

**Ohio**

**Board of Regents**

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University System of Ohio



# Transfers in the University System of Ohio

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**State Initiatives and Outcomes 2002-2009**

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## Executive Summary

2009 Student Transfers

**36,295**

undergraduates transferred within  
the University System of Ohio

Student Transfers Increased

**↑ 21%**

from 2002 to 2009

Students Saved

**\$ 20.1 Million**

by taking credits at community colleges  
instead of 4-year universities

This report portrays broad time trends of the volume, direction, and the outcome of transfer movements in the University System of Ohio (USO). The report also presents evidence on the nature of transfer movements undertaken by individual students. In addition, the report underscores the importance of transfer activities and presents brief descriptions of state-level initiatives geared to facilitate transfer movements.

Time trends of aggregate data reveal that transfer volumes in the USO have been on the rise in recent years. Individual level data on student movements, on the other hand, show that large sections of the transfer student community move continually within the USO, effectively treating the system as a large, flexible, multi-campus institution of higher education. Consistent with state level initiatives that increase system-wide credit portability, transfer students are observed to increase credit accumulation before transferring from community colleges to more expensive 4-year universities. The data also show improvements in their post-transfer academic performance and graduation outcomes. In short, both aggregate and individual level data provide clear indications that in addition to becoming more numerous, transfer students are realizing cost-savings potentials accorded by increased credit portability, and critically, producing more baccalaureate degree holders, all consistent with initiatives taken under the auspices of the Ohio Articulation and Transfer Policy.



## Findings

### Highlights

1. Transfer volumes are large; close to 40,000 undergraduates – more than 70% of annualized undergraduate enrollment – transfer within the USO every year.
2. The rate of cumulative transfer – the incidence of an individual student ever transferring within the USO – is much higher. Among students from the 2001 freshman class, 23.2% transferred in subsequent years.
3. Transfer volumes have increased steadily in the last decade. Between 2002 and 2009 academic years, transfer volumes increased by 21.0% or at an annual average rate of 3.0%.
4. Transfer movements between 2-year colleges and 4-year universities (in both directions) have increased in recent years.
  - a. Between 2002 and 2009, the number of annual transfers from 2-year colleges to 4-year universities increased from 7,310 to 8,284.
  - b. Over the same period, the number of annual transfers from 4-year universities to 2-year colleges increased from 6,236 to 8,163.
5. Increases in transfer volumes are driven by rising enrollments – up from 467,039 in 2002 to 503,142 in 2009 – and increased ratios of transfers-to-enrollments – up from 6.4% in 2002 to 7.2% in 2009.

### Nature of transfers

1. Transfer movements include multidirectional student flows among 2-year colleges, 4-year universities, and 4-year regional campuses.
2. With respect to transfers between 2-year and 4-year colleges, a large section is observed to be in the process of continual movements. Pre-transfer attendance records show that 35.8% of 2-year to 4-year college transfers had attended 4-year colleges in previous years. Similarly, almost 40.0% of 4-year to 2-year college transfers had attended 2-year colleges in previous years.
3. For a large section of transfer students, transfer destinations are within close geographical proximities; the proportion transferring to nearby colleges is the maximum (83.3%) in the northeast region of the state and the minimum (52.8%) in the southeast region.



## Characteristics and Activities of Students Transferring from 2-year to 4-year Colleges

### Demographics and Income

1. Transfer students, especially those moving from 2-year to 4-year colleges are older, ethnically more diverse and economically less affluent today than in the beginning of the decade; the share of White students among them is on a decline while shares of Black and Hispanic students are gaining.

### Post-Transfer Activities

1. Students chose their majors from a diverse array of broad disciplines after transferring from 2-year colleges to 4-year universities; in 2009, Social and Behavioral Sciences (19.9%), Arts and Humanities (18.7%), Business (16.1%), Health (14.2%) and Natural Science and Mathematics (10.1%) were the top five majors among students transferring from 2-year colleges to 4-year universities.
2. Average credit hours completed by transfers from 2-year to 4-year colleges have increased; between 2002 and 2009, average hours completed in the first year after the transfer increased from 19.6 hours to 21.2 hours.
3. Earned credits as a proportion of attempted credit also increased in post-transfer years for students transferring from 2-year colleges to 4-year universities, from 80.0% in 2002 to 81.9% in 2009.

### Post-Transfer Graduation Outcomes

1. The USO is producing more baccalaureate degree holders from the ranks of students who transfer from community colleges to 4-year universities.
  - a. Among full-time transfer students (from 2-Year to 4-Year colleges), post-transfer six-year graduation numbers increased by 164 – from 2,686 (2002 cohort) to 2,850 (2004 cohort).
  - b. Among full-time transfer students (from 2-Year to 4-Year colleges), post-transfer four-year graduation numbers increased by 357 – from 2,240 (2002 cohort) to 2,597 (2006 cohort).
2. Cumulative graduation rates of those transfer students also increased over the same period
  - a. Post-transfer 6-year cumulative graduation rates for full-time students increased from 63.1% (2002) to 63.8% (2004 cohort).
  - b. Post-transfer 4-year cumulative graduation rates for full-time students increased from 52.6% (2002 cohort) to 56.1% (2006 cohort).

### Cost-Savings Related to Transfer Activities

Because students take courses at less expensive community colleges before they transfer to 4-year universities, transfer activities help generate substantial cost-savings. An estimation of such savings is based on the following: a. per credit hour cost difference between 4-year universities and community colleges, and b. aggregate number of credit hours completed by community college students the year before they transferred to 4-year universities. A combination of the two reveals an estimated \$20.1 million in cost-savings per year.

# Transfers in the University System of Ohio

State Initiatives and Outcomes 2002-2009

## I. Introduction

Transfer activities in the University System of Ohio (USO) comprise large-scale, multi-directional student movements. In the 2009 academic year, 36,295 undergraduates – 7.2% of the system-wide undergraduate student population – transferred within the system. It should be noted that the cumulative transfer rate for the individual student – the incidence of an individual student ever transferring – is substantially more common within the USO; according to the most recent data, almost a quarter of all freshman students in the system transferred within the USO in subsequent years.

This report portrays a broad picture of transfer movements within the USO. In sections II through V, the report covers the following topics.

**Section II:** The dimension of transfer activities in the USO; recent trends in the volume, directions, and determinants of transfer activities.

**Section III:** Brief descriptions of key state initiatives designed to help transfer movements.

**Section IV:** The importance of transfer activities and concerns over the impact of increased flows of transfers from 2-year colleges to 4-year universities.

**Section V:** Tables and accompanying remarks on the characteristics of transfer students, cost-savings potential of state policies, and post-transfer activities and outcomes.

**Definition:** A student is defined as a transfer if he or she makes a clean break from his or her college of attendance in an academic year. The college of attendance is defined as the one where the student attempted the maximum credit hours in the year. A clean break is defined to have occurred in one of the following situations:

1. The student formally transfers credits from her college of attendance to another institution.
2. The student does not transfer credit to another institution but attends a single institution of higher education that is different from her original college of attendance.
3. The student does not transfer credit to another institution but attends multiple institutions and attempts the maximum number of credit hours in an institution other than her original college of attendance.

The above definition includes students who “formally” transfer credit to other colleges as well as those who change college without transferring credits. The definition, however, does not include transients – students who attend an institution for a few credit hours over a brief period before returning to their original colleges. Summer-term enrollments at colleges close to parental homes are typical examples of transient movements. If transients are added to the group of transfer students, the number increases. In 2009 for example, the number increases from 36,295 (7.2% of enrollment) to 52,204 (10.4% of enrollment). Similarly, with the inclusion of transients, the proportion of students from a freshman class who ever attends more than one institution within the USO increases substantially; for the 2001 freshman class for example, the inclusion of transients raises the proportion from 23.2% to 32.2%.

## II. The Dimension of Transfer Activities

### II.a Rising volumes

Transfer activities have been on the rise in recent years; between 2002 and 2009, the number of undergraduates transferring within the USO rose from 29,993 to 36,295, a 21.0% increase over a seven-year period.

Students transferring to 4-year universities – from 4-year regional campuses, 2-year colleges and other 4-year universities – are the traditional largest segment of overall transfer movements; in 2009, a combined total of 16,575 students – 45.7% of the total annual transfer volume – moved to 4-year universities. Students from 2-year colleges – 8,284 – accounted for almost half of the total number of transfers to 4-year universities.

However, in recent years, the number of students transferring to 2-year colleges, especially from 4-year universities, has increased. In 2002, 6,236 4-year university students had transferred to 2-year colleges; in 2009, 8,163 4-year university students transferred to 2-year colleges.

### II.b A process of continual movements

An examination of pre-transfer attendance records suggests that transfer movements from 2-year to 4-year colleges or in the reverse direction do not constitute sets of terminal activities as a large section of the transfer students appears to be in the process of continually moving within the USO.

In 2009 for example, 8,284 2-year college students transferred to 4-year universities. Interestingly, more than a third of those students – 35.8% to be exact – had attended either a 4-year university or a 4-year regional campus within the USO prior to the transfer (between 2001 and 2008). Similarly, of the 8,163 students transferring from a 4-year university to a 2-year college the same year, 38.9% had attended a 2-year college previously.

In light of the evidence on pre-transfer attendance records, it is safe to assert that a substantial proportion of transfer students do move back and forth within the University System of Ohio.

### II.c Proximity determines the destination

Although transfer students tend to treat the USO as a large, flexible, multi-campus institution of higher education, transfer movements to a large extent are contained within local area institutions. The most recent data on transfer records reveal that more than 60% of Ohio public 2-year college students transfer to other colleges within an average distance of 30 miles. Although transfer students from 4-year universities travel further, geographical proximity between the origin and the destination is a prominent characteristic of all transfer movements. The northeastern part of the state is particularly subject to such characterization.

Four public 4-year universities – Cleveland State, Kent State, Youngstown State, and the University of Akron, their respective regional campuses, and Lorain County, Cuyahoga County, Lakeland County and Stark County Community colleges are located in the northeast part of the state. In 2009, a total of 11,349 students from those colleges moved out from their respective institutions. Interestingly, 9,449 – 83.3% – of those students moved back to campuses within the same geographical area. A similar observation characterizes the southwestern and the central parts of the state. Four 4-year universities – Wright State, Central State, and the universities of Miami and Cincinnati – their regional campuses, and four 2-year colleges – Cincinnati State, Sinclair, Edison and Clark State – are located in the southwest part of the state. Of the 8,489 students who moved out of those institutions in 2009, 6,565 (77.3%) moved back into colleges in the same geographical area. In the central part of the state, 8,442 students moved out of the Ohio State University, its regional campuses, Columbus State Community College, Central Ohio Technical College, North Central Technical College, and Marion Technical College in 2009, and 6,319 (74.9%) moved back into those same colleges in the region.

Geographical proximity is a less prominent feature of transfer destinations for students attending colleges in the northwest part of the state. The University of Toledo, Bowling Green State University, Terra State Community College, the James A. Rhodes and the Northwest State Community College are located in the northwest part of the state. Of the 4,085 students moving out of those colleges in 2009, 57.0% enrolled in campuses within the same area. Geographical proximity is a less important destination feature for transfer students in the southeast part of the state as well; only 52.8% of students moving out of Shawnee State University, the main and the regional campuses of the Ohio University, and the five community colleges – Belmont Technical, Zane State, Rio Grande, Washington State and Hocking – subsequently enrolled in colleges within the area.

## II.d Determinants of rising transfers

Two factors have caused transfer volumes to increase in recent years. First, the absolute level of enrollment has risen in the state; between 2001 and 2008, total undergraduate enrollment in the USO increased from 467,039 to 503,142. With a larger enrollment, transfer movements are likely to increase. Second, transfers as a proportion of total enrollment have increased over the same period of time; the number of transfers in a given year as a proportion of total enrollment from the previous year increased from 6.4% in 2002 to 7.2% in 2009. Table 1 details both factors.

**Table 1**  
Enrollment, Transfer Flows, and Transfers Expressed as Ratios of Annualized Enrollment

Year of transfer	Annualized enrollment in previous year	Definition does not consider transients as transfers*		If transients <u>are</u> added to the group of transfers	
		Number	% of Enrollment	Number	% of Enrollment
2002	467,039	29,993	6.4%	43,159	9.2%
2003	483,041	30,930	6.4%	44,716	9.3%
2004	491,787	32,199	6.5%	46,691	9.5%
2005	502,817	33,449	6.7%	47,377	9.4%
2006	498,632	33,319	6.7%	47,564	9.5%
2007	496,983	33,795	6.8%	48,403	9.7%
2008	494,106	34,660	7.0%	49,516	10.0%
2009	503,142	36,295	7.2%	52,204	10.4%

\* See definition in introduction (section I).

## II.e Why is the ratio of transfer to enrollment rising?

Transfer volumes as a proportion of enrollment, especially for movements from 2-year to 4-year colleges are traditionally rooted in cost, access and convenience advantages accorded by 2-year colleges. Recent increases in transfer volumes are likely to have benefitted additionally from an increased portability of credit within the system. The State of Ohio had promoted the portability of credits within the USO through the Ohio Transfer Module (OTM) since the early 1990s; OTM had enabled students to receive credit at destination campuses for general education requirements completed at other USO colleges. The recent implementation, in the fall of 2005, of the Transfer Assurance Guides (TAGs) improves upon credit portability by allowing students to transfer credits on a specific course-by-course basis. In addition, course equivalency tables introduced in TAGs allow all approved credits to transfer and contribute to pre-major and beginning major requirements at destination institutions.

Table 2 reports details of earned credit hours by students in the USO in 2007, 2008 and 2009. The table shows substantial increases in earned credit in TAG-approved courses for 2-year college students before they had transferred to 4-year universities. Between 2006 and 2008, both the number of students receiving TAG-approved credits and the average number of earned credit in those courses increased.

**Table 2**  
 Earned Credit Hours in the Year before Students Transferred from  
 2-Year Colleges to 4-Year Universities: 2007, 2008 and 2009

	In 2007		In 2008		In 2009	
Number of students transferring	8,027		8,063		8,284	
<b>Earned credits by transfer students in the year prior to the transfer</b>						
	Credit earned by number of students	Average hours of credit earned	Credit earned by number of students	Average hours of credit earned	Credit earned by number of students	Average hours of credit earned
All hours	7,684	19.5	7,699	19.7	7,893	19.6
TAG approved hours	3,337	4.9	4,140	5.6	5,237	7.0

### III. State Initiatives

The Ohio Articulation and Transfer (A&T) policy regulates the transfer system in the USO. The policy is geared to improving transfer student mobility, thereby increasing the number of graduates in the state and ensuring a more efficient use of tax dollars.<sup>1</sup> Key components of the Ohio A&T policy include the Ohio Transfer Module (OTM), the Transfer Assurance Guides (TAGs), admission assurance for transfer students, and credit transfer rules for Career and Technical College students. Brief descriptions of OTM and TAGs, two of the most important components of the Ohio A&T Policy, are presented in the following.

The OTM lays down the foundation of a flexible transfer system; it facilitates the portability of credits applicable to meeting general education requirements across the USO. The Transfer Module is a set or a subset of the general education requirement of a college or university, and represents a body of knowledge and skills common to Ohio's public higher education institutions.<sup>2</sup> Current A&T policies require each college to specify courses for its transfer module and to make the information available in print and electronic formats. When a student transfers, the receiving institution is required to accept all credits from her transfer module. It should be noted that although credits from the transfer module apply to meeting general education requirements, they may not satisfy general education requirements completely at all receiving institutions because of differences in (baccalaureate or associate) degree completion requirements among institutions.

Transfer Assurance Guides lend additional flexibilities to the transfer system, facilitating the portability of credits applicable to meeting pre-major or beginning major requirements at receiving institutions.

TAGs are a multifaceted tool. As an advising tool, they specify clear pathways, i.e., the combination of courses students have to take to choose a particular major from a diverse array of majors. By fall 2009, 292,839 undergraduates in the USO had chosen one of the majors specified in TAGs. The same year, another 46,232 undergraduates had chosen nursing which is covered by bilateral two-plus-two agreements. Overall, a total of 339,071 undergraduates, accounting for 73.3% of the undergraduate student community with a declared major, had either chosen a TAG-approved major or nursing, covered by bilateral two-plus-two agreements.

<sup>1</sup> Ohio Board of Regents. *Credit Transfer Policy*. Available at <http://regents.ohio.gov/transfer/policy/CreditTransferPolicy.pdf>; page 3.

<sup>2</sup> Ohio Board of Regents. *Credit Transfer Policy*. Available at <http://regents.ohio.gov/transfer/policy/CreditTransferPolicy.pdf>; pages 10-20.

The second feature of TAGs refers to the equivalency of individual courses across institutions in the USO. The course equivalency system guarantees that credits received for TAG-approved courses transfer and apply to meeting specific pre-major or beginning-major requirements at receiving institutions.

#### **IV. Importance of Transfers**

The importance of transfer activities in the University System of Ohio is at least two-fold.

First, while an increased portability of credits within the system generates seamless transfer opportunities, students need to have appropriate preparations to take the maximum advantage of such opportunities. Education administrators, therefore, are required to update both the content and the delivery of advising to cater to the emerging needs of an increasing number of transfer students. TAGs are an extremely valuable tool in this regard; TAGs specify exact course combinations students have to take to choose a particular major, and crucially, ensure complete portability of earned credits across the system for a wide range of approved courses.

Second, transfer activities also help generate large amounts of costs-savings.

Community colleges are a low-cost alternative to 4-year universities for a large number of courses. As a result, substantial cost-savings are generated when students take courses at community colleges before transferring to 4-year universities. An estimate of such savings is provided below for students who transferred to 4-year universities from community colleges in 2009; 7,893 students completed 19.6 semester hours on average and 154,387 hours in aggregate.

The credits transferred from community colleges, which are a mixture of general and baccalaureate level courses, would have cost \$130 more per hour on average at 4-year universities. The 154,387 hours completed at community colleges and subsequently transferred to 4-year universities, therefore, would have cost an additional estimated \$20.1 million if those students had instead completed them at 4-year universities.

The low-cost option of completing credits at community colleges, therefore, helped generate annual savings estimated to be worth at least \$20 million. Importantly, 36,659 of those hours were completed in TAG-approved courses. Since university versus community college cost-differences for TAG-approved courses tend to be higher – \$191 per hour for TAG-approved courses versus \$111 per hour for other courses – \$7.0 million of the estimated \$20.1 million savings were generated in TAG-approved courses.

Because TAG-approved courses are not required to be repeated anywhere in the USO, the extent of cost-savings associated with TAGs could be even higher. In general, as students complete a higher proportion of their attempted credit hours after transferring to 4-year universities and reduce the time needed to graduate, cost-saving potentials of transfer activities increase.

#### **Questions to answer**

While an increased portability of credits earned at 2-year colleges can result in substantial cost-savings for the student and the system, post-transfer academic outcomes such as course completion, retention, and graduation rates must be considered.

This report answers these questions using data on post-transfer attendance, academic performance, and graduation outcomes for students who transferred from 2-year colleges to 4-year universities between 2002 and 2009. The data show improvements in a large number of post-transfer outcome measures including persistence in academic disciplines, the number of earned credit hours, earned credit as a proportion of attempted credit, and finally, the cumulative graduation rate – all indicators of successful academic performance of students after they had transferred from 2-year colleges to 4-year universities.

## V. Findings

This section presents a series of tables with accompanying brief descriptions on the following.

1. The volume of transfer by origin-destination combinations (sectors). Complete transfer matrices for each of the years between 2002 and 2009 are provided in electronic format.
2. Breakdown of transfer volumes by combinations of the region of origin and the region of destination.
3. Pre-transfer characteristics of students transferring from 2-year colleges to 4-year universities: Demographics, family income, choice of majors (broad academic disciplines).
4. Post-transfer activities of students transferring from 2-year colleges to 4-year universities: Status of attendance (part-time/full-time), choice of major (broad academic disciplines)
5. Post-transfer outcome measures: Persistence in major (broad academic disciplines), cumulative graduation rates, and cumulative combined graduation and continuation rates.
6. Based on aggregate credit hours completed at community colleges before students transfer to 4-year universities and the average difference in the cost of credit between the two sectors, transfer activities help generate annual savings worth an estimated \$20 million.

**Table A1**

Breakdown of the Number of Transfer Students by Origin-Destination Combinations: 2002-2009

Year of transfer	Origin: 2-Year colleges			Origin: 4-Year Universities			Origin: 4-Year Reg. campus		
	Destination			Destination			Destination		
	2-Yr college	4-Yr University	4-Yr Reg.	2-Yr college	4-Yr University	4-Yr Reg.	2-Yr college	4-Yr University	4-Yr Reg.
2002	2,710	7,310	1,082	6,236	3,661	1,966	1,614	4,466	948
2003	2,746	7,192	1,078	6,745	3,767	2,114	1,705	4,596	987
2004	3,128	7,456	1,239	6,933	3,592	2,316	1,896	4,532	1,107
2005	3,619	7,585	1,238	7,385	3,561	2,248	2,004	4,533	1,276
2006	3,658	7,501	1,289	7,486	3,392	2,130	2,080	4,515	1,268
2007	3,738	8,027	1,287	7,345	3,321	2,320	1,973	4,514	1,270
2008	3,671	8,063	1,428	7,839	3,411	2,184	2,040	4,727	1,297
2009	4,003	8,284	1,490	8,163	3,358	2,389	2,248	4,933	1,427

- Transfer volumes characterizing all but one of origin-destination combinations show substantial increases; student movements between 4-year universities declined.
- The largest absolute increase is observed for the 4-year to 2-year college movement; the number increased by 1,927 between 2002 and 2009. The movement among 4-year regional campuses, on the other hand, showed the largest percentage increase of 50.5%.
- **Transfer volumes from 2-year colleges to 4-year universities increased by a healthy 13.3% over the seven year period.**

**Table A2.1**  
Number of Transfer Students by Regional Origin-Destination Combinations: 2009

Region of Origin	Number transferred out	Number transferred (to region of destination)				
		Northeast	Northwest	Central	Southeast	Southwest
Northeast	11,349	9,449	530	780	315	275
Northwest	4,523	874	2,543	615	89	402
Central	8,442	525	378	6,319	579	641
Southeast	3,492	368	116	738	1,845	425
Southwest	8,489	336	454	866	268	6,565
All regions	36,295	11,552	4,021	9,318	3,096	8,308

**Table A2.2**  
Proportion of Transfer Students by Regional Origin-Destination Combinations: 2009

Region of Origin	Number transferred out	Proportion transferred (to region of destination)				
		Northeast	Northwest	Central	Southeast	Southwest
Northeast	11,349	<b>83.3%</b>	4.7%	6.9%	2.8%	2.4%
Northwest	4,523	19.3%	<b>56.2%</b>	13.6%	2.0%	8.9%
Central	8,442	6.2%	4.5%	<b>74.9%</b>	6.9%	7.6%
Southeast	3,492	10.5%	3.3%	21.1%	<b>52.8%</b>	12.2%
Southwest	8,489	4.0%	5.3%	10.2%	3.2%	<b>77.3%</b>

- The northeast region of the state retains the highest proportion (83.3%) of its own transfer students, followed by the southwest (77.3%), and the central parts (74.9%) of the state.
- The northwest and the southeast parts of the state, in contrast, retain a little over one-half of their respective transfer students.

**Table A3.1**  
Pre-Transfer Demographic and Income characteristics of Students Transferring  
from 2-year Colleges to 4-year Universities: 2002-2009

Year of transfer	2002	2003	2004	2005	2006	2007	2008	2009
	N=7,310	N=7,192	N=7,456	N=7,585	N=7,501	N=8,027	N=8,063	N=8,284
<b>Age and gender</b>								
Proportion of female students	52.7%	52.7%	52.9%	54.3%	53.9%	51.8%	53.3%	52.8%
Proportion 25 years or older	30.9%	33.7%	34.8%	35.5%	34.9%	33.6%	34.9%	36.1%
<b>Race and ethnicity</b>								
White	80.1	81.0	78.3	78.5	77.6	77.6	76.3	74.7
Black	12.1	11.4	12.8	12.1	13.0	12.1	12.6	13.9
Asian	2.3	2.1	2.2	2.2	1.9	2.5	2.2	2.6
Hispanic	1.8	1.7	1.9	1.9	1.9	2.1	2.4	2.3
Family income (2009 constant dollars)	53,231	52,907	51,256	51,642	50,164	50,248	48,057	49,052
Proportion with income information	44.5%	49.6%	49.9%	55.3%	58.1%	55.3%	58.5%	59.1%

- Female students account for slightly more than half of the total volume each year, consistent with the overall gender composition of college students.
- Average age of students transferring from 2-year colleges to 4-year universities has been increasing. In 2002, 30.9% of those students were 25 or older; in 2009, the proportion has risen to 36.1%.
- Ethnic diversity is also on the rise; the proportion of White students has fallen from 80.1% in 2002 to 74.7% in 2009. The decline in the proportion of White students is partially compensated by rising proportions of Black, Asian and Hispanic students; the rest is due to missing ethnicity information for a slightly higher proportion of students.
- Income characteristics show that students are coming from less wealthy families in the later part of the decade; average family income declined from \$53,231 in 2002 to \$49,052 in 2009. Moreover, income information is available only if the student applied for financial aid. As such, the 14.6 percentage-point increase in the proportion of students with income information (in the bottom row) implies that substantially more transfer students applied for financial aid in the later part of the decade.
- **Ethnicity, income and aid application ratios suggest growing diversities among Ohio students transferring from 2-year colleges to 4-year universities.**

**Table A3.2**  
Pre-Transfer Demographic and Income characteristics of Full-Time Transfer Students Moving  
from 2-year Colleges to 4-year Universities: 2002-2009

Year of transfer	2002	2003	2004	2005	2006	2007	2008	2009
	N=4,259	N=4,072	N=4,468	N=4,615	N=4,631	N=5,270	N=5,193	N=5,308
<b>Age and gender</b>								
Proportion of female students	51.6%	51.1%	51.3%	52.2%	51.1%	48.7%	50.1%	55.3%
Proportion 25 years or older	19.1%	22.0%	24.4%	24.7%	24.9%	23.2%	24.9%	26.2%
<b>Race and ethnicity</b>								
White	81.2%	82.1%	78.9%	80.0%	78.7%	78.5%	77.5%	75.9%
Black	9.9%	10.1%	11.2%	10.6%	11.2%	10.6%	11.0%	12.1%
Asian	2.7%	2.3%	2.8%	2.3%	2.1%	2.6%	2.6%	3.0%
Hispanic	2.0%	1.5%	1.7%	1.8%	1.8%	2.2%	2.2%	2.3%
Family income (2009 constant dollars)	55,964	56,105	54,148	54,621	52,163	52,852	51,255	52,453
Proportion with income information	46.7%	53.0%	51.6%	57.8%	59.4%	55.8%	59.8%	60.3%

- Trends characterizing increased proportions of older, female, financially less solvent and ethnically more diverse transfer students are observed for full-time students as well.
- Among full-time transfer students moving from 2-year colleges to 4-year universities, 19.1% were 25 or older in 2002; the proportion rose to 26.2% in 2009.
- The proportion of White students among full-time transfers from 2-year colleges to 4-year universities declined from 81.2% in 2002 to 75.7% in 2009. Over the same period of time, the proportions of Black, Asian and Hispanic students increased.
- Among full-time transfer students, average family income declined and the proportion of aid applicants increased between 2002 and 2009, indicating that they are increasingly from less affluent family financial backgrounds.

**Table A4**  
Pre-Transfer Choice of Majors for Students Transferring  
from 2-Year Colleges to 4-Year Universities: 2001, 2006 and 2008

Year before transfer	2001		2006		2008	
Number of transfers	7,310		8,027		8,284	
Number & proportion choosing a major	5,985 (81.9%)		6,726 (83.8%)		7,366 (88.9%)	
<b>Choice of majors (broad disciplines)</b>						
Name of discipline	Number	Proportion	Number	Proportion	Number	Proportion
Arts and Humanities	2,713	45.3%	2,975	44.2%	3,102	42.1%
Business	940	15.7%	1,002	14.9%	1,119	15.2%
Education	269	4.5%	359	5.3%	376	5.1%
Engineering	486	8.1%	503	7.5%	523	7.1%
Health	506	8.5%	950	14.1%	1,160	15.8%
Law	4	0.1%	43	0.6%	40	0.5%
Natural Science and Mathematics	457	7.6%	286	4.3%	363	4.9%
Services	237	4.0%	269	4.0%	271	3.7%
Social and Behavioral Sciences	268	4.5%	299	4.5%	372	5.1%
Trades and Repair Technicians	105	1.8%	40	0.6%	40	0.5%

- The proportion of transfer students declaring a major prior to the transfer increased from 81.9% in 2001 to 88.9% in 2008.
- Among more popular pre-transfer disciplines in 2001, Arts and Humanities, and Business mostly retained their respective shares in 2006 and 2008. Engineering faced a slight decline.
- In contrast, the share of Health rose sharply – from 8.5% in 2001 to 15.8% in 2008 – and the share of Education rose, but less spectacularly. Natural Science and Mathematics, however, lost as its share went down from 7.6% in 2001 to 4.9% in 2008.

**Table A5**  
 Post-Transfer Status of Attendance for Students Transferring from  
 2-Year Colleges to 4-Year Universities: 2002-2009

Year of transfer	Full-Time		Part-Time		Discontinued/No Status
	Number of students	As a proportion of transfer volume	Number of students	As a proportion of transfer volume	Number of students
2002	4,259	58.3%	2,972	40.7%	79
2003	4,072	56.6%	3,008	41.8%	112
2004	4,468	59.9%	2,888	38.7%	100
2005	4,615	60.8%	2,893	38.1%	77
2006	4,631	61.7%	2,773	37.0%	97
2007	5,270	65.7%	2,724	33.9%	33
2008	5,193	64.4%	2,818	34.9%	52
2009	5,308	64.1%	2,902	35.0%	74

- The proportion of full-time students among transfers from 2-year colleges to 4-year universities was on the rise: up from 58.3% in 2002 to 64.1% in 2009.

**Table A6**  
 Post-Transfer Choice of Majors for Students Transferring  
 from 2-Year Colleges to 4-Year Universities: 2002, 2007 and 2009

Year of the transfer	2002		2007		2009	
Number of transfers	7,310		8,027		8,284	
Number & proportion choosing a major	6,141 (84.0%)		7,278 (90.1%)		7,720 (93.2%)	
<b>Choice of majors (broad disciplines)</b>						
Name of discipline	Number	Proportion	Number	Proportion	Number	Proportion
Arts and Humanities	1,139	18.6%	1,342	18.4%	1,447	18.7%
Business	1,109	18.1%	1,223	16.8%	1,240	16.1%
Education	418	6.8%	589	8.1%	688	8.9%
Engineering	596	9.7%	644	8.9%	587	7.6%
Health	499	8.1%	970	13.3%	1,093	14.2%
Law	1	0.0%	24	0.3%	19	0.3%
Natural Science and Mathematics	788	12.8%	696	9.6%	783	10.1%
Services	250	4.1%	356	4.9%	326	4.2%
Social and Behavioral Sciences	1,340	21.8%	1,431	19.7%	1,535	19.9%
Trades and Repair Technicians	1	0.02%	3	0.04%	2	0.03%

- Proportion of transfer students declaring a major in the post-transfer year increased from 84.0% in 2002 to 93.2% in 2009.
- Students chose the majors from a broad and diverse array of disciplines; in 2009, Social and Behavioral Sciences (19.9%), Arts and Humanities (18.7%), Business (16.1%), Health (14.2%) and Natural Science and Mathematics (10.1%) were the top five disciplines.
- Between 2002 and 2009, respective shares of Business, Natural Science and Mathematics, Social and Behavioral Sciences, and Engineering declined. On the other hand, Health and Education increased their respective shares.
- The decline in the shares of Engineering and Natural Science and Mathematics emphasizes the need for actions to promote Science, Technology, and Engineering Majors (STEM). However, it should be noted that the number of transfer students choosing Engineering or Natural Science and Mathematics remained almost constant between 2002 and 2009. The shares of STEM declined because those majors did not attract additional students although aggregate transfer numbers increased.

**Table A7**

Persistence in Major for Students Transferring from 2-Year Colleges to 4-Year Universities: 2002 and 2009

	Year of Transfer: 2002 Number of transfers: 7,310	Year of Transfer: 2007 Number of transfers: 8,027
Number declared major before transfer (2001 and 2006, respectively)	5,985 (81.9% of 7,310)	6,726 (83.8% of 8,027)
Number persisted with the same major the year of the transfer	1,899 (31.7% of 5,985)	2,601 (38.7% of 6,726)
Number persisted in the following year	1,355 (22.6% of 5,985)	1,975 (29.4% of 6,726)

- The proportion of transfer students (moving from 2-year to 4-year colleges) declaring a major before transferring increased from 81.9% in 2001 to 83.8% in 2006.
- The proportion of students who persisted in the pre-transfer major (broadly defined) in the first year of post-transfer attendance increased from 31.7% in 2002 to 38.7% in 2007.
- The proportion of students who continued their persistence in the same major in the following year also increased over time; from 22.6% for the 2002 transfer class to 29.4% for the 2007 class.

**Table A8**

Post-Transfer Earned Credit and the Ratio of Credit Earned to Credit Attempted for Students Transferring from 2-Year Colleges to 4-Year Universities: 2002 and 2009

Year of Transfer	Post-transfer first year		Post-Transfer Second Year		Post-Transfer Third Year	
	Average Earned Credit Hour	Earned Credit / Attempted Credit	Average Earned Credit Hour	Earned Credit / Attempted Credit	Average Earned Credit Hour	Earned Credit / Attempted Credit
2002	19.6	80.0%	21.8	82.3%	19.9	82.8%
2003	19.6	80.7%	21.1	81.4%	19.1	81.6%
2004	20.2	80.8%	21.7	81.8%	19.3	82.3%
2005	20.6	81.8%	21.9	82.3%	19.6	83.3%
2006	20.6	81.3%	22.0	82.1%	19.6	83.0%
2007	21.4	82.1%	22.6	83.2%	20.4	85.0%
2008	21.2	81.8%	22.3	83.5%	-	-
2009	21.2	81.9%	-	-	-	-

- Earned average credit hours – expressed in semester hours and without hours in remedial education – increased in the first, second, and the third year after the transfer.
- Earned hours as a proportion of attempted hours also increased in the first, second, and the third hour after the transfer.
- **The increases in earned credit and the ratio of earned to attempted credit indicate that the academic performance of 2-year college students transferring to 4-year universities actually improved over time. The above allays quality concerns associated with increased transfer volumes from 2-year colleges to 4-year universities.**

**Table A9**  
 Post-Transfer Cumulative Graduation Number for Full-Time Transfer Students  
 from 2-Year Colleges to 4-Year Universities: 2002-2009

Year Transferred	2002	2003	2004	2005	2006	2007	2008	2009
# Transferred	4,259	4,072	4,468	4,615	4,631	5,270	5,193	5,308
Year 1	78	83	114	110	108	142	136	177
Year 2	623	654	749	830	846	922	953	
Year 3	1,551	1,543	1,821	1,832	1,915	2,047		
Year 4	2,240	2,152	2,467	2,481	2,597			
Year 5	2,560	2,428	2,735	2,779				
Year 6	2,686	2,527	2,850					

- Post-transfer six-year graduation numbers were up from 2,686 to 2,850 between 2002 and 2004 transfer recipients.
- Post-transfer three-year graduation numbers refer to more recent periods; between 2002 and 2007 transfer recipient classes, the three-year cumulative graduation number increased by 496, up from 1,551 for the 2002 transfer recipient class to 2,047 for the 2007 transfer recipient class.
- Two-year cumulative graduation number also went up; between the 2002 and 2008 transfer recipient classes, two-year cumulative graduation number increased from 623 to 953, an increase of 330.
- **The USO is producing more graduates from the ranks of students who transfer from 2-year colleges to 4-year universities.**

**Table A10**  
 Cumulative Post-Transfer Graduation Rates for Full-Time Transfer Students  
 from 2-Year Colleges to 4-Year Universities: 2002-2009

Year Transferred	2002	2003	2004	2005	2006	2007	2008	2009
# Transferred	4,259	4,072	4,468	4,615	4,631	5,270	5,193	5,308
Year 1	1.8%	2.0%	2.6%	2.4%	2.3%	2.7%	2.6%	3.3%
Year 2	14.6%	16.1%	16.8%	18.0%	18.3%	17.5%	18.4%	
Year 3	36.4%	37.9%	40.8%	39.7%	41.4%	38.8%		
Year 4	52.6%	52.8%	55.2%	53.8%	56.1%			
Year 5	60.1%	59.6%	61.2%	60.2%				
Year 6	63.1%	62.1%	63.8%					

- Six-year graduation rates increased from 63.1% to 63.8% between 2002 and 2004 transfer recipient classes.
- Three-year graduation rates increased from 36.4% for the 2002 transfer recipient class to 38.8% for the 2007 transfer recipient class.
- **Increased cumulative graduation rates clearly show that the increase in the number of graduates from the ranks of transfer students is due to both increased transfer volumes and increased rates of graduation.**

**Table A11**  
 Estimated Savings due to Students Taking Courses at Community Colleges (in 2008)  
 before Transferring to 4-Year Universities (in 2009)

	Number of students completing credit	Average number of hours completed	Aggregate number of hours completed	Average cost difference per hour: 4-year university vs. community colleges	Savings = Aggregate cost-difference
All courses	7,893	19.6	154,387	\$130	\$20.1 mil.
Only TAG-approved courses	5,237	7.0	36,659	\$191	\$7.0 mil.

Note:

Average cost-difference per credit hour for all courses is derived in the following three steps.

Step 1: Obtains the difference in enrollment weighted average cost of general level courses between 4-year universities and community colleges. The estimated difference is \$111.

Step 2: Obtains the difference in enrollment weighted average cost of baccalaureate level courses between 4-year universities and community colleges. The estimated difference is \$191.

Step 3: Obtains the weighted average of those two differences (\$130). The weights are the respective shares of baccalaureate (23.7%) and general education (76.3%) hours completed by the 7,839 students in 2008 – the year before they transferred to a 4-year university.

- **Transfer activities help generate an estimated \$20 million per year as students take courses at less expensive community colleges and transfer to 4-year universities.**
- **\$7.0 million of the annual estimated cost-savings are in TAG-approved courses.**