



Meeting Future Workforce Needs



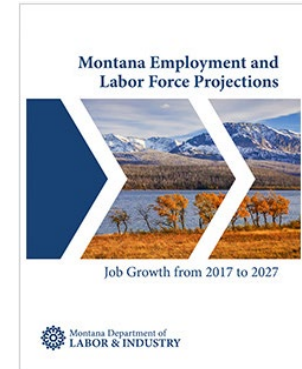
Agenda

1. Labor force projections
2. Post-secondary supply and demand report



About MTDLI Projections

- Annual updates of 2-year & 10-year
- State and regions
- Industry & occupation
- Job growth and replacements
- National methodology
- Funded by U.S. Department of Labor (U.S. DOL)
- Used by educational institutions, students, private forecasts
- Educational requirements set by U.S. DOL
- Full methodology available at mi.mt.gov/publications



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Montana's Job Projections (2018-2028)

Montana's annual projected job growth rate is 0.7% through 2028

Use this tool to understand Montana's projected job growth. Click the link below for additional information.

[Projections Publication](#)

Click the "All Data" link for the full dataset.

[All Data](#)

| Occupation | Minimum Education | Minimum Training | Jobs Due to Growth | Jobs due to Transfers | Jobs due to Exits | Annual Openings | 2018 Average Wage |
|----------------------------------|-------------------|------------------|--------------------|-----------------------|-------------------|-----------------|-------------------|
| Cashiers | <HS | ST OJT | 22 | 1,665 | 1,706 | 3,393 | \$22,930 |
| Retail Salespersons | <HS | ST OJT | 59 | 1,420 | 1,133 | 2,612 | \$28,500 |
| Combined Food Preparation a.. | <HS | ST OJT | 190 | 1,078 | 1,031 | 2,299 | \$22,380 |
| Waiters and Waitresses | <HS | ST OJT | 90 | 1,212 | 791 | 2,093 | \$20,990 |
| Office Clerks, General | HS or GED | ST OJT | 3 | 812 | 833 | 1,648 | \$33,350 |
| Maids and Housekeeping Clea.. | <HS | ST OJT | 104 | 478 | 634 | 1,216 | \$25,420 |
| Janitors and Cleaners, Except .. | <HS | ST OJT | 73 | 529 | 547 | 1,149 | \$29,790 |
| Personal Care Aides | HS or GED | ST OJT | 140 | 381 | 505 | 1,026 | \$24,250 |
| Cooks, Restaurant | <HS | MT OJT | 79 | 500 | 366 | 945 | \$25,230 |

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Region

Statewide

Min. Educa

(All)

Minimum Tr

(All)

Stem

(All)

US Apprentic

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MT Apprentic

(All)

2018 Wa

\$0

Annual Gr

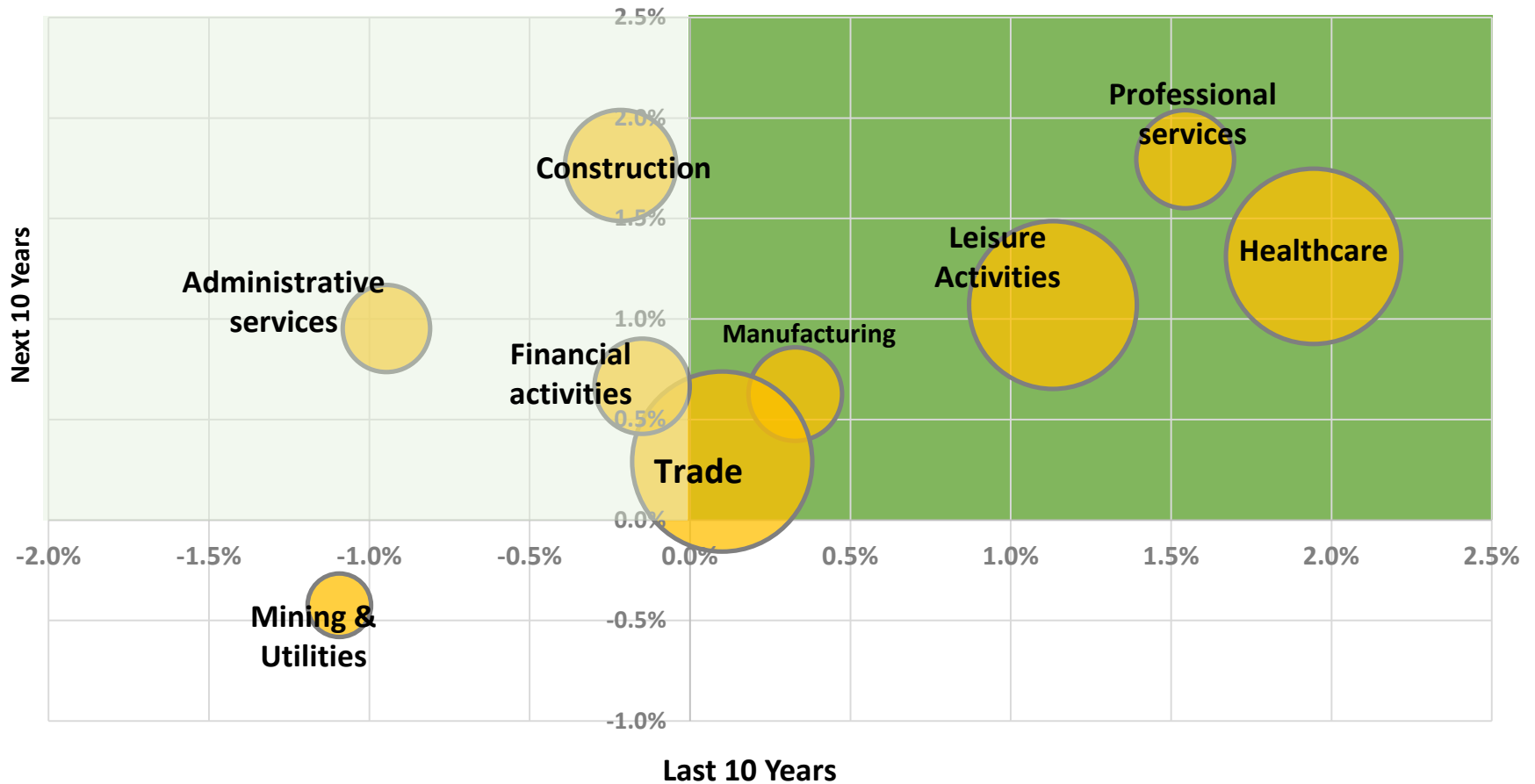
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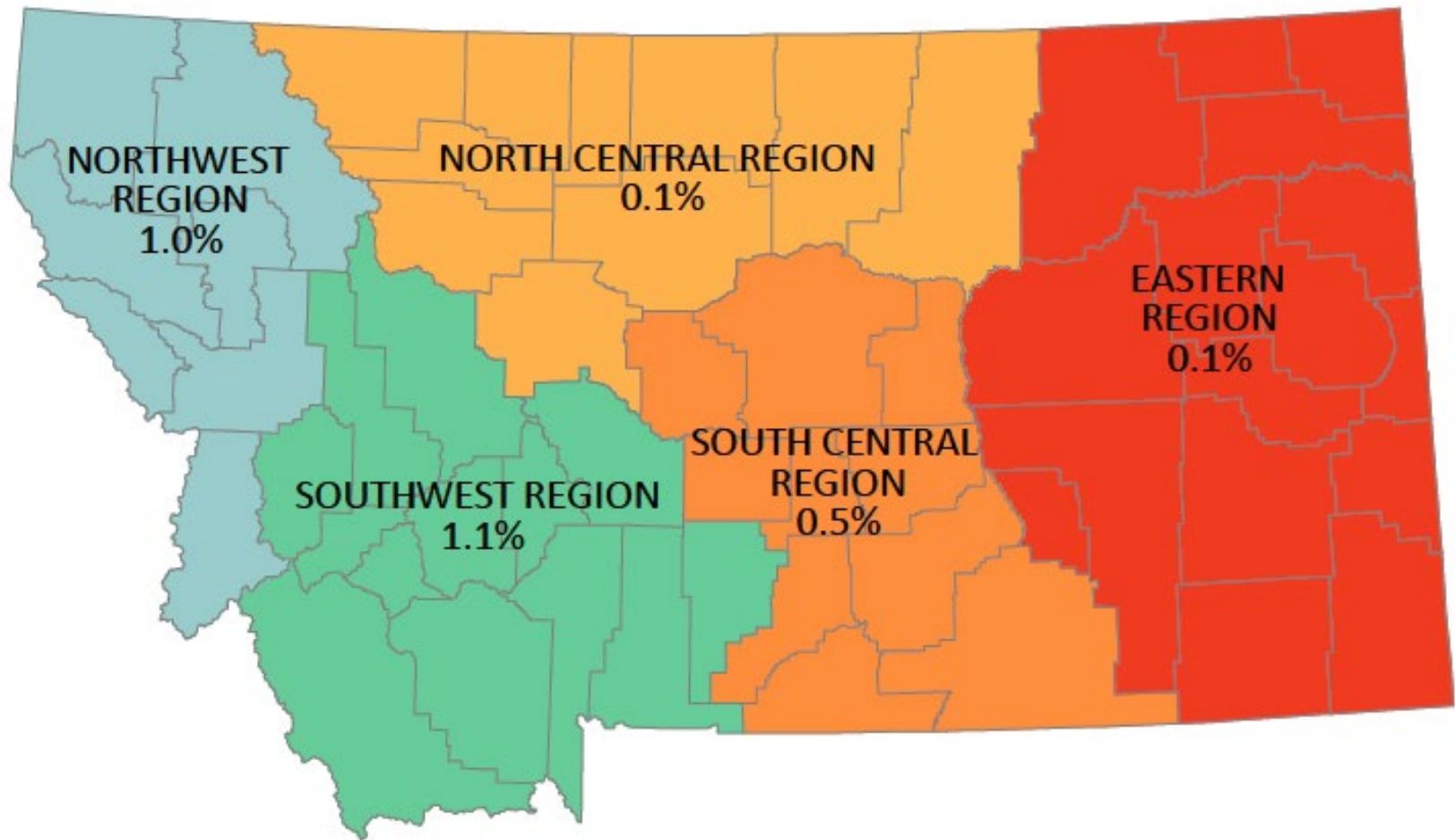
Industry Projections

Forecasted and Historic Employment Growth by Industry





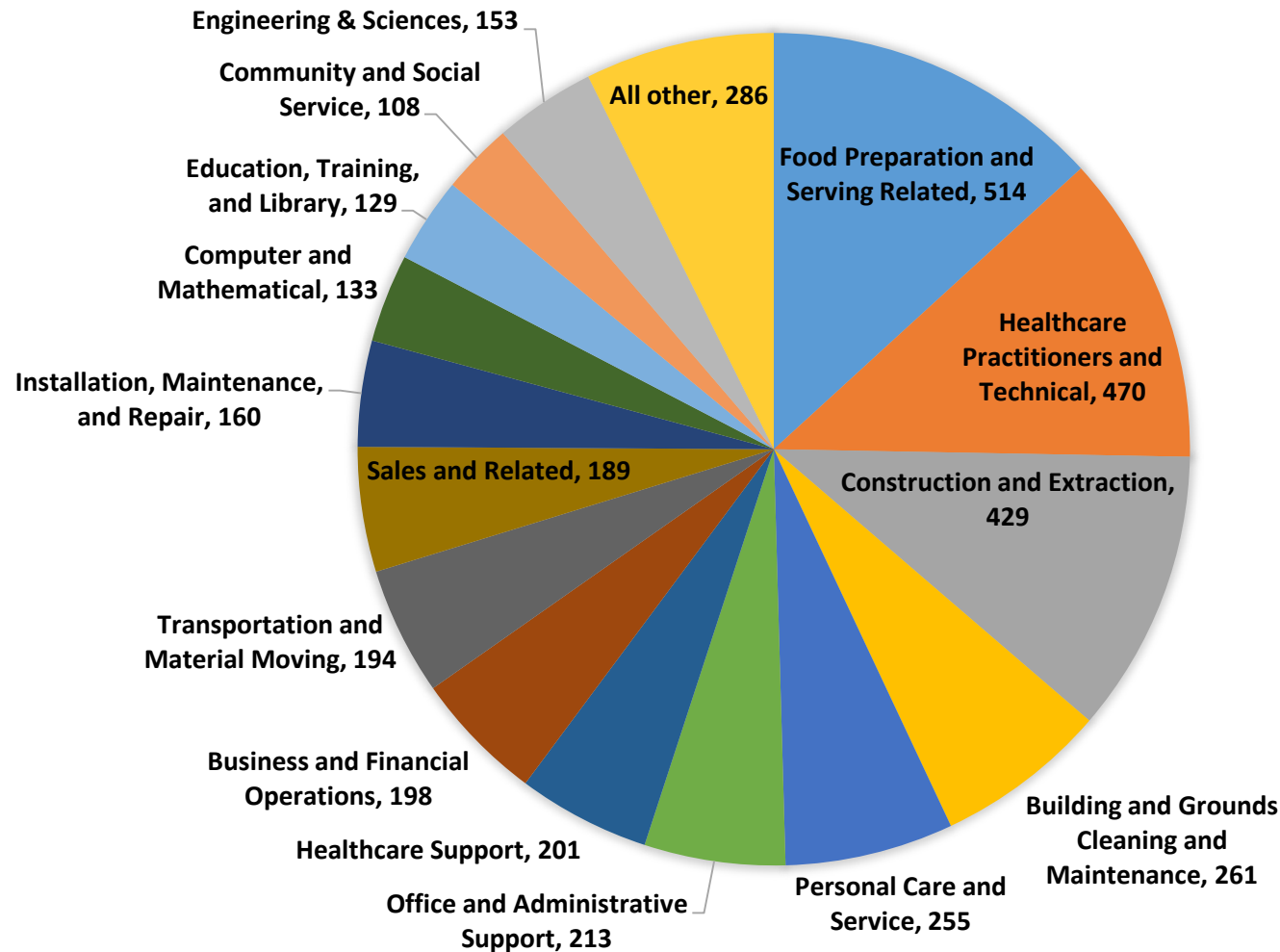
Regional Employment Growth





Occupational Projections – New Jobs

New Jobs Annually by Occupational Group



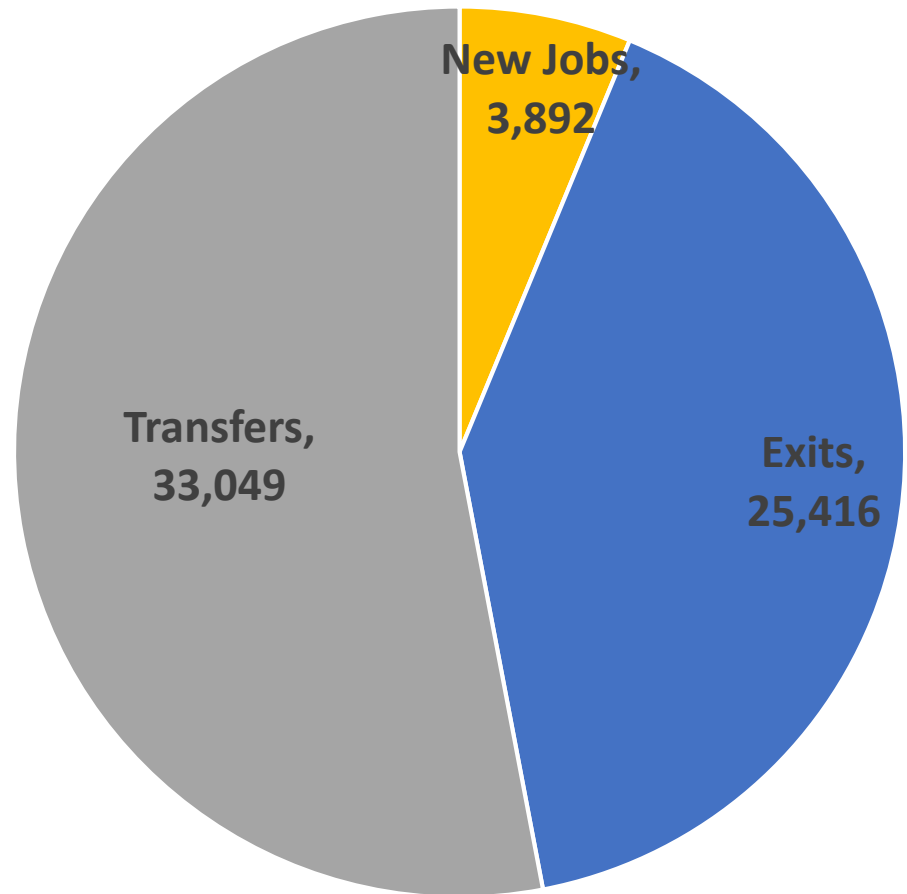


Total Annual Job Openings by Type

Churn is much larger than new job growth. Only 6% of worker needs comes from job growth.

Exits: people leaving the occupation, including retirements. 20% of Montana workforce expected to retire in next 10 years.

Transfers: people moving between similar jobs, thus leaving a job opening



Source: MTDLI forecasts for 2018-2028.



Occupational Openings and Wages

Occupations with the Most Openings Next 10 Years (2018 to 2028)

| | Title | Education and Training Requirements | Annual Growth Openings | Total Annual Openings | 2018 Average Wage |
|---|--|-------------------------------------|------------------------|-----------------------|-------------------|
| 1 | Cashiers | Short-term OJT | 22 | 3,393 | \$22,930 |
| 2 | Retail Salespersons | Short-term OJT | 59 | 2,612 | \$28,500 |
| 3 | Food Preparation & Serving (Fast Food) | Short-term OJT | 190 | 2,300 | \$22,380 |
| 4 | Waiters and Waitresses | Short-term OJT | 90 | 2,093 | \$20,990 |
| 5 | Office Clerks, General | High School, Short-term OJT | 3 | 1,648 | \$33,350 |

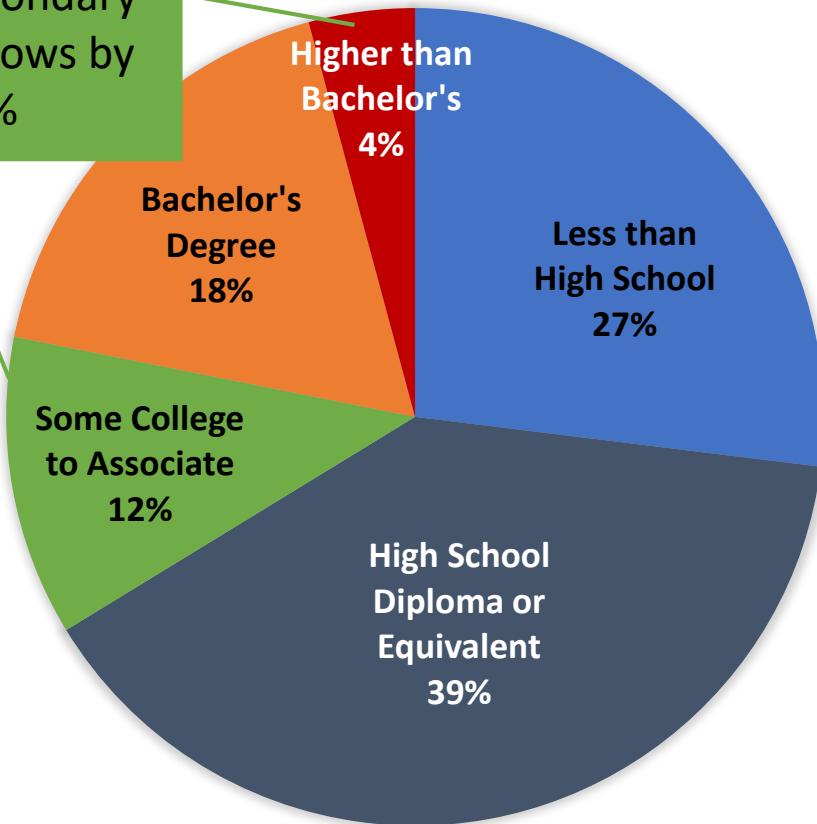
- Big occupations in terms of employment
- Low wages means more openings from turnover.



Montana Jobs by **Minimum** Education Level (Using BLS Minimum Education Data)

PROJECTED JOB OPENINGS BY MINIMUM EDUCATION NEEDED

10-Years from Now:
Post-secondary share grows by 1%

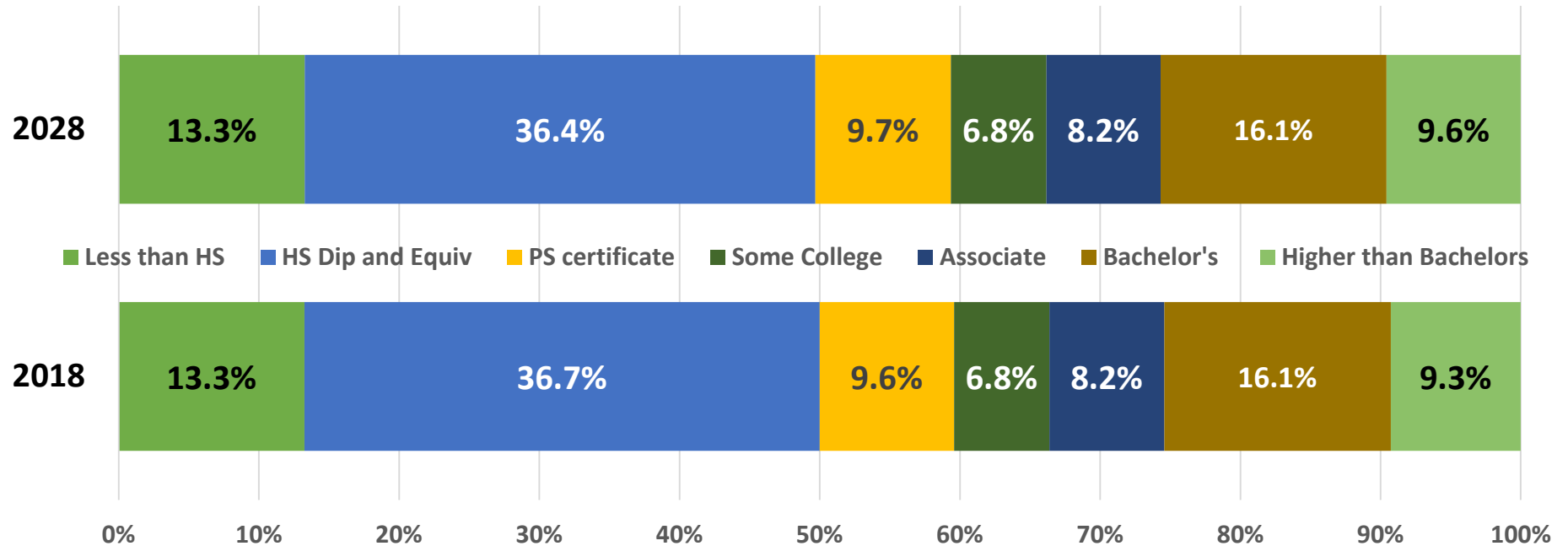


1/3rd of projected job openings require some college education.



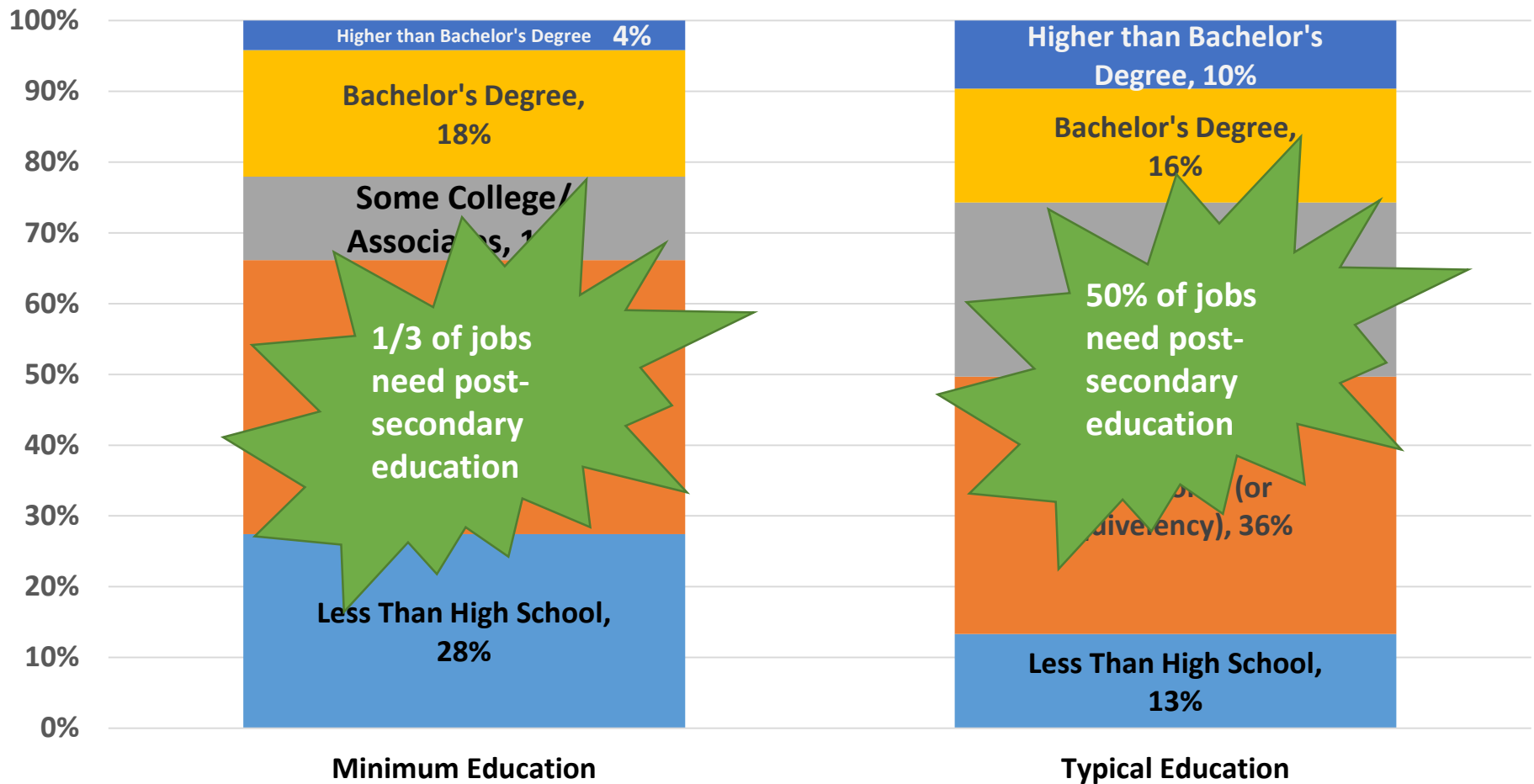
Education Needs Based on O*Net

Montana Jobs Using the **Typical** Education of Workers (Rather than Minimum)





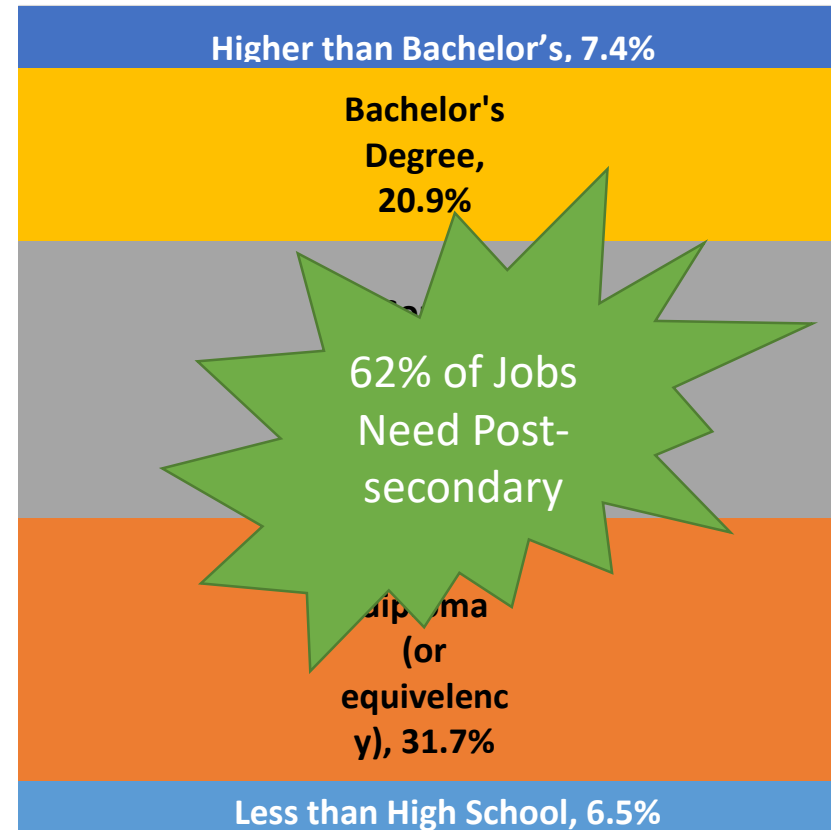
Comparison of Methods





Education Needs based on Georgetown Methodology (2018 data)

- Assume requirements change over time
- Attempt to account for automation
- Website had projections to 2018





Take-aways

- Methodology matters
- Montana jobs are moving towards higher education levels, but slowly
 - For the most part, current needs mimic needs in 10 years
- Encourage job-appropriate and continuous training
 - College degrees are still needed, as are certifications, associate degrees, and apprenticeships
 - Make lifelong learning easier



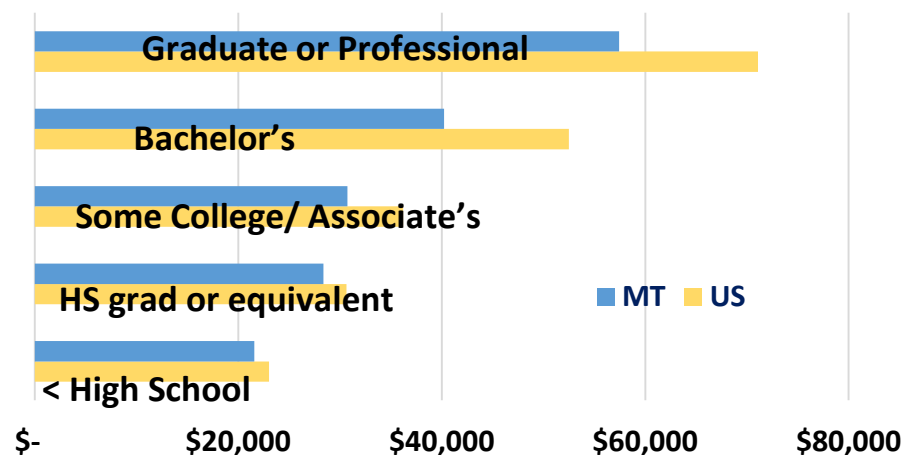
Over-education is good for the economy (Positive externalities from education)

Higher education levels

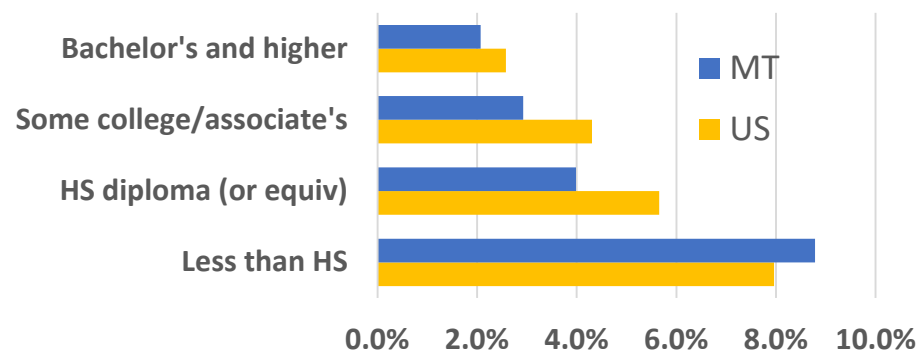
lead to higher:

- Productivity and technology adoption
- Innovation
- Entrepreneurialism
- Income
- Labor force participation
- Voter turnout & citizenship
- Volunteerism & public service
- Homeownership

Median Earnings by Education Level



2017 Unemployment Rates by Education Level





High-Paying Jobs at High School Level Typically Require Apprenticeships

- High school diploma or less, some job training required, Over \$40k
 - Adding roughly 400 jobs per year
 - Total openings of 6,000 per year

| Rank | Title | Education & Training Required | Total Annual Openings | 2018 Average Wage |
|------|--|-------------------------------|-----------------------|-------------------|
| 1 | Carpenters | HS Diploma & Apprenticeship | 680 | \$42,480 |
| 2 | Operating Engineers and Other Operators | HS Diploma & Moderate OJT | 440 | \$51,580 |
| 3 | Sales Representatives, Wholesale and Manufacturing | HS Diploma & Moderate OJT | 430 | \$57,500 |
| 4 | Electricians | HS Diploma & Apprenticeship | 320 | \$59,000 |
| 5 | Plumbers | HS Diploma & Apprenticeship | 280 | \$60,940 |



High-Paying Jobs at Between HS diploma and Bachelor's

- Associate, Post-secondary award, or Some College, \geq \$40k
 - Adding roughly 255 jobs per year
 - Total openings of 2,370 per year

| Rank | Title | Education & Training Required | Total Annual Openings | 2018 Average Wage |
|------|---|-------------------------------|-----------------------|-------------------|
| 1 | Truck Drivers | PS Award & Short OJT | 740 | \$46,100 |
| 2 | Computer User Support Specialists | Some College | 225 | \$46,060 |
| 3 | LPNs | PS Award | 210 | \$43,770 |
| 4 | Heating & Air Conditioning Mechanics and Installers | PS Award & Long OJT | 130 | \$48,740 |
| 5 | Paralegals & Legal Assistants | Associate's | 120 | \$44,330 |



High-Paying Jobs at Bachelor's & Higher

- Bachelor's Degree, \geq \$40k
 - Adding roughly 2,600 jobs per year
 - Total openings of 7,850 per year

| Rank | Title | Education & Training Required | Total Annual Openings | 2018 Average Wage |
|------|---------------------------------|--|-----------------------|-------------------|
| 1 | Registered Nurses | Bachelor's degree | 750 | \$67,450 |
| 2 | General and Operations Managers | Bachelor's degree & 5 Years Experience | 457.7 | \$98,990 |
| 3 | Business Operations Specialists | Bachelor's degree | 386.6 | \$66,290 |
| 4 | Accountants and Auditors | Bachelor's degree | 383.7 | \$66,410 |
| 5 | Elementary School Teachers | Bachelor's degree | 296.1 | \$52,360 |



Agenda

1. Labor force projections show DEMAND
2. Post-secondary supply and demand report



MEETING STATE WORKER DEMAND

A REPORT ON THE LABOR MARKET
OUTCOMES FOR MONTANA COLLEGES



MONTANA
UNIVERSITY SYSTEM



Montana Department of
LABOR & INDUSTRY



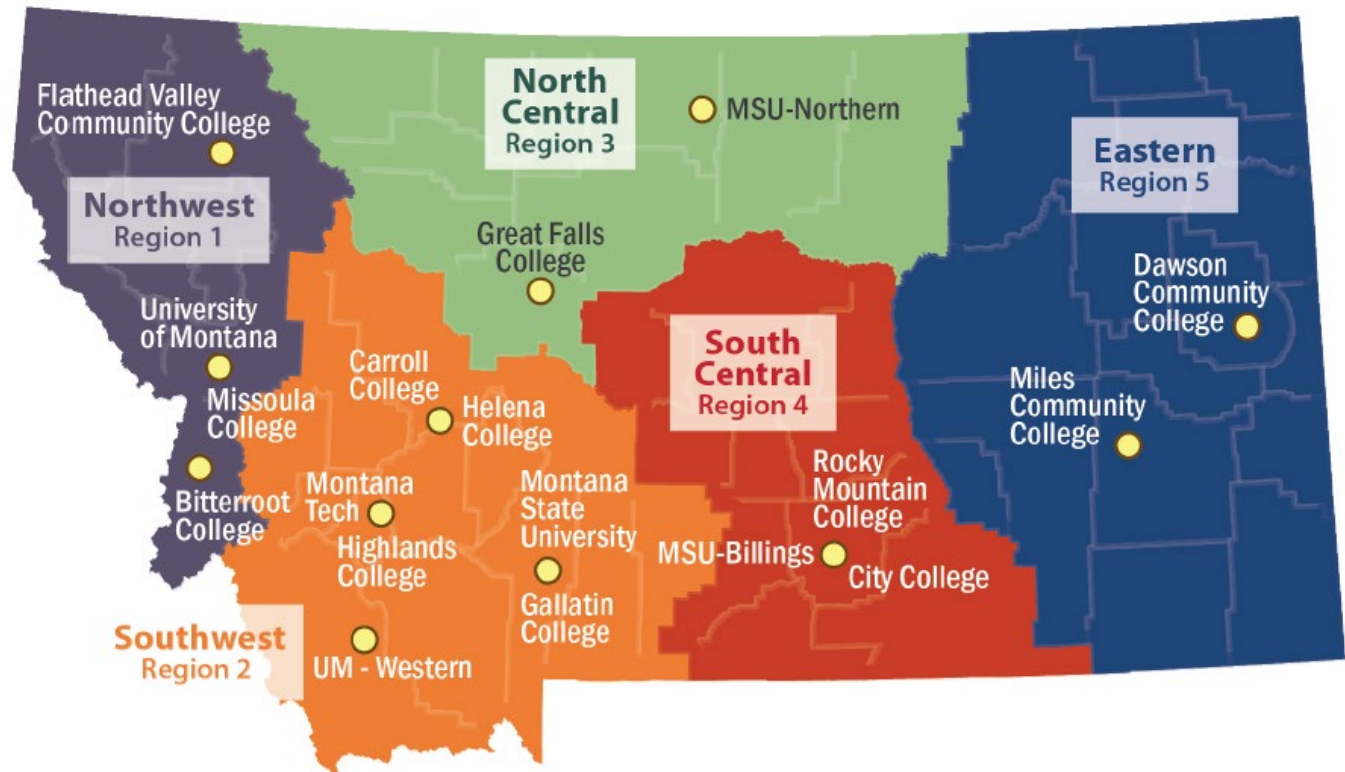
Data on Graduates

Graduates from
2001-02 to 2014-15

~ 100,000 graduates

~ 113,000 degrees

18 Montana colleges





Statewide Research Questions

1. How do graduates fare in the labor market?
2. Do colleges produce enough graduates in the right fields?
3. Are there regional gaps in supply and demand?



Higher Education System Contribution

7,000 Graduates per year on average

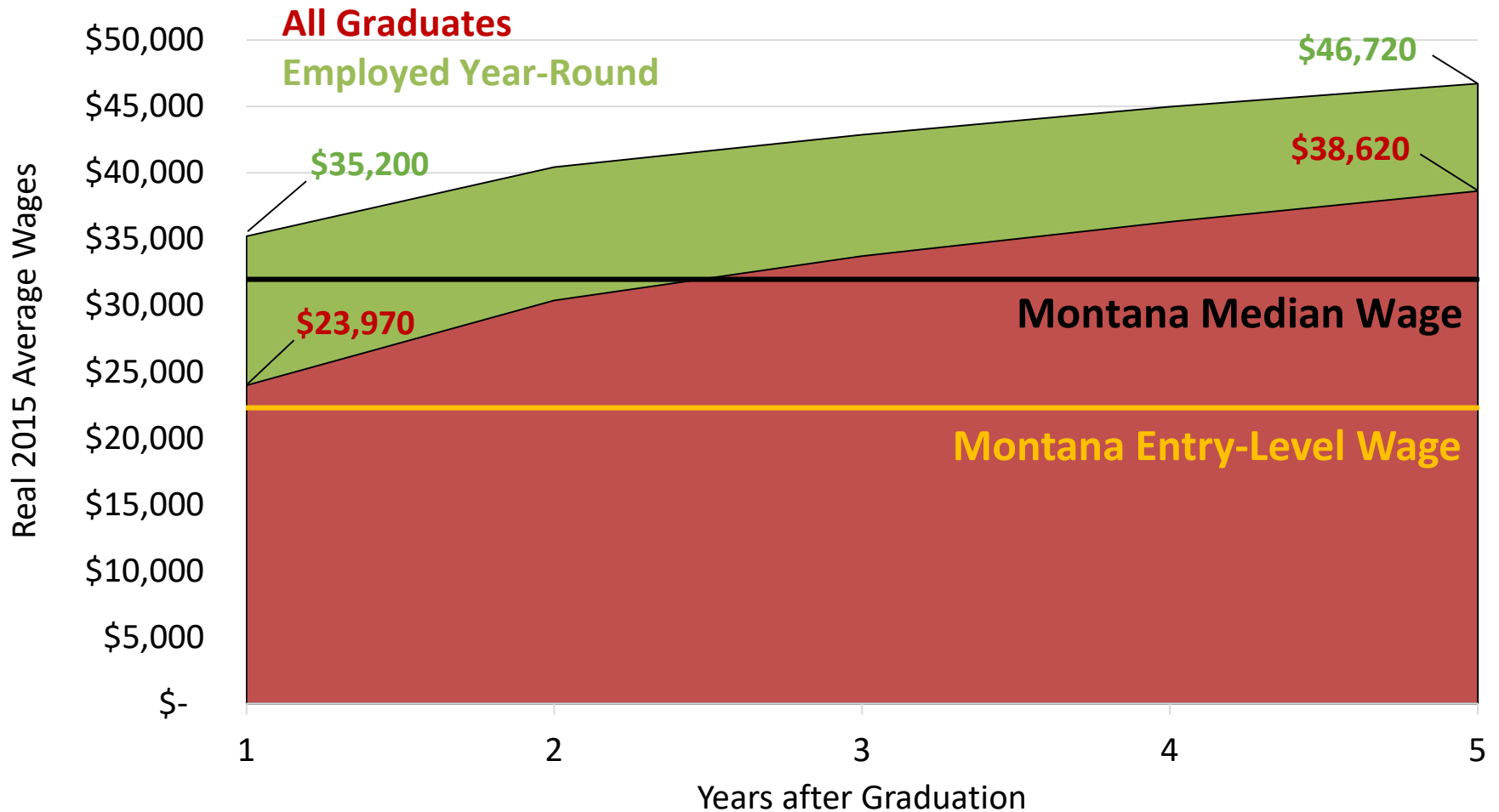
75% of graduates work in Montana sometime in the five years after graduation

Graduates work in every county in the state.

In-migration for college \approx out-migration after college

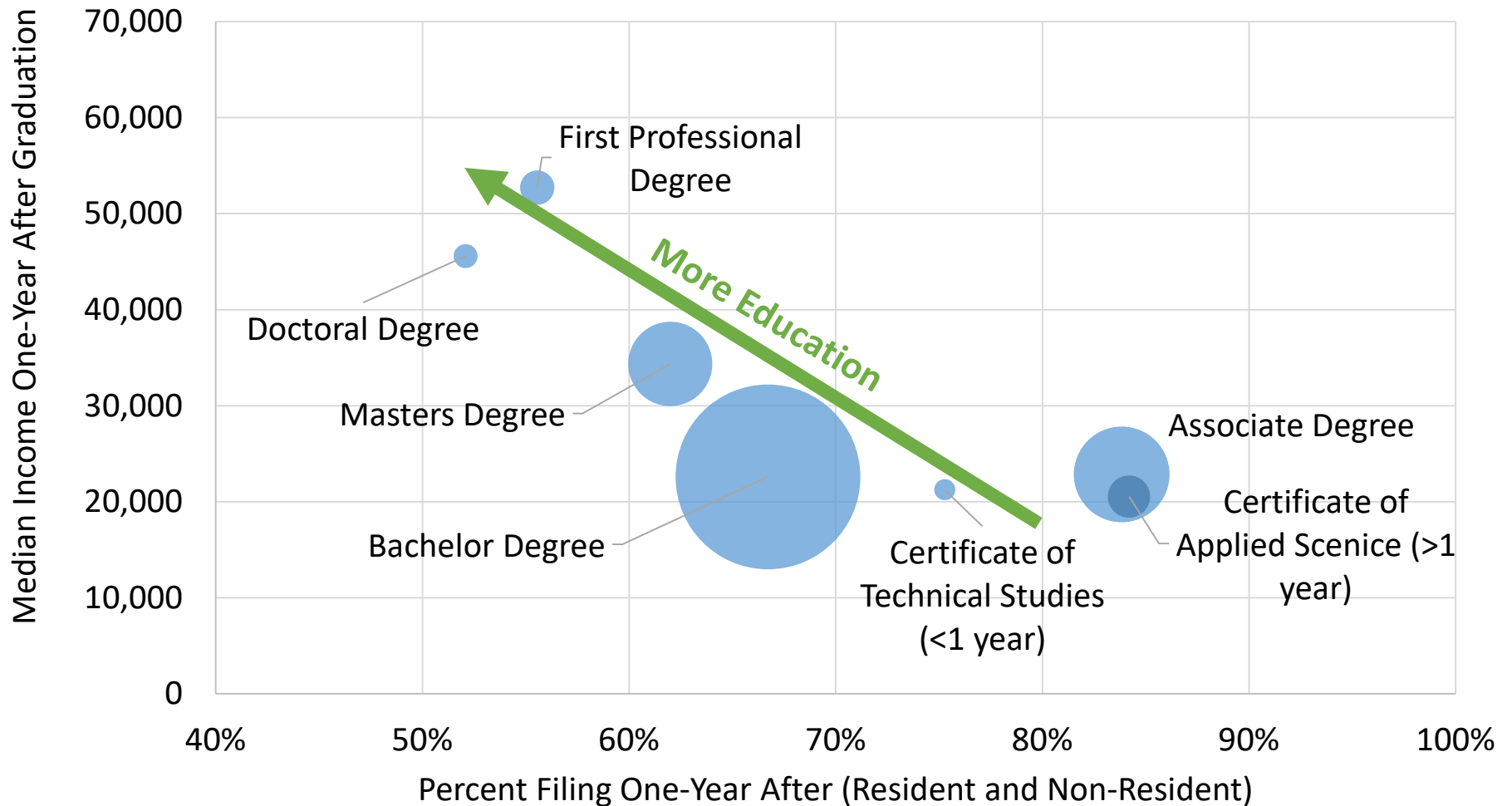


Graduates Earn Above Median Wages within Three Years of Graduation



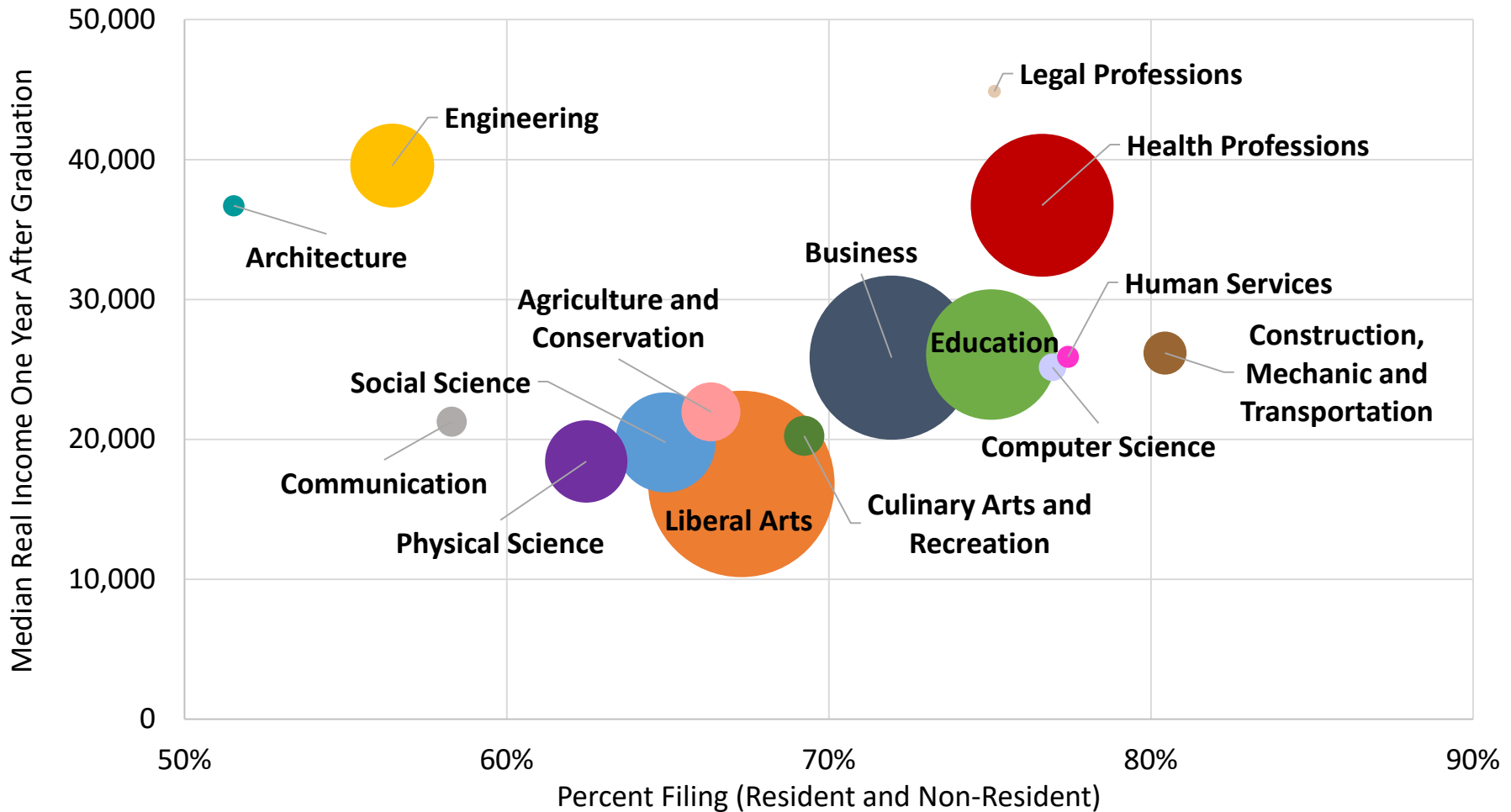


Workforce Outcomes by Degree





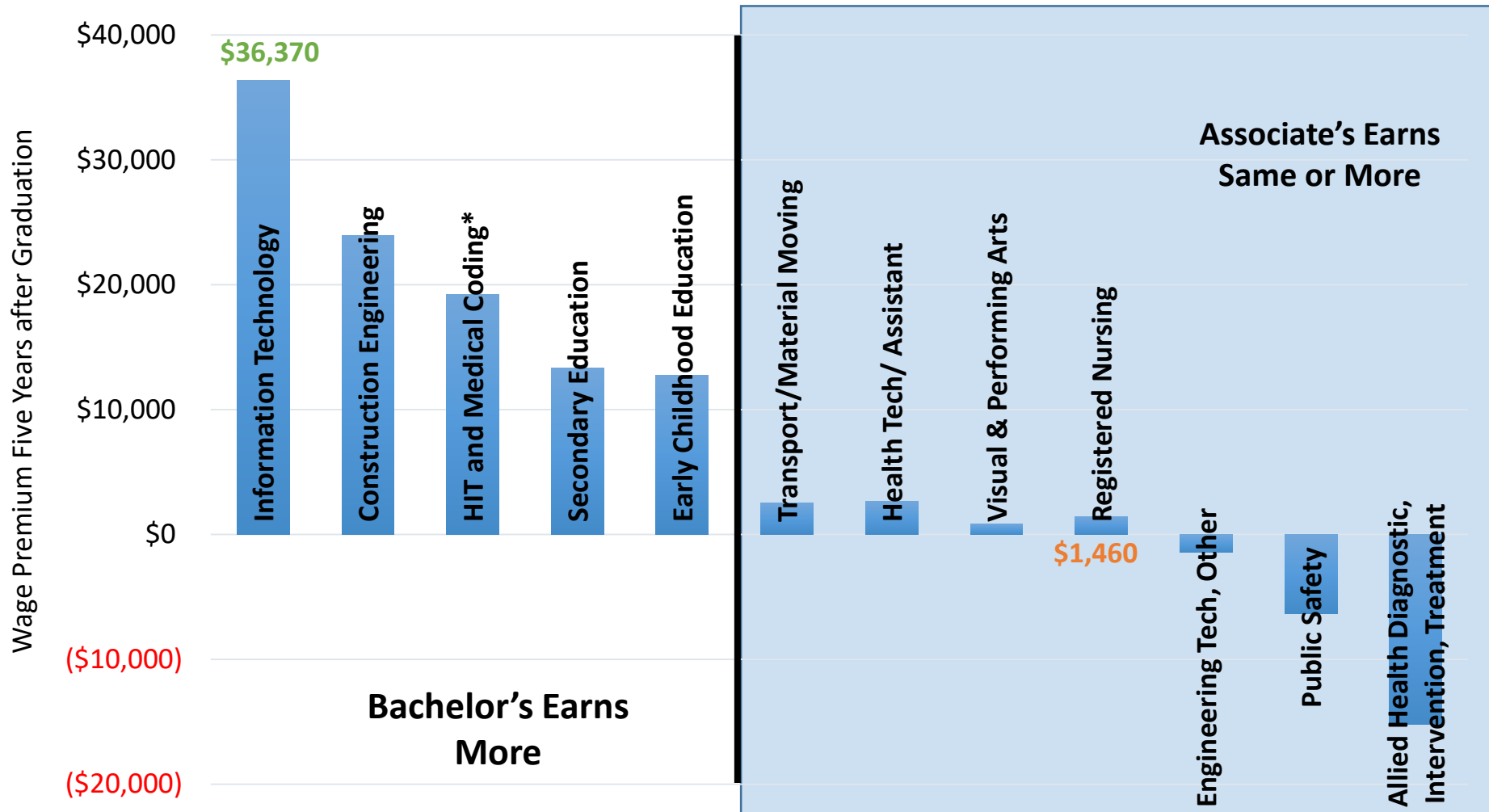
Workforce Outcomes by Program





Wage Premium for Bachelor's Degree

Difference in wage earnings for associate vs. Bachelor's





Wages versus Tuition Costs

Breakeven period by degree

- Graduates from all degrees earn wages equal to their tuition costs in **less than two years**.
- Two-year colleges can provide tuition savings for students pursuing a bachelor's degree.



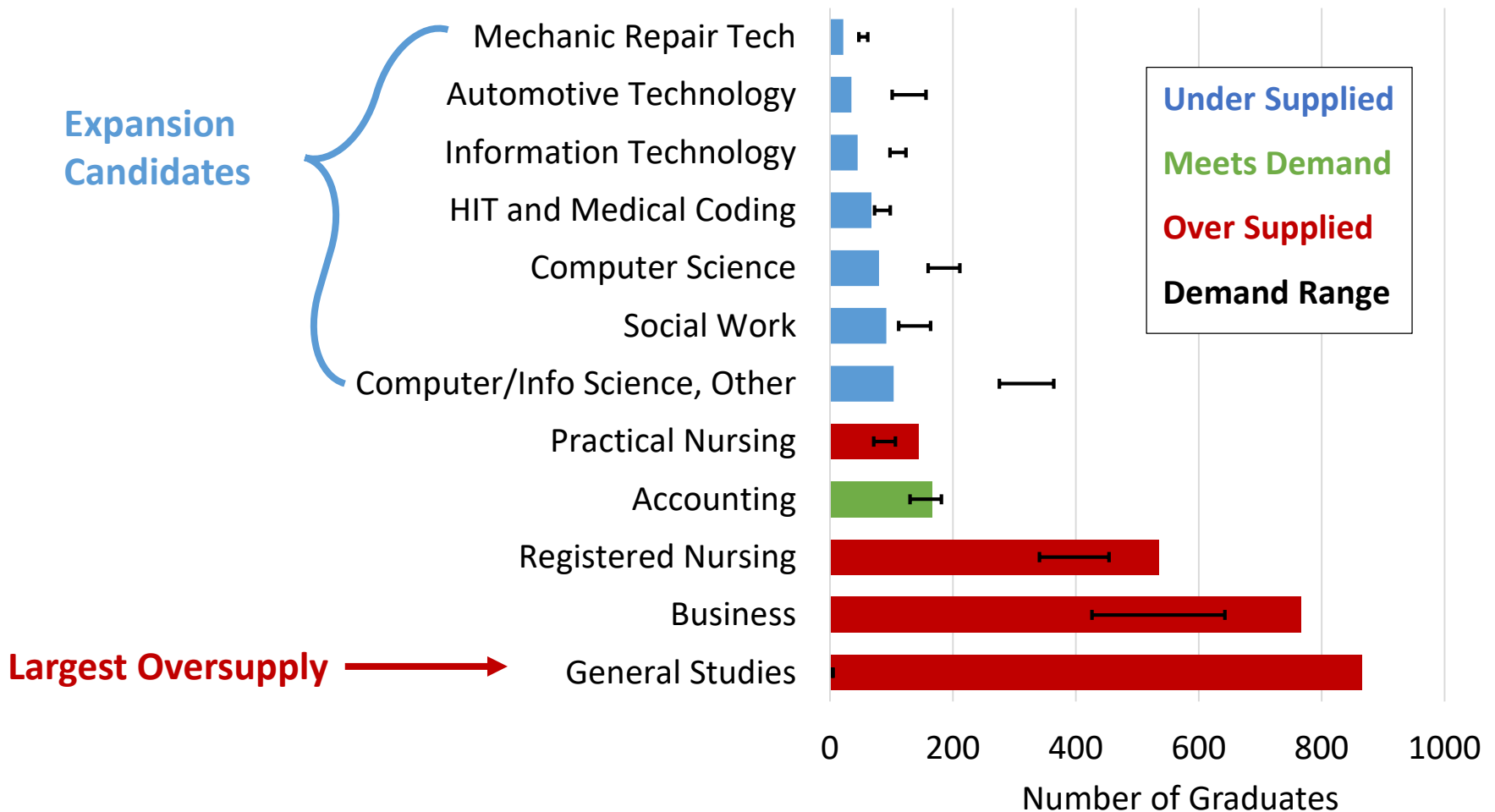
Statewide Research Questions

1. How do graduates fare in the labor market?
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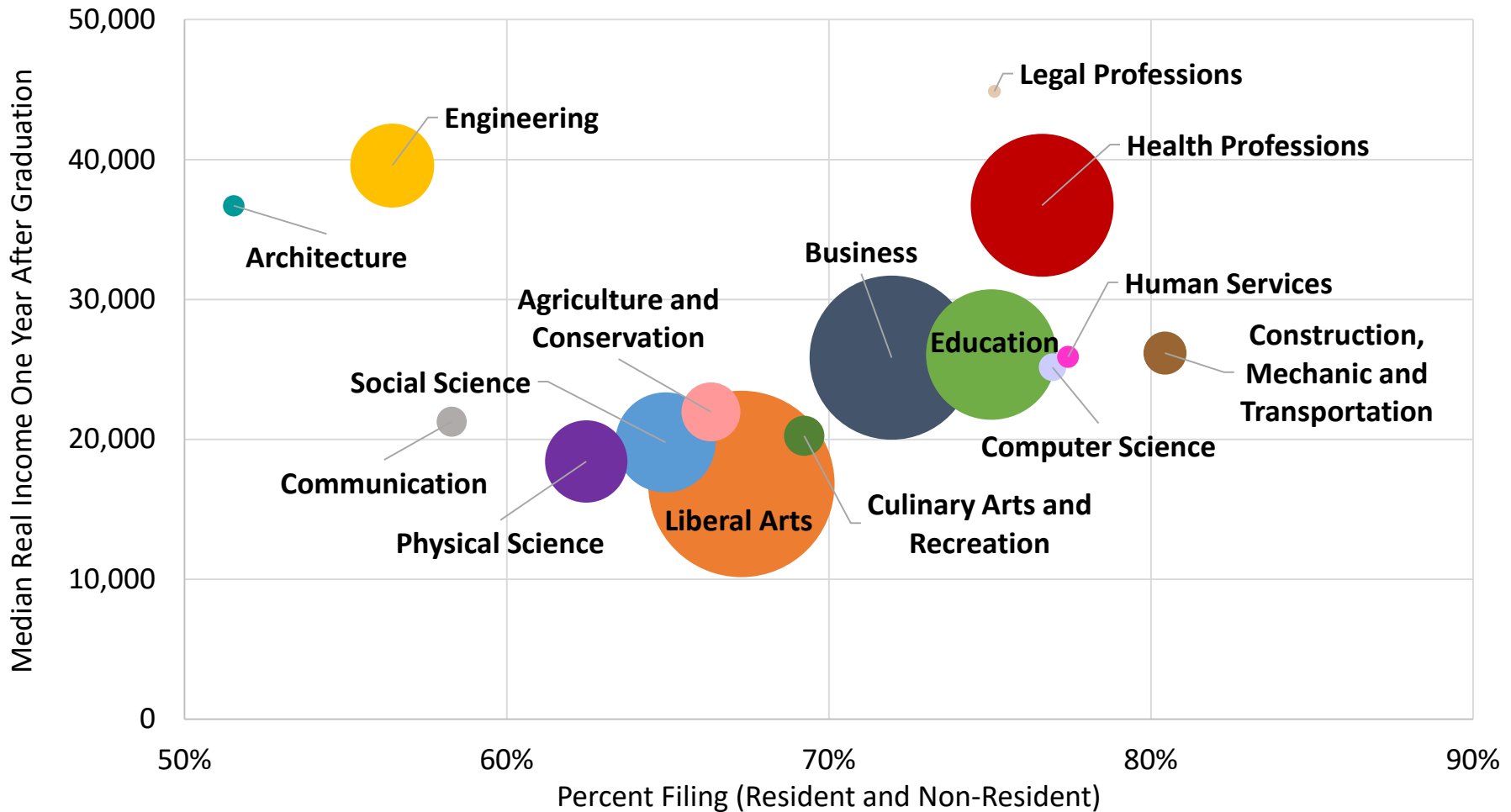
Supply and Demand by Program

Select Programs





Workforce Outcomes by Program





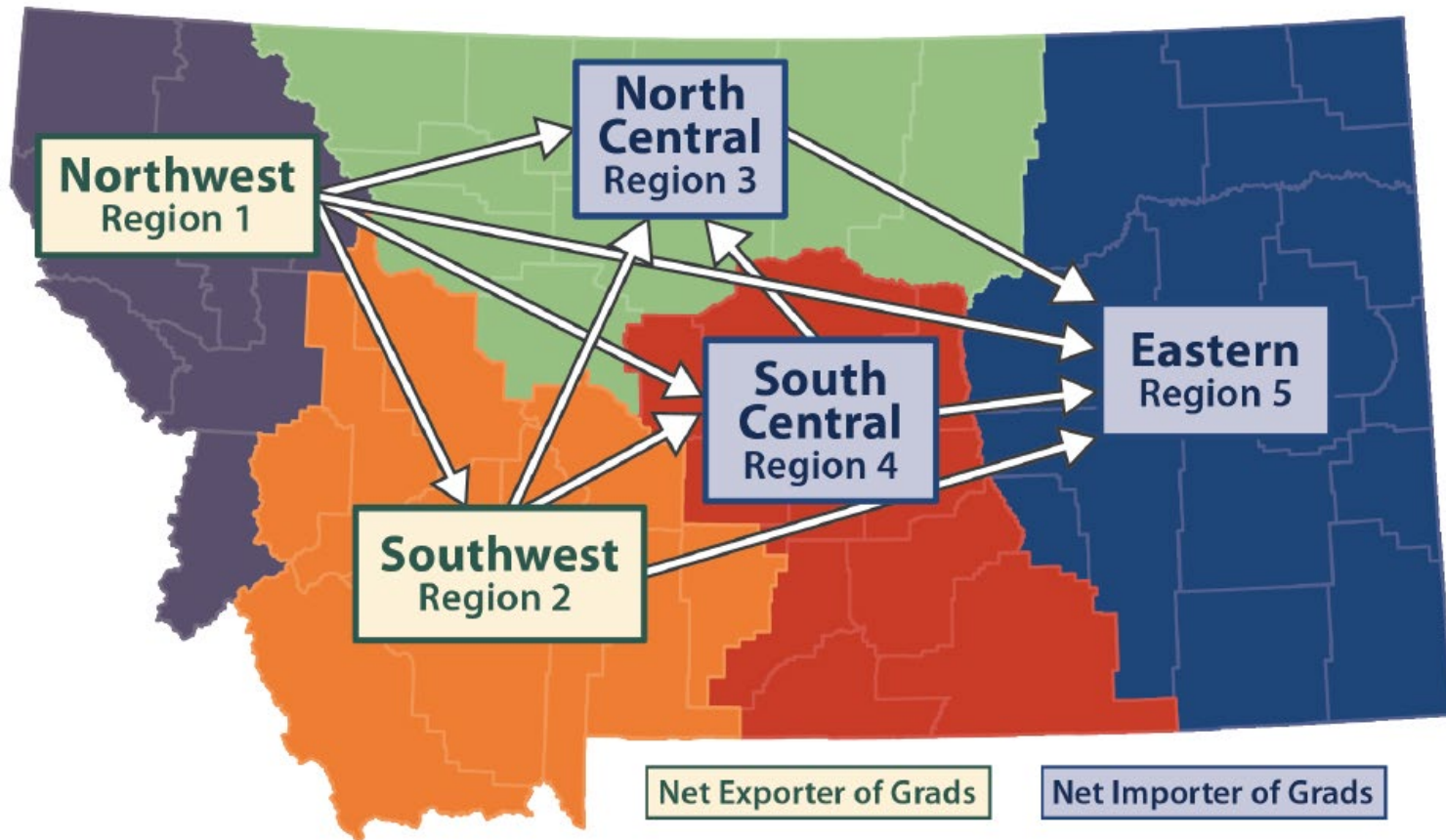
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Migration Helps Fill Gaps





Program Supply and Demand

by Region

| Program Category | Program | NW | SW | NC | SC | E |
|--|------------------------------|-----------|-----------|-----------|-----------|-----------|
| <i>Computer/ Info Science</i> | Computer/Info Science, Other | Dark Blue | Dark Blue | Dark Blue | Dark Blue | Dark Blue |
| | Information Technology | Green | White | Red | Dark Blue | White |
| | Computer Science | Dark Blue | Dark Blue | White | Dark Blue | White |
| <i>Liberal Arts</i> | General Studies | Red | Red | Red | Red | Red |
| <i>Human Services</i> | Social Work | Red | Dark Blue | White | White | White |
| <i>Construction, Mechanic & Transportation</i> | Mechanic Repair Tech | Green | Dark Blue | White | Dark Blue | White |
| | Automotive Technology | Dark Blue | Dark Blue | Dark Blue | Dark Blue | Dark Blue |
| <i>Health Professions</i> | HIT and Medical Coding | Dark Blue | Dark Blue | Red | Dark Blue | Dark Blue |
| | Registered Nursing | Dark Blue | Red | Red | Dark Blue | Red |
| | Practical Nursing | Red | Red | Red | Red | Dark Blue |
| <i>Business</i> | Business | Red | Red | Green | Red | Dark Blue |
| | Accounting | Red | Dark Blue | White | Red | White |



More Information at [Imi.mt.gov](https://imi.mt.gov)

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