

Student Migration

SUMMARY

A sizable percentage of Minnesota residents who attend college in reciprocity states return to Minnesota to work following graduation. More than 60 percent of Minnesota residents who finished college in Wisconsin, North Dakota, or South Dakota in the 1997-98 school year had earnings of some sort in Minnesota during 2001, and about half of these graduates had 2001 Minnesota earnings exceeding \$20,000. In addition, 47 percent of reciprocity students who graduated from the University of Minnesota in 1997-98 had Minnesota earnings in 2001, compared with 35 percent of reciprocity students who graduated from MnSCU schools. In general, Minnesota has fared better than surrounding states and the nation as a whole in its ability to retain and attract college graduates.

In recent years, some policy makers have expressed concerns about so-called “brain drains”—that is, the out-of-state migration of prospective college students or college-educated workers. Minnesota’s tuition reciprocity agreements provide Minnesotans with more options for attending college out of state, just as they improve the affordability of Minnesota colleges and universities for residents of neighboring states. Until now, however, there has been very limited information about where reciprocity students find employment following graduation. Such information may help policy makers judge the impact of the reciprocity program on Minnesota’s workforce.

This chapter addresses the following questions:

- **How does Minnesota compare with other states in its retention of college-bound students? How has the growth of Minnesota’s college-educated population compared with that of other states?**
- **To what extent do Minnesota residents who attend school in reciprocity states return to Minnesota to work following graduation? To what extent do reciprocity state residents who attend school in Minnesota stay in Minnesota following graduation?**
- **Do Minnesota higher education agencies have sufficient authority to track the post-graduate earnings of reciprocity program participants?**

GENERAL MIGRATION PATTERNS

To provide context for our analysis of migration by reciprocity students, we examined general migration patterns among prospective college students and college-educated persons. We compared Minnesota with other states on several measures, using data from the U.S. Census Bureau and National Center for Education Statistics. As we noted in Chapter 2, Minnesota experiences a net “loss” of a few thousand college students annually under the tuition reciprocity program. But it is likely that other factors, such as Minnesota’s overall job climate, play far greater roles than the reciprocity program in the decisions of college graduates about whether to seek employment in Minnesota.

As a starting point for this review of general migration patterns, it is worth noting that a relatively high percentage of Minnesota’s high school graduates enroll in college immediately following graduation. A recent analysis showed that 64 percent of Minnesota’s 2000 high school graduates enrolled in college in Fall 2000, which was ninth highest among the states.¹

Although a high percentage of Minnesota high school graduates attend college,

- **Nationally, and compared with surrounding states, Minnesota has ranked relatively low in its percentage of college-bound high school graduates who have remained in their home state to attend college.**

Table 3.1 shows that 74 percent of Minnesota residents who became college freshmen within a year of high school graduation attended a college in Minnesota in Fall 1998. This ranked 34th among the states, and it was below the national average of 81 percent. In addition, Minnesota has been a net “exporter” of college freshmen—that is, the freshmen leaving the state have outnumbered the freshmen coming to Minnesota institutions from other states. Minnesota’s net loss of

Minnesota has been a net "exporter" of college freshmen.

Table 3.1: Percentage of College Freshmen Who Attended A College or University in Their Home State, Fall 1998

<u>State</u>	<u>Percent</u>	<u>State Rank</u>
Iowa	86.3%	15th
North Dakota	84.3	19th
Wisconsin	82.5	25th
MINNESOTA	74.4	34th
South Dakota	73.5	35th
U.S.	80.8	

NOTE: The data include college freshmen who graduated from high school in the past 12 months and attended a degree-granting postsecondary institution.

SOURCE: National Center for Education Statistics, *Digest of Education Statistics, 2001*, <http://nces.ed.gov/pubs2002/digest2001/tables/dt205.asp>; accessed June 12, 2003.

¹ Tom Mortenson, “Chance for College by Age 19 By State in 2000,” *Postsecondary Education Opportunity*, n. 123 (September 2002).

college freshmen in Fall 1998 was larger than that of all but six states (plus many states experienced net gains).²

As discussed in Chapter 2, Minnesota's net outmigration of reciprocity students partly reflects the demographic features of Minnesota and its neighboring states. Minnesota's largest urban area—the Minneapolis-St. Paul metropolitan area, with nearly three million residents—is close to the Wisconsin state border, and there are several universities in Wisconsin that are within easy driving distance of the Twin Cities. In contrast, the areas bordering Minnesota in Wisconsin, North Dakota, and South Dakota provide a much smaller population base in close proximity to Minnesota's colleges and universities.

We also looked at recent changes in states' populations of college-educated persons. Such changes depend on (1) the number of college graduates that a state's institutions produce over time, and (2) the state's net migration rate of persons with college degrees. We found that:

- **Minnesota has fared better than most states in its ability to retain and attract college graduates.**

Table 3.2 shows that Minnesota's *number* of persons age 25 and older with bachelors degrees increased by 263,498 between 1990 and 2000—an increase of 43.6 percent, compared with a national increase of 37.6 percent. In addition, Minnesota's *percentage* of persons age 25 and older with at least a bachelors degree grew from 21.8 percent in 1990 to 27.4 percent in 2000. Compared with the nation as a whole, a larger percentage of Minnesota's population age 25 and older has at least a bachelors degree, and the gap between the percentages of Minnesota and the nation widened over the past decade.

Between 1990 and 2000, Minnesota's growth in its population with bachelors degrees or higher (263,498) was larger than the total number of persons with

In recent years, Minnesota has been a relatively attractive place for persons with college degrees.

Table 3.2: Persons Age 25 or Greater With at Least a Bachelors Degree, 1990 and 2000

State	Number of Residents Age 25 or Greater With at Least a Bachelors Degree				Percentage of Persons Age 25 or Greater With at Least a Bachelors Degree:	
	1990	2000	Increase, 1990-2000	Percentage Increase, 1990-2000	1990	2000
MINNESOTA	604,584	868,082	263,498	43.6%	21.8%	27.4%
Wisconsin	548,970	779,273	230,303	42.0	17.7	22.4
North Dakota	71,639	89,843	18,204	25.4	18.1	22.0
South Dakota	73,891	102,012	28,121	38.1	17.2	21.5
Iowa	299,392	402,090	102,698	34.3	16.9	21.2
U.S.	32,310,253	44,462,605	12,152,352	37.6	20.3	24.4

SOURCE: U.S. Census Bureau.

² Minnesota's net loss was 1,917 students. National Center for Education Statistics, *Digest of Education Statistics, 2001*, Table 205, <http://nces.ed.gov/pubs2002/digest2001/tables/dt205.asp>; accessed June 12, 2003.

bachelors degrees produced by Minnesota institutions during this period (236,929). In contrast, all of the states surrounding Minnesota saw their population with bachelors degrees increase at a slower rate than the number of bachelors degrees that they produced. This suggests that, compared with neighboring states, Minnesota attracted more persons to the state with bachelors degrees, retained more of its college graduates, or both.

Overall, although parts of Minnesota have faced workforce shortages in some fields, the state as a whole has a relatively well-educated population. Many of Minnesota's high school graduates leave the state to attend colleges and universities, but Minnesota has been an attractive place for persons with college degrees.

POST-GRADUATION MIGRATION OF RECIPROCIDTY STUDENTS

In Chapter 2, we noted that the students leaving Minnesota under the reciprocity program have consistently outnumbered the students coming to Minnesota under the program. If students tend to leave Minnesota for college and never return, then policy makers may question whether the benefit of expanding educational opportunities for Minnesotans is worth the long-term cost to Minnesota's workforce.

We tracked the Minnesota earnings of nearly 7,000 reciprocity students.

To help determine the workforce impacts of the tuition reciprocity program, we tracked students who completed their degrees during the 1997-98 school year. The University of Minnesota and Minnesota State Colleges and Universities (MnSCU) provided us with information on Wisconsin, North Dakota, and South Dakota residents who graduated from Minnesota's public institutions during 1997-98.³ For Minnesota residents who were reciprocity students in Wisconsin, North Dakota, and South Dakota, we did not have information that identified those who graduated. Thus, we used Higher Education Services Office (HESO) data to identify reciprocity students who accumulated large numbers of credits at public institutions in these states between the 1992-93 and 1997-98 school years and had no reciprocity credits in subsequent years.⁴ We refer to these students as "graduates," although it is possible that some of them did not complete a degree.

³ MnSCU's data were incomplete, due to inconsistent ways that institutions converted data in 1999 to a new information system. For example, MnSCU was unable to identify all of the reciprocity students at St. Cloud State, Bemidji State, and Southwest State universities who graduated in 1997-98.

⁴ Our primary sample included persons who accumulated at least 120 undergraduate credits or 24 graduate-level credits. We did *not* exclude from our sample those students who took the last of their 120+ undergraduate credits in 1997-98 and then took graduate credits as a reciprocity student in a subsequent year. As a secondary sample, we tracked the earnings of students who finished 50 to 119 undergraduate credits, ending in the 1997-98 school year. It is likely that some of these students graduated from a reciprocity state institution with two- or four-year degrees, possibly after transferring from a Minnesota institution. Our analysis showed relatively small differences between undergraduates in our primary and secondary samples in the overall percentage of students with Minnesota earnings, so this chapter reports results for the entire sample of students we tracked.

For a total of 6,820 reciprocity students who graduated in 1997-98, we looked for evidence of Minnesota earnings during calendar year 2001.⁵ We examined Minnesota Department of Employment and Economic Development data on Minnesota income earned by individuals during 2001. These data do not include Minnesota earnings from self-employment or federal employers.⁶

Among reciprocity students who graduated in 1997-98 and had Minnesota earnings in 2001, the median level of Minnesota earnings was \$36,977 for University of Minnesota graduates, \$27,926 for MnSCU graduates, and \$32,410 for graduates of reciprocity states' schools.⁷ As one measure of post-graduation employment, we looked at the percentage of 1997-98 graduates who had Minnesota earnings exceeding \$20,000 during 2001. The \$20,000 threshold is arbitrary, but such a measure excludes some persons whose jobs were part time or paid low wages—that is, jobs on which the person's college degree probably had less impact. As a second measure of post-graduation employment, we examined the percentage of 1997-98 graduates who had *any* Minnesota income three years after college—including those with Minnesota earnings of \$20,000 or less. Some persons with relatively low incomes may have taken entry-level jobs, entered graduate school, or started families in the years immediately following graduation.⁸ Arguably, however, having any Minnesota earnings three years after college graduation suggests a potentially important connection to Minnesota's workforce, even in cases where the amount of the earnings in 2001 was not large.

We found that:

- **More than 60 percent of Minnesota residents who finished college in Wisconsin, North Dakota, or South Dakota in the 1997-98 school year had earnings in Minnesota during 2001. About half of the reciprocity students who graduated from schools in these states had Minnesota earnings exceeding \$20,000 in 2001.**

Figure 3.1 shows the “return rate” to Minnesota for the out-of-state institutions that Minnesotans most often attended. Nearly 80 percent of Minnesota residents who graduated from the universities in River Falls, Menomonie (Stout), and Superior in 1997-98 had some Minnesota earnings in 2001, and 55 to 63 percent of these graduates had Minnesota earnings exceeding \$20,000. Of the institutions shown, the University of Wisconsin-Madison was the only one in which less than 50 percent of its graduates had some Minnesota earnings three years later.

5 This included 1,121 University of Minnesota graduates and 1,626 MnSCU graduates. For Minnesota residents who attended school in other states, we tracked 2,356 students who completed at least 120 undergraduate credits or 24 graduate-level credits; we also tracked 1,717 students who completed 50 to 119 undergraduate credits.

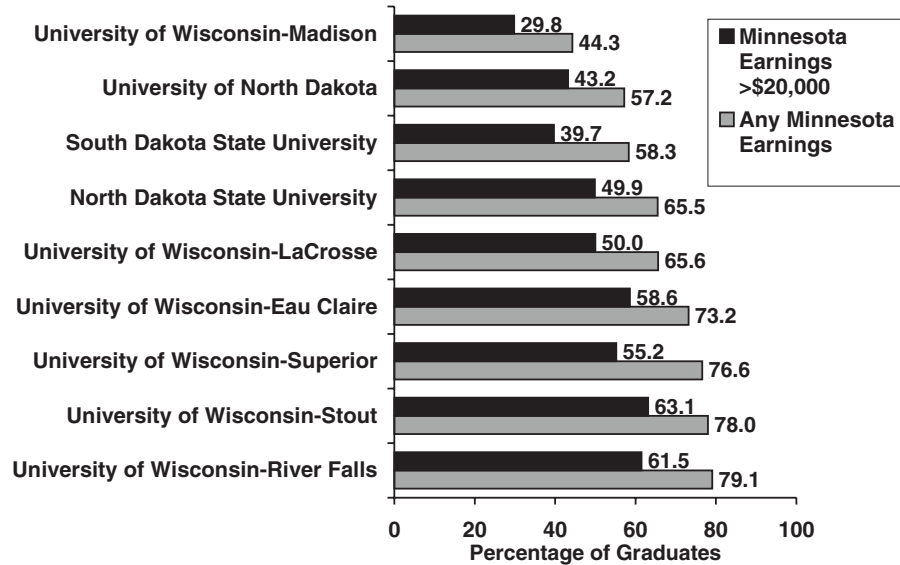
6 In addition, we used state tax records to identify persons for whom the Department of Employment and Economic Development data showed no Minnesota earnings for 2001 but who filed 2001 Minnesota tax returns. These tax filers likely included Minnesota residents who were federal employees, self-employed, or nonworking spouses. Counting such persons as “Minnesota earners” in our analysis would have increased our reported percentages of graduates with Minnesota earnings, typically by at least two or three percentage points. On the other hand, because Minnesota has tax reciprocity agreements with Wisconsin and North Dakota, some of these filers may live in Minnesota but actually work in Wisconsin or North Dakota.

7 Of all of the 1997-98 graduates we tracked, about 4 percent had Minnesota earnings between \$1 and \$5,000 in 2001, and about 14 percent had Minnesota earnings between \$1 and \$20,000.

8 Also, some 2001 Minnesota incomes may have been low for persons who lived in Minnesota for only part of 2001—moving into or out of the state at some time during the year.

A majority of Minnesotans who attended school in reciprocity states had Minnesota earnings three years after graduation.

Figure 3.1: Percentage of Reciprocity Students From Minnesota Who Had Minnesota Earnings in 2001 Following 1997-98 Graduation, Selected Institutions



Half of the Minnesotans who graduated from Wisconsin schools in 1997-98 had Minnesota earnings exceeding \$20,000 in 2001.

SOURCE: Office of the Legislative Auditor analysis of HESO data on reciprocity students and earnings data from the Minnesota Department of Employment and Economic Development.

Overall, we found that 66 percent of Minnesota residents graduating from Wisconsin institutions had some Minnesota earnings in 2001, compared with 62 percent of graduates from North Dakota schools and 58 percent of graduates from South Dakota schools.⁹ In addition, we found that 50 percent of Minnesotans who graduated from Wisconsin schools had Minnesota earnings exceeding \$20,000 in 2001, compared with 46 percent of graduates from North Dakota schools and 40 percent of graduates from South Dakota schools. These percentages would likely be slightly higher if income from federal jobs and self-employment were included in the analysis.¹⁰

Meanwhile, we found that a sizable proportion of reciprocity students who graduated from Minnesota institutions worked in Minnesota after graduation. Specifically,

⁹ Graduates who did not have Minnesota earnings in 2001 did not necessarily work in 2001 in the states where they attended school—for example, in cases where the graduates moved to places other than Minnesota or the states in which they attended college.

¹⁰ In general, college graduates tend to move more often and are more likely to move across state lines than persons with lower education levels—see Yolanda K. Kodrzycki, “Migration of Recent College Graduates: Evidence from the National Longitudinal Survey of Youth,” *New England Economic Review* (January/February 2001): 13-34. This study found that, five years after college graduation, 30 percent of graduates lived in a state other than the one in which they attended college. Students who went to college in a state other than the one in which they attended high school (that is, “nonresident” college students) were more likely to move in the years after college graduation than were “resident” students.

- **About 47 percent of reciprocity students who graduated from the University of Minnesota in 1997-98 had Minnesota earnings in 2001, compared with 35 percent of MnSCU graduates. The percentage of reciprocity student graduates with 2001 Minnesota earnings exceeding \$20,000 was 39 percent for the University of Minnesota and 24 percent for MnSCU.**

Table 3.3 shows that, in general, graduate-level students were somewhat less likely than undergraduates to work in Minnesota after graduation. Perhaps graduates with advanced degrees have limited opportunities in any particular location (such as Minnesota) in the specialized fields in which they have studied, or perhaps they are more likely than undergraduates to be recruited by employers from other states.¹¹

Figure 3.2 shows that reciprocity students from North Dakota were less likely than students from Wisconsin and South Dakota to earn income in Minnesota after graduating from a Minnesota college or university. Among the University of Minnesota's campuses, the Crookston campus (which enrolls reciprocity students primarily from North Dakota) had the lowest percentage of graduates who subsequently earned income in Minnesota—21 percent, compared with 56 percent for Morris, 55 percent for Duluth, and 48 percent for the Twin Cities.

Table 3.3: Percentage of Reciprocity Students Who Had 2001 Minnesota Earnings After Graduating From a Minnesota Institution in 1997-98, by Degree Type

Degree Type	University of Minnesota	
	Number of Reciprocity Graduates	Percentage With 2001 Minnesota Earnings
Bachelors	845	48.2%
Masters	159	44.0
Professional	66	51.5
Ph.D.	38	39.5
Other	13	30.8
TOTAL	1,121	47.3

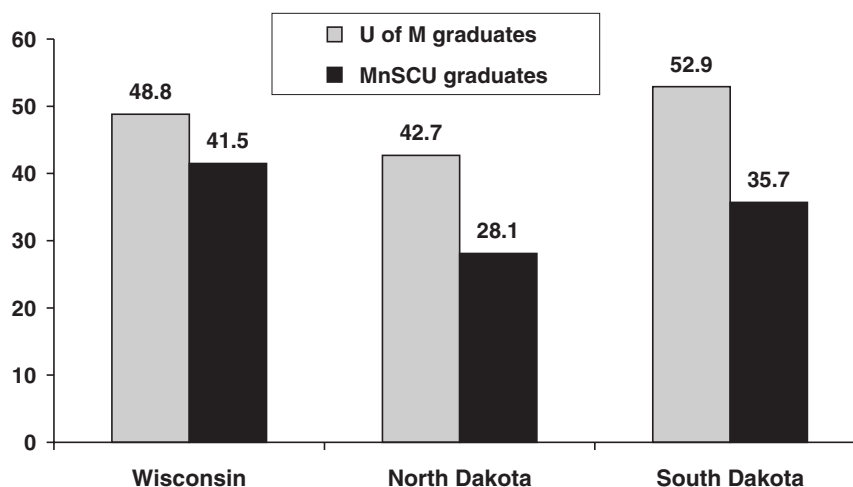
Degree Type	Minnesota State Colleges and Universities	
	Number of Reciprocity Graduates	Percentage With 2001 Minnesota Earnings
Certificate	131	38.2%
Diploma	269	26.8
Associate	371	37.2
Bachelors	747	36.6
Masters	44	25.0
Other	64	34.4
TOTAL	1,626	34.8

SOURCE: Office of the Legislative Auditor analysis of data from the University of Minnesota, MnSCU, and Department of Employment and Economic Development.

¹¹ Another study found the likelihood of migration increased as science and engineering students attended increasingly "research-intensive" institutions. See Southern Technology Council, *Who Will Stay and Who Will Leave? Individual, Institutional and State-Level Predictors of State Retention of Recent Science and Engineering Graduates* (Research Triangle Park, NC, May 2001), 21.

Reciprocity students from other states who graduated from the University of Minnesota were more likely to stay in Minnesota to work than those who graduated from MnSCU schools.

Figure 3.2: Percentage of Reciprocity Students Who Had 2001 Minnesota Earnings After Graduating From a Minnesota Institution in 1997-98 (Undergraduates Only), by State of Residence



SOURCE: Office of the Legislative Auditor analysis of data from the University of Minnesota, MnSCU, and Minnesota Department of Employment and Economic Development.

Overall, although the Minnesotans who participate in the tuition reciprocity program outnumber participants from other states who come to Minnesota, this net “outmigration” is offset by the relatively high percentage of departing students who return to Minnesota as wage earners following graduation. In addition, a substantial proportion of reciprocity students graduating from Minnesota institutions stay in the state after graduation, particularly graduates of the University of Minnesota. It is worth reiterating, however, that our analysis does not address some questions that would be interesting to know. For instance, we looked at Minnesota earnings in only the third or fourth year following graduation, and we did not assess earnings or places of residence over the longer term. In general, students’ likelihood of living in the state where they attended college declines over time.¹² However, some states may fare better than others in retaining graduates over the long term—depending, for example, on the strength of the labor market near the institution.

Also, we do not know the extent to which reciprocity students who returned to Minnesota were working in fields directly related to their college degrees. In fact, we had limited information on the fields of study of the 1997-98 graduates, so did not comprehensively assess whether graduates in certain fields of study were

¹² For example, an analysis of University of Minnesota alumni mailing addresses indicated that 90 percent of Minnesotans who completed their undergraduate degrees at the University of Minnesota in 2001 still lived in Minnesota the next year, compared with 70 percent of 1981 graduates. See Peter Zetterberg, *How Many Reciprocity Students Remain in Minnesota After Graduation?* (University of Minnesota Office of Institutional Research and Reporting, unpublished, October 2002). Compared with our evaluation, this analysis found somewhat lower percentages of reciprocity state graduates who remained in Minnesota after graduation.

more likely than others to return to Minnesota (or stay in Minnesota). We did, however, ask North Dakota State University (NDSU) to provide us with information from its Fall 2002 placement surveys for Minnesotans who graduated from NDSU's engineering and pharmacy programs during the previous year. We observed that many Minnesotans have enrolled in these specialized programs, and Minnesota policy makers might have concerns if large proportions of these students left Minnesota to attend school and did not return. The NDSU placement surveys indicated that:

- Of 100 Minnesotans who graduated from NDSU with undergraduate engineering degrees in the 2001-02 school year, 44 were employed in Minnesota in Fall 2002.¹³
- Of 13 Minnesotans who graduated from NDSU with a pharmacy doctorate degree during the 2001-02 school year, 7 were employed in Minnesota in Fall 2002.¹⁴ The pharmacy doctorate is a six-year professional program, and it is somewhat outside the usual definitions of bachelors, masters, and Ph.D. programs.

DATA ISSUES

We are not aware of any published reports prior to this study that have examined the post-graduation earnings of Minnesota reciprocity students. In 2002, the Minnesota House of Representatives considered but did not pass a bill that would have authorized the Minnesota Higher Education Services Office (HESO) to track the Minnesota earnings of nonresidents who graduated from the University of Minnesota and MnSCU institutions.¹⁵

We think that officials from Minnesota's executive and legislative branches will periodically ask questions regarding the post-graduation earnings of reciprocity students. For example, policy makers may wish to examine the Minnesota earnings of reciprocity students at various points in time after their graduation. Or, they may wish to know the extent to which reciprocity students in specialized fields stay in (or move to) Minnesota. We think that HESO—the administrative agency for the tuition reciprocity program—should be in a position to address these questions, although the University of Minnesota and MnSCU may also want to conduct such tracking for their own purposes. We think that data on individual earnings collected by the Minnesota Department of Employment and Economic Development would probably be the most useful for this purpose, but tax records

The Legislature should authorize the Higher Education Services Office to track the earnings of reciprocity students.

¹³ There were also 27 graduates working in North Dakota, and the remaining 29 were in various states and foreign countries.

¹⁴ There were three graduates in North Dakota and three in other states.

¹⁵ *H.F. 2824*, Minnesota Legislature (2002). Under the bill, tracking would only have occurred in cases where students granted their consent. The bill would have required HESO to forward social security numbers of students to the Minnesota Department of Revenue to match against tax records. Because of restrictions on disclosure of student records under the Federal Education Rights and Privacy Act, however, it may be preferable if HESO could directly access state data on Minnesota earnings—for example, as MnSCU now does—rather than providing student records to other agencies.

from the Minnesota Department of Revenue might also be helpful.¹⁶ HESO already has student identifiers for Minnesota residents attending school in reciprocity states, but it does not have identifiers for reciprocity state residents attending school in Minnesota.

RECOMMENDATION

The Legislature should authorize HESO to access state data on Minnesota earnings for the purpose of monitoring the extent to which reciprocity students eventually become Minnesota wage earners. The Legislature should also require the University of Minnesota and MnSCU to provide student identifiers to HESO for this purpose, as needed.

To answer questions that arise about post-graduation earnings of Minnesota residents who have attended school in reciprocity states, HESO may need to obtain additional data from those states. For example, legislators may wish to know how many of the Minnesota residents who get an engineering degree from a reciprocity state return to Minnesota to work, but HESO does not have information on which reciprocity students have graduated and their fields of study. We think that such information should be provided by reciprocity states to HESO on an “as needed” basis.

RECOMMENDATION

HESO should seek language in future reciprocity agreements (or in annual interstate memoranda) that require the state in which a student attended school to share information with the resident state regarding the student’s graduation status and field of study, if requested by the resident state.

¹⁶ The Department of Employment and Economic Development (DEED) has data on individuals, while tax records include a mix of individual and joint returns. DES has data on earnings reported by Minnesota employers, while tax records may include Minnesota income as well as income earned outside Minnesota. The DEED data, however, do not include some types of earnings, such as self-employment earnings or the wages of federal employees.