



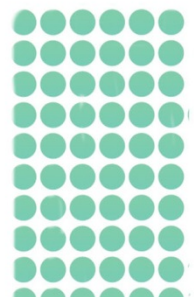
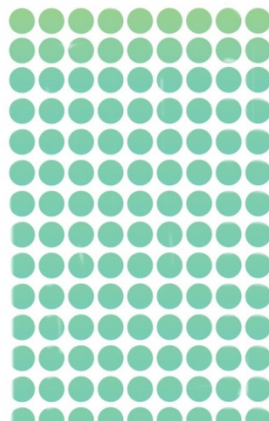
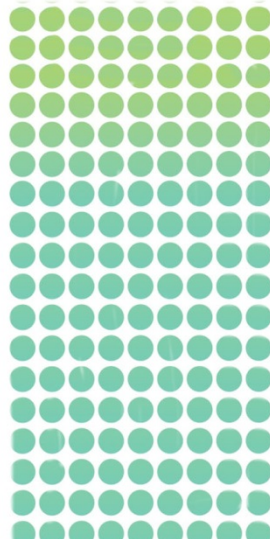
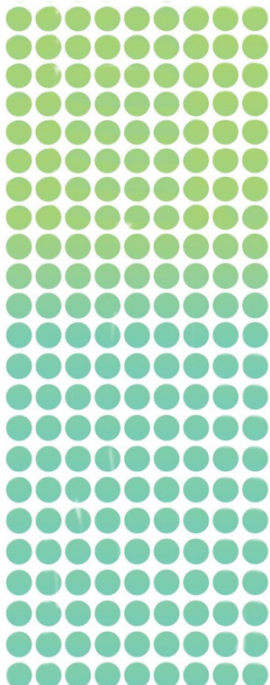
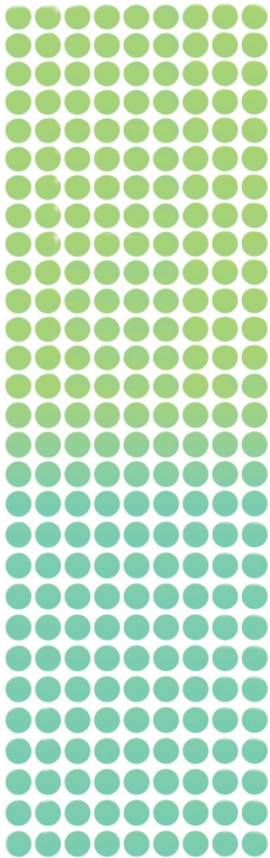
OHIO EDUCATION RESEARCH CENTER

Making Research Work for Education

# North Union County Local School District Workforce and Higher Education Outcomes

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Improving with Data  
OLDA-2013-0005  
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# OHIO EDUCATION RESEARCH CENTER

The Ohio Education Research Center (OERC) is a **COLLABORATIVE** of Ohio-based researchers from six universities (Case Western Reserve University, Miami University, Ohio University, The Ohio State University, University of Cincinnati, and Wright State University) and four research institutions (Battelle, Battelle for Kids, Community Research Partners and Strategic Research Group) The founding partners coordinate the work of the OERC through the Governance Committee and three standing committees (Research Agenda, Data, and Outreach). Membership includes key participants from State of Ohio agencies and partner organizations. Administratively, the OERC reports to the State of Ohio through the Policy Council. The OERC is headquartered at The Ohio State University.

The **MISSION** of the OERC is to develop and implement a statewide, preschool-through-workforce research agenda addressing critical issues of education practice and policy. The OERC identifies and shares successful practices, responds to the needs of Ohio's educators and policymakers, and signals emerging trends. The OERC communicates its findings broadly, through multiple platforms and networks, producing materials, products and tools to improve educational practice, policy and outcomes.

The **VISION** of the OERC is to be the source for cutting edge knowledge and resources regarding education and training for Ohio's educators, policymakers and community leaders creating a dynamic cycle of research and practice where the needs of practitioners drive the research agenda and high-quality research has a rapid impact upon practice in the field.

Core **FUNDING** for the OERC is provided by the Ohio Department of Education. Additional funding comes from the Ohio Department of Job and Family Services in collaboration with the Ohio Board of Regents.

This report was completed by the Ohio Education Research Center using the Ohio Longitudinal Data Archive at The Ohio State University.

The **Ohio Longitudinal Data Archive** (OLDA) is a repository of administrative records from Ohio's workforce and education agencies. The OLDA enables linkages between longitudinal workforce and educational records to measure the experiences of individuals from childhood through the workforce. Researchers can use this valuable resource to inform the development of policies, programs, and services that assist individuals. Researchers can also utilize the OLDA to analyze a wide range of issues, including program outcomes, costs and financial returns, and the underlying economic conditions that impact the education and workforce sectors.

The Ohio Education Research Center is supported in part by the Ohio Department of Education through Race to the Top and the Ohio Longitudinal Data Archive is funded by the Ohio Department of Job and Family Services through the Workforce Data Quality Initiative from the U.S. Department of Labor. The OLDA fulfills the OERC's objective of building, maintaining, and providing researcher access to secure, linked cross-agency administrative data.

The Ohio Longitudinal Data Archive is managed by the Center for Human Resource Research at The Ohio State University.

The Ohio Education Research Center would like to thank the following individuals who made this research possible:

**Project Team**

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## I. INTRODUCTION

North Union County Local School District (North Union) asked the Ohio Education Research Center (OERC) to provide wage and higher education outcomes for North Union High School graduates using data available through the Ohio Longitudinal Data Archive (OLDA). These data allow matching of North Union graduates with wages of most individuals employed in Ohio. Further, the administrative data allow matching of North Union graduates with enrollment and GPA of students at Ohio's public institutions of higher education.

The report describes the analysis and results. Tables of numeric results are attached as an appendix.

## II. PROCESS

North Union provided the OERC access to student records for six cohorts of graduates of North Union High School; database administrators at the Center for Human Resource Research (CHRR) matched these records with employment and higher education records currently held in the Ohio Longitudinal Data Archive. A matched, de-identified dataset was then provided to OERC analysts for tracking student employment and education outcomes over time. Table 1 provides a breakdown of the records we were able to match with wage and/or higher education data, and records that were missing either a common identifier or a year of graduation<sup>1</sup>, that were then excluded from the analysis. Five of the records North Union provided were identified as duplicates and deleted.

Table 1. Records Used to Calculate North Union Outcomes

	Populated records	Records with missing data	Total number of records
<b>Received from North Union</b>	537		
<b>Identifier</b>	507	30	537
<b>Graduation Year</b>	511	26	537
<b>Identifier and Graduation Year</b>	484	53	537
<b>By Graduation Year:</b>			
<b>2007</b>	76	3	79
<b>2008</b>	75	4	79
<b>2009</b>	90	10	100
<b>2010</b>	77	2	79
<b>2011</b>	78	4	82
<b>2012</b>	88	4	92

<sup>1</sup> All but one of the records missing year of graduation came from the 2008 table. We were unsure whether these individuals are 2008 graduates, or if they are dropouts, transfers, or other students that did not actually graduate. As a result, they are omitted from this analysis.

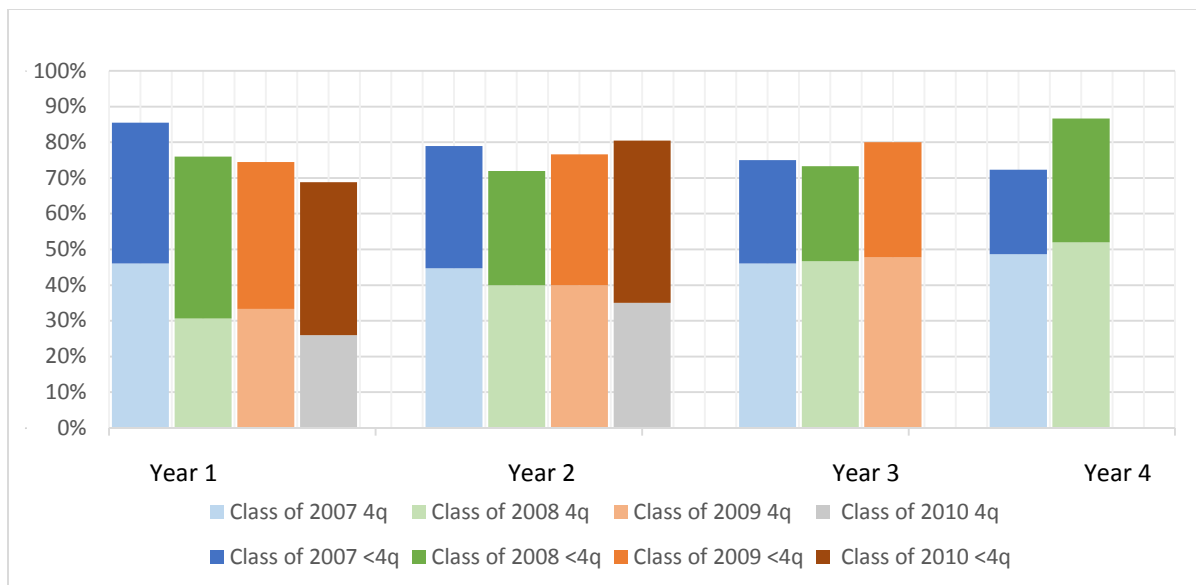
### III. WORKFORCE

We merged the student data provided by North Union with wage data from the ODJFS unemployment insurance database, which includes all employees working in Ohio unless the individual is self-employed or works for the Federal government.<sup>2</sup> We adjusted wages for inflation using the Department of Labor Consumer Price Index so that every year is equivalent to 2010 dollars.

Most cohorts have a generally increasing percentage of graduates who are employed in Ohio (see Figure 1). The total percentages range from just under 70% to almost 90% of graduates employed at any time during the year. The outlier cohort is the class of 2007, whose percentage employment in Ohio started high but fell, likely due to the recession.

Figure 1 also illustrates the proportion of graduates working in Ohio who are employed during all four quarters of the year (4q) versus the proportion of graduates employed in at least one quarter, but not in all four quarters (<4q). In the first year following graduation, less than half of the members of each class who are employed in Ohio are employed all four quarters. The extent of partial-year employment is important context for understanding the wage outcomes below.

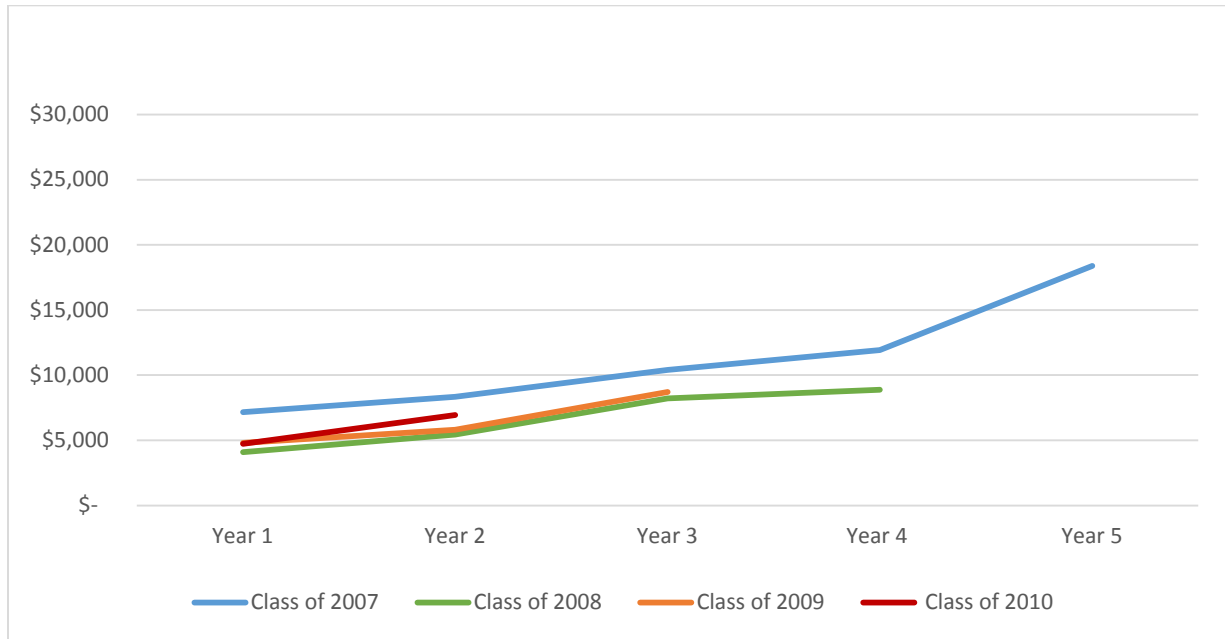
Figure 1. Percent Employed in Ohio



<sup>2</sup> For reference, in Ohio in 2010, about 1.5% of workers were Federal employees, and about 5% of workers were self-employed. (Bureau of Labor Market Information, Ohio Department of Job and Family Services, <http://ohiolmi.com/proj/OhioJobOutlook.htm>, accessed 12/16/13).

Each cohort begins earning approximately the same median income, with the exception of the Class of 2007 (perhaps due to their graduation immediately preceding the recession) and increases over time (see Figure 2). The 2007 cohort earns a rapidly increasing median income in the fifth year after graduation, likely because those students who spent four years attending college full time became employed full time.

Figure 2. Median Wages (2010\$)





Limiting the wage analysis to those individuals employed all four quarters, the median wages for each year are higher (see Figure 3). In 2011, the median earnings for 25-34 year olds with only a high school diploma was \$29,950.<sup>3</sup> Given that the class of 2007 was approximately 24 in their fifth year following graduation, their median earnings approaches the median for their age bracket. Further, there is likely a proportion of those individuals employed all four quarters who are working part time, which would bring down the median wage. This information (full time vs. part time employment) is not available through the OLDA.

Figure 3. Median Wages, Employed 4 Quarters (2010\$)



Finally, we analyzed the difference between wages of those individuals enrolled in public higher education in Ohio versus those employed who were not enrolled, assuming that those not enrolled in higher education are more likely to be working full time. However, there was no consistent difference between those two groups. One possible reason is those individuals enrolled in higher education outside of Ohio, or enrolled in private institutions, may be returning for summer employment. As a result, those individuals would have wages in Ohio, but only for a short time (or part time during the school year) which would bring down the median wages of those not enrolled in Ohio public higher education.

<sup>3</sup> National Center for Education Statistics, Fast Facts: Income of Young Adults, <http://nces.ed.gov/fastfacts/display.asp?id=77> (accessed April 18, 2014).

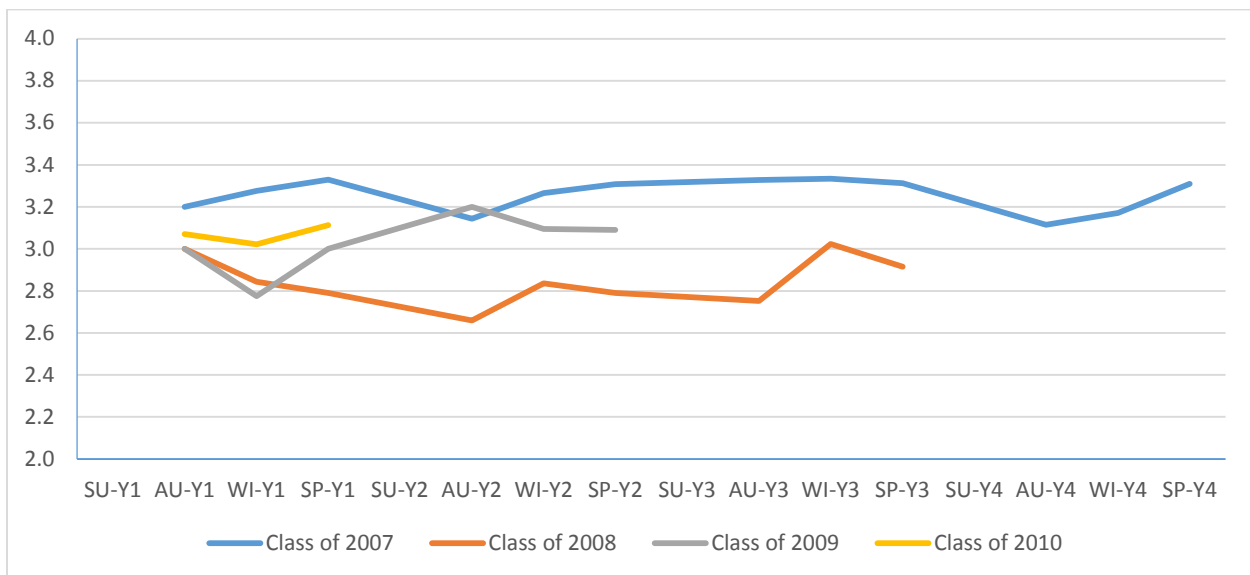
## IV. HIGHER EDUCATION

We merged the records of graduates of North Union High School to the Board of Regents data to determine which graduates attend public institutions of higher education in Ohio.<sup>4</sup> The most recent higher education data available is from the 2010-11 school year, so the reported higher education outcomes are more limited than earnings. The North Union cohorts range from 30% of the class of 2008 attending public college in Ohio in the first year following graduation, to 50% of the class of 2010 attending public college in Ohio in the first year following graduation.

When analyzing which institutions North Union students attended, we aggregated all institutions other than Marion Technical College (MTC) and The Ohio State University (OSU) because the number of individuals attending each institution from each cohort was too small to report.<sup>5</sup> Of those individuals attending public colleges in Ohio, about equal numbers of each of the classes of 2007 and 2008 attended MTC, OSU, and other public institutions in Ohio. However, the classes of 2009 and 2010 were less likely than earlier cohorts to attend either MTC or OSU, with about a quarter of each class attending each institution. About half of each of the class of 2009 and 2010 who were enrolled in a public institution in Ohio attended institutions other than MTC or OSU.

The median GPAs earned by each cohort range from about 2.6 to about 3.4, with the class of 2007 earning the highest median grades in most quarters (see Figure 4). Median GPAs were generally flat over time.

Figure 4. Median GPA



<sup>4</sup> For reference, of all students attending Ohio institutions of higher education in the 2011-12 school year, about 73% attend public colleges and universities. (Integrated Postsecondary Education Data System (IPEDS), National Center for Education Statistics, <http://nces.ed.gov/ipeds>, accessed 12/16/13).

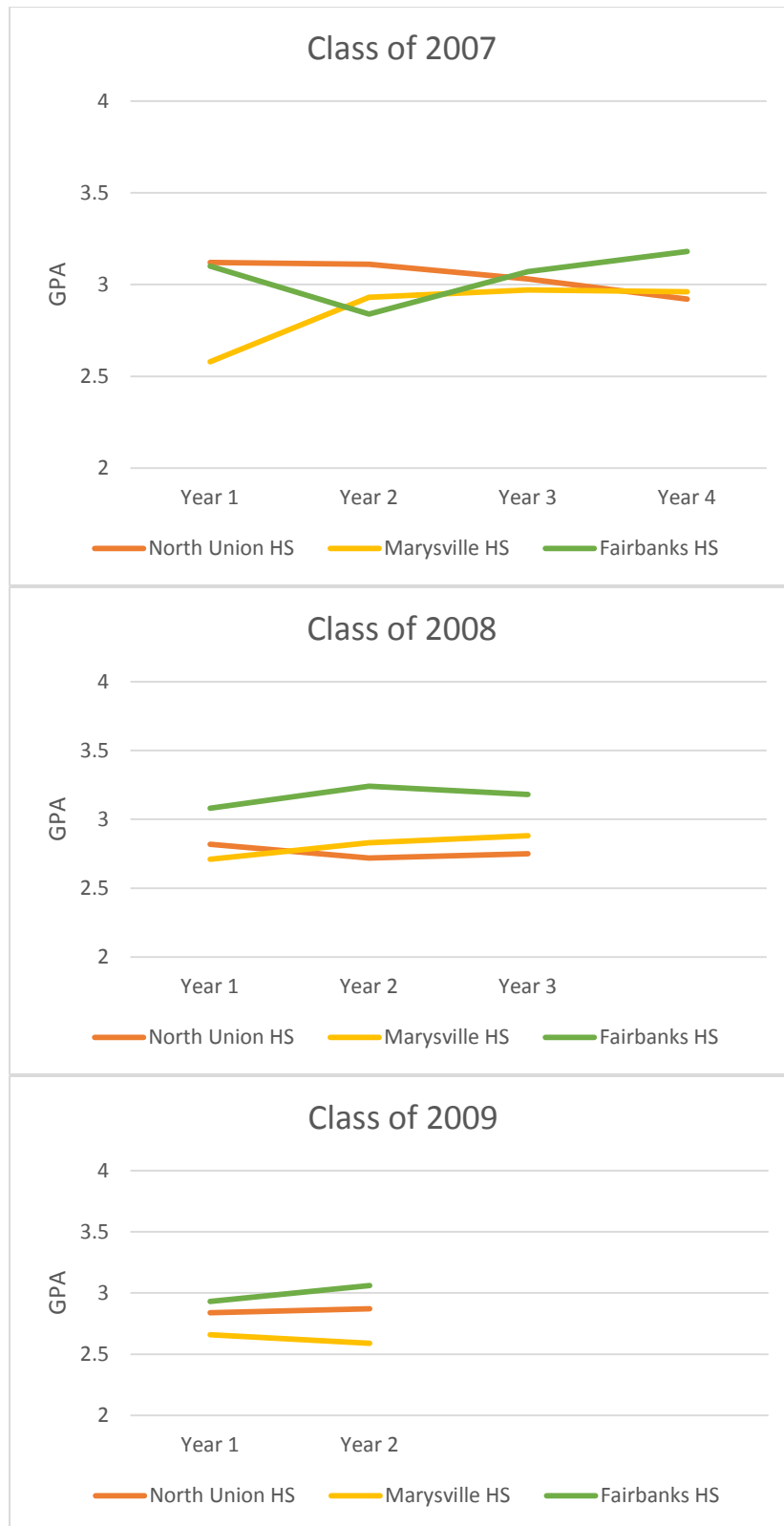
<sup>5</sup> We report only cell sizes of 10 or larger in order to maintain the privacy of student records.

To provide context for North Union graduate GPAs, we used the Board of Regents data to identify graduates from Marysville High School and Fairbanks High School for comparison. In order to ensure that the comparison was most accurate, we used the North Union graduates identified in the Board of Regents data for the comparison, instead of the individuals provided to us by North Union. As a result, the median GPAs of North Union graduates in the graphs below may vary slightly from the median GPAs reported above.

As shown in Figure 5, North Union graduates earn GPAs that are comparable to Fairbanks graduates and Marysville graduates.

Figure 5. GPA of Students Enrolled in an Ohio Public College or University

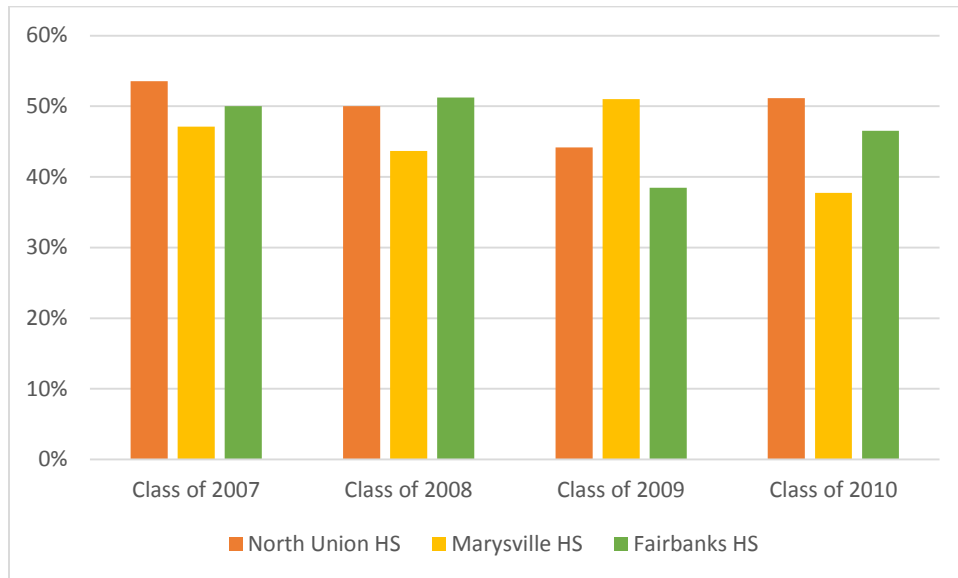
**Comparison of North Union HS Graduates to Marysville and Fairbanks HS Graduates**



Further, approximately half of the graduates attending public college in Ohio took at least one remedial course in the first year following graduation. Again, to provide context, we compare the proportion of students taking at least one remedial course to graduates of Marysville and Fairbanks High Schools, and find that rates are comparable (see Figure 6).

Figure 6. Proportion of Students Enrolled in an Ohio Public College or University Enrolled in At Least One Remedial Course in the Year Following High School Graduation

**Comparison of North Union HS Graduates to Marysville and Fairbanks HS Graduates**



Finally, due to the small numbers of graduates from each cohort of North Union High School graduates that seek degrees or certificates from public institutions of higher education in Ohio, we could not provide either by subject information or degree/certificate information, as the cell sizes are so small as to risk identification of individual students.

## V. APPENDIX

### Annual Wage and Higher Education

All North Union County High School Graduates	N	2007-08	2008-09	2009-10	2010-11	2011-12
<u>June 2007 Graduates</u>	79					
Number with missing matching identifiers	3	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
Employed at any point during the year in Ohio		65	60	57	55	59
Median Annual Wages (All Employers)		\$7,200	\$8,300	\$10,400	\$11,900	\$18,400
Employed and *not* enrolled in higher education		36	35	33	33	
Median Annual Wages		\$7,200	\$8,500	\$10,500	\$15,400	
Employed and enrolled in higher education		29	25	24	22	
Median Annual Wages		\$7,200	\$7,000	\$9,600	\$9,700	
<u>June 2008 Graduates</u>	79					
Number with missing matching identifiers	4		<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Employed at any point during the year in Ohio			57	54	55	65
Median Annual Wages (All Employers)			\$4,100	\$5,400	\$8,200	\$8,900
Employed and *not* enrolled in higher education			38	36	38	
Median Annual Wages			\$3,200	\$4,600	\$8,500	
Employed and enrolled in higher education			19	18	17	
Median Annual Wages			\$5,200	\$7,900	\$8,200	

All North Union County High School Graduates	N	2007-08	2008-09	2009-10	2010-11	2011-12
<u>June 2009 Graduates</u>	100					
Number with missing matching identifiers	10			<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
Employed at any point during the year in Ohio				67	69	72
Median Annual Wages (All Employers)				\$4,800	\$5,800	\$8,700
Employed and *not* enrolled in higher education				38	41	
Median Annual Wages				\$4,600	\$5,700	
Employed and enrolled in higher education				29	28	
Median Annual Wages				\$4,900	\$6,500	
<u>June 2010 Graduates</u>	79					
Number with missing matching identifiers	2				<u>Year 1</u>	<u>Year 2</u>
Employed at any point during the year in Ohio					53	62
Median Annual Wages (All Employers)					\$4,700	\$6,900
Employed and *not* enrolled in higher education					27	
Median Annual Wages					\$5,600	
Employed and enrolled in higher education					26	
Median Annual Wages					\$4,400	
<u>June 2011 Graduates</u>	82					
Number with missing matching identifiers	4					<u>Year 1</u>
Employed at any point during the year in Ohio						63
Median Quarterly Wages (All Employers)						\$4,900

## Annual Wage and 4 Quarter

All North Union County High School Graduates	N	2007-08	2008-09	2009-10	2010-11	2011-12
<u>June 2007 Graduates</u>	79					
Number with missing matching identifiers	3	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
Employed at any point during the year in Ohio		65	60	57	55	59
Median Annual Wages (All Employers)		\$7,200	\$8,300	\$10,400	\$11,900	\$18,400
Employed in all four quarters in Ohio		35	34	35	37	40
Median Annual Wages (All Employers)		\$10,200	\$11,800	\$13,300	\$15,800	\$25,200
<u>June 2008 Graduates</u>	79					
Number with missing matching identifiers	4		<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Employed at at any point during the year in Ohio			57	54	55	65
Median Annual Wages (All Employers)			\$4,100	\$5,400	\$8,200	\$8,900
Employed in all four quarters in Ohio			23	30	35	39
Median Annual Wages (All Employers)			\$7,300	\$8,900	\$10,900	\$14,700
<u>June 2009 Graduates</u>	100					
Number with missing matching identifiers	10			<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
Employed at any point during the year in Ohio				67	69	72
Median Annual Wages (All Employers)				\$4,800	\$5,800	\$8,700
Employed in all four quarters in Ohio				30	36	43
Median Annual Wages (All Employers)				\$10,100	\$10,100	\$11,900
All North Union County High School Graduates	N	2007-08	2008-09	2009-10	2010-11	2011-12



All North Union County High School Graduates	N	2007-08	2008-09	2009-10	2010-11	2011-12
<b>June 2010 Graduates</b>	79					
Number with missing matching identifiers	2				<u>Year 1</u>	<u>Year 2</u>
Employed at any point during the year in Ohio					53	62
Median Annual Wages (All Employers)					\$4,700	\$6,900
Employed in all four quarters in Ohio					20	27
Median Annual Wages (All Employers)					\$12,000	\$14,100
<b>June 2011 Graduates</b>	82					
Number with missing matching identifiers	4					<u>Year 1</u>
Employed at any point during the year in Ohio						63
Median Annual Wages (All Employers)						\$4,900
Employed in all four quarters in Ohio						31
Median Annual Wages (All Employers)						\$9,100

## Annual HEI

All North Union County High School Graduates	N	2007-08	2008-09	2009-10	2010-11
<b>June 2007 Graduates</b>	79				
Number with missing matching identifiers	3				
		<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Enrolled in Public College in Ohio		33	31	30	29
Percent employed while enrolled		88%	81%	80%	76%
Enrolled in at least one remedial course		55%	*	*	*
Median College GPA		3.23	3.18	3.25	2.98
Enrolled by Institution					
Marion Technical College		33%	42%	43%	44%
The Ohio State University		39%	37%	38%	37%
Other Institutions		30%	32%	33%	40%
<b>June 2008 Graduates</b>	79				
Number with missing matching identifiers	4				
			<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>
Enrolled in Public College in Ohio			23	24	19
Percent employed while enrolled			83%	75%	89%
Enrolled in at least one remedial course			48%	*	*
Median College GPA			2.81	2.72	2.94
Enrolled by Institution					
Marion Technical College			*	42%	44%
The Ohio State University			*	38%	37%
Other Institutions			*	38%	41%
<b>June 2009 Graduates</b>	100				
Number with missing matching identifiers	10				
				<u>Year 1</u>	<u>Year 2</u>
Enrolled in Public College in Ohio				36	35
Percent employed while enrolled				81%	80%
Enrolled in at least one remedial course				44%	*
Median College GPA				2.93	2.98
Enrolled by Institution					
Marion Technical College				26%	35%
The Ohio State University				26%	28%
Other Institutions				54%	54%

All North Union County High School Graduates	N	2007-08	2008-09	2009-10	2010-11
<b>June 2010 Graduates</b>	<b>79</b>				
<b>Number with missing matching identifiers</b>	<b>2</b>				
					<u>Year 1</u>
<b>Enrolled in Public College in Ohio</b>					39
<b>Percent employed while enrolled</b>					67%
<b>Enrolled in at least one remedial course</b>					49%
<b>Median College GPA</b>					3.05
<b>Enrolled by Institution</b>					
<b>Marion Technical College</b>					26%
<b>The Ohio State University</b>					26%
<b>Other Institutions</b>					55%