



St. Louis Community College has four campuses, including the newest one (above), which opened in the suburb of Wildwood last year.

Compared with a traditional four-year college, a community college has several important advantages for students.

Community Colleges

Not So Junior Anymore

By Natalia Kolesnikova and Luke Shimek

Joliet Junior College, the oldest community college in the nation, was founded in 1901. Since then, community colleges have become increasingly important for the U.S. education and training system. Today, 11.5 million students (6.5 million of whom are credit students) are enrolled in almost 1,200 community colleges, according to the American Association of Community Colleges. Of all U.S. undergraduates, community college students constitute a remarkable 46 percent.¹

The original goal of two-year colleges was to prepare students, through an associate's degree program, to transfer to a four-year college. Over time, the purpose evolved to include work force training programs, schooling toward certification in areas such as nursing and other professions, and adult continuing education classes. Lately, some community colleges have started to offer bachelor's degrees in a number of fields.

However, there are big differences across states in how the community college system is used. Economist Cecilia Elena Rouse found

evidence suggesting that states tend to focus their resources on either a community college or a four-year college system. California has the largest network of the former, with 66 percent of the state's current undergraduates attending community colleges. Nevada and Vermont have only 16 percent of their undergraduates in community colleges.²

Among the states within the Eighth District, Illinois and Mississippi have the largest proportion of undergraduates—about half—in community colleges. Indiana has the lowest percentage—19 percent. Table 1 summarizes enrollment and other relevant statistics for the Eighth District.

Advantages of Community Colleges

Compared with a traditional four-year college, a community college has several important advantages for students. To begin, the open admission policy makes it easier to enroll regardless of prior academic record.

The cost to attend community college is also less because of lower tuition and other

fees than what four-year colleges charge. Community college students on average paid \$2,017 in tuition and fees for the 2006-07 academic year, which is less than half of what students in public four-year universities paid (\$5,685) and only about one-tenth of the tuition and fees for students in private four-year universities (\$20,492), according to the U.S. Department of Education. In addition, most community college students live at home, thus saving room and board expenses incurred by students at other institutions.

Finally, community colleges offer a more flexible curriculum, and their schedule includes evening and weekend classes. That gives students an opportunity to attend college while working.

Community College Students

The population of community college students is diverse and is different from the population at four-year colleges. Community college students are 60 percent white, 15 percent black, 14 percent Hispanic and

TABLE 1
Comparisons for the Eighth District

	Enrollment in community colleges, fall 2005	Percent of all undergraduates, fall 2005	Average tuition and required fees 2006-07		
			Four-year public (in-state)	Four-year private	Two-year public
United States	6,184,000	41	\$5,685	\$20,492	\$2,017
8th District States					
Arkansas	47,771	37	\$ 4,937	\$ 13,396	\$ 1,890
Illinois	352,824	51	\$ 8,038	\$ 20,181	\$ 2,252
Indiana	59,969	19	\$ 6,284	\$ 22,060	\$ 2,713
Kentucky	84,669	39	\$ 5,821	\$ 14,739	\$ 2,633
Mississippi	66,298	50	\$ 4,457	\$ 12,300	\$ 1,709
Missouri	86,742	28	\$ 6,320	\$ 16,539	\$ 2,284
Tennessee	74,829	31	\$ 5,009	\$ 17,576	\$ 2,474

SOURCE: U.S. Department of Education, National Center for Education Statistics

5 percent Asian.³ Forty-one percent of community college students are males. In comparison, students attending four-year colleges are more likely to be white (70 percent) and male (45 percent).

Because of the flexibility they offer, and the relatively low monetary and time costs of attending, community colleges have more so-called nontraditional students than four-year colleges have. Community college students are more likely to be older: 35 percent of them are 30 years old or older compared with 16 percent in four-year colleges. The average community college student is 28 years old, with a median age of 24. The corresponding ages for students in four-year colleges are 24 and 21.

Only 31 percent of community college students are enrolled full-time, in part because students attending community colleges are more likely to also be working. In contrast, 63 percent of students at four-year colleges are enrolled full-time. Only 21.4 percent of all community college students do not work, compared with 30.5 percent at four-year colleges. Furthermore, 40.8 percent of community college students work full-time, compared with 22.8 percent of their four-year college counterparts.

More students in community colleges are first-generation college students than are students attending four-year colleges. More than 40 percent of the former have parents with only a high school education or less. In contrast, only 27 percent of four-year college students have parents with a high school education or less.

Not surprisingly, most community college students attend an institution that is close to their home. They live on average 40 miles away from the college they attend. In comparison, students at four-year institutions attend colleges on average 230 miles away from their home. Over 95 percent of community college students attend colleges in their states compared with 83 percent of students at four-year colleges.

Along Different Paths

Community college students have various educational goals and intentions when they enter college. Although many of them plan to obtain an associate's degree, some students enroll to take just a couple of classes to improve their skills or aim at getting a certification in a certain field. Some intend to transfer to a four-year institution without any formal community college credential.

This ability of community colleges to offer students many options provides a unique opportunity to have postsecondary education for many students who would not have it otherwise. On the other hand, because the educational objectives of students, and, thus, their paths are so different, it is difficult to track their progress through college and to assess the effect of community college education on their educational attainment and labor market outcomes. The fact that most students attend community colleges part-time and take longer to complete their program adds another complication to the task.

Critics of the community college system often point out that a significant proportion

of community college students complete relatively few college credits. Economists Thomas Kane and Rouse calculated that the majority of community college students complete one year or less and 35 percent complete one semester of study or less. The two economists also showed that less than one-half of community college students complete any degrees. In particular, about 15 percent receive a certificate, 16 percent complete an associate's degree and another 16 percent eventually receive a bachelor's degree or higher. Kane and Rouse point out that, among four-year college entrants, almost 60 percent receive at least a bachelor's degree.

Does this mean that enrolling in a two-year college somehow reduces an individual's educational attainment? One view is that easy access to community college sidetracks students from a four-year college, where they are more likely to obtain a bachelor's degree. On the other hand, many nontraditional students would not have attended four-year colleges. For them, community colleges provide a chance for a post-secondary education they would not have had otherwise. Therefore, researchers argue, even if attending community college instead of four-year college might lower educational attainment for some students, more students have access to higher education, which makes overall educational attainment in society higher.

To better answer a question about the effect of community colleges on educational attainment, it is necessary to consider students' intentions toward their educational objectives together with their outcomes. The problem is a lack of reliable data that measures students' goals and preparation.

The U.S. Department of Education is among those that attempted to study educational outcomes of community college students. Its report used data from several sources, including those tracking students over time.

The study found that about 90 percent of students entering community college intended to obtain a formal credential or to transfer to a four-year college. One could argue that it is more reasonable to consider completion rates only for those who intended to obtain a degree in the first place. The report estimated that between 51 and 63 percent (depending on data used) of these students had fulfilled their

expectations within 6-8 years after initial enrollment. In particular, about 11 percent had earned a certificate, 17-18 percent had earned an associate's degree, 11-28 percent (depending on data used) had attained a bachelor's degree or higher, and 12-13 percent had transferred to a four-year college without attaining a formal degree.

Keeping in mind that one of the main goals of two-year colleges is to prepare students for continuing their studies at four-year institutions, it is particularly important to evaluate their transfer rates. The U.S. Education Department report indicated that, overall, about 29 percent of community college students had transferred to four-year colleges. Interestingly, 51 percent of those who intended to complete a bachelor's degree when they first started had transferred. At the time data was collected, 80 percent of those who did transfer either obtained a bachelor's degree or were still working toward it.

What about the students who left community college without any formal credential? This amounts to more than half of them. According to the report, about one-third of this group said that postsecondary education improved their salary. For 47 percent, attending community college led to increased job opportunities. About 43 percent reported improvement in job performance, and 47 percent said they had more job responsibilities.

Students who did receive a certificate or a degree were more likely to be satisfied with their outcomes. About 80 percent of them said their salaries had increased. Almost 85 percent reported having a better job or more responsibilities.

Labor Market Returns

What is the economic payoff to attending community college? This turns out to be a rather complicated question to answer. One reason is the lack of available data. Until 1990, the U.S. Census Bureau recorded only the number of years of education, making it impossible to identify individuals attending specifically community college. In the 1990 and 2000 U.S. censuses, the highest educational attainment was recorded instead of years of education. This makes it possible to focus on individuals with a completed associate's degree. Still, this information does not make



Missouri Students Have Chance To Attend Community College for Almost Nothing

The "A+" program of the state of Missouri makes it easy for residents to attend community college. The program provides funding for qualified high schools and for students enrolled in community colleges.

The program came about when two school districts sued the state of Missouri, accusing it of negligence and unfair practices in the education funding mechanism in place at the time (1990). That mechanism based funding on the district's prior enrollment and performance. The judge found the state's school funding plan did not "pass constitutional muster." As a response, on the last day of the 1993 session, the state legislature passed the Outstanding Schools Act of 1993, which included the provisions for the A+ Schools program. In 2006, the legislature expanded the program from strictly public institutions to include private technical colleges.

The program has had a strong response: 253 high schools have signed up. Since 1997, more than 77,000 students who enrolled in the A+ program graduated from those schools, with over 38,000 of them receiving financial incentives to go on with their schooling. According to the program's office, the high school dropout rate has decreased and the high school graduation rate has increased at those schools compared with the state averages.

The program provides funding for high schools and students in order to (1) discourage students from dropping out, (2) provide more challenging course work, and (3) help those students who are unlikely to attend a four-year institution proceed to a two-year public community college, technical school or other postsecondary course work.

For students who had enrolled in the A+ program while still in high school, the program provides reimbursement for

the unpaid balance of the cost of tuition, general fees and up to half the cost of books at the community college. To obtain this funding, these students must have had a 95 percent attendance rate at a participating high school for at least three years, maintained a 2.5/4.0 grade point average, completed 50 hours of unpaid supervised tutoring/mentoring, signed an agreement with the participating high school concerning the program and have no criminal record. To maintain the grant, the student must try to secure funding from the federal government via the Free Application for Federal Student Aid (FAFSA), attend a community college or technical school fulltime and maintain a 2.5/4.0 GPA at that institution.

The program provides funding to high schools that submit themselves to the authority of the Department of Elementary and Secondary Education.

These A+ schools commit themselves to:

- establishing clear guidelines and measurement standards to which students must adhere,
- requiring rigorous course work,
- developing a partnership program with local businesses, community colleges, community leaders and technical schools to create a counseling and mentoring service for students as well as an apprenticeship/internship program,
- making available facilities and services for adult literacy training, and
- developing a procedure for evaluating the effectiveness of the program.

Missouri isn't the only state in the Eighth District that has a program to encourage students to attend community college. For example, Mississippi has the Tech Prep program, and Arkansas has Nex+ Step.



Community colleges draw more nontraditional students than do four-year colleges. For example, 35 percent of community college students are at least 30 years old, compared with 16 percent who are that old at four-year colleges. Whites make up 60 percent of students at community colleges but 70 percent of students at four-year colleges.

it possible to identify an institution students attended if they did not complete a degree.

Several available studies used data from surveys instead. Most of the surveys recorded data on various characteristics of respondents, starting with their teenage years and following them over the years.⁴ One limitation of these studies is that, given the timeline of surveys, they include only students who enrolled in community college soon after graduating from high school.

Most studies found that students who attended community college, but did not complete a degree, earn 9 to 13 percent more than those with a high school diploma only. The estimation technique usually attempts to control for differences in academic preparation between the two groups as measured by test scores and class rank. Furthermore, researchers found that there is an increase in annual earnings of 5-8 percent associated with each year of education at community college. This finding is particularly interesting because it is very similar to the return to a year of schooling in a four-year college.

Economists Louis Jacobson, Robert LaLonde and Daniel Sullivan looked at a very different group—older, high-tenure displaced workers. Much of the retraining efforts for this group is done at community colleges. Researchers found that one year of community college schooling increases long-term earnings of displaced workers by about 9 percent for men and about 13 percent for women compared with earnings for similar workers who did not attend community college. Another important fact reported by the authors is that while there is a high return to technically oriented and math and science courses (about 14 percent for men and 29 percent for women), less technically oriented courses yield very low and possibly zero returns.

Returns to an Associate's Degree

Another way to think about a value of community college education is to ask how much more a person with an associate's degree earns compared with a similar person who has only a high school diploma.⁵

Studies done separately by researchers Kane and Rouse and by Duane Leigh and Andrew Gill estimated the labor market return to an associate's degree of about 16-27 percent.

Using the much larger data set from the U.S. 2000 census, more detailed questions can be answered.⁶ For instance, are there differences in labor market returns to an associate's degree between different demographic groups? Are the returns the same across different cities? Data also allow looking at the differentials in hourly wages rather than annual earnings.

One immediate feature of the results, reported in Table 2, is that though the estimated average returns to an associate's degree are consistent with other researchers' findings, there are significant differences between demographic groups. Women of all races have higher returns to an associate's degree than men do, mostly because women are more likely to major in nursing and related fields. There is also variation in the return to an associate's degree among racial groups. Hourly wages of white men with an associate's degree are 18 percent higher than wages of white men who stopped their formal education at high school.⁷ The returns are much higher for black and Hispanic men—25 and 27 percent, respectively.

Furthermore, the return to an associate's degree is not the same across different cities in the U.S. For example, white men with associate's degrees are paid only 4 percent more than white high school graduates in Seattle, but as much as 30 percent more in Miami. For Hispanic men, the return to an associate's degree is 16 percent in Washington, D.C., but it is more than twice as much, 39 percent, in Atlanta. Cross-city differentials for white women are not as big, but they are significant for minority women.

Table 2 also presents estimated returns to an associate's degree in four large metropolitan areas of the Eighth District. White men with an associate's degree earn on average 11 percent more in St. Louis, 16 percent more in Memphis, 22 percent more in Little Rock and 18 percent more in Louisville than similar men with only a high school diploma. For black men, returns to an associate's degree are 13 percent in St. Louis, 22 percent in Memphis and 17 percent in Louisville. Consistent with the rest of the country, women's returns are higher than men's. For example, black women in St. Louis with an associate's degree earn 43 percent more than black women with only a high school education.

Why is there such a big variation in

TABLE 2

Associate's Degree Pays Off

Someone with an associate's degree makes more money in every city listed than does the equivalent person with only a high school diploma. The numbers could be interpreted as percentage increases in wages. For example, a white man in Atlanta who has an associate's degree makes 21 percent more than a white man in Atlanta with a high school diploma.


	MEN			WOMEN		
	White	Black	Hispanic	White	Black	Hispanic
United States	0.18	0.25	0.27	0.29	0.30	0.29
20 LARGEST METROPOLITAN AREAS						
Atlanta	0.21	0.26	0.39	0.27	0.29	0.53
Baltimore	0.15	0.26	0.19	0.28	0.28	0.20
Boston	0.17	0.06	0.25	0.29	0.33	0.31
Chicago	0.10	0.21	0.19	0.25	0.23	0.21
Dallas	0.24	0.28	0.29	0.30	0.27	0.24
Detroit	0.21	0.22	0.34	0.32	0.19	0.25
Houston	0.19	0.21	0.27	0.24	0.45	0.20
Los Angeles	0.16	0.35	0.30	0.20	0.26	0.30
Miami	0.30	0.25	0.30	0.25	0.30	0.33
Minneapolis	0.17	0.27	0.32	0.23	0.28	0.24
New York	0.11	0.24	0.21	0.26	0.35	0.28
Philadelphia	0.15	0.17	0.32	0.28	0.24	0.38
Phoenix	0.18	0.42	0.24	0.24	0.33	0.18
Pittsburgh	0.16	0.17	—	0.29	0.19	—
Riverside-San Bernardino	0.20	0.15	0.24	0.31	0.40	0.36
San Diego	0.15	0.36	0.24	0.23	0.21	0.28
San Francisco	0.12	0.48	0.23	0.26	0.21	0.30
Seattle	0.04	0.22	0.17	0.25	0.29	0.39
St. Louis	0.11	0.13	—	0.24	0.43	—
Washington	0.18	0.22	0.16	0.23	0.26	0.37
OTHER 8TH DISTRICT LARGE METROPOLITAN AREAS						
Memphis	0.16	0.22	—	0.23	0.31	—
Little Rock	0.22	—	—	0.37	—	—
Louisville	0.18	0.17	—	0.32	0.32	—

NOTE: Author's calculation. Data from 2000 Public Use Micro Sample of the census. Results are missing if data were insufficient due to small sample size.

returns to an associate's degree across cities? Although no formal research has been done on this topic, possible explanations might be locational differences in labor market conditions and in industrial composition.

Conclusions

Community colleges play a significant role in U.S. higher education. They offer an opportunity to receive a postsecondary education to many students who would not have attended college otherwise. Today, the number of U.S. undergraduates is at all-time high as more and more people understand the necessity of having higher education in our technology-intensive world. Community

colleges are very important in helping to absorb this increasing number of students. In addition, historically, college enrollments in general go up during times of economic downturns. Currently, community colleges have an additional appeal because tuition and fees at four-year colleges continue to increase while financial aid and student loans are getting harder to secure. For many students, community colleges offer the best chance to obtain a college education. 

Natalia Kolesnikova is an economist, and Luke Shimek is a research analyst, both at the Federal Reserve Bank of St. Louis. For more on Kolesnikova's work, see <http://research.stlouisfed.org/econ/kolesnikova>.

ENDNOTES

- ¹ The term "junior college" originally referred to any two-year postsecondary school. The term "community college" became more popular to describe public two-year institutions as it better conveys their mission to serve local communities. The two terms are still often used interchangeably.
- ² These are the latest state-level statistics available. Source: the U.S. Department of Education, 2005.
- ³ Data in this section are from the National Center for Education Statistics, 2003-04. See Horn and Nevill.
- ⁴ See Kane and Rouse (1999) for a survey of these studies and a more detailed description of data.
- ⁵ For more on nonparametric estimation of returns to schooling, see Black et al.
- ⁶ Data are from 2000 Public Use Micro Sample of the U.S. Census. See Ruggles et al.
- ⁷ Table 2 reports differences in mean log wages between associate's degree holders and high school graduates. They approximate percentage differences.

REFERENCES

- Black, Dan; Kolesnikova, Natalia; and Taylor, Lowell. "Earnings Functions When Wages and Prices Vary by Location." *Journal of Labor Economics*, forthcoming.
- Hoachlande, Gary; Sikora, Anna C.; and Horn, Laura. *Community College Students: Goals, Academic Preparation, and Outcomes*. NCES 2003-164. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, 2003.
- Horn, Laura; and Nevill, James. *Profile of Undergraduates in U.S. Postsecondary Education Institutions: 2003-04: With a Special Analysis of Community College Students*. NCES 2006-184. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, 2006.
- Jacobson, Louis S.; LaLonde, Robert J.; and Sullivan, Daniel G. "Estimating the Returns to Community College Schooling for Displaced Workers." *Journal of Econometrics*, March-April 2005, Vol. 125, Issues 1-2, pp. 271-304.
- Kane, Thomas J.; and Rouse, Cecilia Elena. "Labor Market Returns to Two- and Four-Year College." *The American Economic Review*, June 1995, Vol. 85, No. 3, pp. 600-14.
- Kane, Thomas J.; and Rouse, Cecilia Elena. "The Community College: Educating Students at the Margin Between College and Work." *Journal of Economic Perspectives*, Winter 1999, Vol. 13, No. 1, pp. 63-84.
- Leigh, Duane E.; and Gill, Andrew M. "Labor Market Returns to Community Colleges: Evidence for Returning Adults." *Journal of Human Resources*, Spring 1997, Vol. 32, No. 2, pp. 334-53.
- Rouse, Cecilia Elena. "Do Two-Year Colleges Increase Overall Educational Attainment? Evidence from the States." *Journal of Policy Analysis and Management*, 1998, Vol. 17, No. 4, pp. 595-620.
- Ruggles, Steven; Sobek, Matthew; Alexander, Trent; Fitch, Catherine; Goeken, Ronald; Hall, Patricia; King, Miriam; and Ronnander, Chad. 2004. Integrated Public Use Microdata Series. Minneapolis, Minn: Minnesota Population Center. See <http://usa.ipums.org/usa/>.