Maine Workforce Dynamics: Challenges and Opportunities for Education and Training Institutions

A presentation for the Maine Futures Institute

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Jobs for the Future
formerly
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and Director of the Center for Workforce Research and Information, Maine Department of Labor
Overview

• From Recession to Recovery 2007-2011

• Maine’s Demographic Challenges and Implications for the Workforce

• Opportunities, Occupation and Skills Projections 2008-2018
Unemployment Rate, Maine and U.S.  
Feb 2010 - 2011
2009 Annual Average Unemployment Rates By Age Group, Maine

- 16-19: 25.7%
- 20-24: 15.0%
- 25-34: 9.7%
- 35-44: 6.0%
- 45-54: 5.4%
- 55-64: 5.0%
- 65+: 7.1%
2009 Average Unemployment Rates by Educational Attainment among those age 25 and over, Maine

- Less than High School Diploma: 13.0%
- High School Graduates, no College: 8.3%
- Some College or Associate Degree: 6.6%
- Bachelor's Degree and Higher: 3.4%
Payroll Jobs in Maine
2000-2011
Job Losses In Maine By Industry Sector  2008-2010

Construction
Retail Trade
Manufacturing
Leisure & Hospitality
Government
Financial Activities
Information
Transportation & Utilities
Wholesale Trade
Professional & Business Svcs
Other Svcs
Natural Resources
Education & Health Care
New Hires, Professional, Scientific and Technical Services 2008-2010 (1st and 2nd Quarter), Maine
Health Care and Social Assistance Sector, New Hires in Maine 2008-2010 (1st and 2nd QTR)
### The Outlook for the Maine Economy 2010-2015

<table>
<thead>
<tr>
<th>Calendar Years</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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</thead>
<tbody>
<tr>
<td><strong>Wage &amp; Salary Employment (Annual Percentage Change)</strong></td>
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<tr>
<td>CEFC Forecast 02/2010</td>
<td>-1.3%</td>
<td>1.2%</td>
<td>2.2%</td>
<td>2.0%</td>
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<tr>
<td>CEFC Forecast 11/2010</td>
<td>-1.0%</td>
<td>0.4%</td>
<td>1.5%</td>
<td>2.1%</td>
<td>1.7%</td>
<td>1.0%</td>
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<tr>
<td>Economy.com 12/2010</td>
<td>-0.8%</td>
<td>0.6%</td>
<td>1.5%</td>
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<tr>
<td><strong>Wage &amp; Salary Income (Annual Percentage Change)</strong></td>
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<td>Economy.com 12/2010</td>
<td>2.6%</td>
<td>4.4%</td>
<td>6.8%</td>
<td>8.4%</td>
<td>7.5%</td>
<td>5.6%</td>
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<tr>
<td>Economy.com 01/2011</td>
<td>2.0%</td>
<td>4.5%</td>
<td>7.5%</td>
<td>7.9%</td>
<td>7.3%</td>
<td>5.6%</td>
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<tr>
<td><strong>Personal Income (Annual Percentage Change)</strong></td>
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<td>CEFC Forecast 02/2010</td>
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<td>4.6%</td>
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<td>5.3%</td>
<td>7.0%</td>
<td>5.4%</td>
<td>4.6%</td>
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<tr>
<td><strong>CPI (Annual Percentage Change)</strong></td>
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<td>2.7%</td>
<td>2.4%</td>
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</tbody>
</table>
Maine’s Future Workforce: Demographic Challenges
Components of population change from previous year

- Net migration
- Natural change

Population Net Change by Age Group, 2008 to 2018

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Change 2008 to 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>1,442</td>
</tr>
<tr>
<td>16-24</td>
<td>(29,998)</td>
</tr>
<tr>
<td>25-34</td>
<td>11,885</td>
</tr>
<tr>
<td>35-44</td>
<td>(1,376)</td>
</tr>
<tr>
<td>45-54</td>
<td>(31,720)</td>
</tr>
<tr>
<td>55-64</td>
<td>37,606</td>
</tr>
<tr>
<td>65-74</td>
<td>56,495</td>
</tr>
<tr>
<td>75-84</td>
<td>15,846</td>
</tr>
<tr>
<td>85+</td>
<td>8,040</td>
</tr>
</tbody>
</table>
Growth Rates for Maine Labor Force

- 1958-68: 7%
- 1968-78: 24%
- 1978-88: 22%
- 1988-98: 11%
- 1998-08: 7%
- 2008-18: 2%
Maine’s Aging Workforce in the Professional, Scientific and Technical Sector 2000 and 2010
Opportunities, Occupation and Skills Projections 2008-2018
“A major obstacle is finding workers in Maine with the right skills.”

Michael Dubyak, CEO of South Portland based Wright Express commenting on his plans to hire 30 to 50 new workers in 2011
Job Openings by Occupation Group
Maine, July to December 2010

Job Openings by Education and Experience  
Maine, July to December 2010

- **Associate Degree**
  - Less than 1 Year: 2%
  - 1 to 6 Years: 6%
  - 6+ Years: 2%

- **Graduate/Professional Degree**
  - Less than 1 Year: 1%
  - 1 to 6 Years: 8%
  - 6+ Years: 4%

- **High School/PostSecondary**
  - Less than 1 Year: 13%
  - 1 to 6 Years: 16%
  - 6+ Years: 5%

- **Bachelor's Degree**
  - Less than 1 Year: 4%
  - 1 to 6 Years: 27%
  - 6+ Years: 11%

Certificates in Demand
Maine, July to December 2010

Major Payday
Average pay for respondents’ first full-time job out of college, by major

<table>
<thead>
<tr>
<th>Major</th>
<th>Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>$56,000</td>
</tr>
<tr>
<td>Computer science</td>
<td>$50,000</td>
</tr>
<tr>
<td>Civil engineering</td>
<td>$49,000</td>
</tr>
<tr>
<td>Accounting</td>
<td>$43,000</td>
</tr>
<tr>
<td>Economics</td>
<td>$42,000</td>
</tr>
<tr>
<td>Finance</td>
<td>$41,000</td>
</tr>
<tr>
<td>Biology</td>
<td>$38,000</td>
</tr>
<tr>
<td>Business</td>
<td>$38,000</td>
</tr>
<tr>
<td>Marketing</td>
<td>$37,000</td>
</tr>
<tr>
<td>Political science</td>
<td>$36,000</td>
</tr>
<tr>
<td>Psychology</td>
<td>$35,000</td>
</tr>
<tr>
<td>Communications</td>
<td>$34,000</td>
</tr>
<tr>
<td>English</td>
<td>$34,000</td>
</tr>
</tbody>
</table>

Note: Survey of about 11,000 respondents conducted between April and June of people who graduated between 1999 and 2010. Pay includes salary, bonuses, commission and profit-sharing, and is adjusted to be in 2010 dollars. Margin of error ranges between 0.5% and 5%. Respondents were in a set of jobs deemed satisfying, well-paid and with growth potential.
Source: PayScale.com/WSJ survey
<table>
<thead>
<tr>
<th>#</th>
<th>Occupation</th>
<th>Employment 2008</th>
<th>Employment 2018</th>
<th>Percent Change *</th>
<th>Earnings</th>
<th>Training Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Biomedical engineers</td>
<td>16,100</td>
<td>27,600</td>
<td>72%</td>
<td>🥃scripción</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>2</td>
<td>Network systems and data communications analysts</td>
<td>292,000</td>
<td>447,800</td>
<td>53%</td>
<td>🥃inscription</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>3</td>
<td>Financial examiners</td>
<td>27,000</td>
<td>38,100</td>
<td>41%</td>
<td>🥃inscription</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>4</td>
<td>Medical scientists, except epidemiologists</td>
<td>109,400</td>
<td>153,600</td>
<td>40%</td>
<td>🥃inscription</td>
<td>Doctoral degree</td>
</tr>
<tr>
<td>5</td>
<td>Physician assistants</td>
<td>74,800</td>
<td>103,900</td>
<td>39%</td>
<td>🥃inscription</td>
<td>Master's degree</td>
</tr>
<tr>
<td>6</td>
<td>Biochemists and biophysicists</td>
<td>23,200</td>
<td>31,900</td>
<td>37%</td>
<td>🥃inscription</td>
<td>Doctoral degree</td>
</tr>
<tr>
<td>7</td>
<td>Athletic trainers</td>
<td>16,400</td>
<td>22,400</td>
<td>37%</td>
<td>🥃inscription</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>8</td>
<td>Computer software engineers, applications</td>
<td>514,800</td>
<td>689,900</td>
<td>34%</td>
<td>🥃inscription</td>
<td>Bachelor's degree</td>
</tr>
<tr>
<td>9</td>
<td>Veterinarians</td>
<td>59,700</td>
<td>79,400</td>
<td>33%</td>
<td>🥃inscription</td>
<td>First professional degree</td>
</tr>
<tr>
<td>10</td>
<td>Environmental engineers</td>
<td>54,300</td>
<td>70,900</td>
<td>31%</td>
<td>🥃inscription</td>
<td>Bachelor's degree</td>
</tr>
</tbody>
</table>
Job Growth by Occupational Group, 2008 to 2018

- Mgmt/Business/Finance: 1.3%
- Professional: 5.7%
- Service: 5.1%
- Sales: 1.4%
- Administrative Support: 0.2%
- Farming/Fishing/Forestry: -4.0%
- Construction & Extraction: 1.9%
- Installation/Maintenance: 1.6%
- Production: -6.4%
- Transport/Material Moving: -1.5%
Job Outlook by Industry Sectors

1998 to 2008
2008 to 2018

Natural Resources & Mining
Construction
Manufacturing
Wholesale Trade
Retail Trade
Transportation & Warehousing
Utilities
Information
Financial Activities
Professional & Business Services
Education & Health Services
Leisure & Hospitality
Other Services
Government
The number of people working in STEM occupations represents 8% of those employed and is growing.
In Maine STEM occupations are growing at a faster rate than all other occupations.

Science, Technology, Engineering, and Mathematics
2008-2018 Job Growth By Wage Group

- $\leq 11/hr: 5.0%
- $11 to 14.99/hr: 0.4%
- $15 to $19.99/hr: 1.3%
- $20 to $24.99/hr: 1.9%
- $25 to $29.99/hr: 3.7%
- $30+/hr: 5.9%
Job Growth by Education or Training Requirements, 2008 to 2018

- First Professional degree: 5.4%
- Doctoral degree: 10.5%
- Master's degree: 6.6%
- Bachelor's degree + exp: -1.4%
- Bachelor's degree: 4.6%
- Associate degree: 11.0%
- Postsecondary vocational: 2.5%
- Related work experience: 1.2%
- Long-term OJT: 0.4%
- Moderate-term OJT: 0.4%
- Short-term OJT: 1.5%
Alternative Occupational Projections
Maine Jobs By Educational Level 2018
Georgetown University, Center for Education and the Workforce

- Associates Degree = 136,000
- Bachelors Degree = 128,000
- Graduate Degree = 58,000

- By 2018, 59% of jobs in Maine will require post secondary education
So What-Now What
A MODEL FOR DEVELOPING A LOCAL IMPROVEMENT PROCESS

Local Leadership for Improved Outcomes

Work with employers to identify requirements for family-sustaining jobs

Assess effectiveness of existing solutions; identify “leakage points”, gaps

Convene stakeholders across “silos” to diagnose leaks, design systemic solutions

Implement solutions, evaluate effectiveness and improve further

Feedback Loop (continuous monitoring)

Improved Education/Workforce Outcomes

SOURCE: Center for Community College Research at Columbia University: 2010