

Knocking at the College Door: Implications of Differences in the Family Income of High School Graduates

Changes in the composition of public high school graduating classes portend new and significant challenges for many states as they struggle to maintain their financial commitments to keeping college affordable. Two primary mechanisms for ensuring affordability are state appropriations that minimize the pressure for increasing revenue through increasing tuition charges and the provision of grant based financial aid for students from families unable to realistically meet the costs of college attendance. The family income distribution of high school graduates projected through 2008 varies dramatically across the 50 states revealing disparate economic demands on state governments to provide resources for postsecondary education. WICHE's recent projections of graduates by family income background provide insight to the challenges facing many states as their graduating classes grow over the coming years. Many states will be hard pressed to maintain their current levels of commitment to ensuring affordability for all residents, and the provision of additional resources to better ensure affordability for those from the lowest income families continues to present a formidable challenge for the vast majority of states. Never before have the economic stakes of expanding postsecondary participation been higher, making this challenge all the more critical to individual welfare, and continued state, regional, and national economic development.

In January of 2004, the Western Interstate Commission for Higher Education (WICHE) released the 6th edition of *Knocking at the College Door*, a report on the projected number of high school graduates in the United States through the year 2018. As with past editions, the latest *Knocking on the College Door* report includes projections within states and census regions, and for the nation as a whole. The report provides projections of the number of public and private high school graduates

and, for the public sector, projections of the racial/ethnic composition of future graduating classes. As Figure 1 indicates, the nation is expected to see continued growth in the number of high school graduates until the class of 2009; after that, the number of graduates is expected to decline somewhat until about 2015, when the numbers will again increase.¹

These data have been widely used by

policymakers, researchers, and planners to understand the potential changes in national, regional, and state demographics of K-12 enrollments and the numbers of high school graduates. Because of increasing concerns about access to college for historically underrepresented populations, especially low-income students, WICHE included a new set of information with the latest edition of *Knocking*, looking at projections of the number of public high school graduates by family income level for

each year out to 2013.

With projections by family income, this edition of *Knocking* provides unique insight to the financial demands that are likely to face states as they attempt to accommodate the significant demographic change forecast for the next decade. This policy brief summarizes the main findings of the income component of the projections

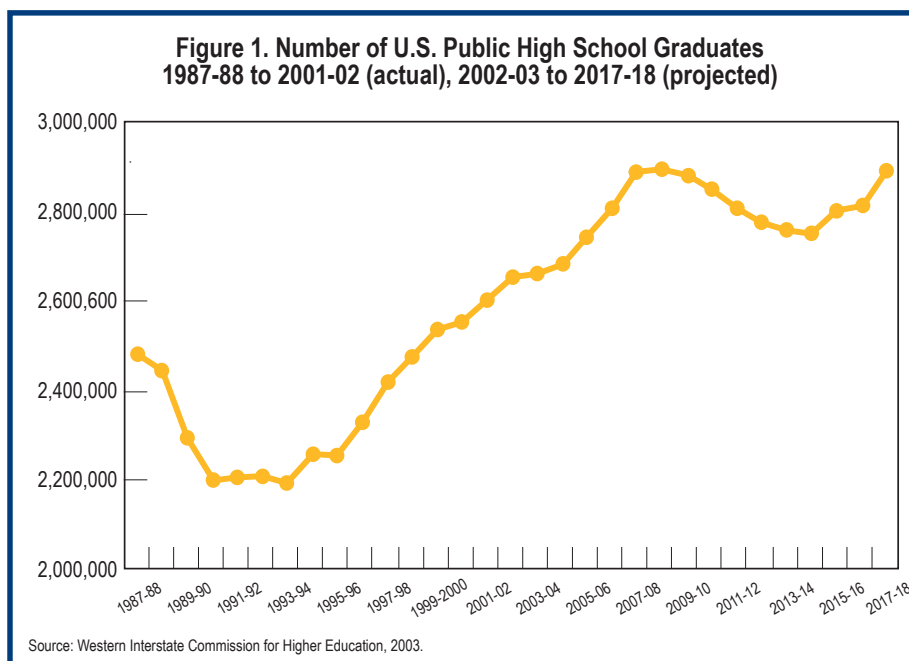
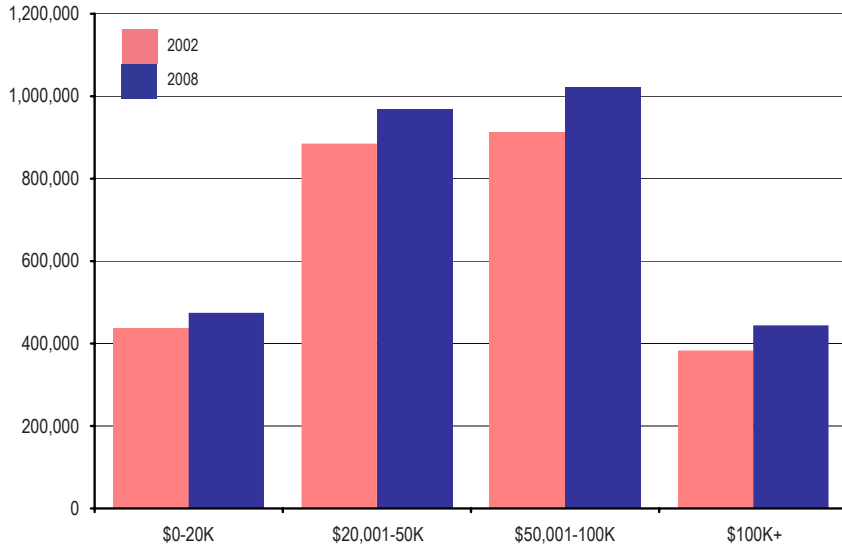


Figure 2. High School Graduates by Family Income Level, 2002 and 2008



Source: Western Interstate Commission for Higher Education, 2003

graduates by state and region, little change was found in the overall distribution of high school graduates by family income level (see Figure 2).³ In other words, while the number of high school graduates in some states can be expected to expand and in other states contract, the rates of expansion and contraction are generally comparable across income groups. This is captured in Figure 2, which shows the similar distribution of public high school graduates estimated across the family income categories for 2002 and those projected for 2008.

It is important to note that these projections yield the most conservative future scenario. Not directly captured in these projections are shifts in the overall family income distributions underlying growth and

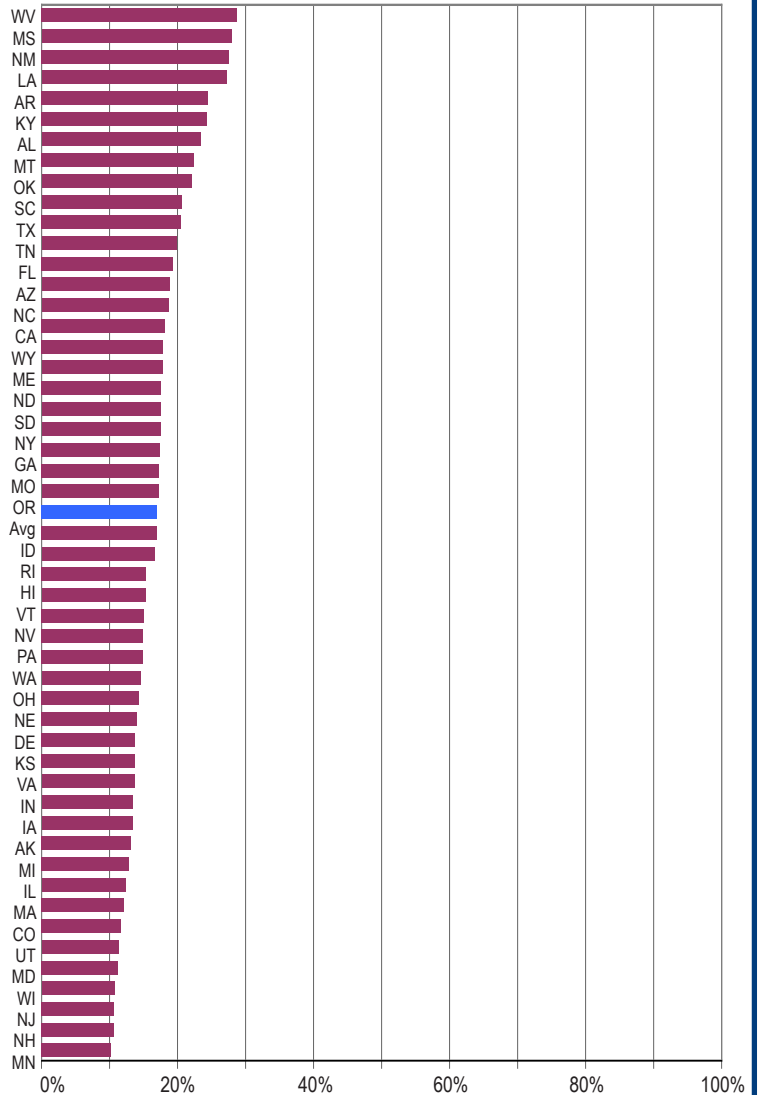
and explores some potential implications for states as they plan for future demands on their higher education systems.

High School Graduates & Family Economics

For most lawmakers dealing with education issues, access to postsecondary education for all who can benefit is a primary goal of state and federal education policy. Among high school graduates from more affluent families, the chances of going on to college before age 24 are very high — estimated at about 93 percent by Tom Mortenson.² That percentage drops dramatically, however, for students from less affluent families, to about 63 percent. While most states have limited historical data on family income levels, more precise data on future high school graduates and the income levels of their families has not been available. Without this kind of information, policymakers, state agencies, and researchers have little reliable data to adequately plan for college enrollments by income levels, financial aid needs for varying income groups, tuition setting, institutional capacity to meet enrollment demands, and many other significant education issues. In 2003, to help supply states and institutions with better tools for planning purposes, WICHE supplemented its projections of high school graduates by race/ethnicity with projections of high school graduates by family income level.

For purposes of these projections, four categories of family income (measured in year 2000 dollars) are considered: under \$20,000; \$20,001 to \$50,000; \$50,001 to \$100,000; and \$100,001 and over. While the projections out to 2008 and beyond revealed significant shifts in expected numbers of high school

Figure 3. Projected Percentage of 2008 High School Graduates from Families Earning Less than \$20,000



contraction in schools serving different types of families. Note, for example, that while WICHE's race and ethnicity projections forecast significant growth of Hispanic populations in many states, these income projections do not fully capture the reality that Hispanics in the United States generally earn considerably less than whites. Thus all of the scenarios developed in this Policy Insights will be "best-case" in every sense. WICHE is continuing to refine its models to better capture the powerful impact of fluctuations in the underlying income distributions within states.

Figure 1 illustrates the substantial growth expected between 2002 and 2008 in the total number of high school graduates. As Figure 2 shows, little change is expected in the overall family income distribution of high school graduates (note the similar shape of the family income distribution in 2002 and 2008).⁴ While the national picture reflects little change during this period, there is great variability in income levels from state to state: the projections reveal substantial differences in the expected family income distribution of graduates across the 50 states. These distinctions are reflected in Figure 3, which arrays the 50 states in terms of the projected proportion of their 2008 public high school graduates that are forecast to come from families earning less than \$20,000 annually.

Figure 3 shows the wide variation in the expected percentage of graduates from low-income backgrounds. Projections range from a low of 10 percent of the projected population of high school graduates in Connecticut to a high of over 28 percent in West Virginia, with an average across states of 17 percent. Over one-fifth of states are projected to have more than 20 percent of their graduating classes coming from families earning less than \$20,000 annually. Four states — West Virginia, Mississippi, New Mexico, and Louisiana — are projected to have over one-quarter of their 2008 high school graduates from such families.

Family Economics, Academic Preparation & Affordability

Two obvious policy implications in this distribution focus on college access and affordability for lower-income families. Access and students' decisions to enroll in college are defined by many factors, most often including student aspirations and expectations, academic preparation, and ability to pay for college. While policymakers have only modest control over the development of students' college-going expectations, they do have substantial immediate influence over their ability to prepare academically and their families' ability to pay.

Three main factors that drive affordability are: 1) the cost of attendance, including tuition, fees, books, room, and board; 2) adequacy of state financial aid; and 3) personal or family income.⁶ This section of *Policy Insights* will illustrate how the projections of high school graduates by income level can be used with other essential pieces of

information to understand how income level is affected by key affordability factors.

The three affordability factors — cost of attendance, financial aid, and family income — are displayed with the income projection data in Table 1, where:

- Column A shows the projected percentage of high school graduates in the class of 2008 from low-income families.
- Column B contains the expected percentage change in the number of high school graduates from low-income families between 2002 and 2008.
- Column C reflects the share of family income needed to cover costs at public four-year colleges. Across the four regions in the country, students can expect public four-year college costs to amount to between 26 and 34 percent of their total family income each year, on average and net of any financial aid that might be awarded.
- Column D focuses on low-income families sending their high school graduates to an in-state public four-year college. Nationally, high school graduates from low-income families can expect to pay between 61 and 83 percent of their total family income, on average (low-income families are defined as those in each state's bottom quintile of annual income).
- Column E provides an estimate of the percentage of the family earnings of the state's low-income citizens that would be required to pay for the net cost of attendance at the state's lowest cost institutions, usually community colleges. These values show that, on average across the regions, between 13 and 22 percent of family income would be needed to attend one of the least expensive colleges in the state.
- Column F is a measure of state commitment to the provision of need-based financial aid for their lower-income students. This measure approximates how well the state targets aid to families with the greatest need and how much need aid is available to all students. States providing greater amounts of need-based aid relative to their low-income student populations will have higher values. Ideally, states projected to have a higher proportion of high school graduates would also be exhibiting a greater commitment to need-based aid programs. This measure picks up only state need-based grant aid and therefore states with large programs that are not need-based but may assist needy students, such as Georgia's HOPE Scholarship or Arizona with its reliance on institutional aid, will have low scores on this index.

Each of the three measures of affordability expresses the percentage of family income required to pay for the "net" cost of attendance at some type of in-state public institution. Cost of attendance includes tuition, fees, books, and room and board in 2004. The total cost of attendance value has been adjusted for student financial aid (federal, state, and institutional) and, therefore,

Table 1. Number of Projected High School Graduates from Low-Income Families and Affordability Factors

State	Projected Percentage of High School Graduates from Low-Income Families (Class of 2008)	Percentage Change in Number of High School Graduates from Low-Income Families (2002 to 2008)	Percentage of Family Income Needed to Pay for College at Public 4-Year Institutions (All Families)	Percentage of Family Income Needed to Pay for College at Public 4-Year Institutions (Low-Income Families)	Percentage of Family Income Needed to Pay for College at Lowest-Priced Colleges (All Families)	State Need-Based Aid as a Percent of Federal Pell Grant Aid
Connecticut	9.9%	12.9%	29.2%	72.8%	15.4%	43.9%
Maine	17.3	(2.2)	33.7	81.0	26.2	29.1
Massachusetts	12.1	7.9	30.9	79.0	21	61.6
New Hampshire	10.3	4.0	32.1	77.6	30.2	12.1
New Jersey	10.2	17.4	33.6	82.9	16.3	86.6
New York	16.9	6.3	31.8	78.0	26.8	90.1
Pennsylvania	14.7	10.3	35.1	84.6	19	85.8
Rhode Island	18.6	33.8	34.9	90.0	17.7	21.1
Vermont	14.9	(5.8)	40.8	96.3	28.6	85.9
Avg Northeast	13.9	9.4	33.6	82.5	22.4	57.4
Illinois	12.2	3.9	29.9	72.3	13.7	77.8
Indiana	13.1	3.4	28.9	66.4	18.3	85.2
Iowa	13.3	2.5	28.2	63.3	19.2	36.2
Kansas	13.2	(4.3)	22.8	53.8	13.8	13.0
Michigan	13.1	14.1	31.7	78.7	14.6	36.0
Minnesota	10.3	5.3	22.6	51.5	20.4	86.9
Missouri	16.9	3.5	27.5	65.1	14.7	12.3
Nebraska	14.0	(3.6)	24.0	56.5	12.7	12.1
North Dakota	17.2	(16.1)	24.7	57.9	22	3.9
Ohio	14.2	3.8	35.6	86.1	22	31.4
South Dakota	17.5	(11.3)	22.8	51.4	22.7	0.0
Wisconsin	11.2	1.8	21.9	49.9	17.3	49.4
Avg Midwest	13.9	0.3	26.7	62.7	17.6	37.0
Alabama	22.6	(0.1)	26.5	62.4	23.6	0.6
Arkansas	24.0	0.2	25.7	56.1	17	23.5
Delaware	14.0	6.0	29.7	70.2	12.8	5.3
Florida	19.2	15.0	24.6	56.0	14.2	13.5
Georgia	16.3	10.6	23.7	57.9	11.7	0.5
Kentucky	23.6	0.2	22.2	50.3	20.1	39.9
Louisiana	26.6	(12.4)	22.6	53.6	13.4	0.4
Maryland	10.2	4.3	28.9	71.7	16.3	32.8
Mississippi	26.8	(3.3)	26.5	60.9	15.4	1.0
North Carolina	18.3	13.1	25.0	58.5	10.8	34.3
Oklahoma	22.0	(0.9)	22.9	52.0	15.7	15.8
South Carolina	20.0	(3.5)	32.4	80.5	24.9	22.5
Tennessee	19.9	11.2	27.1	65.7	20.8	18.4
Texas	19.6	7.1	26.3	60.5	10.4	35.8
Virginia	13.2	15.2	25.9	62.6	12.7	35.5
West Virginia	28.3	(2.2)	28.9	65.4	18.3	27.9
Avg South	20.3	3.8	26.2	61.5	16.1	19.2
Alaska	13.3	14.0	21.3	50.4	12.4	0.0
Arizona	18.1	22.5	29.9	71.2	9.7	0.5
California	18.3	20.7	31.9	76.9	3.9	47.9
Colorado	11.7	8.7	24.1	56.7	12.7	40.7
Hawaii	15.3	5.0	22.6	55.9	8.6	0.0
Idaho	16.7	1.9	21.5	46.4	13.5	2.7
Montana	22.2	(6.6)	31.2	71.6	25.8	8.3
Nevada	15.1	44.0	26.8	59.2	10	0.0
New Mexico	27.1	(0.5)	26.8	61.9	11	19.9
Oregon	17.0	8.5	33.8	79.5	20.2	15.2
Utah	11.5	(0.6)	17.6	39.1	13	5.2
Washington	14.8	8.0	31.2	75.8	18.5	58.8
Wyoming	17.9	(13.1)	23.7	53.3	12.4	1.2
Avg West	16.9	8.7	26.3	61.4	13.2	15.4

represents the actual estimated costs borne by students and their families. This net cost is then expressed as a percentage of family income in each state.

What the Data Mean for States

In the Northeast region of the country, an estimated 14 percent of graduates in the class of 2008 will be from families earning less than \$20,000 a year. Among the states in this region, Connecticut has one of the lowest proportions of high school graduates from low-income families: approximately 10 percent of Connecticut's high school graduating class of 2008 is expected to come from families that earn under \$20,000 a year. Yet this is an increase of nearly 13 percent when compared to the class of 2002. On average, Connecticut families dedicate about 29 percent of their family income to pay for costs (tuition, fees, books, and room and board in 2004) to attend a public four-year institution; that percentage drops to about 15 percent of the family's income if the student chooses one of Connecticut's lowest-priced colleges. The impact on low-income families is considerably greater: for low-income families who plan to send their graduates to a public college, the cost of going to a public four-year institution will consume nearly 73 percent of their family income.

In contrast to the Northeast, over 20 percent of graduates in the South's class of 2008 will come from families with annual incomes of less than \$20,000. In some states, that figure is lower. Virginia is projected to see only about 13 percent of its 2008 graduates coming from families earning under \$20,000 a year — yet this number, while relatively low, is an increase of 15 percent over 2002. On average, the cost of going to a public four-college in 2002 consumed about 26 percent of family income in Virginia. Families earning less than \$20,000 a year, however, spent nearly 63 percent of their annual income if they sent their students to a public four-year institution. Thirteen percent of the state's graduates attended one of the lowest-priced colleges in the state.

Policy Implications

The public policy implications of maintaining access to college for low-income students are significant. Many states are going to be pressed to provide money to accommodate the forecasted growth of high school graduates at all family income levels. This money will need to be channeled through state appropriations to help institutions limit future tuition increases and through financial aid programs designed to assist students from lower-income backgrounds who are unable to meet the costs associated with postsecondary attendance.

To demonstrate the possible fiscal impact on states, and show the additional resources that might be needed to address the growth in the number of high school graduates from low-income families only (those earning under \$20,000 per year), in this section we consider the potential costs

facing states as their high school graduating classes change over the coming years. Data for three states — North Carolina, Ohio, and Washington — are presented in two scenarios. Under Scenario 1, the assumption is made that “all things will remain equal” — no current or proposed policies or other factors will influence the current trends in the numbers of students graduating from low-income families. For Scenario 2, change is factored in to show how success in increasing the numbers of low-income students who graduate from high school will affect the need-based financial aid resources needed to support them in higher education. In both scenarios, the numeric increase projected for graduates from families earning less than \$20,001 annually, along with an estimate of the associated student financial aid expenditures that will be needed to support high school graduates with state need-based financial aid funding, are made.

North Carolina, a high-growth state, provided, on average, \$1,535 in state need-based aid for every high school graduate in 2003. The state is expected to see about 1,600 more high school graduates from low-income families in 2008 than it had in 2002. With all things being equal and per-student aid funding remaining at the 2003 level, the state would require an additional \$2.470 million in state resources to provide need-based financial aid for the class of 2008. If the state is successful in increasing the number of low-income students that graduate from high school, North Carolina might be looking at nearly 2,200 more low-income high school graduates in 2008 than it had in 2002, which would require at least an additional \$3.373 million in need-based aid.

Ohio, a state expected to see manageable growth in the number of high school graduates, awarded \$1,009 in state need-based aid per high school graduate in 2003. The state is projected to see about 609 more high school graduates from low-income families in 2008 than it had in 2002, which will mean \$614,274 in additional financial aid funding for low-income students. If Ohio improves on its graduation of low-income students, the state may see an additional 4,500 high school graduates in the class of 2008 from low-income families, which would require an estimated \$4.5 million in additional need-based aid.

Moderate-growth states with higher need-based financial aid awards may be more strongly affected by successful access initiatives for low-income students. Washington state is projected to see manageable growth in the number of high school graduates. In 2003, Washington awarded \$1,815 in state need-based aid per high school graduate, one of the highest rates in the nation, particularly outside the Northeast. Approximately 700 more high school graduates from low-income families are expected in 2008 than the state had in 2002, which will mean \$1.256 million in additional financial aid funding for low-income students. If Washington improves on its graduation of low-income students, the state may see an additional 1,180 high school graduates in the class of 2008 from low-income families, which would require an estimated \$2.141 million in additional need-based aid.

These estimates represent the additional cost of serving an increase in low-income aspirants to higher education at a state's current level of service. Estimated costs for states with little or no current commitment to need-based aid programs are by definition going to be low or even zero regardless of the magnitude of increase in low-income high school graduates. A handful of states—Alabama, Louisiana, Mississippi, Oklahoma, Montana, and New Mexico, for example—will potentially experience the worst case scenario: high proportions of students from low-income families in future high school graduating classes combined with very low ratios of state need-based aid to Pell Grant aid. The degree to which states embrace their commitment to the less affluent citizens is a normative decision, one that will increasingly bear on the socioeconomic well-being of this segment of the population and, by extension, the state's overall economic and social health.

To further exacerbate the picture for states, scholars and policy analysts have noted the emergence of structural budget deficits in most states. An updated state fiscal outlook released by the National Center for Higher Education Management Systems (NCHEMS) suggests that "even if state and local governments close their current budget gaps with entirely recurring actions, rather than gimmicks that provide only temporary relief, most states will face continuing difficulty financing current services with existing revenue structures, and will not have resources for real increases in spending."⁷ Notable in the NCHEMS state fiscal outlook are significant budget deficits forecast for several of those states identified above as having high proportions of students from low-income families in future high school graduating classes combined with very low ratios of state need-based aid to Pell Grant aid (i.e., New Mexico, Louisiana, Alabama, and Mississippi). Legislators work with a finite set of resources that must be allocated across the many public services provided by the state. The additional resources required to meet the rising demand for affordable, quality higher education experiences will have to come from additional revenues or from funding currently directed at other state programs. This will be a difficult choice either way in most states.

Conclusion

The 6th edition of WICHE's *Knocking at the College Door* report has for the first time provided state-by-state data on the likely socioeconomic makeup of high school graduates over this decade. This information can be used by states to develop estimates of the resources that will be required to address the needs of high school graduates from every family income bracket as increasing numbers of students make their way to our college campuses and ultimately into the workforce. Escalating costs of college attendance and, in many states, significant increases in the number of graduates from economically challenged backgrounds will require states to more carefully target their postsecondary subsidies to ensure equitable postsecondary opportunity for all who demonstrate academic capacity and an interest in further education.

Endnotes

¹ Western Interstate Commission for Higher Education, *Knocking at the College Door: Projections of High School Graduates by State, Income, and Race/Ethnicity* (Boulder, CO: WICHE, 2003).

² T. Mortenson, *Postsecondary Education Opportunity*, no. 143, May 2004, downloadable at <<http://www.postsecondary.org>>.

³ *Knocking*.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ National Center for Public Policy and Higher Education, *Technical Guide Documenting Methodology, Indicators, and Data Sources for Measuring Up 2002: The State-by-State Report Card for Higher Education*, downloadable at <<http://measuringup.highereducation.org/2002/technicalguide.htm>>.

⁷ National Center for Higher Education Management Systems (NCHEMS). April 2005. **State Fiscal Outlook Update**. Prepared for NCHEMS by Donald Boyd, Consultant and former Deputy Director, Nelson A. Rockefeller Institute of Government.

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