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THE KEY TO SUSTAINABLE RE-EMPLOYMENT: Mapping Credential Programs to Industry Growth

BY ALEXANDRA FORTER SIROTA AND ALLAN M. FREYER

KEY FINDINGS

- Nearly 61 percent of jobs in North Carolina will require some form of post-secondary education as early as 2020.
- Achieving a target of 60 percent of working-age adults with post-secondary credentials would require a 4.5 percent average annual increase in post-secondary attainment. Annual per capita income would increase ten-fold over the trajectory with current attainment levels.
- For credential programs to be effective for workers, industry and the broader economy, it is critical that they align with industries with the potential for growth and family-sustaining wages.

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Introduction

Although the state's current jobs crisis is largely the result of having three unemployed workers for every available job opening, the long-term challenge facing North Carolina is to ensure that workers have the skills for employment in high-growth, high-wage industries. To do that, the state has to align its job training and workforce development services with the needs of industries that are stable or have potential for growth.

The Georgetown Center on Education and the Workforce projects that nearly 61 percent of jobs in North Carolina will require some form of post-secondary education as early as 2020.¹ Yet just 38.5 percent of the state's adult working-age population (ages 25 to 54) has an associate's degree or higher, and just 20.1 of every 10,000 have some type of certificate.²

Numerous states and private foundations have adopted a target of 60 percent of working-age adults having post-secondary credentials, and they are working to focus policymakers and the public on the value of investing in post-secondary completion. For North Carolina, achieving such a target by 2025 would require a 4.5% average annual increase in post-secondary credential attainment.

Aligning credential attainment with industry growth patterns in the state can position North Carolina workers for more sustainable and better-paying jobs in high-growth industries. This brief reviews the evidence around the value of credential attainment to workers and the economy, presents an analysis of industry growth, and reviews current credential program alignment with high-potential industries.

Credentials Matter to Workers and the Economy

Credential attainment can have positive effects on labor and social outcomes if the training programs are tailored to the specific demands of the labor market and if the credential represents one year or more of study.⁴

Recently released data from the U.S. Census Bureau demonstrates the value of post-secondary attainment for workers. Workers with even some post-secondary education earn \$3,600 more than workers with just a high-school diploma; those with a bachelor's degree \$22,000 more than those with a high-school diploma on average. Moreover, workers with post-secondary education have lower levels of unemployment and higher prospects for career mobility.

The benefits of credential attainment not only accrue to workers but to the broader economy when workers build their skills. For example by increasing credential attainment to a target of 60 percent, annual per capita income would increase 10 times more than if North Carolina continues on the current trajectory, so that annual per capita income would be \$1700 higher in 2025.⁵

High-Wage, High-Growth Industries: Current and Future Skill Needs

For credentials to generate the greatest return for workers and the economy, they must match with industry demand. By analyzing growth in specific industries in North Carolina and nationally, we identified three categories of industries where alignment with credential attainment is critical.

1) Growing Local Strengths – These industries are already heavily concentrated in North Carolina, making them a key strength for the state's employment base. They also have experienced long-term employment growth since 2004, and most critically, have seen significant job gains in North Carolina relative to the industries' job growth in the rest of the country, suggesting that North Carolina has a competitive advantage that bodes well for future growth potential. Training workers for these Growing Local Strengths serves to reinforce that competitive advantage.

As **Figure 1** shows, the state has 12 industries that meet this description, with weekly wages ranging from a low of \$387 in the crop farming industry to a high of \$1,496 in the electronics markets industry. Altogether, this most attractive group of industries employs 3.5% of the state's population.

2) Stable Local Strengths – These industries are heavily concentrated in North Carolina—that is, they are a key component of the state's employment base—and

have experienced meaningful employment growth over the last business cycle. Unlike Growing Local Strengths, however, Stable Local Strengths did not make employment gains in the state relative to the industries' gains nationally but rather remained stable, suggesting that North Carolina's competitive advantage compared to the rest of the United States is limited. Therefore, investing in training for these industries will enable North Carolina to take advantage of their national and state-level growth, but they may not make as strong a long-term investment prospect as the Growing Local Strengths.

As **Appendix 1** shows, the state has 14 industries that meet this description, with weekly wages ranging from a low of \$321 in the forestry industry to a high of \$1,979 in the spectator sports industry. Altogether, this second-most attractive group of industries employs 14% of the state's population. Government is the largest employer in this category, with 3.4% of the state's total employment and an average weekly wage of \$777.

3) Emerging Local Strengths – These industries are not yet heavily concentrated in North Carolina but have experienced growth in employment within North Carolina in absolute terms since 2004 and relative to the industries' growth in the rest of the nation. Given the fact that they are not already concentrated in North Carolina but

are experiencing faster growth in the state than they are experiencing nationwide, these industries represent an area of significant growth potential for North Carolina.

As **Appendix 1** shows, North Carolina has 59 industries that meet this description, with weekly wages ranging from a low of \$376 in the tree and nut farming industry to a high of \$3,009 in the securities and commodities exchange industry. Altogether, this attractive group of industries employs 6% of the state's population.

Alignment of Credential Programs

To encourage these industries over the long term, North Carolina needs to ensure its workforce has the skills demanded by firms in these industries, many of which will require specialized training and credentials. Currently, North Carolina offers 57 programs that prepare

workers for industry-recognized credentials. In addition, the community-college campuses and UNC system prepare students with associate's and bachelor's degrees that are relevant for employment in many high-growth industries.

The projected distribution of employment by 2020 also can provide an approximation of the skills that industries will require in the future. The information in Figure X is

ANALYSIS OF INDUSTRY TRENDS

Determining the industries best suited for targeted training requires assessing several key aspects of industry composition and change from 2004 (the equivalent point in the previous business cycle) to 2011. Using detailed industry employment data for North Carolina and the United States, we used location quotients to determine the local concentration of an industry's employment in North Carolina compared to the rest of the country, standard trend analysis to determine whether the industry gained or lost employment from 2004 to 2011, and shift-share analysis to determine the change in an industry's employment within North Carolina over this period compared to the employment change in that same industry at the national level. This last analysis lets us understand whether a local industry is declining, stable, or emerging relative to the rest of the nation.

useful in approximating which sectors are projected to grow and what the commensurate demand for credentials or degrees will be by sector.⁶

There are several models that have been successful in North Carolina and other states at aligning workforce training with the credentials and degrees that are relevant to the

trends in the broader economy. Sector approaches are proven to achieve such alignment, and through delivery models like career pathways and bridge programs, it is possible to train more workers for future opportunities in these industries.

FIGURE 1:
Education Distribution by Sector, 2020

Percent of Jobs that will require Post-Secondary Education	
Construction	26.8%
Educational Services	82.8%
Financial Services	72.9%
Healthcare Services	74.0%
Information Services	81.2%
Leisure and Hospitality Services	41.3%
Manufacturing	42.6%
Personal Services	46.5%
Natural Resources	21.3%
Professional and Business Services	54.4%
Government Services	75.6%
Transportation and Utilities Services	51.5%
Wholesale and Retail Services	49.5%

SOURCE: Carnevale, Anthony P. and Nicole Smith, July 2012. A Decade Behind: Breaking out of the low-skill trap in the southern economy. Center on Education and the Workforce: Georgetown University, Washington DC.

CAREER PATHWAYS IN PRACTICE

State policymakers can further promote direct investment in good jobs through the creation of career pathways—programs that facilitate workers movement from low-wage work into higher-skill, higher-wage employment through multi-tiered training and certification standards tied to formal career mobility ladders in targeted private-sector industries. An example of a formalized career pathway is the “work keys” program common in automotive manufacturing industries in the U.S. South. Work keys provide workers a series of widely recognized certifications demonstrating mastery of an increasingly difficult set of skills pegged to positions with increasing responsibilities within automotive manufacturing companies. This allows workers to integrate skill development with upward mobility within their industries, creating pathways to better training, higher wages, and ultimately more successful careers.

Conclusion

Preparing North Carolina’s workforce for the jobs of the future will require designing and adequately funding effective sector approaches with delivery models like career pathways and bridge programs that can move people through training and toward industry-recognized and relevant credentials.

- 1 Carnevale, Anthony P. and Nicole Smith, July 2012. A Decade Behind: Breaking out of the low-skill trap in the southern economy. Center on Education and the Workforce: Georgetown University, Washington DC.
- 2 Working Poor Families Project, 2012 and Complete College America, December 2010. Certificates Count: An Analysis of Sub-baccalaureate Certificates.
- 3 CLASP, April 2012. Credential Improvement Rate required to Meet Goal, State Rankings.
- 4 Bosworth, December 2010, p. 15-17
- 5 CLASP, April 26, 2012. North Carolina: The Return on Investment to Increasing Postsecondary Credential Attainment.
- 6 The analysis of high-growth industries is based on 4-digit NAICS codes and therefore does not line up exactly with the data available on education levels by sector. Given that there is variation in the educational requirements for occupations with a sector, these data provide an approximation of the alignment between industry growth and educational requirements.

APPENDIX 1. Industries with Potential for High Growth

SECTOR	INDUSTRY	INDUSTRY GROWTH CATEGORY	WAGE
Wholesale Trade	Electronic Markets and Agents/Brokers	1) Growing Local Strengths	\$1,496.00
Manufacturing	Turbine and Power Transmission Equipment	1) Growing Local Strengths	\$1,279.00
Financial and Insurance Services	Depository Credit Intermediation	1) Growing Local Strengths	\$1,215.00
Manufacturing	Other Nonferrous Metal Production	1) Growing Local Strengths	\$1,204.00
Manufacturing	Other Chemical Preparation Manufacturing	1) Growing Local Strengths	\$1,117.00
Manufacturing	Household Appliance Manufacturing	1) Growing Local Strengths	\$1,091.00
Manufacturing	Plastics Product Manufacturing	1) Growing Local Strengths	\$865.00
Manufacturing	Other Furniture Related Product Mfg	1) Growing Local Strengths	\$787.00
Transportation and Utilities	Interurban and Rural Bus Transportation	1) Growing Local Strengths	\$781.00
Retail Trade	Vending Machine Operators	1) Growing Local Strengths	\$607.00
Professional and Business Services	Other Support Services	1) Growing Local Strengths	\$600.00
Natural Resources and Mining	Other Crop Farming	1) Growing Local Strengths	\$387.00
Leisure and Hospitality	Spectator Sports	2) Stable Local Strengths	\$1,979.00
Information	Data Processing and Related Services	2) Stable Local Strengths	\$1,581.00
Professional and Business Services	Management of Companies and Enterprises	2) Stable Local Strengths	\$1,456.00
Government Services	Administration of Economic Programs	2) Stable Local Strengths	\$883.00
Wholesale Trade	Furniture & Furnishings Merchant Whsle	2) Stable Local Strengths	\$864.00
Government Services	Executive, Legislative, & Gen Government	2) Stable Local Strengths	\$777.00
Financial and Insurance Services	Offices of Real Estate Agents & Brokers	2) Stable Local Strengths	\$730.00
Educational Services	Junior Colleges	2) Stable Local Strengths	\$603.00
Professional and Business Services	Employment Services	2) Stable Local Strengths	\$582.00
Natural Resources and Mining	Hog and Pig Farming	2) Stable Local Strengths	\$579.00
Manufacturing	Animal Slaughtering and Processing	2) Stable Local Strengths	\$578.00
Health Care and Social Assistance	Continuing care, assisted living fclt.	2) Stable Local Strengths	\$428.00
Retail Trade	Other General Merchandise Stores	2) Stable Local Strengths	\$420.00
Natural Resources and Mining	Forest Nursery/Gathering Forest Products	2) Stable Local Strengths	\$321.00
Financial and Insurance Services	Securities and Commodity Exchanges	5) Emerging local Strengths	\$3,009.00
Manufacturing	Electronic Instrument Manufacturing	5) Emerging local Strengths	\$2,819.00
Financial and Insurance Services	Security & Commodity Investment Activity	5) Emerging local Strengths	\$2,090.00
Manufacturing	Aerospace Product & Parts Manufacturing	5) Emerging local Strengths	\$1,764.00
Manufacturing	Communications Equipment Manufacturing	5) Emerging local Strengths	\$1,757.00
Professional and Business Services	Scientific Research and Development Svc	5) Emerging local Strengths	\$1,684.00
Financial and Insurance Services	Insurance Carriers	5) Emerging local Strengths	\$1,333.00
Government Services	National Security & International Affair	5) Emerging local Strengths	\$1,304.00
Manufacturing	Iron and Steel Mills and Ferroalloys	5) Emerging local Strengths	\$1,228.00
Financial and Insurance Services	Lessors, Nonfinancial Intangible Assets	5) Emerging local Strengths	\$1,216.00
Manufacturing	Other Transportation Equipment Mfg	5) Emerging local Strengths	\$1,187.00
Manufacturing	Audio and Video Equipment Manufacturing	5) Emerging local Strengths	\$1,185.00
Information	Wired Telecommunications Carriers	5) Emerging local Strengths	\$1,177.00
Financial and Insurance Services	Insurance and Employee Benefit Funds	5) Emerging local Strengths	\$1,144.00
Manufacturing	Commercial & Service Industry Machinery	5) Emerging local Strengths	\$1,105.00
Government Services	Administration of Human Resource Program	5) Emerging local Strengths	\$1,060.00
Leisure and Hospitality	Independent Artists/Writers/Performers	5) Emerging local Strengths	\$1,051.00
Health Care and Social Assistance	Medical and Diagnostic Laboratories	5) Emerging local Strengths	\$1,016.00
Manufacturing	Medical Equipment and Supplies Mfg	5) Emerging local Strengths	\$1,011.00
Financial and Insurance Services	Machinery & Equipment Rental & Leasing	5) Emerging local Strengths	\$992.00
Manufacturing	Grain and Oilseed Milling	5) Emerging local Strengths	\$962.00
Transportation and Utilities	Scheduled Air Transportation	5) Emerging local Strengths	\$946.00
Professional and Business Services	Waste Treatment and Disposal	5) Emerging local Strengths	\$938.00

(cont.)

APPENDIX 1. (cont.)

SECTOR	INDUSTRY	INDUSTRY GROWTH CATEGORY	WAGE
Transportation and Utilities	Water, Sewage and Other Systems	5) Emerging local Strengths	\$907.00
Manufacturing	Beverage Manufacturing	5) Emerging local Strengths	\$888.00
Other Services	Professional and Similar Organizations	5) Emerging local Strengths	\$855.00
Manufacturing	Fruit, Vegetable, & Specialty Foods Mfg	5) Emerging local Strengths	\$836.00
Manufacturing	Purchased Steel Product Manufacturing	5) Emerging local Strengths	\$832.00
Educational Services	Technical and Trade Schools	5) Emerging local Strengths	\$820.00
Transportation and Utilities	Scenic/Sightseeing Transportation, Other	5) Emerging local Strengths	\$751.00
Manufacturing	Other Food Manufacturing	5) Emerging local Strengths	\$746.00
Leisure and Hospitality	Agents and Managers for Public Figures	5) Emerging local Strengths	\$741.00
Natural Resources and Mining	Support Activities for Animal Production	5) Emerging local Strengths	\$725.00
Manufacturing	Dairy Product Manufacturing	5) Emerging local Strengths	\$725.00
Transportation and Utilities	Urban Transit Systems	5) Emerging local Strengths	\$721.00
Financial and Insurance Services	Lessors of Real Estate	5) Emerging local Strengths	\$705.00
Manufacturing	Sugar/Confectionery Product Manufacture	5) Emerging local Strengths	\$699.00
Retail Trade	Electronic Shopping & Mail-Order Houses	5) Emerging local Strengths	\$696.00
Professional and Business Services	Travel Arrangement & Reservation Service	5) Emerging local Strengths	\$688.00
Transportation and Utilities	Inland Water Transportation	5) Emerging local Strengths	\$687.00
Natural Resources and Mining	Timber Tract Operations	5) Emerging local Strengths	\$653.00
Transportation and Utilities	Local Messengers and Local Delivery	5) Emerging local Strengths	\$631.00
Retail Trade	Auto Parts, Accessories, and Tire Stores	5) Emerging local Strengths	\$566.00
Natural Resources and Mining	Support Activities for Crop Production	5) Emerging local Strengths	\$551.00
Other Services	Household Goods Repair and Maintenance	5) Emerging local Strengths	\$541.00
Retail Trade	Lawn & Garden Equipment/Supplies Stores	5) Emerging local Strengths	\$497.00
Natural Resources and Mining	Oilseed and Grain Farming	5) Emerging local Strengths	\$489.00
Retail Trade	Beer, Wine, and Liquor Stores	5) Emerging local Strengths	\$463.00
Retail Trade	Specialty Food Stores	5) Emerging local Strengths	\$449.00
Transportation and Utilities	Charter Bus Industry	5) Emerging local Strengths	\$446.00
Natural Resources and Mining	Fishing	5) Emerging local Strengths	\$406.00
Transportation and Utilities	Taxi and Limousine Service	5) Emerging local Strengths	\$404.00
Natural Resources and Mining	Vegetable and Melon Farming	5) Emerging local Strengths	\$392.00
Leisure and Hospitality	Rooming and Boarding Houses	5) Emerging local Strengths	\$392.00
Leisure and Hospitality	Special Food Services	5) Emerging local Strengths	\$392.00
Manufacturing	Seafood Product Preparation & Packaging	5) Emerging local Strengths	\$387.00
Natural Resources and Mining	Fruit and Tree Nut Farming	5) Emerging local Strengths	\$376.00
Leisure and Hospitality	Drinking Places (Alcoholic Beverages)	5) Emerging local Strengths	\$296.00
Leisure and Hospitality	Amusement Parks and Arcades	5) Emerging local Strengths	\$272.00

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