

# Minnesota Measures

2009 Report on Higher Education Performance

**“Building Minnesota’s world-leading status in the knowledge economy requires us to set goals for higher education and measure results. This report gauges outcomes so we can focus on strategies for improvement in productivity and student success.”**

**– Governor Tim Pawlenty**

#### **Acknowledgements**

The Office of Higher Education thanks the Minnesota State Colleges and Universities, the University of Minnesota, the Minnesota Private College Council and the Minnesota Career College Association for their participation and assistance in this process.

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# Minnesota Measures

## A report on higher education performance

### Executive Summary

Now in its third year, *Minnesota Measures* provides policymakers and educators with a statewide look at higher education effectiveness in the context of broad state objectives and national and international performance comparisons. In challenging economic times, Minnesotans have historically turned to higher education to upgrade their skills or earn a degree that will give them an advantage in a contracting job market. Minnesota's higher education sector will play a key role in the state's economic recovery, which is why the collective effectiveness of higher education in Minnesota is so critical today.

This report is produced in response to legislation passed in 2005 requiring the Minnesota Office of Higher Education to "*develop and implement a process to measure and report on the effectiveness of postsecondary*

*institutions in the state*" [Minnesota Session Laws 2005]. It is a tool to aid Minnesota policymakers in the difficult and important work of providing the vision, identifying priorities and setting goals needed to move Minnesota forward to lead in the information age.

Minnesota students and taxpayers value and support higher education. State taxpayers provide more than \$1.3 billion annually to the state's public colleges, universities and financial aid programs. Over the last 10 years, state lawmakers have approved millions in funding for capital bonding for construction, remodeling and repair of state-owned higher education facilities. In addition, Minnesota students and their families pay tuition and fees to institutions across the state with an expectation, in return, of academic quality and value.

While the state's higher education systems and many institutions are actively engaged in implementing accountability measures specific to their operations, *Minnesota Measures* provides a statewide perspective on the postsecondary sector as a whole. Comparisons with Big 10 "peer states", the national average and other countries, where possible, help to identify broad areas in which Minnesota excels and others where improvement may be needed.

How were the goals developed? In 2005 and 2006, educators, policymakers, employers and other leaders were involved in a process to identify broad goals and indicators of success. Five goals emerged, which serve as the framework for this report. In 2009, the Office of Higher Education will invite public discussions on each of the goals and corresponding indicators.

- |                   |   |
|-------------------|---|
| <b>GOAL ONE</b>   | Improve success of all students, particularly students from groups traditionally underrepresented in higher education.                                      |
| <b>GOAL TWO</b>   | Create a responsive system that produces graduates at all levels who meet the demands of the economy.   |
| <b>GOAL THREE</b> | Increase student learning and improve skill levels of students so they can compete effectively in the global marketplace.                                   |
| <b>GOAL FOUR</b>  | Contribute to the development of a state economy that is competitive in the global market through research, workforce training and other appropriate means. |
| <b>GOAL FIVE</b>  | Provide access, affordability and choice for all students.  |

## The Good News

Minnesota is a leader among states in many areas important to the state's vitality, workforce and quality of life.

- **College participation:** Nearly seven out of 10 Minnesota high school graduates are enrolling directly in college following graduation. The rate at which high school graduates enroll directly in college is known as the college participation rate. In Minnesota, 68.4 percent of high school graduates enroll within the year following graduation, the ninth highest participation rate in the country. This rate, when considered with Minnesota's nation-leading high school graduation rate, demonstrates that high school graduates are navigating the high school to college transition with some degree of success. The state's participation rate has increased slowly but steadily over the last 15 years.
- **Educational attainment:** Minnesota leads the nation and many developed countries in the percentage of its population with an associate degree or higher. For the period 2005 through 2007, 39.9 percent of adults 18 to 64 years old possessed an associate degree or higher, the fourth highest percentage among states. As a regional economic hub, the Twin Cities metropolitan area has traditionally drawn degree holders from other states, contributing to the educational attainment level of Minnesota residents.

- **Economic responsiveness:**

Minnesota's higher education sector is responding to employment demand in many critical and growing fields by producing graduates to fill high demand/high paying occupations identified by the Minnesota Department of Employment and Economic Development through 2016. In a 2008 survey of Minnesota employers conducted for the Minnesota Office of Higher Education, 96 percent of employers rated the employment preparation of Minnesota college graduates as either good (77 percent) or very good (19 percent).

- **Participation in learning assessments:** On measures of student learning, many public and private institutions are implementing learning assessments and surveys to gauge the value added by higher education. For example, the Minnesota State Colleges and Universities system, which enrolls more than half the undergraduates in Minnesota, began requiring its institutions to conduct a standardized survey of student engagement at least biennially in 2008. National discussions on the importance of learning assessment and how best to accomplish this task are ongoing. These may someday lead to the availability of widespread learning and engagement outcomes for Minnesota institutions that can be compared nationally and internationally.

## Areas of Concern

Feedback received from policymakers from the first two editions of *Minnesota Measures* in 2007 and 2008 pointed to a need for more specific identification of areas where performance is low and improvements are needed in Minnesota postsecondary institutions.

- **College readiness and preparation gap:** Vast disparities persist in the academic achievement among groups of high school students. On average, low-income students and students who are Black, American Indian or Hispanic posted dramatically lower-than-average scores on Minnesota Comprehensive Assessments as well as the ACT college entrance exam. The ACT is taken voluntarily by about 70 percent of high school students, all of whom presumably have college aspirations. As Minnesota grows increasingly more diverse, effectively addressing this achievement gap becomes an urgent moral and economic imperative.

While not directly accountable for the readiness of high school graduates, Minnesota's public and private colleges are increasingly identifying ways to reach out to the K-12 system in general and partner with local middle and high schools in particular to improve academic rigor and college awareness.

- College completion for students of color:** Three years of data suggest students of color (particularly Hispanic, American Indian and Black students) are completing two- and four-year degrees at lower rates than their White counterparts. This is true at both two- and four-year colleges. For example, 56 percent of White students initially enrolled at two-year colleges either graduated or transferred to another institution after three years, compared with 33 percent of American Indian, 44 percent of Black and 35 percent of Hispanic students. The remainder neither completed nor transferred. This and other data suggest the achievement gap persists into postsecondary education and solutions to improve student success rates are needed.
- Affordable college options:** Minnesota's gross and net tuition and fees were higher than the national average for most public and private institutions. The net price of attending college plays a critical role in understanding student access and is reflected in the college choices students make. Minnesota undergraduates from families with annual incomes less than \$30,000 were much more likely to attend public two-year institutions than any other option; students from families with annual incomes of \$60,000 or more were more likely to enroll in private colleges and the University of Minnesota. This and other enrollment patterns suggest that price is driving college choices and may be limiting program and college options for low-income students.
- Productivity and completion rates:** Learning for the sake of learning is important; but for degree-seeking students, program completion is what matters. Among states, Minnesota's three-year, four-year and six-year graduation rates are at the national average. While graduation rates as calculated at the federal level are a less-than-perfect measure of productivity, the rate is widely and consistently used by colleges and national organizations. An alternative measure of degree completion – awards conferred as a proportion of full-time enrollment – confirms a need to focus on getting students through to degree completion. Minnesota's public and private colleges have focused on degree completion in recent years, and improvements in the state's graduation and related measures are expected to improve in the near term.

## College Readiness and Academic Preparation

The effectiveness of the higher education sector depends, in part, on the preparation of new students entering the state's colleges and universities directly out of high school. Students completing more rigorous courses in core academic subjects in high school consistently score higher on standardized tests and college entrance assessments. These students are more likely to participate and succeed in college.

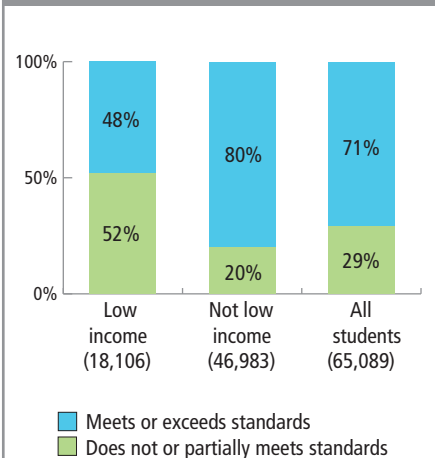
Two exam results illustrate the academic strengths and weaknesses of Minnesota high school students: the Minnesota Comprehensive Assessments and the ACT exam.

### Minnesota Comprehensive Assessments

Minnesota Comprehensive Assessments measure student progress toward Minnesota's academic standards for K-12 education. All public school students in grades three through eight take reading and mathematics assessments. Students in grade 10 take reading assessments and students in grade 11 take mathematics assessments.

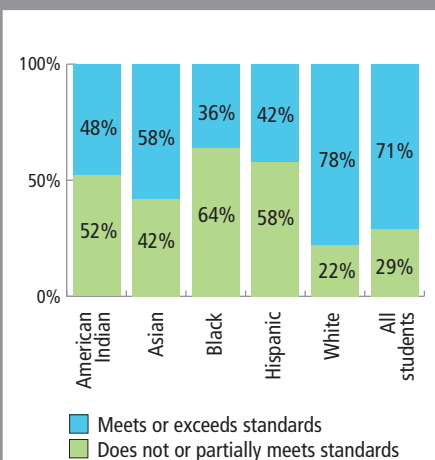
The statewide results of public high school students in 2008 indicate 71 percent were meeting the minimum competency standards set by the Minnesota Department of Education in reading and 34 percent in math. Gaps in math were especially acute for low-income students and students of color. About 25 percent of public high school students were low income and about 20 percent were students of color.

**Reading Grade 10  
Minnesota Comprehensive  
Assessment  
Results by Income 2008  
Minnesota Public Schools**



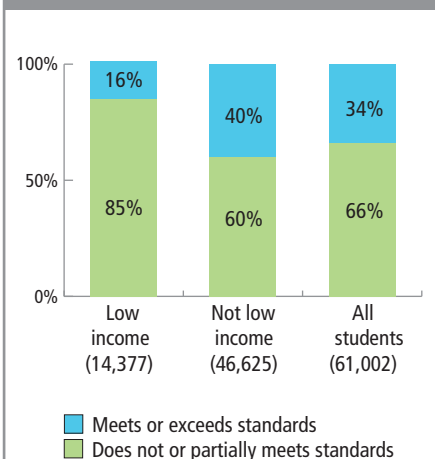
Note: Low income students are eligible for free or reduced price lunch. Families are eligible based on income and family size.  
Source: Minnesota Department of Education

**Reading Grade 10  
Minnesota Comprehensive  
Assessment  
Results by Race/Ethnicity 2008  
Minnesota Public Schools**



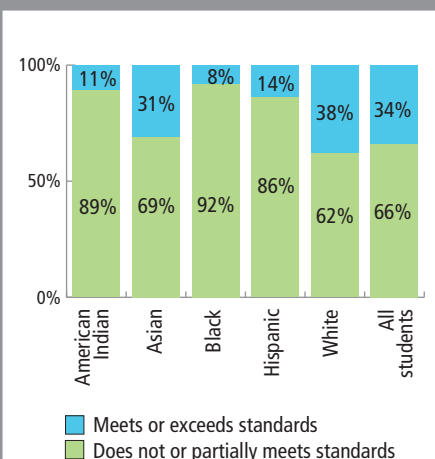
Source: Minnesota Department of Education

**Mathematics Grade 11  
Minnesota Comprehensive  
Assessment  
Results by Income 2008  
Minnesota Public Schools**



Note: Low income students are eligible for free or reduced price lunch. Families are eligible based on income and family size.  
Source: Minnesota Department of Education

**Mathematics Grade 11  
Minnesota Comprehensive  
Assessment  
Results by Race/Ethnicity 2008  
Minnesota Public Schools**



Source: Minnesota Department of Education

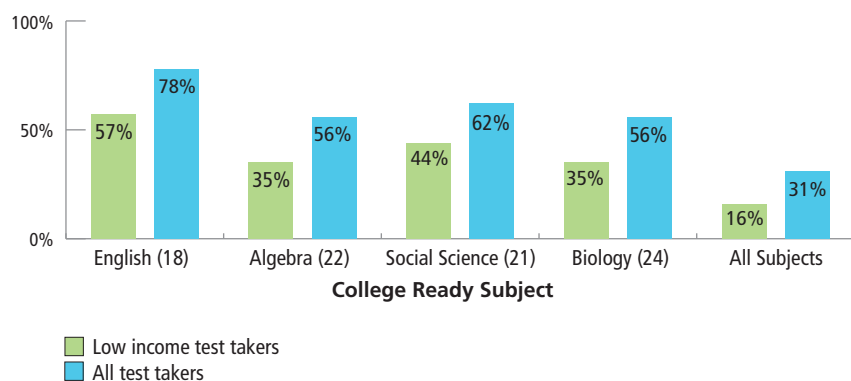


### ACT College Entrance Exam

Minnesota's high school graduates posted the highest average composite score in the nation among states where more than 50 percent of students took the ACT. The mean score was 22.6 out of a possible 36. Almost 69 percent of Minnesota high school graduates took the ACT. While Minnesota had the highest average composite score in the nation, a significant proportion of high school graduates were not prepared for college-level work, according to ACT.

ACT has developed college readiness benchmarks in each of the four testing areas of its college entrance exams. Based on ACT research, these benchmarks define the score needed to have a 75 percent chance of earning a grade of 'C' or better in related college-level courses. Less than one-third of Minnesota's ACT test takers were academically prepared to succeed in all four subject areas: college-level English, social science, algebra and biology. Minnesota students of color and low-income test takers were less college ready overall than white students.

**Minnesota ACT Test-Takers Meeting College Readiness Benchmarks Set by ACT 2007**



Note: Low income test-takers had an annual family income of less than \$30,000. Eleven percent, or 4,668 test takers, were low income. Minimum ACT score needed to meet college readiness shown in parenthesis in college subject area. Source: ACT

**Minnesota ACT Test-Takers Meeting College Readiness Benchmarks Set by ACT by Race/Ethnicity 2008**

| ACT Percent College Ready by ACT Score in: |   |  |   |   |                           |
|--|---|--|---|---|---------------------------|
|  | English Composition:<br>score of 18 or<br>higher in English | Social Science:<br>score of 21 or<br>higher in reading | College Algebra<br>score of 22 or<br>higher in math | Biology:<br>score of 24 or<br>higher in science | All Four<br>Subject Areas |
| All students                               | 77%   | 64%  | 56%   | 40%   | 32%                       |
| American Indian                            | 64%   | 58%  | 38%   | 23%   | 18%                       |
| Asian                                      | 55%   | 41%  | 41%   | 25%   | 19%                       |
| Black                                      | 38%   | 26%  | 16%   | 9%  | 5%                        |
| Hispanic                                   | 59%   | 50%  | 34%   | 22%   | 17%                       |
| White                                      | 81%   | 67%  | 59%   | 42%   | 34%                       |

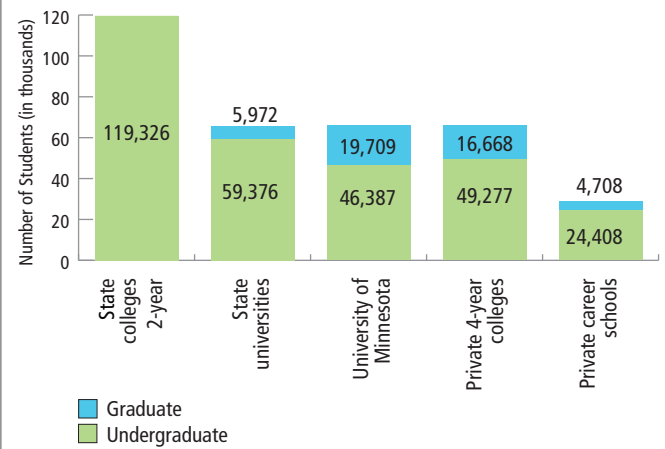
Note: The data in this table are from 2008 whereas the chart above presents 2007 ACT data. Source: ACT

## Minnesota College Enrollment Overview

An overview of who enrolls in Minnesota postsecondary institutions and student characteristics provides a context for the indicators throughout the report. In fall 2007, there were 397,059 students enrolled in all types of Minnesota postsecondary institutions.

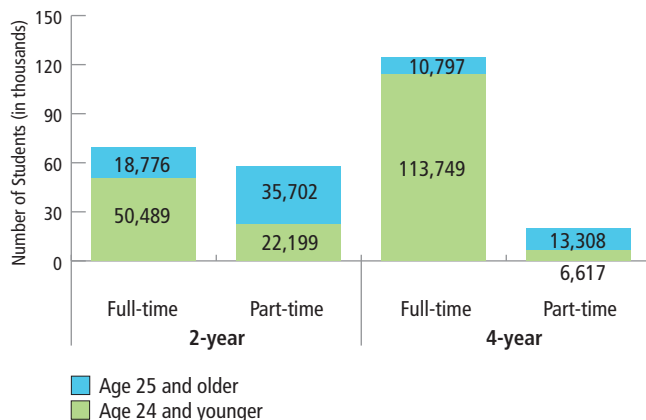
- Three-quarters of all students were enrolled in undergraduate programs.
- Undergraduates enrolled at four-year institutions tended to be age 24 or younger and enrolled full-time.
- Two-year institutions had larger numbers of undergraduates age 25 and older enrolled part time. Students of color enrolled at two-year institutions in higher numbers than four-year institutions.
- Students of color were 10 percent of all undergraduates.

Minnesota Undergraduate Enrollment by Type of Institution 2007



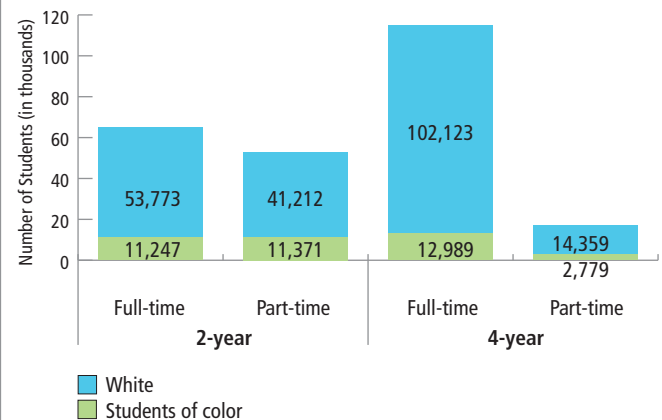
Source: Minnesota Office of Higher Education

Minnesota Undergraduate Enrollment by Age and Enrollment Status Fall 2007



Source: Minnesota Office of Higher Education

Minnesota Undergraduate Enrollment by Race/Ethnicity and Enrollment Status Fall 2007



Source: Minnesota Office of Higher Education



## Improve success of all students, particularly students from groups traditionally underrepresented in higher education.

From the state's perspective, success for students in higher education generally means students entering college will gain the knowledge, skills and capacity to complete their chosen programs so they are prepared for a rewarding life. When more students participate in college and complete degrees, the state benefits in many important economic, cultural and social ways. No single indicator alone demonstrates student success. Examining measures such as enrollment, retention and graduation rates by race and ethnic background begins to paint a picture of the Minnesota experience in postsecondary education.

In general, students attending more selective public and private institutions tended to fare better on success measures than those attending institutions with more open admissions policies. Indicators suggest American Indian, Black and Hispanic students were generally less successful than their Asian and White counterparts enrolled in postsecondary education. American Indian, Black and Hispanic students were more likely to attend college part time than full time and completed degrees at lower rates than their White or Asian counterparts. Differences in part-time versus full-time enrollment and program choices by race and ethnicity are also illustrated here.

Minnesota's performance on standard measures of retention and graduation, and the well-known achievement gap for certain populations, are important and relevant policy concerns.

# GOAL ONE

## College Participation

### Indicator 1A: What percentage of Minnesota high school graduates enroll in postsecondary education in the year following graduation?

The rate at which recent high school graduates enroll in college is known as the college participation rate.<sup>1</sup> Specifically, this indicator shows the percentage of Minnesota high school graduates enrolling in postsecondary education within a 12-month period following high school graduation. Minnesota's performance on this measure may indicate the effectiveness of college awareness initiatives and the success of college recruiting and outreach targeted to Minnesota high school students. College participation is also heavily influenced by the academic preparation of high school students.

Minnesota ranked ninth in the nation in 2006, with 68 percent of the state's 2005-2006 high school graduates enrolling in college directly from high school.<sup>2</sup> All state participation rates rose between 2004 and 2006.

Minnesota's college participation rate is notably strong, since it also has one of the highest high school graduation rates in the nation. Larger proportions of this age group are graduating and choosing to enroll in college immediately after high school than in other states. The college participation rate in Minnesota has remained in the mid-60 percent range since 2001.<sup>3</sup>

Of all 2006 Minnesota high school graduates, approximately:

- 50 percent attended a Minnesota postsecondary institution
- 18 percent attended an out-of-state school
- 32 percent did not attend college within the first year after graduating

#### Percent of High School Graduates Going Directly to College

| Top 3 States    | 2004  | Top 3 States    | 2006  |
|-----------------|-------|-----------------|-------|
| South Dakota    | 68.8% | Mississippi*    | 76.1% |
| New York        | 67.9% | New York        | 74.4% |
| North Dakota    | 67.6% | North Dakota    | 72.3% |
| Minnesota (5th) | 65.3% | Minnesota (9th) | 68.4% |
| Peer States     | 57.8% | Peer States     | 61.9% |
| Nation          | 55.7% | Nation          | 61.6% |

\*Note: Mississippi has one of the lowest high school graduation rates in the nation. It may rank first in college going due to the likelihood that the small percent who do graduate are more likely to enroll in college. Mississippi ranked 16th in 2004 at 59.9 percent.

Source: National Center for Higher Education Management Systems

### Participation by race/ethnicity

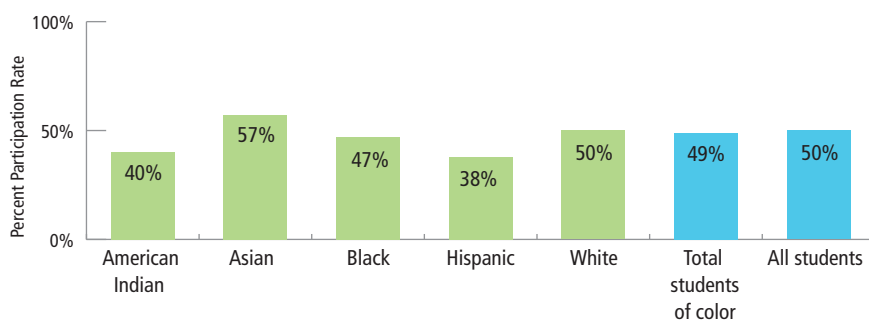
While Minnesota has a relatively high college participation rate, there were some gaps in college participation by race and ethnicity. College participation rates by race and ethnicity were available only for students attending Minnesota institutions. Since approximately 18 percent of high school graduates attend a college out of state, a complete picture of college participation for Minnesota high school graduates by race and ethnicity was not available.

Participation rates for various racial and ethnic populations attending Minnesota postsecondary colleges directly from high school can vary by several percentage points from year to year. Rate fluctuations tend to be due to small numbers of students in some racial and ethnic groups. Thus, a five-year average is shown here.

Asian high school graduates enrolled in Minnesota postsecondary institutions at rates higher than other populations. White high school graduates had the next highest participation rate, followed by Black, Hispanic and American Indian high school graduates.

Between 2002 and 2006, the number of students of color graduating from high school and enrolling in a Minnesota college increased 36 percent. During the same period, White high school graduates increased two percent, Black graduates increased 58 percent, Asian and Hispanic graduates increased 25 percent and American Indian graduates increased 34 percent.

**Minnesota High School Graduates Enrolling in a Minnesota Postsecondary Institution  
Five-Year Average College Participation Rates Fall 2002 to 2006**



Note: Minnesota college participation only; these percentages do not include an estimated 18 percent of recent high school graduates enrolling out of state.

Source: Minnesota Office of Higher Education

# Retention

## Indicator 1B: Are first-time undergraduates being retained in the second year?

College retention is defined as the number of first-time, full-time undergraduates who start at one institution in the fall term and return to the same institution in the fall term of their second year. Students may not return for a wide range of reasons. Some students may find they are not academically or socially prepared for college. Some do not find the right institutional fit on the first try and do not return because their expectations or needs were not met. Retention rates do not account for students continuing their education at another institution.

### Retention at four-year institutions

Between fall 2006 and fall 2007, 81 percent of first-time, full-time students were retained from their first to second year at Minnesota four-year institutions. Minnesota's retention rate at four-year institutions improved from 77.8 percent to 80.6 percent between fall 2005 to fall 2007 and remained higher than peer states or national averages. When compared by institution type, Minnesota private not-for-profit institutions and the University of Minnesota had higher first- to second-year retention rates than the state universities.

Minnesota ranked 13th nationally in first- to second-year retention rates at four-year institutions behind the top-performing states of California, Massachusetts and Connecticut.

### Retention at two-year institutions

Minnesota's public and private two-year institutions ranked well below the top-performing states on this measure, with 58.1 percent of first-time, full-time

students retained at the same institution in the second year. Students completing their programs within their first year of study were still counted as retained in the second year; thus, retention was not negatively impacted by students completing short-term programs.

Minnesota's retention rate at two-year institutions improved from 56.6 percent to 58.1 percent over the last three years but remained lower than peer states or national averages. When compared by institution type, Minnesota private career schools had higher first- to second-year retention

rates than the state colleges. Though the retention rates at Minnesota's private institutions were substantially higher than those at public institutions, the first-time, full-time enrollment at private institutions was only five percent of the overall first-year, full-time enrollment at two-year institutions.

Minnesota ranked 26th nationally in first- to second-year retention at two-year institutions behind the top-performing states of South Dakota, North Dakota and California.

First- to Second-Year Retention Rates at Minnesota Institutions

| 4-Year Institutions     | Fall 2005    | Fall 2006    | Fall 2007    |
|-------------------------|--------------|--------------|--------------|
| State universities      | 71.9%        | 72.7%        | 73.2%        |
| University of Minnesota | 83.0%        | 82.6%        | 83.4%        |
| Private not-for-profit  | 83.5%        | 84.6%        | 84.5%        |
| <b>Total 4-year</b>     | <b>77.8%</b> | <b>78.8%</b> | <b>80.6%</b> |
| 2-Year Institutions     | Fall 2005    | Fall 2006    | Fall 2007    |
| State colleges 2-year   | 55.7%        | 56.0%        | 56.8%        |
| Private career schools  | 81.0%        | 75.0%        | 65.6%        |
| <b>Total 2-year</b>     | <b>56.6%</b> | <b>56.7%</b> | <b>58.1%</b> |

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

First- to Second-Year Retention Rates Fall 2006

| 4-Year Institutions    | 2-Year Institutions    |
|------------------------|------------------------|
| Top 3 States           | Top 3 States           |
| California 83.2%       | South Dakota 70.3%     |
| Massachusetts 82.9%    | North Dakota 65.6%     |
| Connecticut 82.5%      | California 65.3%       |
| Minnesota (13th) 78.8% | Minnesota (26th) 56.7% |
| Peer States 76.3%      | Peer States 58.4%      |
| Nation 76.2%           | Nation 58.6%           |

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

## Graduation Rates

### Indicator 1C: How do Minnesota institutions compare on college graduation rates?

Graduation rates are an indicator used to measure both individual and institutional success. High graduation rates may be an indication of appropriately targeted student recruitment, effective campus communication and scheduling, strong advising and accessible student support services. The academic preparation of students, colleges' admissions selectivity and student demographics also factor into graduation rates.

#### Graduation rates at four-year institutions

The graduation rate tracks a cohort of first-time, full-time degree-seeking students and identifies what proportion completed bachelor's degrees within four or six years at the same institution they began their studies. The 2007 data in this report reflect the graduation rates of first-time, full-time degree seeking undergraduates who began at a four-year institution in fall 2001. Students who started attending a four-year institution part time or were not seeking a bachelor's degree are not included in this calculation.

Graduation rates in 2007 at Minnesota's four-year colleges were higher than the national average but lower than peer

states, with 36.7 percent of students completing degrees within four years and 59.5 percent completing degrees within six years of their initial enrollment. Minnesota's not-for-profit private colleges had the highest graduation rates.

Minnesota's graduation rate was significantly lower than the top-performing states of Massachusetts, Rhode Island, New Hampshire and Delaware. Among peer states, the four-year graduation rate ranged from 46 percent (Pennsylvania) to 31 percent (Wisconsin); the six-year rate ranged from 66 percent (Pennsylvania) to 57 percent (Ohio). Massachusetts and Rhode Island, as well as most eastern states, have a higher

percentage of students enrolled at private not-for-profit four-year institutions than public four-year institutions. Since private institutions have higher graduation rates than public institutions, eastern states tend to rank higher on this indicator.

Another measure of completion for institutions is the number of degrees awarded. The total number of bachelor's degrees awarded at four-year institutions is listed next to the retention and graduation rates by institution. Degrees awarded include all bachelor's degrees regardless of when or where the student began their program of study or whether they enrolled full time or part time.

#### Graduation Rates at 4-Year Institutions

| 4-Year Rate      |       | 6-Year Rate      |       |
|------------------|-------|------------------|-------|
| Top 3 States     | 2006  | Top 3 States     | 2006  |
| Rhode Island     | 52.7% | Massachusetts    | 69.0% |
| Massachusetts    | 50.1% | Rhode Island     | 66.2% |
| Delaware         | 50.0% | New Hampshire    | 66.1% |
| Minnesota (19th) | 36.7% | Minnesota (19th) | 57.5% |
| Peer States      | 38.6% | Peer States      | 60.3% |
| Nation           | 36.1% | Nation           | 57.5% |

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

#### Graduation Rates at Minnesota 4-Year Institutions

| Institution Type        | 2005        |             | 2006        |             | 2007        |             |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                         | 4-Year Rate | 6-Year Rate | 4-Year Rate | 6-Year Rate | 4-Year Rate | 6-Year Rate |
| State universities      | 14.9%       | 46.8%       | 20.6%       | 46.8%       | 20.4%       | 47.7%       |
| University of Minnesota | 29.0%       | 56.2%       | 30.1%       | 56.6%       | 33.3%       | 58.5%       |
| Private not-for-profit  | 58.8%       | 70.0%       | 56.7%       | 68.2%       | 62.0%       | 71.8%       |
| Minnesota               | 35.0%       | 58.0%       | 36.7%       | 57.5%       | 39.2%       | 59.5%       |

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

### Retention and Graduation Rate, and Bachelor's Degrees Awarded at Minnesota 4-Year Institutions 2007

| 4-Year Institutions                    | Fall 2007 Retention Rate | Fall 2001 First-Time, Full-Time Cohort | 4-Year Graduation Rate | 6-Year Graduation Rate | 2006-2007 Bachelor's Degrees Awarded |
|--|--------------------------|--|------------------------|------------------------|--------------------------------------|
| <b>University of Minnesota</b>         | <b>83.4%</b>             | <b>8,078</b>                           | <b>33.3%</b>           | <b>58.5%</b>           | <b>9,539</b>                         |
| University of Minnesota-Crookston      | 69.3%                    | 236                                    | 19.5%                  | 33.1%                  | 211                                  |
| University of Minnesota-Duluth         | 74.9%                    | 2,109                                  | 23.5%                  | 49.6%                  | 1,638                                |
| University of Minnesota-Morris         | 81.2%                    | 474                                    | 43.5%                  | 57.4%                  | 392                                  |
| University of Minnesota-Twin Cities    | 87.7%                    | 5,259                                  | 36.9%                  | 63.4%                  | 7,298                                |
| <b>State Universities</b>              | <b>73.2%</b>             | <b>8,388</b>                           | <b>20.4%</b>           | <b>47.7%</b>           | <b>10,328</b>                        |
| Bemidji State University               | 69.1%                    | 651                                    | 27.6%                  | 45.8%                  | 821                                  |
| Metropolitan State University          | 58.5%                    | 45                                     | 11.1%                  | 17.8%                  | 1,321                                |
| Minnesota State University-Mankato     | 79.8%                    | 2,114                                  | 18.5%                  | 49.9%                  | 1,400                                |
| Minnesota State University-Moorhead    | 68.9%                    | 1,236                                  | 18.4%                  | 45.1%                  | 2,258                                |
| Saint Cloud State University           | 71.9%                    | 2,313                                  | 17.6%                  | 45.2%                  | 2,487                                |
| Southwest Minnesota State University   | 71.0%                    | 448                                    | 20.8%                  | 43.3%                  | 496                                  |
| Winona State University                | 71.5%                    | 1,581                                  | 25.9%                  | 53.4%                  | 1,545                                |
| <b>Private Not-for-Profit</b>          | <b>84.5%</b>             | <b>9,185</b>                           | <b>62.0%</b>           | <b>71.8%</b>           | <b>11,798</b>                        |
| Augsburg College                       | 80.5%                    | 346                                    | 37.6%                  | 60.1%                  | 604                                  |
| Bethany Lutheran College               | 78.8%                    | 53                                     | 35.8%                  | 75.5%                  | 117                                  |
| Bethel University                      | 85.5%                    | 643                                    | 68.7%                  | 76.2%                  | 844                                  |
| Carleton College                       | 97.8%                    | 516                                    | 90.5%                  | 92.6%                  | 492                                  |
| College of Saint Benedict              | 90.4%                    | 556                                    | 75.7%                  | 81.7%                  | 479                                  |
| College of Saint Scholastica           | 79.3%                    | 314                                    | 55.7%                  | 63.7%                  | 672                                  |
| College of St Catherine                | 78.5%                    | 289                                    | 38.4%                  | 58.5%                  | 552                                  |
| College of Visual Arts                 | 54.1%                    | 40                                     | 2.5%                   | 40.0%                  | 27                                   |
| Concordia College at Moorhead          | 79.0%                    | 758                                    | 63.1%                  | 69.3%                  | 740                                  |
| Concordia University                   | 71.4%                    | 200                                    | 28.5%                  | 44.5%                  | 588                                  |
| Crown College                          | 67.7%                    | 157                                    | 30.6%                  | 47.8%                  | 160                                  |
| Dunwoody College of Technology         | 75.3%                    | na                                     | na                     | na                     | 143                                  |
| Gustavus Adolphus College              | 92.5%                    | 601                                    | 77.9%                  | 85.7%                  | 694                                  |
| Hamline University                     | 81.4%                    | 418                                    | 60.8%                  | 68.7%                  | 525                                  |
| Macalester College                     | 94.4%                    | 505                                    | 82.2%                  | 86.1%                  | 557                                  |
| Martin Luther College                  | 88.5%                    | 255                                    | 39.2%                  | 68.2%                  | 223                                  |
| Minneapolis College of Art and Design  | 23.0%                    | 98                                     | 41.8%                  | 52.0%                  | 163                                  |
| North Central University               | 69.5%                    | 250                                    | 46.4%                  | 48.0%                  | 172                                  |
| Northwestern College                   | 83.1%                    | 397                                    | 46.3%                  | 59.4%                  | 799                                  |
| Pillsbury Baptist Bible College        | 67.5%                    | 68                                     | 25.0%                  | 33.8%                  | 44                                   |
| Saint Johns University                 | 89.3%                    | 502                                    | 71.7%                  | 79.9%                  | 421                                  |
| Saint Mary's University of Minnesota   | 78.3%                    | 395                                    | 48.6%                  | 53.4%                  | 453                                  |
| Saint Olaf College                     | 93.4%                    | 744                                    | 81.7%                  | 86.2%                  | 907                                  |
| University of St Thomas                | 87.9%                    | 1,080                                  | 55.6%                  | 71.7%                  | 1,422                                |
| <b>Private For-Profit</b>              |                          |  |                        |                        |                                      |
| Art Institutes International Minnesota | 59.5%                    | 163                                    | 32.5%                  | 41.1%                  | 183                                  |
| Brown College                          | 74.2%                    | na                                     | na                     | na                     | 14                                   |
| Globe University                       | 72.7%                    | na                                     | na                     | na                     | 25                                   |

Note: The fall 2001 first-year, full-time cohort is the adjusted cohort in the IPEDS graduation rate survey is an institution's revised cohort minus any allowable exclusions. Schools with cohort size of 30 or less not shown. Cohort are first-time, full-time degree-seeking students. Colleges are classified based on their reporting status as "two-year" or "four-year" institutions for IPEDS surveys. Bachelor's degrees awarded at each institution during the 2006-2007 academic year shown for reference.

Source: U.S. Department of Education, IPEDS Graduation Rate and Completion Surveys



## Graduation rates at two-year institutions

At two-year institutions, the three-year graduation rate includes students completing a certificate, diploma or associate degree from the same institution where they began their studies. The 2007 data reflect the graduation rates of first-time, full-time certificate or degree-seeking students beginning a program at a two-year institution in fall 2004. Students who

started attending a two-year institution part time or were not seeking a certificate or degree are not included in this calculation. Minnesota's three-year graduation rate at two-year institutions decreased between 2005 and 2007.

Not all degree-seeking students attending two-year institutions receive credentials at a two-year institution; some will transfer to a four-year

institution to obtain a bachelor's degree. At Minnesota's public two-year institutions, a set of courses known as the Minnesota Transfer Curriculum<sup>4</sup> can be taken and transferred to four-year institutions upon completion (or even near completion) of an associate degree. Statewide, about 20 percent of all undergraduates at Minnesota two-year institutions transfer; 10 percent of all undergraduates transfer from both two-year and four-year institutions.

Minnesota's three-year graduation and transfer rates were above the peer states and the national average, but well below the top performing states. Minnesota ranked fifth nationally in the combined graduation and transfer rates for students attending two-year colleges. Two-year schools in Wyoming and South Dakota had the highest three-year graduation and transfer rate. Minnesota state two-year colleges enrolled more than 116,000 students in fall 2007 compared to 5,200 in South Dakota and 22,600 in Wyoming according to enrollment statistics from the U.S. Department of Education.

**3-Year Rate Graduation and Transfer Rates at Minnesota 2-Year Institutions**

| Institution Type                      | 2005  | 2006  | 2007  |
|---------------------------------------|-------|-------|-------|
| <b>State colleges 2-year</b>          |       |       |       |
| Graduation rate                       | 31.5% | 31.8% | 30.3% |
| Transfer rate                         | 23.0% | 22.0% | 24.1% |
| Combined graduation and transfer rate | 54.5% | 53.8% | 54.4% |
| <b>Private career schools</b>         |       |       |       |
| Graduation rate                       | 49.6% | 55.2% | 56.2% |
| Transfer rate                         | 1.7%  | 0.2%  | 0.5%  |
| Combined graduation and transfer rate | 51.3% | 55.4% | 56.6% |
| <b>Minnesota</b>                      |       |       |       |
| Graduation rate                       | 34.0% | 33.3% | 31.6% |
| Transfer rate                         | 20.3% | 20.3% | 22.9% |
| Combined graduation and transfer rate | 54.3% | 53.9% | 54.5% |

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

**Graduation and Transfer Rates at 2-Year Institutions 2006**

| Top 3 States     | 3-Year Graduation Rate | Top 3 States    | 3-Year Transfer Rate | Top 3 States    | Combined Graduation and Transfer Rate |
|------------------|------------------------|-----------------|----------------------|-----------------|---------------------------------------|
| South Dakota     | 64.8%                  | Illinois        | 24.9%                | Wyoming         | 68.7%                                 |
| Wyoming          | 59.1%                  | Alabama         | 24.5%                | South Dakota    | 65.3%                                 |
| Arizona          | 47.5%                  | Texas (4th)     | 20.2%                | Utah            | 61.1%                                 |
| Minnesota (23rd) | 33.3%                  | Minnesota (3rd) | 20.6%                | Minnesota (5th) | 53.9%                                 |
| Peer States      | 32.2%                  | Peer States     | 13.1%                | Peer States     | 45.3%                                 |
| Nation           | 32.3%                  | Nation          | 13.1%                | Nation          | 45.3%                                 |

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

### Retention, Graduation and Transfer Rates at Minnesota 2-Year Institutions 2007

| 2-Year Institutions                           | Fall 2007 Retention Rate | Fall 2004 First-Time, Full-Time Cohort | 3-Year Graduation Rate | 3-Year Transfer Rate | 3-Year Graduation and Transfer Rate |
|---|--------------------------|--|------------------------|----------------------|-------------------------------------|
| <b>State Colleges 2-year</b>                  | <b>56.8%</b>             | <b>20,232</b>                          | <b>30.3%</b>           | <b>24.1%</b>         | <b>54.5%</b>                        |
| Alexandria Technical College                  | 67.9%                    | 822                                    | 56.9%                  | 10.6%                | 67.5%                               |
| Anoka Technical College                       | 50.4%                    | 427                                    | 35.6%                  | 17.8%                | 53.4%                               |
| Anoka-Ramsey Community College                | 47.7%                    | 1,078                                  | 16.9%                  | 41.3%                | 58.2%                               |
| Central Lakes College                         | 60.2%                    | 692                                    | 40.0%                  | 20.5%                | 60.5%                               |
| Century Community & Technical College         | 54.6%                    | 1,285                                  | 13.5%                  | 30.4%                | 44.0%                               |
| Dakota County Technical College               | 56.3%                    | 615                                    | 40.8%                  | 14.6%                | 55.4%                               |
| Fond Du Lac Tribal & Community College        | 53.3%                    | 178                                    | 17.4%                  | 24.7%                | 42.1%                               |
| Hennepin Technical College                    | 56.2%                    | 863                                    | 38.2%                  | 12.1%                | 50.3%                               |
| Hibbing Community College                     | 46.7%                    | 476                                    | 37.4%                  | 25.8%                | 63.2%                               |
| Inver Hills Community College                 | 55.8%                    | 1,052                                  | 13.3%                  | 34.8%                | 48.1%                               |
| Itasca Community College                      | 56.3%                    | 327                                    | 37.3%                  | 24.5%                | 61.8%                               |
| Lake Superior College                         | 58.3%                    | 578                                    | 19.0%                  | 25.1%                | 44.1%                               |
| Mesabi Range Community & Technical College    | 62.8%                    | 344                                    | 39.5%                  | 19.8%                | 59.3%                               |
| Minneapolis Community & Technical College     | 56.6%                    | 1,085                                  | 20.1%                  | 22.1%                | 42.2%                               |
| Minnesota State College-Southeast Technical   | 55.3%                    | 373                                    | 41.0%                  | 11.0%                | 52.0%                               |
| Minnesota State Community & Technical College | 57.0%                    | 1,318                                  | 39.2%                  | 20.9%                | 60.2%                               |
| Minnesota West Community & Technical College  | 66.8%                    | 571                                    | 44.7%                  | 13.1%                | 57.8%                               |
| Normandale Community College                  | 53.9%                    | 1,517                                  | 12.3%                  | 43.2%                | 55.4%                               |
| North Hennepin Community College              | 56.6%                    | 715                                    | 16.4%                  | 33.3%                | 49.7%                               |
| Northland Community & Technical College       | 54.8%                    | 652                                    | 34.5%                  | 14.6%                | 49.1%                               |
| Northwest Technical College-Bemidji           | 46.6%                    | 225                                    | 38.2%                  | 24.0%                | 62.2%                               |
| Pine Technical College                        | 60.7%                    | 97                                     | 38.1%                  | 22.7%                | 60.8%                               |
| Rainy River Community College                 | 36.8%                    | 129                                    | 25.6%                  | 36.4%                | 62.0%                               |
| Ridgewater College                            | 62.5%                    | 1,122                                  | 42.8%                  | 17.3%                | 60.1%                               |
| Riverland Community College                   | 62.0%                    | 515                                    | 39.4%                  | 18.4%                | 57.9%                               |
| Rochester Community and Technical College     | 56.0%                    | 1,009                                  | 23.0%                  | 25.6%                | 48.6%                               |
| Saint Cloud Technical College                 | 61.9%                    | 799                                    | 40.4%                  | 23.5%                | 64.0%                               |
| Saint Paul College                            | 59.3%                    | 679                                    | 39.0%                  | 15.3%                | 54.3%                               |
| South Central Technical College               | 57.3%                    | 489                                    | 38.2%                  | 15.3%                | 53.6%                               |
| Vermilion Community College                   | 58.0%                    | 200                                    | 33.5%                  | 32.5%                | 66.0%                               |
| <b>Private Career Schools</b>                 |                          |  |                        |                      |                                     |
| Duluth Business University                    | 54.7%                    | 86                                     | 48.8%                  | 1.2%                 | 50.0%                               |
| High Tech Institute                           | na                       | 609                                    | 42.7%                  | na                   | 42.7%                               |
| Le Cordon Bleu College                        | na                       | 149                                    | 72.5%                  | na                   | 72.5%                               |
| Minneapolis Business College                  | 83.1%                    | 241                                    | 79.7%                  | na                   | 79.7%                               |

Note: The fall 2004 first-time, full-time cohort is the adjusted cohort in the IPEDS graduation rate survey is an institution's revised cohort minus any allowable exclusions. Schools with cohort size of 30 or less not shown. Cohort are first-time, full-time degree-seeking students.

Source: U.S. Department of Education, IPEDS Enrollment, Graduation Rate and Completion Surveys

## Factors affecting retention and graduation rates at Minnesota institutions

Timely graduation and retention can be influenced by a wide range of factors. While the method used to calculate graduation rates starts with students initially attending full time and intending to seek a certificate or degree, student plans can change, adversely affecting the institution's graduation rate. Students working more hours outside school and changing their course load to part-time attendance may be less likely to complete their program on time. Timely graduation is also more difficult for students who change their program of study. Insufficient academic preparation and financial challenges may also influence a student's ability to graduate within an expected period of time.

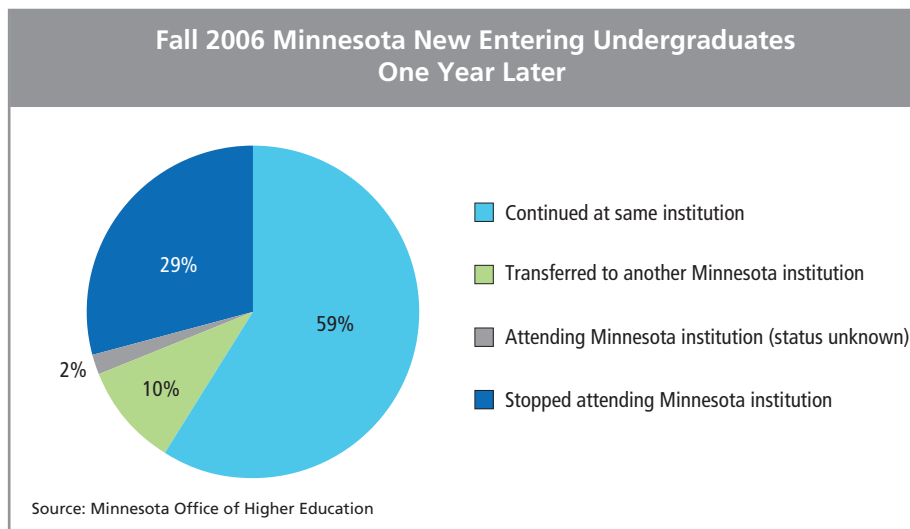
Transfer activity also affects reported retention and graduation rates. Students transferring to another institution before completing their program are not counted in the graduation rate measure using the current method of reporting. For many students at two-year colleges, transferring can be a forward progression to a bachelor's degree. In other cases, transfers may represent students who did not initially find the right fit or the programs and services they expected or needed at their first institution.

The Office of Higher Education collects and reports data on transfer activity. The chart in this indicator represents both part- and full-time new entering undergraduates enrolled in Minnesota postsecondary institutions in fall 2006, and the enrollment status of these students one year later in fall 2007. Of the new undergraduates in fall 2006,

71 percent were still enrolled in a Minnesota postsecondary institution one year later and 29 percent were not enrolled. Specifically:

- 59 percent were enrolled at the same institution one year later
- 10 percent transferred to another Minnesota institution
- two percent were enrolled in a Minnesota institution, but whether they transferred, or stayed at the same institution was not identified
- 29 percent were not enrolled one year later. These students either dropped out, completed a short-term program at a two-year institution, transferred out of state or a valid student record match could not be made.

With improvements in the transfer process within Minnesota public institutions and greater access to online courses, transferring credits has become commonplace. Ten percent of undergraduates transferred credits from one Minnesota institution to another, or from out of state in fall 2007.



### Minnesota Undergraduates Admitted as Transfer Students Fall 2007

| Transferred From                  | Transferred To          |                     |                            |                           |                          |               |
|-----------------------------------|-------------------------|---------------------|----------------------------|---------------------------|--------------------------|---------------|
| Institution Type                  | State<br>College 2-year | State<br>University | University<br>of Minnesota | Private<br>College 4-year | Private<br>Career School | Total         |
| State college 2-year              | 3,509                   | 2,716               | 885                        | 527                       | 464                      | 8,101         |
| State university                  | 1,146                   | 427                 | 198                        | 83                        | 152                      | 2,006         |
| University of Minnesota           | 757                     | 308                 | 72                         | 88                        | 89                       | 1,314         |
| Private college 4-year            | 598                     | 337                 | 187                        | 131                       | 55                       | 1,308         |
| Private career school             | 146                     | 54                  | 7                          | 22                        | 111                      | 336           |
| Unspecified Minnesota institution | 116                     | 32                  | 12                         | 19                        | 16                       | 195           |
| Out of state                      | 2,466                   | 1,522               | 741                        | 429                       | 670                      | 5,828         |
| Institution unknown               | 4,961                   | 165                 | 748                        | 1,996                     | 1,176                    | 9,046         |
| <b>Total</b>                      | <b>13,699</b>           | <b>5,561</b>        | <b>2,850</b>               | <b>3,295</b>              | <b>2,733</b>             | <b>28,138</b> |

Source: Minnesota Office of Higher Education

## Achievement Gap

### Indicator 1D: Are students from all racial and ethnic groups enrolling in higher education at equal rates?

Minnesota's traditional college-age population is becoming increasingly diverse. By 2015, high school graduates of color are projected to comprise 20 percent of all graduates at a time when the overall number of high school graduates are projected to decrease by approximately 10 percent, according to calculations prepared by the Minnesota State Demographic Center. The state anticipates a projected increase of 40 percent in the number of high school graduates who are students of color and a decrease of 17 percent in the number of White graduates by 2015.

The purpose of this indicator is to identify college enrollment choices from each broad racial or ethnic group.

#### Undergraduate college enrollment

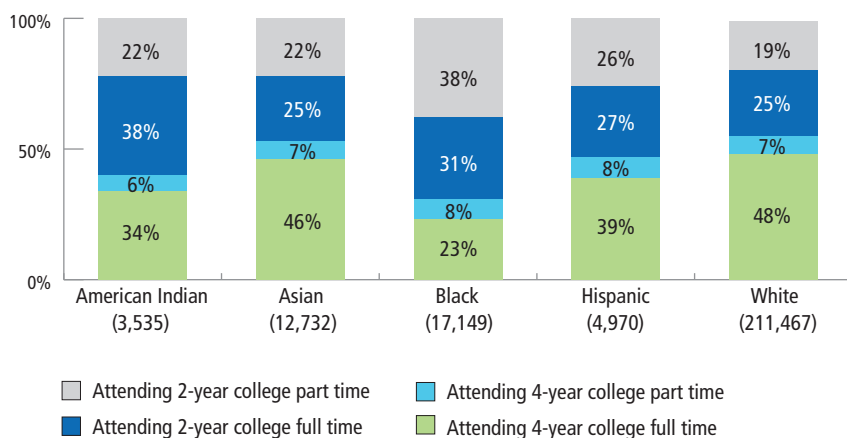
Enrollment patterns vary by race and ethnicity. The following observations can be made about Minnesota undergraduates enrolled in fall 2007:

- Undergraduates of color enrolled part time at two-year colleges in higher percentages than White undergraduates.
- Black, Hispanic and American Indian students attended two-year institutions at rates higher than their White or Asian counterparts.
- Of all enrolled Black students, 69 percent attended two-year institutions, the highest percent of

all racial/ethnic groups. They also enrolled disproportionately part time compared to other students. These high percentages particularly stand out, considering Black students comprised the largest number of undergraduate students of color.

- Asian students attended two-year and four-year institutions at rates comparable to White students.

Minnesota Undergraduate Enrollment by Race/Ethnicity, Institution Type and Status Fall 2007



Source: Minnesota Office of Higher Education

## Achievement Gap

### Indicator 1E: Are undergraduates from all racial and ethnic groups completing postsecondary programs at similar levels?

In general, the more education students complete, the more employment flexibility and income they will enjoy. Analyzing students' program choices becomes important as the state of Minnesota considers the kinds of economic opportunities available and whether students from all racial and ethnic groups are preparing for the high-wage opportunities of the future.

Data on awards conferred by race and ethnicity for 2007 paralleled enrollment choices by institution type. Black, American Indian and Hispanic students completed certificate and associate degree programs in higher percentages than they did bachelor's degrees, while Asian and White

students completed higher percentages of bachelor's degree programs than associate degrees or below.

Indicator 2F on page 33 provides more information on degrees awarded by race/ethnicity.

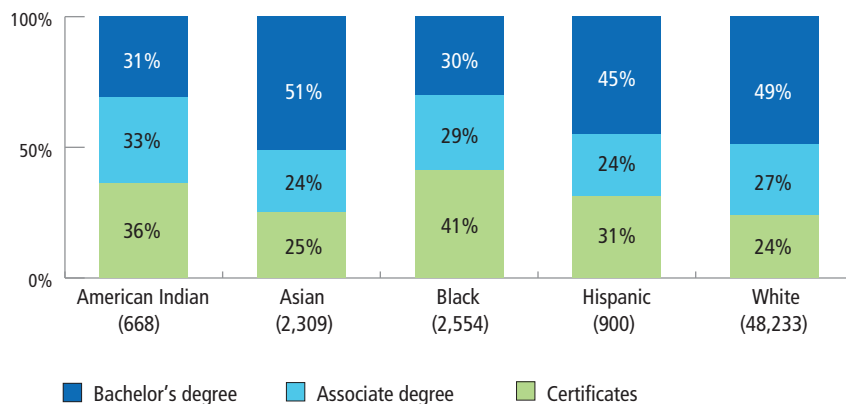
Even though more students of color enrolled in two-year colleges rather than four-year colleges, they predominantly completed certificates and diplomas in health-related programs, which are occupational areas in high demand in Minnesota.

- At the certificate level, programs in health were the most popular program for all groups. Fifty-three percent of all students of color who

completed certificate programs received health-related certificates or diplomas compared to 39 percent of White students.

- At the associate degree level, 32 percent of students of color who completed degrees earned health-related degrees compared to 29 percent of White students.
- At the bachelor's degree level, the top four most popular programs were in business (20 percent), STEM (science, technology, engineering, and mathematics, 15 percent), liberal arts (13 percent) and health (11 percent). Students of color completed programs in these categories in percentages similar to White students.

Undergraduate Awards Conferred by Minnesota Institutions by Race/Ethnicity 2006-2007



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

## Graduation and transfer rates

The following graphs show graduation and transfer rates for each racial or ethnic group. The graduation rate tracks a cohort of first-time, full-time students and identifies what proportion of them graduate within four or six years at four-year institutions and within three years at two-year institutions. Only students staying at the same institution and completing their programs are counted as graduates in this measure.

A larger portion of students of color neither graduated nor transferred within 150 percent of the expected completion time than their White counterparts. This was especially pronounced at two-year institutions where, on average, fewer than half the students of color either completed a credential or transferred to another institution within three years. At Minnesota's four-year institutions, Black and American Indian students completed degrees at substantially lower rates than their Asian, Hispanic and White counterparts.

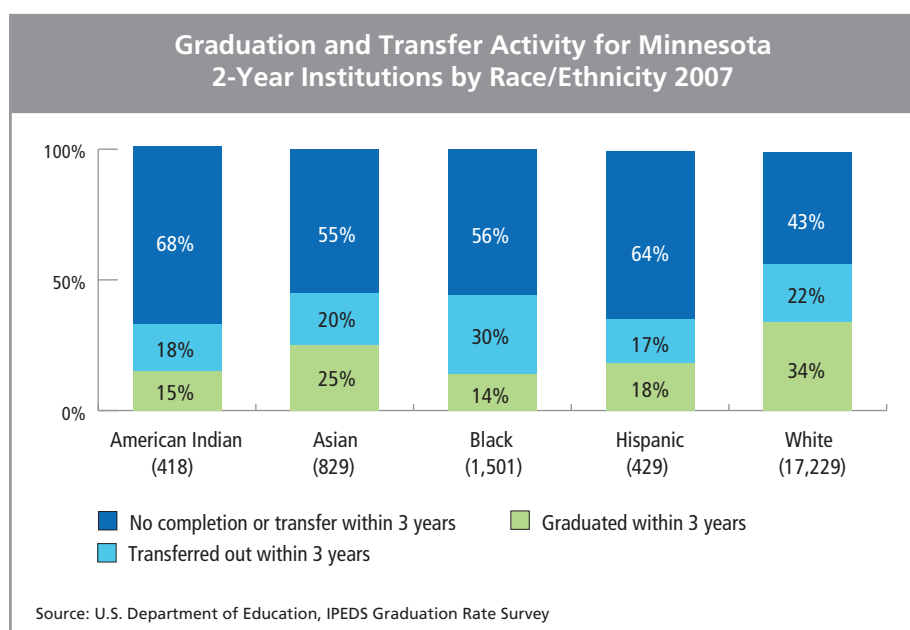
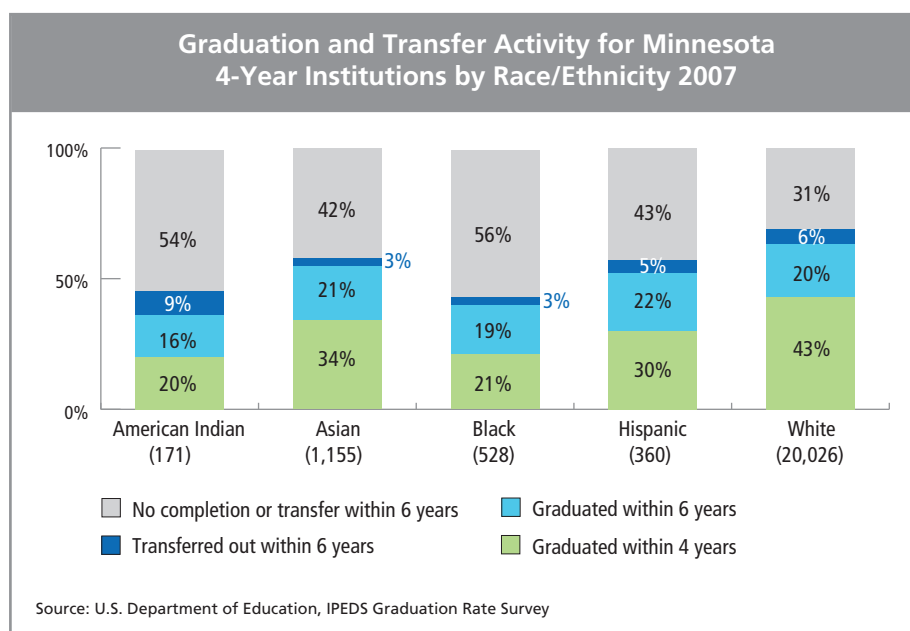
What is unclear is the degree to which these students have switched to part-time status, stopped out (meaning they left school but intend to return) or dropped out of college.

## Four-year institutions

Among students attending Minnesota's four-year colleges, American Indian students had the lowest graduation rate of any group, with 36 percent of first-time, full-time new entering undergraduates in fall 2001 graduating from the same institution within six years.

## Two-year institutions

Among students attending Minnesota's two-year colleges, Black students had the lowest graduation rate of any group, with 14 percent of first-time, full-time students in fall 2004 graduating from the same institution within three years. This group also had the highest transfer out rate of any group.





## **Create a responsive system that produces graduates at all levels who meet the demands of the economy.**

The state's higher education sector is a critical driver in building and maintaining a competitive workforce. This section examines Minnesota's postsecondary institutions' degree productivity and programs of study.

Minnesota continues to have a highly educated workforce, ranking fourth among all states in the total working population holding associate degrees or higher. Minnesota ranks above national averages in numbers of academic credentials awarded per full-time equivalent enrollment and per 1,000 of the working-age population.

The Minnesota Office of the Legislative Auditor has evaluated occupational programs offered by the Minnesota State Colleges and Universities designed to prepare students for specific jobs. The corresponding report explores how MnSCU responds to market conditions and employer needs for these programs; how well it coordinates with workforce centers and public training entities; and how well MnSCU evaluates these programs and communicates those results and labor market needs to students.



# Enrollment Rates

## Indicator 2A: What are the Minnesota postsecondary enrollment rates by age group?

Before measuring the extent to which the higher education sector produces graduates to meet economic demand, it is useful to consider how many individuals are enrolling in postsecondary education generally. Of the traditional college age students, 18 to 24 years old, 42 percent were enrolled in some form of postsecondary education in Minnesota. This was above the national average, but below peer states.

Within the 25 to 34 year-old age group, 11 percent were enrolled in college, placing Minnesota 33rd nationally. However, 48 percent of Minnesota’s 25 to 34 year olds have an associate degree or higher, placing Minnesota third in the nation in degrees obtained within this age group (see indicator 2C).

Percent of Population Enrolled in College 3-Year Estimates 2005-2007

| 18-24 Year Olds       | 25-34 Year Olds       |
|-----------------------|-----------------------|
| Top 3 States          | Top 3 States          |
| Rhode Island54.0%     | Utah15.2%             |
| Massachusetts49.3%    | New Mexico14.5%       |
| Vermont48.9%          | Maryland14.4%         |
| Minnesota (18th)42.0% | Minnesota (33rd)10.7% |
| Peer States48.5%      | Peer States11.7%      |
| Nation40.3%           | Nation11.6%           |

Note: Data collected during calendar years 2005, 2006 and 2007 for populations of 20,000 or more.  
Source: U.S. Census Bureau, American Community Survey

# Online Learning

## Indicator 2B: Are Minnesota’s colleges and universities meeting the demand for online learning?

One form of access to higher education is through online courses offered at institutions across the state. Expansion of education and training has been deemed critical in today’s knowledge-based economy. The Internet, particularly through the use of online learning, has expanded the opportunity for students to gain access to higher education. In Minnesota, all public institutions and most private institutions offer courses online. Furthermore, the expansion of online learning has occurred at both public and private higher education institutions and at both the graduate and undergraduate levels. Students may choose online learning for a variety of reasons: convenience, continuing education, job training, degree completion, dual enrollment and recreational learning.

Online enrollments in postsecondary education have grown faster than general higher education enrollments. This is a growing avenue for access since it allows students to customize the place and time of a course. The table shows online courses and enrollment at the University of Minnesota and Minnesota State Colleges and Universities.

Nationally, 22 percent of all higher education students were taking at least one online course in the fall of 2007.<sup>5</sup> Comprehensive data on online enrollments for Minnesota’s private institutions were not available; however, Minnesota’s career colleges report delivering approximately 40 percent of their credits online.

Credits Delivered Entirely Online at Minnesota Public Institutions

|               | University of Minnesota |                          | Minnesota State Colleges and Universities |                          |
|---------------|-------------------------|--------------------------|---|--------------------------|
| Academic Year | Online Credits          | Percent of Total Credits | Online Credits                            | Percent of Total Credits |
| 2005-2006     | 19,664                  | 1.2%                     | 228,927                                   | 5.7%                     |
| 2006-2007     | 33,700                  | 1.9%                     | 291,261                                   | 7.2%                     |
| 2007-2008     | 44,523                  | 2.5%                     | 376,958                                   | 9.1%                     |

Source: University of Minnesota and Minnesota State Colleges and Universities

## Degree Attainment

Indicator 2C: What percentage of the state's working-age population possess a postsecondary degree?

Degree attainment is not only a measure of institutional and individual success, but a measure of responsiveness by the higher education sector as a whole. Having an educated citizenry benefits the state in several areas, from overall quality of life to areas more directly related to the economy.

With 40 percent of its residents age 18 to 64 years old holding an associate degree or higher, Minnesota ranked fourth in the nation on this measure of degree attainment. Adults from age 25 to 44 have the highest levels of degree attainment compared to those age 18 to 24, or those age 45 and older.

Minnesota ranked consistently high on all measures of degree attainment among working-age adults. The relatively high rankings may be based, in part, on steady in-migration<sup>6</sup> of college-educated people moving to Minnesota from other states. Minnesota's performance on these measures was substantially higher than peer states and the nation.

In addition to the 40 percent of the Minnesota population age 18 to 64 with an associate degree or higher,

another 26 percent have some college, but no degree. The American Community Survey does not ask this group whether they completed a college program or received a credential. It is therefore difficult to determine how many in this non-degree group received the training needed for occupations requiring a college-level credential below the associate degree, such as those in allied health, construction trades, culinary arts, mechanics, transportation and manufacturing.

### Percent of Population with an Associate Degree or Higher 3-Year Estimates 2005-2007

| 18-64 Year Olds |       |
|-----------------|-------|
| Top 3 States    |       |
| Massachusetts   | 44.2% |
| Connecticut     | 41.0% |
| New Jersey      | 40.2% |
| Minnesota (4th) | 39.9% |
| Peer States     | 32.8% |
| Nation          | 33.5% |

Note: Data collected during calendar years 2005, 2006 and 2007 for populations of 20,000 or more.  
Source: U.S. Census Bureau, American Community Survey

### Percent of Population with an Associate Degree or Higher 3-Year Estimates 2005-2007

| 18-24 Year Olds |       | 25-34 Year Olds |       | 35-44 Year Olds    |       | 45-64 Year Olds  |       |
|-----------------|-------|-----------------|-------|--------------------|-------|------------------|-------|
| Top 3 States    |       | Top 3 States    |       | Top 3 States       |       | Top 3 States     |       |
| New York        | 18.7% | Massachusetts   | 52.0% | Massachusetts      | 50.1% | Massachusetts    | 46.7% |
| Massachusetts   | 18.6% | North Dakota    | 47.9% | Connecticut (3rd)  | 46.5% | Colorado         | 45.4% |
| New Jersey      | 17.5% | New York (4th)  | 47.1% | North Dakota (4th) | 46.4% | Vermont          | 45.0% |
| Minnesota (5th) | 17.1% | Minnesota (3rd) | 47.6% | Minnesota (2nd)    | 47.1% | Minnesota (12th) | 40.7% |
| Peer States     | 14.0% | Peer States     | 38.7% | Peer States        | 38.3% | Peer States      | 34.0% |
| Nation          | 13.4% | Nation          | 37.1% | Nation             | 38.4% | Nation           | 36.5% |

Note: Data collected during calendar years 2005, 2006 and 2007 for populations of 20,000 or more.  
Source: U.S. Census Bureau, American Community Survey

Minnesota's population does well on degree attainment measures compared to international standards. If Minnesota were a nation, it would be ranked fifth (behind Canada, Russia, Japan and Korea) in the percent of population age 25 to 34 with an associate degree or higher. Internationally and nationally, younger adults are more credentialed than older generations, reflecting increased participation and expansion of higher education opportunities.

Minnesota's performance on this measure is influenced, in part, by a high-wage economy with employers importing talented and educated people from other states and countries.

### Educational Attainment, Minnesota and International Comparisons 2006

|                                  | Percent of Population with Associate Degree or Higher |           | Percent of Population with Bachelor's Degree or Higher |           |
|----------------------------------|---|-----------|--|-----------|
|                                  | Age 25-34   | Age 25-64 | Age 25-34  | Age 25-64 |
| <b>Top Ranked OECD Countries</b> |   |           |  |           |
| Russian Federation*              | 55%   | 54%       | 21%  | 21%       |
| Canada                           | 55%   | 47%       | 29%  | 24%       |
| Japan                            | 54%   | 40%       | 30%  | 23%       |
| Korea                            | 53%   | 33%       | 33%  | 23%       |
| New Zealand                      | 44%   | 38%       | 30%  | 23%       |
| Belgium                          | 42%   | 32%       | 19%  | 14%       |
| Norway                           | 42%   | 33%       | 40%  | 31%       |
| Ireland                          | 42%   | 31%       | 28%  | 20%       |
| Denmark                          | 41%   | 35%       | 32%  | 27%       |
| France                           | 41%   | 26%       | 24%  | 16%       |
| Australia                        | 39%   | 33%       | 29%  | 24%       |
| Sweden                           | 39%   | 31%       | 31%  | 22%       |
| Spain                            | 39%   | 28%       | 26%  | 20%       |
| United States                    | 39%   | 39%       | 35%  | 35%       |
| Finland                          | 38%   | 35%       | 29%  | 19%       |
| United Kingdom                   | 37%   | 30%       | 29%  | 22%       |
| Minnesota                        | 48%   | 45%       | 35%  | 33%       |
| Peer States                      | 39%   | 38%       | 29%  | 28%       |
| OECD Average                     | 33%   | 27%       | 25%  | 19%       |
| EU19 Average**                   | 30%   | 24%       | 23%  | 17%       |

\*Russian Federation is an OECD partner member

\*\*Members of the European Union

Note: OECD country rankings based on top percent of population age 25 to 34 with an associate degree equivalent or higher. OECD member countries include 23 in Europe plus Australia, Canada, Korea, Japan, Mexico, New Zealand and the United States.

Source: U.S. Census Bureau, American Community Survey (for Minnesota and peer states); Organisation for Economic Cooperation and Development (for international data)

## Degree Attainment

### Indicator 2D: What is the proportion of undergraduate awards conferred to full-time enrollment?

This indicator provides an alternate perspective on productivity and graduation rates described in indicator 1C. Graduation rates track the progress of a group of degree seeking, first-time, full-time undergraduates. This indicator measures the undergraduate degrees and other awards produced relative to all enrolled undergraduates.

#### Four-year institutions

At Minnesota's four-year institutions, the number of bachelor's degrees awarded during 2006-2007 represented 20 percent of the total undergraduate full-time equivalent enrollment. The equivalent of about one-fifth of the student body graduated from

Minnesota's four-year institutions in 2007, placing Minnesota above the national average and near the average for peer states on this measure. Minnesota's private not-for-profit institutions award a higher percentage of degrees per full-time equivalent than public institutions; about one-fourth of the student body graduated each year.

#### Two-year institutions

At two-year institutions, the number of students completing certificates and associate degrees during 2006-2007 was nearly one-third of the undergraduate full-time equivalent enrollment for these institutions. The majority of these awards were conferred at the state two-

year colleges. Minnesota was above the national average and peer states on this measure. States ranked in the top percent of certificates awarded at two-year colleges did not confer many associate degrees, so the bulk of their full-time equivalent enrollment received certificates. In comparison, about half of the full-time equivalent students graduating from Minnesota's two-year colleges received certificates and half received associate degrees.

The full-time equivalent enrollment represents full-time enrollment plus part-time enrollment adjusted to its full-time equivalent.

Awards Conferred as a Proportion of Full-Time Equivalent Enrollment 2006-2007

| Certificates at 2-Year Institutions |       | Associate Degrees at 2-Year Institutions |       | Bachelor's Degrees at 4-Year Institutions |       |
|-------------------------------------|-------|--|-------|---|-------|
| Top 3 States                        |       | Top 3 States                             |       | Top 3 States                              |       |
| Alaska                              | 58.4% | North Dakota                             | 24.5% | Oregon                                    | 23.3% |
| Louisiana                           | 33.3% | South Dakota                             | 20.9% | Illinois                                  | 23.3% |
| Kentucky                            | 30.7% | New Hampshire                            | 17.5% | California                                | 23.3% |
| Minnesota (20th)                    | 15.2% | Minnesota (14th)                         | 14.7% | Minnesota (23rd)                          | 20.1% |
| Peer States                         | 13.6% | Peer States                              | 11.9% | Peer States                               | 20.6% |
| Nation                              | 13.8% | Nation                                   | 11.4% | Nation                                    | 19.6% |

Source: U.S. Department of Education, IPEDS Completion and Enrollment Surveys

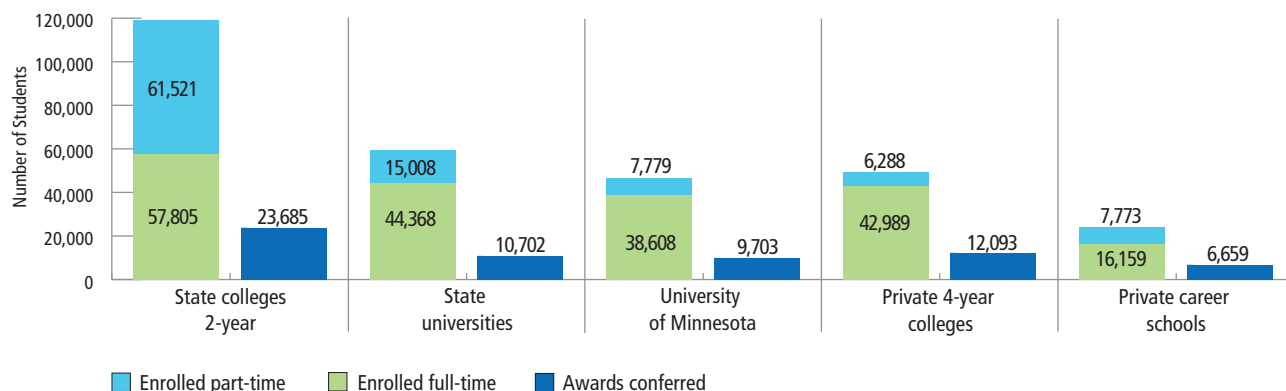
Another comparison is the number of awards conferred compared to headcount enrollment. The total undergraduate awards conferred are compared to the total undergraduate enrollment at Minnesota's various postsecondary sectors.

### Awards Conferred by Minnesota Institutions as a Proportion of Full-Time Equivalent Enrollment 2005 to 2007

| Institution Type   | 2004-2005    | 2005-2006    | 2006-2007    |
|--|--------------|--------------|--------------|
| <b>Bachelor's Degrees at 4-Year Institutions</b>                 |              |              |              |
| State universities and University of Minnesota                   | 17.7%        | 18.4%        | 20.7%        |
| Private not-for-profit   | 22.0%        | 21.3%        | 23.8%        |
| Private for-profit   | 2.3%         | 2.5%         | 6.2%         |
| <b>Total</b>   | <b>16.6%</b> | <b>16.3%</b> | <b>20.1%</b> |
| <b>Certificates and Associate Degrees at 2-Year Institutions</b> |              |              |              |
| State colleges 2-year  | 28.2%        | 31.1%        | 29.0%        |
| Private career schools   | 44.6%        | 39.2%        | 39.1%        |
| <b>Total</b>   | <b>29.1%</b> | <b>31.6%</b> | <b>29.8%</b> |

Note: A small number of private for-profit institutions have begun offering bachelor's degrees and identify themselves as four-year institutions; however, the majority of their students are not in four-year programs.  
Source: U.S. Department of Education, IPEDS Completion and Enrollment Surveys

### Undergraduate Headcount Enrollment Compared to Undergraduate Awards Conferred at Minnesota Institutions 2007



Note: Fall 2007 undergraduate headcount enrollment. Academic year 2006-2007 total awards conferred at bachelor's degree and below.  
Source: Minnesota Office of Higher Education & U.S. Department of Education, IPEDS Completion Survey

## Programs of Study

### Indicator 2E: Are Minnesota's students choosing programs and majors that lead to occupations in demand?

This indicator compares the academic choices of Minnesota students with the choices of students nationally and in the peer states.

This information provides a picture of the composition of degrees earned by program at each degree level. As Minnesota seeks to increase the number of students prepared to succeed in high demand occupations, policymakers and educators may utilize these data to learn what types of degrees and program choices students make and how these choices change over time and align with peer states and the nation.

Minnesota's postsecondary institutions offer a variety of programs at all levels of training. Not all postsecondary training leads to an associate or bachelor's degree. Each year, thousands of students earn certificates and diplomas in programs one or two years in length.

In 2006-2007 the following awards were earned by students from Minnesota postsecondary institutions:

- 14,700 certificates and diplomas less than two years in length
- 16,100 associate degrees
- 32,700 bachelor's degrees
- 11,300 master's degrees
- 3,300 doctoral degrees in both research and professional fields (such as in law, medicine, theology)

Note: Does not include 5,049 master's degrees awarded in education from Walden University and 318 doctorate degrees in education from Walden and Capella University. Since Walden and Capella University report their national enrollment it cannot be determined whether these education degrees are being awarded to students in Minnesota.

### What is a Career Cluster?

Higher education programs are grouped into career clusters to align programs and majors with those used in the workforce for careers and occupations. The career clusters identified here were developed by the U.S. Department of Education. The career clusters are designed to help students (at both the secondary and postsecondary level) link the knowledge acquired in school with the skills needed to pursue careers. By tracking graduates in higher education programs to specific career clusters, potential workforce needs can be estimated.

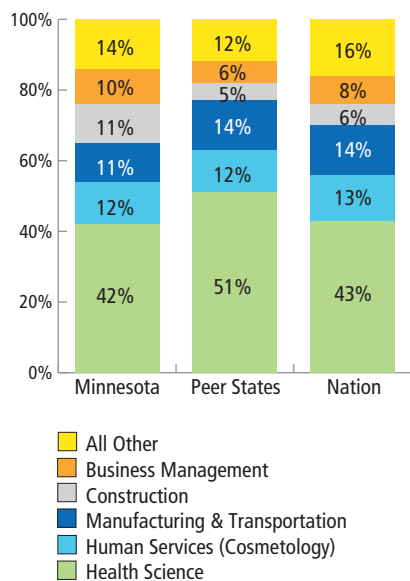
| Career Cluster  | Programs included   |
|---|---|
| <b>Agriculture, Food &amp; Natural Resources:</b>                 | agriculture; natural resources and conservation; and parks, recreation and leisure.   |
| <b>Architecture and Construction:</b>                             | architecture (at the bachelor's and master's degree level) and construction trades (at associate degree level and below).   |
| <b>Arts, Audio/Video Technology &amp; Communication:</b>          | communication and journalism; communication technologies; and visual and performing arts.   |
| <b>Business Management, Administration &amp; Finance:</b>         | Three career clusters are combined with programs in business, management and administration, marketing and finance.   |
| <b>Education &amp; Training:</b>                                  | education, housing, and library science. Note: not all graduates who have credentials needed for a teaching career can be identified by tracking education majors. Someone pursuing a secondary math teaching career might be a math major with an education minor or a math major only.  |
| <b>Government &amp; Public Administration:</b>                    | public administration and social service professions; and social science programs in international relations, political science, and urban affairs.   |
| <b>Health Science:</b>  | health and allied professions and psychology programs in health and psychometrics.  |
| <b>Hospitality &amp; Tourism:</b>                                 | culinary services and business programs in hospitality management and facilities.   |
| <b>Human Services:</b>  | cosmetology; family and consumer science; philosophy and religious studies; psychology (clinical, counseling, developmental); sociology; and theology and religious vocations.  |
| <b>Information Technology:</b>                                    | computer science, computer engineering, and drafting.   |
| <b>Law, Public Safety, Corrections &amp; Security:</b>            | criminology; legal professions and studies; and security and protective services.   |
| <b>Liberal Arts, Languages, History:</b>                          | Not an official career cluster. These programs are normally in the "Education and Training" cluster, but have been placed here to identify education majors from other liberal arts majors. Includes programs in ethnic, cultural, and gender studies; English language and literature; foreign languages and linguistics, history, liberal arts and sciences, general studies and humanities; and multi/interdisciplinary studies in liberal arts. |
| <b>Manufacturing &amp; Transportation:</b>                        | Two career clusters are combined with programs in mechanic and repair technologies; precision production; science technologies; and transportation and materials moving.  |
| <b>Science, Technology, Engineering &amp; Mathematics (STEM):</b> | biological and biomedical studies; engineering; engineering technologies; mathematics and statistics; multi/interdisciplinary studies in science areas; physical sciences (chemistry, geology, physics) and social sciences (anthropology, cartography, demography, economics, geography). Note: academic programs classified as STEM vary by organization.   |

Source: [www.careerclusters.org](http://www.careerclusters.org)



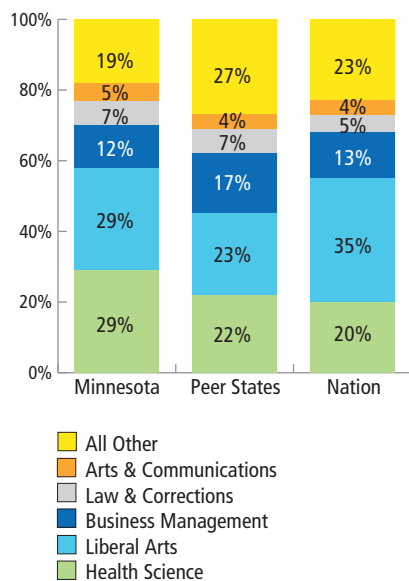
## Awards Conferred by Minnesota Institutions Compared to Peer States and the Nation by Level of Award 2006-2007

### Certificates and Diplomas



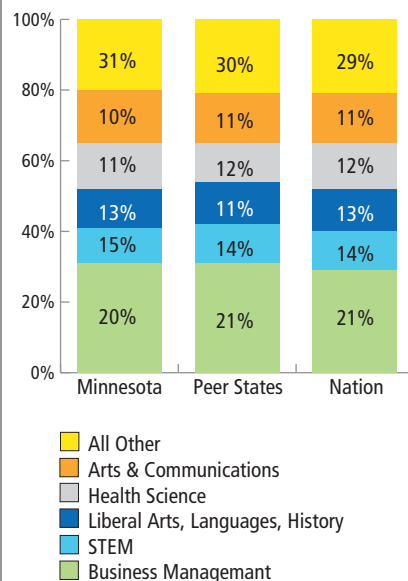
Source: U.S. Department of Education, IPEDS Completion Survey

### Associate Degrees



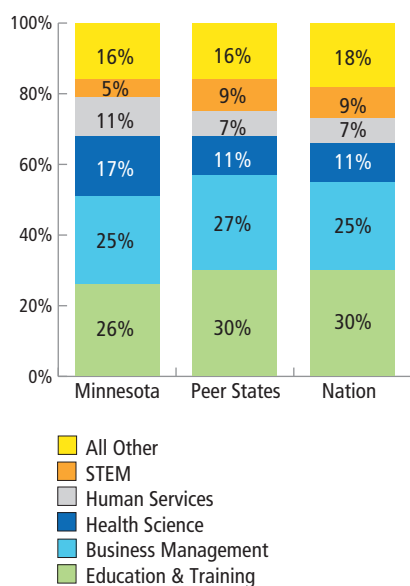
Source: U.S. Department of Education, IPEDS Completion Survey

### Bachelor's Degrees



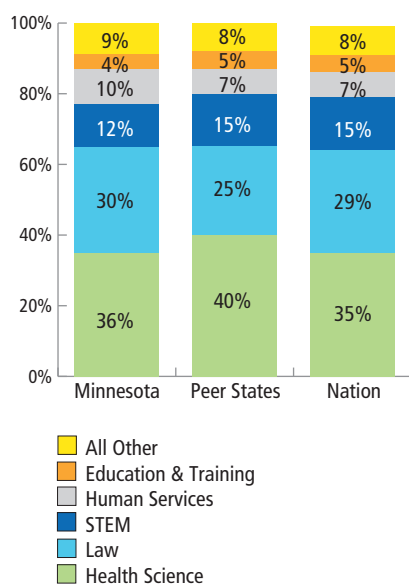
Source: U.S. Department of Education, IPEDS Completion Survey

### Master's Degrees



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

### Doctoral Degrees



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

Organizing the awards earned in hundreds of programs into career clusters helps make sense of the kinds of careers students might enter upon college graduation. The top five program areas at each award level—certificate to doctorate—show dominant programs. The following patterns emerged:

- Programs in health sciences were the most numerous earned at all degree levels. Given the variety and high demand of careers available in the health professions from training at the one-year level (health care aides) to doctorate (medical doctor), students chose health science programs in large numbers.
- The top five career clusters emerging at each degree level were the same in Minnesota as peer states and the nation.
- At the certificate level, the most common programs pursued by students besides health care were in cosmetology, manufacturing and transportation (including vehicular repair) and construction trades. These careers were popular choices for students wanting jobs that can be obtained with short-term training.
- At the associate degree level, Minnesota graduates earned a larger proportion of degrees in health sciences than in peer states and nationally. Except for the degrees earned in liberal arts, associate degrees were generally awarded in the applied sciences for entry level jobs in health care, law enforcement and hospitality and tourism.
- At the bachelor's degree level, programs where a bachelor's degree is necessary for job entry were popular such as in business (accounting, finance, management), STEM (science, technology, engineering and mathematics) and programs in education and health sciences.
- At the master's degree level, programs for job advancement in education and business comprised the majority of degrees earned. Other master's degrees earned are required for job entry such as those in health (Master of Nurse Anesthesia) or human services (Master of Social Work).
- At the doctoral level (both research and professional), health, law, STEM and human services comprised the majority of programs.

## Programs of Study

### Indicator 2F: Are Minnesota students from all racial and ethnic backgrounds choosing programs that lead to occupations in high demand?

This indicator compares the academic choices of students of color with the choices of White students to see whether students from all racial and ethnic backgrounds are choosing programs that lead to occupations in high demand.

Comparisons by students of color and White students of the top five programs chosen by all students at the different award levels are presented. Program choices by students of color

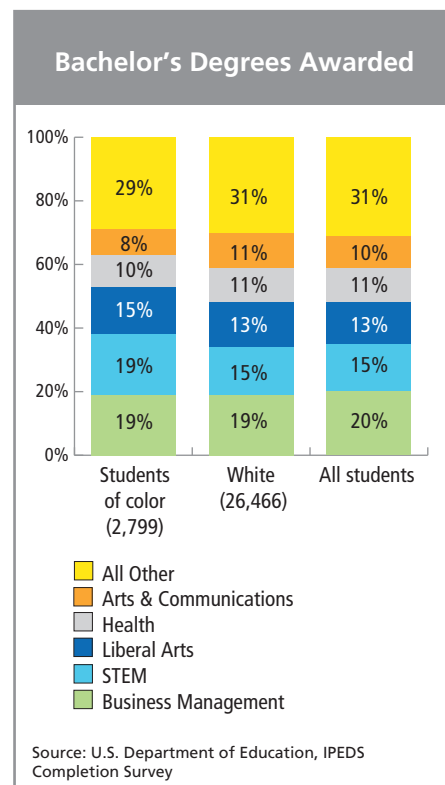
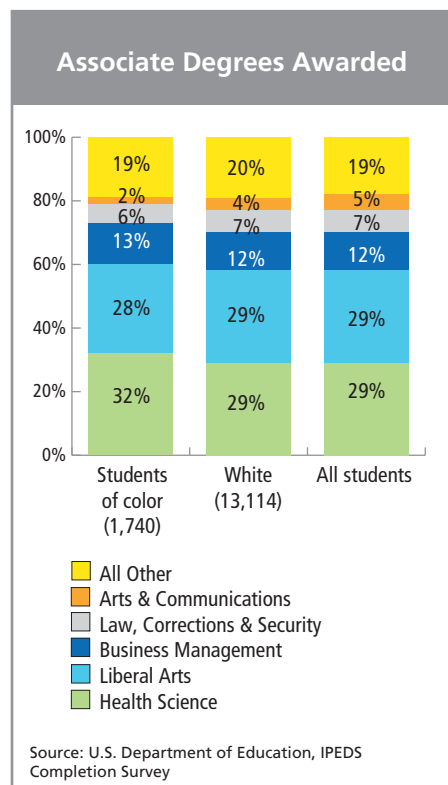
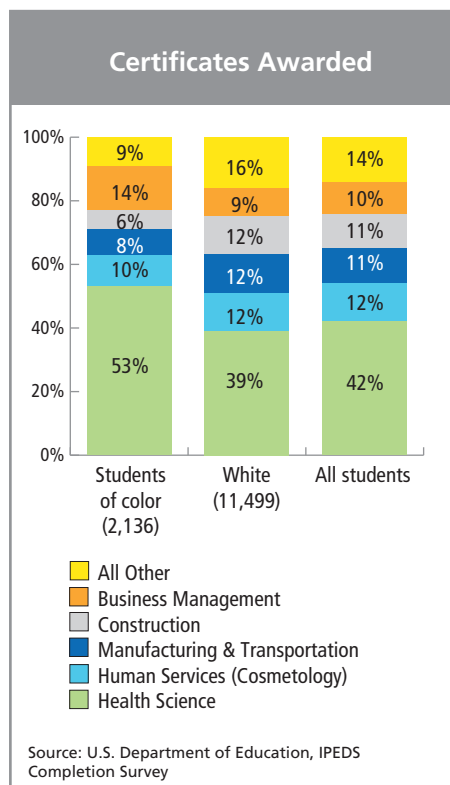
generally tended to align with White students, although at some degree levels variations occurred.

At the certificate and associate degree level a higher proportion of awards in health science programs were chosen by students of color than White students. Students of color tend to enroll in two-year colleges rather than four-year colleges in higher numbers as shown by indicators 1D and 1E.

At the graduate level, students of color choose business programs in higher percentages than White students.

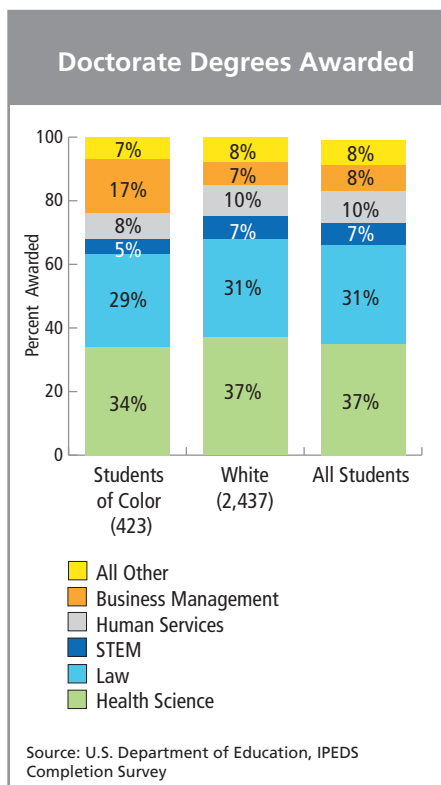
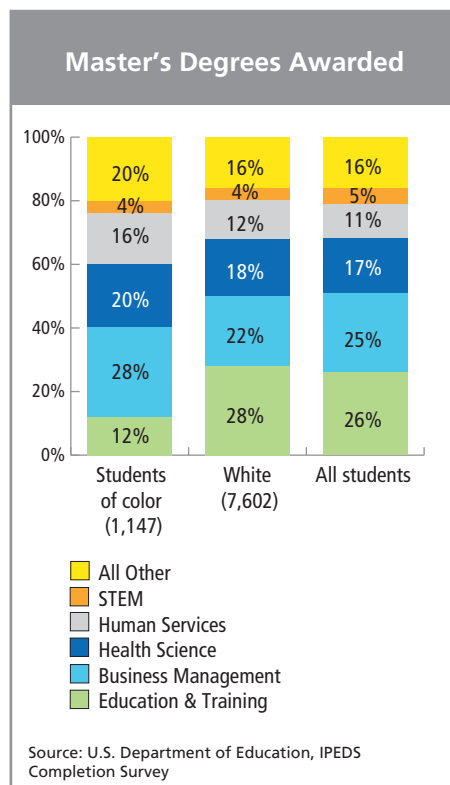
Awards conferred in 2006-2007 from Minnesota postsecondary institutions were grouped by level of award with programs of study aligned into the career clusters explained in indicator 2E.

**Awards Conferred to Students of Color Compared to White Students at Minnesota Institutions by Level of Award 2006-2007**



*continued*

## Awards Conferred to Students of Color Compared to White Students at Minnesota Institutions by Level of Award 2006-2007



## Occupational Demand

### Indicator 2G: Are Minnesota colleges producing graduates to fill high demand and high paying jobs?

This indicator uses occupational projection data from the Minnesota Department of Employment and Economic Development. Comparing workforce projections to academic award production is an effort to simplify and analyze a complex and highly nuanced dynamic. Workforce needs do not grow in equal increments each year, and higher education institutions need time to develop programs and move students through them to respond to anticipated demand. The labor market is mobile and Minnesota employers draw educated employees from outside the state. Not all Minnesota jobs are filled exclusively with graduates from institutions within the state.

The occupational projections for the 10-year period from 2006 to 2016 were published in 2008. Projections are available at the state and regional level in various ways:

- all occupations in demand
- high demand/high pay occupations
- high growth/high pay occupations

State level projections of the 50 top occupations in demand were analyzed for this indicator.

High demand occupations are projected to have more total openings as a share of employment than the average. The total job openings represent the sum of new jobs and replacements.

#### High demand occupations

High demand occupations do not necessarily equate to high paying jobs. Of the top 50 projected high demand occupations, only 18 paid a median annual salary of \$36,000 or above reported by the Department of Employment and Economic Development in 2008. Thirteen required postsecondary training as a minimum for job entry.

The high demand occupations not listed were jobs paying from \$8.15 to \$16.42 per hour. Examples of occupations in this category that are in high demand but pay low wages are food service workers, janitors, child care workers and retail sales persons.

Top Projected High Demand/High Pay Occupations in Minnesota 2006-2016

| Occupation  | Estimated Employment 2006 | Annual Academic Awards Granted 2006-2007 | Total Annual Openings 2006-2016 | Median Annual Salary 2008 |
|---|---------------------------|--|---------------------------------|---------------------------|
| <b>Health Science</b>                             |                           | <b>5,991</b>                             | <b>4,229</b>                    |                           |
| Registered Nurses                                 | 50,942                    | 2,901                                    | 2,340                           | \$69,021                  |
| Licensed Practical and Licensed Vocational Nurses | 19,324                    | 1,740                                    | 733                             | \$39,171                  |
| Dental Assistants                                 | 5,393                     | 469                                      | 241                             | \$40,661                  |
| Pharmacists                                       | 4,715                     | 161                                      | 192                             | \$114,618                 |
| Medical and Health Services Managers              | 4,816                     | 146                                      | 184                             | \$84,901                  |
| Dental Hygienists                                 | 3,529                     | 236                                      | 164                             | \$71,083                  |
| Radiologic Technologists and Technicians          | 4,227                     | 175                                      | 163                             | \$55,450                  |
| Medical and Clinical Laboratory Technicians       | 3,057                     | 110                                      | 108                             | \$41,483                  |
| Medical and Clinical Laboratory Technologists     | 3,232                     | 53                                       | 105                             | \$55,825                  |
| <b>Information Technology*</b>                    |                           | <b>1,646</b>                             | <b>2,909</b>                    |                           |
| Computer Software Engineers, Applications         | 16,096                    |  | 889                             | \$84,279                  |
| Computer Support Specialists                      | 10,679                    |  | 457                             | \$46,003                  |
| Computer Systems Analysts                         | 8,982                     |  | 453                             | \$74,551                  |
| Network Systems and Data Communications Analysts  | 5,723                     |  | 411                             | \$80,405                  |
| Network and Computer Systems Administrators       | 8,690                     |  | 401                             | \$67,979                  |
| Computer Specialists, All Other                   | 7,504                     |  | 299                             | \$69,833                  |

*continued*

## Top Projected High Demand/High Pay Occupations in Minnesota 2006-2016

| Occupation   | Estimated Employment 2006 | Annual Academic Awards Granted 2006-2007 | Total Annual Openings 2006-2016 | Median Annual Salary 2008 |
|--|---------------------------|--|---------------------------------|---------------------------|
| <b>Business Management &amp; Administration &amp; Finance*</b>     |                           | <b>10,012</b>                            | <b>6,200</b>                    |                           |
| Business Operations Specialists, All Other                         | 49,509                    |  | 1,640                           | \$49,245                  |
| Accountants and Auditors   | 27,257                    |  | 920                             | \$57,897                  |
| Sales Representatives, Services, All Other                         | 13,156                    |  | 624                             | \$52,085                  |
| Management Analysts  | 12,230                    |  | 422                             | \$79,358                  |
| Securities, Commodities, and Financial Services                    | 8,291                     |  | 361                             | \$76,066                  |
| Insurance Sales Agents   | 8,349                     |  | 317                             | \$50,192                  |
| Human Resources, Training, and Labor Relations Specialist          | 7,637                     |  | 295                             | \$57,657                  |
| Sales Managers   | 8,140                     |  | 261                             | \$108,608                 |
| Sales Representatives, Wholesale & Manufacturing                   | 7,499                     |  | 245                             | \$79,606                  |
| Marketing Managers   | 5,247                     |  | 181                             | \$115,232                 |
| Administrative Services Managers                                   | 4,891                     |  | 176                             | \$79,306                  |
| Claims Adjusters, Examiners, and Investigators                     | 4,693                     |  | 164                             | \$47,862                  |
| Cost Estimators  | 4,739                     |  | 161                             | \$56,784                  |
| Industrial Production Managers                                     | 4,435                     |  | 153                             | \$85,015                  |
| Financial Specialists, All Other                                   | 3,820                     |  | 152                             | \$57,356                  |
| Property, Real Estate & Community Association Mgr                  | 3,914                     |  | 129                             | \$44,545                  |
| <b>Education and Training*</b>                                     |                           | <b>3,030</b>                             | <b>2,644</b>                    |                           |
| Elementary School Teachers, Except Special Education               | 24,685                    |  | 795                             | \$49,066                  |
| Secondary School Teachers, Except Special and Vocational Education | 21,881                    |  | 713                             | \$48,170                  |
| Community and Social Service Specialists, Other                    | 5,515                     |  | 274                             | \$38,890                  |
| Special Education Teachers, Preschool, Kindergarten                | 5,442                     |  | 206                             | \$52,190                  |
| Training and Development Specialists                               | 4,192                     |  | 154                             | \$57,585                  |
| Vocational Education Teachers, Postsecondary                       | 3,224                     |  | 140                             | \$59,751                  |
| Educational, Vocational, and School Counselors                     | 3,555                     |  | 124                             | \$46,972                  |
| Education Administrators, Elementary & Secondary                   | 3,692                     |  | 122                             | \$91,316                  |
| Employment, Recruitment & Placement Specialists                    | 3,050                     |  | 118                             | \$48,933                  |
| <b>Law, Public Safety, Corrections &amp; Security</b>              |                           | <b>1,597</b>                             | <b>709</b>                      |                           |
| Police and Sheriff's Patrol Officers                               | 9,749                     | 1,181                                    | 354                             | \$53,162                  |
| Correctional Officers and Jailers                                  | 6,006                     | 169                                      | 218                             | \$41,244                  |
| Paralegals and Legal Assistants                                    | 4,252                     | 247                                      | 137                             | \$48,232                  |
| <b>Science, Technology, Engineering &amp; Mathematics (STEM)</b>   |                           | <b>181</b>                               | <b>444</b>                      |                           |
| Industrial Engineers   | 6,378                     | 48                                       | 302                             | \$75,936                  |
| Civil Engineers  | 3,465                     | 133                                      | 142                             | \$73,114                  |
| <b>Human Services</b>  |                           | <b>477</b>                               | <b>305</b>                      |                           |
| Child, Family, and School Social Workers                           | 7,905                     |  |                                 | \$53,054                  |
| <b>Arts, Audio/Video Technology &amp; Communication</b>            |                           | <b>200</b>                               | <b>200</b>                      |                           |
| Graphic Designers  | 5,224                     |  |                                 | \$42,525                  |
| <b>Architecture and Construction</b>                               |                           | <b>25</b>                                | <b>144</b>                      |                           |
| Cement Masons and Concrete Finishers                               | 3,869                     |  |                                 | \$47,064                  |
| <b>Manufacturing &amp; Transportation</b>                          |                           | <b>31</b>                                | <b>112</b>                      |                           |
| Mobile Heavy Equipment Mechanics, Except Engines                   | 3,292                     |  |                                 | \$49,408                  |

\*Within these career clusters academic programs do not align specifically with occupations; therefore, all graduates in the career cluster are included. Graduates from a variety of academic programs within the career cluster could work in these occupations. Annual academic awards granted are at the bachelor's degree level and below.

Source: Minnesota Department of Employment and Economic Development and U.S. Department of Education, IPEDS Completion Survey

### High demand/high pay

Occupations in the high demand/high pay category require postsecondary training for job entry and most also appear on the list of projected high growth/high pay occupations. For individuals, this means that the path to a secure financial future includes higher education. The annual median salary for all 50 high demand/high pay occupations was \$62,000 in 2008. Annual salaries ranged from \$38,900 for a community and social service worker to \$115,200 for a marketing manager. The projected annual occupational demand is included with the most recent awards conferred in the corresponding postsecondary program.

### Health science careers

Health sciences along with information technology (computer science) are two high demand occupational areas receiving attention, both statewide and nationally. Occupations in these areas require some level of higher education training for job entry.

Of the top 50 projected high demand occupations for Minnesota, nearly one-quarter are in health care. All of the health science occupations requiring postsecondary training for job entry are also high paying.

Comparing the 4,229 projected annual job openings in the high demand health care occupations with the 5,991 annual postsecondary awards (shown on page 35) indicate that Minnesota's postsecondary institutions are generally able to meet the demand. The state's colleges and universities have made special efforts to increase capacity in nursing and other allied health programs, in the last decade. Of course, this conclusion assumes that every graduate in health care enters their chosen profession and stays on the job.

Programs in health sciences are popular student choices. As shown in indicator

2E nearly half the sub-baccalaureate certificates awarded at two-year colleges were in health science programs. Of all the 85,000 academic credentials awarded to students from certificate to doctorate, the largest number, nearly 15,000 were in health sciences. Nursing programs comprised half of all health science awards. In addition to the nine high demand health science occupations listed on page 35 were 101 other specific health science programs offered at Minnesota postsecondary institutions during the 2006-2007 academic year.

### Information technology careers

Degrees in science, technology, engineering and mathematics are widely accepted as the most high-demand and desirable degrees to build competitiveness in a world economy. A closer look reveals some occupations are in much higher demand than others. For the period ending in 2016, the highest-demand STEM occupations were projected to be in information technology.

The state projects 2,902 job openings per year in the high demand information technology occupations listed on page 35 through 2016. Minnesota's higher education sector produced 1,646 awards at the bachelor's degree or below in the 2006-2007 academic year, indicating that Minnesota's postsecondary institutions may not be meeting the demand.

Of all the 85,000 academic credentials awarded to students from certificate to doctorate, 2,159 academic credentials were awarded to students in 22 different programs in computer sciences during the 2006-2007 academic year. Enrollments in these programs, below the bachelor's degree, have decreased somewhat recently in conjunction with the so-called "dot-com bust" and the outsourcing of jobs in high-tech industries.

Unlike health science occupations, in which there is significant specialization and correlation between the academic award and occupation, a bachelor's degree in computer and information sciences may qualify an individual for several occupations within the field. Recently information technology occupations have become more specific and specialized as the information technology infrastructure has grown and specific skills sets are needed to keep it operational. Demand is particularly high for systems analysts, software engineers, and network administrators. Some of these skills can be learned on-the-job through work experience and some can be acquired through postsecondary education training.



## **Increase student learning and improve skill levels of students so they can compete effectively in the global marketplace.**

This section examines how Minnesota postsecondary institutions are assessing student learning. Student learning outcomes have been identified by educators and policymakers as essential measures in understanding the effectiveness of higher education institutions. The Higher Learning Commission has positioned effective assessment of student learning as an essential aspect of evaluating an organization's overall effectiveness. The tools for developing assessment measures are evolving as discussions about best practices for student learning evaluation progress at the national, state and institutional levels. This section offers an abbreviated inventory of activities in this area. Future reports will continue to build on this work.

In addition to local assessment efforts at institutions, several standardized tools are available to assess student learning. Each assessment tool or outcome measure offers a different lens with which to view student development at postsecondary institutions. Analyzing this assessment data at the state level creates a fragmented picture, in part because no single tool has broad institutional participation and no one test can capture the breadth and depth of a postsecondary student's development. The diversity of institutional missions and academic programs further complicates the task. This section uses a variety of indicators to view the landscape of what defines a successful learning outcome for Minnesota students: measures of student learning and engagement during their undergraduate careers, scores on graduate school admission exams, Minnesota candidates' certification and licensure pass rates and measures of employer satisfaction with recent graduates of Minnesota postsecondary institutions.



# GOAL THREE

In response to national dialogue about the need for clear and comparable information about student learning, public and private colleges and universities across the country are collaborating in unprecedented ways. Two nationwide networks to provide information for students, families and policymakers have been developed. The Voluntary System of Accountability, which is a joint product of the American Association of State Colleges and Universities and the National Association of State Universities and Land-Grant Colleges, provides a College Portrait template for participating institutions to describe their institution across three main areas: Student and Family Information, Student Experiences and Perceptions, and Student Learning Outcomes. Student survey data is used to illustrate levels of student engagement, and a pilot study is underway to evaluate student learning assessments using the three tools described in this section. The seven Minnesota state universities and the University of Minnesota-Twin Cities campus are participating in this voluntary, web-based system. The National Association of Independent Colleges and Universities has also launched the University and College Accountability Network. U-CAN is a web-based common college portrait designed for consumers with descriptive information on participating private institutions' students and graduates with the option for institutions to include information on their students' learning outcomes, including data from engagement surveys, standardized tests and alumni satisfaction surveys. Fourteen private institutions in Minnesota are currently participating in U-CAN.<sup>7</sup>

The Office of Higher Education will continue to analyze the use of current assessment instruments as well as how best to capture the value of students' experiences at two- and four-year institutions across the state.

## Abbreviated Inventory of Assessment Tools Currently in Use in Minnesota

|                      | Assessment Tool  | Purpose  | Minnesota Participation (most recent year)  | National Participation (most recent year)   | Report Indicator |
|----------------------|--|--|---|---|------------------|
| Learning Assessments | Collegiate Assessment of Academic Progress (CAAP)      | General education test for students at two- and four-year institutions                                 | 5 four-year and 1 two-year institution  | 370 institutions                            | 3A               |
|                      | Measure of Academic Proficiency and Progress (MAPP)    | General education test for students at two- and four-year institutions                                 | 5 four-year and 1 two-year institution  | 325 institutions                            | 3A               |
|                      | Collegiate Learning Assessment (CLA)                   | General education test for students at four-year institutions designed to measure learning over time   | 10 institutions; some participate as part of a longitudinal study and may not have tested last year | 176 institutions                            | 3A               |
| Student Surveys      | National Survey of Student Engagement (NSSE)           | Annual survey of students at four-year institutions  | 15 institutions   | 769 institutions                            | 3B               |
|                      | Community College Survey of Student Engagement (CCSSE) | Annual survey of student engagement at two-year colleges   | 11 institutions   | 316 institutions                            | 3B               |
| Graduate Admissions  | Graduate Record Exam (GRE)                             | Graduate school admissions test  | 4,109 students  | 387,044 students                            | 3C               |
|                      | Law School Admissions Test (LSAT)                      | Law school entrance exam   | 1,194 students  | 117,952 students                            | 3C               |
|                      | Medical College Admission Test (MCAT)                  | Medical school entrance exam   | 2,365 students  | 159,515 students                            | 3C               |
| Career Licensure     | Praxis   | Set of exams used for teacher licensure  | 3,172 candidates  | 29 states                                   | 3D               |
|                      | National Council Licensure Examination (NCLEX)         | Licensing exam for registered and practical nurse  | 1,687 PN candidates; 2,726 RN candidates  | 60,238 PN candidates; 119,573 RN candidates | 3D               |
|                      | Uniform Certified Public Accounting Exam (CPA)         | Exam required to practice as a certified public accountant   | 851 candidates  | 69,259 candidates                           | 3D               |
| Employer Survey      | Minnesota Office of Higher Education Survey            | Survey of employers' satisfaction levels with recent graduates of Minnesota postsecondary institutions | 1,500 employers surveyed statewide with a 52% response rate   | Minnesota only                              | 3E               |

Source: Minnesota Office of Higher Education

## Learning Outcomes Assessment

### Indicator 3A: How is student learning currently measured through standardized tests at Minnesota postsecondary institutions?

Assessment of student learning is embedded in classroom and institutional activities at all Minnesota postsecondary institutions. Three standardized assessment tools that measure student learning in general education areas have been in limited use in Minnesota for several years. The Collegiate Assessment of Academic Proficiency, the Measure of Academic Proficiency and Progress and the Collegiate Learning Assessment offer institutions a variety of ways to assess general learning. All three exams are designed to facilitate transparency and comparability of student-centered information at different academic levels.<sup>8</sup> The CLA also has a longitudinal study where institutions test the same group of students to get specific individual-level information on learning gains over time.

Although these assessments can provide a picture of current practices in learning outcomes, the data are incomplete. Institutions can choose to use different modules of the assessment. They may test students at different levels of schooling and there is growing but still limited participation in these national assessments by Minnesota institutions.

#### Collegiate Assessment of Academic Progress

The CAAP is a general education test available to two- and four-year institutions that is designed to assess general learning. The test has multiple choice and essay questions and offers six modules: critical thinking, writing skills, reading skills, science, essay writing and mathematics. The test is completed by students in class.

The CAAP is not widely used in Minnesota. In 2007-2008, students at 5 four-year institutions and 1 two-year institution took the test. Over the past three years of testing at four-year

institutions, Minnesota undergraduates posted consistently higher average scores on the CAAP math and critical thinking modules than did participants nationally. The critical thinking module is the most commonly used module in Minnesota. In 2007-2008, writing skills and math were the most common modules used nationally. Two-year college data is not shown here due to the small sample size.

#### Measure of Academic Proficiency and Progress

The MAPP is another general education test for students at two- and four-year institutions that combines four general education skill areas (critical thinking, reading, writing and mathematics) into one integrated test, available in 40-minute or two-hour versions. Scores from both test formats are included in the scores reported by MAPP.

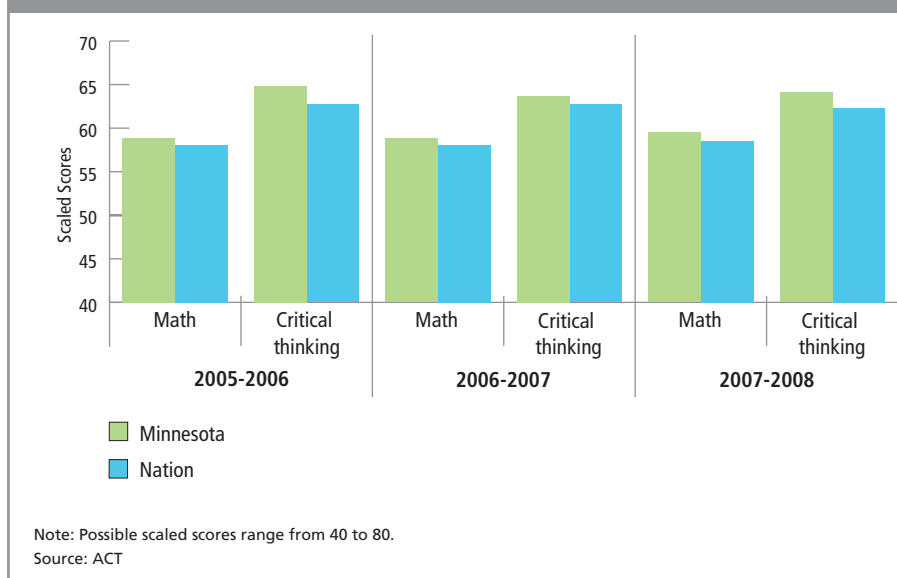
In 2007-2008, Minnesota students attending 5 four-year institutions and 1 two-year institution took a portion

or all of the MAPP assessment. Due to the condensed format of some of the tests and the small sample size at the two-year college level, data from the MAPP are not included here.

#### Collegiate Learning Assessment

The CLA is a comprehensive instrument used to measure broad student abilities. Its purpose is to measure learning gains over time at the institutional level by testing both first-year and senior students. It also gives a separate value-added score attuned to a student's entrance scores on either the SAT or ACT to measure how the institution contributes to student learning. The CLA focuses on the institution as the unit of measurement rather than on the student. Ten four-year public and private institutions in the state have participated in the CLA, either in 2007-2008 or as part of a longitudinal study that tests the same group of students at various stages of their academic career. CLA data was not publicly available.

Minnesota and National CAAP Scores at 4-Year Institutions



# Student Engagement

## Indicator 3B: Are Minnesota students fully engaged in the educational process?

Another current tool used to assess the undergraduate experience is a student survey designed to gather feedback about students' levels of engagement, both academic and non-academic, at their institutions. This indicator presents data gathered through two surveys of student engagement: the National Survey of Student Engagement and the Community College Survey of Student Engagement. The NSSE is a survey of students at four-year public and private institutions. The CCSSE surveys students at community and technical colleges. While not identical, both surveys cover general topics relating to student engagement such as academic rigor, collaborative learning, student-faculty interaction and student support.

Research indicates that there is a strong relationship between a student's level of engagement as an undergraduate and successful outcomes for students and for institutions, such as improved retention and graduation rates.<sup>9</sup> Both surveys contribute to an overall picture of how

well institutions serve the needs and maximize the intellectual and social development of their students.

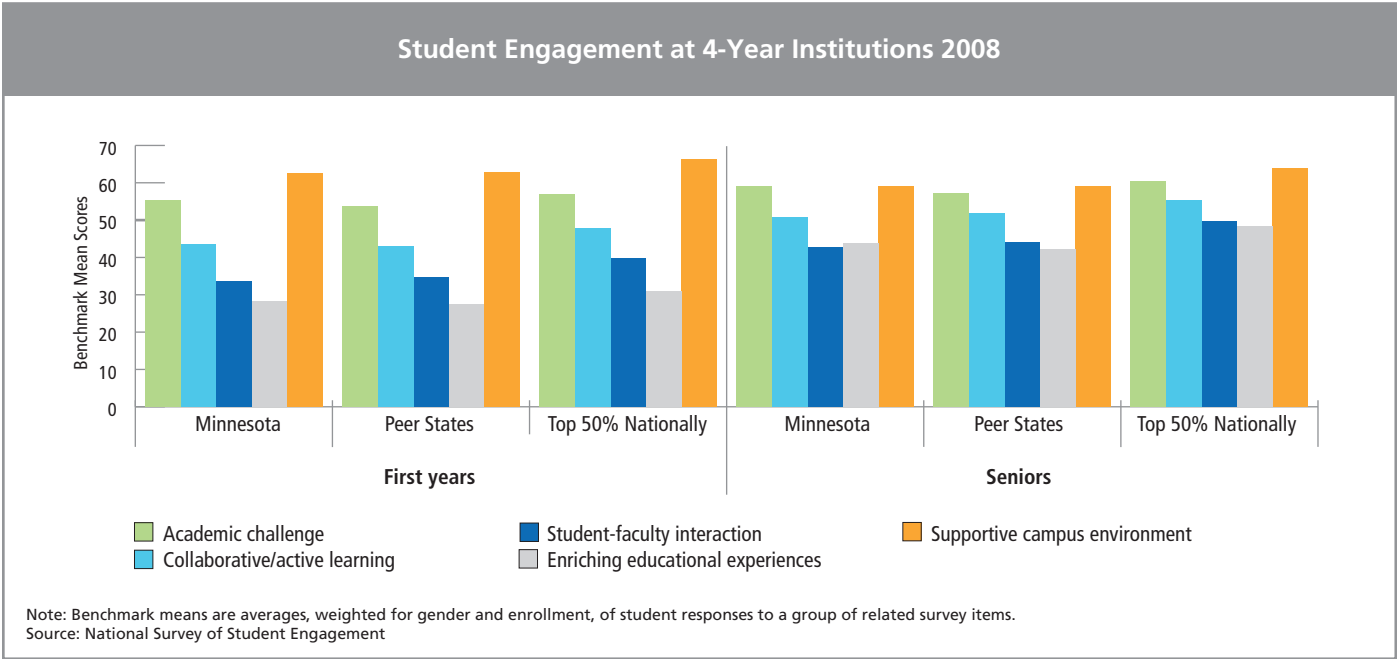
### National Survey of Student Engagement

The NSSE<sup>10</sup> is an annual survey distributed to students at participating four-year public and private institutions nationwide. The survey, which is conducted online and through direct mail, allows for comparisons of responses from first-year students and seniors to measure changes in student engagement levels.

In 2008, 769 institutions participated in the survey nationally, including 15 from Minnesota, up from 610 national participants in 2007. Approximately 370,300 students participated nationally, including 102,900 from peer states and 9,200 from Minnesota. In 2008, the Minnesota State Colleges and Universities system, which enrolls more than half the undergraduates in Minnesota, began requiring their

institutions to conduct either NSSE or CCSSE at least biennially.

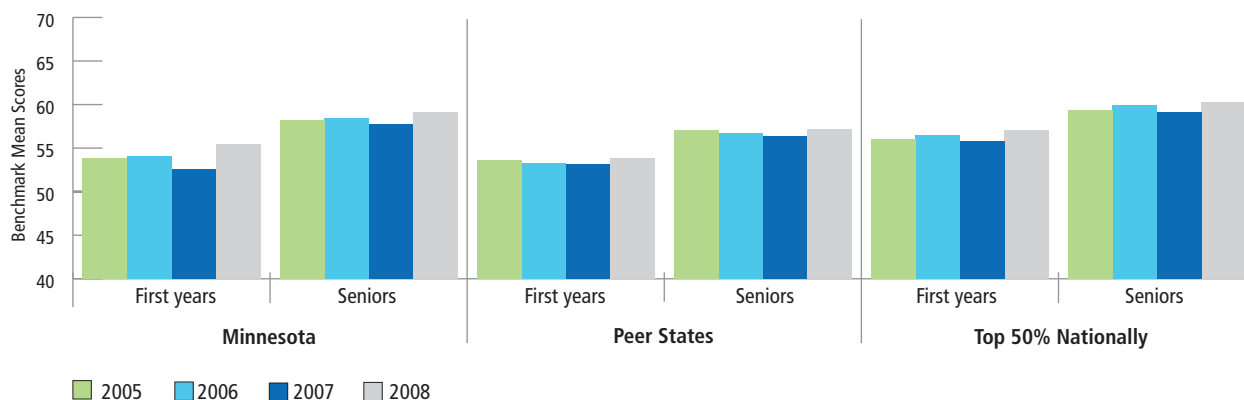
Students attending Minnesota four-year institutions indicated comparable levels of engagement across all categories as did students in peer states in 2008. The average ratings for both first-year and senior students in Minnesota and the peer states were lower across all categories than the average for students at the top-scoring 50 percent of institutions participating in NSSE nationally. Minnesota college seniors had higher ratings of engagement than Minnesota first-year students across all categories except for supportive campus environment, which was rated lower by seniors than by first-year students. Seniors in peer-state institutions and the top 50 percent of NSSE institutions also rated supportive campus environment lower than did first-year students—the only benchmark to be lower for seniors.



Minnesota's first-year and senior students on average rated their institutions as more academically challenging than did students in peer states, yet lower than students from the top-scoring 50 percent of institutions participating in NSSE nationally in 2008. The increase in ratings between first-year and senior students at Minnesota institutions, however, was greater than the increase between first-year and senior students in both the peer states and the top 50 percent of NSSE institutions. This difference occurred for all four years studied. Although the same students are not necessarily surveyed as

first years and later as seniors, the consistent and sizeable increase in ratings of academic rigor by seniors compared to first-years suggests the positive effect of student engagement on learning outcomes.<sup>11</sup> Scores on this benchmark were based on a section of survey questions including whether students worked harder than expected to meet instructor expectations, the amount they studied, whether they applied concepts learned to problems and situations, the number and length of papers they wrote and the number of assigned texts and course readings.

Level of Academic Challenge Reported by Students at 4-Year Institutions



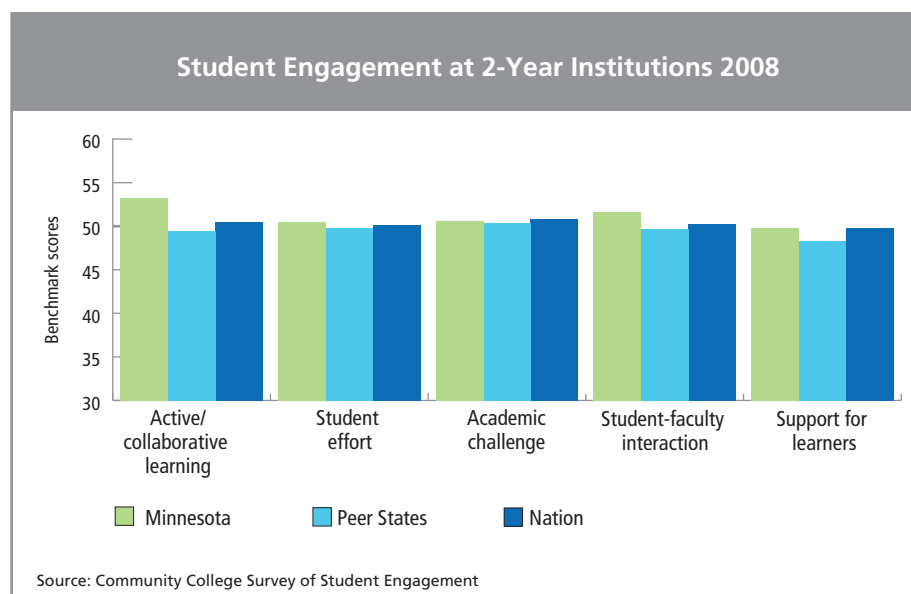
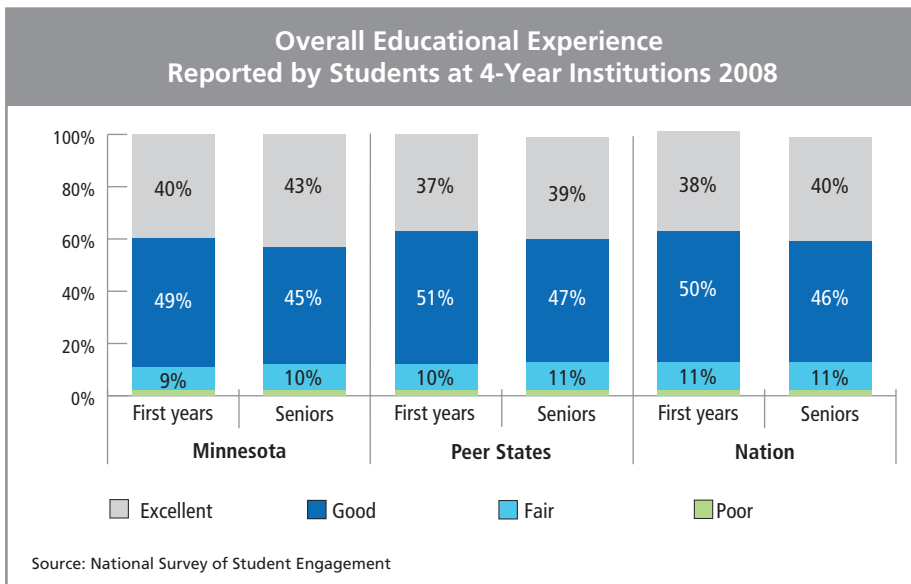
Note: Benchmark means are averages, weighted for gender and enrollment, of student responses to a group of related survey items.  
Source: National Survey of Student Engagement

On measures of satisfaction with their overall educational experience assessed by NSSE, students at Minnesota institutions indicated comparable satisfaction and dissatisfaction levels with both the peer states and the national average of participating institutions for both first-year and senior students. Slightly higher numbers of senior students rated their experience as “excellent” than did first-year students for Minnesota and both comparison groups over the past three years studied.

### Community College Survey of Student Engagement

The CSSE<sup>12</sup> is a survey of public community and technical college students’ level of engagement at their institutions. In 2008, 316 institutions participated in the survey nationally, of which 11 were Minnesota institutions. Students in credit-based courses were randomly selected and surveyed during class sessions. A benchmark score of 50 on the CCSSE is equivalent to an average score nationally.

For 2008, Minnesota two-year institutions had higher ratings of student engagement on average than both the peer states and national comparison groups across all five benchmark categories: active and collaborative learning, student effort, academic challenge, student-faculty interaction and support for learners. The ratings difference for Minnesota students compared to the comparison groups was the greatest on questions related to active and collaborative learning and least on questions relating to the level of academic challenge at their institutions. Minnesota student ratings declined from 2007 to 2008 but remained higher than 2006 ratings across all five survey categories.



## Graduate Preparation

Indicator 3C: How well are Minnesota postsecondary institutions preparing their graduates for further study?

Graduate admissions tests can provide another perspective on outcomes of undergraduate student learning. These exams are designed to evaluate an individual's level of preparation for graduate study, which includes master's, doctoral and professional degree programs. In analyzing graduate admissions test results as measures of undergraduate student learning at the state level, three important caveats should be considered:

- Test takers represent a select subset of undergraduates who plan to pursue graduate study. While some baccalaureate programs use the Graduate Record Exam as a learning outcomes assessment for the program, admissions tests are generally taken by individual students interested in pursuing

a specific area of graduate study and cannot in isolation measure undergraduate education.

- Some test takers may have completed their undergraduate studies several years prior to taking a graduate school admissions exam, while some test takers may take a graduate exam prior to completing their undergraduate programs.
- Exams such as the Law School Admission Test and Medical College Admission Test are targeted to specific programs of study and, as such, do not reflect the whole of an undergraduate's learning.

This indicator includes data on Minnesota undergraduates taking the GRE, LSAT and MCAT.

### Graduate Record Exam

The Educational Testing Service provided three years of aggregate data on the GRE General Test, based on the state in which the test takers reported that they earned their undergraduate degree.<sup>13</sup> The GRE General Test has three subtests: quantitative reasoning, verbal reasoning and analytical writing. Students may take the exam by computer or in paper-based format. Required minimum scores for admission to graduate school vary by institution and by program within the institution.<sup>14</sup>

### Quantitative Reasoning on the Graduate Record Exam

| 2004-2005           | Test Takers | Mean Score | 2005-2006           | Test Takers | Mean Score | 2006-2007           | Test Takers | Mean Score |
|---------------------|-------------|------------|---------------------|-------------|------------|---------------------|-------------|------------|
| <b>Top 3 States</b> |             |            | <b>Top 3 States</b> |             |            | <b>Top 3 States</b> |             |            |
| Connecticut         | 2,781       | 616        | Massachusetts       | 5,371       | 605        | Utah                | 3,323       | 594        |
| Massachusetts       | 8,738       | 612        | California          | 19,684      | 603        | Massachusetts       | 7,699       | 593        |
| California          | 31,042      | 611        | Utah (4th)          | 2,799       | 598        | Wisconsin (3rd)     | 4,708       | 589        |
| Minnesota (7th)     | 4,546       | 600        | Minnesota (3rd)     | 2,768       | 599        | Minnesota (3rd)     | 4,109       | 589        |
| Peer States         |             | 588        | Peer States         |             | 579        | Peer States         |             | 572        |
| Nation              |             | 567        | Nation              |             | 558        | Nation              |             | 552        |

Note: Peer state and national scores are weighted averages based on the number of test takers reporting their undergraduate institution.  
Source: Educational Testing Service

On the quantitative subtest, graduates from Minnesota institutions have consistently achieved high scores. Minnesota learners' average scores ranked at the top of the peer states and well above the national average in each of the past three years.

On the verbal subtest, graduates from Minnesota institutions also achieved high average scores, higher than those of graduates from institutions in the peer states and notably above the national average.

Scores for Minnesota graduates on the analytic writing exam, first implemented

in 2002, remained at 4.4 to 4.5 out of a six-point scale over the past three years. This is comparable with average scores from graduates in the peer states and slightly higher than the national average over the same period.

### Law School Admission Test

The LSAT uses a multiple-choice format to evaluate law school applicants' reading comprehension, analytical reasoning and logical reasoning. The average score on the LSAT for graduates from Minnesota postsecondary institutions was higher than the average scores for both the national and the peer states comparison

groups for all four academic years studied. The number of test takers has declined over the past four years for all groups.

The LSAT score is reported on a scale ranging from 120 to 180. Test takers with multiple scores in a given year have their scores averaged. Undergraduate institutional information is available for test takers who register for the Law School Data Assembly Service (about two-thirds of all test takers) and not for students who register only for the LSAT, so state-level data does not represent the entire test-taking population.

## Verbal Reasoning on the Graduate Record Exam

| 2004-2005           | Test Takers | Mean Score | 2005-2006           | Test Takers | Mean Score | 2006-2007           | Test Takers | Mean Score |
|---------------------|-------------|------------|---------------------|-------------|------------|---------------------|-------------|------------|
| <b>Top 3 States</b> |             |            | <b>Top 3 States</b> |             |            | <b>Top 3 States</b> |             |            |
| Rhode Island        | 1,287       | 525        | Vermont             | 351         | 524        | Massachusetts       | 7,699       | 524        |
| Vermont             | 685         | 523        | Rhode Island        | 786         | 510        | Rhode Island        | 1,386       | 520        |
| Connecticut         | 2,781       | 519        | Utah                | 2,799       | 506        | Vermont             | 738         | 519        |
| Minnesota (12th)    | 4,546       | 492        | Minnesota (11th)    | 2,768       | 489        | Minnesota (11th)    | 4,109       | 498        |
| Peer States         |             | 483        | Peer States         |             | 476        | Peer States         |             | 483        |
| Nation              |             | 473        | Nation              |             | 465        | Nation              |             | 476        |

Note: Peer state and national scores are weighted averages based on the number of test takers reporting their undergraduate institution.  
Source: Educational Testing Service

## Law School Admissions Test Results

| 2003-2004   | Test Takers | Mean Score | 2004-2005   | Test Takers | Mean Score | 2005-2006   | Test Takers | Mean Score | 2006-2007   | Test Takers | Mean Score |
|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|
| Minnesota   | 1,383       | 152.9      | Minnesota   | 1,342       | 153.2      | Minnesota   | 1,220       | 153.5      | Minnesota   | 1,194       | 153.2      |
| Peer States | 21,434      | 151.7      | Peer States | 20,621      | 152.0      | Peer States | 18,461      | 152.1      | Peer States | 17,714      | 152.1      |
| Nation      | 128,994     | 150.8      | Nation      | 126,224     | 150.7      | Nation      | 119,206     | 150.9      | Nation      | 117,952     | 150.9      |

Source: Law School Admission Council



### Medical College Admission Test

The MCAT is taken by undergraduates planning to go to medical school. The maximum score possible on the MCAT is 45. MCAT data is presented over a three-year period and measures the number and mean scores of test takers as well as the number and mean scores of examinees accepted into medical schools nationwide. Examinees from Minnesota undergraduate institutions have similar performance on the MCAT as examinees in the peer states and are slightly ahead of the national average in both MCAT mean scores and acceptance into medical school.

Applicants may take the MCAT multiple times. These scores include only the most recent score for all test takers, following the common medical school practice. When removing all but the most recent scores for test takers during the three-year period, the number of reported scores nationwide drops by approximately one-third.

### 3-Year Performance on the Medical College Admission Test 2005-2007

|             |             | Examinees | Matriculants at Medical Schools | Acceptance Rate |
|-------------|-------------|-----------|---------------------------------|-----------------|
| Minnesota   | Test takers | 2,365     | 802                             | 34%             |
|             | Mean scores | 26.85     | 30.79                           |                 |
| Peer States | Test takers | 30,591    | 10,203                          | 33%             |
|             | Mean scores | 26.11     | 30.82                           |                 |
| Nation      | Test takers | 159,515   | 46,189                          | 29%             |
|             | Mean scores | 25.68     | 30.50                           |                 |

Source: American Association of Medical Colleges

# Certification and Licensure Preparation

Indicator 3D: How do graduates of Minnesota programs compare to students nationally and in peer states on certification and licensure exam pass rates?

## Praxis Series Assessments

The Praxis Series assessments are a set of exams by the Educational Testing Service used for teacher licensure. The exams required in Minnesota cover

three areas: basic content (general knowledge of reading, writing and mathematics), professional knowledge (knowledge related to teaching) and academic content (knowledge of the

subject to be taught). These three areas are combined into summary pass rate scores.

To pass a portion of the Praxis, test takers must achieve a score at or above the established cut score set by each state's licensing organization. Because cut scores are set individually by each state and states may utilize different exams or forms of assessment, no comparative data for the Praxis exam exists. In Minnesota for 2006-2007, 3,174 individuals took all or a portion of the Praxis; 1,868 were from public and 1,306 were from private institutions. This data reflects initial licenses only; licensed teachers receiving added endorsements or additional licenses are not included in this data.

### Praxis Series Assessments for Teacher Licensure in Minnesota

|  | 2003-2004  | 2004-2005  | 2005-2006  | 2006-2007  |
|--|------------|------------|------------|------------|
| <b>Summary Pass Rates</b>                |            |            |            |            |
| Public institutions                      | 94%        | 89%        | 88%        | 90%        |
| Private institutions                     | 98%        | 96%        | 94%        | 97%        |
| <b>Total</b>                             | <b>95%</b> | <b>91%</b> | <b>90%</b> | <b>92%</b> |
| <b>Basic Skills Pass Rates</b>           |            |            |            |            |
| Public institutions                      | 95%        | 96%        | 93%        | 95%        |
| Private institutions                     | 98%        | 99%        | 98%        | 98%        |
| <b>Total</b>                             | <b>96%</b> | <b>97%</b> | <b>95%</b> | <b>96%</b> |
| <b>Professional Knowledge Pass Rates</b> |            |            |            |            |
| Public institutions                      | 99%        | 99%        | 98%        | 98%        |
| Private institutions                     | 100%       | 100%       | 99%        | 99%        |
| <b>Total</b>                             | <b>99%</b> | <b>99%</b> | <b>98%</b> | <b>99%</b> |
| <b>Academic Content Pass Rates</b>       |            |            |            |            |
| Public institutions                      | 98%        | 91%        | 92%        | 94%        |
| Private institutions                     | 99%        | 96%        | 95%        | 96%        |
| <b>Total</b>                             | <b>98%</b> | <b>93%</b> | <b>93%</b> | <b>95%</b> |

Source: U.S. Department of Education and the Minnesota Department of Education

### First-time Licensure Exam Results for Nursing Program Graduates

|   | 2004   |           | 2005   |           | 2006   |           | 2007   |           |
|---|--------|-----------|--------|-----------|--------|-----------|--------|-----------|
|   | Number | Pass Rate | Number | Pass Rate | Number | Pass Rate | Number | Pass Rate |
| <b>Practical Nurse Candidates</b>   |        |           |        |           |        |           |        |           |
| Minnesota   | 1,494  | 91.0%     | 1,704  | 90.0%     | 1,676  | 88.6%     | 1,687  | 89.4%     |
| Nation  | 49,284 | 89.0%     | 53,213 | 89.0%     | 56,947 | 87.9%     | 60,238 | 87.3%     |
| <b>Registered Nurse Candidates—Associate Degree Programs</b>                |        |           |        |           |        |           |        |           |
| Minnesota   | 1,349  | 85.0%     | 1,720  | 84.0%     | 1,618  | 87.0%     | 1,814  | 80.9%     |
| Nation  | 52,275 | 85.0%     | 60,053 | 87.0%     | 65,390 | 88.0%     | 69,890 | 84.8%     |
| <b>Registered Nurse Candidates—Baccalaureate and Higher Degree Programs</b> |        |           |        |           |        |           |        |           |
| Minnesota   | 603    | 90.0%     | 710    | 86.0%     | 775    | 88.3%     | 912    | 88.8%     |
| Nation  | 30,648 | 85.0%     | 35,496 | 87.0%     | 41,349 | 88.3%     | 45,781 | 86.4%     |

Source: Minnesota Board of Nursing

## National Council Licensure Examination

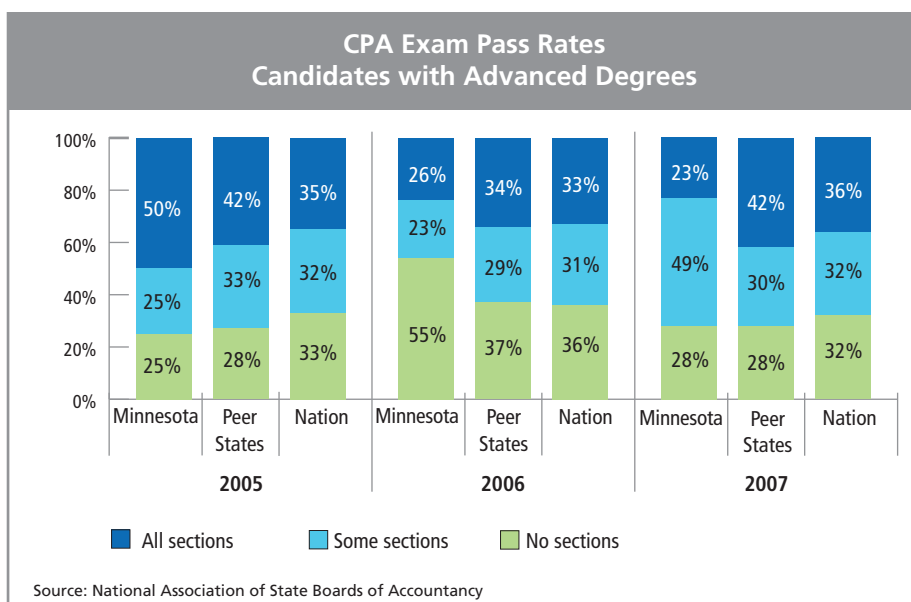
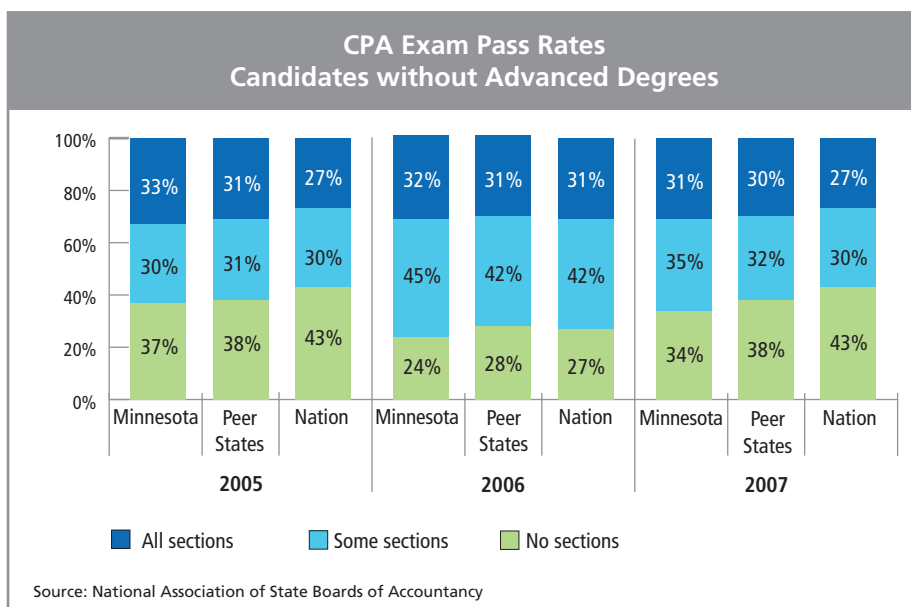
The Minnesota Board of Nursing requires graduates to complete the National Council Licensure Examination at either the practical nurse or registered nurse level in order to obtain licensure in the state. The majority of associate degree nursing programs (both practical and registered nursing programs) are provided by Minnesota public two-year colleges. Many public and private institutions offer baccalaureate and master's degree programs in nursing.

Minnesota practical nurse candidates have had higher pass rates than candidates nationally over the past four years. Registered nurse candidates from Minnesota associate degree programs have either met or been slightly below the national pass rates. Registered nurse candidates from Minnesota bachelor's degree and higher programs have generally met or exceeded the national pass rates. Increasing numbers of candidates in Minnesota have taken the exams, ranging from a 13 percent increase in test takers at the practical nurse level to a 51 percent increase at the registered nurse level from graduates of baccalaureate and higher programs between 2004 and 2007.

## Uniform Certified Public Accounting Exam

The Uniform Certified Public Accounting exam is administered across the country by the National Association of State Boards of Accountancy to candidates with baccalaureate degrees and those with advanced degrees. In 2007, 851 graduates of Minnesota institutions took the exam.

The following charts refer to the percentage of unique candidates that passed all four exam sections, none of the sections, and some (but not all) of the sections. Minnesota CPA



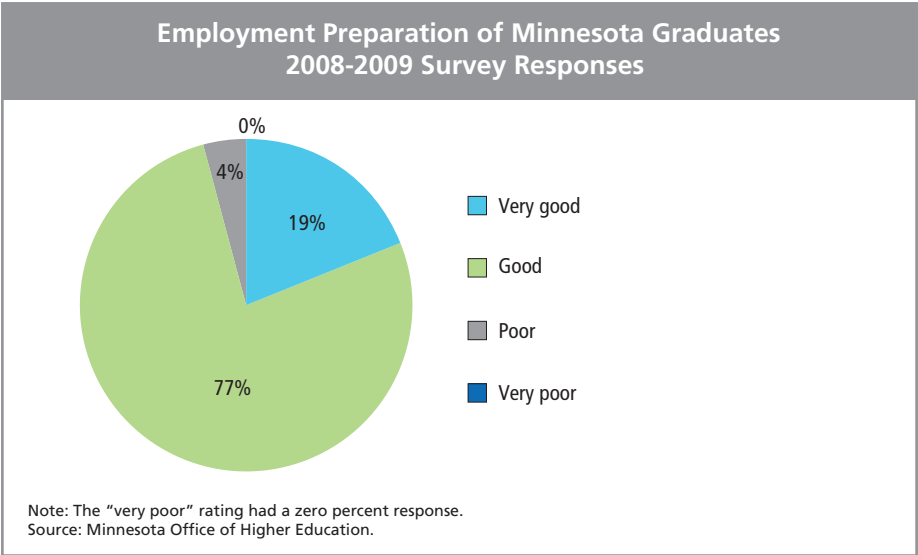
candidates without advanced degrees have consistently performed well compared to the nation and the peer states. In 2007, candidates with advanced degrees passed some or all sections of the exam in similar numbers as the comparison groups, although fewer Minnesota candidates passed all of the exam. Pass-rate data on individual exam sections were not reported in the aggregate.

# Preparation for Employment

## Indicator 3E: How satisfied are Minnesota employers with recent graduates of Minnesota postsecondary institutions?

Another means of assessing student learning outcomes is by examining students' preparation for employment. To gather information on this issue, the Office of Higher Education asked employers throughout the state how they viewed the preparation of recent graduates of Minnesota postsecondary institutions. In a survey conducted in late 2008-early 2009, 1,500 employers with 20 or more employees representing all major industry groups were sent a mail survey with questions about their satisfaction with recent Minnesota graduates.<sup>15</sup> The overall survey response rate was 52 percent.

The vast majority of respondents rated the job Minnesota postsecondary institutions are doing in preparing graduates to work in their organizations as either "good" or "very good". When asked to compare their experience with recent Minnesota graduates to graduates 10 years ago, 95 percent of employers surveyed responded that Minnesota postsecondary institutions are currently doing either a "better job" (30 percent) preparing their graduates for their workplace or doing "about the same job" (65 percent). Eighty-six percent of employers surveyed indicated that they are "likely" or "very likely" to hire graduates of Minnesota postsecondary institutions within the next five years. Of the employers who had hired a postsecondary graduate, 98 percent had hired a graduate of a Minnesota institution. When asked why their



### Factors in Hiring for Positions Requiring Postsecondary Education

|                      | Prior Work Experience | Field-Specific Education |
|----------------------|-----------------------|--------------------------|
| Not at all important | 1%                    | 1%                       |
| Not very important   | 10%                   | 4%                       |
| Somewhat important   | 63%                   | 38%                      |
| Very important       | 26%                   | 57%                      |

Source: Minnesota Office of Higher Education

organization may have hired graduates of postsecondary institutions outside Minnesota, employers cited as the most important factor in their hiring decision that not enough Minnesota graduates applied for the open position. Employers surveyed also indicated the relative importance of field-specific study and previous work experience in their hiring decisions.

Although employers indicated strong levels of satisfaction with Minnesota postsecondary institutions overall, employers expressed concerns about the level of workforce training they must provide to recent graduates in their organizations, including 67 percent who indicated they either “sometimes” or “almost always” have to train employees in areas they feel should have been part of their undergraduate education (see indicator 4E for further information).

Employers were also asked about specific skills and characteristics valued in their organizations. They were subsequently asked how satisfied they were with those same skills and characteristics of employees who were recent Minnesota graduates. The two highest priority attributes, professionalism and professional ethics, also received strong satisfaction rates based on experiences with recent graduates. The two categories with the lowest priority ratings, foreign language fluency and advanced mathematical reasoning, also had the lowest satisfaction ratings.

Other characteristics, such as creativity, written communication and critical thinking, had more mixed assessment with lower “very satisfied” ratings, relatively high “not very satisfied” ratings and most frequent ratings of “somewhat satisfied”. With the exception of professional ethics, the majority of ratings for each characteristic/skill fell into the “somewhat satisfied” category.

Employer Evaluation of Employee Attributes 2008-2009 Employer Survey

| Attribute  | Not At All Satisfied | Not Very Satisfied | Somewhat Satisfied | Very Satisfied |
|--|----------------------|--------------------|--------------------|----------------|
| Professionalism (punctuality, time management, attitude)               | 0%                   | 3%                 | 53%                | 44%            |
| Self-direction, ability to take initiative                             | 0%                   | 6%                 | 58%                | 36%            |
| Capability for promotion, advancement                                  | 0%                   | 6%                 | 60%                | 33%            |
| Creativity   | 0%                   | 9%                 | 64%                | 27%            |
| Adaptability, willingness to learn                                     | 0%                   | 4%                 | 50%                | 46%            |
| Professional ethics, integrity   | 0%                   | 4%                 | 46%                | 51%            |
| Ability to work in a culturally diverse environment                    | 0%                   | 4%                 | 57%                | 39%            |
| Ability to work in teams   | 0%                   | 4%                 | 54%                | 42%            |
| Written communication skills   | 0%                   | 11%                | 54%                | 35%            |
| Verbal communication skills  | 0%                   | 5%                 | 55%                | 39%            |
| Basic mathematical reasoning (arithmetic, basic algebra)               | 0%                   | 5%                 | 57%                | 38%            |
| Critical thinking and analysis   | 0%                   | 11%                | 60%                | 30%            |
| Problem solving, application of theory                                 | 0%                   | 8%                 | 61%                | 31%            |
| General computer skills (word processing, spreadsheets)                | 0%                   | 6%                 | 53%                | 42%            |
| Advanced mathematical reasoning (linear algebra, statistics, calculus) | 1%                   | 15%                | 61%                | 23%            |
| Technical communications   | 0%                   | 10%                | 64%                | 26%            |
| Fluency in a language other than English                               | 5%                   | 25%                | 56%                | 14%            |
| Knowledge of specific computer applications required for the job       | 0%                   | 6%                 | 63%                | 31%            |
| Knowledge of technology/equipment required for the job                 | 0%                   | 7%                 | 59%                | 33%            |
| Application of knowledge from a specific field of study                | 0%                   | 4%                 | 57%                | 39%            |

☒ Most frequent ratings of “very important” (top 5)

☐ Most frequent ratings of “not at all” or “not very important” (lowest 5)

Source: Minnesota Office of Higher Education



## **Contribute to the development of a state economy that is competitive in the global market through research, workforce training and other means.**

A strong academic research component is beneficial to institutions, students and the state's economy. While many institutions engage faculty and students in some academic and applied research, the University of Minnesota is the state's leading research institution. The University of Minnesota ranks among the top 20 institutions nationally in terms of total federally-funded academic research dollars. The University and the state have a vested interest in seeing the state's rank and reputation improve in this area. The University of Minnesota's strategic plan adopted in 2006 establishes research as a key priority.

The state is fortunate to have a rich complement of institutions performing research through other organizational structures. The Mayo Clinic is a non-profit institution educating health care professionals and receives extensive federal funds for research, much like the University of Minnesota. For this reason, the Mayo Clinic is included in some of the indicators in this goal.

Measures of workforce training and development by the Minnesota State Colleges and Universities are also included in this section. This indicator provides valuable information, but falls short of fully measuring the impact of higher education on workforce issues. Additional indicators, based on employer input, have also been added.

# Research and Discovery

## Indicator 4A: What is Minnesota’s relative position in its national share of academic research?

This indicator recognizes the contribution of academic research to the competitive position of Minnesota in the global economy. While business produces a substantial amount of research to develop new products and processes, higher education institutions contribute in unique ways that should be separately measured.

The federal government, through agencies such as the National Science Foundation, the National Institutes of Health and the U.S. Department of Defense, annually provides billions of research dollars. Much of this money is spent on university campuses. These research funds have two significant impacts on the economy of the state. First, the spending provides jobs and income directly through the research process and less directly as the money moves through the economy. Second, and more importantly, this research can lead to new products, techniques and services that can create new industries.

In 2006, Minnesota ranked 18th in its share of national academic research dollars, which can translate into research activity. Minnesota’s share of 1.8 percent was well below the two top states, California and New York, both of which are significantly larger than

Minnesota and are home to numerous research institutions. The 1.8 percent share of the total in Minnesota was well below the 3.4 percent average for Minnesota’s peer states. (This figure is a weighted average for the states in this group.)

While Minnesota cannot expect to reach the research activity levels of California or New York, due to its size, the percent share of total research over time provides a good indication of the state’s position and direction. Slight changes in the share of research dollars can make a big difference to a state. For example, an increase of one percentage point in the share would bring in another \$356 million to the state. Between 2005 and 2006, total academic research grants in the state grew by about two percent.

This measure included all institutions of higher education and the Mayo Clinic. Minnesota’s data are dominated by the University of Minnesota since few other universities in Minnesota obtain significant funds for sponsored research. This indicator included research funded by the federal government, business and industries and non-profit foundations. It excluded research funded by states or institutions.

National Academic Research Dollars Share and Rank

|              | 2002 | 2003 | 2004 | 2005 | 2006  |
|--------------|------|------|------|------|-------|
| Top 3 States |      |      |      |      |       |
| California   |      |      |      |      | 13.9% |
| New York     |      |      |      |      | 8.1%  |
| Texas        |      |      |      |      | 6.5%  |
| Minnesota    | 1.9% | 1.9% | 1.9% | 1.8% | 1.8%  |
| Rank         | 17   | 18   | 18   | 18   | 18    |
| Peer States  | 3.6% | 3.5% | 3.3% | 3.3% | 3.4%  |

Source: National Science Foundation, National Patterns of R&D Resources 2007 Data Update

## Research and Discovery

### Indicator 4B: How does the University of Minnesota compare to other flagship research institutions?

The competition is intense for sponsored research dollars among institutions with similar scope and mission around the country and the world. A publicly established goal of the University of Minnesota's governing board is to be among the top three public research universities in the world.

The Arizona State University report on America's top research universities defines top research universities as those with at least \$20 million in federal research expenditures and ranking within the top 25 on at least one of these nine measures:

- Research dollars
- Federal research dollars
- Size of endowments
- Annual giving to the institution
- Membership in the national academies
- Number of faculty awards
- Number of doctorates granted
- Number of post doctorates appointed
- The average SAT or ACT scores of entering freshmen

#### Ranking the Top Public and Private U.S. Research Universities 2007

| Type    | Institution                              | Number of Measures in the Top 25 Nationally |
|---------|--|---|
| Private | Columbia University                      | 9   |
| Private | Harvard University                       | 9   |
| Private | Massachusetts Institute of Technology    | 9   |
| Private | Stanford University                      | 9   |
| Private | University of Pennsylvania               | 9   |
| Private | Duke University                          | 8   |
| Public  | University of California - Berkeley      | 8   |
| Public  | University of Michigan - Ann Arbor       | 8   |
| Private | Johns Hopkins University                 | 7   |
| Private | Yale University                          | 7   |
| Public  | University of California - Los Angeles   | 7   |
| Public  | University of Washington - Seattle       | 7   |
| Public  | University of Wisconsin - Madison        | 7   |
| Public  | University of Minnesota - Twin Cities    | 6   |
| Private | Washington University - St. Louis        | 6   |
| Public  | University of California - San Francisco | 6   |

Source: The Center for Measuring University Performance at Arizona State University 2007 Annual Report

Fifty-one institutions met the criteria and were included in the ranking of top research institutions in the country. Then researchers ranked institutions based on how many times each institution ranked among the top 25 percent on these measures. The top institutions earned nine points, one point in each of the categories listed above. The University of Minnesota

earned six points, ranking among the top 16 research universities in the country in 2007. This was one rank lower than reported for 2006.



The University of Minnesota's decline was in the faculty awards category but only changed by one award. This was enough to move the University out of the top 25 percent. Of perhaps larger concern was the relatively small growth in reported annual giving compared to other institutions. The two measures where the University of Minnesota did not score in the top 25 percent were membership in national academies and student test entrance scores. Rankings on the other categories remained fairly consistent between 2006 and 2007.

Arizona State University evaluated only institutions within the United States and did not establish international comparisons. Comparison to other countries is important given the aspirations of the University of Minnesota leadership to improve the institution's standing and reputation on research and discovery internationally.

Related international rankings by other sources:

- China's Institute of Higher Education at Shanghai Jiao Tong University ranked the University of Minnesota 28th internationally among the top 100 research institutions for 2008. This was an improvement from 33rd in 2007 and rankings in the low 30s in previous reports.
- *London Times Higher Education Supplement* ranked the University of Minnesota 87th in 2008. This was an improvement from 142 in 2007 and 187 in 2006. The ranking methodology for this report is broader than that used in other studies.
- The G-factor International University Ranking placed the University of Minnesota 19th in the world. This source ranks universities as a function of the number of links to their Web sites from the Web sites of other leading international universities. *Webometrics* ranked the University eighth.

- *Newsweek* ranked the University of Minnesota 30th internationally among research institutions in 2007.

Other organizations rank higher education institutions on an international basis.<sup>16</sup> They are not presented in this report because the methodologies of these other rankings have not been completely investigated.

# Research and Discovery

## Indicator 4C: What are the total expenditures for research and development as a proportion of gross domestic product?

While indicator 4A measures academic research dollars, this indicator measures total expenditures on research in the state from all sources, including business. Total research expenditures for the state were larger, by a factor of ten, than spending on academic research alone. This provides a context for the academic research measure. Research in business and industry is more closely aligned with finished products produced by corporations. Many of these products may have their roots in basic research performed at an earlier stage at a university. Total academic research spending from all sources (including non-profit based research) in 2005 in Minnesota was \$746 million. Total research spending from all sources was \$7.137 billion.

In order to fairly compare research and development spending across geographic regions, the spending is divided by gross domestic product. This is a measure of output prepared by the U.S. Bureau of Economic Analysis in this country and reported by the Organisation for Economic Cooperation and Development (OECD) for the international comparisons. Research as a share of output in Minnesota increased dramatically in 2005. About 97 percent of this improvement was due to a significant increase in business spending. Minnesota's rank improved between 2004 and 2005.

Performance on this indicator can be influenced by factors that have nothing to do with the strength or growth of a state's economy. For example, New Mexico had the highest share of gross state product both because its economy is small and two large federal laboratories are located there.

Research Expenditures as a Percentage of Gross Domestic Product by State and Country

|                             | 2001 | 2002 | 2003 | 2004 | 2005 |
|-----------------------------|------|------|------|------|------|
| <b>Top 3 States</b>         |      |      |      |      |      |
| New Mexico                  |      |      |      |      | 7.6% |
| Maryland                    |      |      |      |      | 5.8% |
| Massachusetts               |      |      |      |      | 5.2% |
| Minnesota                   | 2.6% | 2.6% | 2.8% | 2.7% | 3.1% |
| Rank                        | 16   | 14   | 15   | 14   | 12   |
| Peer States                 | 2.7% | 2.5% | 2.5% | 2.5% | 2.6% |
| Nation                      | 2.7% | 2.5% | 2.5% | 2.5% | 2.6% |
| <b>Top 3 OECD Countries</b> |      |      |      |      |      |
| Israel                      |      |      |      |      | 4.4% |
| Sweden                      |      |      |      |      | 3.9% |
| Finland                     |      |      |      |      | 3.5% |
| OECD Countries Average      | 2.3% | 2.2% | 2.3% | 2.3% | 2.3% |

Source: National Science Foundation, National Patterns of R&D Resources 2007 Data Update; OECD Factbook 2008

## Workforce Development

### Indicator 4D: What is the activity at Minnesota State Colleges and Universities in customized and contract training?

Much of postsecondary education can be seen as a form of workforce training since many students continue their education beyond high school to obtain the knowledge and skills needed for future employment. This indicator is intended to address the important aspect of direct workforce training undertaken at the Minnesota State Colleges and Universities.

The system's 32 two- and four-year institutions offer employee training, including contract training, in a broad range of areas designed to meet common business challenges. For some employer needs, a standard training program works best. More often, however, colleges and universities customize or create new training tailored to an employer's workforce, timeline, industry or business plan. Training is delivered on-site, on campus or online. This indicator measured the change in unduplicated headcount enrollment in credit and non-credit courses in customized training from

2003 through 2008. There has been steady growth in total enrollment over this period although contract courses did drop off between 2007 and 2008.

More than 97 percent of all customized training offered by the Minnesota State

Colleges and Universities is provided by the system's two-year colleges. This activity tends to be more prevalent in the non-metropolitan areas of the state. About 63 percent of the customized training courses sections are offered in greater Minnesota.

**Customized Training, Full-Year Unduplicated Headcount at Minnesota State Colleges and Universities 2008**

| Fiscal Year | Contract Courses |            |        | Open Enrollment | Total Customized Training Enrollment |
|-------------|------------------|------------|--------|-----------------|--------------------------------------|
|             | Credit           | Non-Credit | Total  |                 |                                      |
| 2003        | 5,136            | 83,456     | 87,918 | 57,645          | 141,780                              |
| 2004        | 4,927            | 81,388     | 85,699 | 60,812          | 142,829                              |
| 2005        | 4,582            | 78,266     | 82,160 | 62,096          | 141,262                              |
| 2006        | 3,674            | 82,224     | 85,219 | 64,310          | 146,345                              |
| 2007        | 3,998            | 85,388     | 88,535 | 66,749          | 151,319                              |
| 2008        | 4,456            | 80,435     | 84,466 | 72,805          | 153,229                              |

Note: The totals in the table do not add up exactly since this is an unduplicated count and students are only counted once even though they may take both credit and non-credit courses. Open enrollment is non-credit enrollment by individuals that is not contracted by an employer.

Source: Minnesota State Colleges and Universities, Office of Research and Planning

# Workforce Development

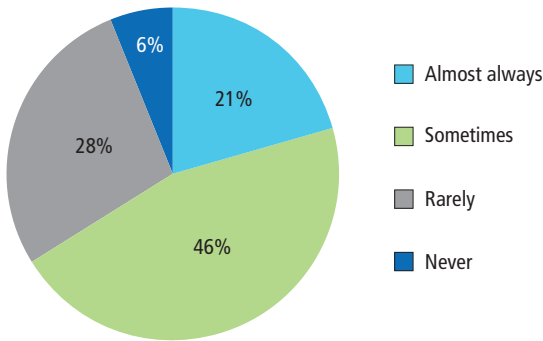
## Indicator 4E: How are Minnesota postsecondary institutions meeting the workforce training needs of employers in the state?

In a mail survey conducted in late 2008-early 2009, the Office of Higher Education asked 1,500 employers in Minnesota how satisfied they were with the education and training of recent graduates of Minnesota postsecondary institutions. Employers across industries throughout the state that had at least 20 employees were selected in a random sample to complete the survey. The overall response rate for the survey was 52 percent. Additional information on this project is presented in Goal 3.<sup>17</sup>

Employers had generally positive comments about Minnesota postsecondary institutions, but also noted a need for workforce training for recent graduates. When asked about workforce training in their organization for new hires that graduated from Minnesota postsecondary institutions, 92 percent of employers surveyed responded that they usually provided training to these employees. Notably, 67 percent of employers reported they sometimes or almost always had to train new employees in areas that they felt should have been covered in college.

The most commonly reported area of training provided by employers was in current job training, including general occupational and specific technical skills. The second most common area for training was in professional development, including interpersonal and leadership skills. The overwhelming majority of employers provided training in house, compared to offering reimbursement at a postsecondary institution or contracting with an outside provider.

How often do new employees who have completed their postsecondary education have to be trained in areas that you feel should have been included in their postsecondary education?



Source: Minnesota Office of Higher Education

How is training provided to new employees who have completed their postsecondary education? (Multiple responses possible)

|  |     |
|--|-----|
| In house.....  | 95% |
| Contract with outside provider .....                     | 31% |
| Offer reimbursement at a postsecondary institution ..... | 21% |
| Other .....  | 5%  |

In which of the following areas are new employees who have completed their postsecondary education trained? (Multiple responses possible)

|  |     |
|--|-----|
| <b>Current job training</b>  |     |
| Including general occupational skills, specific technical occupational skills and adding or upgrading skills to meet job needs ..... | 85% |
| <b>Professional development</b>  |     |
| Including interpersonal skills, diversity training and leadership skills .....   | 62% |
| <b>General development</b>   |     |
| Including basic skills education in writing, math and reading and ESL training .....   | 12% |
| Other .....  | 5%  |

Source: Minnesota Office of Higher Education

## **Provide access, affordability and choice for all students.**

With more than 150 postsecondary institutions in Minnesota offering a wide variety of programs at all levels, students have many choices. A range of admissions policies and the availability of online courses from both public and private institutions further enhance access and opportunity.

College affordability and a lack of academic preparation are significant barriers to college access. The ability of students to meet the financial requirements of higher education is a critical step in increasing educational attainment in the state. Affordability is a function of college prices, the student's college and program choice, income, assets and financial aid coupled with the family's determination of what it wants to invest in the student's education.

While state, federal and institutional policies can address broad concerns, there is no ideal measure to ensure each student can afford to attend. Furthermore, the variation in federal and state higher education finance and financial aid policies make comparisons nationally and internationally difficult.

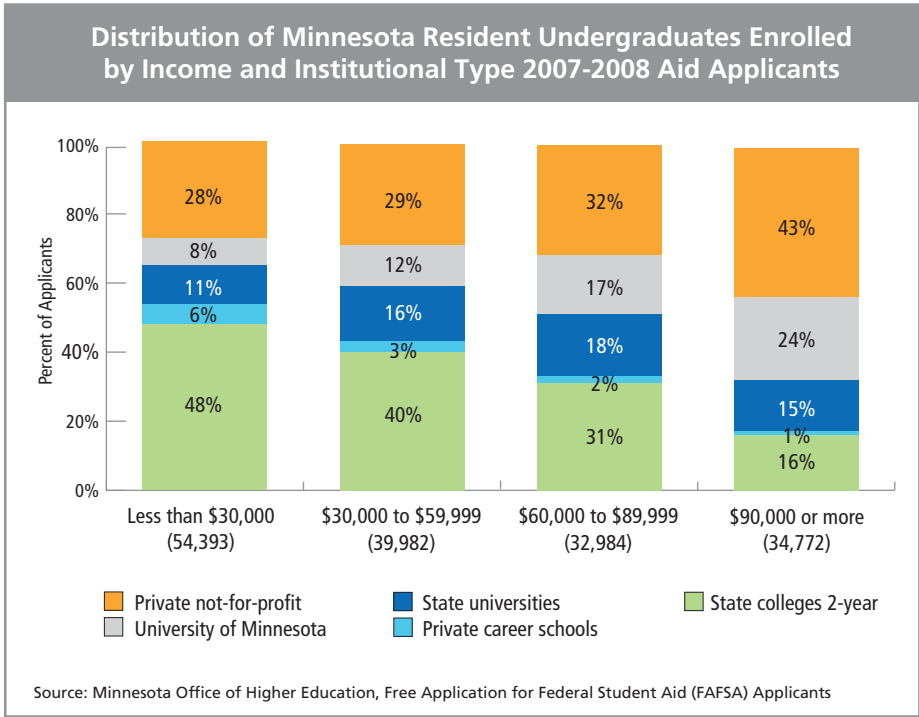
# GOAL FIVE

# Student Choice

## Indicator 5A: Where do low-income students enroll?

Family income has an impact on the type of postsecondary institution a student chooses to attend. National research describes the increasing “stratification” of higher education, where an increasing number of low-income students attend two-year as opposed to four-year institutions. Minnesota undergraduates from families with annual incomes less than \$30,000 were more likely to attend two-year institutions than public or private four-year institutions.

Undergraduates from families with annual incomes of \$60,000 or more were more likely to attend public or private four-year institutions. This chart shows adjusted gross income of Minnesota State Grant recipients as reported on federal income tax forms. For dependent students, the parents’ income was used; for others, the student’s income was used. If married, the spouse’s income was included. This distribution excluded students who did not apply for financial aid.



## Net Prices

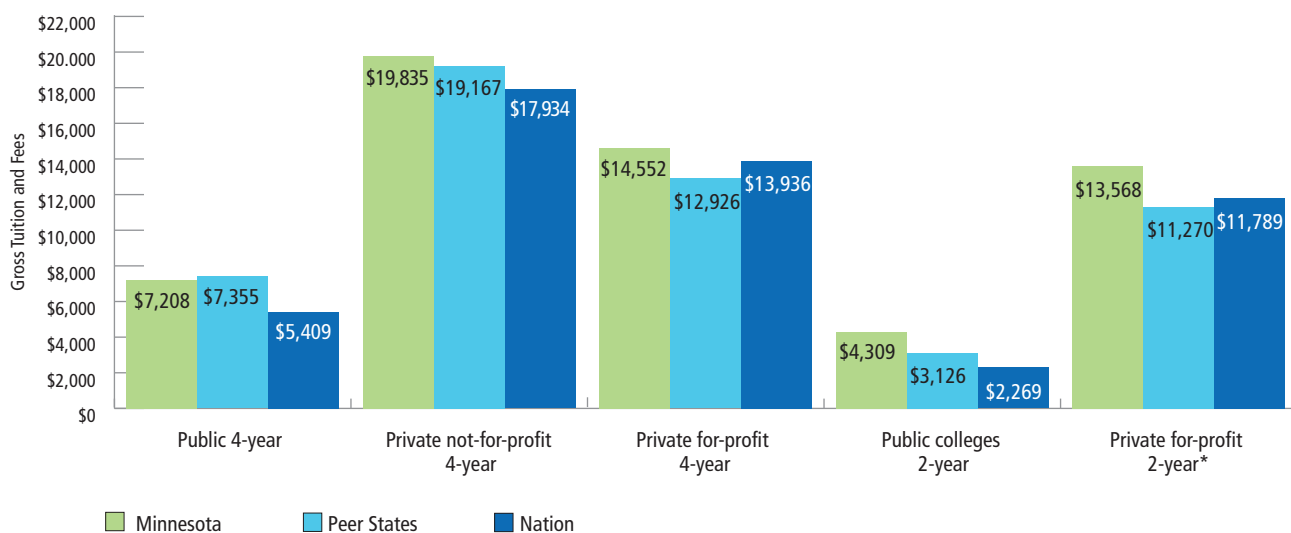
**Indicator 5B: How do tuition and fees at Minnesota institutions compare to the tuition and fees at colleges nationally? How do net prices at Minnesota institutions compare to the net prices at colleges nationally?**

Minnesota's two- and four-year public institutions had among the highest gross tuition and fees nationally (sixth and eighth respectively). Tuition and fees at Minnesota institutions are higher than national averages in every sector. Tuition and fees at institutions in peer states are comparable to Minnesota. This is to be expected as college costs tend to reflect regional trends with institutions along the East Coast having higher tuition and fees and institutions in the southern and western United States having lower tuition and fees.

Comparisons of college prices are incomplete without consideration of financial aid, specifically grants and scholarships provided to students. Policies regarding who is eligible to receive a grant or scholarship vary greatly by institution type and state. In Minnesota, a significant percentage of first-time, full-time students at all institutions received both federal and state grants. Approximately one in five students at public and private not-for-profit four-year institutions and one in three students at private for-profit four-year and public two-year

institutions received federal or state grants. A significant percentage of students received institutional grants and scholarships, 40 percent at public four-year institutions, and 88 percent at private not-for-profit four-year institutions.

Gross Tuition and Fees for First-Time, Full-Time Students by Institution Type 2006-2007



\*Only 60 percent of schools reported financial aid data.

Note: Data for public institutions represents the weighted average of in-district and in-state charges.  
Source: U.S. Department of Education, IPEDS Institutional Characteristics Survey

After subtracting grants and scholarships from tuition and fees, the remaining tuition and fees are deemed the “net price”. The net price for first-time, full-time students took into account all federal, state and institutional grants and scholarships and is intended to reflect the price students and families actually pay. The averages

shown are weighted by the number of first-time, full-time students at each institution. Minnesota’s average net prices were higher than the national averages by institution type.

These data represent averages across all income levels. In Minnesota, state grants are awarded based on financial

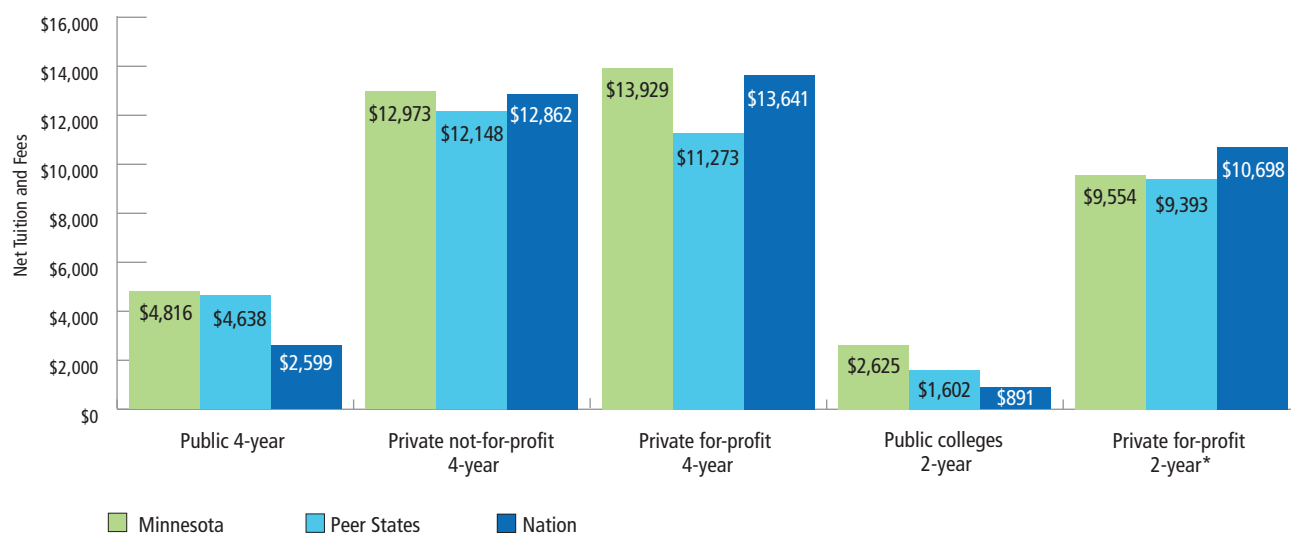
need. Students from families with incomes under \$50,000 are likely to receive federal Pell and Minnesota State Grants that lower their net prices.

### Financial Aid by Type for First-Time, Full-Time Minnesota Students 2006-2007

| Institution Type              | Fall 2006 Number of Students | % Receiving Federal Grant Aid | Average Federal Grant | % Receiving State Grant Aid | Average State Grant | % Receiving Institutional Grant Aid | Average Institutional Grant |
|-------------------------------|------------------------------|-------------------------------|-----------------------|-----------------------------|---------------------|-------------------------------------|-----------------------------|
| Public 4-year                 | 16,557                       | 20%                           | \$3,393               | 28%                         | \$3,027             | 40%                                 | \$3,136                     |
| Private not-for-profit 4-year | 10,364                       | 21%                           | \$3,930               | 27%                         | \$3,418             | 88%                                 | \$10,033                    |
| Private for-profit 4-year     | 2,792                        | 39%                           | \$2,103               | 45%                         | \$1,731             | 22%                                 | \$1,036                     |
| Public colleges 2-year        | 16,680                       | 36%                           | \$2,907               | 41%                         | \$1,509             | 7%                                  | \$883                       |
| Private for-profit 2-year     | 496                          | 57%                           | \$3,408               | 57%                         | \$2,507             | 4%                                  | \$3,124                     |

Source: U.S. Department of Education, IPEDS Student Financial Aid Survey

### Net Tuition and Fees for First-Time, Full-Time Students by Institution Type 2006-2007



\*Only 60 percent of schools reported financial aid data.

Source: U.S. Department of Education, IPEDS Institutional Characteristics Survey



## Affordability

### Indicator 5C: What is the net price of higher education in Minnesota by student and family income?

This indicator provides additional context for the net tuition and fees outlined in indicator 5B. This measure accounts for more factors affecting the net price, including gross tuition and fees, an estimated living allowance, financial aid, employer aid and some federal tax credits. Most importantly, this indicator presents the net price in the context of student and family income.

Since data are not available for individuals for many of the aid components, hypothetical families were constructed using information from a number of sources. In calculating these amounts, a “typical” student was used. A “typical” dependent student is from a family with a household size of four, with two parents and two children, with

one of the children enrolled in postsecondary education.

The charts in this indicator show the average net prices dependent or independent students and their families pay. Dependent students are generally under 24 years old. Independent students are generally 24 years old or older.

Students can meet educational costs in a variety of ways. They can work, take out loans or use past savings. Similarly, a family can use current income, savings and loans. The student may further reduce costs by taking fewer courses or by living on less than the annual \$10,000 living allowance assumed in the analysis.

Net price was calculated as follows:

$$\text{Net Price} = (\text{tuition} + \text{fees} + \$10,000 \text{ living allowance}^{18}) - (\text{grants} + \text{scholarships} + \text{tax credits})$$

Grants, scholarships and tax credits are the average sum of:

- **Federal Pell and Minnesota State Grants**
- **Institutional grants and scholarships:** The average amount (including students receiving no aid) for all undergraduates in 2004 by \$5,000 income bands by type of institution, adjusted to reflect inflation and differences between average institution grants to Minnesota undergraduates and national averages.<sup>19</sup>
- **Private scholarships:** The average amount of private scholarships (e.g., Lions Club, Kiwanis) for undergraduates, adjusted to reflect inflation and differences between average private scholarships awarded to Minnesota undergraduates and national averages.
- **Employer aid:** The average amount for undergraduates adjusted to reflect inflation and differences between employer aid given to Minnesota undergraduates and national averages. Employer aid include tuition reimbursement, tuition benefits to children of university staff and similar assistance.
- **Federal Hope Tax Credits:** A simulation of the federal higher education Hope Tax Credit.<sup>20</sup>

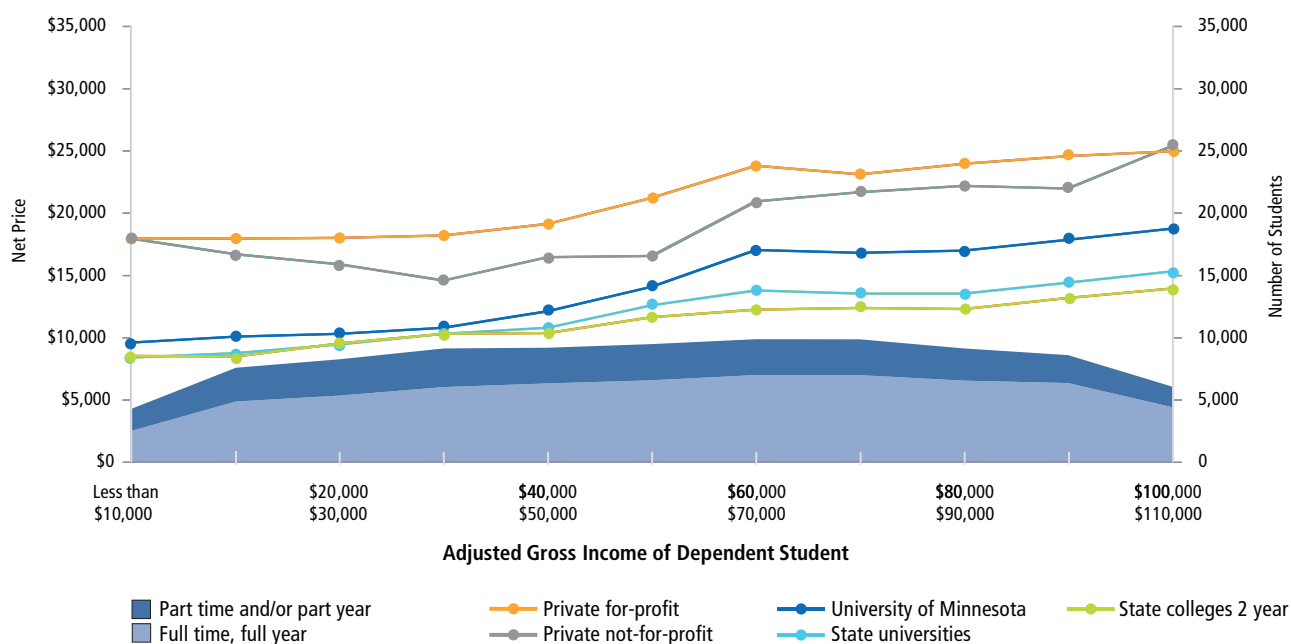
## Dependent Students

Net prices vary with income and institution attended. At all income categories, the net prices at public institutions were lower than those at private institutions. At annual family

incomes of \$40,000 or lower, the net prices for students attending public institutions were about the same, but diverged in higher family incomes. For example, a dependent student attending the University of Minnesota

on a full-time basis and coming from a family with an annual income between \$30,000 and \$35,000 faced a net price of about \$10,100.

Net Price for Dependent Students by Income at Minnesota Institutions 2007-2008



Source: Minnesota Office of Higher Education

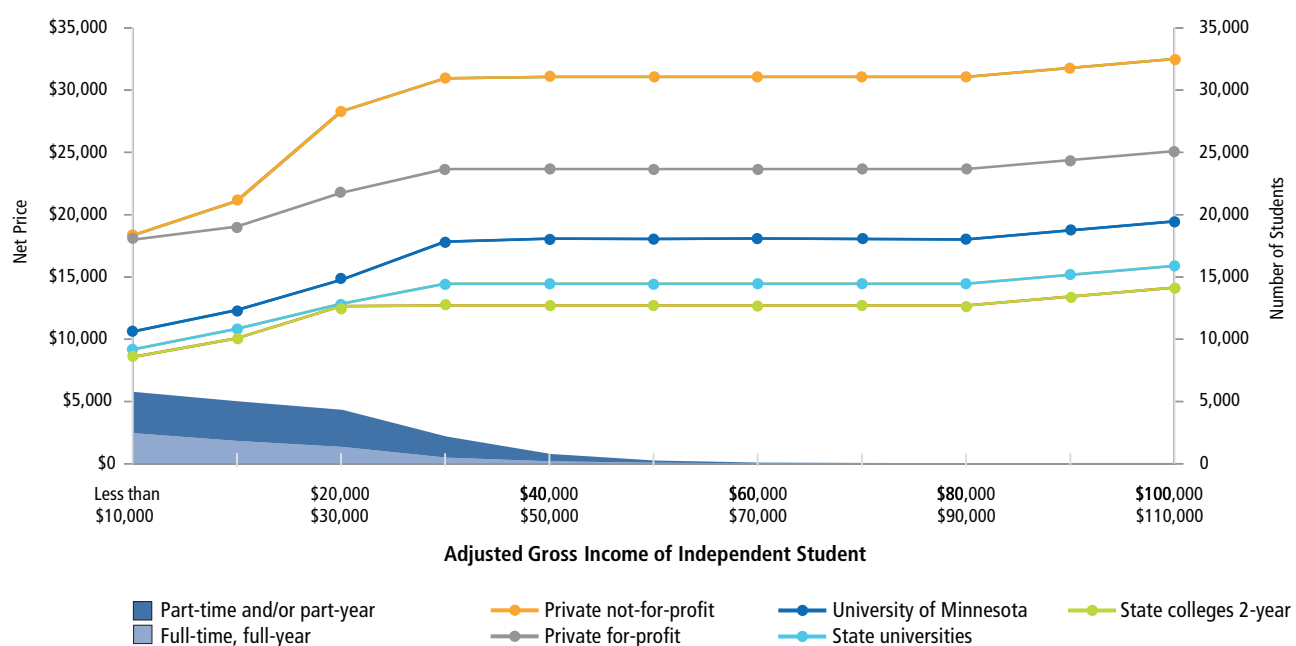
## Independent Students

Independent students at the lower end of the income scale had lower net prices; however, their net prices were substantial compared to their income. As income increases, net prices

increase dramatically, especially for single, independent students. For example, a single independent student without children attending the University of Minnesota full time, with an annual income between \$10,000

and \$15,000 faced a net price of \$11,700. A similar student with an annual income between \$20,000 and \$25,000 faced a net price of \$13,400.

Net Price for Single Independent Students Without Children  
by Income at Minnesota Institutions 2007-2008



Source: Minnesota Office of Higher Education

# Borrowing Patterns

## Indicator 5D: To what extent are Minnesota undergraduates borrowing to finance their education?

The educational debt of college graduates is an important concern in any discussion about affordability. The number of undergraduates with loans and the total amount borrowed provide one perspective on the extent students rely on future income to pay for higher education. If students believe they cannot complete a college education without incurring significant debt, there may be negative implications for the student, the state and the economy. Some view borrowing for postsecondary education as an investment providing income and other benefits over a lifetime. As in the general economy, the number of students borrowing and

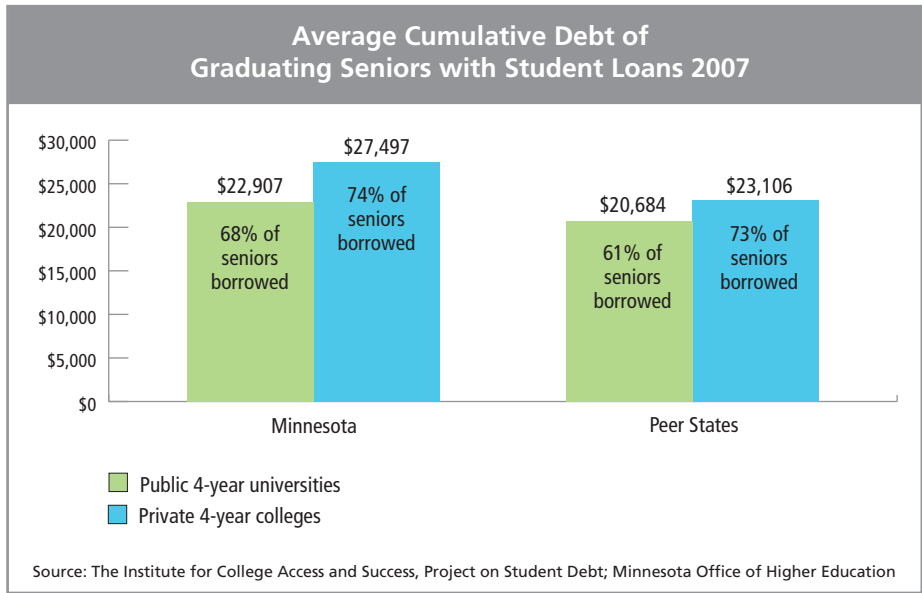
borrowing levels may increase in response to favorable interest rates.

In Minnesota, 68 percent of seniors graduating from public universities had student loans and borrowed an average cumulative total of \$22,907, while 74 percent graduating from private colleges and universities had loans, and borrowed an average cumulative total of \$27,497.

In peer states, 61 percent of seniors graduating from public universities had student loans, and borrowed \$20,684, while 73 percent graduating from private colleges and universities had loans, and borrowed \$23,106.

In summary, more Minnesota undergraduates at public institutions borrowed than those in peer states, and those who did, borrowed greater amounts. Slightly more graduating seniors at private colleges in Minnesota borrowed compared to peer states and they borrowed larger amounts. Students graduating from private colleges and universities in both Minnesota and peer states borrowed larger amounts than students graduating from public universities.

The data in this indicator were reported by campuses and were used to illustrate undergraduate debt levels across states and colleges. While useful, the data have some limitations. If a campus did not report data, the data for the previous year were used. Since student debt levels generally rise from year to year, using the same data from a previous year may understate the true debt level. The data reflect debt data as reported to the Project on Student Debt. If current year data were not available for Minnesota institutions, additional data were gathered by the Minnesota Office of Higher Education.



## Next Steps

The Minnesota Office of Higher Education reviews the goals and indicators annually and considers feedback from systems, institutions and policymakers. New relevant data is incorporated as it becomes available. In 2009, two research projects will be undertaken related to access and affordability. Analysis from both projects will be featured in the 2010 accountability report. During 2009, public meetings will be held to review the goals and analyze the indicators to ensure use of the most relevant, appropriate and current measures to assess higher education performance.

### Student Aid Study

The Office of Higher Education will analyze data from the 2008 National Postsecondary Student Aid Study. NPSAS is a nationwide study of 80,000 undergraduates designed to determine how students and their families pay for postsecondary education. The study also provides demographic and other characteristics of those enrolled. The NPSAS data will provide information on income for students who applied for financial aid and those who did not apply, the net price of postsecondary education for students in different income categories, the distribution of financial aid and the characteristics of Minnesota students and their families. Data on Minnesota students will be compared to data for peer states and the nation.

### Family Finance Study

The Office of Higher Education is undertaking a state-focused study of how families pay for postsecondary education in Minnesota. This study will complement the student-focused NPSAS data and provide a useful comparison to national studies of family educational financing. The study will gather information on the variety of financial tools and strategies Minnesota families use to meet the costs of higher education. Results from the survey will be included in future reports and help guide policy discussions and outreach efforts.

### International Comparisons

One of the ongoing projects of *Minnesota Measures* is the selection of appropriate metrics for comparing Minnesota's postsecondary institutions nationally and internationally. This year's report has international comparative data for certain indicators using information from the Organisation for Economic Cooperation and Development, which analyzes educational data from 30 countries including the United States. Future reports will continue to analyze international comparative data and appropriate means of comparison for Minnesota.

### Technology Transfer

One of the components of Goal Four is the analysis of how research at the postsecondary level contributes to a globally competitive state economy. Future reports will expand this goal's current analysis of research and development expenditures to include the economic contributions of licensing and patents developed at educational research institutions in the state.

### Graduation and Retention Rates

Because the Integrated Postsecondary Enrollment Data System does not include sufficient data to report graduation and retention rates for many private for-profit degree-granting institutions, the Office of Higher Education will identify if data is available from alternative sources and where possible, report this information in subsequent reports.

### Survey of Graduates/Employees

The Office of Higher Education completed an Employer Satisfaction Survey with a set of questions exploring workforce training needs in late 2008-early 2009. The survey was sent to 1,500 employers in industries across the state and had a 52 percent response rate. Data from that survey is included in Indicators 3E and 4E, and further analysis of the data will be in future reports. The Office of Higher Education and the Department of Employment and Economic Development will explore workforce preparation from the perspective of graduates/employees for inclusion in future reports.

## Endnotes

<sup>1</sup> For additional detail on participation rates, visit [www.ohe.state.mn.us/tPg.cfm?pageID=764](http://www.ohe.state.mn.us/tPg.cfm?pageID=764).

<sup>2</sup> Computation of college participation rates is not an exact science. Three sources (NCES, NCHEMS and OECD) show three different national participation rates for the United States. The methodology used by NCHEMS most closely mirrors the methodology used by Minnesota in computing college participation numbers, so the NCHEMS data is used here. For more information, visit [www.higheredinfo.org](http://www.higheredinfo.org).

<sup>3</sup> See the April 2006 issue of *Insight*, a newsletter published by the Office of Higher Education.

<sup>4</sup> Minnesota Transfer Curriculum information is available at [www.mntransfer.org](http://www.mntransfer.org).

<sup>5</sup> I. Elaine Allen and Jeff Seaman, *Staying the Course Online Education in the United States, 2008* (Needham, MA: Sloan Consortium, 2008), [www.sloanconsortium.org/publications/survey/staying\\_course](http://www.sloanconsortium.org/publications/survey/staying_course).

<sup>6</sup> According to the U.S. Census, Minnesota had a net migration of almost 35,000 degreed people from 1995 and 2000. For the same period, the state had a gross in-migration of degreed people of 43,000.

<sup>7</sup> Further information on U-CAN is available at: [www.ucan-network.org](http://www.ucan-network.org).

<sup>8</sup> In its pilot project of measuring student learning outcomes, the Voluntary System of Accountability uses two modules of the CAAP (the Critical Thinking and Writing Essay tests) and two subscores of the MAAP (critical thinking and written communication). The third testing option for the VSA is the complete Collegiate Learning Assessment. After the pilot project, institutions will be required to update student learning measures every three years.

<sup>9</sup> George D. Kuh, Jillian Kinzie, Ty Cruce, Rick Shoup and Robert M. Gonyea, *Connecting the Dots: Multi-Faceted Analyses of the Relationships between Student Engagement Results from the NSSE, and the Institutional Practices and Conditions That Foster Student Success: Final Report Prepared for Lumina Foundation for Education*. (Bloomington, IN: Indiana University Center for Postsecondary Research, 2006), [nsse.iub.edu/pdf/Connecting\\_the\\_Dots\\_Report.pdf](http://nsse.iub.edu/pdf/Connecting_the_Dots_Report.pdf).

<sup>10</sup> The National Survey of Student Engagement is administered by the Center for Postsecondary Research at Indiana University in Bloomington, Indiana, [www.ccsse.org](http://www.ccsse.org).

<sup>11</sup> Minnesota first-year students' ratings were lower than those of the top 50 percent of NSSE institutions but higher than those of first-year students in the peer states; the larger increase in ratings of academic challenge among Minnesota seniors is not, then, solely attributable to lower initial student ratings.

<sup>12</sup> More information on the Community College Survey of Student Engagement is available at [www.ccsse.org](http://www.ccsse.org).

<sup>13</sup> For 2006-2007, 5,719 students took the GRE General Test at testing centers in Minnesota. Since the testing center location does not necessarily indicate the location of the test taker's undergraduate institution, this indicator reports exam scores for the 4,546 examinees who self-reported that their undergraduate institution was in Minnesota.

<sup>14</sup> Some institutions and programs require prospective students to take one of eight specific GRE Subject Tests. Those scores are not reported here.

<sup>15</sup> Employers from all major groups of the Standard Industrial Classification Coding System that had at least 20 employees were included.

<sup>16</sup> Arizona State University's online Center of American Research University Data provides a comprehensive set of data on more than 200 institutions ([mup.asu.edu](http://mup.asu.edu)). This research was performed by The University of Florida in prior years.

<sup>17</sup> Employers from all major groups of the Standard Industrial Classification Coding System that had at least 20 employees were included.

<sup>18</sup> The \$10,000 allowance was calculated by using U.S. Bureau of Labor Statistics data from the Consumer Expenditure Survey which analyzed interview data on expenditures of college students aged 18 to 22 enrolled on a full-time basis. The data was for the 1996-1998 period. The data included expenses for food eaten at home, food eaten away from home, shelter and utilities, apparel and services, transportation, health care, entertainment and travel. Average total expenses for students were \$2,584 per quarter (three calendar months). This figure was multiplied by three to arrive at an estimate for the nine-month academic year. The result was adjusted from 1997 dollars to 2007 dollars using the Consumer Price Index.

<sup>19</sup> For example, grants from private not-for-profit postsecondary institutions to undergraduates were 16 percent higher in Minnesota, on average, than the national average, so the national average institutional grant to students attending private not-for-profit institutions for each income category was multiplied by 1.16.

<sup>20</sup> Federal Hope Tax Credits were available to taxpayers with students in their first and second years of postsecondary education. This calculation did not simulate the other federal higher education tax benefits: federal Lifetime Tax Credits and the deduction for postsecondary tuition.

## Appendix

### Definitions, Terms and Data Sources Used in the Report

#### Institutions:

**Four-year institutions:** For purposes of this report, four-year institutions were postsecondary institutions in Minnesota that offer bachelor's degrees as their primary undergraduate degree.

**Two-year institutions:** For purposes of this report, two-year institutions were postsecondary institutions in Minnesota that offer associate degrees as their primary undergraduate degree.

**State colleges two-year:** For purposes of this report, these are Minnesota's public community and technical colleges.

**University of Minnesota:** References to the University of Minnesota included the state's land grant campus in the Twin Cities and its regional institutions in Duluth, Morris, Rochester and Crookston. The University of Minnesota campuses are included with four-year public institutions in some instances.

**Minnesota State Colleges and Universities:** This state-supported system comprises seven state universities and 25 community and technical colleges across Minnesota. Where appropriate:

- **State Universities** are included with four-year institutions
- **Community and technical colleges** are referred to as state colleges two-year

**Private colleges:** These institutions are licensed or registered by the state, and their students are generally eligible to receive state and federal financial aid. Some colleges are church affiliated, others are independent. Classifications within the private colleges are:

- **Not-for-profit:** These schools have a tax-exempt status and are typically church affiliated. In Minnesota, they mainly include four-year liberal arts colleges. Examples are St. Olaf College, Macalester College and Augsburg College.
- **For-profit:** In Minnesota, these institutions mainly offer associate degrees or sub-baccalaureate certificates in specific career fields. Recently, some have started offering career-related bachelor's and master's degrees. Examples are Brown College and Rasmussen College.

#### Other terms used:

**Peer states:** Peer states were selected due to their similarities to Minnesota in terms of geography, higher education structures, economies and demographics. The peer states are Iowa, Illinois, Indiana, Michigan, Ohio, Pennsylvania and Wisconsin.

**Top three states:** For several of the indicators, Minnesota's performance was compared to the three best performing states. In cases where trends over time were being evaluated, the best states were identified for the most recent year.

**Per capita:** A way of measuring outputs in relation to the population. For example, the number of degrees produced per 1,000 residents ages 18 to 64, were reported as a way to compare states with vastly different populations.

**Race/ethnicity descriptions:** Assessing the situations of students by race and ethnicity is somewhat limited due to

constraints of data collection systems. Existing data do not recognize the breadth of diversity that exists within communities of color. Most educational institutions use definitions adopted by the U.S. Department of Education which uses the terms American Indian, Asian or Pacific Islander, Black, Hispanic and White.

**Undergraduate:** Unless otherwise specified, an undergraduate is any student enrolled at a postsecondary institution taking one or more courses where the credits earned in the course can be applied to an academic award. The student may be attending part time or full time. The student may also be a high school student earning dual credits. The undergraduate student may also be degree-seeking or non-degree seeking.

**Dependent students:** For financial aid purposes, a dependent student is generally a traditional age college student and must submit financial aid information about his or her parents on the Free Application for Federal Student Aid.

**Independent students:** For financial aid purposes, the student meets one or more of the following criteria: is age 24 or older, is a graduate or professional student, is married, has legal dependents other than a spouse, is an orphan or ward of the court or is a veteran of the U.S. armed forces or is in active service.

**Certificate:** These are occupation-specific academic awards that are typically earned in less than two years and are below the bachelor's degree. They are not an associate degree. The term "certificate" includes awards some institutions call "diplomas".



## Data Sources:

**Minnesota Department of Employment and Economic Development:** This state agency's labor statistics staff provided employment projections for fields analyzed in Goal Two.

**National Science Foundation:** This is the branch of the federal government that collects information on research and development across the United States. It is recognized by higher education institutions and research agencies as the primary and official source of this data.

**Office of Higher Education Student Enrollment Record Database:** The Office of Higher Education's student enrollment record database contains unit records for students enrolled during the fall term in Minnesota's public and private postsecondary education institutions. Institutions eligible to participate in a Minnesota-funded student financial aid program are required to report their student enrollment data.

**Organisation for Economic Cooperation and Development:** This is a collaboration of 30 democratic countries sharing information and best practices on domestic and international policies. The OECD publication *Education at a Glance* provides data on a variety of measures.

**U.S. Census Bureau:** This is the source for the American Community Survey data. The survey is conducted annually by the Census Bureau.

**U.S. Department of Education:** The National Center of Education Statistics manages the Integrated Postsecondary Education Data System. IPEDS are a series of surveys collected from the nation's postsecondary institutions with data on enrollment, degrees conferred, student financial aid and institutional characteristics.

**Exam data:** The Office of Higher Education either contracted with the organizations listed below or obtained data on various assessments and admissions exams completed by students from the organization Web site.

- **ACT:** ([www.act.org](http://www.act.org)) Data on ACT test takers and data on the Collegiate Assessment of Academic Proficiency.
- **Association of American Medical Colleges:** ([www.aamc.org](http://www.aamc.org)) Data on the Medical College Admissions Test.
- **Community College Survey of Student Engagement:** ([www.ccsse.org](http://www.ccsse.org)) Data on community college student surveys.
- **Council for Aid to Education:** ([www.cae.org/content/pro\\_collegiate.htm](http://www.cae.org/content/pro_collegiate.htm)) Information on the Collegiate Learning Assessment.
- **Educational Testing Service:** ([www.ets.org](http://www.ets.org)) Data on the Graduate Record Exam and the Measure of Academic Proficiency and Progress.
- **Law School Admissions Council:** ([www.lsac.org](http://www.lsac.org)) Data on the Law School Admissions Test.
- **Minnesota Department of Education:** ([www.education.state.mn.us](http://www.education.state.mn.us)) Data on the Minnesota Comprehensive Assessment Series and on teacher licensure.
- **Minnesota Board of Nursing:** ([www.nursingboard.state.mn.us](http://www.nursingboard.state.mn.us)) Pass rates on NCLEX, the exam used for nursing certification nationwide.
- **National Association of State Boards of Accountancy:** ([www.nasba.org](http://www.nasba.org)) Pass rates on the Uniform Certified Public Accountant exam.
- **National Survey of Student Engagement:** ([www.nsse.iub.edu](http://www.nsse.iub.edu)) Data on NSSE.
- **U.S. Department of Education:** Teacher licensure pass rates on the Praxis exam.



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## Notes

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## Notes

## 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 serves as the state's clearinghouse for data, research and analysis on postsecondary enrollment, financial aid, finance and trends.

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