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Supporting our Wealth Driving Sectors: Demand for Technical Talent in  
Central Indiana

A Report Prepared By



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# Executive summary

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Hire UP Indy is a collaborative effort to align Central Indiana’s education resources with the talent needs of the region’s key wealth economic drivers. These wealth industries have been identified by Central Indiana leaders as:

- Manufacturing
- Health care
- Life sciences
- Transportation and Logistics
- Technology
- Advanced manufacturing
- Alternative energy

*Supporting Our Wealth Driving Sectors: Demand for Technical Talent in Central Indiana* describes Central Indiana’s key wealth driving sectors and emerging clusters. Not only are these important sources of economic growth, employment and income, but they support the health of the entire regional economy. Employers in these sectors and clusters are hiring people with higher level skills for more technically complex jobs. The data presented here utilize real-time (to October 2012) job postings in the region to better understand the demand for talent in these key industries. These data allow us to describe the labor market needs of wealth producing sectors and describe the level of talent these employers seek. Our intent is to provide a clear snapshot of the talent needed to fuel the region’s wealth producing sectors.

This information will inform Hire Up Indy Council’s work toward an actionable strategic plan to address critical workforce and educational needs in our City and region.

Key points of this report include:

- While manufacturing and health care have driven the Indiana economy for several decades and will likely continue to do so into the foreseeable future, the emerging clusters are now significant sources of employment and wealth production. One-third of the 100,000 job postings in the region are in these sectors.
- These sectors and clusters rely heavily on technically skilled talent. The large majority—between 60 and 75 percent – require technical skills.
- Together, these sectors account for 40 percent of the region’s 725,000 private sector jobs. To support growth in the regional economy and provide opportunity for the region’s residents, Central Indiana needs a strong focus on increasing educational attainment, particularly in technical fields.

# Supporting Our Wealth Driving Sectors: Demand for Technical Talent in Central Indiana

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Supporting Our Wealth Driving Sectors is the first in a series of short papers commissioned by Hire Up Indy and the Hire Up Indy Council. In this paper we address the employment demand and labor market characteristics of Central Indiana’s key economic drivers. These drivers move the Central Indiana economy: their presence strengthens other industries and they bring new wealth to the region. Taken together, they provide 40 percent of private sector jobs to Central Indiana’s workforce and supply 56 percent of total private sector wages.

## **A quick review: Central Indiana’s wealth driving sectors**

Wealth driving sectors of a regional economy represent substantial concentrations of value producing economic activity and employment. In Central Indiana, these sectors create productive wealth and net new income for the region. They support nearly every other sector in the regional economy, including areas of new economic growth. Other sectors are important, but wealth driving sectors are fundamental to the well-being and future of the region.<sup>1</sup>

We will not repeat findings of a great deal of research already done on Indiana’s key economic sectors; others have done that well, leading to innovative sector-based organizations and successful efforts to grow these sectors.<sup>2</sup> Our interest is to identify their significance within the regional economy and then look at real-time job demand, used here for the first time in Central Indiana, to describe the talent needs of Central Indiana’s wealth drivers.

## **Healthcare and manufacturing**

Two large sectors, manufacturing and healthcare, have driven the Indiana economy for several decades and, in all likelihood, will drive the economy into the future. They will continue to dominate the Central Indiana economy and define significant employment opportunity. Together they account for 27 percent of the Gross Metropolitan Product (GMP),

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<sup>1</sup> When it comes to growth, the economic engines in a region’s economy are its “traded” clusters that sell their goods and services to external markets. Through exporting goods and services outside of a region, traded clusters import income into a region that is then circulated throughout the regional economy. This, in turn, supports the growth of “non-traded” industries – those parts of the economy whose market is primarily local.

<sup>2</sup> Leaders in Indiana have created nationally recognized organizations to support and grow these sectors and clusters. Among them are BioCrossroads (life sciences), Conexus (advanced manufacturing and logistics), and TechPoint (high technology), all housed within the Central Indiana Corporate Partnership.

24 percent of all private sector employment, and 32 percent of Central Indiana’s total wages.<sup>3</sup>

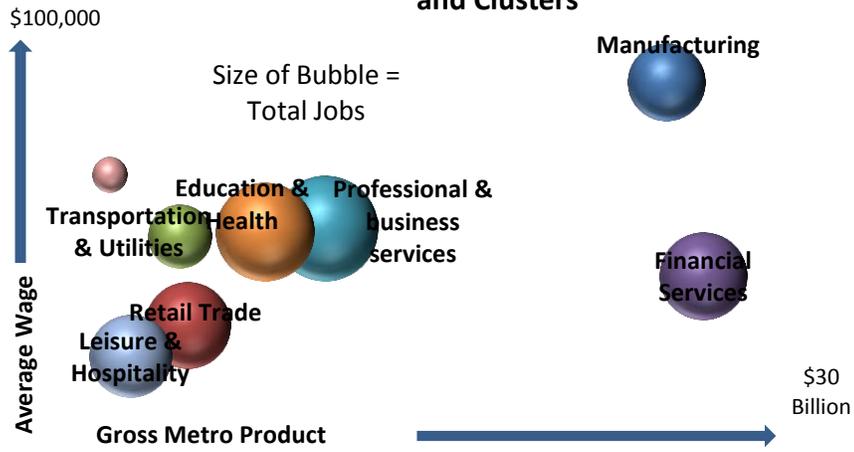
For its part, *manufacturing* is still by far the predominant wealth-producing sector in the Central Indiana economy. Even though manufacturing has declined in overall employment in Central Indiana over the last 30 years, it still accounts for more than \$17 billion in Gross Metropolitan Product (GMP), or almost 20 percent of the region’s total output. And, as a jobs-producer, it accounts for 11 percent of all private sector jobs in the regional economy.

*Healthcare* continues to gain economic importance, is growing steadily, and is adding employees and value to the economy each year, even during the recent recession. It now surpasses manufacturing and accounts for roughly 13 percent of all private sector employment in the region. That is about one in every eight jobs in Central Indiana.

### New industry clusters

In addition to manufacturing and healthcare, new industry clusters have emerged as significant wealth producers in Central Indiana. These clusters include advanced manufacturing, life sciences, high technology, logistics, and alternative energy. Each cluster has a strong tie to manufacturing and/or healthcare, either relying on or benefiting from shared talent, technology, and markets of related companies. While not nearly as large as manufacturing and healthcare in terms of contribution to the GMP or employment, the high wages in these clusters make each important in terms of contribution to the overall economy and potential growth.

**Chart 1: Central Indiana's Wealth Producing Sectors and Clusters**



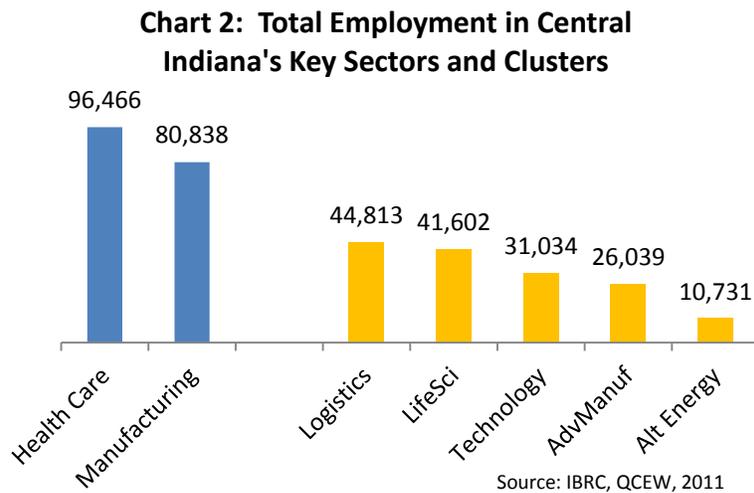
Source: BEA, Indianapolis-Carmel MSA, 2010

Chart 1 shows the relative importance of manufacturing and other emerging clusters to the regional economy by mapping the combined contribution of each industry’s gross metropolitan product (GMP), wages, and employment. Unfortunately, data available for this chart do not precisely map to our definitions of healthcare and some of the emerging

<sup>3</sup> Gross Metropolitan Product is the value added, or the gross output, of a region’s industries. It equals total earnings (wages, salaries, employee benefits, and proprietor income), property income (dividends, interest, rent, corporate profits, and capital depreciation), and taxes on production and imports.

clusters, so the contributions of these sectors are slightly obscured.<sup>4</sup> However, we can clearly see the remarkable importance of manufacturing’s total contribution to the Central Indiana economy—high wages, employment and value of products – followed closely by large contributions of healthcare and professional and business services (which includes life sciences).

Chart 2 shows employment for each of the key sectors in Central Indiana and provides a vivid picture of their importance to the regional economy. Manufacturing and health care dominate employment. Together they account for 24 percent of the region’s 725,000 private sector jobs, or about one in every four jobs in 2011. The other five clusters in the chart account for a significant number of jobs in the regional economy and, when combined, represent 113,000 jobs, or about 16 percent of the region’s total private employment.<sup>5</sup>



### Real time labor market demand in Central Indiana’s Key Sectors and Clusters

What kinds of jobs are employers in Central Indiana seeking to fill? By analyzing job-postings in real-time we can better understand the scale of current talent and skill demand in these key sectors. Then, we can look at the educational requirements of these job postings.

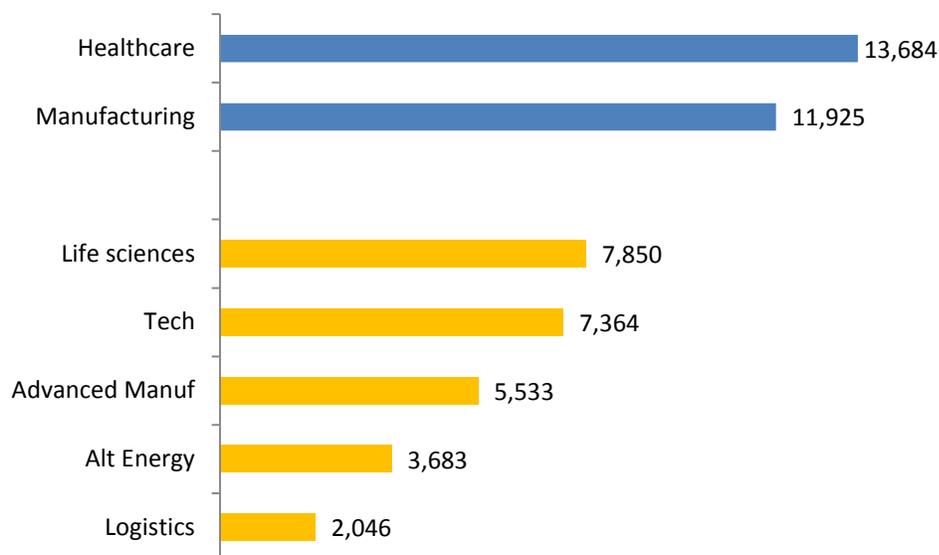
Standard employment statistics are only partly useful in describing these talent demands. In this report we have gathered real-time data on job postings to give us a more robust and timely picture of the jobs and labor market demand in Central Indiana.<sup>6</sup>

<sup>4</sup> Life sciences and other science related sectors are represented as part of professional and business services. Financial service’s apparent “outsized” contribution to GMP is due, in part, to inclusion of property income (e.g. rent and dividends) in calculations of GMP.

<sup>5</sup> Although the five clusters shown in this chart contain some duplicated industry segments and therefore are not cumulative, each taken alone shows significant employment levels. As indicated in the text accompanying the chart, the total “unduplicated” count of jobs across these clusters is 113,000.

<sup>6</sup> Unique to this analysis is our ability to show what kind of demand in real-time is occurring in each of these wealth drivers. We draw on new technologies, algorithms, and data gathering techniques from Burning Glass that de-duplicate and analyze real-time job postings from employers in Central Indiana (and elsewhere). These data present a unique picture of the scale and nature of demand in these industries.

**Chart 3: Job Openings in Central Indiana's Key Sectors and Clusters**



Source: Burning Glass RTLMI, Oct 31 2011-Nov 1 2012

The real-time labor market information that Central Indiana’s employers posted shows more than 100,000 new job openings in the last year.<sup>7</sup> More than 34,457 of these jobs, or about 2/5 of all job openings in 2011-2012, are in Central Indiana’s wealth driving sectors and clusters.<sup>8</sup> As expected, the largest number of job openings occurred in healthcare and manufacturing. Chart 3 shows the distribution of job openings among these sectors in addition to job openings in Central Indiana’s key targeted clusters – life sciences, high technology, advanced manufacturing, alternative energy, and logistics.<sup>9</sup>

As the chart above shows, the total number of job openings in each of these industries is substantial – with more than 25,000 openings in healthcare and manufacturing alone. A significant amount of the total—though certainly not all – are what we refer to as **technically skilled positions**.

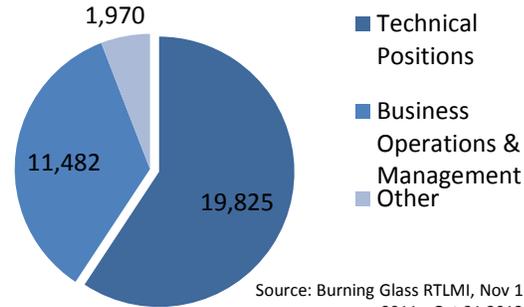
<sup>7</sup> Unless otherwise noted, all data from Burning Glass’ real-time labor market information are for November 1, 2011 to October 31, 2012, the most recent full year of data available at the time of this report.

<sup>8</sup> The Burning Glass data show 104,146 job openings in Central Indiana from November 1, 2011 to October 31, 2012. Of these, there are 21,143 openings with insufficient information on the occupational nature of the position. Therefore, the 34,457 job openings in the wealth driving sectors and clusters represent roughly 41 percent of all job postings with known occupational information.

<sup>9</sup> There are jobs within many of these key sectors and clusters that overlap. In part, that is because industry clusters are defined by their shared talent, products, and market relationships, rather than standard industrial classification. As a result, data on total job openings in Chart 3 do not add to the aggregated, unduplicated count of 28,825 total job openings for Central Indiana’s key sectors and clusters.

As Chart 4 shows, fully 19,825 job openings in these key sectors and clusters are technical-oriented. In other words, more than half the job postings in these sectors require a technical skill set. About another one-third are business operations or managerial positions.<sup>10</sup>

**Chart 4: Technical Job Openings in Central Indiana's Sector and Clusters**



Two important conclusions can be drawn from the data in the chart:

- The occupational structure of the key sectors and clusters in Central Indiana is decidedly oriented to technical and professional positions, positions that require specialized skills.
- Within the last year there have been high levels of demand and thousands of positions open in these same areas.

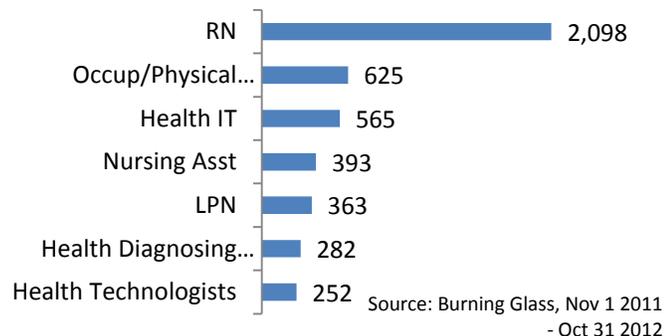
**A closer look at the scale of demand for technically oriented positions**

We can further quantify the need for the talent and skills in each of these sectors. That is not only helpful in pinpointing the scale of demand in each sector, but it also helps us identify specific occupations and skill areas that are most critical to meet current demand.

For the purposes of this overview, we will start by examining the demand in key technical oriented occupations within three industries – healthcare, advanced manufacturing, and life sciences. They serve as good examples of the scale and technical areas in demand.<sup>11</sup>

**Healthcare:** When looking across the technical job openings in healthcare, not surprisingly the highest demand in Central Indiana is for registered nurses (RNs), followed by occupational therapists. There is a growing need for health information technologists to satisfy the growth in electronic health records and other high-tech healthcare information systems.

**Chart 5: Job Openings in Select Technical Occupations for Healthcare**

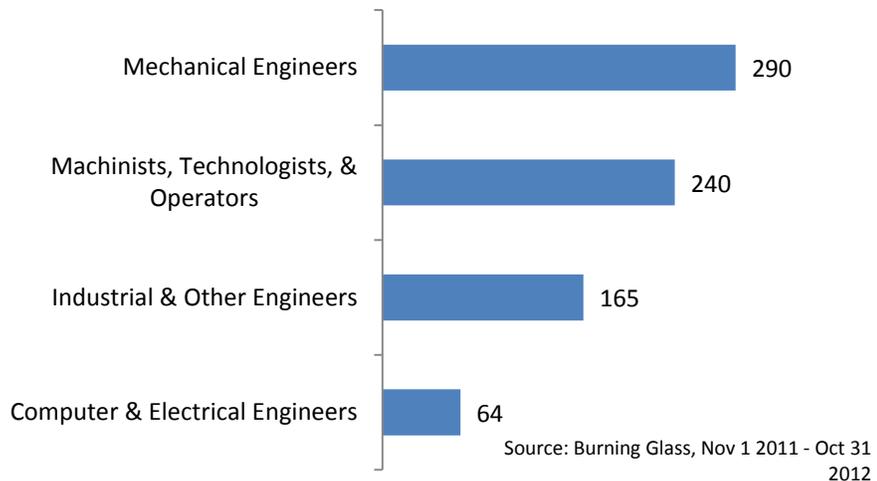


<sup>10</sup> This analysis uses occupation families classified by US Department of Labor's O\*NET system to identify occupations that are technically oriented.

<sup>11</sup> Separate one-page analyses of each of the region's key sectors and clusters accompany this paper.

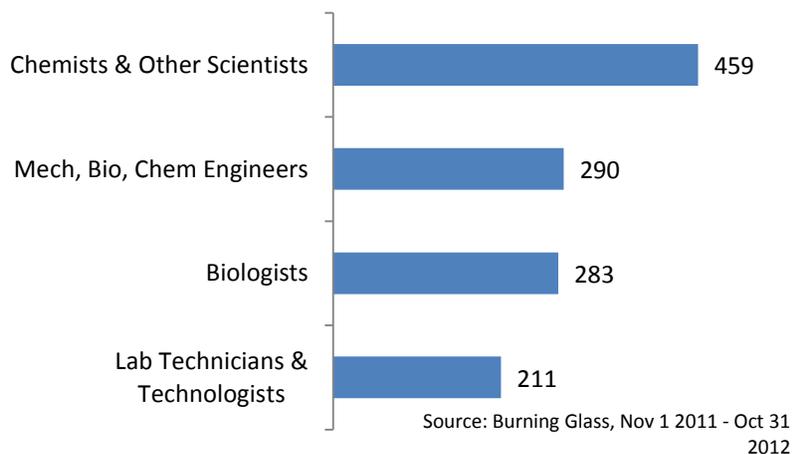
**Advanced manufacturing:** While the overall number of job openings for advanced manufacturing is not as large as healthcare, there were still 5,533 job openings in this industry in the last year. Like healthcare, not all of the positions are technical-oriented. There are still lower-skill production jobs that require baseline skills. Still, there is relatively high demand for some of the industry's more technical positions. In Chart 6 we show the distribution of some of these positions in Central Indiana. Leading the way in demand is engineering.

**Chart 6: Job Openings in Select Technical Occupations for Advanced Manufacturing**



**Life Sciences:** There were 7,850 job openings in life sciences in the last year. As shown in Chart 7, a good proportion of these openings are in technical and scientific-oriented positions.

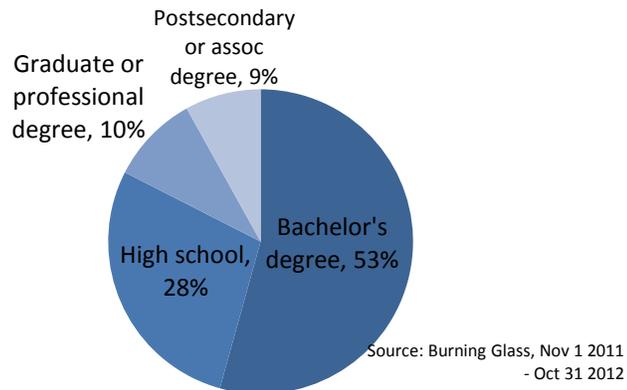
**Chart 7: Job Openings in Select Technical Occupations for Life Sciences**



## Education requirements for job openings in the key sectors and clusters

Meeting these emerging cluster's talent and skills needs across a spectrum of skills and educational levels is an important factor in how successfully they grow in the region. This section of the report describes the type of skills and talents that employers are presently seeking in these sectors and clusters.

**Chart 8: Education Required for Technical Talent in Key Sectors and Clusters**



The complex processes and technologies now routinely used in most of these and other technical positions increase the skill levels and levels of educational attainment required for both entry-level and experienced workers. This is true of the educational attainment levels required for the majority of the job openings in Central Indiana's key sectors and clusters. Chart 8 shows the levels of education required for the occupations in the key sectors and clusters. More bachelor's degrees are needed than any other degree

### What's Next: The Supply of Talent to Central Indiana's Key Sectors and Clusters

This report provides an accurate and timely snapshot of the needs of key wealth driving elements of the Central Indiana economy. Demand for technically skilled talent will remain at high levels. A recent report by the Georgetown University Center on Education and the Workforce projects that nearly half of the jobs added to Indiana's economy between now and 2021 will require some type of postsecondary credential: a technical certificate, Associate's degree, or Bachelor's degree. That means Indiana needs an average of more than 15,400 new workers each year to fill jobs that require some type of postsecondary credential beyond high school. When labor turnover is considered, this number jumps to a total of more than 37,000 each year.<sup>12</sup>

Our next challenge is to offer an in-depth analysis of how our regional and statewide educational resources—among secondary and postsecondary institutions – are producing graduates and skilled individuals to meet those needs. To foreshadow the results of our next report, the misalignment between the technical talent demands in these sectors and the

<sup>12</sup> Carnavale, Tony. "State of Indiana Roundtable Report Education and Workforce Data," Commissioned by Indiana's Education Roundtable, Georgetown University Center on Education and the Workforce, 2012.

output—measured in terms of graduates in technical fields—at all levels of our secondary and postsecondary educational system is striking.