

CHAPTER V

The averages in the table mask big variations among Illinois subgroups in the percentages of freshmen completing a 4-year degree within 6 years. Nearly two-thirds of Asian students (65%) and white students (64%) complete degrees in six years, but graduation rates of Hispanic students (46%) and black students (33%) are much lower. The differences may be in part due to the number of black and Hispanic students who are also low income. These students are more apt to reduce their course loads to part time to accommodate a job or they may drop out to work but later return to college. The “pipeline” completion rate does not include students who transfer to private institutions, transfer out of state, or drop out of college but later return.

At the current time, Illinois’ recruitment of students into college is comparable to the national average, and the 4-year institutions are exceeding the national rates in retention and degree completion. If Illinois is to increase the number of students graduating from college, more students need to be prepared to enter college and persist to completion.

Students in STEM Majors

From 1994 to 2004, the percentage of Illinois workers with bachelor’s degrees or higher increased from 30.3% to 36.9%, compared to the U.S. increase of 29.5% to 37.2%.¹³⁸ As Illinois looks to bolster the economic infrastructure of the state, more graduates with STEM degrees will be needed.

The percentage of higher education degrees awarded in science and engineering is a broad measure of the preparation of a STEM workforce. Even though nationally and in Illinois the total number of higher education degrees increased, the proportion of STEM degrees remained constant.¹³⁹ From 1993 to 2003, the number of science and engineering higher education degrees, including bachelor’s, master’s, and doctorate degrees, conferred in the U.S. increased from 473,414 to 564,444 (19%); in terms of the percentage of all degrees awarded, the proportion of science and engineering degrees stayed rather consistent at approximately 30%.

In Illinois, the number of science and engineering bachelor’s, master’s, and doctorate degrees increased from 20,620 in 1993 to 25,263 (22%), which represents approximately 27% of all degrees awarded in those years.¹⁴⁰ During 1993 to 2003, the proportion of graduate degrees in science and engineering remained around 23% for the U.S. but increased in Illinois from 28% to 30%.¹⁴¹

These global measures of science and engineering degrees provide an overall picture but do not measure whether the granted degrees match the state’s workforce needs.

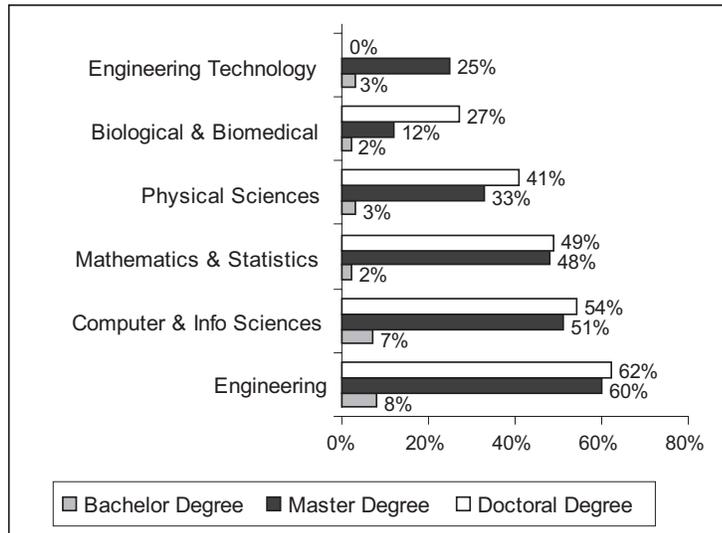
COLLEGE PARTICIPATION AND COMPLETION

The following table shows the distribution of degrees in targeted STEM fields. At face value, it would appear that Illinois colleges are preparing a strong STEM workforce; however, the figure shows that nearly half or more of the master and doctoral degrees in mathematics, computer science, and engineering are awarded to non-residents. The global competition for these workers, as well as all STEM degree holders, is increasing, making it more difficult for Illinois to build and retain a STEM workforce.

Table 12 Number of Degrees Awarded by Illinois Colleges and Universities in 2003-2004¹⁴²

	Associate Degree	Bachelor Degree	Master Degree	Doctoral Degree
Computer & Info Sciences	1,312	3,337	1,496	41
Engineering	107	2,392	1,373	282
Engineering Technology	1,183	1,098	204	13
Biological & Biomedical	-	2,506	360	234
Mathematics & Statistics	-	587	306	71
Physical Sciences	-	676	294	151
Construction Trades	121	-	-	-
Mechanic Technicians	427	34	-	-
Precision Production	39	-	-	-

Figure 33 Percentages of Degree Recipients in Illinois Who are Non-Residents¹⁴³



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The under representation of black and Hispanic students in higher education is an ongoing concern. From 1994 to 2004, the percentage of undergraduate white students in Illinois public universities decreased from 71% to 68%. During the same period, the number of black students in Illinois public universities decreased 6%, the number of Hispanic students increased 36%, and the number of Asian students increased 22%.

Even though black and Hispanic students are under represented, an American Council on Education study¹⁴⁴ concluded that black and Hispanic students are just as likely as white and Asian students to major in science, technology, engineering, and mathematics when they enter college. Within six years, however, only 63% of the black and Hispanic students will have graduated with a STEM degree, compared to 95% of their Asian peers and 87% of their white peers.

A six-year longitudinal study of 12,000 students found the stumbling blocks for the black and Hispanic students are the same regardless of their major—those not completing were more likely to work 15 hours or more a week, less likely to have completed a highly rigorous high school curriculum, and less likely to have a parent with a bachelor's degree or higher.¹⁴⁵ Compared to their white and Asian peers, black and Hispanic STEM majors are more likely to dropout after their third year.

Figure 34 College Major, Persistence, and Completion by Ethnicity¹⁴⁶

