LEAD Pipes

Role of NC’s Labor & Economic Analysis Division in Workforce & Education Pipelines

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Dir. Of Data Analytics & Research, NC Commerce
Agenda

► About Labor & Economic Analysis Division (LEAD)

► NC Economic Trends

► LEAD Products & Services Supporting Education and Workforce Pipeline
  ► Career information
  ► Educational and Employment Outcomes
  ► Talent Supply and Demand
Who is LEAD?

NC’s primary source of economic & labor market data, information, & analysis

**LEAD Director**
Jackie Keener, Asst. Commerce Secretary

**Funding**
Multiple sources, including state $
Most significantly by US Dept. of Labor (BLS & ETA)
LEAD’s Products & Services
Supporting the Workforce & Education Pipeline

Key Information
- Economic Trends
- Occupation Info
- Market Demand (Employment & Wages)

Student Interest & Access
Clear & Supported Pathways for Student Progress & Success
Economic & Workforce Impact
Demonstrated Results (Measurement & Reporting)
Economic Trends

Context for Decision-Makers
Has NC Fully Recovered Jobs Lost from Great Recession?
Has NC Fully Recovered Jobs Lost from Great Recession?

Charlotte & Raleigh MSAs 13.6%
(1m+ Pop)

U.S. MSAs 1m+ Pop 6.6%

North Carolina 4.8%
Has NC Fully Recovered Jobs Lost from Great Recession?
Has NC Fully Recovered Jobs Lost from Great Recession?
Uneven Industry Employment Growth
2008-2016

Lower Wage Jobs = employment in industries paying in the bottom quartile in 2016
Middle Wage Jobs = employment in industries paying in the middle two quartiles in 2016
Higher Wage Jobs = employment in industries paying in the upper quartile in 2016
Routine Cognitive

"Office & Sales Jobs"
Manual

"Blue Collar Jobs"
Composition of Jobs in NC

Non-Routine Cognitive

Routine Manual

Non-Routine Manual

Routine Cognitive
What NC Manufacturers has changed
Share of employment by durable & non-durable industries

Jobs in both sectors have declined
But at different rates
Doing More with Less

NC Manufacturing GDP ($ Real) vs Jobs, indexed to 1998
39% of companies that tried to hire in 2015 had difficulties.
Resources Used to Meet Skill Needs

- On-the-Job Training: 97%
- Private Vendors: 21%
- Community Colleges: 18%
- Universities: 14%
- Apprenticeship Programs: 10%
Projected Occupation Growth 2014-2024

- No formal educational credential: 14.2%
- High School: 9.3%
- Associate's or Postsecondary award: 15.9%
- Bachelor's degree: 15.3%
- Master's, Doctoral or Professional degree: 17.2%
10-Year Industry & Occupation Projections
Occupation & Career Information

insights on the job market
Tools & Publications

NCCareers
North Carolina Career Information Portal
Careers.org Tools

Employment Projections

<table>
<thead>
<tr>
<th>Industry Code</th>
<th>Industry Group</th>
<th>Industry Title</th>
<th>Employment</th>
<th>% Growth</th>
<th>Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>722000</td>
<td>Sub-Sector</td>
<td>Food Services and Drinking Places</td>
<td>22,571</td>
<td>1.4%</td>
<td>$283.77</td>
</tr>
<tr>
<td>561000</td>
<td>Sub-Sector</td>
<td>Administrative and Support Services</td>
<td>20,105</td>
<td>1.3%</td>
<td>$467.06</td>
</tr>
<tr>
<td>622000</td>
<td>Sub-Sector</td>
<td>Hospitals</td>
<td>19,026</td>
<td>1.3%</td>
<td>$1,043.30</td>
</tr>
<tr>
<td>621000</td>
<td>Sub-Sector</td>
<td>Ambulatory Health Care Services</td>
<td>13,983</td>
<td>1.2%</td>
<td>$1,116.04</td>
</tr>
<tr>
<td>238000</td>
<td>Sub-Sector</td>
<td>Specialty Trade Contractors</td>
<td>7,422</td>
<td>1.3%</td>
<td>$776.70</td>
</tr>
<tr>
<td>541000</td>
<td>Sub-Sector</td>
<td>Professional, Scientific, and Technical Services</td>
<td>9,867</td>
<td>0.9%</td>
<td>$1,182.53</td>
</tr>
<tr>
<td>Stars</td>
<td>SOC</td>
<td>Occupation Title</td>
<td>2014</td>
<td>2024</td>
<td>Change (10 years)</td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>--------------------------------</td>
<td>------</td>
<td>------</td>
<td>-------------------</td>
</tr>
<tr>
<td>★★★★ 13-2011</td>
<td>Accountants and Auditors</td>
<td>32,986</td>
<td>38,969</td>
<td>5,983</td>
<td>1.7%</td>
</tr>
<tr>
<td>Not Rated 27-2011</td>
<td>Actors</td>
<td>174</td>
<td>208</td>
<td>34</td>
<td>1.8%</td>
</tr>
<tr>
<td>Not Rated 15-2011</td>
<td>Actuaries</td>
<td>346</td>
<td>435</td>
<td>89</td>
<td>2.3%</td>
</tr>
<tr>
<td>★★★ 51-9191</td>
<td>Adhesive Bonding Machine Operators and Tenders</td>
<td>947</td>
<td>978</td>
<td>31</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

**FILTER**

- North Carolina
- All Star Jobs Ratings
- Minimum Salary
- Maximum Salary
- Education Level
- Career Clusters
- CIP Program
- Primary Interest
- 2nd Interest
- 3rd Interest
Your Monthly Budget Report

<table>
<thead>
<tr>
<th>Category</th>
<th>Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>$950.00</td>
</tr>
<tr>
<td>Utilities</td>
<td>$410.00</td>
</tr>
<tr>
<td>Transportation</td>
<td>$640.00</td>
</tr>
<tr>
<td>Food</td>
<td>$190.00</td>
</tr>
<tr>
<td>Clothes</td>
<td>$110.00</td>
</tr>
<tr>
<td>Entertainment</td>
<td>$30.00</td>
</tr>
<tr>
<td>Personal</td>
<td>$50.00</td>
</tr>
<tr>
<td>Healthcare</td>
<td>$80.00</td>
</tr>
<tr>
<td>Education</td>
<td>$0.00</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>$130.00</td>
</tr>
<tr>
<td>Savings</td>
<td>$170.00</td>
</tr>
<tr>
<td>Taxes</td>
<td>$730.00</td>
</tr>
<tr>
<td>Minimum income</td>
<td>$41,880.00</td>
</tr>
</tbody>
</table>

Monthly Spending by Category

- Housing: $950.00 (27.2%)
- Transportation: $640.00 (18.1%)
- Food: $190.00 (5.4%)
- Savings: $170.00 (4.9%)
- Miscellaneous: $130.00 (3.7%)
- Taxes: $730.00 (21.9%)
- Utilities: $410.00 (12.2%)
- Healthcare: $80.00 (2.2%)
- Education: $0.00 (0.0%)
- Personal: $50.00 (1.4%)
- Clothes: $110.00 (3.2%)
- Miscellaneous: $130.00 (3.7%)

Total Monthly Spending: $3,490.00

HOW MUCH WILL YOU NEED TO EARN IN THE FUTURE? REALITY CHECK IS HERE TO HELP!
AEROSPACE ENGINEERS

What do aerospace engineers do?

Aerospace engineers perform engineering duties involved in designing, building, and testing aircraft, missiles, and spacecraft. They may conduct basic and applied research to evaluate adaptability of materials and equipment to aircraft design and manufacture. They typically do the following:

- Direct or coordinate activities of engineering or technical personnel involved in designing, fabricating, modifying, or testing aircraft or aerospace products
- Design aeronautical or aerospace products or systems to meet customer requirements
- Plan or coordinate activities to investigate and resolve customers' reports of technical problems with aircraft or aerospace vehicles
- Plan or conduct experimental, environmental, operational, or stress tests on models or prototypes of aircraft or aerospace systems or equipment
- Analyze project requests, proposals, or engineering data to determine feasibility, cost, or production time of aerospace or aeronautical products
- Evaluate product data and design from inspections and reports for conformity to engineering principles, customer requirements, and quality standards
- Maintain records of performance reports for future reference
- Write technical reports or other documentation, such as handbooks or bulletins, for use by engineering staff, management, or customers

What's the work environment like?

Aerospace engineers almost always work indoors in comfortable air temperatures. They frequently use email and often participate in face-to-face discussions. They normally spend part of their workdays using the telephone. This job allows workers to have a fair amount of freedom for structuring their work. Producing accurate work and working well in a group or team is very important. Aerospace engineers have a moderate amount of freedom to make decisions. Many of them work full time.

Are my interests similar to those of aerospace engineers?

The interests of aerospace engineers typically match jobs that have the following characteristics:

<table>
<thead>
<tr>
<th>Investigative</th>
<th>Realistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequently require working with ideas and involve an extensive amount of thinking. May involve searching for facts and figuring out problems mentally.</td>
<td>Often involve work activities that include practical, hands-on problems and solutions. Usually involve working with actual materials - many times in an outdoor setting.</td>
</tr>
</tbody>
</table>

You'll find additional information about interests in the introduction to these profiles. To learn more about your interests and how they may connect with careers, try the brief activity at [www.mynextmove.org/explore/fp](http://www.mynextmove.org/explore/fp).

What are the most important types of knowledge, skills, and abilities to have in this field?
Future Career System

Seeing inside.

Radiology is a niche within the health professions projected to grow at 5 percent each year in North Carolina through 2024. It's great for those who like science and enjoy helping others. Typical education for Radiologic Technicians: Associate's (57%)
Economic & Workforce Impact
NCCCS role in driving NC economy
North Carolina Community College System serves nearly 800,000 students annually.
Outcomes & Impacts of NC’s 58 Community Colleges

10-Years of Outcomes

- 3.3 Million Students (over the last 10 years)

Single-Year Impact
(July 2015 - June 2016)

- 57.6 Billion Total Wages Earned (by students served over last 10 years)
Between July 2015 and June 2016, four out of every 10 workers in covered employment have been students of the North Carolina Community College System in the last 10 years.
Percentage of Wage Earners by Industry Sector between July 2015 - June 2016

Wage earners who have been NCCCS students in the past 10 years
Evaluating Workforce Development Outcomes for North Carolina
Common Follow-up System (CFS)

► Provide information on educational and employment outcomes of participants in publicly supported educational, employment and training programs

► Evaluation of Programmatic Outcomes
  ► Are former participants of publicly supported education, employment and training programs employed in NC?
  ► What are the wages of former participants and graduates?
  ► In what industries are former participants and graduates employed?
  ► What are the employment and wage outcomes for different academic majors and degree areas?
CFS Outputs

- Reports to the North Carolina General Assembly
  - CFS Evaluation Report
  - CFS Operational Report
  - NCWorks Performance Report

- Development of Information Technology Delivery Systems
  - NC TOWER
  - Supply Demand Dashboard (in progress)

- Collaborating with Contributing Agencies
  - Reporting Initiatives
  - Analytical Capacity
NC Community Colleges

- Career and Technical Education Programs
- Workforce Continuing Education Programs
- Human Resources Development
- Basic Skills Programs
Career and Technical Education
Associate Degree Recipients, 1 Year Post Completion

Participants and Recipients 2008-2009 - 2012-2013

Average 1 Year Post Wage in North Carolina

1 Year Post Employment in North Carolina

1 Year Post Employment and Wage by Industry

2008-2009 Graduates
Career and Technical Education
Associate Degree Recipients, 3 Years Post Completion

**Participants and Recipients 2008-2009 - 2012-2013**

- **Participants**: 109,403, 125,353, 132,576, 131,314, 125,076
- **Associate Degree Recipients**: 11,506, 12,184, 13,842, 14,354, 14,300

**Average 3 Year Post Wage in North Carolina**

- $31,625 (2008-2009)
- $31,733 (2009-2010)
- $31,702 (2010-2011)

**3 Years Post Employment in North Carolina**

- 81% (2008-2009)
- 80% (2009-2010)
- 80% (2010-2011)

**3 Years Post Employment and Wage By Industry 2008-2009 Graduates**

- Natural Resources and Mining: 8.6%, $27,678
- Wholesale Trade, Transportation and Utilities: 4.8%, $27,735
- Construction: 7.6%, $18,765
- Manufacturing: 7.3%, $13,713
- Retail Trade: 11.5%, $14,946
- Information: 0.9%, $94,981
- Financial Activities: 3.1%, $14,962
- Professional and Business Services: 16.7%, $18,118
- Educational Services: 10.8%, $38,652
- Health Care and Social Assistance: 14.9%, $33,627
- Leisure and Hospitality: 7.3%, $15,346
- Other Services: 2.5%, $12,984
- Public Administration: 0.6%, $23,176
### Career and Technical Education

**Associate Degree Recipients by Program Area, 2008-2009**

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Participants</th>
<th>Associate Degree Recipients</th>
<th>1 Year After Completion</th>
<th>2 Years After Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td><strong>Agricultural and Natural Resources Technologies</strong></td>
<td>1,753</td>
<td>218</td>
<td>143</td>
<td>66%</td>
</tr>
<tr>
<td><strong>Biological and Chemical Technologies</strong></td>
<td>1,249</td>
<td>139</td>
<td>114</td>
<td>82%</td>
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<tr>
<td><strong>Business Technologies</strong></td>
<td>40,139</td>
<td>3,168</td>
<td>2,473</td>
<td>78%</td>
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<tr>
<td><strong>Commercial &amp; Artistic Production Technologies</strong></td>
<td>3,253</td>
<td>323</td>
<td>238</td>
<td>74%</td>
</tr>
<tr>
<td><strong>Construction Technologies</strong></td>
<td>3,125</td>
<td>283</td>
<td>220</td>
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<td><strong>Engineering Technologies</strong></td>
<td>6,260</td>
<td>574</td>
<td>466</td>
<td>81%</td>
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<tr>
<td><strong>Health Sciences</strong></td>
<td>20,981</td>
<td>4,234</td>
<td>3,858</td>
<td>91%</td>
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<td><strong>Industrial Technologies</strong></td>
<td>3,026</td>
<td>230</td>
<td>182</td>
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<td><strong>Public Service Technologies</strong></td>
<td>28,029</td>
<td>2,040</td>
<td>1,628</td>
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<td><strong>Transport Systems Technologies</strong></td>
<td>3,535</td>
<td>320</td>
<td>268</td>
<td>84%</td>
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<td>320</td>
<td>250</td>
<td>78%</td>
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</table>
Career and Technical Education Findings

Employment And Wage Outcomes

Associate Degree Recipients - ALL
- 1 year Post Employment Rates 82% – 83% Average Wage $24,772 - $25,225
- 3 Year Post Employment Rates 80% – 81% Average Wage $31,625 - $31,733
- 5 Year Post Employment Rate 78% Average Wage $34,903

Diploma Recipients - ALL
- 1 year Post Employment Rates 76% – 82% Average Wage $21,155 - $22,481
- 3 Year Post Employment Rates 75% – 79% Average Wage $26,427 - $28,176
- 5 Year Post Employment Rate 74% Average Wage $29,393

Certificate Recipients - ALL
- 1 year Post Employment Rates 62% – 74% Average Wage $18,698 - $20,087
- 3 Year Post Employment Rates 63% – 70% Average Wage $24,171 - $26,014
- 5 Year Post Employment Rate 63% Average Wage $26,950
Career and Technical Education Findings

Employment And Wage Outcomes By Program Area
Associate Degree Recipients

Health Sciences
• 1 year Post Employment Rates 89% - 91%
• 1 year Post Average Wage $30,948 - $32,453
• 3 year Post Employment Rates 86% - 88%
• 3 year Post Average Wage $39,704 - $40,340

Transport Systems Technologies
• 1 year Post Employment Rates 79% - 84%
• 1 year Post Average Wage $19,970 - $23,807
• 3 year Post Employment Rates 74% - 79%
• 3 year Post Average Wage $27,278 - $29,106

Industrial Technologies
• 1 year Post Employment Rates 79% - 85%
• 1 year Post Average Wage $27,993 - $32,913
• 3 year Post Employment Rates 81% - 83%
• 3 year Post Average Wage $37,052 - $42,484
CFS Information
Delivery Tools
North Carolina's Tool for Online Workforce and Education Reporting

A CFS information delivery tool can answer:
- Top-Paying Degree Programs
- Most Popular Degree Programs
- Post-Graduation Enrollment
- Post-Graduation Employment by Industry
- Average Earned Wage by Industry
- Program Comparison
Post-Graduation Employment in North Carolina
(2007-2008 Graduates)

- Associate's Degree in Construction Technologies at All Community Colleges
- Associate's Degree in Health Sciences at All Community Colleges
- Associate's Degree in Associate Degree Nursing at All Community Colleges

Note: Caps in charts may represent suppressed data. See table for details.
Data Source: NC Common Follow-up System.
Post-Graduation Enrollment in North Carolina Public Higher Education
(2007-2008 Graduates)

- Associate's Degree in Construction Technologies at All Community Colleges
- Associate's Degree in Health Sciences at All Community Colleges
- Associate's Degree in Associate Degree Nursing at All Community Colleges

Note: Gaps in charts may represent suppressed data. See table for details.
Data Source: NC Common Follow-up System.
How well are we matching workforce supply to demand?

NC Talent Pool Dashboard

- Information supplied by NCCCS and UNC System
- To assess the alignment of North Carolina’s educational pipeline and occupational demand and to help measure the state’s ability to develop and sustain a quality workforce
NC Talent Pool Dashboard

**Occupational Summary**

Healthcare Practitioners and Technical Support Occupations

**SOC 29**

**NC Occupational Star Rating**

Related Annual Average Completions: 9,767

(NCCCS & UNC only)

Projected Annual Job Openings in NC: 11,262

Occupational Employment in NC: 256,650

Occupational Annual Wage in NC: 57,260

Total Related Completions (5-Year Total Unique): 46,801
NC Talent Pool Dashboard
NC Talent Pool Dashboard

Post Completion Employment by Industry

- Natural Resources & Mining: 33
- Construction: 159
- Manufacturing: 428
- Trade, Transportation, & Utilities: 2,288
- Information: 123
- Financial Activities: 630
- Professional & Business Services: 3,423
- Education & Health Services: 31,105
- Leisure & Hospitality: 1,850
- Other Services: 401
- Public Administration: 2,020
- Unclassified: 1,578

Post Completion Employment in North Carolina

- All Degree Recipients

Year 1: 9,140, 10,243
Year 2: 7,020, 8,308
Year 3: 7,129, 7,691
Year 4: 9,283, 8,772
Year 5: 9,672
Unique Completers: 10,496
Useful Links

NCCareers.org
http://nccareers.org/

2016 Employer Needs Survey

Common Follow-up System
www.nccommerce.com/lead/research-publications/common-follow-up-system

NC TOWER
http://nctower.com/

Talent Pool Supply & Demand Dashboard
https://accessnc.opendatasoft.com/pages/supply-demand2/
Questions?

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