

Using Public Data to Guide Purposeful Planning

Nichole Sorenson
Research Analyst
Office of Higher Education

Rachel Vilsack
Agency Performance Manager
Dept. of Employment and
Economic Development

Scott Godfrey
Performance Measures Analyst
Dept. of Employment and
Economic Development

- Building your data toolbox
- Program planning and your institution
- Leveraging longitudinal data systems
- Using labor market data for decision-making
- Let's talk about liberal arts
- Student loan debt and graduate outcomes

Building the Data Tool Box

National Data Resources

- Integrated Postsecondary Education Data System (IPEDS) Statistical Tables

Minnesota-specific Data Resources

- Occupations in Demand (OID) tool
- Statewide Longitudinal Education Data System (SLEDS)
- Graduate Employment Outcomes (GEO)

Scenario: Program Planning

Scenario: Welding Program (CIP 4805 Precision Metal Working)

Publicly available data can be used to answer a series of questions

- How many graduates are being produced and at how many institutions?
- What is the outlook for occupations related to this program?
- What employment outcomes are recent program graduates exhibiting?

Scenario: Program Planning

How many graduates are being produced and at how many institutions?

- Integrated Postsecondary Education Data System (IPEDS)
- Information from every post-secondary institution that participates in the federal student financial aid programs, two-thirds of which are degree-granting
- Covers data in 9 major areas -> we will be looking at completions data

Scenario: Program Planning

Select institutions:

1. Select Institutions 2. Select Variables 3. Output

My Comparison Institution - None Selected ⓘ
Select Institutions - You have selected 3 institution(s)
Select Variables - You have selected 5 variable(s), 5 can be used in this report

How would you like to select institutions to include in your data file/report?
 [By Names or UnitIDs](#) [By Groups](#) [By Variables](#) [By Uploading a File](#)

Select

- First Look Universe ⓘ Title IV participating ⓘ U.S. only

Special missions (if any)

- Historically Black College or University Tribal College Land-grant

Special characteristics

- State or other jurisdiction
- Bureau of Economic Analysis (BEA) Regions
- Sector
- Degree-granting status
- Highest degree offered

Select variables:

Completions

- Awards/degrees conferred by program (2010 CIP classification; new race/ethnicity and award level categories)
- Gender - 2009-10 to current year

Step 1: Select Year(s)

- 2015-16 ~ 2014-15 2013-14 2012-13
~ Preliminary Release

Step 2: Select Qualifying Variable(s)

- [First or Second Major](#) 1 value(s) selected
[CIP Code - 2010 Classification](#) 1 value(s) selected
[Award Level code](#) 1 value(s) selected

Step 3: Select from the list of variables

[Select All](#) | [Unselect All](#)

- Grand total ⓘ
 Grand total men ⓘ
 Grand total women ⓘ

- Race/ethnicity (new) - 2010-11 to current year

Scenario: Program Planning

Statistics Report



[Show graph](#)



[Print report](#)



[Download](#)

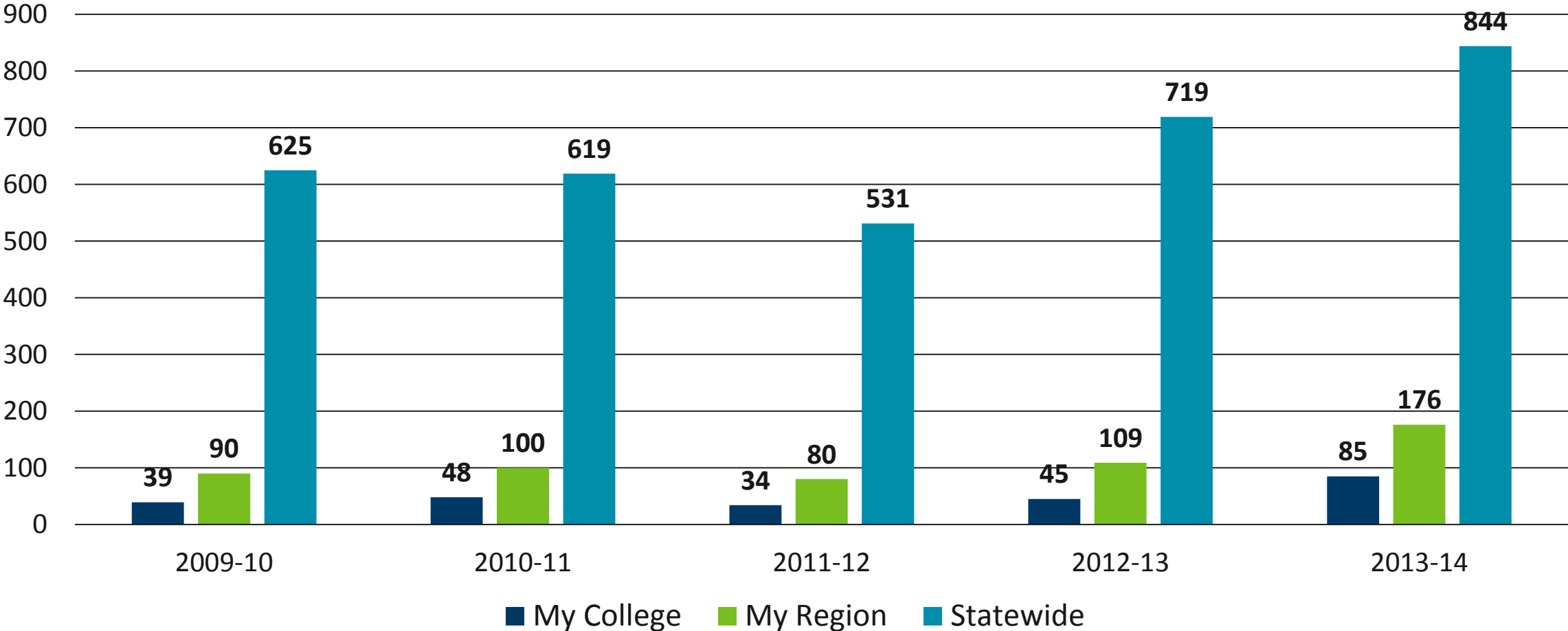


[Modify options](#)

Variable	My College	N	Sum	Minimum	Maximum	Mean
Grand total - First major, Precision Metal Working, Degrees/certificates total - (14)	85	4	176	24	87	44
Grand total - First major, Precision Metal Working, Degrees/certificates total - (13)	45	4	109	18	50	27
Grand total - First major, Precision Metal Working, Degrees/certificates total - (12)	34	4	80	17	24	20
Grand total - First major, Precision Metal Working, Degrees/certificates total - (11)	48	4	100	16	33	25
Grand total - First major, Precision Metal Working, Degrees/certificates total - (10)	39	4	90	10	37	22

Scenario: Program Planning

Number of Completers in CIP 4805, by Year



Scenario: Program Planning

What is the outlook for occupations related to this program?

- Minnesota's Occupations in Demand (OID) Tool
- Lists current career opportunities in a region as determined by regularly updated local labor market data.
- Also includes future occupational outlooks



[Labor Market Information](#)

[Data Home](#)

[OID Home](#)

Occupations In Demand

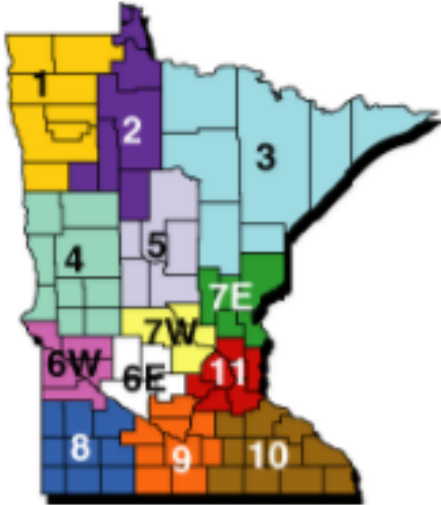
Scenario: Program Planning

Select a region:

Occupations In Demand

Welcome to the Minnesota Occupations in Demand (OID) homepage. The OID Data Tool allow
Select a region from the box below or click on an area of the map then press the View Data bu

- Statewide - Minnesota
- EDR 1 - Northwest
- EDR 2 - Headwaters
- EDR 3 - Arrowhead
- EDR 4 - West Central
- EDR 5 - North Central
- EDR 6E- Southwest Central
- EDR 6W- Upper Minnesota Valley
- EDR 7E- East Central
- EDR 7W- Central
- EDR 8 - Southwest
- EDR 9 - South Central
- EDR 10 - Southeast
- EDR 11 - 7 County Twin Cities



View Data

Select an occupation:

To further refine these results use the filters below:

Wage Range (median)	All Wage Ranges ▼
Education Category	All Education Categories ▼
Job Title Keyword Search	
<input type="button" value="Get Filtered Results"/> <input type="button" value="Reset Search Filters"/>	

Scenario: Program Planning

Statewide:

<u>SOC Code</u>	<u>Job Title</u>	<u>Current Demand Rank</u>	<u>Current Demand Indicator</u>	<u>25th Percentile Wage</u>	<u>Median Wage</u>	<u>MN Projected Growth Rate</u>	<u>MN Projected Openings</u>	<u>Education Requirements</u>	<u>On-the-job Training Requirements</u>
	?	?	?	?	?	?	?	?	?
514121	<u>Welders, Cutters, Solderers, and Brazers</u>	55	★★★★★	\$35,724/yr	\$42,310/yr	1%	2,660	high school diploma or equivalent	Moderate term on the job training

Regional:

<u>SOC Code</u>	<u>Job Title</u>	<u>Current Demand Rank</u>	<u>Current Demand Indicator</u>	<u>25th Percentile Wage</u>	<u>Median Wage</u>	<u>Planning Area Projected Growth Rate</u>	<u>Planning Area Projected Openings</u>	<u>Education Requirements</u>	<u>On-the-job Training Requirements</u>
	?	?	?	?	?	?	?	?	?
514121	<u>Welders, Cutters, Solderers, and Brazers</u>	360	★☆☆☆☆	\$33,864/yr	\$38,012/yr	3.1%	390	high school diploma or equivalent	Moderate term on the job training

Scenario: Program Planning

What employment outcomes are recent program graduates exhibiting?

- Minnesota's Statewide Longitudinal Education Data System (SLEDS) & Graduate Employment Outcomes (GEO) tool
- GEO shows how many Minnesota graduates are finding jobs in Minnesota, and at what wages
- Systems are the result of Federal SLDS and WDQI grants

Scenario: Program Planning



Labor Market Information

[Data Home](#)

[GEO Home](#)

GRADUATE EMPLOYMENT OUTCOMES IN MINNESOTA

[Graduate Employment Outcomes Home](#)

[Report Interpretation And Methodology](#)

[Glossary](#)

Graduation Year: July 2013-June 2014 ▼

School Location: Minnesota Statewide ▼

Award Type: Certificates (less than Bachelor's Degrees) Associate Degree Bachelor's Degree Graduate (C

Institution Type: All Institution Types ▼

School: All Schools

Instructional Program: All Programs, Grand Total

(Multiple selections: Ctrl+Click)

All Programs, Subtotals

Agriculture, agriculture operations, and related sciences

Architecture and related services

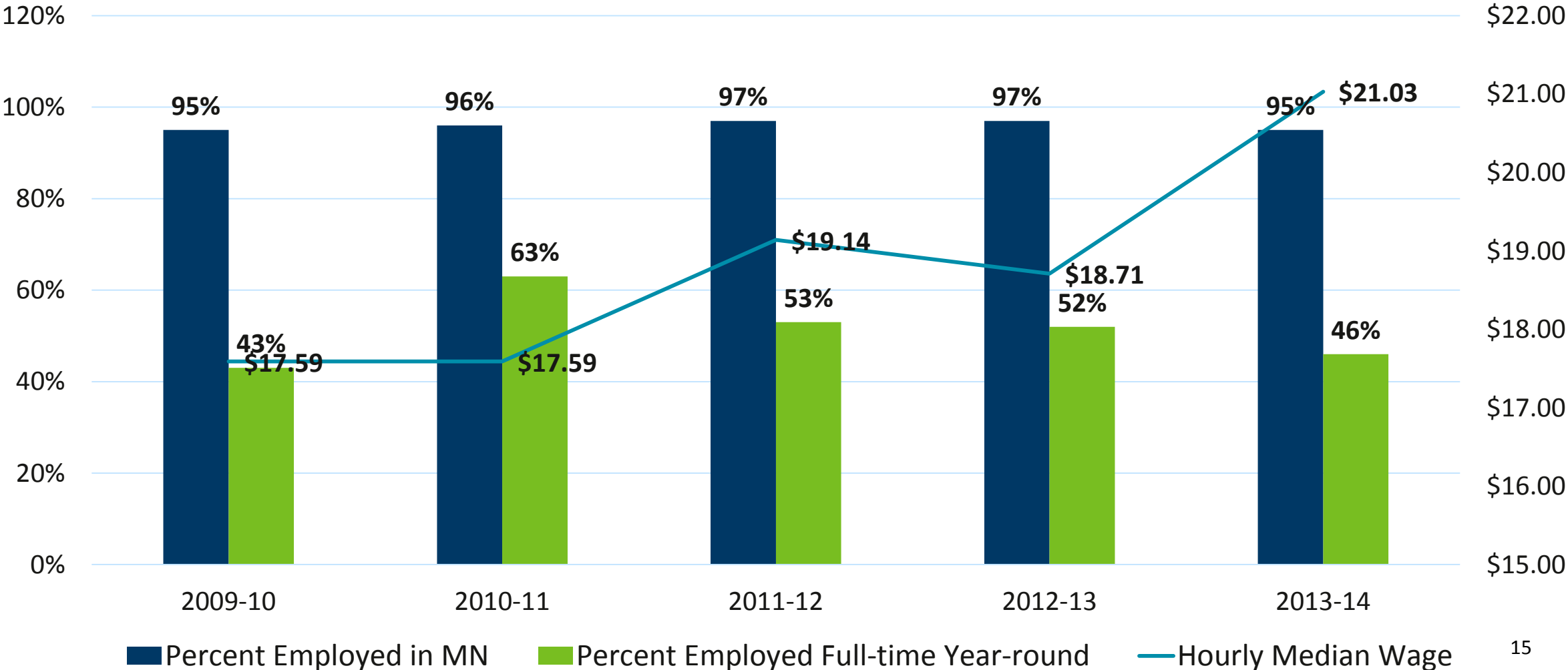
Area, ethnic, cultural, gender, and group studies

Scenario: Program Planning

Hourly Wage Trend		Annual Wage and Employment		Employment Status			
You Selected: July 2010-June 2011, Minnesota Statewide, All Institution Types, All Schools, All Awards							
		First 3 months of:					
		Second year after graduation		Third year after graduation			Fifth year a graduation
CIP	Instructional Program	Graduates	Median Hourly Wage	Median Hourly Wage	Top Industry Of Employment	Top Region Of Employment	Median Hourly
48	Precision production	672	\$17.77	\$19.00	Manufacturing	Twin Cities	\$21.23
48.05	Precision Metal Working	631	\$17.81	\$19.19	Manufacturing	Twin Cities	\$21.65
48.07

Scenario: Program Planning

Second Year After Graduation Employment Outcomes



Scenario: Program Planning

Constructing a narrative:

- Prominent regional source of program completers (1/3) and growing prominence as a statewide source (1/10th in 2013-14).
- Occupation is currently high demand (statewide) and current completers are successfully finding work in the state.
- Regional occupational demand is low, and long-term projections v. completer numbers signal a possible tightening of occupational labor market.
- Continue to monitor regional occupational trends?

Building the Data Tool Box

National Data Resources

- Integrated Postsecondary Education Data System (IPEDS) Statistical Tables
- State Longitudinal Data Systems; Workforce Data Quality Campaign
- State Data Sharing Initiative

Minnesota-specific Data Resources

- Occupations in Demand (OID) tool
- Statewide Longitudinal Education Data System (SLEDS)
- Graduate Employment Outcomes (GEO)

Leveraging Longitudinal Data Systems

Minnesota SLEDS

- 4 P's – Pathways, Progress, Predictors, Performance
- Postsecondary secured reports/data mart – analyze your student employment and wage outcomes
- Custom SLEDS data request – for deeper research on your institutions' outcomes



No SLDS resources in your state?

- SLDS Technical Assistance Program – learn from others

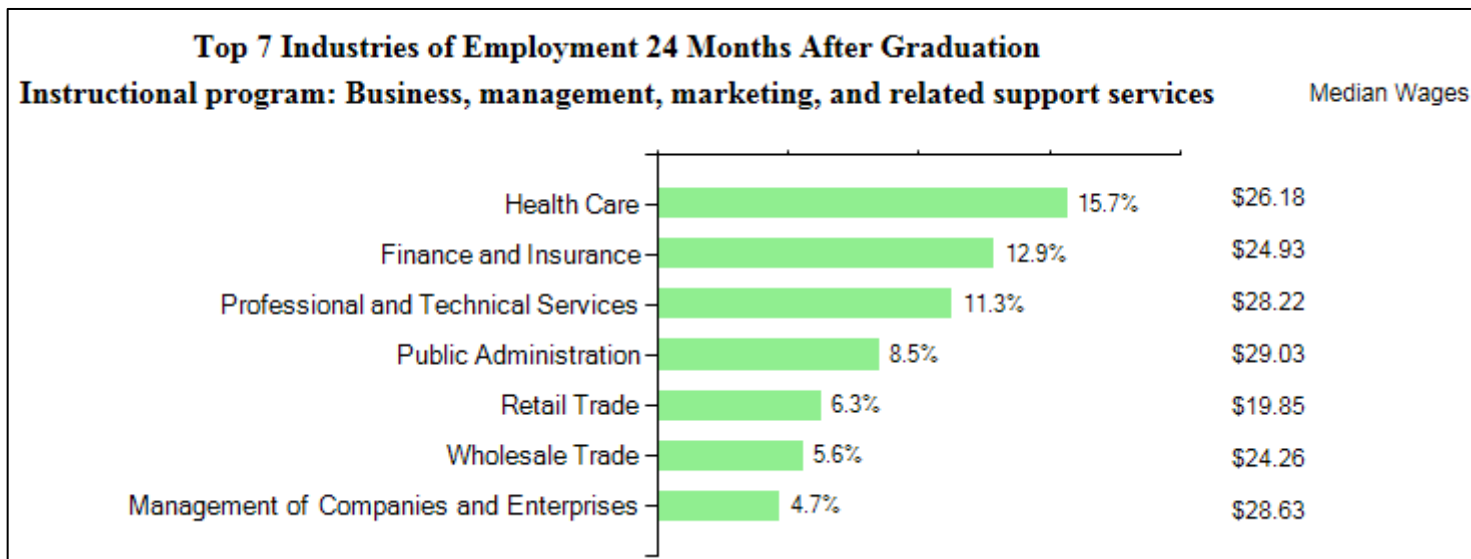
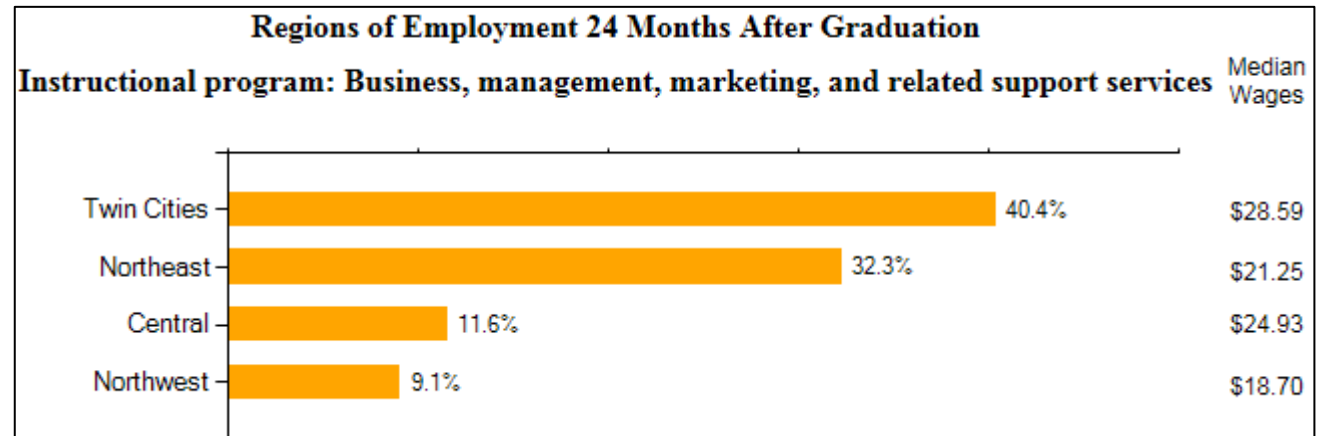


- State Data Sharing Initiative – see who has administrative data



Scenario: Where Do Your Graduates End Up?

- 4-year college in northern Minnesota
- ~150 graduates in business-related majors



- 1/3 stay in the region for work
- Largest employing industries in the region: health care (24%), leisure and hospitality (13%), and retail trade (12%)

Scenario: Where Do Your Graduates End Up?

- Texas Workforce Commission
- Dashboards feature employment/wage outcomes by race and ethnicity for programs of study

Value	Cohort Size ▼	Percentage	Found Employed	Found Enrolled	Median Qtly. Wages
White	580	0.9%	69.3%	9.1%	\$11,250
Hispanic	194	0.6%	67%	9.3%	\$9,116
Asian	170	2%	61.2%	8.2%	\$11,072
International	169	2.5%	19.5%	13.6%	\$5,617
Black	63	0.5%	77.8%	3.2%	\$8,981
Multiracial	20	0.9%	65%	25%	\$7,767
Unknown Ethnicity	17	0.8%	47.1%	5.9%	\$8,550
American Indian	***	***	0%	0%	***
Pacific Islander	***	***	0%	0%	***

Texas Higher Education Coordinating Board
Automated Student and Adult Learner Follow-Up System
2014-2015 Exit Cohort Reports
TEXAS A&M UNIVERSITY

Summary by Gender, Ethnicity - Undergraduate Completers

Gender	Cohort Group Subtotal	Working Only				Working and Enrolled				All Working			
		Count	Percent	Mean Quarterly Earnings	Median Quarterly Earnings	Count	Percent	Mean Quarterly Earnings	Median Quarterly Earnings	Count	Percent	Mean Quarterly Earnings	Median Quarterly Earnings
Male	4,688	2,873	61.28	12,872	12,925	288	6.14	4,968	3,600	3,161	67.43	12,202	12,325
Female	4,844	2,813	58.07	9,812	9,537	440	9.08	4,682	3,345	3,253	67.16	9,173	8,885
Total	9,532	5,686	59.65	11,360	11,030	728	7.64	4,796	3,453	6,414	67.29	10,672	10,352
Ethnicity													
White	6,783	4,147	61.14	11,633	11,324	503	7.42	4,897	3,600	4,650	68.55	10,963	10,754
African-American	231	136	58.87	9,251	8,762	20	8.66	2,590	1,326	156	67.53	8,491	7,494
Hispanic	1,636	994	60.78	10,430	10,000	145	8.86	4,941	3,430	1,139	69.62	9,772	9,071
Asian	473	244	51.59	12,101	12,874	28	5.92	4,391	2,780	272	57.51	11,379	11,685
Native-American	35	21	60.00	9,947	7,685	1	2.86	*	*	22	62.86	9,623	7,655
International	124	13	10.48	12,672	14,067	13	10.48	3,363	3,540	26	20.97	8,017	5,100
Unknown	30	10	33.33	9,115	9,466	0	0.00	0	0	10	33.33	9,115	9,466
Multi-Racial	220	121	55.00	10,790	10,220	18	8.18	4,942	2,806	139	63.18	10,102	9,509
Total	9,532	5,686	59.65	11,360	11,030	728	7.64	4,796	3,453	6,414	67.29	10,672	10,352

- Texas Higher Education Coordinating Board
- Institution level reports with employment/wage outcomes by race and ethnicity.

Building the Data Tool Box

National Data Sources

- Integrated Postsecondary Education Data System (IPEDS) Statistical Tables
- State Longitudinal Data Systems; Workforce Data Quality Campaign
- State Data Sharing Initiative
- Labor Market Information: Occupational Employment Statistics; Employment Projections, Quarterly Census of Employment and Wages
- Quarterly Workforce Indicators (Census)

Minnesota-specific data Sources

- Occupations in Demand (OID) tool
- Statewide Longitudinal Education Data System (SLEDS)
- Graduate Employment Outcomes (GEO)
- Labor Market Information Office

Finding Your Local Labor Market Data



Labor Market Information

Occupational Employment Statistics – employment and wages for 800+ nationally defined job titles.

Employment Projections – 10-year job projections for states and regions by occupation.

Quarterly Census of Employment & Wages – number of businesses and employees for states, regions, and local regions by industry.



Census

Quarterly Workforce Indicators - Labor market indicators by worker characteristic for local regions by industry.

Scenario: Finding the Gaps

Southwest Minnesota

- 2,500 openings for Agricultural Managers between 2014-2024
- Almost entirely self-employment
- Average wage of \$42.50/hour

Construction Industry

- 14% growth in new construction jobs estimated in Central Minnesota between 2014-2024
- Current workforce is 97.8% white
- Increasing workforce participation goals for women and people of color for state construction contractors

Workforce Supply and Demand Alignment

In Minnesota:

- Translate CIP/award graduates into occupational supply through a CIP-to-SOC crosswalk that reflects Minnesota
- Develop an allocation methodology for assigning graduates to occupations
- Establish an occupational supply estimate
- Establish a corresponding measure of the occupational demand
- Model inter-occupational transitions; how do we move between occupations during our lifetimes
- Refine the educational requirements of occupations in Minnesota

Scenario: Liberal Arts

- How do we better plan for programs that are not aligned to careers?
 - Where are our liberal arts graduates finding employment?
 - What kind of wages are they making?
 - Will their wages support them and their potential student debt?

Building the Data Tool Box

National Data Sources

- Integrated Postsecondary Education Data System (IPEDS) Statistical Tables
- State Longitudinal Data Systems; Workforce Data Quality Campaign
- State Data Sharing Initiative
- Labor Market Information: Occupational Employment Statistics; Employment Projections, Quarterly Census of Employment and Wages
- Quarterly Workforce Indicators (Census)
- [TICAS Project on Student Debt](#)
- [Mapping Your Future Debt Wizard](#)

Minnesota-specific Data Sources

- Occupations in Demand (OID) tool
- Statewide Longitudinal Education Data System (SLEDS)
- Graduate Employment Outcomes (GEO)
- Labor Market Information Office
- [Graduate Debt Report](#)

How much do your graduates owe?

TICAS Project on Student Debt

Minnesota

[Close Window](#) | [Print This Page](#)

	Public 4-Year Institutions and Private Non-Profit 4-Year Institutions			
	Average Debt **	Rank *	Proportion with Debt **	Rank *
State Average	\$31,526	6	70%	5

University of Minnesota-Twin Cities	
Average debt of graduates 2015	\$26,006
Proportion of graduates w/any debt 2015	59%
Proportion of graduates w/private loan debt 2015	9%
Proportion of graduates w/state loan debt 2015	6%
Proportion of graduates w/institutional loan debt 2015	4%
Nonfederal debt, % of total debt of graduates 2015	21%
Bachelor's degree recipients 2015	7,553
Full-time enrollment fall 2014	28,904

How much do your graduates need to make?

Mapping Your Future Debt Wizard

Debt Wizard

How much can I afford to borrow in student loans based on a certain salary?

Expected salary:
Hourly ▾

Interest rate:

Repayment period: (years)

*Do not enter dollar signs, percent signs or commas.

How much salary do I need to support my student loan debt?

Current amount borrowed:

Future borrowing needs:

Interest rate:

Repayment period: (years)

*Do not enter dollar signs, percent signs or commas.

Debt Wizard

Question:
How much salary do I need to support my student loan debt?

Answer:
Based on student loan debt of \$26,006.00 to be repaid over 10 years at 4.45 percent interest, my estimated monthly payment is \$268.90.

To support repayment of the debt, I should earn at least:

\$19.39 Hourly

- \$3,361.20 Monthly
- \$40,334.35 Annually

[back to wizard](#)

Scenario: Liberal Arts

GRADUATE EMPLOYMENT OUTCOMES IN MINNESOTA

[Graduate Employment Outcomes Home](#)

[Report Interpretation And Methodology](#)

[Glossary](#)

Graduation Year:

School Location:

Award Type: Certificates (less than Bachelor's Degrees) Associate Degree Bachelor's Degree Graduate (Certificates and Degrees) All Awards

Institution Type:

School:

Instructional Program:
 (Multiple selections: Ctrl+Click)

OR Program Keyword Search:

[View Results](#)

Hourly Wage Trend

Annual Wage and Employment

Employment Status

You Selected: July 2010-June 2011, Minnesota Statewide, All Institution Types, All Schools, Award - Bachelor's Degree

[Download These Results in Excel](#)

		First 3 months of:							
		Second year after graduation		Third year after graduation			Fifth year after graduation	Sixth year after graduation	
CIP	Instructional Program	Graduates	Median Hourly Wage	Median Hourly Wage	Top Industry Of Employment	Top Region Of Employment	Median Hourly Wage	Median Hourly Wage	
	?	?	?	?	?	?	?	?	
38	Philosophy and religious studies	283	\$13.75	\$15.35	Retail Trade	Twin Cities	\$18.63	\$20.17	
38.01	Philosophy	159	\$14.46	\$15.49	Retail Trade	Twin Cities	\$18.71	\$21.18	
38.02	Religion/Religious Studies	124	\$12.98	\$13.82	Elementary and Secondary Schools	Twin Cities	\$18.28	\$19.36	

* Cells with less than 10 students having wages were suppressed to ensure confidentiality.

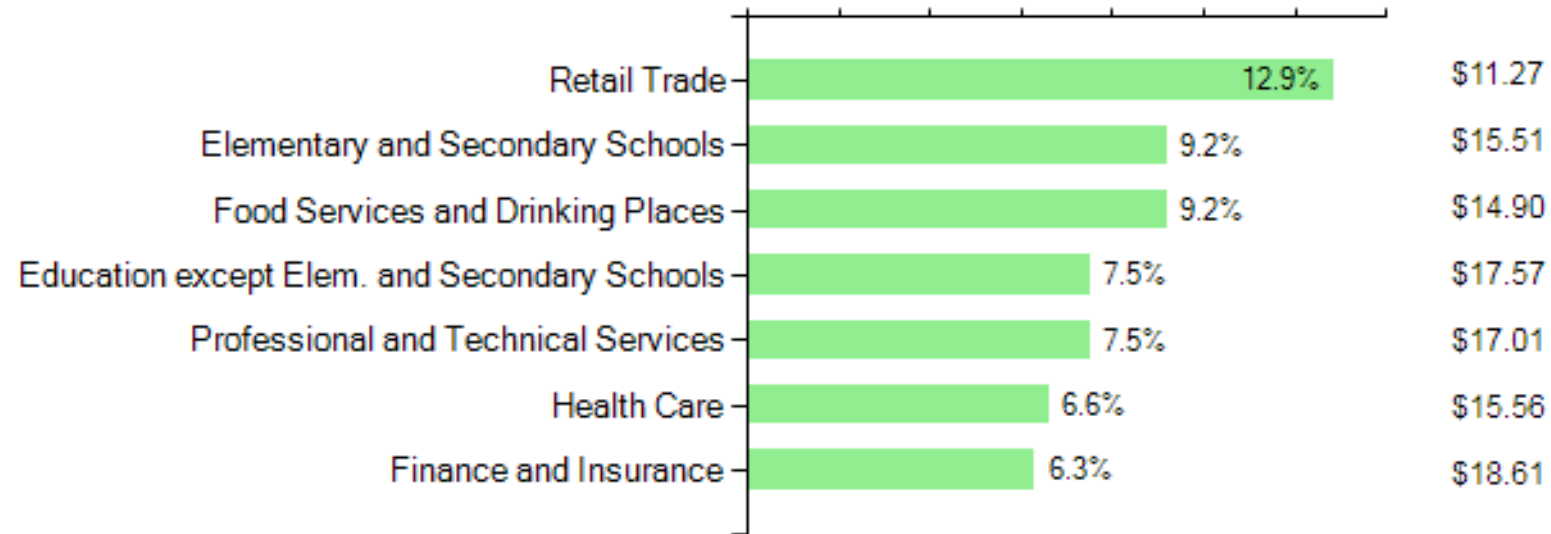
** Wage data not yet collected for this time period.

Scenario: Liberal Arts

Top 7 Industries of Employment 24 Months After Graduation

Instructional program: Philosophy and religious studies

Median Wages



Percentages are based on 348 employed graduates from school years 2010, 2011, 2012.
Missing data bars indicate suppressions.

Scenario: Liberal Arts

Hourly Wage Trend Annual Wage and Employment Employment Status

You Selected: July 2010-June 2011, Minnesota Statewide, All Institution Types, All Schools, Award - Bachelor's Degree

[Download These Results in Excel](#)

CIP	Instructional Program	Second Year After Graduation				Third Year After Graduation		Fourth Year After Graduation	
		Graduates With Reported Wages In MN During The Year	Annual Median Wage	Percent of Employed Grads Working Full-Time Year-Round	Percent of Employed Grads Working Part-Time and/or Seasonally	Percent of Employed Grads Working Full-Time Year-Round	Annual Median Wage	Percent of Employed Grads Working Full-Time Year-Round	Annual Median Wage
38	Philosophy and religious studies	149	\$17,819	31%	69%	35%	\$23,450	42%	\$27,650
38.01	Philosophy	87	\$21,141	37%	63%	37%	\$24,877	41%	\$28,050
38.02	Religion/Religious Studies	62	\$13,395	23%	77%	33%	\$22,264	42%	\$27,650

* Cells with less than 10 students having wages were suppressed to ensure confidentiality.

** Wage data not yet collected for this time period.

Hourly Wage Trend Annual Wage and Employment Employment Status

You Selected: July 2010-June 2011, Minnesota Statewide, All Institution Types, All Schools, Award - Bachelor's Degree

[Download These Results in Excel](#)

CIP	Instructional Program	Second Year After Graduation		
		Percent Graduates With reported Wages in MN	Percent Graduates Continuing Education in MN and Not Found in Wage Records	Employment Outcome Unknown
38	Philosophy and religious studies	52.8%	3.5%	43.7%
38.01	Philosophy	54.7%	3.1%	42.2%
38.02	Religion/Religious Studies	50.4%	4.1%	45.5%

* Cells with less than 10 students having wages were suppressed to ensure confidentiality.

What's missing?

- Are there other program planning data resources we did not cover?
- If your institution or system has gone through this process, are there data tools you found helpful and insights you would like to share?
- None of these tools help us gauge program interest of potential students. What ideas or data sources have others used to fill that need?



Thank you!

Nichole Sorenson

Research Analyst

Office of Higher Education

nichole.sorenson@state.mn.us

Rachel Vilsack

Agency Performance Manager

Dept. of Employment and
Economic Development

rachel.vilsack@state.mn.us

Scott Godfrey

Performance Measures Analyst

Dept. of Employment and
Economic Development

scott.godfrey@state.mn.us