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A Discussion of Retention and Completion

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About the Minnesota Office of Higher Education

The Minnesota Office of Higher Education is a cabinet-level state agency providing students with financial aid programs and information to help them gain access to postsecondary education. The agency also serves as the state's clearinghouse for data, research and analysis on postsecondary enrollment, financial aid, finance and trends.

The Minnesota State Grant Program is the largest financial aid program administered by the Office of Higher Education, awarding up to $180 million in need-based grants to Minnesota residents attending accredited institutions in Minnesota. The agency oversees tuition reciprocity programs, a student loan program, Minnesota's 529 College Savings Plan, licensing and early college awareness programs for youth.

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Taking Stock

The purpose of this report is to identify best practices that stakeholders in postsecondary education can put in place to improve retention and completion rates at postsecondary institutions across Minnesota. In doing so, this report will also identify existing barriers students face that potentially prevent them from completing their education. This report recommends that all stakeholders in postsecondary education must share responsibility in order for retention and completion rates to see improvement across the state.

At the heart of the social compact between states and the public is the belief that a postsecondary education offers students the opportunity for social and economic mobility. This social compact has always been student-centric, with the goal of providing the state's citizens with a pathway to a sustainable wage, improved quality of life and the ability to constructively participate in Minnesota's civic culture. Recognizing the transformational role higher education can play in its citizen's lives, in 1963 the Minnesota Legislature created the "35 mile rule," which expanded the number of public institutions in the state to ensure that every citizen would have access to a postsecondary institution within 35 miles of their home.[1] As a result of the rule, Minnesota created more community colleges per capita than any other state over the next twenty years.

In 1983, Minnesota created a new policy framework for allocating the state's need-based grant funds.[2] The policy framework, the Design for Shared Responsibility, specified each stakeholder's responsibility in financing a student's postsecondary education (the student, their family and state and federal taxpayers). A key tenant of the framework is the student's ability to choose any higher education institution within the state that best meets their needs and educational goals. Such policy reinforces a student-centered financial aid framework which is cited as an exemplar for other states.

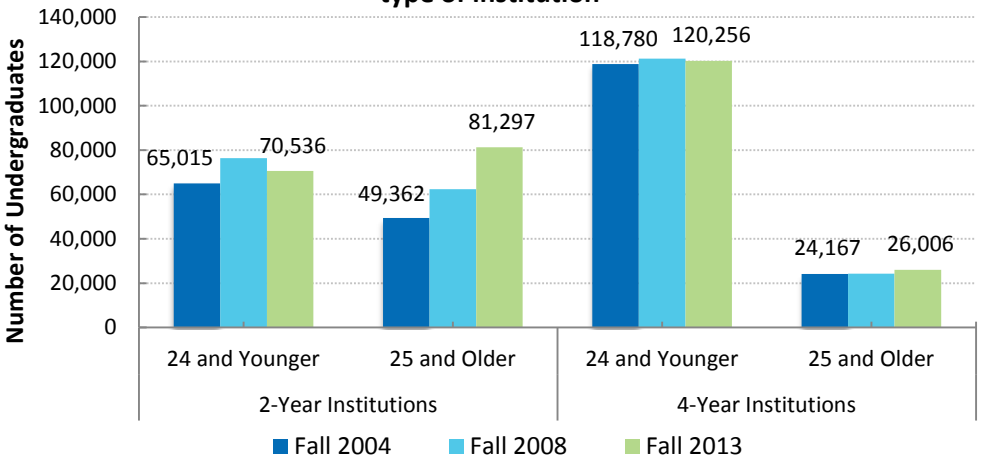
Minnesota also adopted, around 1983, a state appropriations funding policy of providing at least 67 percent of the combined tuition and fee and state appropriations revenue for both public systems of higher education.[3] The policy acknowledges both the state's and the students' role in funding postsecondary education. In fiscal year 2015, Minnesota fell short of its objective, funding only 43 percent of the cost. To fully fund the policy, Minnesota would need approximately an additional $694 million (or $1.4 billion over a biennium), a 57 percent increase, for fiscal year 2015.[4]

Recent research shows that when compared to states with similar characteristics, Minnesota funds its public postsecondary institutions at higher than expected levels. In their longitudinal study on factors affecting state appropriations over time, Weerts, Sanford and Reinert (2012) found that after accounting for state and institutional factors, Minnesota has historically funded its postsecondary institutions at

[1] Fine, K.K. (1993, January). A history of Minnesota higher education policy. A policy analysis. St. Paul, MN: *Minnesota House of Representatives*.
[2] Misukanis, M. (2008, October). *Overview of the prior model: Minnesota State Grant review*. *Minnesota Office of Higher Education.*
[3] Funding Policy, Minnesota Statutes, Section 135A.01, 2007.
[4] Fiscal year 2015 state appropriations were $1.22 billion ($600 million for the University of Minnesota [UMN] and $622 million for the Minnesota State Colleges and Universities [MnSCU]). According to MnSCU's and the UMN's FY15 operating budgets, tuition revenue for MnSCU ($794 million) and the UMN ($844 million) is estimated to be $1.64 billion. The combined tuition and fee and state appropriations revenue is $2.86 billion, of which 67 percent should be funded by the state ($1.9 billion) according to the policy.

higher than expected rates until the recession in the early 2000s.[5] While state appropriations have yet to return to their fiscal year 2008-2009 pre-recession highs, Weerts et al. found that variation in state funding over time is related to the state's ability to fund the higher education enterprise due to state economic conditions, rather than the result of conscious policy decisions.

Figure 1: Undergraduate enrollment in Minnesota by age and type of institution



2-year institutions include state colleges and private career schools. 4-year institutions include state universities, University of Minnesota campuses and private colleges.

Source: Minnesota Office of Higher Education

The cumulative effect of Minnesota's longstanding commitment to providing access to a postsecondary education for its citizenry is evident in the educational attainment rate of the state's adult population. In 2012, Minnesota led the nation in the proportion of its adult population (age 25-64) with at least some college[6] or above (70 percent).[7]

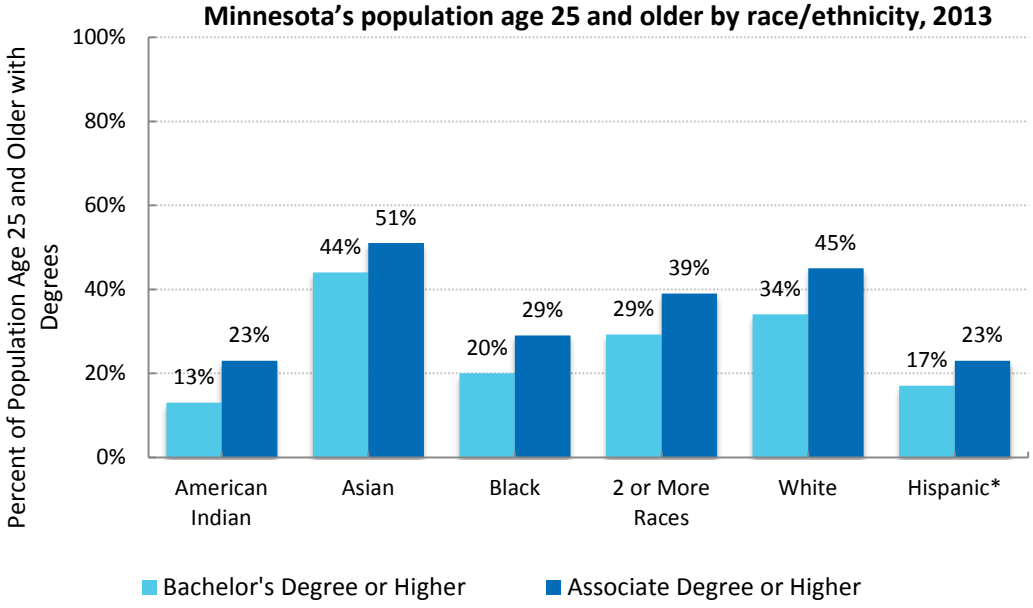
Minnesota, however, is in the midst of key demographics transitions. The Minnesota State Demographic Center (2014) currently projects Minnesota's minority population will grow from 14 percent to 25 percent by 2035. In addition, the proportion of the state's population age 65 and older will double as compared to the population under age 18 which will experience only moderate growth.[8] Within higher education, students of color and older students have grown and will continue to be a larger share of undergraduate enrollment in the state. Students of color enrollments have doubled from 13 percent of total students in 2003 to 24 percent in 2012. Enrollments of older students have increased 37 percent over the same time period as compared to eight percent growth for students age 24 and younger. This rapid growth rate may be abating with the improving economy, but a trend to lifelong learning seems evident, for both retraining and obtaining post-baccalaureate degrees.

[5] Weerts, D. J., Sanford, T., & Reinert, L. (2012). College funding in Context: Understanding the difference in higher education appropriations across the states. Dēmos.
[6] The American Community Survey's educational attainment categories include, "Some College or Above," which does not distinguish between individuals who obtained a postsecondary certificate or diploma and those did not obtain either credential. For a more nuanced discussion on postsecondary certificates in Minnesota, see Appendix A.
[7] U.S. Census Bureau, American Community Survey, 1-year estimates
[8] Minnesota State Demographic Center. (2014). Minnesota population projects. Retrieved September 29, 2014 from http://mn.gov/admin/demography/data-by-topic/population-data/our-projections/index.jsp

In a widely quoted estimate, the Georgetown Center for Education and the Workforce projects 74 percent of jobs in Minnesota will require education or training beyond high school by 2020.[9] To meet such projected workforce demands within changing demographic trends, Minnesota's higher education system must identify and implement effective strategies to increase postsecondary completion rates for underserved populations.

Significant disparities exist in educational attainment by race and ethnicity. As shown in Figure 2, only 29 percent of Black adults and 23 percent of Hispanic adults have obtained an associate degree or higher compared to 45 percent of White adults.[10] Additionally, younger Black and Hispanic adults (ages 25 to 34) are less likely to have obtained an associate degree than Black and Hispanic adults between the ages of 45 to 54, indicating the state may be losing ground in educational attainment for communities of color.[11] The disparity is present in grade school, as there are significant gaps between different races in high school graduation rates. The trend continues with initial college enrollment as fewer Black students enroll in four-year institutions (Figure 3) and when they do enroll they graduate at lower rates. Furthermore, Black, Hispanic and American Indian students are more likely to attend two-year colleges over four-year institutions than Whites or Asians, indicating that there is racial stratification as to which groups opt for two-year or four-year institutions.

Figure 2: Educational attainment (associate degree or above) of Minnesota's population age 25 and older by race/ethnicity, 2013



*Hispanics may be of any race. Data for Hispanics may overlap with data for other race groups.

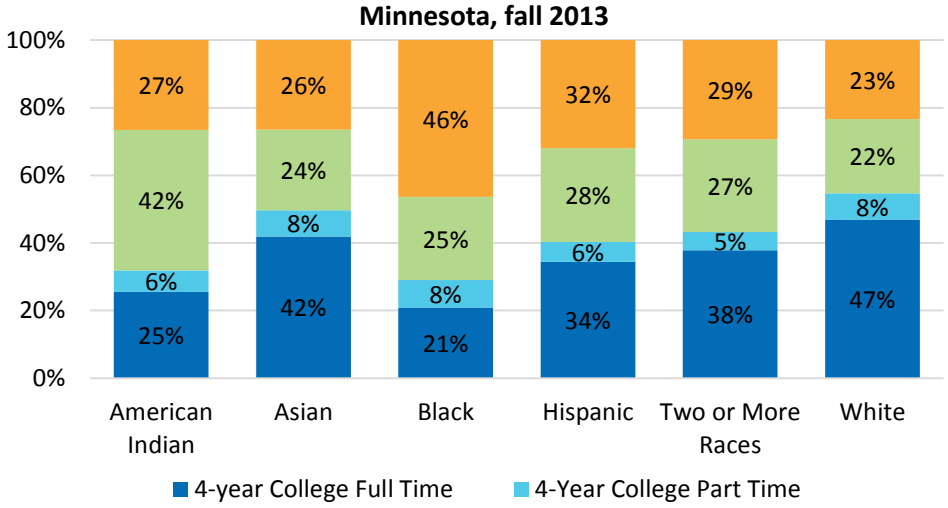
Source: U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates

[9] Carnevale, A. P., Smith, N., & Strohl, J. (2013). Recovery: Job growth and education requirements through 2020.

[10] The Hispanic origin category represents individuals from all race categories. The Hispanic category reported should not be compared to the Caucasian population. Understanding this definitional difference further highlights the disparities that exist across race/ethnicity groups.

[11] Prescott, B. T., & Bransberger, P. (2012). Knocking at the college door: Projections of high school graduates. *Western Interstate Commission for Higher Education*.

Figure 3: Undergraduate enrollment by race/ethnicity in Minnesota, fall 2013



Source: Minnesota Office of Higher Education

Postsecondary Access

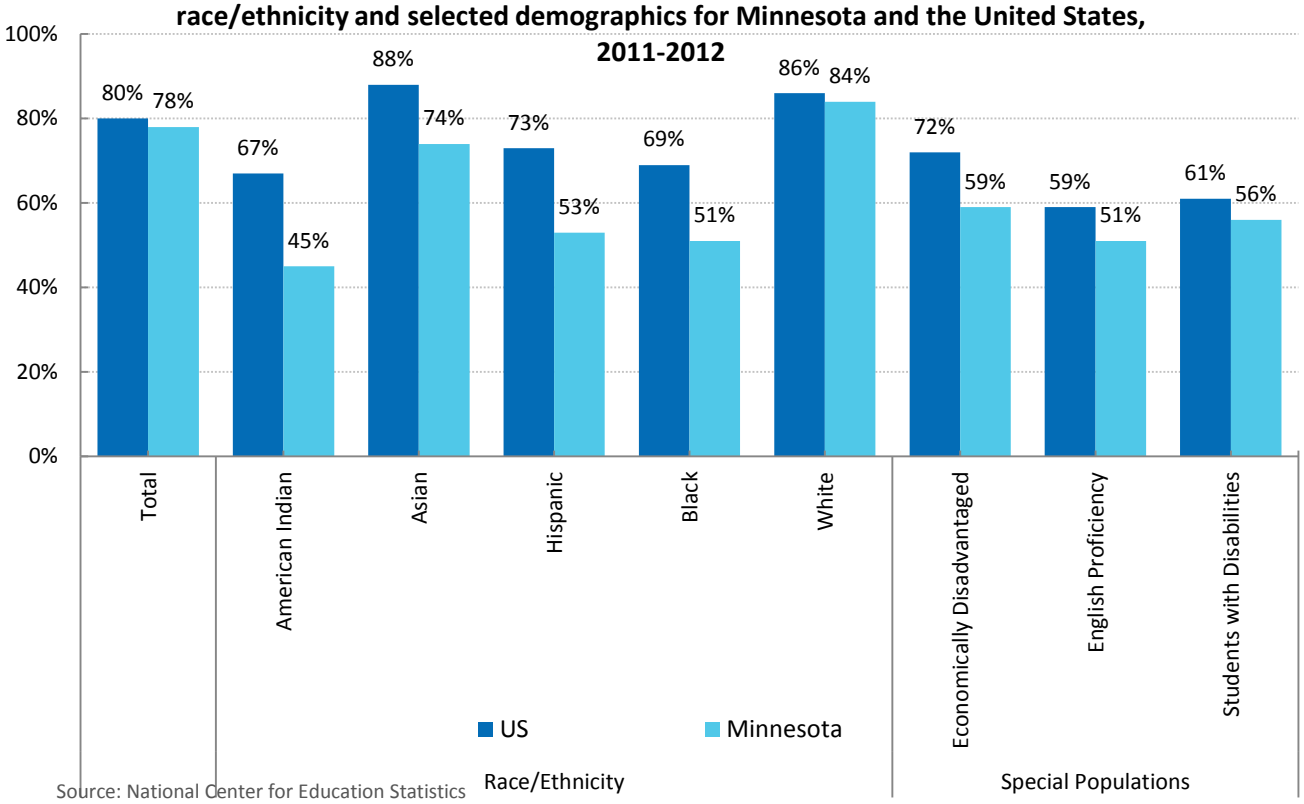
Gaps in postsecondary success start before college with high school graduation and subsequent enrollment in college. While Minnesota's high college participation rate is encouraging, not all populations are participating equally.

High School Graduation

Figure 4 presents the public four-year high school graduation rates by race/ethnicity for both Minnesota and the nation in 2011-2012 (the most recent year of available data). With the exception of White students (84 percent for both Minnesota and the nation), Minnesota's public high school graduation rates lag behind the nation and within Minnesota across every race/ethnicity category and among economically disadvantaged populations. For example, only 49 percent of Minnesota's Black students graduate from public high schools within four years compared to 67 percent nationally.[12] Figure 5 shows public four-year high school graduation rates from 2009-2013 by race. The graduation rate of White students has remained stable, and there have been slight increases in graduation rates for students of color.

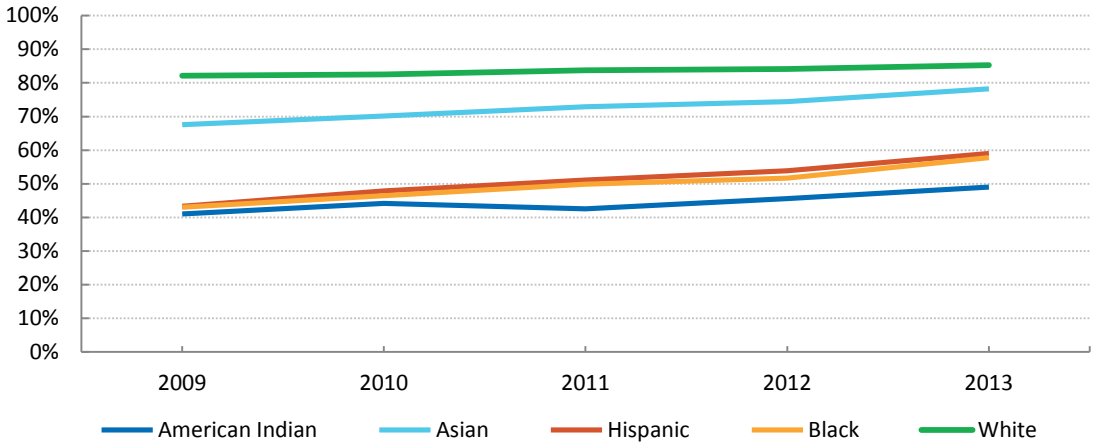
[12] Stetser, M., and Stillwell, R. (2014). Public High School Four-Year On-Time Graduation Rates and Event Dropout Rates: School Years 2010–11 and 2011–12. First Look (NCES 2014-391). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved September 29, 2014 from http://nces.ed.gov/pubsearch.

Figure 4: Public 4-year high school graduation rates (adjusted cohort) by race/ethnicity and selected demographics for Minnesota and the United States, 2011-2012



Source: National Center for Education Statistics

Figure 5: Public 4-year high school graduation rates (adjusted cohort) by race/ethnicity and selected demographics for Minnesota, 2009-2013

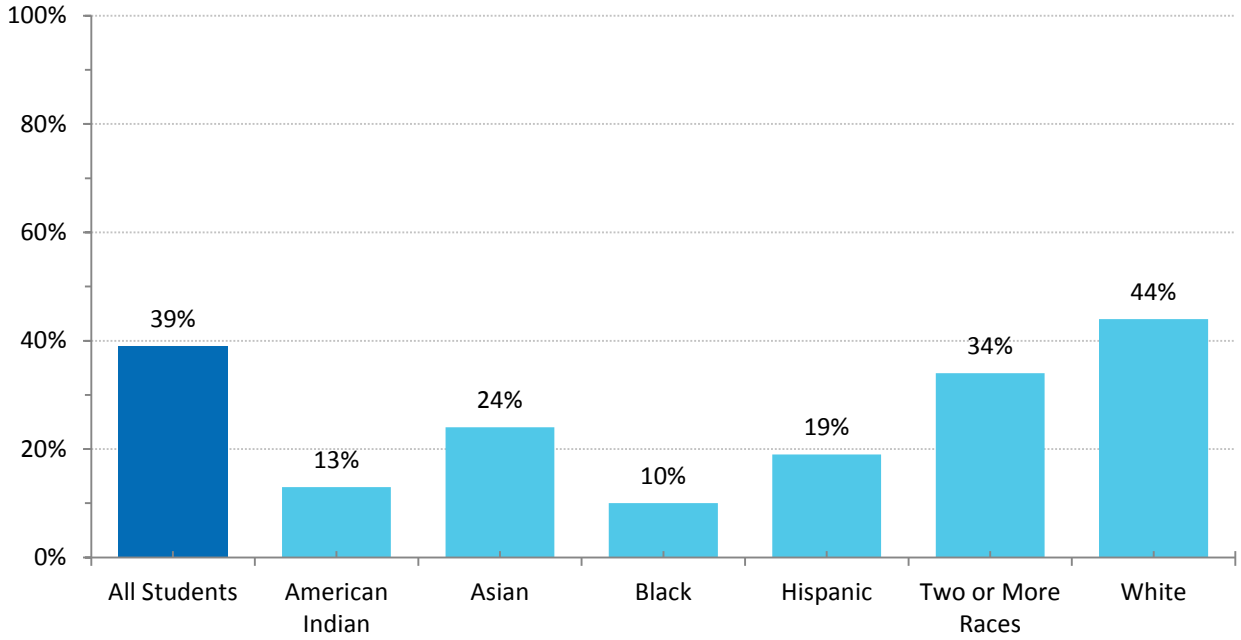


Source: Minnesota Department of Education

College Readiness

There are also significant differences in academic preparation. Figure 6 shows the percentage of Minnesota ACT test-takers who obtained a college-ready score in all four subject areas (English, math, science and reading) by race/ethnicity in 2013.[13] ACT defines college-ready as having a 75 percent chance of earning a "C" or better in related college-level courses. Ten percent of Black, 19 percent of Hispanic and 44 percent of White students have a 75 percent chance of earning a "C" (the minimum value for maintaining satisfactory academic progress) in all four of the respective college-level courses. Students who are not prepared academically are more likely to enroll in developmental coursework, which is associated with a lower probability of completion.[14]

Figure 6: College-readiness* of Minnesota ACT test-takers, 2014



*Meeting college-ready benchmarks in all four subjects: English, Math, Reading and Science.

Source: ACT

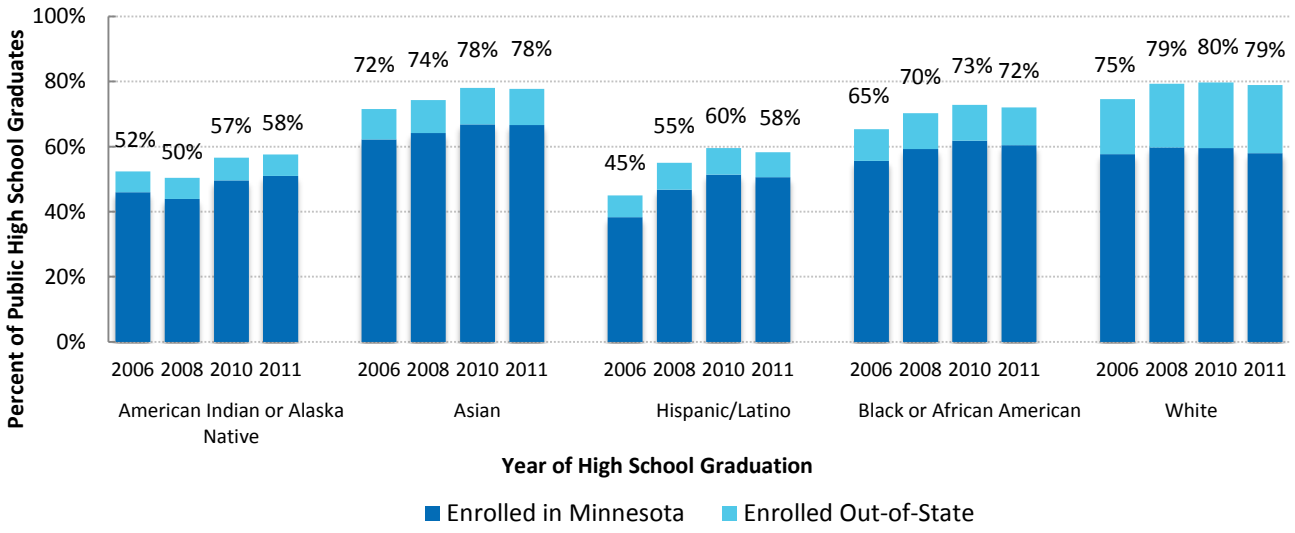
Students of color enrolled in developmental education at higher rates than White students.[15] While 28 percent of 2011 public high school graduates took developmental courses statewide, Minnesota's public high school class that year had the highest percentage of Black students (55 percent) taking college developmental education. The Asian, American Indian and Hispanic class of 2011 graduates enrolled in developmental courses at rates between 38 and 45 percent as compared to 24 percent for White students. This mirrors national trends, especially for Black or African American public high school graduates.[16]

[13] The ACT. (2014). ACT profile report – Minnesota: Graduating class 2014. Retrieved September 14, 2014 from http://www.act.org/newsroom/data/2014/pdf/profile/Minnesota.pdf.
[14] Adelman, C. (1999). *Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment.* Washington, DC: US Department of Education Office of Educational Research and Improvement.
[15] Minnesota Office of Higher Education. (2014). *Getting Prepared 2014*.
[16] National Center for Education Statistics. (2013). "First-year undergraduate remedial course-taking: 1999-2000, 2003-04, 2007-08". *Statistics in Brief*. January 2013. NCES 2013-013.

College Participation

As shown in Figure 7, students of color enrolled in college at lower rates than their White peers, especially for Hispanic and American Indian graduates. In 2011, the enrollment gap was 21 percentage points between Asian and White graduates (79 percent) enrolling in college within the first two years as compared to Hispanic and American Indian graduates (58 percent). In comparison, 72 percent of Black or African American graduates from the class of 2011 enrolled in college within two years. This trend is consistent across years.

Figure 7. College enrollment within two years of high school graduation by race/ethnicity



Source: Minnesota Office of Higher Education

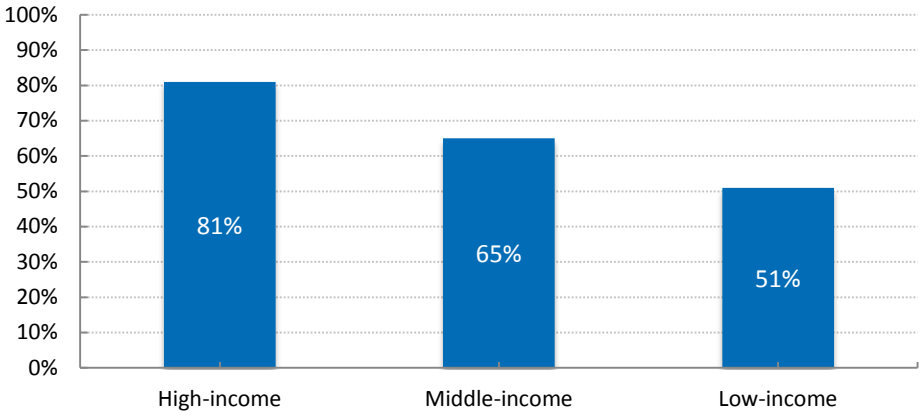
In addition to racial/ethnic disparities, disparities in access across family income levels exist. Graduates enrolled in free lunch enrolled in college at the lowest rates (63 percent) as compared to reduced price lunch status students (72 percent) and non-free and reduced price lunch graduates (81 percent). All three economic groups have shown growth in college enrollments over time, but the gaps are not closing. Students who were not enrolled in free and reduced price lunch also enrolled in college outside of Minnesota at higher rates than lower-income students. This indicates that students from low-income households are more likely to attend an institution based on affordability and geographic location, rather than what is truly the best fit for them.

Furthermore, the students most at-risk of not completing postsecondary education are most likely to attend postsecondary institutions that have less funding and lack the resources to fully assist them. A study by Georgetown University found that since 1995, more than 80 percent of new white students enrolled at the top 468 colleges in the country, while more than 70 percent of new black and Hispanic students enrolled at the country's open-enrollment 2- and 4-year institutions.[17] As a result, many students who attend these institutions end up leaving before graduating.[18]

[17] Carnevale, A, and J. Strohl. (2013). "Separate and Unequal: How Higher Education Reinforces the Intergenerational Reproduction of White Racial Privilege." Georgetown University Center on Education and the Workforce.
[18] Bowen, W., M. Chingos, and M. McPherson. (2011). *Crossing the Finish Line: Completing College at America's Public Universities*. Princeton University Press.

Nationally, 81 percent of recent high school completers from high-income families participated in college in 2011-2012 compared to 51 percent for students from low-income families (a 30 percentage point gap) and 65 percent for students from middle-income families (Figure 8).[19] The 30 percentage point gap in postsecondary participation between low-income and high-income has remained stable since 1975, while the gap between students from middle-income and high-income families has slightly declined over the same period (from 20.2 percentage points in 1975 to 16.1 percentage points in 2012).

Figure 8: College participation rate of recent high school graduates in the United States, by family income type, 2011-2012



Source: National Center for Education Statistics

Postsecondary Retention

Understanding when students enroll and exit the system without a credential is crucial for developing targeted policies and interventions to support them in achieving certificate or degree requirements. Table 1 presents Minnesota's first-to-second year retention rates by sector. It should be kept in mind that these rates do not capture those students who transferred to another institution, or graduated that year.[20] [21] Retention rates at four-year institutions (81 percent) ranked 14th nationally, slightly higher than both the national average and retention rates at four-year institutions in peer states.[22] Over half of the attrition at four-year institutions occurs in students' first year in college. At two-year institutions, first-to-second year retention rates (57 percent) rank in the bottom half nationally (34th), four percentage points lower than the national average. The first- to second-year retention rates do not capture those students who may have transferred to another college or university, or graduated.

[19] Snyder, T. D., & Dillow, S. A. (2013). Digest of Education Statistics, 2012. NCES 2014-015. *National Center for Education Statistics*.
[20] By the second fall term after entry, 10 percent of Minnesota two-year state college students have transferred to another institution, while another 9 percent have graduated.
[21] The Minnesota Transfer Curriculum (MnTC) gives students at state colleges incentives to transfer credit before graduation as well.
[22] The retention rates presented do not account for students that transfer to another intuition, thereby artificially inflating the attrition rate. Two-year institutions are likely to be more affected by this omission.

Table 1: Undergraduate first-time, full-time, first-to-second year retention rates at the same instiution, fall 2013

4-Year Institutions		2-Year Institutions	
Top States		**Top States**	
California	87%	Alaska	89%
Massachusetts	86%	California	71%
Rhode Island	85%	South Dakota	69%
Minnesota (14th)	**81%**	**Minnesota (34th)**	**57%**
Peer States	80%	Peer States	58%
Nation	80%	Nation	61%
Source: U.S. Department of Education, IPEDS Enrollment Survey			

For many adults, the path to higher education is nonlinear and is often characterized by several entry and exit points over longer periods of time. Historically, Minnesota led the nation in developing strategies to serve adult students, including the founding of Metropolitan State University, one of the first public institutions designed to meet the needs of older working adults.

Nonlinear education pathways lead many students to return to college to complete their program or to enhance existing skills later in life. Even though students age 24 and younger represent the largest share of total undergraduate enrollment, over the last decade, the enrollment of undergraduate adult students (age 25 and older) in Minnesota increased 37 percent, compared to eight percent for students age 24 and younger.[23] At Minnesota two-year institutions, adult students now represent the largest share of enrollment. These trends could intensify as the growth rate of Minnesota's population age 19 and younger slows in the coming decades.

Postsecondary Completion

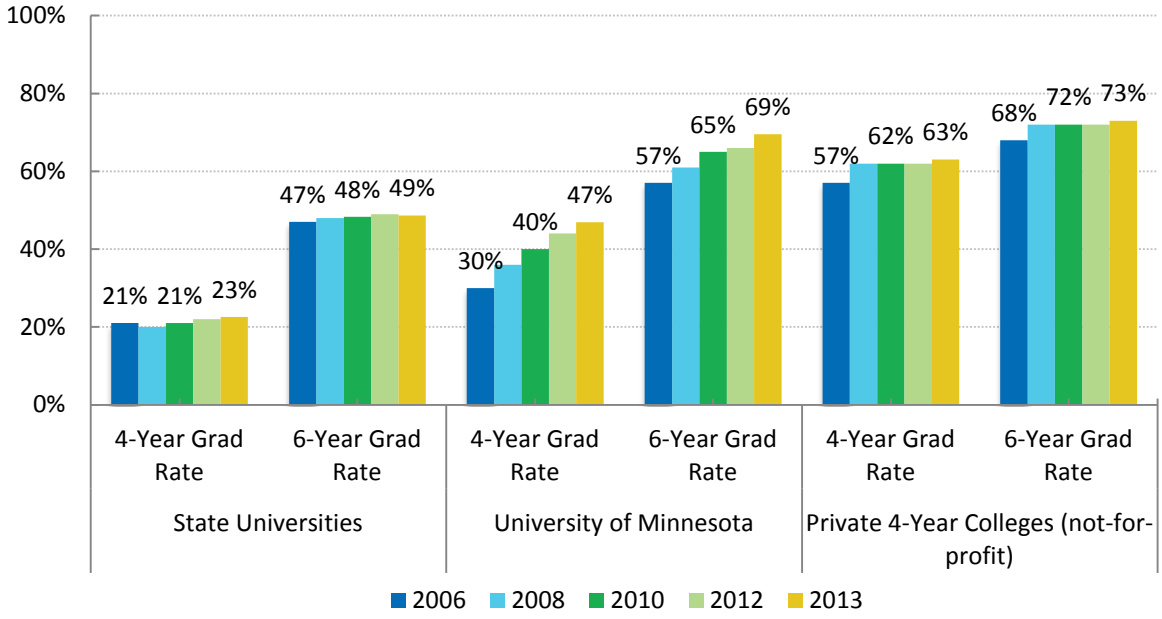
States are beginning to gather more comprehensive data about the completion rates of student populations. Graduation rates reported to the U.S. Department of Education are based on a cohort of first-time, full-time students which represents a small share of enrollment at public two-year institutions. Furthermore, graduation rates reported by the U.S. Department of Education exclude students who enrolled into an institution as a transfer student. This limited cohort also hinders policymakers from reliably creating policy for all students using only data on first-time, full-time populations. Students enrolling part-time are less likely to persist, so policies focused on one-size fits all strategies are short sighted.[24] Additionally, due to Minnesota's public two-year institution's open enrollment policy, they are likely to have students with lower levels of academic preparation than other sectors. This is the distinguishing characteristic of Minnesota's two-year institutions. This is also the situation the less-selective four-year state universities face when compared to four-year institutions in other sectors. The MnSCU institutions' main purpose is to serve all Minnesotans, including those who did not complete high school earlier, enroll in college immediately post-high school, or who are low- and middle-income.

[23] Minnesota Office of Higher Education. (2014). *Minnesota Measures: 2014 Report on Higher Education Performance*. Minnesota Office of Higher Education.

[24] Adelman, C. (2006). The Toolbox Revisited: Paths to Degree Completion From High School Through College. *US Department of Education*.

Figures 9 and 10 compare graduation rates in 2006 and 2012 across Minnesota's institutional sectors.[25] Figure 9 shows graduation rates at four-year institutions, while Figure 10 shows graduation rates at two-year institutions. Across all sectors, graduation rates have increased over the seven-year period, with the exception of state two-year colleges, however, the decline in the state two-year college graduation rates was likely affected by the increase in enrollment of displaced workers that occurred during the 2007 recession. Given these difficulties of understanding student outcomes, institutions and policymakers need to better understand why individual students are enrolling to better serve them in reaching their goal of completion. As such, it is important that data be improved on what students' intents are when enrolling at a two-year institution, whether it is to earn a certificate, associate degree or take a couple of courses. One way that data could be provided is through a survey new enrollees at two-year institutions complete, asking what their goals are at the institution (associate, certificate, transfer, continuing education, etc.).

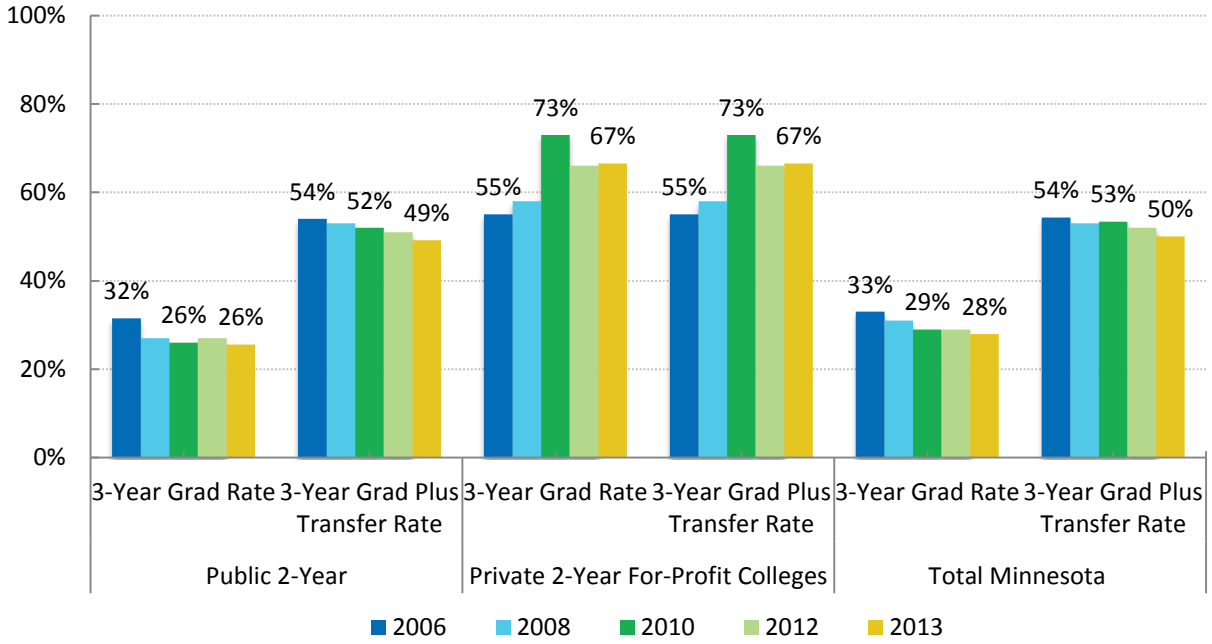
Figure 9: Graduation rates for first-time, full-time undergraduates at Minnesota four-year institutions, 2006 to 2013



Source: U.S. Department of Education, IPEDS Graduation Rate Survey

[25] Minnesota public institution's graduation rates are presented in Appendix C.

Figure 10: Graduation rates for first-time, full-time undergraduates at Minnesota two-year institutions, 2006 to 2013



Private 2-year for-profit colleges include only eight institutions with 1,048 students in cohort; compared to 16,072 students in the public 2-year cohort. Private 2-year for-profit colleges do not report transfer-out data.

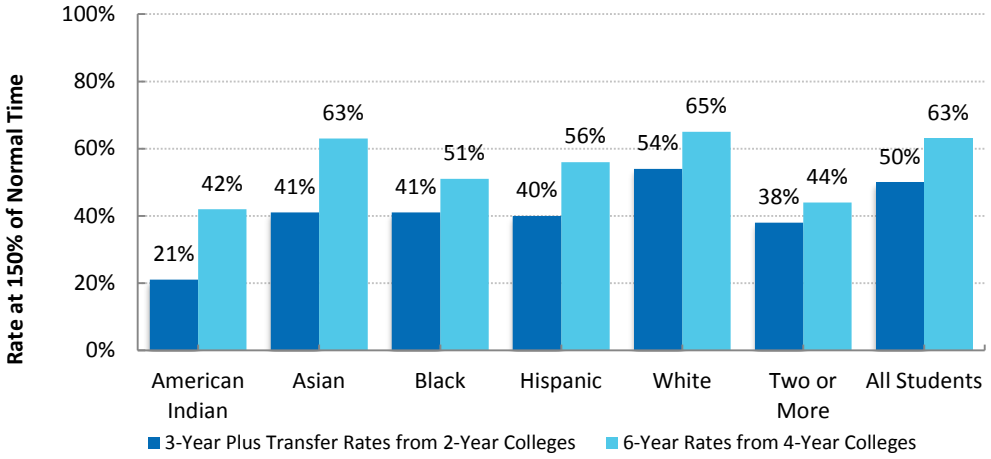
Source: U.S. Department of Education, IPEDS Graduation Rate Survey

Most of the gains in completion across the sectors have been modest over time, with the University of Minnesota and the for-profit two-year colleges experiencing the most significant gains. The University of Minnesota has implemented several policies since 2001 that likely influenced student outcomes, including requiring full-time enrollment, first-year experience programs and increasing the selectivity of their first-year class.

While caution should be exercised when interpreting this data, given external factors between 2006 and 2012, it is clear that many students who enroll in a postsecondary institution in Minnesota leave without obtaining a certificate or degree; and with changing demographic trends, it seems prudent to minimize the number of students who do not complete.

Graduation rates also vary within institutional sectors by race/ethnicity as shown in Figure 11. For example, 56 percent of Hispanic students graduate at four-year institutions compared to 40 percent at two-year institutions, while Black students' graduation rates are low at both institution types. With the exception of Asian students enrolled at four-year institutions, all race/ethnicity populations are less likely to obtain their degree than their White peers at both two-year and four-year institutions.

Figure 11: Graduation rates of first-time, full-time students by race/ethnicity, 2013



First-time, full-time undergraduates entering college in 2007 at Minnesota 4-year institutions and 2010 at Minnesota 2-year institutions and graduating from the same institution, or transfering to another institution (2-year colleges only) by 2013.

Source: U.S. Department of Education, IPEDS Graduation Rate Survey

Given the gaps in graduation rates between students of color and White students that persists across sectors and the cumulative effect of a larger share of students of color enrolling at two-year institutions - where they are less likely to obtain a postsecondary credential - **narrowing the educational attainment gap is a critical economic and social challenge facing the state as the population becomes increasingly diverse**.

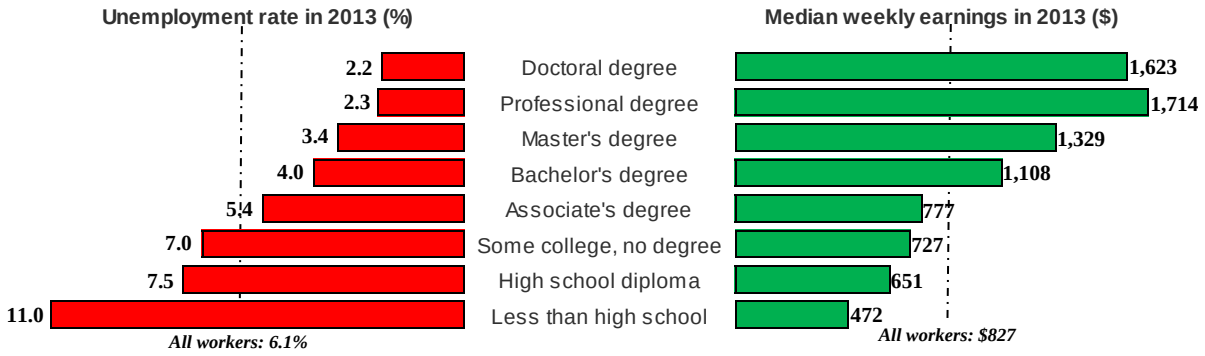
Economic Consequences of Non-completion

The postsecondary dropout rate in the United States is the highest in the industrialized world.[26] While ensuring equitable access to postsecondary education for all citizens remains a priority, providing access to a postsecondary education without facilitating completion is neither affordable nor efficient for students, institutions, or taxpayers of Minnesota. For students, non-completion is associated with a greater likelihood of being unemployed or underemployed and defaulting on student loans.[27] Non-completers at community colleges are three times more likely to default on their student loans than graduates.[28] For example, it is not uncommon for general education courses, which are often taken in the first two years of college, to subsidize upper division courses' smaller class sizes. During times of increased demand, these financial pressures may be partially mitigated; however, in periods of declining enrollment, institutions have less tuition revenue to subsidize low enrollment upper division courses. For states, non-completion results in reduced tax capacity and likely exacerbates historical social inequities and income inequality.

[26] Symonds, W. C., Schwartz, R. & Ferguson, R.F. (2011). Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st century. Cambridge, MA: Pathways to Prosperity Project, Harvard University Graduate School of Education.
[27] Gladieux, L., & Perna, L. (2005). Borrowers Who Drop Out: A Neglected Aspect of the College Student Loan Trend. National Center Report# 05-2. *National Center for Public Policy and Higher Education.*
[28] Association of Community College Trustees (ACCT) & The Institute for College Access & Success (TICAS). Protecting Colleges and Students: Community College Strategies to Prevent Default. July 2014.

According to estimates by the American Institutes of Research (AIR), between 2003 and 2008, the state of Minnesota spent $110.6 million on first-year dropouts, including $19.4 million in State Grants. [29] [30] AIR also found that Minnesota lost over $188 million in tax revenue from the 2002 cohort of first-time first-year students pursuing a bachelor's degree. The estimates, however, fail to account for non-completers who were seeking an associate degree, certificate or diploma and are limited to one cohort of first-time freshmen, thereby dramatically underestimating the cost of non-completion to the state.

Figure 12: Earnings and unemployment rates by educational attainment



Source: Current Population Survey, U.S. Department of Labor, as cited in Bureau of Labor Statistics, 2014
Notes: Data are for persons age 25 and over.Earnings are for full--time wage and salary workers.

Maximizing the Returns to Education

The economic and social returns to a postsecondary education are well documented for both individuals and the state.[31] For individuals, obtaining higher levels of education is associated with increased wages and lower probability of unemployment (Figure 12). Specifically, individuals who obtain a bachelor's degree enjoy a 75 percent wage premium compared to high school graduates, while individuals who earn an associate degree experience a 20 percent wage premium.[32] After accounting for both the direct (tuition, fees and books) and indirect (forgone wages) costs of obtaining a degree, both associate degree and bachelor's degree recipients realize a 13 to 15 percent return on their investment, which is twice the rate of return of the stock market since 1950 (7 percent).[33] Graduates who earned bachelor's degree in 2013 will recoup the costs of their investment in just ten years, less than half the time (23 years) it took a student in 1980 (Lambert, 2014).[34] These trends have occurred despite students and their families shouldering a greater proportion of postsecondary costs.[35]

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[29] Their state grant estimates are not based on student-level records, but based on the average expenditure per student and retention rates. The Office of Higher Education is currently working to determine the actual costs to the State. Schneider also estimates that an additional $18.8 million in Pell grants were spent on first-year dropouts.

[30] Schneider, M. (2010). Finishing the First Lap: The Cost of First Year Student Attrition in America's Four Year Colleges and Universities. *American Institutes for Research*.

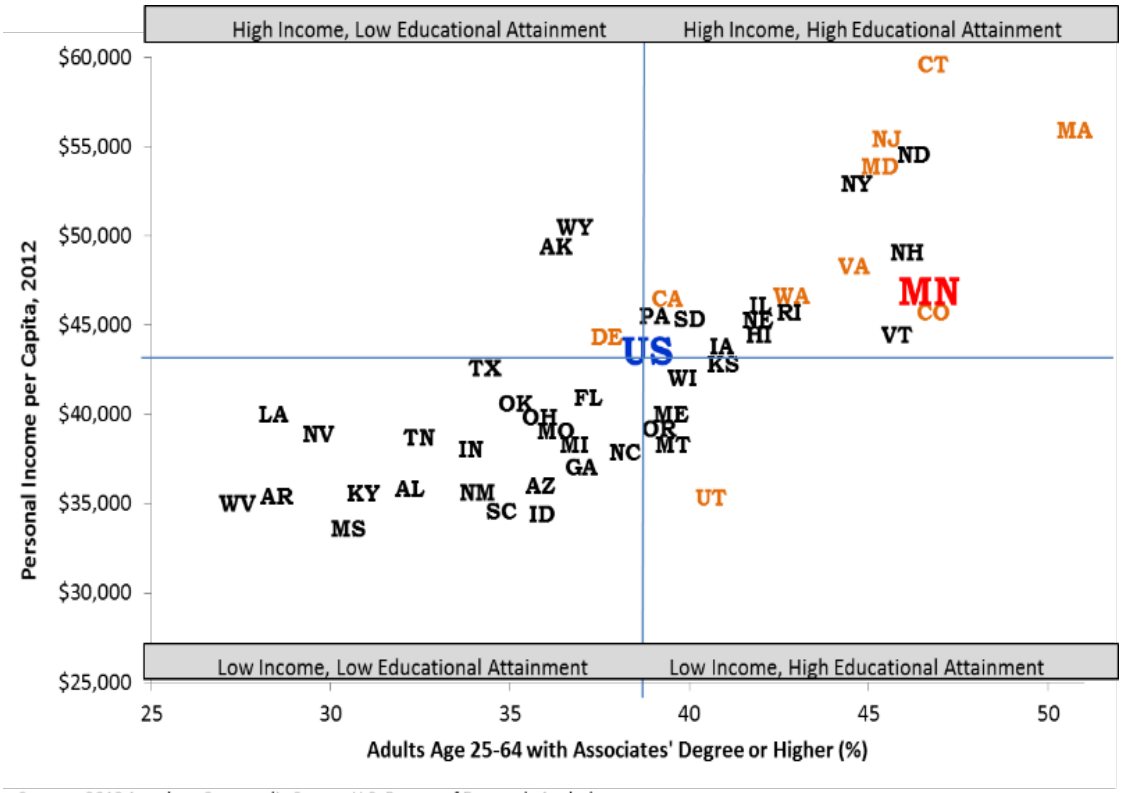
[31] Oreopoulos, P., & Petronijevic, U. (2013). Making college worth it: A review of the returns to higher education. *The Future of Children*, *23*(1), 41-65.
Baum, S., Ma, J., & Payea, K. (2013). Education pays 2013. *The College Board*.

[32] Abel, J. R., & Deitz, R. (2014). Do the benefits of college still outweigh the costs? *Current Issues in Economics and Finance*, *20*(3).

[33] These findings are limited to college graduates. The ROI for students that did not complete their degree was not examined.

[34] Lambert, L. (2014, September 5). Is a degree still worth it? Yes, researchers say, and the payoff is getting better. *The Chronicle of Higher Education*. Retrieved from: http://chronicle.com/blogs/data/2014/09/05/is-a-degree-still-worth-it-yes-researchers-say-and-the-payoff-is-getting-better/#disqus_thread78-9ui

Figure 13: Educational attainment and personal income per capita



Sources: 2012 American Community Survey, U.S. Bureau of Economic Analysis

For states, there is a strong positive correlation between educational attainment and per capita income (Figure 13). Higher per capita income is an indicator of a higher standard of living. The states highlighted in orange in Figure 11 were ranked in the top ten of the 2014 New Economy Index.[36] The New Economy Index measures the extent to which a state's economy is knowledge-based, innovative and global (Minnesota ranked 13th in 2014). The signature characteristic of a knowledge-based economy is its increased reliance on intellectual capabilities, rather than on physical inputs or natural resources.[37]

In addition to the direct economic benefits for individuals who obtain their degree, Moretti (2004) found that marginal increases in the proportion of the workforce population with a college degree is associated with increased wages for all educational attainment levels, with lower educational attainment levels receiving lower benefits.[38]

The wages associated with bachelor's and associate degrees have stagnated since the mid-1990s (Abel & Deitz, 2014). As a result, the primary driver behind the increasing ROI is the declining wages of high school graduates, which has reduced the opportunity costs of pursuing a postsecondary credential.

[35] United States Government Accountability Office. (2014). "Report to the Chairman, Committee on Health, Education, Labor, and Pensions, United States Senate: State Funding Trends and Policies on Affordability."

[36] Atkinson, R. D., & Andes, S. M. (2014). The 2014 state new economy index. Retrieved from http://www2.itif.org/2014-state-new-economy-index.pdf.

[37] Powell, W. W., & Snellman, K. (2004). The knowledge economy. *Annual review of sociology*, 199-220.

[38] Moretti, E. (2004). Estimating the social return to higher education: evidence from longitudinal and repeated cross-sectional data. *Journal of econometrics*,*121*(1), 175-212.

In an era of increasing wage inequality, earning a postsecondary credential continues to offer students a pathway for obtaining a sustainable wage and joining the middle class. A child born in the bottom income quintile is ten times more likely to remain in their income quintile as an adult than a child born into the top income quintile. If an individual earned a postsecondary credential; however, 86 percent moved out of the lowest quintile and over 60 percent reached the middle income.[39]

A state's median income level, which is positively correlated to educational attainment, is negatively associated with income inequality. Stated simply, states with higher median incomes tend to have lower income inequality.

Rajaram (2010) examined the relationship between income inequality and economic growth and found that there is a negative cyclical relationship.[40] Specifically, Rajaram found that, all else being equal, income equality fosters economic growth, which mitigates future inequality.

Historically, Minnesota compared favorably to other states on measures of income inequality.[41] Minnesota's relative position, however, declined over the last decade from the ninth lowest income inequality to the 13th lowest.[42]

In addition to the economic benefits associated with postsecondary education, there are numerous societal spillover effects including: improved employee-employer job match, lower crime rates, greater and more informed civic participation, improved health outcomes, increased life expectancy and intergenerational degree attainment effects.[43] It is important to note however that there is no evidence to suggest that simply producing more graduates is an effective strategy for fostering economic development.[44] Rather, Hill, Hoffman and Rex suggest that a portfolio approach may have a more significant impact on local economic development. They suggest an approach that focuses on quality workforce development and public infrastructure, emphasizes quality of life, develops a business climate conducive to attracting quality employment opportunities and integrates higher education.[45] Students thus should have access to more timely information so they can make timely decisions about which programs of study they decide to pursue. Such timely information is provided in the Statewide Longitudinal Educational Data System's (SLEDS) employment outcomes tool for postsecondary graduates. Given the economic and social benefits associated with obtaining a postsecondary credential for both students and the state, while meeting future workforce demands in a period of changing demographics, Minnesota's challenge moving forward is to successfully integrate and support underserved populations to certificate or degree completion.

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[39] Pew Charitable Trusts. "Moving on up: Why do some Americans leave the bottom of the economic ladder, but not others?" 2013.

[40] Rajaram, R. (2010). Poverty, Income Inequality and Economic Growth in US Counties: A Spatial Analysis. (Unpublished doctoral dissertation). University of Georgia, Athens.

[41] States were compared using the Gini coefficient. The Gini coefficient has a range from zero to one, with zero representing perfect inequality and one representing perfect equality (two theoretical positions).

[42] Coggins, J., Legg, T., & Smith D. (2013, August). Widening economic inequality in Minnesota: causes, effects, and a proposal for estimating its impact in policymaking. *Growth & Justice.* Retrieved from http://growthandjustice.org/publication/EconomicInequality.pdf

[43] Wolfe, B. L., & Haveman, R. H. (2002, June). Social and nonmarket benefits from education in an advanced economy. In *Conference Series-Federal Reserve Bank of Boston* (Vol. 47, pp. 97-131). Federal Reserve Bank of Boston; 1998.

[44] Hill, K., Hoffman, D., & Rex, T. R. (2005). *The value of higher education: Individual and societal benefits*. L. William Seidman Research Institute, Arizona State University, Tempe, AZ.

[45] Hill, K., Hoffman, D., & Rex, T. R. (2005). The value of higher education: Individual and societal benefits. L. William Seidman Research Institute, Arizona State University, Tempe, AZ.

What about Sub-Baccalaureate Certificates?

Not all undergraduates attend a postsecondary institution with the goal of obtaining a degree. Many students, especially older adults, choose to enter a career where an occupationally specific non-degree credential is required for employment. Minnesota's postsecondary institutions, mainly public two-year and private for-profit institutions, annually award a large number of occupationally specific certificates. Recently, quantifying the academic credentials awarded at the sub-baccalaureate level has gained national and state level prominence as a means to better gauge the human capital of the labor market.

Earning a postsecondary non-degree certificate is often the highest education needed to enter several high-demand, high-wage careers, including many in healthcare, manufacturing and construction trades. Complete College America's report *Certificates Count: An Analysis of Sub-baccalaureate Certificates* highlights the importance of certificates to an individual's ability to enter a well-paying career:

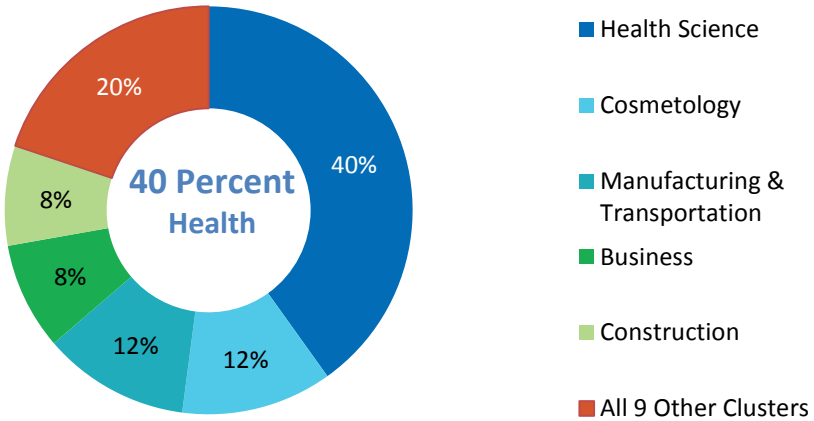
> *. . .[C]ertificate awards for completion of programs of study of at least one year have significant and consistent labor market value and should count toward national and state postsecondary attainment goals. They are particularly accessible to young high school graduates and working adults who may not now be attracted to more traditional degree programs.*
>
> (Certificates Count, 2010, p. iii)

The report also indicated certificates can provide greater income returns than some associate and bachelor's degrees. However, these income outcomes differ when distinguishing between long-term certificates and short-term certificates. Research indicates that certificate programs, which are less than 16 credits in duration and have no positive impact on increased wages or employment.[46]

Figure 14 shows Minnesota institutions awarded 15,913 certificates in 280 specific programs of study in 2011-2012. Certificates earned in the health care career cluster (43 percent) were the most common. The career clusters: cosmetology and culinary services (12 percent), manufacturing and transportation (11 percent), construction trades (8 percent), business (9 percent), agriculture (5 percent), corrections (3 percent) and all others (6 percent) provided the remaining certificates.

[46] Dadgar, Mina and Madeline Trimble. 2014. "Labor Market Returns to Sub-Baccalaureate Credentials: How Much Does a Community College Degree or Certificate Pay?" *Educational Evaluation and Policy Analysis.*

Figure 14: Certificates awarded by Minnesota institutions, 2012-2013



Source: U.S. Department of Education, IPEDS Completion Survey

Comparing Certificates Nationally

The report, *Certificates: Gateway to Gainful Employment and College Degrees*, completed by Georgetown University, Center on Education and the Workforce, found states ranking high in workers with certificates usually ranked lower in workers with college degrees. Conversely, states with a high share of workers with college degrees usually have low shares of workers with certificates. Minnesota is an exception to this rule as it ranked sixth in its share of workers with certificates and third in its share of bachelor's degree workers. This can be explained by both Minnesota's culture of high postsecondary education attendance and by a shift in recent times from employers providing on-the job-training to having employees train at postsecondary institutions.

HIGH PERCENT OF MINNESOTA'S WORKFORCE HAVE CERTIFICATES

Share of Workers with a Certificate		Certificates Awarded Per 10,000 Population	
Top States	**Percent**	**Top States**	**Number**
Wyoming	20%	Louisiana	67
Oklahoma	18%	Kentucky	50
Louisiana	15%	Georgia	50
Minnesota (6th)	**13%**	**Minnesota (18th)**	**30**
Nation	12%		

Source: Georgetown University, Center on Education and the Workforce using IPEDS and 2010 Census data for awards per population; and 2005 and 2009 Survey of Income and Program Participation (SIPP) data for percent of workforce with certificates.

The number of certificates awarded nationally has increased more than 800 percent over the past 30 years as postsecondary institutions have offered more formal educational training that in previous years was obtained on the job. In 1984, less than two percent of adults 18 and older had a certificate as their highest educational attainment; by 2009 the percentage had grown to almost 12 percent, according to the Survey of Income and Program Participation [administered by the U.S. Department of Education]

- 24 percent of all 23- to 65-year-old workers responded that they had attended a vocational, technical, trade or business program beyond high school at some point.
- 75 percent of those who had attended these schools reported having earned a certificate.
- Overall, 18 percent of prime-age workers have obtained certificates and, of those, 12 percent have certificates as their highest educational attainment; and
- One third of certificate holders also have an Associates, Bachelor's or graduate degree.

(*Certificates: Gateway To Gainful Employment and College Degrees*, 2012, p. 4)

The Challenge

Minnesota's historical social compact and commitment to students is at risk. While Minnesota has a strong foundation in postsecondary education, the disparities in "best-fit" access and success for some populations demonstrate failure to adequately support all Minnesotans as they work toward postsecondary success. The state's changing demographics demand inclusive and responsive innovations in postsecondary education to prepare our students for the future.

Minnesota's historically high levels of educational attainment and its professional economy are at risk if we do not improve retention and completion for three key groups: students of color, lower-income students and students over age 24. Simply put, a robust economy relies on a steady supply of talented, educated graduates ready to meet the needs of a dynamic, knowledge based 21st century economy. By 2020, it has been estimated that 74 percent of jobs in Minnesota will require education or training beyond high school.[47] Minnesota's economic future will rely on a diverse, skilled, educated workforce, implying that we cannot afford to tolerate the staggering racial inequities in postsecondary access and completion.

Institutions vary in their missions and populations served, and in their openness and selectivity. Some institutions develop students for specific careers while others focus on critical thinking and problem solving. Some institutions offer a select group of degree programs (Minneapolis College of Art and Design), while others are comprehensive universities (The University of Minnesota; Minnesota State University, Moorhead; the University of St. Thomas) attempting to provide high quality programs in many areas. Possible missions vary upon institutional type and purpose, such as vocational programs versus research institutions. Differing missions leads to a difference in how credit hours are allocated within programs, the time to degree by program, the intensity of student services offered, the ratio of faculty to students and the overall cost of instruction. Thus, comparisons should be made giving consideration to the institutional mission.

Some postsecondary institutions expect faculty and staff to work towards the tripartite mission of research, service and teaching. Research I institutions, such as the University of Minnesota, Twin Cities, place heavy emphasis on research for faculty and students, and direct resources to creating opportunities for participation in research. While other four-year institutions may conduct research, they more often emphasize the teaching and learning aspects of their mission.

One caveat to comparing colleges and universities relates to population served. Open-access institutions have unique populations that warrant consideration in general comparisons. For example, Metropolitan State University has an older, part-time population of students that is not easily compared to the University of Minnesota, Twin Cities on measures such as six-year graduation rates. The majority of Metropolitan State University graduates take longer than six years to receive their degrees. The missions of open-access institutions seek to make postsecondary education available to any adult who wants to attend. This means that open access institutions face challenges that are not present at controlled-enrollment institutions, including taking in academically-underprepared students and lacking the resources to conduct longitudinal research. Still, with these challenges, open access institutions have an obligation to see that every student who enrolls in their institution with the goal of earning a credential completes their chosen program. This is especially important, given that these institutions serve a larger

[47] Carnevale, Smith, & Strohl, 2013

segment of populations that have lower levels of educational attainment. This provides evidence that there is socioeconomic segmentation occurring across different institutions, according to their mission.

A Reinvigorated Social Compact

As a state with an array of high-quality public and private postsecondary institutions, Minnesota is well positioned to use research-based best practices to address the state's educational gaps and meet the needs of Minnesota's future economy. To be successful, Minnesota must:

1. **Take responsibility for increasing completion rates at all institutions**, regardless of students' academic preparation prior to arriving on campus. As such, Minnesota must pay particular attention to the disparities that exist in completing programs.
2. **Commit to solving and investing in these problems with urgency and in collaboration**. Leaders from all fields—public, private and nonprofit must work together, uphold Minnesota's social compact and renew a student centered commitment to the state's collective future. Frequent and expanded partnerships with business and the nonprofit community are needed to leverage their financial resources, human capital and infrastructure to maximize the state's return on investment in higher education. Minnesota has long understood higher education financing through the frame of shared responsibility, which has become a model in other states. It needs to also be applied to the current challenge in this state with college completion.
3. **Use transformational research both in state policy-making and at postsecondary institutions to inform policies and practices.*** Both the state and higher education institutions should increase research-based practices already in existence that addresses various populations' needs and provide clear measurements for tracking progress. To maximize the impact for all Minnesota students, the state needs a strategy for student completion that builds on successful institution strategies and focuses on effectiveness, efficiency, scalability and sustainability.
4. **Embrace the diversity within Minnesota's higher education system.** All Minnesota postsecondary institutions deserve support to maximize their differentiated missions and best serve their students. A homogenous system for a heterogeneous student population will not maximize Minnesota's potential for future success.
5. **Invest funds strategically.** Investment of public resources should focus on access, retention and completion for Minnesota's students. Investments toward institutional success should be dependent on student's learning, outcomes and future success.
6. **Support institutional culture change.** Changes to improve retention and completion rates in Minnesota will not necessarily be easy. No single strategy will eliminate barriers to completion for all students. Rather, leaders, faculty and staff across campuses need to be fully committed to improving completion and creating a culture of completion on their campuses.

***Note:** The goal of "transformational research" is to ultimately lead to transformational change, which is taking a set of actions that are fundamentally different from what have been done before. Transformational change is irreversible: once it begins, it is impossible to return to the way thing have been done before.

Student-Centered Strategies to Improve Minnesota's Postsecondary Completion Rates

There is a good deal of research on increasing postsecondary completion. These strategies focus on four key factors associated with student completion:

1. Social and Campus Integration
2. Academic Policies that Promote Completion
3. Alternative Pathways to Completion
4. Affordability

Most of these strategies are not new in Minnesota. In 2007, MnSCU identified five best practices for retaining underrepresented students and received state appropriations to implement them across the system.[48] *Charting the Future for a Prosperous Minnesota* underscores the same policies and practices advocated by research and this report. Similarly, the University of Minnesota has implemented a range of programs and policies to improve retention and completion. These initiatives have shown some success, but it remains unclear to what extent these best practices have been shared and implemented across Minnesota institutions, since there is some evidence that with the large increase in enrollment during the recession, retention and completion rates may have stalled on some campuses.

The following strategies are not meant to be prescriptive nor will each one be applicable to every institution. Rather, these are a collection of best practices that have been implemented across a range of institutions. Individual institutions must decide which practices would be the most beneficial for their social cohort.

1. Social and Campus Integration

According to researcher Vincent Tinto, successful social integration into a college environment is necessary for students to be able to complete their postsecondary education. Social integration requires a sense of belonging on campus, which is fostered by the informal connections created with peers and faculty outside of the classroom.[49] Students can improve their social and communication skills and feel more engaged in a positive campus culture by engaging in high-impact educational activities, including orientation, first-year programs, service learning and off-campus study.[50]

One underserved student population, first-generation college students, are often at a distinct disadvantage because of their lack of knowledge about postsecondary processes. Because campus integration is easier for students whose parents also went to college, first-generation students are much less likely to persist and complete their degree than their peers.[51] Of students enrolling in college, only 47 percent of first-generation students finished either an associate or bachelor's degree within eight

[48] http://www.asa.mnscu.edu/AccessandOpportunity/Index.html
[49] Tinto, V. 1997. Colleges as Communities: Exploring the Educational Character of Student Persistence. *Journal of Higher Education* 68 (6).
[50] Astin, A., L. Vogelsang, E. Ikeda, and J. Yee. 2000. How Service Learning Affects Students. Los Angeles: Higher Education Research Institute, UCLA.
[51] Choy, S. (2001). Students Whose Parents Did Not Go to College: Postsecondary Access, Persistence, and Attainment. Findings from the Condition of Education Report.

years as compared to 75 percent of students whose parents were college educated.[52] These students may also receive less support from parents, such as a lack of information about entrance exams, applications, or sources of financial aid, than their peers.[53] First-generation college students may also lack the social capital needed to navigate a complex higher education institution, a benefit of students with college educated parents, which is known to positively influence their college enrollment and persistence.[54] These differences in enrollment and persistence between students whose parents did and did not attend college contribute to educational and workforce achievement gaps seen across the nation and in Minnesota.

"Post-traditional"[55] postsecondary students, such as student-parents, veteran students and students not of traditional postsecondary age (over 25), also require specialized support systems in order to persist and complete certificate and degree programs at the same rates as their peers. Almost 40% of post-traditional students work full-time and 27% have children of their own.[56] According to a 2012 report by the federal Advisory Committee on Student Financial Assistance to the U.S. Congress and the Secretary of Education, students surveyed on barriers to postsecondary completion cited lack of time and lack of awareness of suitable options, and cost (in that order).[57] Institutions can implement strategies to mitigate these challenges for post-traditional students. This will contribute to the development of an inclusive, accommodating campus environment.[58]

While many strategies to improve persistence and completion for these two underserved populations are the same, institutions should recognize the unique needs of post-traditional student groups and implement specific strategies that combat their barriers to success.

Strategy: Expand high-impact support activities

Orientation provides students with important institutional knowledge. There is demonstrated evidence of a positive relationship between participation in orientation programs and student retention. At one community college, a stand-alone orientation course was offered to students. Students who participated in the orientation course were 72 times more likely to graduate than students who did not take the course. [59]

Many institutions have implemented **first-year programs or seminars** in their curriculum that bring small groups of students together with faculty or staff on a regular basis. The highest-quality first-year experiences place a strong emphasis on skills (including critical analysis, intensive writing, information literacy and collaborative learning) that simultaneously develop students' intellectual and practical

[52] Chen, X., & Carroll, C. D. (2005). First-Generation Students in Postsecondary Education: A Look at Their College Transcripts. Postsecondary Education Descriptive Analysis Report. NCES 2005-171. National Center for Education Statistics.
[53] Engle, J., ibid.
[54] Rios-Aguilar, C. & Deil-Amen, R. (2012). Beyond Getting In and Fitting In: An Examination of Social Networks and Professionally Relevant Social Capital Among Latina/o University Students. Journal of Hispanic Higher Education, 11(2), 179–196.
[55] Soares, L. (2013). Post-traditional learners and the transformation of postsecondary education: A manifesto for college leaders. American Council on Education. Retrieved from http://www.acenet.edu/news-room/Documents/Soares-Post-Traditional-v5-011813.pdf
[56] National Center for Education Statistics (2009).
[57] http://knowledgecenter.completionbydesign.org/sites/default/files/320%20ACSFA%202012.pdf
[58] http://escholarship.org/uc/item/13k8d2mz
[59] Derby, D. 1997. Predicting Degree Completion: Examining the Interaction between Orientation Course Participation and Ethnic Background. Community College Journal of Research and Practice. 31 (11).

competencies. First-year seminars can also provide students the opportunity to answer cutting-edge questions in scholarship and engage with faculty members in their own research.[60]

> **Minnesota examples:** Saint Cloud State University offers the **Multicultural First Year Experience (MFYE)** program. Using a first-year cohort model, this program offers an interdisciplinary approach to the study of race, ethnicity, identity, gender and community in the United States. MFYE encourages academic rigor and supports student success, improves retention rates and creates a community for students of color on SCSU's campus.[61]
>
> The University of Minnesota, Twin Cities, is working to expand student participation in **first-year seminars**. In 2012-2013, 40 percent of the first-year students on the Twin Cities campus enrolled in at least one of the 150 first-year seminars offered. According to the University of Minnesota's Office of Institutional Research, students who have taken a first-year seminar have higher retention and graduation rates than their peers who have not taken a first-year seminar course.[62]
>
> Another strategy to enhance student success at the University of Minnesota, Twin Cities, is the **Access to Success** (ATS) program. ATS was designed to assist first-year students whose experiences and high school records indicated potential for success, but whose high school rank and test scores alone may not. Opportunities for ATS students included curriculum integration, intensive advising, peer mentoring and networking opportunities. The results of the ATS program were encouraging as they narrowed the college retention gap between traditional and ATS students. From fall 2010 to 2011, 86.6 percent of ATS students were retained for a second year, compared with 90.5 percent of first-year students overall. Due to its initial success, ATS was extended to a four-year support model and renamed the **President's Emerging Scholars** (PES) program. PES provides professional advising, peer mentoring, and opportunities for engagement and PES scholarships for students throughout their college career.[63]

Service learning provides a unique opportunity to develop a sense of belonging among students. As Tinto (1987) noted, "incongruence with one's student peers proves to be a particularly important element in voluntary departure." Service learning engages students in the community and with their college peers.[64] The real-world application of classroom learning is particularly important for developing students' aspirations, as studies have shown that students who participate in community engagement or service learning report a higher sense of personal efficacy.[65]

> **Minnesota examples:** The University of Minnesota, Twin Cities, **Community Engagement Scholars Program** recognizes students who integrate more than 400 hours of community volunteering into their educational experiences. Students take eight credits of service learning coursework and participate in structured reflections. Upon completing a final project based on a

[60] Kuh, G.D. 2008. High-impact educational practices: What they are, who has access to them, and why they matter. Washington, DC: Association of American Colleges and Universities.
[61] http://www.asa.mnscu.edu/AccessandOpportunity/Best_Practices/First_Year_Experienc.html
[62] http://www.academic.umn.edu/accountability/pdf/2013/Accountability-Report-for-BOR-Sept2013Draft.pdf
[63] http://www.academic.umn.edu/accountability/pdf/2013/Accountability-Report-for-BOR-Sept2013Draft.pdf
[64] Astin, A., L. Vogelsang, E. Ikeda, and J. Yee. 2000. How Service Learning Affects Students. Los Angeles: Higher Education Research Institute, UCLA.
[65] Eyler, J., Giles, D. E. Jr., Stenson, T., & Gray, C. (2001). At a glance: Summary and annotated bibliography of recent service-learning research in higher education (3rd ed.). San Diego: Learn & Serve America National Service-Learning Clearinghouse.

community identified need, students receive official recognition at graduation and on their academic transcript. Since its inception, enrollment in the program has grown five-fold, with more than 500 students now participating. Of these students, approximately 20 percent are honors students.[66]

The University of Minnesota, Twin Cities, also hosts the **Engaged Department Grant Program**, enabling 20 academic departments to explore the expansion of community based learning experiences within their curricula. A growing number of academic majors and minors are incorporating community-engaged work linked to learning goals and objectives.[67]

The University of Minnesota, Crookston is a recognized leader in **student service-learning**. In 2012, the student body completed 39,481 hours of service through academic service-learning courses, club and individual community service and community based work study including the America Reads Program, community service internships and AmeriCorps.[68]

Century College has a strong and active **service-learning program**. Since it began in 2000, over 13,000 Century students have participated in service learning and students have contributed over 200,000 hours of service to the community. Approximately 2,000 Century students participate in service learning each year with service learning incorporated into over 40% of the programs at Century College.[69]

Augsburg College has service-learning components integrated into many of their courses. Over 70 courses at Augsburg contain an embedded service-learning component. In addition, all incoming first-year students must participate in City Service Day the day before the fall semester begins. Here, students participate in service projects in the neighborhoods that surround Augsburg.[70]

Apart from service learning, many Minnesota institutions support **research opportunities for undergraduate students**. On a broad scale, Astin (1993) argues that high quality interactions with peers and faculty mentors yield the greatest gains in student learning outcomes.[71] Of additional importance, research opportunities can enhance students' technical and interpersonal skills, clarify career path decisions and retain students, among other benefits.[72]

Minnesota examples: Minnesota State Mankato cites their Undergraduate Research Center (URC) as an opportunity for students to gain real world experience, improve their resumes, and participate in mentoring. To further its commitment to undergraduate research, in 2012, Minnesota State Colleges and Universities (MnSCU) held its first undergraduate research conference of scholarly and creative activity[73]. Over 120 students, representing six institutions, presented scholarly research across a wide variety of disciplines.

[66] http://www.academic.umn.edu/accountability/pdf/2013/Accountability-Report-for-BOR-Sept2013Draft.pdf
[67] http://www.academic.umn.edu/accountability/pdf/2013/Accountability-Report-for-BOR-Sept2013Draft.pdf
[68] http://www.academic.umn.edu/accountability/pdf/2013/Accountability-Report-for-BOR-Sept2013Draft.pdf
[69] http://www.century.edu/currentstudents/servicelearning.aspx
[70] http://www.augsburg.edu/sabo/about/service-learning/
[71] Astin, A.W. (1993). *What matters in college: Four critical years revisited.* San Francisco, CA: Jossey-Bass.
[72] Craney, C., McKay, T., Mazzeo, A., Morris, J., Prigodich, J., & de Groot, R., (2011). Cross-discipline perceptions of the undergraduate research experience. *The Journal of Higher Education* (82.1), pp. 92-113.
[73] http://www.mnsu.edu/news/read/?id=old-1334682553&paper=topstories

St. Olaf College's **Collaborative Undergraduate Research and Inquiry (CURI**) program gives undergraduates from all majors the opportunity to work with a faculty member on research. Upon completion of the research, students are provided funding to present their research at conferences.[74]

Many colleges and universities now stress the importance of **global learning or study abroad** that help students learn about cultures and life experiences different from their own. These courses and programs can promote diversity and understanding of world cultures, as well as address issues such as racial/ethnic/gender inequality and human rights issues around the world. Frequently, intercultural studies are augmented with experiential learning in the community and through study abroad.[75] Research supports education that connects students to the world outside the classroom.

Minnesota examples: Minnesota State Colleges and Universities (MnSCU) has a consortium of universities and colleges, the **Education for Global Learning (EGL),** that collectively promotes study abroad programs offered at various MnSCU institutions. Hosted by Ridgewater College, EGL also sponsors an annual study abroad to Costa Rica each spring semester with faculty members rotating participation from MnSCU colleges and universities to teach courses in Costa Rica and MnSCU garners student registrations from across the state. Additional study abroad opportunities for students range from a few weeks to a full semester abroad, and many feature volunteer projects in communities and local schools, which facilitate students' contributing their talents while they learn.

St. Olaf College provides study abroad programs in 54 countries, including nearly 80 semester or year-long programs and nearly 30 off-campus courses during short-term semesters. Before graduation, over two-thirds of students at St. Olaf will have participated in a study abroad program. For the past six years, St. Olaf has ranked number one in the United States among baccalaureate institutions in sending students on study abroad programs.[76] [77]

The University of Minnesota, Twin Cities, has set an ambitious goal to send 50% of students abroad during their college experience. Participation has grown from 19 percent in 1999 to 27 percent in 2012. The University encourages study abroad during **First-Year Experience** programs, which include a week abroad with an instructor. In response to economic challenges to participation, the University has emphasized semester and year-long experiences which are more cost-effective.[78]

Strategy: Expand available summer bridge programs for targeted students

Students who are first-generation, lower-income or in need of developmental education can enhance their college going knowledge and skills by participating in a summer bridge program at their institution. Summer bridge programs help ease the transition from high school to postsecondary education, so that first-year students can be on an equal footing with their peers. While various programs at institutions serve a wide array of students (including international, underrepresented and disabled students, along

[74] http://wp.stolaf.edu/curi/
[75] Kuh, G. D. 2008. High-impact educational practices: What they are, who has access to them, and why they matter. Washington, DC: Association of American Colleges and Universities.
[76] http://wp.stolaf.edu/blog/st-olaf-ranks-no-1-in-study-abroad-for-fifth-straight-year/
[77] http://www.iie.org/Research-and-Publications/Open-Doors/Data/US-Study-Abroad/Leading-Institutions-by-Institutional-Type/2012-13
[78] http://www.academic.umn.edu/accountability/pdf/2013/Accountability-Report-for-BOR-Sept2013Draft.pdf

with students in specific fields of study), the main focus of all of these programs is to provide support for underprepared students. [79] Minnesota State Colleges and Universities system campuses offer seventeen summer bridge or transition programs.

Minnesota examples: The **College Access Program** (CAP) at Minnesota State University, Mankato, for example, identifies students who show academic promise in high school but may need additional support to succeed in college. CAP provides a four-week intensive summer residential program between high school and college and continues to support students during the regular school year.

The 2013 higher education omnibus bill provided $100,000 annually to support Summer Transition Programs. Postsecondary institutions applied for this competitive block grant to support their summer programs. Four programs were awarded state matching grant funds during the 2014-2015 biennium: Minneapolis Community and Technical College: Jump Start to College, Minnesota State University, Mankato: College Access Program, Saint Paul College: Math Transitions-Power of You, and University of Minnesota-Duluth: Math Preparation for STEM Careers.

Jumpstart to College, cited previously as a Summer Transition Program grant recipient, is a tuition-free program sponsored by Minneapolis Community and Technical College. The program provides Minneapolis Public School and Robbinsdale Cooper High School students the opportunity to take pre-college classes that count towards high school graduation requirements. Students accepted into the Jump Start to College program are also eligible for Postsecondary Enrollment Options (PSEO) and concurrent enrollment courses. Jump Start to College courses are held at MCTC and are co-taught by high school and college faculty members. Grades earned in this program will transfer to the college. Jump Start to College summer course offerings include reading, English, and math. Students receive academic support in each course including access to a computer and tutoring from their high school teacher.[80]

Another summer bridge program, Riverland Community College's **Be Your Best College Prep Academy,** is a free program for teens and young adults between the ages of 16 and 22. At Be Your Best, students have the opportunity to prepare for college by taking pre-college Math, Reading, Writing, and Career Planning. Students receive guidance and support through dedicated instructors, advisors, counselors and tutors. Students also benefit from the educational seminars designed for college success and participate in fun leadership, volunteer activities and field trips throughout the summer.[81]

The TRIO/Student Support Services (SSS) Summer Bridge Program at Augsburg College provides 25 admitted first-year students the opportunity to gain a head start on the postsecondary education. Participants spend five weeks living on campus attending two credit courses, while also attending academic support seminars, workshops, and other activities to facilitate a smoother transition to the fall semester. After completion, participants also take part in the

[79] Tinto, V. 1997. Colleges as Communities: Exploring the Educational Character of Student Persistence. *Journal of Higher Education* 68 (6).
[80] http://www.minneapolis.edu/Educational-Programs/Preparing-for-College/Jump-Start-to-College
[81] http://www.riverland.edu/beyourbest/

academic year component of TRIO/SSS.[82]

Strategy: Develop cohort models of block scheduling for key groups

Placing students in an academic cohort ensures that students take multiple courses with the same group of students. This structure creates a sense of familiarity and can build trust among students. Cohorts bring together students with similar academic and career interests who can build on their commonalities and create stronger social bonds.[83]

> **Minnesota example:** Metropolitan State University utilizes a **cohort model** for their social work program. The program has seen great success with a traditionally underrepresented student group (approximately half of program participants are students of color and many are post-traditional adult students). The graduation rate for each class ranges from 91 to 100 percent. Elements that contribute to this success include strong relationships within the learning community, personal coaching from faculty and an emphasis on field experiences.[84]

Strategy: Develop low cost, on-campus child care to accommodate student-parents.

Nationwide, more than one in three community college students have children. Yet few postsecondary institutions address this barrier and provide low cost, on-campus child care. Those that do often are limited to normal business hours, which does not accommodate for the night and weekend class schedules of many working adult students. Institutions should explore grant funding, partnerships with nonprofit organizations, such as the YMCA or Boys and Girls Club, to help provide accessible child care for student-parents.[85] Without access to reliable and affordable childcare, student-parents face additional challenges to complete their training or education.[86]

> **Minnesota examples:** Saint Paul College contracts with the YWCA to provide **on-campus childcare/early learning center** for children of SPC students and staff before they begin kindergarten. The center offers full-time, part-time and daily rates to accommodate the diverse needs of the student body.[87]
>
> Century College also offers on-site childcare, **Busy Bees Day Care**. It is open during normal business hours and cares for children 33 months to 11 years old.[88]
>
> In addition, the state funded **Child Care Grant** program provides financial assistance to student-parents with children ages 12 and younger. To qualify, a parent must demonstrate financial need, be enrolled at a Minnesota post-secondary institution at least half-time and not receive Minnesota Family Investment Program (MFIP). While this program makes childcare more

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[82] http://www.augsburg.edu/triosss/summer-bridge/
[83] Complete College America. (Winter 2012). Guided Pathways to Success (GPS): Boosting College Completion. Report retrieved from http://completecollege.org/docs/GPS_Summary_FINAL.pdf.
[84] http://www.mnscu.edu/board/materials/2014/june18/asa-02-student-handout.pdf
[85] http://content.thirdway.org/publications/306/Third_Way_E-Binder_-_A_Success_Agenda_for_the_Middle_Class.pdf
[86] http://baywood.metapress.com.ezp2.lib.umn.edu/media/2pphykuhqkjmgc6uhqrl/contributions/j/4/0/2/j40232m3g1075034.pdf
[87] http://www.saintpaul.edu/currentstudents/Pages/Child-Care-Center.aspx
[88] http://www.century.edu/community/childcare.aspx

affordable for some Minnesota student-parents, it does not address the accessibility and convenience issue offered by on-site child care.[89]

[89] http://www.ohe.state.mn.us/mPg.cfm?pageID=348

2. Academic Policies that Promote Completion

Academic success is one of the strongest factors in predicting whether or not a student will complete their postsecondary education. Grade point average (GPA), both in high school and during college is one such predictive factor. However, research suggests that retention programs that focus primarily on helping students master course content alone may only address immediate, rather than longer-term deficiencies. Students who master course content, but fail to develop adequate academic self-confidence, academic goals, institutional commitment, achievement motivation and social support and involvement may still be at risk of dropping out.[90]

Upon enrolling in college, students are provided with an extensive list of courses and choices of majors that may hinder their understanding of how to fulfill degree requirements. Students may not know how term-by-term course choices align or fail to align with requirements, not only to complete a certificate or degree, but how those choices affect their chosen major/program. A related issue is the number of credits students accumulate upon graduation. Students do not always understand how their program/major choice, or lack thereof, or changing majors adds to the number of unnecessary extra credits they might accumulate. While states and institutions are beginning to limit expansion of the number of credits **required** for a degree, many students still graduate with more than 60 credits for an associate degree or 120 credits for a bachelor's degree.[91] At the same time, students should not be discouraged from taking classes outside of their program for personal interest. A distinction must be made between students taking courses intentionally versus taking them unintentionally.

An alternative championed by Jenkins and Cho is creating **guided pathways** to timely degree completion by offering students structured schedules with recommended courses (Appendix A). These plans support timely completion of degree requirements for each program/major offered at the institution by clarifying course selection, encouraging 13-credit enrollment and offering intrusive advising, rather than students selecting individual courses with minimal guidance.[92] For example, all public institutions in Minnesota could be encouraged to make full-time status 13 or more credits per semester. This is critical for degree completion, as students who are taking 12 credits every semester will not graduate from a community/technical college in two years or from a college or university in four years. Making matters worse, they will run out of financial aid before they complete their degree.

Strategy: Implement intrusive advising

Intrusive advising is a form of academic advising that involves the advisor reaching out to the student, as opposed to the student taking the initiative themselves.[93] Each student is assigned a professional advisor to assist with program modifications and classroom based issues. During advising sessions, the advisor helps develop the student's problem-solving and decision making skills by working through problems together.[94] One of the first intrusive advising programs was at Western New Mexico

[90] Lotkowski, V., S. Robbins, and R. Noeth. (2004). The Role of Academic and Non-Academic Factors in Improving College Retention. ACT Inc.
[91] Complete College America. (Winter 2012). Guided Pathways to Success (GPS): Boosting College Completion. Report retrieved from http://completecollege.org/docs/GPS_Summary_FINAL.pdf.
[92] Jenkins, D., & Cho, S. W. (2013). Get With the Program… and Finish It: Building Guided Pathways to Accelerate Student Completion. New Directions for Community Colleges, 2013(164), 27-35.
[93] Earl, W. R. (1988). Intrusive advising of freshmen in academic difficulty. NACADA Journal, 8, 27-33.
[94] King, M. C. (2005). Developmental academic advising. NACADA Clearinghouse of Academic Advising

University in the early 1980's, which saw attrition rates fall from 66 percent to 25 percent within two years.[95]

Minnesota examples: North Hennepin Community College (NHCC) has an **Early Alert system**, developed by Hobsons, which allows advisors to identify and assist students who are at risk or failing particular courses or withdrawing from the college. The Early Alert system tracks students' attendance in all their classes, as well as when they use on-campus resources, such as tutoring centers and the fitness center. Students slide their identification card upon entry and exit of using such resources. When students are at-risk, they are contacted by their advisor so they can meet with them about their progress. NHCC also tries to personalize mass communications as much as possible. Whenever an administrator emails students, they put their picture in the email, along with the student's name in the greeting. Administrators report that due to the emails, students have been more likely to recognize them and talk to them around campus. Advisors of students do the same with their emails.

Minnesota State University—Mankato also serves a high proportion of students from non-traditional student populations. At MSU—Mankato, 26 percent of students are low-income, while 46 percent are first generation students. While MSU—Mankato implements some of the Hobsons system, such as customized degree plans and Early Alert, it has its own system called **MavCARES.** MavCARES is touted as a comprehensive student success program. There is a calling system, in which a current student calls new students once a semester to ask them how their year is going. In addition, a phone call is made to the student's family in the fall. Postcards are sent to families, once grades are delivered and text messages are sent to parents for non-registration and non-payment.

Power of YOU Program: The Power of YOU, available at Minneapolis Community and Technical College (MCTC) and Saint Paul College, provides advising and support services for low-income students. These are the integral components of the program, as they are designed to help students succeed at college.[96] The **intrusive support services** help students make the transition to college; develop critical skills to perform academically and grow personally; engage with peers, faculty, and staff; and integrate what students learn in the classroom with activities outside of class.

Minnesota West Community and Technical College has received a grant for $200,000 from the **Otto Bremer Foundation** to create a program that will facilitate completion for low-income students. Students will receive points based on the number of activities they complete each semester. The more points a student earns, the more scholarship money they will earn. Many of these tasks (such as the development of an educational portfolio, one-on-one check-ins, coordination of registration and completing an academic success workbook) require meeting with their advisor throughout the course of the semester.

[95] Glennen, R. E., & Baxley, D. M. (1985). Reduction of attrition through intrusive advising. NASPA Journal, 22, 10-14

[96] The program also makes the first two years of college available tuition-free, through state and federal grants, and private scholarships, for students that meet the eligibility requirements.

Strategy: Increase the number of professional advisors

At many postsecondary institutions, faculty take on the role of student advising advisors. According to Habley (2004), it is estimated that faculty are responsible for between 75 to 90 percent of advising at colleges and universities.[97] In addition to their teaching responsibilities, faculty members in many instances are also expected to conduct research and participate in institutional service activities, while providing service to their discipline and the broader community. One study of faculty at an urban public university showed that 21 percent of faculty members could not give accurate information on degree requirements and 26 percent of faculty members could not assist students with the institutional workings of the university. Faculty also reported that they saw their main priority as providing academic advising and less so with providing career and life goals.[98]

In a more centralized advising structure, full-time professional advisors can focus solely on assisting students with their academic, career and life goals, as well as provide complete, relevant information for degree planning. Professional advisors are evaluated on the job they do as an advisor. This is not the case with faculty advisors, as their job depends primarily on their teaching and research abilities.[99]

Another viable advising structure is for an institution to offer professional advising for students early on, with the expectation that they transfer to a faculty advisor once they have selected a major, in order to receive major-specific advising. Professional advisors would deliver the academic, degree, career and professional planning support, while the faculty advisors provide personal and mental health support. This approach could ensure that students receive appropriate support, and advisors (either professional advisors or faculty) are clear on their function and how to best work with students.

Strategy: Implement opt-out scheduling and other alternatives based on degree mapping

Degree mapping lays out the required sequence of classes a student needs to obtain a given certificate or degree. It provides students with a pathway from entry to completion by detailing classes required for each semester, and in turn the institution commits to offering those classes, with adequate capacity, for all students enrolled in a specified program. Since Florida State University started degree mapping, the number of students that have graduated with excess credits has been cut in half, and the University's graduation rate for all students increased 12 percent in the last ten years. Furthermore, the graduation rate for African Americans has increased to 77 percent, to 72 percent for first-generation Pell students, and more than 70 percent for Hispanic students.[100] With degree mapping, excess credits that are intentional can be encouraged, while institutions help students minimize unintentional excess credit. In **opt-out scheduling**, a student's department creates a schedule for each term. This ensures that the

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[97] Habley, W.R. (Ed.). (2004). The Status of Academic Advising: Findings from the ACT Sixth National Survey. (Monograph No. 10). Manhattan, KS: NACADA.
[98] Allen, J. and C. Smith. (2008). "Importance of, Responsibility for and Satisfaction with Academic Advising: A Faculty Perspective." *Journal of College Student Development*, 49(5).
[99] Oretel, B. "Creating the Case for a New Academic Advising Model at Winona State University: A Review of the Literature." Unpublished manuscript.
[100] Complete College America. Guided Pathways to Success.

student is aware of the classes required to make timely progress to complete the major and earn the degree. Students can opt-out of those classes with an advisor's permission.

Another alternative in current practice is **meta-majoring**. In Arizona State University (ASU)'s, eAdvisor (which is based off of a version at the University of Florida), in students' first year, they must pick a major and follow a degree plan that lays out when to take important courses. Students maintain the option of studying broadly, by choosing one of five exploratory majors, such as "arts and humanities" or "science and engineering,", which they can stay in for 45 credits. If a student fails to register for an important course or to perform sufficiently, the computer marks them "off-track." If a student wanders off-track two semesters in a row, they may have to change majors. One eAdvisor strategy is to front-load important classes. For example, if a student wants to major in psychology, then they will have to take statistics early on. Since the implementation of eAdvisor, ASU's retention rate has increased from 77 percent to 84 percent.[101]

> **Minnesota example:** North Hennepin Community College (NHCC) utilizes online software tools created by the Hobsons Company, comprised of **AgileGrad**, **AgileAdvisor** and **Retain**. One of these features is a graduation planning system that allows students to more effectively plan their course of study, beyond their current semester. Based on the selected degree plan, a student can see how many semesters/how much money it will take to complete a degree, based on future course offerings. If a student withdraws/fails a course, their plan automatically gets updated (students can also see how their degree plan changes before they make any permanent changes, allowing them to play with hypothetical scenarios in the system). With the Hobsons system, NHCC can also plan course schedules in future semesters, based on student demand. Deans can see what times of the day/week students registered for a specific degree plan are able to take specific courses, based on the students' personal schedules.

2.1 Developmental Education

According to the Office of Higher Education's *Getting Prepared* report, 28 percent of 2011 public high school graduates enrolled in one or more developmental courses within two years of graduating high school.[102] Studies have shown that developmental education requirements and the added time to degree negatively impact the likelihood of degree completion. [103]

Strategy: Appropriately structured developmental education

Postsecondary institutions are redesigning and restructuring how to deliver education to better serve students who need help with college-level work.

Three models of developmental education that are being implemented around the country are:

[101] Parry, M. (2012)." Big Data on Campus." *The New York Times.*
[102] Minnesota Office of Higher Education. (2014). Getting Prepared: Recent high school graduates and developmental courses. St. Paul, MN.
[103] Bailey, T., Jeong, D. W., & Cho, S. (2008). Referral, enrollment and completion in developmental education sequences in community colleges. New York, NY: Community College Research Ctr. Completion by Design. (2012). Student voices on the higher education pathway: Preliminary insights & stakeholder engagement considerations. San Francisco, CA: WestEd.

- **Paired courses** – In the paired course model, institutions connect a developmental course to a college-level course in the same subject area. Students learn content in the college-level course (history, for example), while developing basic skills in the developmental course (writing). This method of instruction allows students to receive college credit while still getting extra support from a non-credit course. Students placed into a paired course in the Community College of Denver's FastStart program were more likely to complete their college math sequences than students not in FastStart.[104]

- **Mainstreaming with support** – This model allows developmental students to enroll in college-level courses immediately. Supplemental support can come in the form of mandatory companion classes, lab sessions, integrated tutorial support and additional class sessions. This addresses time concerns and the stigma of students taking developmental courses. The Accelerated Learning Program (ALP) at the Community College of Baltimore County has been very successful in mainstreaming developmental students. In its first trial, 63 percent of ALP students passed the college credit English course, compared to 39 percent of non-ALP developmental students.[105]

- **Co-curricular programming** – This is a model of acceleration that requires students to take fewer developmental courses overall. This can involve collapsing multiple developmental courses into a one-semester course that has more content or hours than one of the courses that it replaced, or developing a single remediation course for a specific academic program. At Chabot Community College in California, students who took a one-semester developmental reading and writing course were twice as likely to pass college English as similar students who took the standard two-semester developmental sequence.[106]

  Minnesota examples:

  There are several developmental education redesign efforts taking place at MnSCU state colleges:

  - **Century College** is planning to implement accelerated models of developmental education within the next few years, as part of their commitment to system-wide efforts across MnSCU to increase completion rates to at least 55 percent by 2021.
  - **Century College**: Tutors Linked to Classes (TLC): TLC places experienced students in classes to provide tutoring and supplementary instruction. The student tutors have previously been successful in the classes.
  - **Quantway/Statway Curriculum**: Minneapolis Community and Technical College, North Hennepin Community College, Normandale Community College and Ridgewater College have implemented the Quantway or Statway mathematics curriculum that was developed by the Carnegie Foundation for Teaching. The redesigned sequence enables students to complete a single developmental and a college-level math course in two semesters. Rochester Community and Technical College and Minnesota State College Southeast will implement this curriculum in fall 2015.
  - **North Hennepin Community College**: Supplemental Instruction: North Hennepin redesigned its English course sequence to incorporate two credits of supplemental

[104] Bragg, D. D. (2009). Community College of Denver: Breaking Through outcomes report. Denver, CO: Community College of Denver.
[105] Adams, P., Gerhart, S., Miller, R., & Roberts, A. (2009). The accelerated learning program: Throwing open the gates. Journal of Basic Writing, 28(2), 50–69.
[106] Hern, K. (with Snell, M.) (2010). Exponential attrition and the promise of acceleration in developmental English and math. Hayward, CA: Chabot College.

developmental instruction with the four credit college composition course, so students could complete the sequence in one semester.

2.2 Transfer Alignment

Transferring is increasingly common.[107] Many students transfer institutions with credits that are not applicable to their program/major or the degree requirements at their new institution. Transfer requirements may not be fully understood by new students entering the institution, especially which courses will transfer and fulfill requirements for a future major or program of study. In these instances, advising staff become critical sources of information on **degree planning** in advance of a student's transfer. Students not receiving accurate information may find themselves completing additional credit requirements in order to finish their program, which can require additional time in school and be an added financial cost.[108] Students need assistance and accurate information to ensure that each course they take counts towards degree completion.

Strategy: Improve transfer alignment between institutions and make it easier to find which credits transfer

Improving transfer alignment through the Minnesota Transfer Curriculum, so there are equivalency of courses, credits awarded and goal areas between institutions. It is important to give students easy access to information so they understand how every course they take applies to their current major/program, or applies to different majors/programs within their current institution, or to another institution.

Some states have taken the initiative, on a statewide level, to increase the transparency of transfer articulation. Several states have created a state-level office or official whose main responsibility is to facilitate a statewide approach to transfer and articulation. In Florida, the Office of K-20 Articulation within the Department of Education is dedicated to transfer articulation. Among its tasks are disseminating information, such as the *Postsecondary Articulation Manual* and the *Common Prerequisite Manual*.[109]

Minnesota examples:

- Through the **Minnesota Transfer Curriculum (MnTC)**, general education credits will be granted at any public institution if all of the goals in the curriculum are met.[110] The MnTC allows specific institutions to determine which courses in their institution satisfy each of the common curriculum's goals. This, however, can lead to confusion for students, especially if they transfer from one institution to another before finishing all of the MnTC goals.
- By using the new web-based tool, **Transferology**, MnSCU institutions enable transfer students to see how their courses and credits will be accepted at receiving institutions. Transferology is a nation-wide network designed to help students explore their college transfer options. The goal is to save students time and money by providing a quick, intuitive way of getting their college transfer credit questions answered.

[107] Marcus, J. (2014). "Increase in Student Transfers Worrying Alumni Offices". *Washington Monthly*. http://www.washingtonmonthly.com/college_guide/blog/increase_in_student_transfers.php
[108] Monaghan, 2014.
[109] Western Interstate Commission for Higher Education. 2010. Promising Practices in Statewide Articulation and Transfer Systems
[110] Minnesota Transfer Curriculum. http://www.mntransfer.org/students/plan/s_mntc.php

- The MnSCU system completed all of the goals of the legislatively mandated **Smart Transfer Plan**. The system provides a database of articulation agreements and has a system transfer website with a link to Transferology that provides course equivalency information and information on how courses apply to a future program. All colleges and universities are required to have a transfer page linked from their homepage that provides comprehensive transfer information. The system is currently developing a framework for implementing the associate to bachelor's degree articulation that was mandated by the legislature.

Strategy: Further expand dual enrollment, PSEO and other related opportunities to earn credit while in high school

There are options for high school students to earn college credit while still in high school. In the dual enrollment option (also known as dual credit) students take courses at their high school that will count simultaneously as high school credit and postsecondary credit. In other models students enroll in college and take courses on campus while still in high school.

During 2004-2008, students in Texas who received college credit in high school through dual credit had higher rates of persistence and graduation than students who did not. This is not limited to four-year universities. A study on students at a community college in Iowa showed that students who came into the institution with college credit through dual credit were significantly more likely to graduate from the institution.[111] However, there are concerns regarding its accessibility for all populations. For example, high schools in Texas show an inverse relationship between the proportion of minority students at a school and the participation rates; schools with higher proportions of minority students had lower rates of dual credit participation.[112]

> **Minnesota example: PostSecondary Education Options (PSEO)** has been in place in Minnesota since 1985. PSEO is a method by which high school students starting in 10th grade (and 9th grade in some situations) can start receiving postsecondary credit. There are two models in PSEO; students enroll concurrently at a participating postsecondary institution while in high school and take college courses at the postsecondary institution, or they take college-level courses at the high school taught by high school teachers.[113] It is the responsibility of students to find transportation to and from the host postsecondary institution. Low-income PSEO students are eligible for assistance in transportation. Evidence shows that having opportunities for postsecondary credit increases the likelihood of students completing college. A study of students who took PSEO courses through MnSCU institutions found that they were more likely to graduate from college than students who did not participate in PSEO. However, these outcomes might be a function of students who are more academically prepared enrolling in PSEO courses. One concern with PSEO in Minnesota is that information about the program is limited for populations that are presently underserved in postsecondary education. Students who take part in the program are overwhelmingly middle-class and white.[114]

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[111] Schmit, M. (2011). "A comparison of accelerated and non-accelerated students and the effect on graduation at Midwestern rural community college." Dissertation.
[112] Appleby, J. et al. (2011). "A Study of Dual Credit Access and Effectiveness in the State of Texas." Greater Texas Foundation.
[113] An example of such is the University of Minnesota's College in the Schools program.
[114] Selix, C. (2011). "Dual-credit focus now is on under-represented, low-income and at-risk students." MinnPost.

3. Alternative Pathways to Completion

Some students experience barriers to participating in education due to the current brick-and-mortar model of higher education. Students of color, first-generation college students, low-income students and students over age 24 enroll and graduate college at lower rates than their peers in traditional higher education settings.[115] More and more students are coming to postsecondary institutions with training acquired from previous jobs, corporate training, military training, and self-guided study. This gives these students the potential to save time and money while earning their degree or credential.[116] Higher education could be a reality for more if we better identify the needs of varying student populations and offer alternative pathways to a college degree, especially for certain populations such as students with full-time jobs, adult students returning to higher education, workers seeking additional training and students with family obligations.

Some institutions are finding success in providing alternative pathways to certificate and degree completion through **prior learning assessments**, **competency-based degree programs**, **alternative academic schedules**, **alternative delivery formats** and **apprenticeship programs**. These models recognize the wide variety of external demands on students and shorten time to degree by accelerating program completion.

Strategy: Expand prior learning assessment

Prior learning assessments are an important component of shortening time to degree and increasing degree completion for adult learners. These assessments give students credit for skills and knowledge acquired outside of their college coursework through experiential learning. Some prior learning assessments are already widely accepted, including national standardized exams (AP, IB, CLEP), while challenge exams for courses, individual assessments and evaluated non-college programs are not as widely utilized. Studies have shown that graduation rates are higher for adults offered credits based on prior learning assessments, as compared to adult learners in traditional tracks.[117] Additionally, prior learning assessment students persisted at higher rates, received higher GPAs, completed degrees more quickly and spent less on tuition than their peers.[118]

Minnesota examples:

- **Metropolitan State** is both a national and MnSCU leader in the practice of prior learning assessment.

[115] Prince, D., & Jenkins, P. D. (2005). *Building pathways to success for low-skill adult students: Lessons for community college policy and practice from a statewide longitudinal tracking study.* Report for Community College Research Center, Teachers College, Columbia University.
Swail, W. S., Redd, K. E., & Perna, L. W. (2003). *Retaining Minority Students in Higher Education: A Framework for Success. ASHE-ERIC Higher Education Report.* San Francisco, CA: Jossey-Bass Higher and Adult Education Series.
[116] Klein-Collins, R. and J. Wettheim. (2013). "The Growing Importance of Prior Learning Assessment in the Degree-Completion Toolkit." Wiley.
[117] Hayward, M. S., & Williams, M. R. (2014). Adult Learner Graduation Rates at Four US Community Colleges by Prior Learning Assessment Status and Method. *Community College Journal of Research and Practice*, (ahead-of-print), 1-11.
Klein-Collins, R. (2010). *Fueling the Race to Postsecondary Success: A 48-Institution Study of Prior Learning Assessment and Adult Student Outcomes.* Report for Council for Adult and Experiential Learning.
[118] Gibson, J. (2013, February 21). *Prior learning assessment: A "new" way to approach competency-based learning. Tennessee*. Presentation prepared for 2013 Promising Practices Conference by Tennessee Department of Labor and Workforce Development.

- **Inver Hills Community College: Adult Success through Accelerated Program (ASAP).** Inver Hills Community College was the first two-year college in the nation to be designated an Adult Friendly Learning Institution by the Council for Adult Experiential Learning. ASAP is designed for adult students who want to earn a degree at an accelerated, independent and flexible pace. In addition to accelerated program options and educational planning, this program offers students the opportunity to earn college credit for the knowledge and skills they've gained through work and life experiences. Using prior learning assessments, adult learners can match learning gained outside the classroom to actual college courses to expedite their college degree.
- **Minnesota State Colleges and Universities: Veterans Education Transfer System.** MnSCU provides information, services and support to veterans and services members along with military to college through two web tools. The System has aligned military training with instructional programs. Its Veterans Education Transfer System (VETS) enables veterans and service members to determine how their military training applies to instructional programs offered within the System.[119] http://www.mnscu.edu/collegesearch/index.php/vets/search.
- **Military Credit Transfer for veterans**[120] http://www.mnscu.edu/military/transfer.html.

Strategy: Develop competency-based degree programs

Rather than focusing on seat time as an indicator of education, **competency-based programs** use learning outcomes assessments to determine when a student has mastered a topic. These programs can be self-paced so are more flexible for the learner. Further, competency-based degree programs can incorporate prior learning assessment to eliminate unnecessary courses and decrease time to degree. Examples of competency-based degrees include Western Governors University, College for America through Southern New Hampshire University and Wisconsin's UW Flexible Option.[121] Policymakers have an opportunity to encourage development of competency-based learning models by creating student aid exemptions for pilot programs and removing policy barriers to implementation for institutions.

Strategy: Utilize alternative academic schedules

Alternative schedules can be used for completing certificates and degrees work for many students. The traditional two-semester model with summers off does not work well for all students. Evening and weekend classes, courses over a shorter time frame, increasing summer course offerings, and restructured programs (such as three-year bachelor degrees) all offer increased flexibility and choices for students. Southern New Hampshire University's three-year bachelor's degree decreased time to degree for students, had a higher graduation rate than peer institutions, and on average saved students 25 percent on tuition.[122]

Minnesota examples:

[119] http://www.mnscu.edu/collegesearch/index.php/vets/search
[120] http://www.mnscu.edu/military/transfer.html
[121] Kinser, K. (2002). Taking WGU Seriously: Implications of the Western Governors University. *Innovative Higher Education*, *26*(3), 161-173.
Klein-Collins, R. (2012). *Competency-based degree programs in the US: Postsecondary credentials for measurable student learning and performance.* Report for Council for Adult and Experiential Learning.
Johnstone, D. (2005). A Competency Alternative: Western Governors University. *Change: The Magazine of Higher Learning*, *37*(4), 24.
[122] Skolnik, M. L. (2012). Saving Higher Education: The Integrated, Competency-Based Three-Year Bachelor's Degree Program. *The Canadian Journal of Higher Education*, *42*(3), 170.

- **Inver Hills Community College – ASAP Program.** The program is designed for adult students who work full-time and cannot attend classes during the traditional day schedule, and/or may be balancing multiple responsibilities along with college. It offers accelerated options to complete two-year degrees including accelerated courses that meet either one night a week or Saturdays for eight weeks, allowing students to complete more than one course during a 16 week semester.
- Many MnSCU institutions offer courses and programs at a variety of times and days. Some offer blocks of courses in the afternoon or evening to accommodate students' schedules.
- For-profit institutions provide flexible schedules to accommodate working students' schedules. As a result, many classes are offered in the evenings.

Strategy: Broaden alternative delivery models

Massive Open Online Courses (MOOCs) are an alternative delivery format receiving wide attention in higher education.[123] **MOOCs** are typically college-level courses that are offered freely on the internet for anyone to take. Learners who also want college credit for completing the MOOC may be able to pay for the credits. Higher education institutions and programs are experimenting with how MOOCs can be leveraged to complement traditional postsecondary options in blended teaching models.

The Gates Foundation is interested in exploring whether MOOCs can be an effective and more cost-efficient way to deliver developmental and remedial education. They funded the development and study of MOOCs at nine colleges and universities.[124] In 2014, Georgia Tech launched a MOOC-based master's degree in computer science. Completed in three years, this program speeds time to degree and is a significant cost savings for students, costing as little as $7,000 for students who finish in three years. Georgia Tech's MOOC program highlights how alternative delivery models are particularly attractive to older learners, as the average age of students in their first cohort was 34.8, 11 years older than their on-campus program.[125]

While MOOCs have received the greatest attention recently for alternative delivery models, there are other models that can be considered. Institutions are experimenting with MOOCs, flipped classrooms and other ways to create alternative pathways to certificate and degree completion for a variety of traditionally underserved populations. Individual faculty at the University of Minnesota and Minnesota State Colleges and Universities are attempting some of these innovations. The research is mixed on what works and does not and with which type of material and students.[126]

Courses and whole programs are being offered online by almost all postsecondary institutions. Online courses provide students with the flexibility they need to complete their education at their convenience.

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[123] Lucas, H. C., Jr. (2013). Can the Current Model of Higher Education Survive MOOCs and Online Learning? *Educause*. Retrieved from http://www.educause.edu/ero/article/can-current-model-higher-education-survive-moocs-and-online-learning.

[124] Wukman, A. (2012, November 26). Gates Foundation Awards $550,000 for Development of Remedial MOOCs. *Online College Courses.* Retrieved from http://www.onlinecollegecourses.com/2012/11/26/gates-foundation-awards-550000-for-development-of-remedial-moocs-2/

Reed, M. (2013, May 6). MOOCs and Remediation. Insider Higher Ed. Retrieved from https://www.insidehighered.com/blogs/confessions-community-college-dean/moocs-and-remediation.

[125] Schaffhauser, D. (2014). Georgia Tech MOOC-Based Degree Program Turns Away Nearly 2,000 Applicants. *Campus Technology*. Retrieved from http://campustechnology.com/articles/2014/01/21/georgia-tech-mooc-based-degree-program-turns-away-nearly-2000-applicants.aspx.

[126] Kolowich, S. (2014). "5 Things Researchers Have Discovered About MOOCs." *Chronicle of Higher Education*.

Minnesota example: MnSCU institutions served 112,000 students or 42 percent of all credit students in online courses in fiscal year 2014. Thirteen percent of credit students in 2014 were enrolled totally online. The colleges and universities offer over 500 instructional programs online.

Strategy: Expand apprenticeship and paid internship related to education programs

Apprenticeship programs are a form of occupational training that includes supervised on-the-job training and classroom instruction. According to the 2011 Minnesota Skills Gap Survey, 45 percent of Minnesota manufacturing businesses reported having positions unfilled due to the inability to find workers with the appropriate skills for the job.[127] Apprenticeship programs are seen as a possible solution to fill these workforce needs while providing an affordable postsecondary training option to Minnesotans.

Completing an **internship** within the field of study prior to graduation has proven beneficial to a student's ability to find career-oriented employment after school (Callanan 2004).[128] Increasing the availability of paid internships for college students is an equity issue. Students, who cannot afford to spend the summer at an internship related to their study, rather than working for pay, are at a disadvantage after degree completion.

Minnesota examples: Dakota County Technical College was selected by the **Minnesota Advanced Manufacturing Partnership** to expand apprenticeships in welding technology and mechatronics, funded by a U.S. Department of Labor Grant.

Bühler's Apprenticeship Academy in Plymouth, Minnesota partnered Bühler Inc. with Dunwoody College of Technology, a model that other schools and companies in Minnesota are beginning to emulate.[129]

The **Health Support Specialist Registered Apprenticeship Program** is a partnership between the Minnesota State Colleges and Universities system and Aging Services of Minnesota. Apprentices work with health care professionals while taking classes at a MnSCU campus to develop necessary skills and earn an HSS certificate.

The University of St. Thomas' **Career Development Center** encourages every student to have one internship or off-campus employment experience related to their career area of interest, along with providing assistance on resume writing, interview techniques, networking and job search communication. In the 2013-14 year, 56 percent of all graduating seniors had an internship while at St. Thomas.

The **Greater Minnesota Internship Tax Credit Program** provides a tax credit to Minnesota employers located outside of the Twin Cities metro area who provide paid internships for students in the second half of their educational experience (50% or more of credits needed to complete degree).[130]

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[127] Minnesota Department of Employment and Economic Development. (2011). Understanding the Worker Needs of Manufacturers: The 2011 Minnesota Skills Gap Survey.
[128] http://www.emeraldinsight.com/doi/pdfplus/10.1108/00400910410525261
[129] Depass, D. (2014, September 26). Minnesota factories gear up to replace retiring boomers. *Star Tribune*. Retrieved from http://www.startribune.com/business/277291591.html.
[130] http://www.ohe.state.mn.us/mPg.cfm?pageID=2099

4. Affordability

For students failing to complete their desired degree or credential, higher education is never affordable. Facing a slow recovery from the recent economic recession, states, including Minnesota, are grappling with affordability, access and completion.[131] With limited resources, Minnesota should increasingly target funding to programs with demonstrated results and, more specifically, the most cost effective of these programs.[132] Minnesota can design higher education policy, and financial aid programs, to meet a variety of policy goals, including access, choice, completion or academic excellence.[133] The Minnesota State Grant, as a complement to Federal Pell Grants, is a key policy tool to mitigate barriers to access and completion for key groups.

Challenges for lower-income students include lack of financial resources, misperceptions about tuition and financial aid and limited support services.[134] The impact of financial factors, including financial support or aid, on student completion is based on theory that individuals derive economic benefits from investments in education and training. Rational individuals will weigh costs and benefits in pursuing education and training within the context of individual values and preferences.[135] Tuition and financial aid change the relative measures of marginal costs and thus influence individual decisions about enrollment, persistence and completion. Analysis of financial aid focuses largely on price responsiveness of students. As price increases, enrollment or persistence decreases.[136] Price is measured by tuition, fees and other education-related costs (books, living expenses) less grants and scholarships. Net price, or what the student and family pays out-of-pocket, is what ultimately affects the student's decision to enroll and stay enrolled. There are also other costs that students face when pursuing postsecondary education. For instance, some students may not be able to afford college application fees, expenses for purchasing tools required in technical programs, or fees associated with graduation or degree receipt.

Financial aid has been determined to be a significant predictor in enrollment and persistence although the variability in results indicates that the effect is likely small and indirect.[137] Bettinger (2004) found that a $1,000 increase in a Pell Grant is associated with a three percentage point reduction in the likelihood that a student drops out.[138] Even among financial aid programs with no effect on initial

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[131] U.S. Department of Commerce. (2013). *National Income and Product Accounts Gross Domestic Product, First Quarter 2013 (advance estimate).* Washington, DC. Retrieved from http://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm.

[132] Bornstein, D. (2012). The Dawn of the Evidence-Based Budget. *New York Times*. May 30, 2012. Retrieved from http://opinionator.blogs.nytimes.com/2012/05/30/worthy-of-government-funding-prove-it/?_r=0.

National Governor's Association, 2011. *Tough Budget Choices and Redesigning Government: Checking In at Year's End 2011* .Retrieved from http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-ehsw-publications/col2-content/main-content-list/summit-redesign-brief.html.

[133] Doyle, W.R. (2008) Access, Choice and Excellence: The Competing Goals of State Student Financial Aid Programs. In Baum, S. & McPherson, M. (eds). *The Effectiveness of Student Aid Policies What the Research Tells Us.* New York: College Board.

[134] Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion from High School Through College*. U.S. Department of Education.

[135] Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education.* London.

[136] Leslie, L. L. and Brinkman, P. T. (1987). Student price response in higher education. *Journal of Higher Education*. 58:121-204.

[137] Heller, D. E. (1997). Student price response in higher education. *Journal of Higher Education*. 68(6):624-659.

[138] Bettinger, E. (2004). How Financial Aid Affects Persistence. In Hoxby, C.M. (ed.) *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It.* Chicago: University of Chicago Press.

enrollment, financial aid can impact persistence and completion.[139] Adequate financial aid is cited most often by both lower-income and students of color as critical in their continued progress towards a college degree.[140] Students face sacrifices that come with enrolling and persisting in higher education, in the form of lost wages, lost family time and less advancement in an existing job that will need to be reflected in aid levels.

The current focus on affordability and student debt recognizes that every dollar in grant aid reduces the amount a student or family must borrow to pay for their college education by one dollar. The current student loan crisis could be attributed to the stagnation in funding in federal Pell Grants and state grants as tuition increased over the past two decades and loans were the only growing source of funding for students.[141] Results for Minnesota indicate that students at four-year public institutions receiving a Minnesota State Grant graduate with significantly lower levels of debt than students not receiving a State Grant.[142]

Minnesota's Design for Shared Responsibility

- Minnesota has a strong financial aid program. The Minnesota State Grant program is the nation's 6th largest need-based grant program.[143] The average grant is $1,700 per recipient ($800 at a two-year program, $2,500 at a four-year program).[144] The grant amount an individual student receives is proportional to the student's price of attendance, financial resources and enrollment level. The policy also clearly states "The legislature finds and declares that the identification of men and women of the state who are economically disadvantaged and the encouragement of their educational development in eligible institutions of their choosing are in the best interests of the state and of the students."[145] The program has two characteristics:
- It utilizes a Design for Shared Responsibility framework, which takes into account the full cost of a college certificate or degree and allocates that cost to students, families and taxpayers.
- The Shared Responsibility model ensures a shared commitment to funding higher education for economically disadvantaged students by recognizing both the "public good" and private good" aspects of postsecondary education.

Several national organizations including WICHE, SHEEO, College Board and the Lumina Foundation promote Minnesota's Design for Shared Responsibility as a model framework for state and federal need-based financial aid. The model is easier to sustain financially than low-tuition models, since it is focused on lower- and middle-income students and provides incentives for more concentrated enrollment. The primary draw to using a Design for Shared Responsibility model is its ability to clearly articulate what

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[139] Kane, Thomas J. 1999. *The Price of Admission: Rethinking How Americans Pay for College*. Washington, DC: Brookings Institution Press.

Leslie, L. L. and Brinkman, P. T. (1987). Student price response in higher education. Journal of Higher Education. 58:121-204.

[140] St. John, E. P. & Noell, J. (1989). The effects of student financial aid on access to higher education: An analysis of progress with special consideration of minority enrollment. *Research in Higher Education*, 30(6), 563-581.

Heller, D. E. (1997). Student price response in higher education. Journal of Higher Education. 68(6):624-659.

[141] Baum, S., & Payea, K. (2013). *Trends in student aid*: *2013.* New York: College Board.

[142] Minnesota Office of Higher Education. (2011). *Minnesota Measures 2011*. St. Paul, MN: Minnesota Office of Higher Education.

[143] National Association of State Student Grant & Aid Programs. (2013). *44th Annual Survey Report on State-Sponsored Student Financial Aid 2012-2013 Academic Year*. NASSGAP.

[144] Minnesota Office of Higher Education. (2014). *Minnesota State Grant End-of-Year Statistics Fiscal Year 2013*. St. Paul, MN: Minnesota Office of Higher Education.

[145] 2013 Minnesota Statutes 136A.095 GRANTS-IN-AID; PURPOSE.

the responsibilities (and expectations) are of students, families and taxpayers. It allows states to align with larger higher education policy in order to promote timely completion, higher rates of student success and strengthen federal and institutional financing partnerships.[146]

"Focusing only on family income at the time students enroll in college is an inadequate method for determining what is affordable. This approach provides little insight into how older students might finance postsecondary education. It ignores the question of how much students themselves—whether dependent or independent—can afford to pay out of the significant earnings premium most students experience as a result of postsecondary education."[147] The principal components of Design for Shared Responsibility allow policymakers to evaluate and determine appropriate measures of affordability. Policymakers should also be aware of work and study tradeoffs for students.

Minnesota's State Grant program has proven to be a strong tool to ensure higher education remains affordable for lower and middle income families. Data on financial aid received by first-time, full-time undergraduates in Minnesota show that the net price of college for the lowest income students has remained stable for the most recent four years. For students from families with incomes of less than $30,000, the net price has declined from $14,000 in 2008-2009 to $13,800 in 2011-2012.[148] Students from families with incomes of $30,000 to $75,000 experienced increases in net price of only $200 during the same time period.

Strategy: Expand investment in Minnesota's State Grant program

The Minnesota State Grant program, properly calibrated to actual costs, is well positioned to meet demand and remove financial barriers to access for Minnesota's lower- and middle-income students. In order to maintain stability in educational costs for students and keep debt from increasing for lower- and middle income families, Minnesota needs to fully recognize the costs students face at all levels.

First, the cap on recognized tuition and fees should be based on current costs charged to students. For example, for students seeking a degree from the University of Minnesota, the program continues to underfund tuition by choosing to fund only $13,000 of their $13,620 in tuition. The result is that the state expects more financially from students seeking University of Minnesota degrees than those seeking degrees from Winona State University or St. Cloud State University. This creates an unintentional barrier for those students able to succeed academically, but not financially, at the University of Minnesota.

The second financial barrier created for students is the failure to recognize a poverty level living standard. The failure to plan for expenses beyond tuition (rent, transportation, books, and food) can derail a student with the best intentions. The state continues to expect that students can live on $8,490 for a nine month period—$943 per month. The result of such policies can mean students work more hours while enrolled in order to afford basic living needs which limits their study and classroom time and negatively impacts their probability of college completion. There is a difference between expecting students to maintain a frugal standard of living and expecting students to live at a level below basic

[146] Prescott, B. and Longanecker, D. (2014). *States in the Driver's Seat: Leveraging State Aid to Align Policies and Promote Access, Success, and Affordability*. Western Interstate Commission on Higher Education.
Carlson, A. and Zaback, K. (2014). *Moving the Needle: How Financial Aid Policies Can Help States Meet Student Completion Goals*. State Higher Education Executive Officers.
[147] Baum, S. and Ma, J. (2014). *College Affordability: What Is It and How Can We Measure It?* Lumina Foundation.
[148] Minnesota Office of Higher Education. (2014). *Minnesota Measures 2014*. St. Paul, MN: Minnesota Office of Higher Education.

poverty standards. While working a part-time job may be beneficial for students, working too many hours will be detrimental to their academic progress.[149]

Despite being cited nationally as an exemplar, the State Grant program has not fully recognized the actual costs lower-income students face in college. When costs within the program are not fully recognized, lower- and middle-income students pay 100 percent of every dollar left unfunded demonstrating the state's failure to maintain its portion of the shared responsibility model as originally intended.[150] With an additional investments over the biennium, Minnesota could ensure the State Grant program maximizes its effectiveness in assisting lower- and middle-income students afford college through to completion.

Strategy: Maximize resources available to students

Affordability can only be achieved and sustained if the financial contributions expected of each party are reasonable. Financial aid at the federal level was designed to protect federal investments by ensuring students and families were assessed educational costs based on their financial resources. This policy works fairly well for traditional dependent students. However, independent students over age 25 have a different set of financial obligations than the teenager straight out of high school. The result is that federal policy expects independent students to designate one-quarter to one-half of their income for college costs.

A disparity exists between low-income independent students without children and dependent students. Independent students are largely excluded from funding for both Pell Grants and State Grants, while parents of a dependent student with the same income are fully funded in both programs. Given the need to have more working adults receive additional education and training to adapt to changing workforce job skills, this policy seems not only misplaced, but a barrier to Minnesota's success. Federal and state policymakers should reevaluate the financial expectations placed on students. Financial expectations and available avenues for meeting those expectations must be easily understood by students and it must be perceived as achievable and available.[151]

Included in this determination is the understanding that many students trade study and classroom time for work time. Employment, whether on campus as work study, or off campus, is one source of income students use to pay tuition and it may also provide valuable career preparation and experience. Student persistence can be both positively and negatively impacted by student employment. Positive impacts are seen when students work on campus for a reasonable amount of hours or have employment related to their educational objective. Negative impacts are seen when the work time or hours required interfere with course and learning obligations. It can be a challenge for a student to create an optimal balance between school and work for themselves while trying to manage finances and multiple demands on their time. Options for assisting students in balancing work and study include expanding paid internships and apprenticeships to ensure that students maximize their time at both college and the workplace, or paying students to enroll full-time has been found to encourage persistence. Such policies are often found in Europe where generous tuition subsidies require the student enroll full-time and complete in an efficient

[149] Boswell, Sarah. (2012). "College Connect: How much work is too much?" Society of American Business Editors and Writers.
[150] Minnesota Office of Higher Education. (2008). Enrollment Patterns of Lower Income Students. St. Paul, MN: Minnesota Office of Higher Education.
[151] Prescott, B. and Longanecker, D. (2014). *States in the Driver's Seat: Leveraging State Aid to Align Policies and Promote Access, Success, and Affordability*. Western Interstate Commission on Higher Education.

manner. There is an efficiency argument to be made in assisting low-wage workers in quickly obtaining skills and credentials required for higher paid employment.

Strategy: Design higher education policy to meet a set of agreed-upon goals

Financial aid does not live in a vacuum. Minnesota must take into account the scope of higher education policies. Tuition, institutional appropriations, expectations of higher education systems and expectations for students should not conflict, but send a clear message to higher education stakeholders that student success is a key goal by which they are measured. Higher education policy and specifically financial aid programs should be designed to meet a variety of policy goals, including access, choice, completion or academic excellence.[152] With limited resources, states should increasingly target funding to programs with demonstrated results and more specifically to the most cost effective of these programs.[153] Financial aid policies can be combined with other programs, such as child care grants, paid internships, and work study to ensure that students are financially in a position to complete their education.

States could embed incentives within financial aid programs to ensure institutions share in the risk and rewards. In addition, states could leverage grant aid funding to incentivize student and/or institutional behaviors geared toward completion. For example, renewal of a state grant may require that students complete a given number of credits during the academic year.

Strategy: Increase public and policymaker awareness of grant effectiveness to improve economic mobility for lower-income students

Available research clearly demonstrates the power of messaging in ensuring financial access for lower income students. The Minnesota State Grant program is well-designed but may not be well understood by prospective students. This hinders the state's ability to achieve desired outcomes or provide opportunities. Broad-based financial guarantees fail to integrate shared responsibility principles and can be seen as using valuable limited resources inefficiently, while not directly addressing the attainment gaps. Prospective students and their families need simple and clear communication in order to understand how much funding will be provided by federal and state grants.

Strategy: Continually evaluate outcomes

As with any financial investment on the part of the state, continued work to systematically evaluate outcomes in terms of access, affordability and student success is important. Minnesota's newly developed State Longitudinal Education Data System (SLEDS) is beginning to demonstrate how the state can effectively use data when paired with information on student developmental education, academic performance, persistence and completion. These data can be obtained by expanding current

[152] Doyle, W.R. (2008) Access, Choice, and Excellence: The Competing Goals of State Student Financial Aid Programs. In Baum, S. & McPherson, M. (eds). *The Effectiveness of Student Aid Policies What the Research Tells Us.* New York: College Board.

[153] Bornstein, D. (2012). The Dawn of the Evidence-Based Budget. *New York Times.* May 30, 2012. Retrieved from http://opinionator.blogs.nytimes.com/2012/05/30/worthy-of-government-funding-prove-it/?_r=0.

National Governor's Association, 2011. *Tough Budget Choices and Redesigning Government: Checking In at Year's End 2011*. Retrieved from http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-ehsw-publications/col2-content/main-content-list/summit-redesign-brief.html.

institution data sharing arrangements and taking advantage of national educational records provided by the National Student Clearinghouse.

Conclusion

The problem of inadequate postsecondary completion is a major hurdle to Minnesota's future social and economic stability. As our population becomes more diverse, our higher education system needs to be more responsive to a variety of student needs. The state, postsecondary institutions, businesses, nonprofits, students and families all have a stake and responsibility in ensuring successful postsecondary completion by Minnesota's students. The above solutions are not meant to be prescriptive nor does every solution apply to every institution. Rather, these are a collection of best practices that should be considered based on student populations and needs.

Appendix A

GUIDED PATHWAYS TO SUCCESS
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- Whole programs of study. Students choose coherent academic majors or programs, not random, individual courses. In this way, a clear path to on-time completion is prepared for students, semester by semester, all the way to graduation day.
- Informed choices and "meta majors." Colleges use a range of information such as past performance in high school to provide recommendations to students about programs of study that match their skills and interests. With this information, students can make more informed choices among a set of initial broad academic pathways that lead to academic programs. For example, first year students would choose a "meta major" in a broad area — such as STEM, health care, or social science — and then narrow into a more specific major — such as chemistry or nursing.
- Default pathways. Students remain on their chosen path unless given approval to change by an adviser. Exploration outside one's major is still allowed and enabled as intentional investigation, replacing aimless wandering. Students stay on track for graduation — and fully understand the time and money consequences of making a change.

- Guaranteed milestone courses. Degree pathways contain critical milestone courses that must be completed each semester to certify students are on track. These courses provide realistic assessments of student progress and give students early signals about their prospects for success in a given field of study. This information eliminates the problem of students putting off challenging courses until the consequences of changing majors becomes too damaging and costly.
- Intrusive, just-in-time advising. Innovations in technology now allow student support to be targeted and customized to meet the needs of individual students as colleges can more effectively monitor student progress. Early warning systems make it easy for institutions to track student performance in required courses and target interventions when they are most needed. Academic advisers can focus attention almost exclusively on students most in need of services instead of spreading themselves thinly over burdensome caseloads.
- Math alignment to majors. College algebra has one purpose: calculus. For many students, algebra is a serious obstacle to college success. Instead, we should use statistics and quantitative literacy, which better align with most non-STEM programs of study.

http://completecollege.org/the-game-changers/#clickBoxTeal

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GUIDED PATHWAYS TO SUCCESS BEST PRACTICES

Arizona State University designed **eAdvisor system** to help boost retention rates. The system is an integrated online degree map, tracking system and alert system. First-time, full-time first-time retention rates have climbed to 84 percent since its implementation and 91 percent of all students are deemed to be "on track" in their programs, up from 22 percent three years before.

Florida State University (FSU) combines degree maps with other strategies to increase graduation rates and close attainment gaps. Since beginning to use degree maps, FSU has cut the number of students graduating with excess credits in half. Additionally, in 10 years, FSU's graduation rate for all students has increased by 12 percent — to 74 percent. More significantly, the graduation rate for African Americans has increased to 77 percent, for first-generation Pell students to 72 percent and for Hispanic students to greater than 70 more.

Georgia State University has boosted graduation rates by more than 20 percentage points in the last 10 years by using degree maps and intrusive advising. Pell students (52.5 percent), African American (57.4 percent) and Hispanic students (66.4 percent) now graduate at higher rates than the overall student body and the university confers more bachelor's degrees to African Americans than any other U.S. university.

The City University of New York (CUNY) Accelerated Study in Associate Programs (ASAP) helps select community college students earn associate degrees more quickly. ASAP students are grouped in cohorts based on a limited set of majors and attend courses during consolidated morning, afternoon, or evening schedules to enable them to better balance school, jobs and family responsibilities. The initiative has produced a graduation rate three times higher than the national average for urban community colleges — 55 percent of its fall 2007 cohort earned associate degrees in three years.

Technical and vocational training at **Tennessee's 27 Tech Centers** have an average 75 percent completion rate, with some centers graduating all of their students. Job placement rates also are high — 80 percent or higher. Unlike traditional approaches, students enroll in whole academic programs, not individual courses, streamlining the path to completion by removing the burdens of individual course selection and availability. Programs are offered Monday to Friday from 8 a.m. to 3 p.m. and attendance is taken. Finally, the complete program costs and the time it will take to graduate are clearly presented up front, allowing students to plan ahead and know with certainty when they will graduate. Many of the Tech Centers' more successful program elements were included in a new state law that created a unified community college system.

Accelerate TEXAS — a fast-track initiative spearheaded by the Texas Higher Education Coordinating Board — has helped more than 2,500 adult basic education students earn certificates in high-demand sectors, including health care, manufacturing, construction and transportation. This highly structured program targets adult learners who lack the reading or math skills and often a GED or high school diploma, necessary to enroll in a typical career and technical education (CTE) program. It offers students a one-and-a-half- or two-year option for completion and students know from day one what courses they will be taking and when.

The program co-enrolls students in basic skills support classes and/or GED (if needed) with the CTE course, bringing students into CTE courses faster and giving them the necessary academic, career and case management advising support to get them through the program and into jobs faster. So far, 19 community colleges across Texas are participating in Accelerate TEXAS.

To address the acute physician shortage in the Rio Grande Valley, in fall 2012 the **University of Texas (UT) at Brownsville** launched a new biomedical degree. The degree is part of the University of Texas System's Transformation In Medical Education program, which enables students to complete the first three years of their undergraduate degree at UT Brownsville and the last three years of the program at medical schools in the UT system.

This innovative program eliminates traditional lecture courses; is modular and competency-based; features intensive mentoring and problem-based learning; and compresses students' time to graduation from the traditional four years to three, propelling them rapidly toward medical and professional schools. Entering freshmen are assigned to a five-student learning community cohort, which is supported by a faculty mentor throughout the program.

Although only in its second semester, UT Brownsville's innovative degree shows promise as a model for increasing student achievement. Students in the program are earning higher grade point averages (2.61) than the general UT Brownsville first-year population (2.12), have higher course completion rates (83 percent vs. 74 percent) and are enrolled in more hours per semester (15.9 vs. 11.7).

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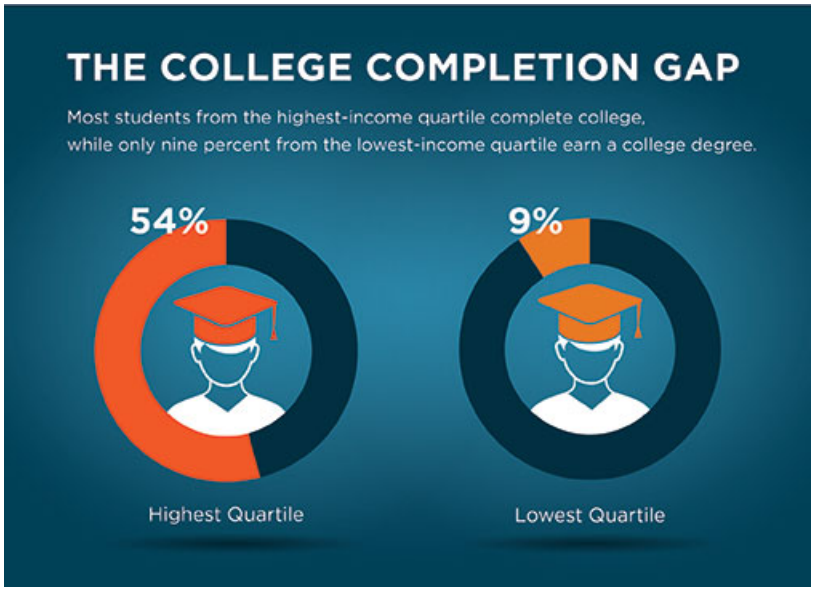
Appendix B

The College Completion Gap

At each stage of their educational lives, students growing up in low-income communities fall behind their peers. They participate in early learning at far lower rates than more affluent students, enter school less ready and are more likely to drop out. For those low-income students who graduate from high school, they are less likely to go to college and less likely to graduate. This hurts young people, their families and their communities and damages America's economic strength and international competitiveness. To ensure that all students have the opportunity to succeed in college and the workforce, our nation must address the needs of students in low-income communities and low-performing schools, as well as homeless students, children of migrant workers, students in foster care and other learners who face challenges to success.



Source: U.S. Department of Education
http://www.ed.gov/ladders