Looking Ahead to 2020

Occupational projections and training needs

Alaska College Access and Success Team
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Research and Analysis
First some numbers ... (Minus the self-employed and military)
Projected growth, 2010-2020

- Health Care and Social Assistance, Public & Private: 12,940
- Retail Trade: 4,038
- Educational Services, Public & Private: 3,582
- Professional, Scientific, and Technical Services: 1,915
- Financial Activities (Including Real Estate): 1,966
- Total Government: 1,966
- Transportation and Warehousing: 1,692
- Construction: 1,606
- Administrative and Support and Waste Management and Remediation Services: 1,428
- Mining (Including Oil and Gas): 1,312
- Other Services (Except Government): 1,064
- Wholesale Trade: 590
- Arts, Entertainment, and Recreation: 535
- Manufacturing: 441
- Utilities: 155
- Information: 101
Very rough interpretation:

What we have now we’ll generally have more of in 2020
A slightly less rough interpretation ...

Industries with above-average growth, 2010-2020

- Health Care and Social Assistance, Public & Private: 31.2%
- Professional, Scientific, and Technical Services: 13.9%
- Financial Activities (Including Real Estate): 13.2%
- Administrative and Support and Waste Management and Remediation Services: 12.6%
- Accommodation and Food Services: 12.5%
- Arts, Entertainment, and Recreation: 12.1%
- All Industries: 12.0%
Occupations with the largest increase, 2010-2020

- Personal Care Aides: 1,475
- Registered Nurses: 1,346
- Retail Salespersons: 1,239
- Home Health Aides: 694
- Office Clerks, General: 683
- Cashiers: 617
- Teacher Assistants: 572
- Combo Food Prep & Svc Wkr, Inc Fast Food: 572
- Janitors /Cleaners, Ex Maids & Housekeeping: 558
- Receptionists and Information Clerks: 553
- Customer Service Representatives: 541
- Bookkeeping, Accounting, and Auditing Clerks: 518
- Nursing Assistants: 510
- Waiters and Waitresses: 460
- Elementary School Teachers, Except Special Education: 431
Fastest Growing Occupations, 2010 - 2020

- Personal Care Aides: 40.0%
- Funeral Attendants: 38.6%
- Home Health Aides: 37.7%
- Nurse Midwives: 37.2%
- Medical Scientists, Except Epidemiologists: 37.0%
- Optometrists: 36.7%
- Personal Financial Advisors: 35.2%
- Dental Hygienists: 34.2%
- Recreational Therapists: 34.1%
- Dental Assistants: 33.4%
- Respiratory Therapists: 33.3%
- Opticians, Dispensing: 33.3%
- Diagnostic Medical Sonographers: 33.3%
- Phlebotomists: 33.3%
- Chiropractors: 33.3%
- Physical Therapist Assistants: 33.3%
- Cardiovascular Technologists and Technicians: 33.3%
- All Occupations: 12.0%
What kind of training will the 2020 workers need to have?
Alaska’s jobs by level of education, projected 2010-2020 (351,114)

- Less than high school: 29.3% (102,758)
- High school diploma or equivalent: 41.6% (146,198)
- Bachelor’s degree: 14.8% (51,910)
- Associate’s degree: 6.2% (21,869)
- Postsecondary non-degree award: 4.4% (15,439)
- Doctoral or professional degree: 2.1% (7,542)
- Master’s degree: 1.5% (5,398)
Alaska’s top jobs by level of education, projected 2010-2020 (67,605)

- Bachelor’s degree: 34.2% (23,108)
- Associate’s degree: 19.7% (13,299)
- Postsecondary non-degree award: 4.7% (3,181)
- Doctoral or professional degree: 3.7% (2,535)
- Master’s degree: 2.2% (1,464)
- High school diploma or equivalent: 34.2% (23,119)
- Less than high school: 1.3% (899)
### Alaska’s jobs by level of education, projected 2010-2020

<table>
<thead>
<tr>
<th>Education Level</th>
<th>All Jobs (351,114)</th>
<th>Top Jobs (67,605)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school diploma or equivalent</td>
<td>41.6%</td>
<td></td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>14.8%</td>
<td></td>
</tr>
<tr>
<td>Associate's degree</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>Master's degree</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Doctoral or professional degree</td>
<td>2.1%</td>
<td></td>
</tr>
<tr>
<td>Postsecondary non-degree award</td>
<td>4.4%</td>
<td></td>
</tr>
<tr>
<td>Less than high school</td>
<td>29.3%</td>
<td></td>
</tr>
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<td>1.3%</td>
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<td>19.7%</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Master's degree</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Postsecondary non-degree award</td>
<td>4.7%</td>
<td></td>
</tr>
</tbody>
</table>
Wages and projected 2020 employment for Alaska by level of education

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Projected Employment</th>
<th>Annual Average Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral or professional degree</td>
<td>7,542</td>
<td>$110,683</td>
</tr>
<tr>
<td>Master's degree</td>
<td>5,398</td>
<td>$73,454</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>51,910</td>
<td>$76,671</td>
</tr>
<tr>
<td>Associate's degree</td>
<td>21,869</td>
<td>$74,425</td>
</tr>
<tr>
<td>Postsecondary non-degree award</td>
<td>15,439</td>
<td>$52,314</td>
</tr>
<tr>
<td>High school diploma or equivalent</td>
<td>146,198</td>
<td>$47,140</td>
</tr>
<tr>
<td>Less than high school</td>
<td>102,758</td>
<td>$29,196</td>
</tr>
</tbody>
</table>
Wait a minute!

Georgetown’s research found that 66% of Alaska jobs in 2020 will require postsecondary education and the pie chart shows less than 30%.

Somebody’s got some explaining to do ...
Leaving that big, important issue aside, let’s do some “gap” analysis.
A slide you may have seen before ...

<table>
<thead>
<tr>
<th></th>
<th>Alaska Jobs in 2018*</th>
<th>Current Workers**</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Dropouts</td>
<td>25,000</td>
<td>13,708</td>
<td>11,292</td>
</tr>
<tr>
<td>High School Graduates</td>
<td>109,000</td>
<td>92,163</td>
<td>16,837</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>100,000</td>
<td>90,910</td>
<td>9,090</td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>30,000</td>
<td>24,976</td>
<td>5,024</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>63,000</td>
<td>54,975</td>
<td>8,025</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>32,000</td>
<td>36,966</td>
<td>-4,966</td>
</tr>
</tbody>
</table>

*Source: Georgetown University Center on Education and the Workforce, Projections of Jobs and Education Requirements through 2018; June 2010

**Source: U.S. Census Bureau, 2010 American Community Survey (ACS) Public Use Microdata Sample (PUMS) File.
Looks like we’re headed for a “gap” in high school dropouts and a surplus of workers with graduate degrees.
Do we need to train up some high school dropouts and invite some of our residents with graduate degrees to seek their fortunes elsewhere?

Of course not.
But are we headed for a shortage of workers with post-secondary training?
But are we headed for a shortage of workers with post-secondary training?

Absolutely, in specific types of training. Unclear overall.
DUBLIN — Week after week, newspapers issue a stream of hopeful headlines: Microsoft, PayPal, Fujitsu and scores of other companies are expanding their investments in Ireland, creating thousands of jobs as unemployment hovers near record highs.

There is just one hitch: Not enough people are qualified to fill all the jobs. In some cases, the companies have had to look outside Ireland to recruit candidates with the right skills.

After a five-year economic crisis, the mismatch represents one of the thorniest problems facing Ireland and many other European countries. Hundreds of thousands of people who lost work, and many young people entering the work force, are finding that their skills are ill suited to a huge crop of innovation-based jobs springing up across the Continent.

…
Themes from the NY Times story:

1. Nonresident hire
2. Still relatively small numbers; not big enough, by themselves, to justify an everybody-go-to-college advocacy effort
3. Specific focus: IT, math, engineering
What can nonresident worker data tell us?
## Occupations with most nonresidents

### Top 16

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seafood processing workers</td>
<td>12,037</td>
<td>77%</td>
</tr>
<tr>
<td>Retail salespersons</td>
<td>2,548</td>
<td>18%</td>
</tr>
<tr>
<td>Maids and housekeeping cleaners</td>
<td>1,808</td>
<td>34%</td>
</tr>
<tr>
<td>Cashiers</td>
<td>1,696</td>
<td>16%</td>
</tr>
<tr>
<td>Waiters and waitresses</td>
<td>1,677</td>
<td>30%</td>
</tr>
<tr>
<td>Food preparation and serving workers</td>
<td>1,443</td>
<td>20%</td>
</tr>
<tr>
<td>Construction laborers</td>
<td>1,407</td>
<td>21%</td>
</tr>
<tr>
<td>Meat, poultry, and fish cutters and trimmers</td>
<td>1,381</td>
<td>68%</td>
</tr>
<tr>
<td>Fishers and related fishing workers</td>
<td>1,294</td>
<td>69%</td>
</tr>
<tr>
<td>Cooks, restaurant</td>
<td>1,145</td>
<td>37%</td>
</tr>
<tr>
<td>Airline pilots, copilots, and flight engineers</td>
<td>1,102</td>
<td>53%</td>
</tr>
<tr>
<td>Food preparation workers</td>
<td>1,048</td>
<td>24%</td>
</tr>
<tr>
<td>Laborers and freight, stock and material movers</td>
<td>964</td>
<td>22%</td>
</tr>
<tr>
<td>Carpenters</td>
<td>909</td>
<td>22%</td>
</tr>
<tr>
<td>Registered nurses</td>
<td>884</td>
<td>18%</td>
</tr>
</tbody>
</table>
High–paying occupations with large numbers of nonresidents

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
<th>Annual Wages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airline pilots, copilots, and flight engineers</td>
<td>1,102</td>
<td>$128,000</td>
</tr>
<tr>
<td>Carpenters</td>
<td>909</td>
<td>$50,000</td>
</tr>
<tr>
<td>Registered nurses</td>
<td>884</td>
<td>$62,800</td>
</tr>
<tr>
<td>Operating engineers and other operators</td>
<td>852</td>
<td>$73,000</td>
</tr>
<tr>
<td>Heavy and tractor-trailer truck drivers</td>
<td>642</td>
<td>$60,000</td>
</tr>
<tr>
<td>Electricians</td>
<td>637</td>
<td>$78,000</td>
</tr>
<tr>
<td>Service unit operations managers</td>
<td>549</td>
<td>$93,000</td>
</tr>
<tr>
<td>Sailors and marine oilers</td>
<td>523</td>
<td>$42,000</td>
</tr>
<tr>
<td>Captains, mates, and pilots of water vessels</td>
<td>503</td>
<td>$74,000</td>
</tr>
<tr>
<td>Plumbers, pipefitters, and steamfitters</td>
<td>447</td>
<td>$73,000</td>
</tr>
<tr>
<td>Machinists</td>
<td>389</td>
<td>$46,000</td>
</tr>
<tr>
<td>Roustabouts, oil and gas</td>
<td>382</td>
<td>$63,000</td>
</tr>
<tr>
<td>Engineers, all other</td>
<td>336</td>
<td>$122,000</td>
</tr>
<tr>
<td>Inspectors, testers, sorters, samplers</td>
<td>335</td>
<td>$91,000</td>
</tr>
</tbody>
</table>
What’s **not** clear from the data:

• That the majority of jobs in 2020 will **require** post-secondary education (unless you want to go all-in with the Georgetown researchers).

• That unfocused post-secondary education will be the meal ticket it once was.
What is clear from the data:

• That the highest-paying, fastest-growing jobs will generally require post-secondary education.
• That jobs requiring post-secondary education will be less vulnerable during economic downturns (lower unemployment rates).
• That states with populations that have high rates of post-secondary education tend to perform better economically (be a little careful with this one; Alaska is an outlier in some research)
Forecasting the weather vs. making it

• We (and BLS) are describing the most likely outcomes, as best we can, based on current trends.
• You, to the extent you seek to guide policy, are trying to make things better for the state by *changing* and *improving* on those trends.
Anything negative about success?

• Hard to imagine. At worst, we end up with an especially well-educated population (something that’s attractive to business; Utah as an example), and some out-migration as Alaskans become more marketable (likely more than offset by a reduced need to import workers).
For more information:

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E-mail: dan.robinson@alaska.gov

Sources for all data:
Alaska Department of Labor and Workforce Development unless otherwise noted