

Projections of High School Graduates

***Implications for Baccalaureate Degree
Production and Workforce Growth***



**Minnesota Private College
Research Foundation**

April 2004

April 12, 2004

Fellow Stakeholder:

The Minnesota Private College Research Foundation has analyzed recent projections of high school graduates published by the Western Interstate Commission for Higher Education (*Knocking at the College Door*, WICHE, December 2003). The implications of and challenges posed by the trends illuminated by the data deserve immediate attention and discussion.

A vital Minnesota thrives on a progressive economy that makes full use of a well-prepared talent pool that is able to successfully compete in the world; enjoys a good quality of life; promotes equity of opportunity and security in citizenship; encourages a diverse, productive society; adapts to continuous change driven by a global environment; and, engages volunteer and elected leaders in meeting the state's needs.

The Minnesota Private College Council believes that a breadth and depth of higher education opportunities and the long-term health and vitality of Minnesota are inextricably linked. The achievement of Minnesota's goals is dependent on the efforts of all who have a stake in the state's future.

The Council envisions a comprehensive higher education enterprise that serves a diverse student body; produces citizens who are responsible decision makers in a changing environment; a workforce that is opportunistic and adaptable to the demands of tomorrow's economy; a research corps that is capable of keeping that complex economy competitive in a global environment; citizens and leaders who are responsive to the needs of society's elders and careful stewards of our resources, including our children.

The first step toward realizing this vision is to anticipate and understand the state's demographics – current and projected. To that end, we offer this Research Update, "Projections of High School Graduates: Implications for Baccalaureate Degree Production and Workforce Growth," to all who have an interest in Minnesota's vital interests and who strive to produce all of the high school and, subsequently, college graduates needed to achieve our collective goals. We look forward to your feedback but, more importantly, to your involvement in a broad, statewide discussion about our future.

Cordially,

David B. Laird, Jr.
President

Table of Contents

	Page
Foreword	i
Executive Summary	iii
Background	1
Projections of High School Graduates in the US	2
Projections of High School Graduates in the Five-State Region	2
Projections of High School Graduates in Minnesota	3
The “Traditional Track” to the Baccalaureate in Minnesota	6
Projections of Baccalaureate Production and Minnesota’s Workforce Needs	9
A National Concern	11
The Challenge to do Better	12
Postscript: Projections of High School Graduates by Family Income Level	13

Projections of High School Graduates

Implications for Baccalaureate Degree Production and Workforce Growth

Executive Summary

The Minnesota Private College Research Foundation has analyzed recent projections of high school graduates published by the Western Interstate Commission for Higher Education (*Knocking at the College Door*, WICHE, December 2003). These projections indicate that over the next ten years, from 2003 to 2013:

- The number of high school graduates in the US will increase by 4% overall, but in the Midwest that number will *decrease* by 3.3%.
- The number of high school graduates in Minnesota will **decrease by 10.3%**; it will fall even faster, by 11.7%, in the five-state region (MN, ND, SD, IA, WI).
- The overall decline of 10.3% in Minnesota masks widely divergent racial/ethnic patterns:
 - 18.7% decline in the number of white graduates
 - 51.9% growth in the number of minority graduates
 - The share of graduates made up of students of color will grow from just 1 in 8 to over 1 in 5.

Because most of the decline is expected in students who are currently among the most likely to go to college and most of the growth in students who are least likely to go to college, the drop in postsecondary student numbers will be even larger than the drop in high school graduates:

- The decline in high school graduates in Minnesota will be **accelerated** by a factor of 1.13 as those graduates progress to bachelor's degrees, simply due to the changing mix of students and the different postsecondary participation rates of racial/ethnic groups.
- This acceleration will lead to a **decline of 11.6%**, from about 27,000 to 24,000, in the number of bachelor's degrees awarded in Minnesota in 2017, compared to 2007.

Over roughly the same period, the state's need for educated workers – individuals with a bachelor's degree or higher – will almost double:

- Retirements from the Minnesota workforce among individuals who hold a bachelor's degree or higher will increase from under 9,000 per year to almost 25,000 per year.
- New job growth in professional and high technology industries will create demand for an additional 10,500 college graduates per year.

The projections suggest that if present trends continue, by 2010 Minnesota will not be producing enough college graduates to meet the total workforce demands of replacing retirees and filling new positions. And by 2015, the state will not be producing enough graduates even to replace the retirees, with no room for economic growth whatsoever.

Projections of High School Graduates

Implications for Baccalaureate Degree Production and Workforce Growth

The Minnesota Private College Council, along with many others in the education community, has been suggesting for some time that changing demographics in Minnesota and the surrounding region will force significant changes not just on our member colleges, but on all of the higher education systems in the state. Recent projections of high school graduates published by the Western Interstate Commission for Higher Education (*Knocking at the College Door*, WICHE, December 2003) have allowed us to place a finer point on that claim by quantifying not only the changes expected in the K12 population over the next ten years, but also the likely impact on the state's ability to produce bachelor's degree graduates over the next fourteen. This update, prepared by the Minnesota Private College Research Foundation (MPCRF), describes some of that research, and MPCRF's interpretation of its import.

It begins with a brief description of the data and methodology employed by WICHE in making the projections, then summarizes the projections for the US, the upper Midwest, and the state. The discussion pays particular attention to the widely divergent projections for different racial and ethnic groups. It then moves on to projections of the numbers of college students and college graduates in the state, given what is known about college-going rates for each racial and ethnic group. Finally, the analysis considers these projections in light of the expected needs for college educated workers in the state's economy. Some attention is also given to WICHE's projections of high school graduates by family income levels, and why those projections do not prove useful.

Background

The National Center for Education Statistics (NCES) has published projections of the numbers of high school graduates in public and private high schools, by state, for some time, but without any breakdowns by race and ethnicity. The WICHE analysis began tracking enrollment data by race from state education agencies in 1991, and began translating those data into projections in 1998. They have consistently used the method of cohort survival ratios to make the projections, which takes into account most of the relevant phenomena of retention and migration patterns. In essence, the method computes the ratio of the number of current 4th graders to last year's 3rd graders, for example, and then applies it to this year's 3rd graders in order to make a projection of the number of 4th graders that will be enrolled next year. Doing this for every grade level, including the transition from birth to 1st grade, and from 12th grade to graduation, creates a straightforward method of projecting the number of high school graduates that we can expect to see in 18 years, given the size of the current birth cohort.

Of course, "survival ratio" is a somewhat misleading moniker since immigration has outpaced the low levels of attrition due to death or emigration in recent years, thus creating ratios greater than 1 in most of the grade levels. That is, there are more 1st graders today than there were newborns 6 years ago, and so on for each grade transition at least through middle school. The cohort survival ratio method takes all of this into account, but like any projection method it can

only assume that current trends will continue, and the further into the future one tries to look the less likely that assumption is to hold, particularly when it comes to migration trends. Thus, even though in theory the method can (and WICHE does) project the numbers of high school graduates 18 years into the future starting with the current birth cohort, in practice the reliability of those projections diminishes considerably after about 10 years. This Research Update focuses on the projections for the high school graduating classes of 2002/03 through 2012/13. (Technically, the 2002/03 figures are still projections, since the last year of actual data that WICHE collected from the states was from 2001/02.)

The projections also tend to be slightly less reliable at the state level than the national level, since intrastate migration patterns are generally more volatile than immigration at the national level. The projections by race are also likely to be less reliable than the overall projections. This is partly because the data on race and ethnicity itself is less reliable, subject as it is to changes in reporting and definitions, and also because it is only available for students in public school systems. To the extent that survival ratios differ from the public to the private schools, and that students transfer between the two systems, the projections are susceptible to added layers of possible variance. Finally, student enrollment levels among many populations of color tend to be particularly influenced by migration patterns, which in turn are influenced by changes in economic and political conditions.

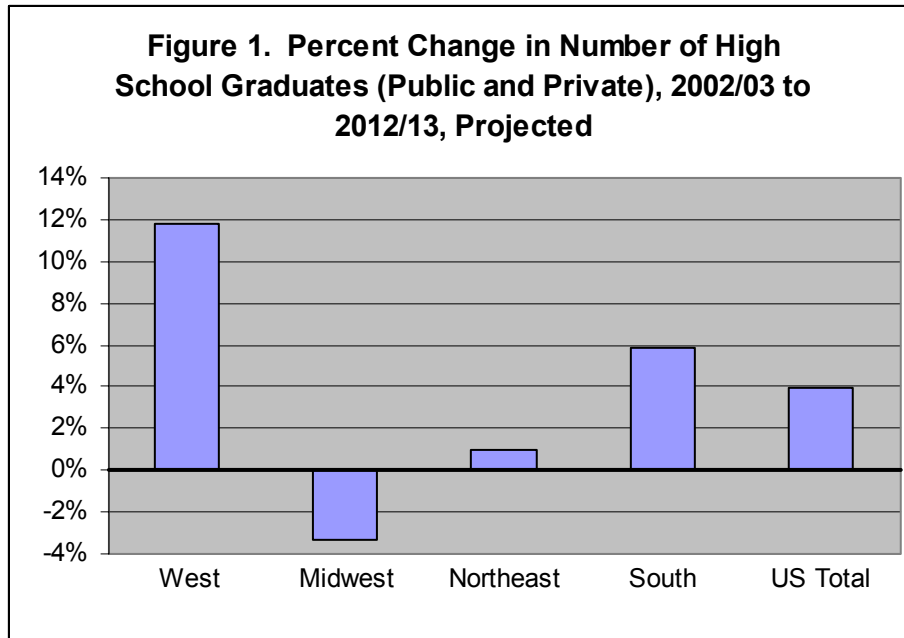
Projections of High School Graduates in the US

Overall projections for the numbers of high school graduates in the US indicate an increase of 4.0% in the next ten years, from 2.95 million graduates in 2002/03 to 3.07 million in 2012/13. That count includes all graduates from both public and private high schools. The general trend conceals a sharper growth in the first five years, to a crest of nearly 3.2 million in 2008/09, followed by a steep drop in the second half of the decade, bottoming out at about 3.05 million in 2014/15. After that, the numbers are expected to swing back up towards 3.2 million graduates again by 2018, but the figures at this tail end of the series are the most speculative and should be treated with caution.

The national projections also conceal widely diverging trends among the broad regions within the US. Almost all of the growth, for example, is expected to occur in the West and South. The number of high school graduates in Western states, in fact, is projected to increase by 11.8% in the decade from 2003 to 2013, and in Southern states WICHE projects an increase of 5.9%. In the 12 Midwestern states, by contrast, the projections indicate a *decline* of 3.3%. (Those states are: ND, SD, NE, KS, MN, IA, MO, WI, IL, IN, MI and OH.) These trends are illustrated in Figure 1.

Projections of High School Graduates in the Five-State Region

The rate of decline is even steeper in the upper Midwest. That is because some of the decline in the region is masked by modest growth in Illinois (4.3%) and remarkably strong growth in Indiana (16.3%). If we look only at the five-state region that includes Minnesota, the Dakotas, Iowa and Wisconsin, we see a more sobering projected *decline of 11.7%* in the total number of high school graduates (public and private) from 2002/3 to 2012/13. In absolute terms, that represents a loss of almost 22,000 graduates, from 185,683 in 2002/3 to 163,980 in 2012/13. In recent years, these five states have been home to about 80% of the enrollments in Minnesota Private College Council member institutions, and 90% of the overall higher education enrollments in Minnesota.

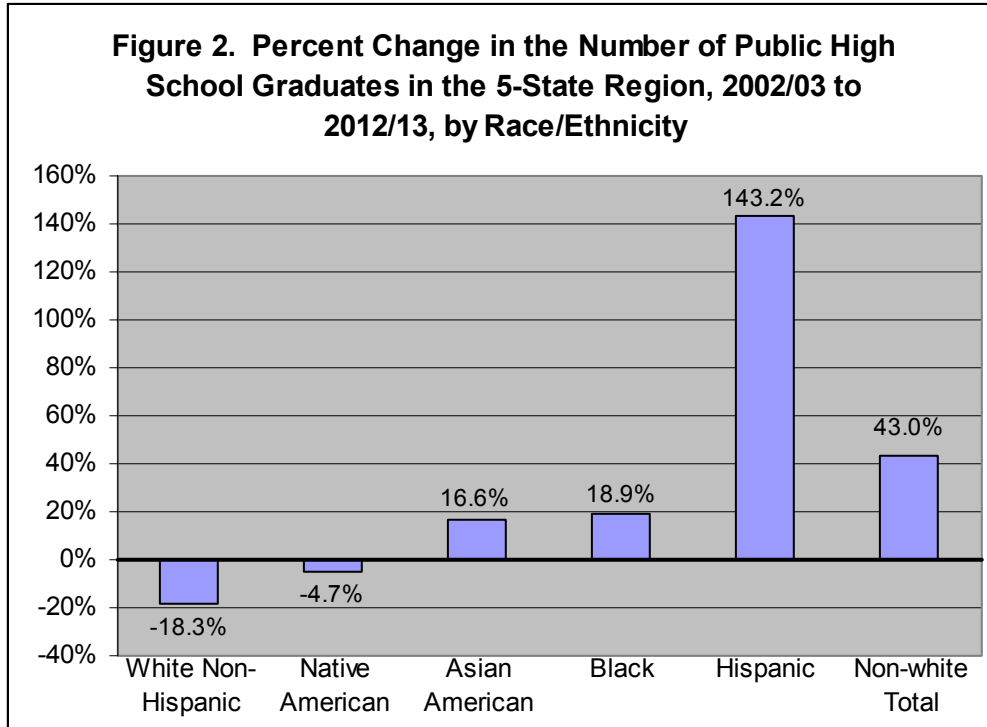


When the overall decline of 11.7% in the region is broken down by race, highly divergent patterns emerge once again. As shown in Figure 2, the number of white non-Hispanic high school graduates in the 5-state region is projected to decline by 18.3%, while the number of Hispanic graduates is expected to grow by 143%. Asian American and Black graduates are expected to increase in number by 16.6% and 18.9%, respectively, while Native American graduates are projected to decline by 4.7%. The exceptional growth rate of Hispanic student populations makes it hard to keep the other numbers in perspective. Another way of viewing the data is to combine the 4 non-white categories, which leads to the projection that the number of minority high school graduates as a whole will grow by 43.0% over this period.

The racial/ethnic breakdowns are only available for public high schools, so these percentages of growth and decline are not strictly applicable to the total numbers of graduates given above. Nonetheless, they give a reasonably good indication of what kind of student population Minnesota postsecondary institutions will be able to draw on in the next decade. (Graduates from nonpublic high schools in this region made up 7.0% of the total number of graduates in 2001/02.) The divergent growth rates of white and minority students during the decade imply that the share of graduates made up of students of color will grow from 10.7% to 17.3% of all public high school graduates in the region from 2002/3 to 2012/13, or from about one in nine to one in six.

Projections of High School Graduates in Minnesota

Somewhat similar phenomena are projected for the state of Minnesota in the next decade. WICHE projects an overall *decline of 10.3%* in the total number of high school graduates (public and private) in Minnesota from 2002/3 to 2012/13. In absolute terms, that represents a loss of over 6,500 graduates, from 63,962 in 2002/3 to 57,397 in 2012/13.



When the public high school graduates are broken down by race (Figure 3), the decline in the number of white non-Hispanic graduates mirrors very closely that of the 5-state region (18.7%), but the growth in minority graduates is significantly greater (51.9%). We also note that:

- The number of Hispanic graduates is expected grow by 173%
- Asian American graduates are expected to increase by 24.9%
- Black graduates are expected to increase by 40.6%
- Native American graduates are projected to decline by 15.6%, more than three times the rate of decline for the region overall.

Once again, the exceptional growth rate of Hispanic student populations obscures the scale of the other numbers. Combining the 4 non-white categories in Minnesota leads to the projection that the number of minority high school graduates as a whole will grow by 51.9% over this period. Thus, we can expect that the share of graduates made up of students of color in Minnesota will grow from 12.5% to 21.0% of all public high school graduates between 2002/3 to 2012/13, or from about one in eight to one in five. Figure 4 shows the growth of each minority population of high school graduates in absolute terms for Minnesota, in each of the first ten years of the WICHE projections.¹

Figure 3. Percent Change in the Number of Public High School Graduates in Minnesota, 2002/03 to 2012/13, by Race/Ethnicity

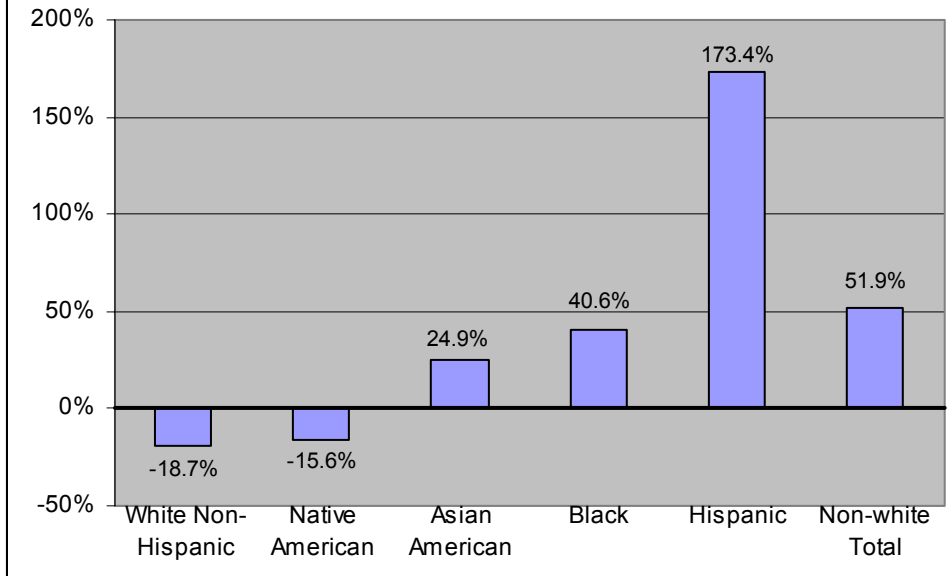
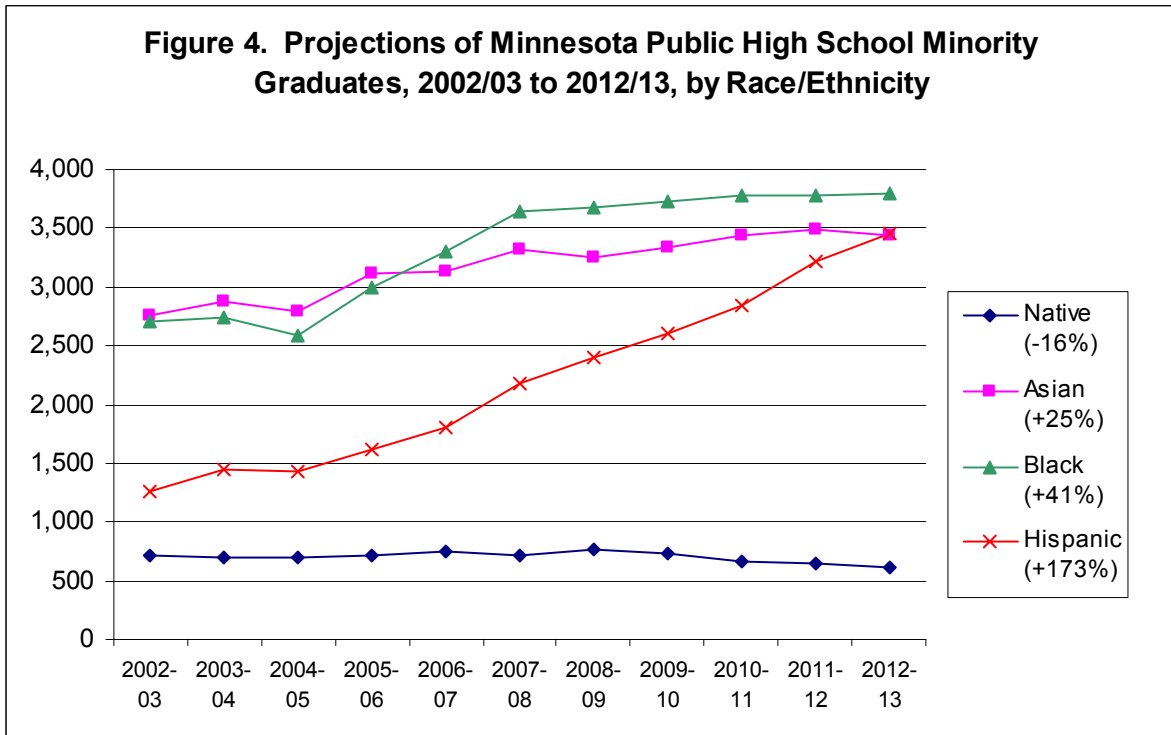


Figure 4. Projections of Minnesota Public High School Minority Graduates, 2002/03 to 2012/13, by Race/Ethnicity



The “Traditional Track” to the Baccalaureate in Minnesota

Thanks to recent work by the Minnesota Higher Education Services Office (MHESO), we have a good picture of what happens to students in the state after they graduate from high school, and this allows us to project what the changing demographics of high school graduates in the next decade might mean in terms of college enrollments and completions. In particular, we know that the two populations that are expected to grow the fastest in Minnesota (Blacks and Hispanics) have traditionally been among the most underrepresented in higher education, while most of the decline in high school graduates will occur in one of the overrepresented populations (Whites).

Indeed, the underrepresentation of the growing populations is particularly acute in four-year institutions. As indicated in Table 1, Black and Hispanic high school graduates are among the least likely to go directly to college after high school. Their postsecondary participation rates in Minnesota are 5 to 17 percentage points lower than those for Asians and Whites. Moreover, among those students who do go straight to college after high school, the share of college enrollments that are in four-year institutions, as opposed to two-year or vocational institutions, is lower for Blacks than for Asian and White students. Finally, when they do enroll in four-year institutions, both Black and Hispanic students have lower six-year completion rates than Asian and White students.

Table 1. Components of “Traditional Track” to the Baccalaureate in Minnesota, 2002, by Race

	Native American	Asian American	Black	Hispanic	White Non- Hispanic
Postsecondary participation rate, Fall after high school graduation ¹	40%	57%	44%	40%	49%
Four-yr Institution share of all postsecondary participation in Fall after high school graduation ²	50%	71%	55%	61%	59%
Baccalaureate completion rate within 6 years of matriculation in 4-yr institution ³	29%	49%	38%	45%	52%

Notes:

1. Minnesota high school graduates attending postsecondary institutions in Minnesota (HESO, 2003).

2. All Minnesota postsecondary institutions, Minnesota residents only (HESO, 2004).

3. All Minnesota four-year institutions, all student residencies (HESO, 2003).

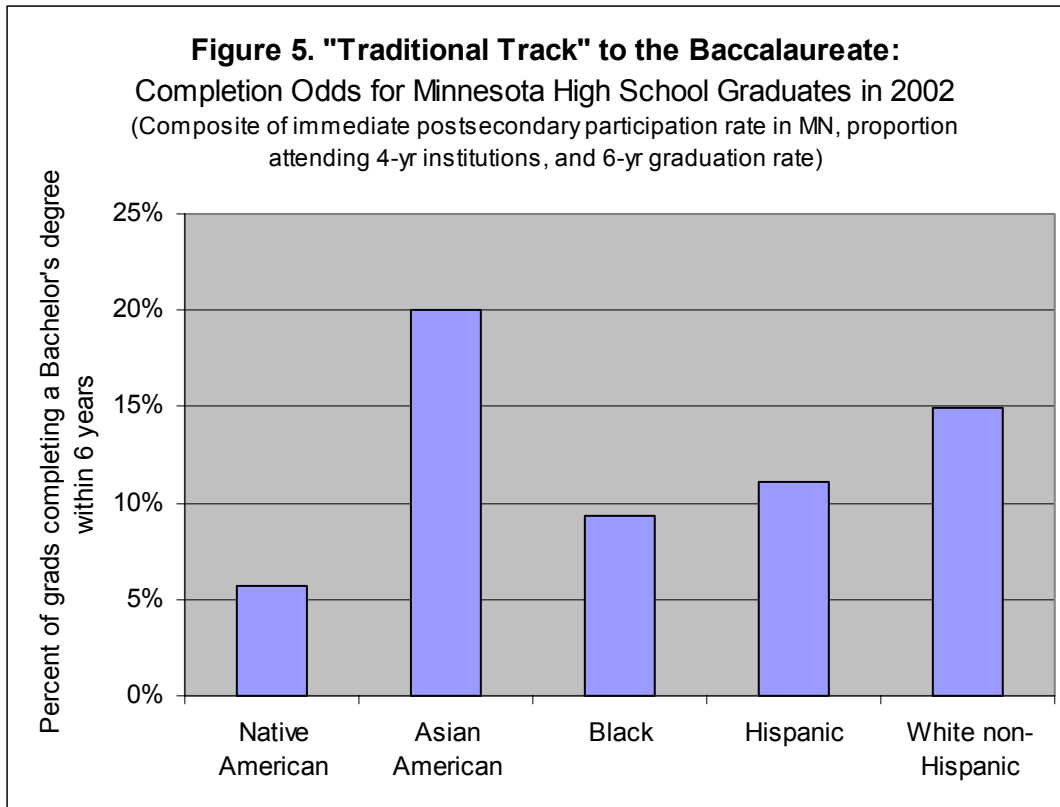
Figure 5 shows the combined effect of all of the rates listed in Table 1: the percentage of students completing the “traditional track” from high school graduation to baccalaureate completion in Minnesota within six years, by race. The striking differences between the composite rate for Asian American students (20.0%) and the rates for other populations of color (5.7%, 9.3% and 11.1% for Native American, Black and Hispanic students, respectively) highlight the importance of disaggregating each population group. Asians have been significantly overrepresented in four-year college completions, not only relative to other minority groups, but relative to White students (14.9%) as well.

We caution that this gives an incomplete picture of college behavior for Minnesota students, for a number of reasons. First, it does not account for students who go to college out of the state (estimated by HESO at around 14% of high school graduates in 2002, but unknown by racial or ethnic category), nor for students who wait a semester, a year, or more, after high school before enrolling in college. It also does not account for those who start college at a two-year institution and then transfer to a four-year institution. Finally, since this analysis can only count college students of known race/ethnicity and year of high school graduation, it systematically understates high school-to-college participation rates. This occurs because incomplete reporting of those data at the postsecondary level causes some students to appear not to have progressed when in fact they have.

For example, applying these ratios systematically to the high school class of 1998/99 would imply that only 14.8% of them would complete a bachelor’s degree within six years, or about 9,000 college degrees out of 60,700 high school diplomas. Yet, we know that Minnesota institutions actually produced 25,700 bachelor’s degrees in 2003. Clearly, many of those degrees were awarded to students such as non-residents and older, returning or transfer students, or students who stopped out for a semester or year after high school. Many of them also went to students who may have followed the traditional track but were lost from the continuation ratios because data on race or high school graduation year were unavailable.

Thus, these completion odds should not be taken as representative of the full range of college-going behaviors for any of these populations. Nonetheless, although we know that the completion odds undercount, we have no reason to think that they undercount differently for different racial or ethnic groups. Since the cautions apply equally to all, it is fair to use the ratios to compare college-going behavior among groups in the state. This is all we need to understand the nature of the challenges that the changing demographic patterns in Minnesota present to educators.

In particular, one can look at the impact that the projected changes in the numbers of high school graduates will have on four-year college enrollments and baccalaureate degree attainment in Minnesota by advancing the expected high school graduates for each racial and ethnic group through this “traditional track” to the bachelor’s, assuming that the rates of progression will remain constant. This is a simplification of a much more complex set of phenomena, but it is nonetheless a helpful way of thinking about how the demographic changes are likely to look as they continue to work their way up through the education system.



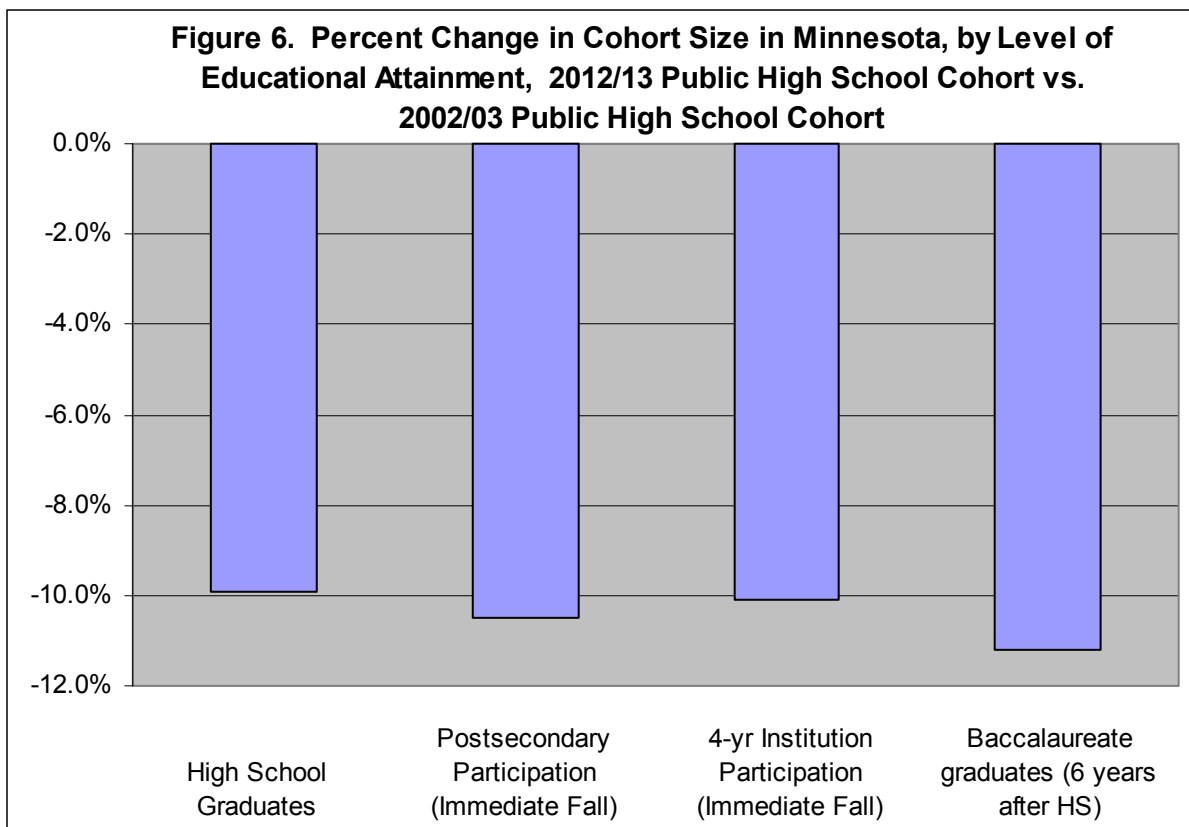
We carry out this exercise in Figure 6, which shows the degree to which the overall declining trend in the number of high school graduates over the next ten years will be amplified by the different participation and completion rates of the racial and ethnic groups within the high school cohort, as it moves through the postsecondary system.

We begin by working within the public high school projections for students of known race. There, the expected rate of decline in the high school class is 9.9%. This can be expected to create a slightly larger decline of 10.5% in general postsecondary enrollments the following Fall because the growing populations of black and Hispanic students progress to postsecondary enrollments at lower rates than the declining population of white students. If we consider only the share of those enrollments that can be expected in four-year institutions, the decline actually shrinks back a bit, so that the cohort size is expected to be 10.1% smaller at the end of the ten year projection period than it was at the beginning. This is due to the relatively high four-year share of postsecondary participation rates among Hispanic students (at 61.1%, slightly *higher* than the 58.5% for white students).

If we continue all the way out to bachelor's degree completions, however, the differences in completion rates for Black and Hispanic students expand the deficit again, so that expected degree production within six years of graduation for the 2012/13 high school cohort will be 11.2% lower than for the 2002/03 cohort. That is, the trend of declining college-age populations in the state will be amplified by a factor of 1.13 (the ratio of the 11.2% decline in bachelor's

degree graduates to the 9.9% decline in high school graduates) due the different growth trends and college participation and completion rates among the student racial and ethnic groups. *Thus, we project that the state will experience even larger declines in the numbers of college graduates, just a little bit further down the road from the declines in high school graduates projected by WICHE.*

To convert these percentage declines into absolute terms, we return to the overall projections of a 10.3% decline in the number of high school graduates in the state for public and private high schools and apply the amplification factor of 1.13. This results in a projected decline of 11.6% in bachelor's degrees, or a loss of 3,140 baccalaureates out of the total of 27,100 bachelor's degrees expected to be awarded in Minnesota in 2006/07.²

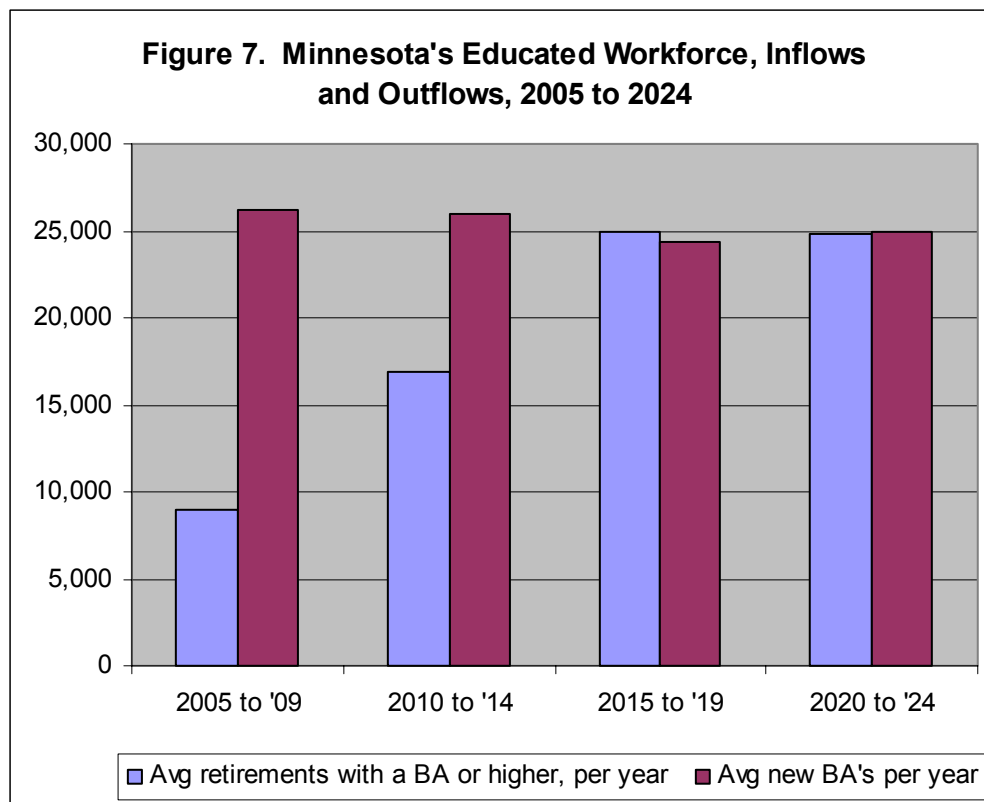


Projections of Baccalaureate Production and Minnesota's Workforce Needs

To put this loss of 3,100 bachelor's degrees per year into perspective, it is informative to consider the effect on the total number of educated workers in Minnesota. New bachelor's degrees awarded can be thought of as the net *inflow* to the educated workforce (disregarding immigration). For *outflows* from the workforce, we can project fairly accurately the number of expected retirements using data on population age, education level and workforce status from

the 2004 Current Population Survey of the US Census (disregarding other departures from the workforce, such as disability or death). As Minnesota's baby boomers begin to retire over the next twenty years, the rate at which current educated workers reach retirement age (65) will grow from about 9,000 per year to 25,000 per year. Figure 7 compares the expected retirement patterns for current participants in the Minnesota workforce holding a bachelor's degree or higher to the projected number of bachelor's degrees to be awarded by all institutions in the state.

Notice, first, that the five-year averages in Figure 7 smooth out the extremes of the annual degrees awarded projection. The years 2006/07 and 2016/17, discussed above, are relative high and low points. Notice also that the decline in degrees awarded is dwarfed by the growth in retirements. Retirements from the educated workforce will actually *exceed* the number of new degrees around the middle of the next decade. Also notable is that every one of those retirees is a Minnesota resident, while only about 72% of the BAs awarded in the state probably go to state residents (HESO's estimate of the percent of new entering students who were residents in 2003).



New college-educated workers are needed not only to replace retirees, however. They must also be on hand to enter the workforce for the economy to grow and add new jobs. The Minnesota Department of Employment & Economic Development (MNDEED) has recently

projected that the number of jobs in the state requiring at least a bachelor's degree education will increase by an average of about 10,500 per year between 2000 and 2010. That represents about 28% of all new job growth over the decade, even though jobs requiring at least four years of postsecondary education account for only 20% of current employment.

That projected job growth is obviously not as reliable as the projected declines in high school graduates. It is based on the continuation of recent trends in economic growth, disaggregated both by industry and by job category, which is a considerably less precise exercise than applying cohort survival ratios to birth cohorts. Given the slowdown in economic growth in the past few years, it is probably not unreasonable to shift the projection forward a few years, into the decade from 2005 to 2014, on the assumption that the economy will resume its anticipated growth after a short "breather." Doing so amounts to adding 10,500 on top of the "retirements" bars in Figure 7, making it strikingly apparent that the total demand for educated workers in Minnesota (retirements plus net new positions) will far outstrip the rate of bachelor's degree production within about six to ten years, and stay above it for at least fifteen years, creating a serious shortage of educated workers in the state.

Put differently, the state will move quite rapidly from a situation where BA cohorts replace retiring workers and satisfy the demands of economic growth to one where BA cohorts barely cover retirements with no room for growth whatsoever. This is true even assuming that every new bachelor's degree holder from a Minnesota institution remains in the state and goes directly into the workforce. (About two-thirds of graduates of MPCC institutions typically remain in the state after graduation.)

A National Concern

Of course, this workforce shortage is not unique to the college-educated portion of the workforce, nor is it unique to Minnesota. A recent report from the Federal Reserve Bank of Minneapolis noted that nationally,

between 2008 and 2030, according to the General Accounting Office, roughly 76 million baby boomers will leave the workforce, some of them retiring well before they reach 65. But only 48 million workers in Generation X will be available to replace them. Generation Y, the echo generation, is larger, but its numbers, when they join the workforce, still won't match those of the baby boom. [<http://minneapolisfed.org/pubs/fedgaz/04-03/retirement.cfm>]

This scenario is also not written in stone. Many factors may keep some baby boomers in the workforce beyond the traditional retirement age of 65, such as financial uncertainty, the failure of many people to save enough for retirement, and the possible inability of social security to keep up with their demands. It is unclear whether—or how—these factors may affect highly educated workers, who tend to have higher levels of financial security and higher expectations of leisure in their older years than other workers (factors encouraging retirement), but who also tend to be healthier and have less physically demanding jobs (factors enabling retention in the workforce). It is clear, however, that adding a few extra years onto the working lives of the baby boom generation will only forestall the problem illustrated in Figure 7, not solve it.

Immigration is another important variable that may help to shore up the younger end of the workforce. In the past, Minnesota has been successful at importing the educated workers it needs to meet the growth in jobs generated by its strong economy. Most have come from other states that will soon be facing the same demographic forces. Indeed, we have already seen

that in the five-state region overall, the projected decline in high school graduates over the next ten years is 11.7%, even higher than the 10.3% decline in Minnesota. We can safely project that our neighboring states will not have many college graduates to spare.

The Challenge to do Better

It makes sense that the state should take on the challenge of doing a better job of educating Generations X and Y. By improving high school preparation and increasing college participation and completion rates, Minnesota could stem the decline in college graduates.

In order to see just how much of a difference might be attainable through these means, we have projected the effects of achieving the following improvements over the next ten years:

1. Increase the overall high school graduation rate for 9th graders from 82% to 90%
2. Increase the overall (in-state) postsecondary participation rate for high school graduates from 49% to 65%
3. Increase the overall bachelor's degree completion rate from 50% to 62.5% of entering freshmen graduating within six years.

These are ambitious but not unattainable goals. Yet, even if each of them were to be reached gradually over the next ten years, the loss of educated entrants into the workforce driven by Minnesota's shrinking birth cohorts would slow considerably, but it would not reverse: The decline in the number of high school graduates would shrink from 10.3% to just 1.5% over the period 2002/3 to 2012/13. The change in the annual production of bachelor's degrees would shrink from a drop of 11.2% to a drop of just 2.5%, enough to keep the average number of bachelor's degrees produced in Minnesota per year at 1,700 to 2,600 *above* the number of retiring degree-holders throughout the decade from 2015 to 2024 (cf. Figure 7).

These results would be significant and represent dramatic improvement in Minnesota's educational pipeline; however, we still would fall short of the number of new graduates needed to keep up with expected jobs from growth in the economy.

In summary, Minnesota is clearly challenged to meet the demand for educated workers given the number of students currently born and currently projected to enter the state over the next ten years. We hope these projections will contribute to our understanding of the complexity of the demographic picture that Minnesota faces, which is the first step in translating challenges into opportunities.

Postscript: Projections of High School Graduates by Family Income Level

The WICHE publication also includes, for the first time in this series, an attempt to project numbers of high school graduates by family income level. We would expect such a projection to add yet another layer of richness to essentially the same phenomenon: overall levels of decline in high school graduates would mask the increase in numbers of graduates from lower-income families, who are historically less likely to participate in postsecondary education. The result would be even larger expected declines in baccalaureate completions. Based on the growing percentages of elementary school students who qualify for federal free or reduced price lunch programs, we would suspect that this is the case.

Unfortunately, there is simply no data on the family incomes of elementary or high school students. The WICHE projections have attempted to fill this gap by using US Census data on household incomes for all families with school-age children living within each school district, and linking those data to the known levels of student enrollments by district. In theory, the distribution of family income levels among students enrolled in a public school district should reflect the distribution of income levels among families living in the same district. The assumptions required to make such linkage, however, include (1) that family size is not correlated to income level, (2) that enrollment behavior in public versus non-public schools is not correlated to family income level, and (3) that grade level transitions (“cohort survival ratios”) within the public schools are not correlated to the family income level of the students. Each of these assumptions is somewhat counter-intuitive. We know from older census data, for example, that median incomes, when broken down by family size, show a significant negative correlation to the number of school-aged children in the household. It is also quite plausible to suppose that children from families with higher income levels would be more likely to transfer from public to private schools as they reach middle school and high school.

These issues make the WICHE projections of high school graduates by income level, although much anticipated, of little use. We do not find their estimates of the income levels of current high school graduates, nor their projections of the income levels of future high school graduates, whether at the national, regional or state level, to be credible.

¹ Note that the projection for the total number of graduates is not simply an aggregate of the individual race/ethnic projections, even within the public sector. Since the reporting of student racial and ethnic data is never 100%, WICHE chose to conduct separate calculations, using only the total enrollments data, for the overall public projections. Thus, although the aggregate of the separate projections by race in Minnesota amounts to a decline of 9.9% across all five categories, the overall decline of 10.3% in the total number of graduates, reported above, is more comprehensive. This figure includes both public and non-public high school students. (Graduates of non-public high schools represented 6.3% of the total number of graduates in Minnesota in 2002.)

² The application of the 1.13 acceleration factor to the overall decline in the number of high school graduates requires the assumption that the racial and ethnic mix of non-public high schools is not significantly different from that for public high schools. Recent surveys conducted by the Minnesota Independent School Forum suggest that this is not an unreasonable assumption.