | <i>Level III</i> |
| Below 2.5 | 36.3 | 27.3 | 36.0 |
| Observations | 146 | 132 | 25 |
| 2.5–2.99 | 43.6 | 35.3 | 28.3 |
| Observations | 590 | 685 | 184 |
| 3.0–3.49 | 53.9 | 45.6 | 43.6 |
| Observations | 1,077 | 1,629 | 484 |
| 3.5–4.0 | 66.2 | 60.9 | 62.1 |
| Observations | 1,126 | 2,340 | 686 |
| Above 4.0 | | | |
| Observations | | | |
| <i>HBCU Graduation Rates (Percent) by Level</i> | | | |
| <i>GPA/No. Observations</i> | <i>Level I</i> | <i>Level II</i> | <i>Level III</i> |
| Below 2.5 | 33.5 | 31.9 | 27.6 |
| Observations | 224 | 492 | 312 |
| 2.5–2.99 | 43.6 | 39.7 | 38.4 |
| Observations | 133 | 501 | 328 |
| 3.0–3.49 | 65.1 | 56.8 | 51.2 |
| Observations | 43 | 310 | 248 |
| 3.5–4.0 | | 67.0 | 73.8 |
| Observations | | 94 | 103 |
| Above 4.0 | | | |
| Observations | | | |

Source: North Carolina High School Seniors Database.

Note: Blank cells indicate that there were data on fewer than 15 students.

APPENDIX TABLE 6.11
 Bachelor's Degree Attainment by SAT and High School GPA,
 1999 North Carolina High School Seniors

| | | | |
|---|--------------------|--------------------|--------------------|
| SAT Scores (Standardized) | 0.061 [0.004]** | 0.044 [0.005]** | 0.017 [0.005]** |
| Adjusted High School GPA (Standardized) | 0.154 [0.004]** | 0.155 [0.005]** | 0.185 [0.005]** |
| Controls? | No | Yes | Yes |
| High School Dummies? | No | No | Yes |
| Observations | 26,455 | 26,455 | 26,455 |

Source: North Carolina High School Seniors Database.

Notes: Robust standard errors appear in brackets. SAT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one across the entire sample of students included in the table. Reported coefficients are calculated from probit regressions as the predicted increase in bachelor's degree attainment probability associated with increasing either SAT scores or high school GPA by one standard deviation, holding all control variables at their respective means. Regressions include all 1999 North Carolina high school seniors who took the SAT and for whom an adjusted high school GPA could be calculated. Bachelor's degree attainment data are from the National Student Clearinghouse. Controls include race/ethnicity, gender, family income quartile, and parental education.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.12
 Six-Year Graduation Rates by SAT/ACT Scores, Adjusted High School GPA,
 Race, and Gender, 1999 Entering Cohort

| | <i>Flagship SEL Is</i> | | | | | | | | | | | |
|--|-------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | <i>Men</i> | | <i>Women</i> | | <i>Men</i> | | <i>Women</i> | | | | | |
| | <i>White</i> | <i>Black</i> | <i>White</i> | <i>Black</i> | <i>White</i> | <i>Black</i> | <i>White</i> | <i>Black</i> | | | | |
| SAT/ACT (Standardized) | 0.017 [0.006]** | 0.026 [0.015] | 0.012 [0.008] | 0.002 [0.011] | 0.001 [0.009] | 0.058 [0.020]** | 0.015 [0.004]** | 0.033 [0.016]** | | | | |
| Adjusted High School GPA (Standardized) | 0.049 [0.006]** | 0.072 [0.023]** | 0.029 [0.006]** | 0.020 [0.014] | 0.068 [0.003]** | 0.090 [0.015]** | 0.042 [0.003]** | 0.047 [0.013]** | | | | |
| Observations | 6,273 | 680 | 7,217 | 1,106 | 10,951 | 650 | 12,066 | 1,008 | | | | |
| | <i>Flagship SEL IIs</i> | | | | | | <i>State System SEL Bs</i> | | | | | |
| | <i>Men</i> | | <i>Women</i> | | <i>Men</i> | | <i>Women</i> | | <i>Men</i> | | <i>Women</i> | |
| | <i>White</i> | <i>Black</i> | <i>White</i> | <i>Black</i> | <i>White</i> | <i>Black</i> | <i>White</i> | <i>Black</i> | <i>White</i> | <i>Black</i> | <i>White</i> | <i>Black</i> |
| | SAT/ACT (Standardized) | -0.002 [0.005] | 0.019 [0.018] | 0.019 [0.006]** | 0.045 [0.028] | 0.007 [0.007] | 0.029 [0.027] | 0.015 [0.007]** | 0.016 [0.016] | 0.007 [0.007] | 0.029 [0.027] | 0.015 [0.007]** |
| Adjusted High School GPA (Standardized) | 0.119 [0.006]** | 0.080 [0.024]** | 0.093 [0.008]** | 0.096 [0.025]** | 0.119 [0.011]** | 0.094 [0.021]** | 0.106 [0.008]** | 0.099 [0.010]** | 0.119 [0.011]** | 0.094 [0.021]** | 0.106 [0.008]** | 0.099 [0.010]** |
| Observations | 12,299 | 526 | 12,182 | 838 | 15,294 | 1,466 | 19,216 | 2,922 | 15,294 | 1,466 | 19,216 | 2,922 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster. Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT/ACT scores or high school GPA by one standard deviation, holding all control variables at their respective means. All regressions include university dummy variables (but no other controls).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.13

Six-Year Graduation Rates by SAT/ACT Scores, Adjusted High School GPA, and Family Income Quartile, 1999 Entering Cohort

| | Flagship SEL Is | | | | Flagship SEL IIs | | | |
|--|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| | Bottom | Second | Third | Top | Bottom | Second | Third | Top |
| SAT/ACT (Standardized) | 0.029 [0.008]** | 0.021 [0.008]* | -0.006 [0.007] | 0.009 [0.004]* | 0.012 [0.006]* | 0.009 [0.010] | 0.012 [0.006] | 0.001 [0.004] |
| Adjusted High School GPA (Standardized) | 0.047 [0.018]* | 0.046 [0.009]** | 0.067 [0.008]** | 0.036 [0.004]** | 0.089 [0.012]** | 0.075 [0.006]** | 0.076 [0.003]** | 0.056 [0.005]** |
| Observations | 2,436 | 2,782 | 4,456 | 10,940 | 3,439 | 3,981 | 7,774 | 14,140 |
| | Flagship SEL IIIs | | | | State System SEL Bs | | | |
| | Bottom | Second | Third | Top | Bottom | Second | Third | Top |
| SAT/ACT (Standardized) | 0.023 [0.016] | 0.001 [0.012] | 0.015 [0.006]* | -0.005 [0.006] | 0.024 [0.011]* | 0.007 [0.010] | 0.003 [0.008] | -0.001 [0.007] |
| Adjusted High School GPA (Standardized) | 0.111 [0.008]** | 0.128 [0.008]** | 0.108 [0.012]** | 0.105 [0.006]** | 0.111 [0.007]** | 0.113 [0.009]** | 0.128 [0.009]** | 0.118 [0.011]** |
| Observations | 4,051 | 5,156 | 8,491 | 10,559 | 5,657 | 8,883 | 12,442 | 11,551 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster. Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT/ACT scores or high school GPA by one standard deviation, holding all control variables at their respective means. All regressions include university dummy variables (but no other control variables).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.14

Six-Year Graduation Rates by SAT/ACT Scores, Adjusted High School GPA,
Race/Ethnicity, and Gender, 1999 Entering Cohort, Flagships

| | <i>All Flagships</i> | | | | | |
|--|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | <i>Men</i> | | | <i>Women</i> | | |
| | <i>White</i> | <i>Black</i> | <i>Hispanic</i> | <i>White</i> | <i>Black</i> | <i>Hispanic</i> |
| SAT/ACT (Standardized) | 0.004 [0.005] | 0.037 [0.012]** | 0.033 [0.009]** | 0.018 [0.003]** | 0.029 [0.011]** | 0.024 [0.009]** |
| Adjusted High School GPA (Standardized) | 0.092 [0.004]** | 0.092 [0.013]** | 0.077 [0.011]** | 0.064 [0.004]** | 0.058 [0.012]** | 0.057 [0.015]** |
| Observations | 29,523 | 1,856 | 1,982 | 31,465 | 2,952 | 2,259 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one across all flagships. Reported coefficients are calculated from probit regressions as the predicted increase in graduation probability associated with increasing either SAT/ACT scores or high school GPA by one standard deviation, holding all control variables at their respective means. All regressions include university dummy variables (but no other control variables).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.15
SAT Scores and High School GPA by Student Characteristics,
1999 North Carolina High School Seniors

| | <i>SAT</i> | <i>High School GPA</i> | <i>SAT</i> | <i>High School GPA</i> |
|------------------------|---------------------|----------------------------|---------------------|----------------------------|
| Black Males | -0.874 [0.021]** | -0.653 [0.023]** | -0.849 [0.022]** | -0.685 [0.023]** |
| Hispanic Males | -0.297 [0.070]** | -0.073 [0.082] | -0.337 [0.069]** | -0.101 [0.082] |
| White Females | -0.174 [0.013]** | 0.291 [0.014]** | -0.174 [0.013]** | 0.291 [0.014]** |
| Black Females | -0.917 [0.018]** | -0.279 [0.020]** | -0.874 [0.019]** | -0.300 [0.020]** |
| Hispanic Females | -0.481 [0.072]** | 0.180 [0.066]** | -0.541 [0.072]** | 0.185 [0.066]** |
| Some College | 0.136 [0.014]** | 0.045 [0.016]** | 0.114 [0.014]** | 0.063 [0.015]** |
| College Degree | 0.384 [0.015]** | 0.210 [0.016]** | 0.318 [0.015]** | 0.271 [0.016]** |
| Graduate Degree | 0.657 [0.018]** | 0.430 [0.019]** | 0.550 [0.018]** | 0.482 [0.020]** |
| Second Income Quartile | 0.120 [0.015]** | 0.085 [0.016]** | 0.111 [0.015]** | 0.098 [0.016]** |
| Third Income Quartile | 0.145 [0.016]** | 0.087 [0.017]** | 0.124 [0.016]** | 0.139 [0.017]** |
| Top Income Quartile | 0.280 [0.019]** | 0.129 [0.021]** | 0.209 [0.019]** | 0.236 [0.021]** |
| High School Dummies? | No | No | Yes | Yes |
| Observations | 26,455 | 26,455 | 26,455 | 26,455 |
| <i>R</i> -squared | 0.25 | 0.14 | 0.29 | 0.18 |

Source: North Carolina High School Seniors Database.

Notes: Robust standard errors appear in brackets. Race/ethnicity and gender coefficients are relative to white males, parental education coefficients are relative to no college, and income quartile coefficients are relative to the bottom quartile. Both SAT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one across all students with non-missing data on both dependent variables and all of the independent variables.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.16
 Rank-in-Class at Exit by SAT/ACT Scores and Adjusted High School GPA, 1999 Entering Cohort, Flagships

19 Flagships

| | SEL Is | | | SEL IIs | | | SEL IIIs | | |
|---|---------|---------|---------|---------|---------|---------|----------|---------|---------|
| SAT/ACT (Standardized) | 7.3 | 7.2 | 4.9 | 4.7 | 5.2 | 3.5 | 4.3 | 4.8 | 3.5 |
| | [0.8]** | [0.6]** | [0.4]** | [0.5]** | [0.7]** | [0.9]* | [0.8]** | [0.7]** | [0.8]** |
| Adjusted High School GPA (Standardized) | 8.5 | 7.8 | 10.2 | 9.5 | 8.4 | 9.9 | 11.7 | 10.9 | 12.3 |
| | [0.9]** | [0.8]** | [0.6]** | [0.6]** | [0.5]** | [0.7]** | [0.5]** | [0.5]** | [0.5]** |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls Included? | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| High School Dummies? | No | No | Yes | No | No | Yes | No | No | Yes |
| Observations | 20,394 | 20,394 | 20,384 | 21,984 | 21,984 | 21,929 | 28,115 | 28,115 | 28,097 |

14 Flagships with Parental Education Data Available

| | SEL Is | | | SEL IIs | | | SEL IIIs | | |
|---|---------|---------|---------|---------|---------|--------|----------|---------|---------|
| SAT/ACT (Standardized) | 7.4 | 6.9 | 4.8 | 4.5 | 4.6 | 2.7 | 3.7 | 4.0 | 2.7 |
| | [0.8]** | [0.5]** | [0.3]** | [0.6]* | [0.4]** | [0.4]* | [1.0]* | [0.9]* | [1.0] |
| Adjusted High School GPA (Standardized) | 8.4 | 7.9 | 10.1 | 9.5 | 8.7 | 10.4 | 12.2 | 11.3 | 12.9 |
| | [0.8]** | [0.7]** | [0.5]** | [1.0]* | [0.8]** | [1.2]* | [0.5]** | [0.6]** | [0.6]** |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls Included? | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| High School Dummies? | No | No | Yes | No | No | Yes | No | No | Yes |
| Observations | 19,936 | 19,936 | 19,926 | 10,840 | 10,840 | 10,801 | 15,702 | 15,702 | 15,692 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster. Observations with missing values on any of the control variables are excluded. Control variables are state residency status, race/ethnicity, gender, and family income quartile. The bottom panel also includes parental education as a control variable.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.17
 Rank-in-Class at Exit by SAT/ACT Scores and Adjusted High School GPA, 1999 Entering Cohort, State Systems

| <i>All Four State Systems</i> | | | | | | | | | | | |
|---|---------|---------|---------|---------------|---------|---------|---------|--------------|---------|---------|--|
| <i>SEL As</i> | | | | <i>SEL Bs</i> | | | | <i>HBCUs</i> | | | |
| SAT/ACT (Standardized) | 6.2 | 6.5 | 4.5 | 4.6 | 4.7 | 3.2 | 3.7 | 3.9 | 3.9 | 1.8 | |
| | [0.9]** | [0.7]** | [0.5]** | [0.2]** | [0.3]** | [0.2]** | [0.4]** | [0.5]** | [0.5]** | [0.5]** | |
| Adjusted High School GPA (Standardized) | 11.2 | 10.1 | 12.0 | 11.6 | 10.9 | 12.6 | 9.9 | 9.0 | 9.0 | 11.0 | |
| | [0.8]** | [0.7]** | [0.6]** | [0.4]** | [0.4]** | [0.3]** | [0.4]** | [0.4]** | [0.4]** | [0.7]** | |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Controls Included? | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | Yes | |
| High School Dummies? | No | No | Yes | No | No | Yes | No | No | No | Yes | |
| Observations | 28,046 | 28,046 | 28,030 | 38,052 | 38,052 | 38,023 | 5,117 | 5,117 | 5,117 | 5,111 | |
| <i>Three State Systems with Parental Education Data Available</i> | | | | | | | | | | | |
| <i>SEL As</i> | | | | <i>SEL Bs</i> | | | | <i>HBCUs</i> | | | |
| SAT/ACT (Standardized) | 6.4 | 6.2 | 4.3 | 4.7 | 4.7 | 3.2 | 3.7 | 3.8 | 3.8 | 1.7 | |
| | [1.3]** | [0.9]** | [0.7]** | [0.3]** | [0.3]** | [0.3]** | [0.4]** | [0.5]** | [0.5]** | [0.5]** | |
| Adjusted High School GPA (Standardized) | 10.5 | 9.5 | 11.5 | 10.8 | 10.2 | 11.9 | 9.4 | 8.6 | 8.6 | 10.7 | |
| | [0.8]** | [0.7]** | [0.7]** | [0.5]** | [0.4]** | [0.4]** | [0.4]** | [0.5]** | [0.5]** | [0.8]** | |
| University Dummies? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Controls Included? | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes | Yes | |
| High School Dummies? | No | No | Yes | No | No | Yes | No | No | No | Yes | |
| Observations | 20,093 | 20,093 | 20,090 | 18,891 | 18,891 | 18,888 | 4,231 | 4,231 | 4,231 | 4,231 | |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores and high school GPA are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster. Observations with missing values on any of the control variables are excluded. Control variables are state residency status, race/ethnicity gender, and family income quartile. The bottom panel also includes parental education as a control variable.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.18

Graduation Rates by SAT/ACT Scores, High School GPA, and Average of SAT II Scores,
1999 Entering Cohort

| <i>Six-Year Graduation Rates</i> | | | | | | |
|--|------------------------|--------------------|--------------------|----------------------------|--------------------|--------------------|
| | <i>Flagship SEL Is</i> | | | <i>State System SEL As</i> | | |
| SAT/ACT (Standardized) | 0.018 [0.003]** | 0.014 [0.002]** | 0.002 [0.003] | 0.010 [0.005]* | 0.002 [0.007] | 0.000 [0.007] |
| Adjusted High School GPA (Standardized) | 0.045 [0.004]** | 0.035 [0.004]** | 0.034 [0.003]** | 0.061 [0.003]** | 0.042 [0.004]** | 0.042 [0.004]** |
| Average of SAT II Scores (Standardized) | | | 0.015 [0.004]** | | | 0.002 [0.006] |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes |
| Observations | 21,923 | 14,074 | 14,074 | 23,324 | 11,431 | 11,431 |
| <i>Four-Year Graduation Rates</i> | | | | | | |
| | <i>Flagship SEL Is</i> | | | <i>State System SEL As</i> | | |
| SAT/ACT (Standardized) | 0.043 [0.004]** | 0.038 [0.006]** | 0.017 [0.004]** | 0.009 [0.014] | -0.002 [0.015] | -0.022 [0.019] |
| Adjusted High School GPA (Standardized) | 0.074 [0.006]** | 0.064 [0.007]** | 0.061 [0.007]** | 0.099 [0.010]** | 0.081 [0.008]** | 0.078 [0.009]** |
| Average of SAT II Scores (Standardized) | | | 0.028 [0.009]** | | | 0.027 [0.008]** |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes |
| Observations | 21,923 | 14,074 | 14,074 | 23,324 | 11,431 | 11,431 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores, high school GPA, and average SAT II scores are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster, and the standardization is done separately for the set of observations in each regression. All regressions include university dummies. "Sample Restricted" indicates that students who did not take an SAT II exam are excluded.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.19a

Six-Year Graduation Rates by SAT/ACT Scores, High School GPA, and Average of AP Test Scores, 1999 Entering Cohort

| | <i>Flagship SEL Is</i> | | | <i>Flagship SEL IIs</i> | | |
|--|----------------------------|--------------------|--------------------|----------------------------|--------------------|--------------------|
| SAT/ACT (Standardized) | 0.018 [0.003]** | 0.010 [0.001]** | -0.004 [0.001]* | 0.015 [0.005]** | 0.008 [0.005] | -0.009 [0.005] |
| Adjusted High School GPA (Standardized) | 0.045 [0.004]** | 0.030 [0.003]** | 0.028 [0.003]** | 0.061 [0.003]** | 0.050 [0.003]** | 0.048 [0.002]** |
| Average of AP Scores (Standardized) | | | 0.026 [0.001]** | | | 0.033 [0.006]** |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes |
| Observations | 21,923 | 17,143 | 17,143 | 27,887 | 16,349 | 16,349 |
| | <i>State System SEL As</i> | | | <i>State System SEL Bs</i> | | |
| SAT/ACT (Standardized) | 0.010 [0.005]* | 0.007 [0.004] | -0.006 [0.003] | -0.013 [0.006]* | -0.012 [0.007] | -0.013 [0.007] |
| Adjusted High School GPA (Standardized) | 0.061 [0.003]** | 0.047 [0.003]** | 0.045 [0.004]** | 0.091 [0.005]** | 0.087 [0.005]** | 0.087 [0.005]** |
| Average of AP Scores (Standardized) | | | 0.024 [0.006]** | | | 0.005 [0.005] |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes |
| Observations | 23,324 | 15,713 | 15,713 | 23,402 | 9,490 | 9,490 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores, high school GPA, and average AP scores are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster, and the standardization is done separately for the set of observations in each regression. All regressions include university dummies. "Sample Restricted" indicates that students who did not take an AP exam are excluded. Rutgers and the Ohio system are excluded (from the Flagship SEL IIs and State System results, respectively) because AP scores are not available.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 6.19b

Four-Year Graduation Rates by SAT/ACT Scores, High School GPA, and Average of AP Test Scores, 1999 Entering Cohort

| | <i>Flagship SEL Is</i> | | | <i>Flagship SEL IIs</i> | | |
|--|----------------------------|--------------------|--------------------|----------------------------|--------------------|--------------------|
| SAT/ACT (Standardized) | 0.043 [0.004]** | 0.033 [0.006]** | 0.007 [0.009] | 0.018 [0.007]* | 0.011 [0.008] | -0.016 [0.007]* |
| Adjusted High School GPA (Standardized) | 0.074 [0.006]** | 0.053 [0.006]** | 0.049 [0.007]** | 0.079 [0.007]** | 0.065 [0.006]** | 0.062 [0.005]** |
| Average of AP Scores (Standardized) | | | 0.049 [0.005]** | | | 0.054 [0.006]** |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes |
| Observations | 21,923 | 17,143 | 17,143 | 27,887 | 16,349 | 16,349 |
| | <i>State System SEL As</i> | | | <i>State System SEL Bs</i> | | |
| SAT/ACT (Standardized) | 0.009 [0.014] | 0.004 [0.011] | -0.021 [0.012] | 0.000 [0.006] | -0.001 [0.007] | -0.006 [0.007] |
| Adjusted High School GPA (Standardized) | 0.099 [0.010]** | 0.080 [0.007]** | 0.078 [0.007]** | 0.104 [0.004]** | 0.111 [0.006]** | 0.111 [0.006]** |
| Average of AP Scores (Standardized) | | | 0.049 [0.010]** | | | 0.021 [0.006]** |
| Sample Restricted? | No | Yes | Yes | No | Yes | Yes |
| Observations | 23,324 | 15,713 | 15,713 | 23,402 | 9,490 | 9,490 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering at the university level appear in brackets. SAT/ACT scores, high school GPA, and average AP scores are standardized to have a mean of zero and a standard deviation of one within each selectivity cluster, and the standardization is done separately for the set of observations in each regression. All regressions include university dummies. "Sample Restricted" indicates that students who did not take an AP exam are excluded. Rutgers and the Ohio system are excluded (from the Flagship SEL IIs and State System results, respectively) because AP scores are not available.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 7.1a
Transfer Admissions at Flagships and State System SELAs

| University | Admitted | | | Admit Rate (%) | Number Enrolled | % Transfers | From | |
|---|----------|----------|-------------|----------------------|--------------------|----------------|-----------------|------------------|
| | Applied | Admitted | Rate (%) | | | | Two-Year (%) | Four-Year (%) |
| Iowa State University | 2,888 | 2,283 | 79 | 1,655 | 29 | 53 | 47 | |
| North Carolina State University | 2,948 | 1,547 | 52 | 1,035 | 23 | 30 | 70 | |
| Ohio State University | 4,728 | 3,182 | 67 | 1,715 | 22 | | | |
| Rutgers, The State University of New Jersey | 6,360 | 2,444 | 38 | 1,246 | 19 | | | |
| Stony Brook University-SUNY | 4,183 | 2,603 | 62 | 1,432 | 37 | | | |
| University of California-Berkeley | 7,750 | 2,371 | 31 | 1,606 | 31 | 89 | 11 | |
| University of California-Los Angeles | 10,350 | 3,796 | 37 | 2,268 | 35 | 92 | 8 | |
| University of Florida | 5,238 | 2,374 | 45 | 1,845 | 33 | 78 | 22 | |
| University of Illinois at Urbana-Champaign | 2,576 | 1,382 | 54 | 1,066 | 14 | 67 | 33 | |
| University of Iowa | 3,107 | 2,040 | 66 | 1,318 | 25 | 60 | 40 | |
| University of MD-Baltimore County | 1,907 | 1,585 | 83 | 1,068 | 43 | 66 | 44 | |
| University of Maryland-College Park | 4,813 | 3,379 | 70 | 2,181 | 36 | 53 | 47 | |
| University of Nebraska-Lincoln | 1,483 | 1,149 | 77 | 916 | 20 | 48 | 52 | |
| University of North Carolina-Chapel Hill | 1,868 | 1,040 | 56 | 712 | 17 | 25 | 75 | |
| University of North Carolina-Asheville | 629 | 433 | 69 | 287 | 38 | 50 | 50 | |
| University of Oregon | 2,342 | 1,983 | 85 | 1,371 | 35 | 30 | 70 | |
| University of Texas-Austin | 6,649 | 3,128 | 47 | 2,038 | 22 | 54 | 46 | |
| University of Virginia | 2,221 | 791 | 36 | 540 | 16 | 34 | 66 | |
| University of Wisconsin-Madison | 3,080 | 1,773 | 58 | 1,138 | 17 | 23 | 77 | |

Source: College Board Annual Survey of Colleges.

Notes: "Percent Transfers" is the number of entering transfers divided by the total number of entering students (transfers and freshmen). All data describe the 1999 entering class, with the following exceptions (and the entering class described noted in parentheses): all data from Rutgers University and the University of California-Los Angeles (2000); percentage of transfers at Stony Brook University and the University of Wisconsin-Madison (2000); and percentage from two- and four-year colleges at the University of Illinois at Urbana-Champaign (2003), the University of Nebraska-Lincoln (2000), and the University of North Carolina-Chapel Hill (2003).

APPENDIX TABLE 7.1b
Transfer Admissions at State System SEL Bs

| <i>University</i> | <i>Applied</i> | <i>Admitted</i> | <i>Admit Rate (%)</i> | <i>Number Enrolled</i> | <i>% Transfers</i> | <i>From</i> | |
|---|----------------|-----------------|-------------------------------|----------------------------|------------------------|-------------------------|--------------------------|
| | | | | | | <i>Two-Year (%)</i> | <i>Four-Year (%)</i> |
| Appalachian State University | 1,389 | 1,112 | 80 | 739 | 25 | 59 | 41 |
| Bowie State University | 1,033 | 570 | 55 | 382 | 51 | 76 | 24 |
| Coppin State University | 469 | 286 | 61 | 200 | 29 | 60 | 40 |
| East Carolina University | 1,821 | 1,583 | 87 | 1,050 | 24 | 63 | 37 |
| Elizabeth City State University | 164 | 138 | 84 | 102 | 20 | 74 | 26 |
| Fayetteville State University | 408 | 349 | 86 | 347 | 30 | | |
| Frostburg State University | 618 | 483 | 78 | 340 | 26 | | |
| North Carolina A&T University | 677 | 555 | 82 | 317 | 17 | 45 | 55 |
| North Carolina Central University | 545 | 446 | 82 | 273 | 29 | | |
| Salisbury University | 1,064 | 791 | 74 | 574 | 40 | 84 | 16 |
| Towson University | 3,222 | 2,689 | 83 | 1,776 | 46 | 62 | 38 |
| University of Maryland—Eastern Shore | | | | 100 | | | |
| University of North Carolina—Charlotte | 2,692 | 2,337 | 87 | 1,555 | 42 | 54 | 46 |
| University of North Carolina—Greensboro | 1,795 | 1,588 | 88 | 926 | 32 | 47 | 53 |
| University of North Carolina—Pembroke | 471 | 452 | 96 | 334 | 41 | 80 | 20 |
| University of North Carolina—Wilmington | 1,947 | 1,313 | 67 | 915 | 35 | 63 | 37 |
| Western Carolina University | 734 | 660 | 90 | 409 | 26 | 78 | 22 |
| Winston-Salem State University | 405 | 360 | 89 | 187 | 28 | 30 | 70 |

Source: College Board Annual Survey of Colleges.

Notes: “Percent Transfers” is the number of entering transfers divided by the total number of entering students (transfers and freshmen). All data describe the 1999 entering class, with the following exceptions (and the entering class described noted in parentheses): percentage from two- and four-year colleges at Bowie State University (2001) and Coppin State University (2000).

APPENDIX TABLE 7.2
 Characteristics of Freshmen and Transfers, 1999 Entering Cohort

| | <i>Flagships and State System SEL As</i> | | | <i>State System SEL Bs</i> | | |
|-----------------|--|--------------------|--------------------|----------------------------|--------------------|--------------------|
| | <i>Freshmen</i> | <i>Transfers 2</i> | <i>Transfers 4</i> | <i>Freshmen</i> | <i>Transfers 2</i> | <i>Transfers 4</i> |
| Number | 70,621 | 8,542 | 7,236 | 16,488 | 2,871 | 1,753 |
| High School GPA | 3.69 | 3.21 | 3.37 | 3.35 | 2.97 | 3.24 |
| SAT/ACT Scores | 1177 | 1032 | 1100 | 1024 | 938 | 1009 |
| Age | 18.4 | 20.8 | 20.3 | 18.4 | 20.7 | 20.5 |
| % White | 72.1 | 73.2 | 78.6 | 83.1 | 89.3 | 81.6 |
| % Black | 6.7 | 4.4 | 6.3 | 10.8 | 5.8 | 14.1 |
| % Hispanic | 5.7 | 6.5 | 3.9 | 1.5 | 1.3 | 1.5 |
| % Asian | 13.4 | 13.2 | 8.8 | 2.6 | 2.4 | 1.5 |

Source: Flagships Database and State Systems Database.

Notes: “Transfers 2” is transfers from two-year institutions, and “Transfers 4” is transfers from four-year institutions.

APPENDIX TABLE 7.3
 Bachelor’s Degree Attainment Rates of Transfer Students (Relative to Freshmen),
 1999 Entering Cohort

| | <i>Flagships and State System SEL As</i> | | | <i>State System SEL Bs</i> | | |
|---------------------------------|--|----------|-----------|----------------------------|-----------|-----------|
| | | | | | | |
| Transfers from | 0.007 | 0.001 | 0.081 | 0.089 | 0.082 | 0.136 |
| Two-Year | [0.018] | [0.014] | [0.010]** | [0.013]** | [0.011]** | [0.012]** |
| Transfers from | 0.010 | 0.026 | 0.071 | 0.108 | 0.110 | 0.130 |
| Four-Year | [0.016] | [0.012]* | [0.009]** | [0.016]** | [0.011]** | [0.006]** |
| University Dummies? | No | Yes | Yes | No | Yes | Yes |
| High School GPA and SAT/ACT? | No | No | Yes | No | No | Yes |
| Observations | 76,806 | 76,806 | 76,806 | 18,141 | 18,141 | 18,141 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering by university appear in brackets. Coefficients are marginal effects from a probit model and indicate the predicted difference in attaining a bachelor’s degree between the listed group and the reference group (freshmen), holding any control variables at their means. “Attaining a bachelor’s degree” is defined as either graduating from the original institution or earning a degree from a later institution (if it is reported in the Clearinghouse degree data).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 7.4a
Six-Year Graduation Rates (Percent) and Numbers of Freshmen Enrollees
and Transfer Students by Family Income, 1999 Entering Cohort

| | | <i>All Students</i> | <i>Bottom Quartile</i> | <i>Second Quartile</i> | <i>Third Quartile</i> | <i>Top Quartile</i> |
|---|------------------------|-------------------------|----------------------------|----------------------------|---------------------------|-------------------------|
| Flagships and State System SEL As | Freshmen | 75.3 70,621 | 68.3 8,861 | 69.9 10,438 | 73.7 17,203 | 80.2 28,232 |
| | Transfers 2 | 74.9 8,542 | 76.4 1,691 | 73.5 1,714 | 72.9 1,872 | 78.6 1,805 |
| | | Transfers 4 | 74.2 7,236 | 68.0 971 | 71.8 1,098 | 73.9 1,521 |
| | State System SEL Bs | Freshmen | 52.9 16,488 | 49.0 1,825 | 50.3 3,880 | 54.9 4,011 |
| Transfers 2 | | 65.1 2,871 | 64.4 360 | 67.0 588 | 62.0 513 | 63.2 372 |
| | | Transfers 4 | 64.6 1,753 | 59.3 263 | 62.2 267 | 66.1 336 |

Source: Flagships Database and State Systems Database.

Notes: Beneath each graduation rate is its corresponding cell size. “Transfers 2” is transfers from two-year institutions, and “Transfers 4” is transfers from four-year institutions.

APPENDIX TABLE 7.4b
Six-Year Graduation Rates (Percent) and Numbers of Freshmen Enrollees and Transfer
Students by High School GPA, 1999 Entering Cohort

| | | <i>All Students</i> | <i>H.S. GPA</i> | | | | |
|---|------------------------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | | | <i>Below 2.50</i> | <i>2.50– 2.99</i> | <i>3.00– 3.49</i> | <i>3.50– 3.99</i> | <i>4.00+</i> |
| Flagships and State System SEL As | Freshmen | 75.3 70,621 | 37.1 105 | 49.9 3,628 | 63.8 15,486 | 78.5 31,873 | 88.7 15,108 |
| | Transfers 2 | 74.9 8,542 | 61.4 414 | 71.0 1,337 | 76.9 2,034 | 83.9 1,581 | 84.2 101 |
| | | Transfers 4 | 74.2 7,236 | 58.3 211 | 63.4 916 | 74.4 1,846 | 80.5 2,071 |
| | State System SEL Bs | Freshmen | 52.9 16,488 | 33.6 396 | 40.5 2,944 | 52.0 6,524 | 60.4 4,867 |
| Transfers 2 | | 65.1 2,871 | 60.5 294 | 64.4 595 | 66.5 514 | 71.7 230 | 81.8 22 |
| | | Transfers 4 | 64.6 1,753 | 58.9 107 | 61.5 273 | 65.2 454 | 70.1 364 |

Source: Flagships Database and State Systems Database.

Notes: Beneath each graduation rate is its corresponding cell size. “Transfers 2” is transfers from two-year institutions, and “Transfers 4” is transfers from four-year institutions.

APPENDIX TABLE 7.4c
Six-Year Graduation Rates (Percent) of Freshmen Enrollees and Transfer Students
by SAT/ACT Scores, 1999 Entering Cohort

| | | SAT/ACT | | | | | |
|---|-------------|-------------------------|----------------------|---------------------|-----------------------|-----------------------|--------------|
| | | <i>All Students</i> | <i>Below 900</i> | <i>900– 990</i> | <i>1000– 1090</i> | <i>1100– 1190</i> | <i>1200+</i> |
| Flagships and State System SEL As | Freshmen | 75.3 | 57.5 | 63.8 | 69.3 | 74.5 | 82.0 |
| | | 70,621 | 2,736 | 6,665 | 11,321 | 17,127 | 31,916 |
| | Transfers 2 | 74.9 | 69.3 | 75.0 | 78.0 | 77.4 | 79.3 |
| | | 8,542 | 1,195 | 1,522 | 1,442 | 1,299 | 944 |
| | Transfers 4 | 74.2 | 62.4 | 72.1 | 75.0 | 77.6 | 79.3 |
| | | 7,236 | 651 | 1,075 | 1,351 | 1,540 | 1,776 |
| State System SEL Bs | Freshmen | 52.9 | 47.7 | 51.7 | 54.4 | 55.7 | 57.7 |
| | | 16,488 | 2,750 | 4,127 | 4,652 | 2,966 | 1,811 |
| | Transfers 2 | 65.1 | 66.1 | 64.6 | 65.1 | 68.6 | 58.7 |
| | | 2,871 | 601 | 438 | 307 | 137 | 63 |
| | Transfers 4 | 64.6 | 63.3 | 64.5 | 65.2 | 66.2 | 73.9 |
| | | 1,753 | 283 | 304 | 299 | 234 | 134 |

Source: Flagships Database and State Systems Database.

Notes: Beneath each graduation rate is its corresponding cell size. “Transfers 2” is transfers from two-year institutions, and “Transfers 4” is transfers from four-year institutions.

APPENDIX TABLE 7.5
Major at Graduation of Freshmen Enrollees and Transfer Students
(Percentage of Students in Each Field), 1999 Entering Cohort

| | <i>Flagships and State System SEL As</i> | | | <i>State System SEL Bs</i> | | |
|---|--|------------------|------------------|----------------------------|------------------|------------------|
| | <i>Freshmen</i> | <i>Transfers</i> | <i>Transfers</i> | <i>Freshmen</i> | <i>Transfers</i> | <i>Transfers</i> |
| | | <i>2</i> | <i>4</i> | | <i>2</i> | <i>4</i> |
| Engineering, Math, and Physical Sciences | 20 | 15 | 14 | 8 | 9 | 7 |
| Life Sciences | 9 | 8 | 8 | 4 | 3 | 6 |
| Humanities | 11 | 13 | 14 | 13 | 11 | 11 |
| Social Sciences | 23 | 29 | 27 | 15 | 14 | 17 |
| Communications and Education | 11 | 10 | 11 | 21 | 23 | 17 |
| Business | 14 | 11 | 11 | 23 | 23 | 22 |
| Professional and Other | 12 | 14 | 14 | 17 | 17 | 19 |

Source: Flagships Database and State Systems Database.

Notes: “Transfers 2” is transfers from two-year institutions, and “Transfers 4” is transfers from four-year institutions.

APPENDIX TABLE 7.6
 Rank-in-Class at Graduation of Transfer Students (Relative to Freshmen),
 1999 Entering Cohort

| | <i>Flagships and State System SEL As</i> | | | <i>State System SEL Bs</i> | | |
|---------------------------------|--|---------|---------|----------------------------|--------|---------|
| Transfers from | -10.6 | -10.5 | 9.4 | -5.2 | -5.2 | 9.2 |
| Two-Year | [1.1]** | [1.0]** | [1.4]** | [1.7]* | [1.7]* | [1.0]** |
| Transfers from | -3.4 | -3.2 | 7.2 | 0.7 | 1.2 | 5.4 |
| Four-Year | [0.8]** | [0.8]** | [0.9]** | [1.9] | [1.7] | [0.9]** |
| University and Major? | No | Yes | Yes | No | Yes | Yes |
| High School GPA and SAT/ACT? | No | No | Yes | No | No | Yes |
| Observations | 50,531 | 50,531 | 50,531 | 9,954 | 9,954 | 9,954 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering by university appear in brackets. Coefficients indicate the average difference in rank-in-class at graduation between the listed group and the reference group (freshmen enrollees).

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 7.7a

Average Rank-in-Class at Graduation of Freshmen Enrollees and Transfer Students
by High School GPA, 1999 Entering Cohort

| | | <i>High School GPA</i> | | | | | |
|---|-------------|------------------------|--------------|--------------|--------------|--------------|--------------|
| | | <i>All</i> | <i>Below</i> | <i>2.50–</i> | <i>3.00–</i> | <i>3.50–</i> | |
| | | <i>Students</i> | <i>2.50</i> | <i>2.99</i> | <i>3.49</i> | <i>3.99</i> | <i>4.00+</i> |
| Flagships and State System SEL As | Freshmen | 51.1 | 20.2 | 27.6 | 38.4 | 52.4 | 62.0 |
| | | 44,602 | 31 | 1,615 | 8,451 | 21,854 | 11,402 |
| | Transfers 2 | 41.3 | 27.2 | 30.5 | 40.5 | 51.0 | 51.6 |
| | | 5,508 | 253 | 910 | 1,479 | 1,211 | 76 |
| | Transfers 4 | 47.5 | 27.0 | 32.4 | 42.7 | 56.9 | 68.6 |
| | | 4,367 | 119 | 546 | 1,256 | 1,470 | 217 |
| State System SEL Bs | Freshmen | 50.8 | 32.1 | 34.2 | 44.2 | 59.8 | 77.1 |
| | | 8,716 | 133 | 1,193 | 3,392 | 2,938 | 684 |
| | Transfers 2 | 45.9 | 33.7 | 39.5 | 49.1 | 64.5 | 67.9 |
| | | 1,868 | 178 | 383 | 342 | 165 | 18 |
| | Transfers 4 | 51.6 | 24.8 | 38.8 | 49.5 | 65.1 | 79.2 |
| | | 1,133 | 63 | 168 | 296 | 255 | 39 |

Source: Flagships Database and State Systems Database.

Notes: Beneath each average rank is its corresponding cell size. "Transfers 2" is transfers from two-year institutions, and "Transfers 4" is transfers from four-year institutions.

APPENDIX TABLE 7.7b

Average Rank-in-Class at Graduation of Freshmen Enrollees and Transfer Students
by SAT/ACT Scores, 1999 Entering Cohort

| | | <i>SAT/ACT</i> | | | | | |
|---|-------------|-----------------|--------------|-------------|--------------|--------------|--------------|
| | | <i>All</i> | <i>Below</i> | <i>900–</i> | <i>1000–</i> | <i>1100–</i> | |
| | | <i>Students</i> | <i>900</i> | <i>990</i> | <i>1090</i> | <i>1190</i> | <i>1200+</i> |
| Flagships and State System SEL As | Freshmen | 51.1 | 27.8 | 36.4 | 42.7 | 48.9 | 58.6 |
| | | 44,602 | 1,365 | 3,693 | 6,464 | 10,736 | 22,177 |
| | Transfers 2 | 41.3 | 29.1 | 37.7 | 40.7 | 44.9 | 52.5 |
| | | 5,508 | 748 | 1,004 | 968 | 893 | 686 |
| | Transfers 4 | 47.5 | 29.2 | 37.3 | 44.5 | 50.8 | 59.2 |
| | | 4,367 | 367 | 665 | 835 | 1,006 | 1,151 |
| State System SEL Bs | Freshmen | 50.8 | 37.2 | 43.9 | 50.7 | 58.5 | 69.8 |
| | | 8,716 | 1,311 | 2,133 | 2,530 | 1,652 | 1,045 |
| | Transfers 2 | 45.9 | 36.9 | 46.4 | 48.8 | 60.9 | 70.5 |
| | | 1,868 | 397 | 283 | 200 | 94 | 37 |
| | Transfers 4 | 51.6 | 35.5 | 44.1 | 56.2 | 63.6 | 67.2 |
| | | 1,133 | 179 | 196 | 195 | 155 | 99 |

Source: Flagships Database and State Systems Database.

Notes: Beneath each average rank is its corresponding cell size. "Transfers 2" is transfers from two-year institutions, and "Transfers 4" is transfers from four-year institutions.

APPENDIX TABLE 7.8

Academic Predictors of Transfers' College Outcomes, 1999 Entering Cohort

| <i>Transfers from Two-Year Schools</i> | | | | |
|---|------------------------|-----------|----------------------|---------|
| | <i>Graduation Rate</i> | | <i>Rank-in-Class</i> | |
| Standardized Transfer GPA | 0.069 | 0.065 | 15.5 | 13.7 |
| | [0.008]** | [0.010]** | [0.7]** | [0.9]** |
| Standardized Adjusted High School GPA | | 0.018 | | 2.6 |
| | | [0.010] | | [0.8]* |
| Standardized SAT/ACT Score | | -0.012 | | 2.3 |
| | | [0.006]* | | [0.4]** |
| Observations | 3,145 | 3,145 | 3,138 | 3,138 |
| <i>Transfers from Four-Year Schools</i> | | | | |
| | <i>Graduation Rate</i> | | <i>Rank-in-Class</i> | |
| Standardized Transfer GPA | 0.062 | 0.054 | 15.8 | 12.8 |
| | [0.010]** | [0.009]** | [1.3]** | [1.3]** |
| Standardized Adjusted High School GPA | | 0.033 | | 5.6 |
| | | [0.009]** | | [1.4]** |
| Standardized SAT/ACT Score | | -0.011 | | 4.2 |
| | | [0.008] | | [0.6]** |
| Observations | 2,268 | 2,268 | 2,268 | 2,268 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering within universities appear in brackets. "Graduation Rate" is six-year graduation status, and "Rank-in-Class" is measured at exit. SAT/ACT scores, transfer GPA, and adjusted high school GPA are all standardized to have a mean of zero and a standard deviation of one so that the coefficients on these variables can be compared. All regressions include institutional dummies. This table is based on data from only eight flagship universities: Iowa State University, the University of California–Berkeley and –Los Angeles, the University of Illinois at Urbana-Champaign, the University of North Carolina–Chapel Hill, and the Universities of Iowa, Maryland, and Oregon, because the transfer GPA is available only at these universities.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 7.9

Comparison of Predictors for Freshmen Enrollees versus Transfers, 1999 Entering Cohort

| <i>Flagships and State System SEL As</i> | | | | | | |
|---|----------------------------------|------------------------|------------------------|------------------------------|------------------------|------------------------|
| | <i>Six-Year Graduation Rates</i> | | | <i>Rank-in-Class at Exit</i> | | |
| | <i>Freshmen</i> | <i>Transfers 2</i> | <i>Transfers 4</i> | <i>Freshmen</i> | <i>Transfers 2</i> | <i>Transfers 4</i> |
| Standardized Adjusted High School GPA | 0.084 [0.004]** | 0.040 [0.008]** | 0.062 [0.011]** | 12.1 [0.6]** | 6.1 [0.7]** | 8.5 [0.7]** |
| Standardized SAT/ACT Score | 0.015 [0.003]** | -0.012 [0.007] | -0.004 [0.005] | 6.1 [0.6]** | 4.1 [0.5]** | 5.1 [0.5]** |
| Observations | 57,056 | 5,040 | 4,829 | 57,056 | 5,040 | 4,829 |
| <i>State System SEL Bs</i> | | | | | | |
| | <i>Six-Year Graduation Rates</i> | | | <i>Rank-in-Class at Exit</i> | | |
| | <i>Freshmen</i> | <i>Transfers 2</i> | <i>Transfers 4</i> | <i>Freshmen</i> | <i>Transfers 2</i> | <i>Transfers 4</i> |
| Standardized Adjusted High School GPA | 0.087 [0.004]** | 0.045 [0.012]** | 0.046 [0.020]* | 10.9 [0.5]** | 6.7 [0.6]** | 7.9 [1.3]** |
| Standardized SAT/ACT Score | -0.013 [0.007] | -0.022 [0.011]* | 0.011 [0.012] | 4.7 [0.3]** | 4.5 [0.5]** | 5.3 [0.5]** |
| Observations | 15,547 | 1,436 | 1,166 | 15,547 | 1,436 | 1,166 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors in brackets. SAT/ACT scores and adjusted high school GPA are both standardized to have a mean of zero and a standard deviation of one so that the coefficients on these variables can be compared. All regressions include institutional dummies. Rutgers is excluded because high school GPA is not available for any transfer students.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 7.10

Outcomes and Characteristics of Freshmen Enrollees and Transfers
at HBCUs, 1999 Entering Cohort

| | <i>Freshmen</i> | <i>Transfers 2</i> | <i>Transfers 4</i> |
|---------------------|-----------------|--------------------|--------------------|
| Number | 5,045 | 276 | 322 |
| Graduation Rate (%) | 39.7 | 53.3 | 52.2 |
| Rank-in-Class | 49.5 | 49.5 | 54.4 |
| High School GPA | 2.96 | 2.72 | 2.84 |
| SAT/ACT Scores | 847 | 806 | 866 |

Source: State Systems Database.

Notes: Data are from HBCUs in Maryland and North Carolina. "Transfer 2" is transfers from two-year institutions, and "Transfers 4" is transfers from four-year institutions.

APPENDIX TABLE 7.11

Outcomes and Characteristics of Freshmen Enrollees and Transfer Students
with High School GPAs below 3.0, 1999 Entering Cohort

| | | <i>Number</i> | <i>Grad %</i> | <i>Rank</i> | <i>% Bot Y</i> | <i>% Top Y</i> |
|---------------|-------------|---------------|---------------|-------------|----------------|----------------|
| Flagships and | Freshmen | 3,733 | 50 | 27.5 | 17 | 38 |
| State System | Transfers 2 | 1,751 | 69 | 29.8 | 19 | 30 |
| SEL As | Transfers 4 | 1,127 | 62 | 31.4 | 18 | 40 |
| State System | Freshmen | 3,340 | 40 | 34.0 | 10 | 39 |
| SEL Bs | Transfers 2 | 889 | 63 | 37.6 | 16 | 28 |
| | Transfers 4 | 380 | 61 | 35.0 | 18 | 37 |

Source: Flagships Database and State Systems Database.

Notes: "Transfers 2" is transfers from two-year institutions, and "Transfers 4" is transfers from four-year institutions. "Grad %" is six-year graduation rate. "Rank" is rank-in-class at graduation. "% Bot Y" and "% Top Y" are the percentages of students in the bottom and top income quartiles, respectively.

APPENDIX TABLE 7.12

Educational Attainment of the Population Aged 25–34 by State, 2000
(Percentage in Each Category)

| <i>State</i> | <i>Some College, No Degree</i> | <i>Associate's Degree</i> | <i>Bachelor's Degree or Higher</i> |
|---------------|------------------------------------|---------------------------|--|
| Massachusetts | 18 | 8 | 41 |
| Connecticut | 20 | 7 | 35 |
| Colorado | 24 | 8 | 35 |
| New Jersey | 20 | 7 | 35 |
| Minnesota | 27 | 11 | 35 |
| Maryland | 23 | 6 | 34 |
| New York | 18 | 9 | 33 |

(continued)

APPENDIX TABLE 7.12 (Continued)

| <i>State</i> | <i>Some College, No Degree</i> | <i>Associate's Degree</i> | <i>Bachelor's Degree or Higher</i> |
|----------------|------------------------------------|---------------------------|--|
| Virginia | 23 | 6 | 33 |
| Illinois | 22 | 7 | 32 |
| Vermont | 19 | 10 | 31 |
| New Hampshire | 22 | 11 | 30 |
| Kansas | 27 | 7 | 30 |
| Delaware | 22 | 7 | 30 |
| Nebraska | 27 | 10 | 30 |
| Rhode Island | 21 | 9 | 29 |
| Pennsylvania | 18 | 8 | 29 |
| Washington | 26 | 9 | 29 |
| North Dakota | 29 | 15 | 29 |
| Wisconsin | 24 | 10 | 28 |
| Iowa | 25 | 11 | 28 |
| Georgia | 23 | 6 | 28 |
| South Dakota | 26 | 11 | 27 |
| Missouri | 25 | 7 | 27 |
| Montana | 29 | 8 | 27 |
| Oregon | 27 | 7 | 27 |
| Hawaii | 26 | 10 | 26 |
| North Carolina | 23 | 8 | 26 |
| California | 22 | 7 | 26 |
| Michigan | 26 | 8 | 26 |
| Ohio | 23 | 8 | 26 |
| Utah | 30 | 10 | 25 |
| Texas | 24 | 6 | 24 |
| Indiana | 23 | 8 | 23 |
| Florida | 23 | 9 | 23 |
| Wyoming | 31 | 10 | 23 |
| Tennessee | 23 | 6 | 23 |
| Maine | 22 | 10 | 23 |
| Arizona | 27 | 7 | 23 |
| South Carolina | 23 | 8 | 23 |
| Idaho | 29 | 8 | 22 |
| Alabama | 25 | 7 | 22 |
| Oklahoma | 26 | 7 | 22 |
| Alaska | 32 | 7 | 21 |
| Louisiana | 25 | 5 | 21 |
| Kentucky | 23 | 6 | 21 |
| New Mexico | 27 | 7 | 20 |
| Arkansas | 24 | 5 | 19 |
| Mississippi | 25 | 8 | 18 |
| West Virginia | 21 | 6 | 18 |
| Nevada | 26 | 6 | 17 |

Source: 2000 U.S. Census.

APPENDIX TABLE 8.1

Average Tuition and Fees (Constant 2008 Dollars) and Percent Change,
1978–79 to 2008–09

| <i>Academic Year</i> | <i>Private Four-Year Institutions</i> | | <i>Public Four-Year Institutions (In-state Rates)</i> | |
|--------------------------|---|--|---|--|
| | <i>Published Tuition and Fees</i> | <i>Year-to-Year Change (%)</i> | <i>Published Tuition and Fees</i> | <i>Year-to-Year Change (%)</i> |
| 1978–79 | 9,903 | — | 2,303 | — |
| 1979–80 | 9,704 | -2.1 | 2,221 | -3.7 |
| 1980–81 | 9,620 | -0.9 | 2,138 | -3.8 |
| 1981–82 | 9,877 | 2.6 | 2,183 | 2.0 |
| 1982–83 | 10,466 | 5.6 | 2,326 | 6.2 |
| 1983–84 | 11,214 | 6.7 | 2,528 | 8.0 |
| 1984–85 | 11,740 | 4.5 | 2,595 | 2.6 |
| 1985–86 | 12,490 | 6.0 | 2,689 | 3.5 |
| 1986–87 | 13,375 | 6.6 | 2,840 | 5.3 |
| 1987–88 | 13,623 | 1.8 | 2,870 | 1.0 |
| 1988–89 | 14,857 | 8.3 | 2,929 | 2.0 |
| 1989–90 | 15,318 | 3.0 | 2,999 | 2.3 |
| 1990–91 | 15,755 | 2.8 | 3,218 | 6.8 |
| 1991–92 | 15,846 | 0.6 | 3,403 | 5.4 |
| 1992–93 | 16,357 | 3.1 | 3,654 | 6.9 |
| 1993–94 | 16,767 | 2.4 | 3,862 | 5.4 |
| 1994–95 | 17,370 | 3.5 | 4,009 | 3.7 |
| 1995–96 | 17,620 | 1.4 | 4,055 | 1.1 |
| 1996–97 | 18,205 | 3.2 | 4,168 | 2.7 |
| 1997–98 | 18,892 | 3.6 | 4,264 | 2.2 |
| 1998–99 | 19,825 | 4.7 | 4,376 | 2.6 |
| 1999–2000 | 20,476 | 3.2 | 4,436 | 1.3 |
| 2000–2001 | 20,459 | -0.1 | 4,465 | 0.7 |
| 2001–02 | 21,534 | 5.0 | 4,667 | 4.3 |
| 2002–03 | 22,057 | 2.4 | 5,005 | 6.8 |
| 2003–04 | 22,666 | 2.7 | 5,556 | 9.9 |
| 2004–05 | 23,280 | 2.6 | 5,953 | 6.7 |
| 2005–06 | 23,617 | 1.4 | 6,182 | 3.7 |
| 2006–07 | 24,113 | 2.1 | 6,274 | 1.5 |
| 2007–08 | 25,075 | 3.8 | 6,538 | 4.0 |
| 2008–09 | 25,143 | 0.3 | 6,585 | 0.7 |

Source: Trends in College Pricing (College Board 1999, 2008a) and authors' calculations.

Note: “—” indicates that the change from the previous year cannot be calculated because data from the previous year are not available.

APPENDIX TABLE 8.2
Average Percent Change in Published and Net Tuition (Constant 2008 Dollars), 1993–94 to 2008–09

| Academic Year | Private Four-Year Institutions | | | Public Four-Year Institutions | | | | |
|---------------|--------------------------------|-----------------------------|------------------------------|-------------------------------|---------------------------------------|-----------------------------|------------------------------|-----------------------------|
| | Published Tuition and Fees | Year-to-Year Percent Change | Average Net Tuition and Fees | Year-to-Year Percent Change | Published Tuition (In-state) and Fees | Year-to-Year Percent Change | Average Net Tuition and Fees | Year-to-Year Percent Change |
| 1993–94 | 16,800 | — | 10,600 | — | 3,900 | — | 2,300 | — |
| 1994–95 | 17,400 | 3.4 | 10,700 | 0.9 | 4,000 | 2.5 | 2,200 | -4.5 |
| 1995–96 | 17,600 | 1.1 | 10,800 | 0.9 | 4,100 | 2.4 | 2,100 | -4.8 |
| 1996–97 | 18,200 | 3.3 | 11,300 | 4.4 | 4,200 | 2.4 | 2,200 | 4.5 |
| 1997–98 | 18,900 | 3.7 | 11,800 | 4.2 | 4,300 | 2.3 | 2,200 | 0.0 |
| 1998–99 | 19,800 | 4.5 | 12,200 | 3.3 | 4,400 | 2.3 | 2,200 | 0.0 |
| 1999–2000 | 20,500 | 3.4 | 12,700 | 3.9 | 4,400 | 0.0 | 2,200 | 0.0 |
| 2000–2001 | 20,500 | 0.0 | 12,600 | -0.8 | 4,500 | 2.2 | 2,100 | -4.8 |
| 2001–02 | 21,500 | 4.7 | 13,500 | 6.7 | 4,700 | 4.3 | 2,000 | -5.0 |
| 2002–03 | 22,100 | 2.7 | 13,800 | 2.2 | 5,000 | 6.0 | 2,200 | 9.1 |
| 2003–04 | 22,700 | 2.6 | 13,900 | 0.7 | 5,600 | 10.7 | 2,100 | -4.8 |
| 2004–05 | 23,300 | 2.6 | 14,300 | 2.8 | 6,000 | 6.7 | 2,400 | 12.5 |
| 2005–06 | 23,600 | 1.3 | 14,400 | 0.7 | 6,200 | 3.2 | 2,700 | 11.1 |
| 2006–07 | 24,100 | 2.1 | 14,600 | 1.4 | 6,300 | 1.6 | 2,700 | 2.1 |
| 2007–08 | 25,100 | 4.0 | 15,100 | 3.3 | 6,500 | 3.1 | 2,800 | 3.6 |
| 2008–09 | 25,100 | 0.0 | 14,900 | -1.3 | 6,600 | 1.5 | 2,900 | 3.4 |

Source: Trends in College Pricing (College Board 1999, 2008a) and authors' calculations.

Note: “—” indicates that the change from the previous year cannot be calculated because data from the previous year are not available.

APPENDIX TABLE 8.3

Average Amount Borrowed (Constant 2008 Dollars) from Federal and Private Sources (among Borrowers) by Family Income Quartile, 1992–93 to 2003–04

| <i>Income Quartile</i> | <i>1992–93</i> | <i>1995–96</i> | <i>1999–2000</i> | <i>2003–04</i> |
|------------------------|----------------|----------------|------------------|----------------|
| Bottom | 4,503 | 5,274 | 6,026 | 6,144 |
| Percent Borrowing | 39 | 47 | 46 | 48 |
| Second | 4,807 | 5,355 | 5,922 | 6,408 |
| Percent Borrowing | 34 | 46 | 48 | 48 |
| Third | 5,098 | 5,384 | 6,405 | 6,637 |
| Percent Borrowing | 19 | 35 | 42 | 47 |
| Top | 5,613 | 5,423 | 6,579 | 6,695 |
| Percent Borrowing | 12 | 21 | 31 | 36 |

Source: Trends in Student Aid (College Board 2007, 2008b).

Notes: Income categories are based on 1991, 1994, 1998, and 2002 quartiles of families in U.S. Census Bureau data with heads of households ages 45–54. For 2002, low-income is less than \$40,000, low- to middle-income is between \$40,000 and \$69,999, middle- to high-income is between \$70,000 and \$99,999, and high-income is \$100,000 and higher. Student loans from both federal and non-federal sources are included. Data for 1992–93 and 1995–96 include loans from friends and family.

APPENDIX TABLE 8.4

Average Amount Borrowed (Constant 2008 Dollars) from Federal and Private Sources (among Borrowers) by Sector, 1992–93 to 2003–04

| <i>Sector</i> | <i>1992–93</i> | <i>1995–96</i> | <i>1999–2000</i> | <i>2003–04</i> |
|--|----------------|----------------|------------------|----------------|
| Public Four-Year Universities | 4,330 | 5,199 | 5,535 | 5,870 |
| Percent Borrowing | 26 | 41 | 45 | 47 |
| Private Four-Year Universities | 5,522 | 6,049 | 7,605 | 7,976 |
| Percent Borrowing | 44 | 55 | 62 | 63 |
| Public Two-Year Colleges | 2,588 | 3,120 | 3,705 | 3,465 |
| Percent Borrowing | 6 | 10 | 12 | 17 |
| For-Profit Education Institutions | 5,131 | 5,053 | 6,347 | 7,359 |
| Percent Borrowing | 51 | 64 | 71 | 74 |

Source: Trends in Student Aid (College Board 2007, 2008b).

Notes: Student loans from both federal and non-federal sources are included. Data for 1992–93 and 1995–96 include loans from friends and family.

APPENDIX TABLE 9.1a
Average Financial Aid Packages (1999 Dollars) by Race/Ethnicity and Family Income,
1999 Entering Cohort, Flagships and State System SEL AS

| <i>Income Quartile</i> | <i>Total Grants</i> | | | | | |
|--------------------------|-----------------------------------|--------------|--------------|-----------------|--------------|--------------------|
| | <i>All Races/ Ethnicities</i> | <i>White</i> | <i>Black</i> | <i>Hispanic</i> | <i>Asian</i> | <i>Other Races</i> |
| Bottom Quartile | 6,539 | 5,705 | 7,660 | 7,801 | 7,230 | 6,433 |
| Percent Receiving Grants | 92 | 90 | 95 | 96 | 92 | 95 |
| Second Quartile | 4,348 | 3,919 | 5,710 | 5,667 | 5,123 | 4,101 |
| Percent Receiving Grants | 81 | 79 | 89 | 87 | 81 | 87 |
| Third Quartile | 2,937 | 2,749 | 4,002 | 3,922 | 3,440 | 2,383 |
| Percent Receiving Grants | 55 | 54 | 70 | 67 | 47 | 74 |
| Top Quartile | 2,783 | 2,602 | 4,450 | 3,883 | 3,176 | 1,608 |
| Percent Receiving Grants | 35 | 35 | 51 | 51 | 24 | 65 |

| <i>Income Quartile</i> | <i>Total Loans</i> | | | | | |
|------------------------|-----------------------------------|--------------|--------------|-----------------|--------------|--------------------|
| | <i>All Races/ Ethnicities</i> | <i>White</i> | <i>Black</i> | <i>Hispanic</i> | <i>Asian</i> | <i>Other Races</i> |
| Bottom Quartile | 3,302 | 3,516 | 3,171 | 2,983 | 2,976 | 2,506 |
| Percent Borrowing | 60 | 61 | 61 | 64 | 56 | 81 |
| Second Quartile | 4,144 | 4,288 | 3,958 | 3,473 | 3,644 | 2,884 |
| Percent Borrowing | 61 | 62 | 64 | 62 | 54 | 75 |
| Third Quartile | 5,028 | 5,057 | 5,122 | 4,809 | 4,766 | 3,530 |
| Percent Borrowing | 48 | 49 | 56 | 50 | 39 | 68 |
| Top Quartile | 5,331 | 5,339 | 5,378 | 4,946 | 5,335 | 2,566 |
| Percent Borrowing | 23 | 23 | 36 | 26 | 18 | 56 |

Net Price

| Income Quartile | All Races/ Ethnicities | | | | |
|-----------------|---------------------------|--------|----------|--------|-------------|
| | White | Black | Hispanic | Asian | Other Races |
| Bottom Quartile | -2,769 | -4,050 | -4,043 | -3,194 | -2,794 |
| Second Quartile | -370 | -1,813 | -1,781 | -942 | -448 |
| Third Quartile | 1,481 | 236 | 408 | 1,709 | 1,478 |
| Top Quartile | 2,124 | 697 | 774 | 2,769 | 2,377 |

| Sticker Price | | | | | |
|---------------|--|--|--|--|--|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Income Quartile | All Races/ Ethnicities | | | | |
|-----------------|---------------------------|-------|----------|-------|-------------|
| | White | Black | Hispanic | Asian | Other Races |
| Bottom Quartile | 3,437 | 3,565 | 3,679 | 3,763 | 3,566 |
| Second Quartile | 3,541 | 3,559 | 3,539 | 3,743 | 3,624 |
| Third Quartile | 3,564 | 3,539 | 3,468 | 3,817 | 3,736 |
| Top Quartile | 3,716 | 3,762 | 3,567 | 4,017 | 3,884 |

Cost of Attendance Analysis

| Income Quartile | Cost of Attendance | | | Total Aid | "Gap" |
|-----------------|--------------------|----------------|---------------|-----------|-------|
| | Attendance | Average Grants | Average Loans | | |
| Bottom Quartile | 12,204 | 6,314 | 2,225 | 8,539 | 3,665 |
| Second Quartile | 12,197 | 3,915 | 2,982 | 6,897 | 5,300 |
| Third Quartile | 12,220 | 2,103 | 3,272 | 5,375 | 6,845 |
| Top Quartile | 12,372 | 1,658 | 2,208 | 3,866 | 8,506 |

Source: Flagships Database and State Systems Database.

Notes: The flagship and SEL A universities in this analysis are James Madison, Iowa State, Ohio State, Pennsylvania State, Purdue, and Stony Brook Universities; the University of California–Los Angeles, the University of North Carolina–Chapel Hill, the Universities of Florida, Illinois, Iowa, Maryland, Minnesota, Nebraska, Oregon, Virginia, Wisconsin, and Mary Washington; the College of William and Mary; and Virginia Polytechnic Institute and State University. Only full-time, dependent, in-state first-year students are included.

APPENDIX TABLE 9.1b
 Average Financial Aid Packages (1999 Dollars) by Race/Ethnicity and Family Income,
 1999 Entering Cohort, State System SEL Bs

| <i>Income Quartile</i> | <i>Total Grants</i> | | | | | |
|--------------------------|-----------------------------------|--------------|--------------|-----------------|--------------|--------------------|
| | <i>All Races/ Ethnicities</i> | <i>White</i> | <i>Black</i> | <i>Hispanic</i> | <i>Asian</i> | <i>Other Races</i> |
| Bottom Quartile | 5,111 | 4,950 | 5,426 | 4,877 | 5,023 | 4,251 |
| Percent Receiving Grants | 93 | 91 | 97 | 92 | 86 | 91 |
| Second Quartile | 3,106 | 2,959 | 3,444 | 3,048 | 3,748 | 2,599 |
| Percent Receiving Grants | 77 | 74 | 87 | 77 | 74 | 85 |
| Third Quartile | 2,232 | 2,202 | 2,309 | 2,341 | 2,401 | 2,674 |
| Percent Receiving Grants | 41 | 38 | 57 | 43 | 46 | 30 |
| Top Quartile | 2,356 | 2,256 | 2,369 | 2,508 | 4,306 | 2,428 |
| Percent Receiving Grants | 22 | 21 | 37 | 22 | 23 | 27 |

| <i>Income Quartile</i> | <i>Total Federal Loans^a</i> | | | | | |
|------------------------|--|--------------|--------------|-----------------|--------------|--------------------|
| | <i>All Races/ Ethnicities</i> | <i>White</i> | <i>Black</i> | <i>Hispanic</i> | <i>Asian</i> | <i>Other Races</i> |
| Bottom Quartile | 2,651 | 2,592 | 2,745 | 2,493 | 2,619 | 2,625 |
| Percent Borrowing | 66 | 61 | 79 | 59 | 55 | 100 |
| Second Quartile | 3,198 | 3,175 | 3,455 | 2,921 | 2,818 | 2,625 |
| Percent Borrowing | 67 | 66 | 84 | 63 | 51 | 33 |
| Third Quartile | 4,031 | 4,005 | 4,557 | 3,615 | 3,281 | 4,811 |
| Percent Borrowing | 59 | 56 | 78 | 61 | 55 | 57 |
| Top Quartile | 4,620 | 4,566 | 4,887 | 4,273 | 4,707 | 5,494 |
| Percent Borrowing | 34 | 32 | 68 | 35 | 27 | 67 |

Net Price

| <i>Income Quartile</i> | <i>All Races/ Ethnicities</i> | | | | |
|------------------------|-----------------------------------|--------------|-----------------|--------------|--------------------|
| | <i>White</i> | <i>Black</i> | <i>Hispanic</i> | <i>Asian</i> | <i>Other Races</i> |
| Bottom Quartile | -2,100 | -2,612 | -1,676 | -1,567 | -2,141 |
| Second Quartile | -254 | -693 | 130 | -338 | -624 |
| Third Quartile | 1,248 | 1,198 | 1,755 | 1,890 | 283 |
| Top Quartile | 1,636 | 1,740 | 2,149 | 1,773 | 671 |

| <i>Income Quartile</i> | <i>Sticker Price</i> | | | | |
|------------------------|----------------------|--------------|-----------------|--------------|--------------------|
| | <i>White</i> | <i>Black</i> | <i>Hispanic</i> | <i>Asian</i> | <i>Other Races</i> |
| Bottom Quartile | 2,753 | 2,784 | 3,101 | 3,233 | 2,106 |
| Second Quartile | 2,512 | 2,588 | 2,893 | 3,090 | 1,954 |
| Third Quartile | 2,596 | 2,831 | 3,075 | 3,249 | 2,183 |
| Top Quartile | 2,634 | 2,835 | 3,148 | 3,387 | 2,254 |

Source: State Systems Database.

Notes: Based on data from Appalachian and East Carolina Universities; the University of North Carolina at Charlotte, Greensboro, Wilmington, and Pembroke; Christopher Newport, George Mason, Longwood, Old Dominion, Radford, and Virginia Commonwealth Universities; the University of Virginia College-Wise; and Virginia Military Academy. Only full-time, dependent, in-state freshmen are included.

^a Except "Total Federal Loans," which is based only on the eight Virginia institutions. See Chapter 9, note 8.

APPENDIX TABLE 9.2a

Changes in Financial Aid Packages (Constant 2002 Dollars) among Full-Time, Dependent, In-State FAFSA-Filers (Grant Aid) by EFC, 1999 Entering Cohort

| <i>Average Total Grants among Recipients</i> | | | | |
|--|-------------------|--------------------|-------------------|--------------------|
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 7,367 | 7,259 | 7,521 | 7,574 |
| Percent Receiving Grants | 99 | 98 | 97 | 95 |
| Second Quartile | 4,739 | 4,423 | 4,454 | 4,590 |
| Percent Receiving Grants | 90 | 84 | 86 | 85 |
| Third Quartile | 3,321 | 3,106 | 3,070 | 3,258 |
| Percent Receiving Grants | 71 | 56 | 59 | 60 |
| Top Quartile | 2,823 | 2,745 | 2,929 | 3,253 |
| Percent Receiving Grants | 57 | 39 | 40 | 41 |
| <i>Average Federal Grants among Recipients</i> | | | | |
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 3,092 | 3,117 | 3,283 | 3,256 |
| Percent Receiving Grants | 94 | 95 | 94 | 90 |
| Second Quartile | 1,861 | 1,691 | 1,706 | 1,753 |
| Percent Receiving Grants | 50 | 41 | 44 | 42 |
| Third Quartile | 1,913 | 1,692 | 1,802 | 1,922 |
| Percent Receiving Grants | 8 | 4 | 5 | 8 |
| Top Quartile | 2,287 | 2,453 | 3,206 | 2,818 |
| Percent Receiving Grants | 2 | 1 | 1 | 2 |
| <i>Average Institutional Grants among Recipients</i> | | | | |
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 2,601 | 2,443 | 2,536 | 2,749 |
| Percent Receiving Grants | 62 | 58 | 59 | 64 |
| Second Quartile | 2,474 | 2,479 | 2,552 | 2,517 |
| Percent Receiving Grants | 57 | 57 | 58 | 65 |
| Third Quartile | 2,451 | 2,508 | 2,387 | 2,483 |
| Percent Receiving Grants | 45 | 40 | 45 | 46 |
| Top Quartile | 2,510 | 2,488 | 2,650 | 2,925 |
| Percent Receiving Grants | 33 | 30 | 30 | 32 |

APPENDIX TABLE 9.2a (Continued)

| <i>Average State Grants among Recipients</i> | | | | |
|--|-------------------|--------------------|-------------------|--------------------|
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 2,971 | 3,458 | 3,426 | 3,217 |
| Percent Receiving Grants | 75 | 72 | 70 | 68 |
| Second Quartile | 2,439 | 2,902 | 2,846 | 2,820 |
| Percent Receiving Grants | 52 | 44 | 43 | 41 |
| Third Quartile | 1,467 | 2,029 | 2,075 | 2,092 |
| Percent Receiving Grants | 33 | 17 | 17 | 18 |
| Top Quartile | 1,054 | 1,841 | 1,899 | 1,875 |
| Percent Receiving Grants | 26 | 6 | 6 | 7 |
| <i>Average Private Grants among Recipients</i> | | | | |
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 2,075 | 2,571 | 2,855 | 2,945 |
| Percent Receiving Grants | 27 | 10 | 11 | 11 |
| Second Quartile | 1,921 | 2,371 | 2,687 | 2,652 |
| Percent Receiving Grants | 35 | 14 | 16 | 13 |
| Third Quartile | 1,808 | 2,308 | 2,386 | 2,403 |
| Percent Receiving Grants | 34 | 14 | 13 | 13 |
| Top Quartile | 1,739 | 1,951 | 2,068 | 2,149 |
| Percent Receiving Grants | 27 | 11 | 10 | 10 |

Source: Flagships Database.

Notes: Based on data from Iowa State, Ohio State, and Stony Brook Universities; the University of California–Los Angeles; and the Universities of Florida, Illinois, Iowa, Maryland, Minnesota, Nebraska, and Oregon. EFC quartiles are calculated from the four-year mean values in this sample. Includes full-time, in-state, dependent students who filed a FAFSA each year, including non-graduates.

APPENDIX TABLE 9.2b

Changes in Financial Aid Packages (Constant 2002 Dollars) among Full-Time, Dependent, In-State FAFSA-Filers (Loan Aid) by EFC, 1999 Entering Cohort

| <i>Average Total Loans among Borrowers</i> | | | | |
|--|-------------------|--------------------|-------------------|--------------------|
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 3,617 | 4,009 | 4,674 | 5,173 |
| Percent Borrowing | 69 | 71 | 72 | 71 |
| Second Quartile | 4,825 | 5,104 | 5,883 | 6,290 |
| Percent Borrowing | 72 | 75 | 75 | 74 |
| Third Quartile | 5,722 | 5,978 | 6,799 | 7,146 |
| Percent Borrowing | 74 | 78 | 80 | 79 |
| Top Quartile | 6,553 | 6,886 | 7,661 | 7,967 |
| Percent Borrowing | 72 | 75 | 78 | 78 |
| <i>Average Federal Loans among Borrowers</i> | | | | |
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 3,460 | 3,806 | 4,490 | 4,977 |
| Percent Borrowing | 69 | 71 | 72 | 71 |
| Second Quartile | 4,357 | 4,555 | 5,443 | 5,718 |
| Percent Borrowing | 72 | 74 | 75 | 74 |
| Third Quartile | 5,124 | 5,219 | 6,165 | 6,406 |
| Percent Borrowing | 74 | 77 | 79 | 78 |
| Top Quartile | 6,047 | 6,289 | 7,068 | 7,300 |
| Percent Borrowing | 72 | 74 | 78 | 78 |
| <i>Average Institutional Loans among Borrowers</i> | | | | |
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 1,801 | 2,049 | 2,603 | 1,573 |
| Percent Borrowing | 0 | 0 | 0 | 0 |
| Second Quartile | 1,602 | 1,760 | 1,647 | 2,150 |
| Percent Borrowing | 3 | 2 | 1 | 1 |
| Third Quartile | 1,436 | 1,912 | 1,609 | 2,165 |
| Percent Borrowing | 2 | 2 | 1 | 1 |
| Top Quartile | 1,445 | 2,696 | 3,797 | 1,737 |
| Percent Borrowing | 1 | 0 | 0 | 0 |

APPENDIX TABLE 9.2b (Continued)

| <i>Average State Loans among Borrowers</i> | | | | |
|--|-------------------|--------------------|-------------------|--------------------|
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | — | 3,380 | 3,377 | 4,281 |
| Percent Borrowing | — | 0 | 0 | 1 |
| Second Quartile | — | 3,404 | 4,424 | 4,351 |
| Percent Borrowing | — | 1 | 1 | 1 |
| Third Quartile | — | 4,318 | 4,507 | 4,560 |
| Percent Borrowing | — | 1 | 1 | 2 |
| Top Quartile | — | 4,316 | 4,312 | 4,831 |
| Percent Borrowing | — | 1 | 1 | 2 |
| <i>Average Private Loans among Borrowers</i> | | | | |
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 3,738 | 4,071 | 4,328 | 2,501 |
| Percent Borrowing | 3 | 3 | 3 | 3 |
| Second Quartile | 4,655 | 4,696 | 5,031 | 2,700 |
| Percent Borrowing | 7 | 8 | 6 | 7 |
| Third Quartile | 5,657 | 5,820 | 5,749 | 2,646 |
| Percent Borrowing | 8 | 9 | 8 | 9 |
| Top Quartile | 6,605 | 6,364 | 6,504 | 3,011 |
| Percent Borrowing | 6 | 7 | 6 | 7 |

Source: Flagships Database.

Notes: Based on data from Iowa State, Ohio State, and Stony Brook Universities; the University of California–Los Angeles; and the Universities of Florida, Illinois, Iowa, Maryland, Minnesota, Nebraska, and Oregon. EFC quartiles are calculated from the four-year mean values in this sample. Includes full-time, in-state, dependent students who filed a FAFSA each year, including non-graduates.

APPENDIX TABLE 9.2c
Changes in Family Income, Tuition, and EFC (Constant 2002 Dollars) among Full-Time, Dependent, In-State FAFSA-Filers, 1999 Entering Cohort

| <i>EFC Quartile</i> | <i>Average Family Income</i> | | | | <i>EFC Quartile</i> | <i>Average EFC</i> | | | |
|---------------------|------------------------------|--------------------|-------------------|--------------------|---------------------|----------------------------|--------------------|-------------------|--------------------|
| | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> | | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 22,860 | 20,289 | 20,308 | 20,996 | Bottom Quartile | 826 | 649 | 720 | 791 |
| Second Quartile | 45,499 | 43,473 | 44,521 | 45,287 | Second Quartile | 4,226 | 3,566 | 3,715 | 3,936 |
| Third Quartile | 66,934 | 67,032 | 68,758 | 68,370 | Third Quartile | 9,006 | 8,597 | 8,861 | 8,776 |
| Top Quartile | 101,638 | 103,809 | 106,997 | 105,592 | Top Quartile | 21,054 | 22,655 | 22,639 | 20,965 |
| | <i>Average Tuition</i> | | | | | <i>Average Net Tuition</i> | | | |
| <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> | <i>EFC Quartile</i> | <i>First Year</i> | <i>Second Year</i> | <i>Third Year</i> | <i>Fourth Year</i> |
| Bottom Quartile | 3,595 | 4,032 | 4,341 | 4,776 | Bottom Quartile | -3,714 | -3,098 | -2,937 | -2,423 |
| Second Quartile | 3,516 | 3,981 | 4,357 | 4,862 | Second Quartile | -740 | 284 | 524 | 973 |
| Third Quartile | 3,565 | 3,989 | 4,410 | 4,935 | Third Quartile | 1,211 | 2,258 | 2,586 | 2,965 |
| Top Quartile | 3,654 | 4,169 | 4,581 | 5,093 | Top Quartile | 2,050 | 3,086 | 3,409 | 3,749 |

Source: Flagships Database.

Notes: Based on data from Iowa State, Ohio State, and Stony Brook Universities; the University of California–Los Angeles; and the Universities of Florida, Illinois, Iowa, Maryland, Minnesota, Nebraska, and Oregon. EFC quartiles are calculated from the four-year mean values in this sample. Includes full-time, in-state, dependent students who filed a FAFSA each year, including non-graduates.

APPENDIX TABLE 9.3a

Regression of Four-Year Adjusted Graduation Rates on Net Price
(1999 Dollars) among Freshmen at Flagship Universities
by Family Income, 1999 Entering Cohort

| <i>Income Quartile</i> | <i>Average Net Price (\$1,000s)</i> | <i>R-Squared</i> |
|------------------------|-------------------------------------|------------------|
| Bottom Quartile | -0.045 [0.019]* | 0.25 |
| Second Quartile | -0.031 [0.023] | 0.11 |
| Third Quartile | -0.002 [0.022] | 0.00 |
| Top Quartile | 0.008 [0.019] | 0.01 |

Source: Flagships Database.

Note: Standard errors in brackets. OLS regression coefficients indicate the increase in four-year graduation rates associated with a \$1,000 decrease in net price for the listed income quartile. For example, the first cell on the left implies that, for bottom-quartile students, a \$1,000 lower net price is associated with an increase of 4.5 percentage points in the four-year graduation rate.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 9.3b

Regression of Six-Year Adjusted Graduation Rates on Net Price
(1999 Dollars) among Freshmen at Flagship Universities
by Family Income, 1999 Entering Cohort

| <i>Income Quartile</i> | <i>Average Net Price (\$1,000s)</i> | <i>R-squared</i> |
|------------------------|-------------------------------------|------------------|
| Bottom Quartile | -0.030 [0.012]* | 0.30 |
| Second Quartile | -0.033 [0.012]* | 0.34 |
| Third Quartile | -0.003 [0.011] | 0.01 |
| Top Quartile | 0.000 [0.010] | 0.00 |

Source: Flagships Database.

Note: Standard errors appear in brackets. OLS regression coefficients indicate the increase in six-year graduation rates associated with a \$1,000 decrease in net price for the listed income quartile. For example, the first cell on the left implies that, for bottom-quartile students, a \$1,000 lower net price is associated with an increase of 3.0 percentage points in the six-year graduation rate.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 10.1a
 Regressions of Adjusted Six-Year Graduation Rates on Institutional
 Characteristics, 1999 Entering Cohort

| <i>Flagships and State System SEL As</i> | | | | |
|---|-----------|---------|---------|-----------|
| Selectivity Index | 0.080 | | | 0.089 |
| | [0.014]** | | | [0.018]** |
| Educational and General Expenditures per FTE (Thousands of Dollars) | | 0.001 | | -0.002 |
| | | [0.001] | | [0.001] |
| FTE Enrollment (Thousands of Students) | | | 0.001 | 0.001 |
| | | | [0.002] | [0.002] |
| Observations | 28 | 28 | 28 | 28 |
| R-squared | 0.38 | 0.04 | 0.04 | 0.41 |
| <i>State System SEL Bs</i> | | | | |
| Selectivity Index | 0.110 | | | 0.116 |
| | [0.043]* | | | [0.044]* |
| General and Educational Expenditures per FTE (Thousands of Dollars) | | 0.001 | | 0.001 |
| | | [0.007] | | [0.006] |
| FTE Enrollment (in Thousands of Students) | | | -0.002 | -0.004 |
| | | | [0.004] | [0.004] |
| Observations | 28 | 28 | 28 | 28 |
| R-squared | 0.19 | 0.00 | 0.02 | 0.23 |

Source: Flagships Database, State Systems Database, and Integrated Postsecondary Education Data System (IPEDS).

Notes: Robust standard errors appear in brackets. The dependent variable is the adjusted six-year graduation rate. Institutional characteristics are from the 2001 IPEDS data. Rutgers is excluded due to missing IPEDS data. Replacing educational and general expenditures with instructional expenditures yielded qualitatively similar results.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 10.1b
 Regressions of Adjusted Six-Year Graduation Rates on Institutional
 Characteristics, 1999 Entering Cohort

| <i>Flagships and State System SEL As</i> | | | |
|---|--------------------|--------------------|--------------------|
| Selectivity Index | 0.085 [0.015]** | | 0.059 [0.012]** |
| Percentage of Freshmen in Campus Housing (One Unit = 10 Percentage Points) | | 0.039 [0.011]** | 0.030 [0.008]** |
| Observations | 28 | 28 | 28 |
| <i>R</i> -squared | 0.41 | 0.46 | 0.63 |
| <i>State System SEL Bs</i> | | | |
| Selectivity Index | 0.081 [0.043] | | 0.029 [0.035] |
| Percentage of Freshmen in Campus Housing (One Unit = 10 Percentage Points) | | 0.027 [0.007]** | 0.025 [0.007]** |
| Observations | 25 | 25 | 25 |
| <i>R</i> -squared | 0.12 | 0.36 | 0.37 |

Source: Flagships Database, State Systems Database, and College Board Annual Survey of Colleges.

Notes: Robust standard errors appear in brackets. The dependent variable is the adjusted six-year graduation rate. The percentage of the freshmen class in campus housing is from the College Board's Annual Survey of Colleges. The following institutions are dropped due to missing data: the University of Cincinnati, the University of North Carolina–Chapel Hill, Virginia Tech, and Cleveland State, Penn State, and Shawnee State Universities.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 10.1c
 Graduation Rates by Living in a Residence Hall in the First Semester,
 1999 Entering Cohort

| <i>Flagships and State System SEL As</i> | | | | |
|--|--------------------------------------|--------------------|---------------------------------------|--------------------|
| | <i>Six-Year Graduation Rates</i> | | <i>Four-Year Graduation Rates</i> | |
| Lived in a Residence Hall (0/1) | 0.117 [0.039]** | 0.080 [0.021]** | 0.091 [0.052] | 0.046 [0.027] |
| Controls? | No | Yes | No | Yes |
| Observations | 58,685 | 58,685 | 58,685 | 58,685 |
| <i>State System SEL Bs</i> | | | | |
| | <i>Six-Year Graduation Rates</i> | | <i>Four-Year Graduation Rates</i> | |
| Lived in a Residence Hall (0/1) | 0.070 [0.027]** | 0.071 [0.019]** | 0.095 [0.020]** | 0.065 [0.009]** |
| Controls? | No | Yes | No | Yes |
| Observations | 16,157 | 16,157 | 16,157 | 16,157 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering within universities appear in brackets. Controls include high school GPA, SAT/ACT scores, race/ethnicity, gender, state residency status, and university attended. Due to missing data on whether students lived in a residence hall, the following universities are excluded: the University of California–Berkeley and –Los Angeles, the University of Maryland–Baltimore County, the University of Mary Washington, Miami University of Ohio, the University of Texas–Austin, and the Universities of Florida, Minnesota, Nebraska, Oregon, and Washington, as well as all state system SEL Bs in Maryland and Ohio.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 10.2

Graduation Rates, Public and Private Institutions, Raw and Adjusted (Compared to Public SEL I Flagships), 1999 Entering Cohort (Publics) and 1995 Entering Cohort (Privates)

| | <i>Six-Year Graduation Rates</i> | | <i>Four-Year Graduation Rates</i> | |
|------------------------------------|--------------------------------------|--------------------|---------------------------------------|--------------------|
| | <i>Raw</i> | <i>Adjusted</i> | <i>Raw</i> | <i>Adjusted</i> |
| Private Ivy League Universities | 0.070 [0.021]** | 0.051 [0.019]** | 0.206 [0.046]** | 0.174 [0.043]** |
| Private Liberal Arts Colleges | -0.009 [0.023] | -0.022 [0.021] | 0.145 [0.048]** | 0.115 [0.045]* |
| Observations | 38,014 | 38,014 | 38,014 | 38,014 |

Source: Flagships Database and Expanded College and Beyond Database.

Notes: Robust standard errors adjusted for clustering within universities appear in brackets. Adjusted differences control for SAT/ACT scores, race/ethnicity, and gender. Coefficients indicate the predicted difference (from a probit model) in graduation rates between the listed group and the reference group (SEL I flagships), holding control variables at their means.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 10.3

Graduation Rates, Virginia Public and Private Institutions, Raw and Adjusted (Compared to SEL A Public Universities), 1999 Entering Cohort

| | <i>Six-Year Graduation Rates</i> | | <i>Four-Year Graduation Rates</i> | |
|-------------------------------|--------------------------------------|---------------------|---------------------------------------|---------------------|
| | <i>Raw</i> | <i>Adjusted</i> | <i>Raw</i> | <i>Adjusted</i> |
| SEL A Private Universities | 0.012 [0.000]** | 0.000 [0.008] | 0.153 [0.000]** | 0.127 [0.005]** |
| SEL B Public Universities | -0.274 [0.000]** | -0.152 [0.024]** | -0.326 [0.000]** | -0.159 [0.019]** |
| SEL B Private Universities | -0.283 [0.000]** | -0.153 [0.027]** | -0.192 [0.000]** | -0.035 [0.026] |
| Observations | 20,257 | 20,257 | 20,257 | 20,257 |

Source: State Systems Database.

Notes: Robust standard errors adjusted for clustering within universities appear in brackets. Adjusted differences control for high school GPA, SAT/ACT scores, race/ethnicity, gender, state residency status, and family income quartile. Coefficients indicate the predicted difference (from a probit model) in graduation rates between the listed group and the reference group (SEL A public universities), holding control variables at their means.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 10.4

Six-Year Graduation Rates by Income and Starting at an Honors College, 1999 Entering Cohort

| | <i>Non-Honors</i> | <i>Honors</i> |
|-----------------|--------------------|--------------------|
| Second Quartile | 0.016 [0.015] | -0.015 [0.021] |
| Third Quartile | 0.051 [0.018]** | 0.007 [0.010] |
| Top Quartile | 0.098 [0.019]** | 0.023 [0.007]** |
| Observations | 33,785 | 4,996 |

Source: Flagships Database.

Notes: Robust standard errors adjusted for clustering within universities appear in brackets. Based on data from Ohio State and Stony Brook Universities, the University of California—Los Angeles, the University of Illinois at Urbana-Champaign, the University of North Carolina—Chapel Hill, the University of Texas—Austin, and the Universities of Iowa, Michigan, Nebraska, Oregon, and Virginia. Controls are included for high school GPA, SAT/ACT scores, state residency status, and university attended. Coefficients indicate the predicted difference (from a probit model) in graduation rates between the listed group and the reference group (students from families in the bottom income quartile), holding control variables at their means.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 10.5

Six-Year Graduation Rates by Income and Public versus Private Control, 1999 Entering Cohort (Publics) and 1995 Entering Cohort (Privates)

| | <i>SEL I Flagships</i> | <i>Ivy League</i> | <i>Liberal Arts Colleges</i> |
|-----------------|------------------------|-------------------|------------------------------|
| Second Quartile | 0.027 [0.018] | 0.009 [0.006] | 0.004 [0.017] |
| Third Quartile | 0.046 [0.022]* | 0.018 [0.013] | 0.012 [0.018] |
| Top Quartile | 0.061 [0.021]** | 0.029 [0.013]* | 0.013 [0.019] |
| Observations | 16,113 | 5,688 | 5,609 |

Source: Flagships Database and Expanded College and Beyond Database.

Notes: Robust standard errors adjusted for clustering within universities appear in brackets. Controls are included for SAT/ACT scores, race/ethnicity, gender, and university attended. Income quartile is based on self-reported information from the SAT survey. Coefficients indicate the predicted difference (from a probit model) in graduation rates between the listed group and the reference group (students from families in the bottom income quartile), holding control variables at their means.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 11.1

Differences in Six-Year Graduation Rates for Black Men by Selectivity Cluster (Compared to SEL I Flagships), 1999 Entering Cohort

| <i>All Black Men</i> | | | | | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|
| SEL IIs | -0.069 [0.031]* | -0.069 [0.031]* | -0.048 [0.030] | -0.033 [0.028] | 0.001 [0.023] |
| SEL IIIs | -0.169 [0.034]** | -0.169 [0.034]** | -0.143 [0.032]** | -0.104 [0.030]** | -0.053 [0.031] |
| SEL Bs | -0.277 [0.045]** | -0.277 [0.045]** | -0.259 [0.042]** | -0.184 [0.036]** | -0.104 [0.037]** |
| State Residency? | No | Yes | Yes | Yes | Yes |
| Family Income? | No | No | Yes | Yes | Yes |
| SAT Scores? | No | No | No | Yes | Yes |
| High School GPA? | No | No | No | No | Yes |
| Observations | 2,976 | 2,976 | 2,976 | 2,976 | 2,976 |
| <i>Black Men with High School GPAs below 3.0</i> | | | | | |
| SEL IIs | -0.066 [0.043] | -0.047 [0.044] | -0.013 [0.050] | -0.004 [0.051] | -0.004 [0.051] |
| SEL IIIs | -0.090 [0.037]* | -0.082 [0.035]* | -0.052 [0.043] | -0.034 [0.046] | -0.033 [0.047] |
| SEL Bs | -0.178 [0.046]** | -0.151 [0.042]** | -0.128 [0.044]** | -0.093 [0.046]* | -0.092 [0.048] |
| State Residency? | No | Yes | Yes | Yes | Yes |
| Family Income? | No | No | Yes | Yes | Yes |
| SAT Scores? | No | No | No | Yes | Yes |
| High School GPA? | No | No | No | No | Yes |
| Observations | 999 | 999 | 999 | 999 | 999 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering by university appear in brackets. Controls include high school GPA, SAT/ACT scores, state residency, and income quartile. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (SEL I flagships), holding all control variables at their means.

* Significant at the .05 level.

** Significant at the .01 level.

APPENDIX TABLE 11.2

Differences in Six-Year Graduation Rates for Hispanics by Selectivity Cluster (Compared to SEL I Flagships), 1999 Entering Cohort

| <i>All Hispanics</i> | | | | | | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| SEL IIs | -0.074 [0.030]* | -0.075 [0.030]* | -0.074 [0.029]* | -0.078 [0.027]** | -0.069 [0.026]** | -0.052 [0.025]* |
| SEL IIIs | -0.194 [0.034]** | -0.192 [0.034]** | -0.191 [0.035]** | -0.185 [0.034]** | -0.158 [0.035]** | -0.098 [0.030]** |
| SEL Bs | -0.324 [0.033]** | -0.326 [0.033]** | -0.333 [0.032]** | -0.335 [0.031]** | -0.284 [0.033]** | -0.199 [0.031]** |
| State Residency? | No | Yes | Yes | Yes | Yes | Yes |
| Gender? | No | No | Yes | Yes | Yes | Yes |
| Family Income? | No | No | No | Yes | Yes | Yes |
| SAT Scores? | No | No | No | No | Yes | Yes |
| High School GPA? | No | No | No | No | No | Yes |
| Observations | 4,572 | 4,572 | 4,572 | 4,572 | 4,572 | 4,572 |
| <i>Hispanics with High School GPAs below 3.0</i> | | | | | | |
| SEL IIs | -0.105 [0.065] | -0.109 [0.069] | -0.096 [0.063] | -0.079 [0.066] | -0.071 [0.069] | -0.069 [0.081] |
| SEL IIIs | -0.121 [0.071] | -0.121 [0.069] | -0.113 [0.066] | -0.094 [0.071] | -0.077 [0.078] | -0.064 [0.087] |
| SEL Bs | -0.239 [0.071]** | -0.244 [0.073]** | -0.243 [0.067]** | -0.231 [0.070]** | -0.213 [0.081]** | -0.162 [0.092] |
| State Residency? | No | Yes | Yes | Yes | Yes | Yes |
| Gender? | No | No | Yes | Yes | Yes | Yes |
| Family Income? | No | No | No | Yes | Yes | Yes |
| SAT Scores? | No | No | No | No | Yes | Yes |
| High School GPA? | No | No | No | No | No | Yes |
| Observations | 447 | 447 | 447 | 447 | 447 | 447 |

Source: Flagships Database and State Systems Database.

Notes: Robust standard errors adjusted for clustering by university appear in brackets. Controls include high school GPA, SAT/ACT scores, state residency, and income quartile. Coefficients indicate the predicted difference in graduation probability (from a probit model) between the listed group and the reference group (SEL I flagships), holding all control variables at their means.

* Significant at the .05 level.

** Significant at the .01 level.