Ascend + futureworks STRATEGIES FOR REGIONAL DEVELOPMENT

Aligning the Workforce:

Labor Market Demand and the Supply of Talent in Indiana, 2019

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INTRODUCTION

The 2019 Supply and Demand Report is the second in a series of reports to characterize demand and supply across Indiana, including a detailed snapshot of Central Indiana and Marion County (Indianapolis). In the first report, Ascend analyzed labor market data and the breadth of skills that were in high demand. The preceding report concluded that imbalances between the demand and supply of talent have long been considered a quantitative misalignment with too few graduates available to enter occupations and industries with growing demand. However, it was concluded that the greater issue was matching talent requirements of employers with skill characteristics of graduates.

This report extends further into that narrative by updating the data from the previous report and more deeply exploring Indiana's labor market in an effort to educate programs and policy. Similar to trends identified in last year's report, demand for talent is projected to grow over the next decade, while the composition of that demand is changing rapidly as employers respond to broader trends like automation and technology. Jobs and occupations now, more than ever, require the support of educational institutions to offer capacity in preparing and reskilling the workforce to meet these evolving needs.

Through this report, we describe current and future labor market demand in Indiana and the current and future supply of talent entering the labor market from Indiana's postsecondary institutions. This analysis enables us to identify where misalignment occurs within the workforce.

KEY FINDINGS

To continue Indiana's strong job growth over the next decade, key stakeholders must continue to work collaboratively to develop solutions that extend from K-12 to employment. The following key findings support this collaborative effort and were informed by a robust labor market analysis for the state:

1. Hoosier employers are encouraged to grow good and promising job opportunities for early career talent and build robust pathways for talent to launch careers.

2. Employers and education partners work collaboratively with students at all ages to ensure they are informed and aware of job opportunities, including the relevant knowledge, skills, and abilities required for entry.

3. Higher education ensures degrees are aligned with the needs of the workforce and connects students with work-based learning and job opportunities.

4. Employers continue to refine talent needs by clearly defining the knowledge, skills, and competencies required of a role. Higher education works with students to ensure they can properly articulate postsecondary experiences as they relate to jobs.

INDIANA LABOR MARKET OVERVIEW

2019 marked an important year for Indiana's economy and workforce, with the state reaching an unemployment rate of 3.2% in September of 2019, the lowest rate since October 2000 and the lowest rate post-recession. More impressive, Indiana's unemployment rate has decreased 7.6% since reaching the recession's highest rate of unemployment in December of 2009. Indiana's labor force participation rate continues to outperform the national average and has for 62 consecutive months as of September 2019.[1] To continue strong growth trends, available talent must have the skills required for existing and future jobs.

Although unemployment and labor force participation rates vary across geographies and demographics, they suggest overall that economic growth is strong, job openings are plentiful, and the labor force has significant opportunities to move into rewarding careers. However, Indiana employers continue to emphasize a growing skills shortage among job candidates, indicating a misalignment between the supply of talent in the labor force, and employer talent needs.

Demand for Talent in the Indiana Labor Market

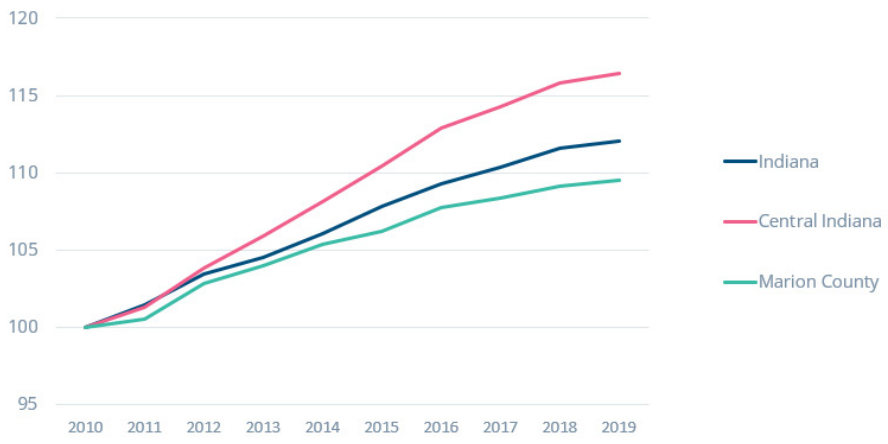
In this section, we present job trends across Indiana. As part of these trends, we examine different characteristics as it relates to geography, occupations, sectors, educational attainment, and early career. Further, we look to understand how many jobs are available and how these jobs are changing (growing, shrinking, or staying stagnant).

Workforce trends are presented as ten-year projections, which is a common benchmark used by the Bureau of Labor Statistics (BLS). This benchmark provides policymakers, strategic planners, state labor market analysts, research and statistics professionals, and stakeholders in workforce and economic development an extended outlook that better allows for informed decision-making.

Indiana's jobs are continuing to grow, but not all jobs added provide opportunity for advancement.

Indiana's workforce grew by 12% between 2010 and 2019, adding over 362 thousand jobs during this time period. Central Indiana added 154 thousand jobs and Marion County added 56 thousand jobs, making up 58% of the state's total added jobs. While Indiana has experienced a healthy growth in jobs since 2010, rates of growth varied across the state. Central Indiana experienced a higher rate of growth (16%), adding jobs at a faster rate than Marion County (12%) and the state (9%).

Chart 1: Indiana, Central Indiana, and Marion Country: Job Growth Trends After the Recession



Source: Emsi, QCEW, 2010-2019, 2019 (Indexed to 2010).

1 *Department of Workforce Development (2019). September 2019 Beyond the Numbers. Retrieved from: https://www.in.gov/dwd/files/Beyond%20the%20Numbers%20-%20September%202019.pdf*

Job growth across the state is projected to continue over the next decade, although not as quickly as the last decade which included years of sharp recovery from the recession. Between 2019 and 2029, Indiana will add over 230 thousand new jobs across all occupations (Table 1). While this represents growth, the economy will add 90 thousand fewer jobs than the previous ten years.[2]

Table 1: Job Growth Across Indiana, Central Indiana, and Marion County, 2019 and 2029

	2019 Jobs	2029 Jobs	Change	% Change
Indiana Total	3,374,798	3,607,103	232,305	7%
Central Indiana	1,095,278	1,193,242	97,964	9%
Marion County	649,704	678,697	28,993	4%

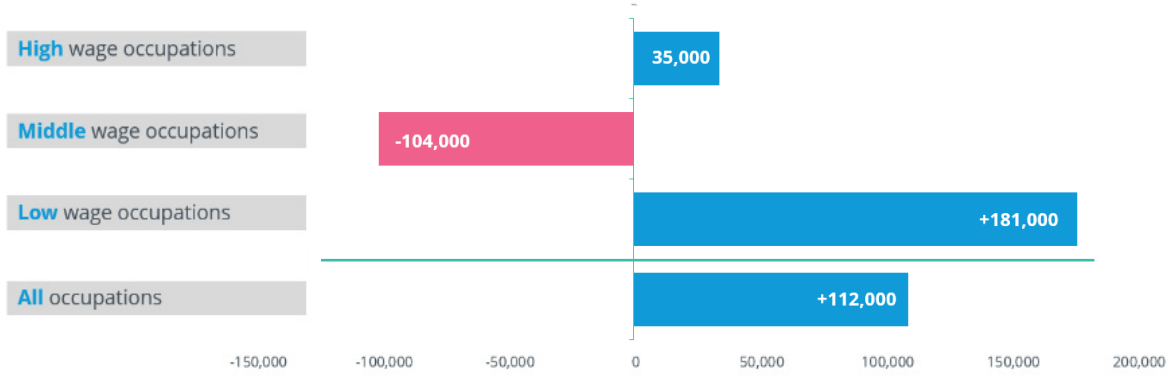
Source: Emsi Industries, Indiana, 2010 - 2019, Selected NAICS codes at the 4- or 6-digit levels

Further, it is increasingly important to consider the career potential of jobs created, especially as jobs are added at a slower rate than previous years (Chart 2).[3] A recent Brookings report focuses on two types of jobs that promote and advance opportunity for Hoosiers towards roles that provide family-sustaining wages and benefits:

- A "good job", which pays at least $37,440 per year, or $18 per hour, on a full-time, year-round basis, and provides employer-sponsored health insurance
- A "promising job", which is an entry-level role that provides career pathways to good jobs

When considering Indiana's added jobs from 2007 – 2017, most of Indiana's net job growth came from lower-paying portions of the economy and did not meet the "good" or "promising" threshold as detailed by Brookings. This uneven growth in earnings is not sustainable for Hoosier workers and families and impacts the ability for many to have access to increased economic opportunity.[4,5]

Chart 2: Absolute Employment Change in Indiana by Relative Wages, 2007-2017



2 While the state is projecting job growth over the next decade, this growth does not stand for unforeseen circumstances in the economy.

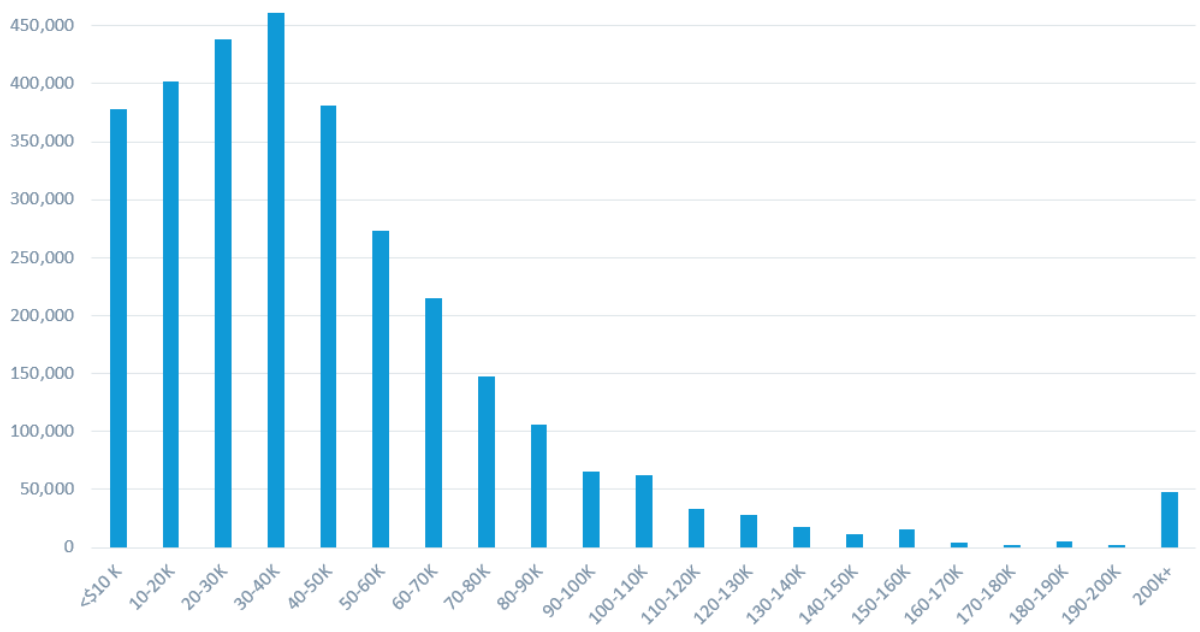
3 Brookings Institute (2018). Advancing opportunity in Central Indiana. Brookings analysis of Emsi data. Retrieved from: https://www.brookings.edu/research/advancing-opportunity-in-central-indiana/

4 High wage occupations have average hourly wages greater than 130% the state average, middle wage occupations between 60% and 130%, and low wage occupations are less than 60% (Emsi, 2019).

5 Brookings indicates that workers and families that struggle to make ends meet are not necessarily in poverty. Federal poverty guidelines refer to the amount of income a family needs to put food on the table, and these thresholds were considered in defining good and promising jobs.

When considering a narrower focus of wage distribution among Indiana residents (2018), it becomes evident that there is growing income inequality across Indiana as a result of not growing "good" and "promising" jobs (Chart 3).[6] Nearly 50% of the workforce are employed in jobs that fall under the "good" and "promising" threshold, indicating that half of the state's workforce receives wages that affect their ability to support day-to-day activities and living. This further reinforces that not all jobs are created equal; some jobs and industries provide much greater opportunity for advancement.

Chart 3: Wage Distribution Among Indiana Residents (2018)



Sectors that drove occupational growth over the last decade will continue to outpace the state's projected occupational growth rate.

Indiana houses five high-growth sectors: Advanced Manufacturing, Business and Finance, Healthcare, Information Technology, and Life Sciences.[7] Together, these five industries represent over one-third of Indiana's total workforce (Table 2).[8] Following the overarching trend of slowed growth, these five sectors are projected to add 95 thousand new jobs over the next decade compared to previously adding 150 thousand. However, these five high-growth sectors collectively will experience 9% growth by 2029, which outpaces the state's projected growth of 7%, and makes up approximately 41% of all new jobs added to the Indiana economy over the next decade.

Table 2: Job Growth Across Indiana's Five High-Growth Sectors

Sector	2010	2019	2029 Jobs	2010-2019% Change	2019-2029% Change
Advanced Manufacturing	299,798	370,382	377,548	23.54%	1.93%
Business + Finance	142,241	148,891	154,189	4.68%	3.56%
Healthcare	346,818	404,666	476,904	16.68%	17.85%
Information Technology	56,699	68,377	75,515	20.60%	10.44%
Life Sciences	53,745	55,200	58,980	2.71%	6.85%
Total	899,301	1,047,516	1,143,136	16.48%	9.13%

6 *DataUSA analysis of Public Use Microdata Sample (PUMs) and American Community Survey (ACS), 2019. The files are a set of un-tabulated records about individual people or housing units*

7 *Next Level Jobs. Retrieved from https://www.nextleveljobs.org/*

8 *Emsi, 2019.*

While the high growth sectors will outpace the state's average in occupational growth, the growth varies within each sector. Outlined below are the growth takeaways for each sector[9].

- Advanced Manufacturing will continue to grow, but at slower rates than previous decades due to trade automation and digitization of work;
- Business and Finance will remain relatively steady, continuing to see growth;
- Healthcare will remain a significant industry over the next ten years, and is estimated to add the greatest number of jobs;
- Information Technology will represent the second largest growth rate, keeping consistent with past growth trends; and
- Life Sciences will experience the greatest change in growth, adding more new jobs into the industry than the previous decade.

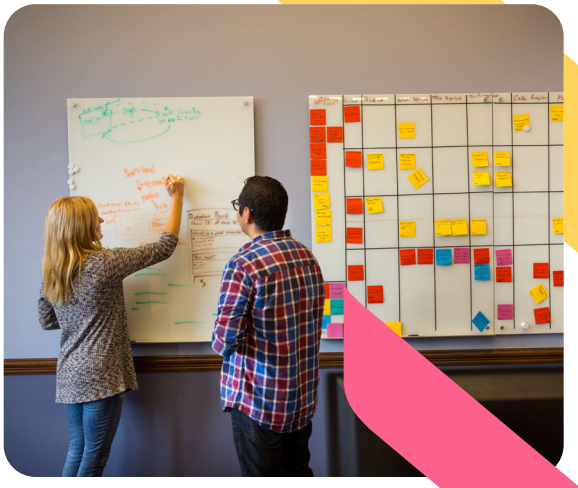
As growth continues to persist among Indiana's high-growth industries that have driven the economy over the past decade, the state can also consider focusing on the growth and development of "advanced sectors." These sectors represent role-types that cut across industries and are characterized by deep involvement with technology research and development (R&D) and STEM (science, technology, engineering, and math) workers. At least 10% of the statewide workforce was employed across the sector, ranking Indiana as one of the leading states in the concentration of residents working in these roles.[10] Because advanced sectors indirectly support one-fourth of the nation's jobs through innovation and productivity, these opportunities provide well-paying jobs that are commonly found within the state's five high-growth, high-demand industries.[11]

Jobs that require postsecondary education are growing.

By 2029, 60% of net new jobs added — jobs that are created and new to the state's economy — will require a postsecondary credential as an entry level requirement. This represents a 10% growth from the previous decade. As a result, jobs that do not require postsecondary education will make up 40% of the new jobs created.[12]

While Indiana is expected to see an increase in jobs that require postsecondary education over the next ten years, this growth will vary by geography. Central Indiana is growing jobs that require postsecondary degrees and credentials at higher rates than both Marion County and the state. By 2029, Indiana is projected to add nearly 122 thousand jobs that require postsecondary education, with Central Indiana accounting for 51 thousand, or about 42% of the total projected growth in the state.

When looking at the composition of new jobs that require postsecondary education over the next decade, the demand for Graduate/Professional and Associate degrees are growing faster compared to jobs requiring a Bachelor's degree and certificates. Jobs requiring a high school diploma or less are growing at the slowest rate.



9 While this growth rate varies from the previous decade, one must consider the post-recession recovery period and the rapid job growth that took place.

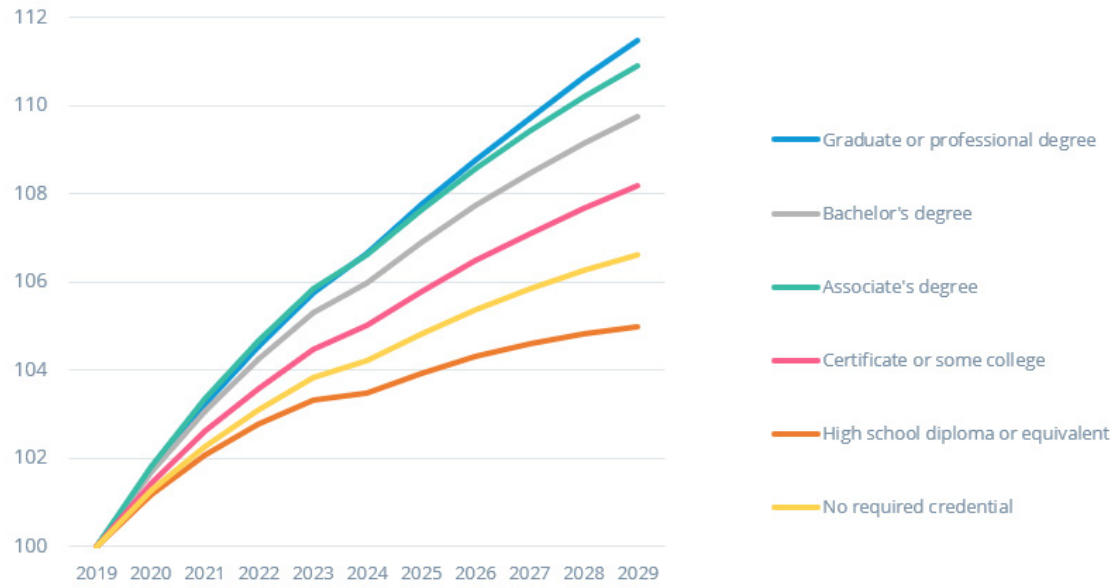
10 Brookings Institute. (2015). America's Advanced Industries: What They Are, Where They Are, and Why They Matter. Retrieved from https://www.brookings.edu/research/americas-advanced-industries-what-they-are-where-they-are-and-why-they-matter/ "These fields range from manufacturing industries such as automaking, aerospace, and medical devices to fast-growing service industries such as computer software, to energy industries such as oil and gas extraction. Through their activities, these industries encompass the nation's "tech" sector at its broadest and most consequential" (Brookings, 2015).

11 Ibid.

12 Ascend and Futureworks used a twenty-year projection, leveraging 2019 Emsi analytics.

Due to increasing knowledge and skill requirements, Indiana's workforce will need higher levels of education to fill open jobs.

Chart 4: Jobs that Require Postsecondary Credentials Over the Next Decade



Source: Emsi, BLS QCEW, 2019-2029, 2019 (Indexed to 2019)

Early career jobs will mirror the state's overall demand trends of slowed growth.

Early career jobs are an important component of the labor market because employers identify them as places to bring in new talent and graduates seek those jobs in order to launch their careers. For the purposes of this report, we define early career jobs as requiring some level of postsecondary education, little to no experience in a related field, and earn wages ranging from $18.50 - $31.30 per hour.

Currently, early career jobs represent approximately 12% of Indiana's total jobs (out of 3 million), but 20% of total jobs that require postsecondary education. In the next decade, the state is expected to add 40 thousand new early career jobs, which is 48% less than the previous decade. This accounts for 41% of the overall 90 thousand less jobs over the next decade (37 thousand less early career jobs added than the previous decade). As a result, early career jobs are keeping pace with slowing job growth as a whole.

Business and Financial Operations, Life Sciences, and Healthcare will add more than 50% of early career occupations in their respective industries over the next decade.

When looking across 225 occupations within Indiana's growth sectors, three occupations are projected to have more than 50% filled by early career talent. These include Business and Financial Operations (67%); Life, Physical, and Social Sciences (63%); and Healthcare Practitioners and Technical occupations (57%). Table 3 provides an overview of the projected change between 2019 and 2029 for jobs in occupational groups that require postsecondary education credentials as an early career requirement.[13]

13 Over 225 different occupations (based on SOC codes) are represented in the occupational groups shown in Table 3, ranging from registered nurses to accountants to mechanical engineers to programmers.

Together, these top growing occupations will add approximately 24 thousand jobs by 2029:

- Business and Financial Operations is projected to increase from 86 thousand early career jobs to 95 thousand;
- Life, Physical, and Social Sciences is projected to increase from 13 thousand to 14 thousand early career jobs; and
- Healthcare Practitioners and Technical roles are projected add 15 thousand early career roles.

Table 3: Selected Early Career Occupations in Indiana, Current + Projected Growth, 2019 - 2029

Occupational Groups	All 2019 Jobs	Early Career Jobs 2019	2019 Early Career Jobs as % of All Jobs	All 2029 Jobs	Early Career Jobs 2029	2029 Early Career Jobs as % of All Jobs
Healthcare Practitioners + Technical	201,546	115,339	57.2%	228,658	130,346	57.0%
Business + Financial Operations	129,257	86,978	67.3%	142,241	95,774	67.3%
Transportation + Material Moving	286,621	59,786	20.9%	311,722	63,515	20.4%
Computer + Mathematical	64,966	17,656	27.2%	73,849	20,095	27.2%
Installation, Maintenance + Repair	145,666	17,283	11.9%	156,693	18,638	11.9%
Architecture + Engineering	53,919	14,506	26.9%	58,987	15,602	26.5%
Community + Social Service	54,160	14.290	26.4%	61,567	16,493	26.8%
Life, Physical + Social Science	21,727	13,989	64.4%	23,480	14,875	63.4%
Arts, Entertainment, Sports, Media	45,877	13,523	29.5%	48,214	14,513	30.1%
Healthcare Support	86,430	10,484	12.1%	102,808	12,745	12.4%
Management	176,049	8,122	4.6%	190,840	8,783	4.6%
Production	365,327	5,664	1.4%	190,840	8,783	4.6%
Sales + Related	311,346	5,224	1.7%	323,138	5,597	1.7%
Legal	18,648	5,028	27.0%	19m245	5,435	28.2%
Office + Administrative Support	457,770	1,687	0.4%	474,180	1,738	0.4%

Source: Emsi, QCEW, Occupations, 2010 – 2019, Indiana. Selected Occupations.

With the understanding that job growth is steepest among jobs that require a postsecondary credential, we expect that what employers and policymakers describe as a tight labor market consisting of talent with the right skill set will continue. Given this, effective strategies to better align talent demand with supply must take this composition into account.

To evaluate the overall alignment of talent supply to demand in Indiana, we now turn to the supply-side.

Supply of Talent in the Indiana Labor Market

In this section, we address the composition of the supply of talent in Indiana. Given that supply is ultimately shaped by the number of people in or entering the labor force, we briefly examine population demographics. Second, we analyze the supply of talent coming from Indiana's postsecondary education institutions. While there are other ways to obtain talent and to gain the skills employers are seeking, Indiana's postsecondary education institutions are the largest source of skilled entrants to the labor market in the state. Finally, as we did with demand, we examine additional factors that are important in shaping talent supply — in this case, the retention of graduates from Indiana colleges and universities.

Understanding the supply of talent provides a framework into the areas of focus for Indiana decision-makers, especially as Indiana's wealth-driving sectors are increasingly requiring workers with higher skills to expand productivity and create economic growth. Due to increasing knowledge and skill requirements, Indiana's workforce will need higher levels of education to meet the forthcoming 60% of added jobs that will require postsecondary educated workers.

Slowing population growth is projected to shrink Indiana's talent pool.

Population demographics indicate that there are not enough incoming younger workers to replace the aging workers to supply the new jobs anticipated in key occupations and sectors. This indicates that birth rates are declining, which will exacerbate the demand for talent to fuel new job growth. When looking at current population cohorts (2019) compared to growth projected through 2029, there will be an overall decline of 144 thousand in Indiana's working aged population. This is a result of increased retirements and declining birth rates. Overall, the next decade will experience fewer new entrants (aged 15-19) into the labor force. This trend is true across Central Indiana and Marion County, as well.

When considering less working age individuals will enter into the workforce over the next decade, the state is simultaneously projected to see an increase in retirements. Projections extending beyond the next decade further indicate that Indiana's available talent pool is expected to slow in growth as a result of these concurrent factors. Indiana's population is expected to grow 10% between 2015 and 2050, indicating an estimated 660 thousand residents. While the state is expected to see population growth, it will increase at lower rates with just a handful of metropolitan areas being responsible for most of the state's population gains. Additionally, Indiana will see an increase in its aging population, with the share of individuals age 65 or older increasing from 14.6% in 2015, to 20.7% by 2035.[14]

Population size is an imperative level-setting framework for decision-makers, especially considering that the state is working to develop a workforce that is adequately prepared for the jobs that will require a postsecondary credential as an entry level requirement.

Not enough Hoosiers are enrolling in postsecondary education.

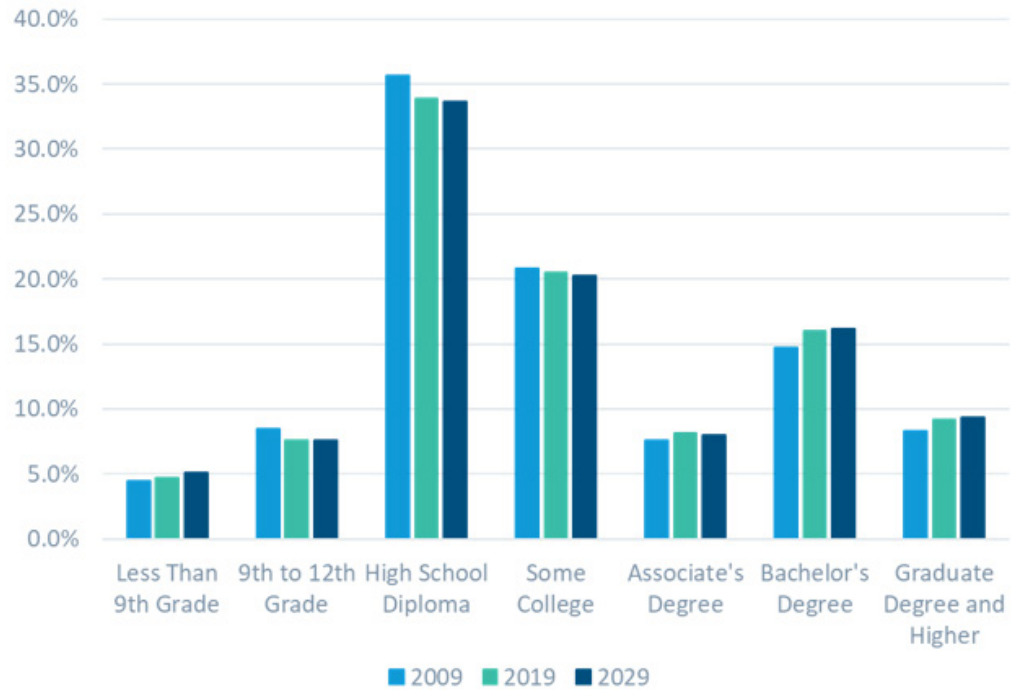
As good and promising jobs continue to be added to the Indiana economy, not enough Hoosiers are enrolling in postsecondary education, continuing to cause misalignment between available talent and needs of employers. Concurrently, the state continues to experience unfavorable demographic trends that tighten available job-ready talent for employers.

Over the past decade, trends indicate higher rates in postsecondary attainment, with an estimated 212 thousand individuals holding an Associate degree or higher in 2019 than a decade earlier

14 *Kinghorn, Matt. (2015). Indiana population projections to 2050. INContext. Retrieved from: http://www.incontext.indiana.edu/2018/mar-apr/article1.asp*

(Chart 5). These trends are projected to stagnate, seeing almost no increase in the percentages of people with an Associate degree or higher. These trends are aligned with Marion County educational attainment rates, with projected percentages of Associate and Bachelor's degrees in 2029 at similar attainment levels as those of 2009.[15]

Chart 5: Educational Attainment Levels, Indiana, 2009 - 2029



Source: Emsi Demographics, Educational Attainment 2009-2029, population 25 years old and over, Indiana.

Currently, only 43% of Hoosiers hold a credential beyond high school, indicating that there is misalignment between the demand of employers and Indiana's talent. This trend is similar in Central Indiana, with only 42% of residents having postsecondary credentials.[16] Neither the state nor Central Indiana's current supply of talent is keeping pace with demand from employers. With the state's goal of 60% acquiring a postsecondary credential by 2025, Central Indiana will have to grow by 18% despite averaging only a 1.3 percentage point total growth over the past four years.

The Commission for Higher Education (CHE) releases an annual College Readiness Report, and in their 2019 rendition, CHE reported 63% of seniors went on to enroll in postsecondary education.[17] While 63% of Hoosier students matriculating into a postsecondary pathway is a positive stride, this leaves 37% of students (27,089 students) with limited opportunity to enter into a good and promising job that provides upward mobility and economic stability.

15 By comparison, Central Indiana saw a higher rate of increase in educational attainment between 2009 and 2019, resulting in an increase of 104 thousand people with postsecondary credentials. Unlike the state, Central Indiana is projected to sustain these trends over the next ten years, with an exception in Associate degrees seeing a minor decline in attainment.

16 Quinn, Sammy. (2020). More Indiana Adults Returning To College to Finish Degrees. Retrieved from https://www.wfyi.org/news/articles/more-indiana-adults-returning-to-college-to-finish-degrees.

17 Indiana Commission for Higher Education. (2019). College Readiness Report. Retrieved from: https://www.in.gov/che/2489.htm

Table 4: Indiana Public College Enrollment by Degree Type		
Degree Type	**# Enrolled in IN Public College**	**% of Total Enrolled in IN Public College**
Bachelor's Degree (4 year)	23,159	68.9%
Associate Degree (2 year)	9,339	27.8%
Award of at least 1 but less than 2 academic years	480	1.4%
Award of less that 1 academic year	170	0.5%
Unclassified undergraduate	446	1.3%
Source: Indiana Commission for Higher Education. (2019). College Readiness Report.		

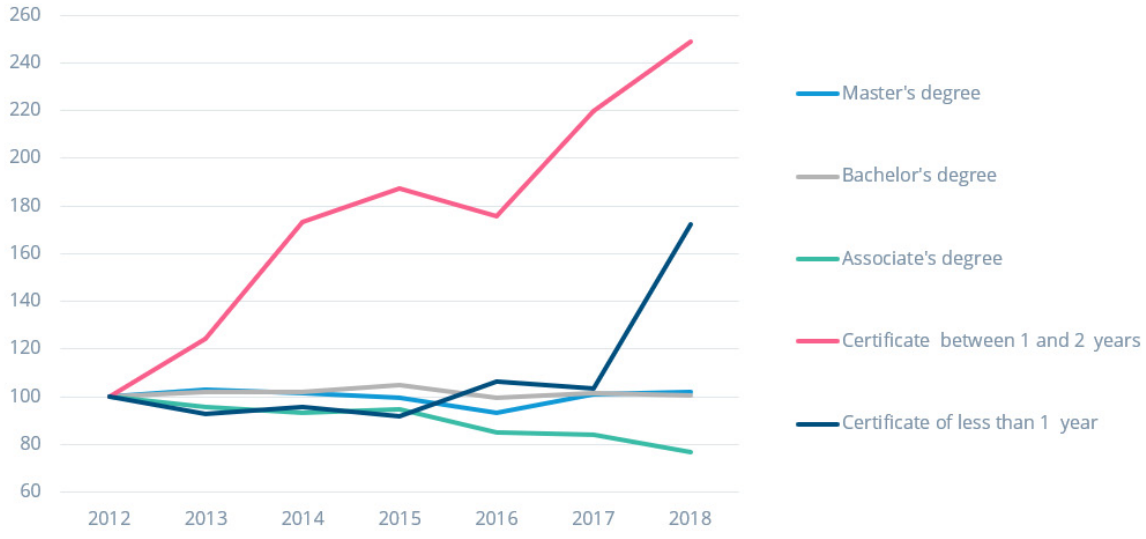
Considering the state's shrinking talent pool and number of students without a defined pathway upon graduation, policies like the Indiana Department of Education's Graduation Pathways provides an opportunity to directly target these students and provide them with the autonomy to choose the options that best meet their postsecondary needs and aspirations.[18]

Too few Hoosiers are pursuing a credential or degree that aligns to good or promising employment opportunities.

As stated in the demand section above, over the next decade, jobs that require a Graduate or Professional degree, Associate degree, and Bachelor's degree will grow at a greater rate than jobs that require a credential or less.

Over the past few years, Indiana has seen an increase in completion of certificates that require one- to two-years of study by 150% and certificates that require less than a year of study increase by 72%.[19] In contrast to the certificate growth, Associate degree awards decreased nearly 23%, and the number of Graduate/Professional and Bachelor's degrees awarded have remained stagnant.[20,21]

Chart 6: Levels of Degree Awards Among Indiana Colleges and Universities, 2012 -2018



Source: NCES, IPEDS, Completions 2012-2018, grand total awards.

18 Indiana Department of Education. Graduation Pathways. Retrieved from https://www.doe.in.gov/graduation-pathways

19 With the inclusion of workforce certificates (beginning in 2014), Indiana's overall rate of educational attainment has increased by 10.2 percentage points since 2008 (CivicLab).

20 These data are consistent with the confluence of effects from a much lower unemployment rate, which draws people away from education and into employment.

21 The data in Chart 6 represent for-credit coursework as defined by academic coursework.

Trends over the next decade indicate that jobs will require higher rates of Graduate or Professional degrees and Associate degrees. However, data indicates that the production of certificates overshadows the lower growth of Associate, Bachelor's, and Graduate/Professional degrees. If this trend continues, there will be a drastic misalignment between the education pursued by students and the education required by employers. While this represents a promising trend in credential attainment, it is important that these certificates lead to good or promising jobs. Thereby, it is increasingly important that colleges and universities partner with employers to deliver industry-aligned curriculum and to award transferable credits to support students in continuing their education and obtaining in-demand credentials.

Too few Hoosiers are concentrating in high-demand fields.

While the attainment of certificates has increased significantly over the past decade, Indiana's regional supply pipelines are not producing enough credentialed workers in key industry clusters. Table 5 below outlines Indiana's top early career occupations and related program completions.

Table 5: Indiana's Top Early Career Occupations + Program Completions, 2017-2028

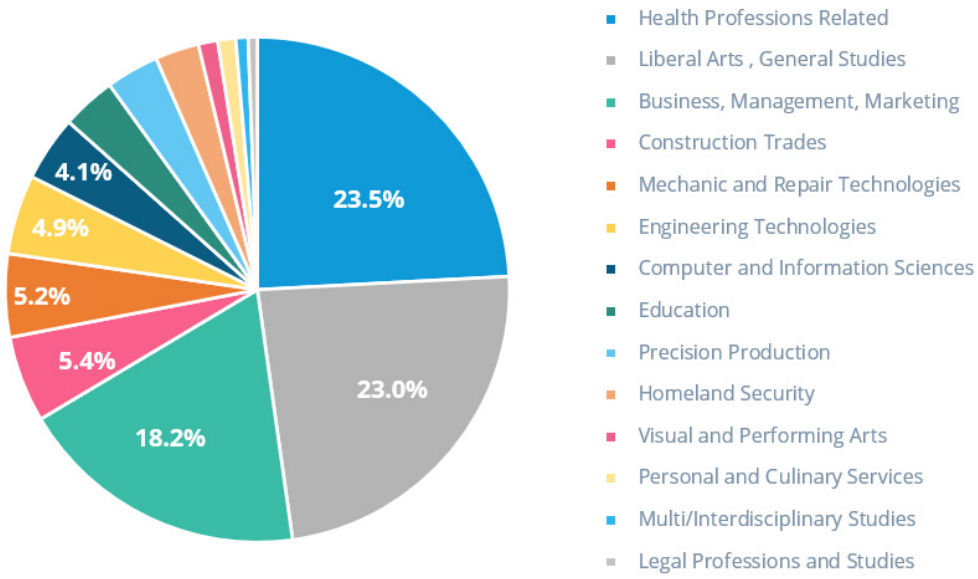
Occupational	2017 Jobs	Projected 2028	Annual Openings	Entry Level Education
Registered Nurses	65,345	75,588	4,508	Bachelor's
Computer + Software Systems + Support**	36,661	44,589	3,407	Bachelor's
Bookkeeping, Accounting, and Auditing Clerks*	34,986	33,638	3,856	Some College
Nursing Assistants*	31,752	37,507	4,387	Certificate
Accountants + Auditors	21,842	24,218	2,262	Bachelor's
Licensed Practical + Vocational Nurses*	16,559	19,176	1,498	Certificate
Automotive Service Technicians + Mechanics*	15,912	17,026	1,647	Certificate
Business Operations Specialists	14,250	15,909	1,503	Bachelor's
Medical Assistants*	12,900	15,711	1,767	Certificate
Human Resources Specialists	11,680	12,502	1,234	Bachelor's
Market Research Analysts + Marketing Specialists	8,964	11,222	1,172	Bachelor's
Industrial Engineers	8,873	9,617	674	Bachelor's
Mechanical Engineers	8,195	9,048	620	Bachelor's
Heating, Air Conditioning, Refrigeration Mechanics*	6,697	7,477	761	Certificate
Child, Family, and School Social Workers	6,435	7,095	744	Bachelor's
Purchasing Agents	6,410	6,896	617	Bachelor's
Dental Assistants*	5,695	6,759	773	Certificate

Source: Emsi Occupation Projections, 2017

With the understanding of in-demand early career occupations, when looking at the breakdown of the degrees being awarded by major, we can begin to understand what fields of study Indiana talent is pursuing. Three fields of study make up the majority of degrees awarded at both the sub-baccalaureate and baccalaureate level, which include Health Professions; Liberal Arts, General Studies; and Business, Management, and Marketing.

At the sub-baccalaureate level, nearly 65% of all certificates and Associate degrees were awarded in these three fields of study, compared to 45% at the baccalaureate level.

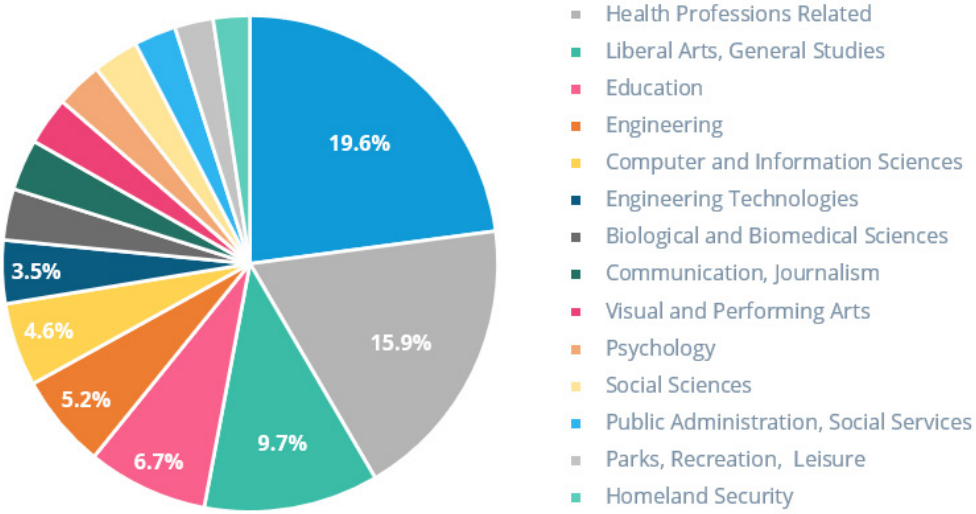
Chart 7: Sub-baccalaureate Program Completions, Public and Private Institutions, 2017 - 2018



Source: NCES, IPEDS, 2017-2018, Completions, Includes Certificates and Associate Degrees. Total N=32,881 awards. Public and private institutions.

While trends in the production of degrees awarded are seen at the baccalaureate and sub-baccalaureate level, the baccalaureate level experiences more distribution across various fields of study that are in high demand across the state.

Chart 8: Baccalaureate Program Completions, Public and Private Institutions, 2017 - 2018



Source: NCES, IPEDS, 2017-2018, Completions, Includes Bachelor's, Masters, Doctorate (research) Degrees. Total N=91,980. Public and private institutions.

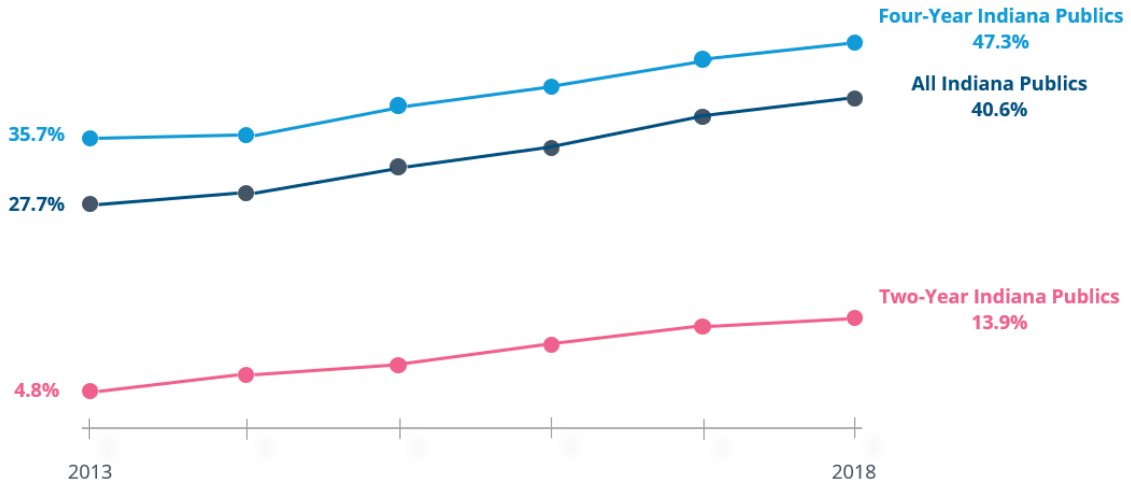
While Hoosiers are pursuing postsecondary education at greater rates, there is still opportunity to ensure they are educated on the best degree options and fields of study that meets their career goals and secure a good and promising job along a defined career path.

Too few students are completing credentials on-time.

College on-time completion rates continue to improve across four-year and two-year public campuses statewide. The most recent completion data from CHE reveal 40.6% of all Hoosier college students graduate on-time (within four years for a Bachelor's degree or within two years for an Associate degree). This represents an increase of 12.8% over the five-year period between 2013 and 2018, and an increase of 2.1% in one year (2017-2018).[22]

Nearly half (47.3%) of all Hoosier students who attend a public four-year campus graduate on-time — an improvement of 11.5% over the five-year period.[23] Indiana's two-year campuses are seeing improvement in on-time graduation rates as well. Overall, 13.9% of students are graduating on-time and 35.3% are graduating during the extended timeline at two-year campuses across the state.

Chart 9: Completing On-time, Same Campus and Degree Level



Source: "College Completion Report 2019. "Indiana Commission for Higher Education.

While rates of on-time completion are improving, CHE reports that of the 63% of high school seniors that enrolled in postsecondary education within an Indiana public college, approximately 12% required remedial coursework. In Indianapolis, of the 62% of Indianapolis high school seniors that enrolled in post-secondary education, approximately 25% required remedial coursework, indicating many are not adequately prepared. As students enroll and do not persist through to completion of a postsecondary program, they are subject to accumulating debt and limited opportunity for entry into a good or promising job that offsets the investment of their education. Additionally, those who do persist through to completion, but do so in an extended time, are also subject to increased debt accumulation, which impacts the long-term stability of the state's economy.

22 Indiana Commission for Higher Education. (2019). 2019 Indiana College Completion Report. Retrieved from: https://www.in.gov/che/3032.htm

23 iBid.

Too few students are connecting to jobs upon graduation.

While Indiana is producing a significant number of people with postsecondary education, and bringing in people outside of the state, many of these individuals are not remaining within the state or contributing to the economy upon graduation. Much of this outmigration is attributable to slowing early career job growth, thus providing less entry points for Indiana-educated talent into the regional workforce.

Leveraging LinkedIn analytics, of the 119 thousand graduates of Indiana's private colleges and universities between 2014 and 2019, 54 thousand, or 45%, self-report living and working in the state. Of the alumni who live in the state, nearly half are located in or around Indianapolis. Outmigration becomes a real consideration for Indiana-educated talent in the absence of early career opportunities, as private institutions already see a majority of graduates living and working outside of the state.

Table 6: Distribution of Alumni of Indiana Private Colleges Living in Indiana, 2014 - 2019

Total Alumni 2014 - 2019	Total LinkedIn Alumni Reporting Living in Indiana	% of LinkedIn Alumni Living in Indiana
119,641	54,005	45.1%
Distribution of Alumni in Indiana[24]		
Indianapolis		26,020
Fort Wayne		10,313
South Bend		5,385
Evansville		3,051
Terra Haute		2,766
Elkhart		2,359
Lafayette		1,375
Muncie		1,065
Bloomington		930
Kokomo		741

Source: LinkedIn Alumni Tool 2014 - 2019, authors analysis

Generalizing from the LinkedIn data, the total aggregate credentials awarded, shown above in Table 6, overstate the pool of potential job candidates for Indiana employers.[25] Thereby, unless the number of graduates substantially increases and/or greater proportions of the graduates stay and become employed in Indiana, it is very likely that Indiana colleges and universities will produce significantly fewer graduates than projected demand for new employees in the state.

The sections above deeply explored Indiana's labor market from both a supply and demand lens to better understand the state's workforce landscape. In the next section, we present a series of opportunities that aim to strengthen workforce efforts and achieve alignment between supply and demand.

24 LinkedIn, in defining residential locations for alumni, has grouped locations in Indiana around the cities listed in the table.

25 Indiana colleges and universities bring in many students from out of state, whose intentions are not to remain within the state upon graduation.

OPPORTUNITIES

Indiana has strong workforce infrastructure supported by dedicated and innovative organizations to mobilize the Hoosier workforce and advance economic opportunity for all. Listed below are opportunities that support the alignment of Indiana's talent supply and future demand, in tandem with strong efforts currently led by initiatives working within this area. As the state considers future efforts to develop and support Hoosier workers and employers, bringing together all key stakeholders and aligning current efforts to a common goal will enable long-term success as it relates to workforce and economic prosperity.

1. Continue to create good and promising jobs

Recognizing the supply and demand challenges stated above, Indiana's leaders are well positioned to lead the effort in promoting economic growth and prosperity while advancing opportunity for more workers and families to reach the middle class. While Indiana provides hundreds of thousands of good and promising jobs for both its sub-baccalaureate workers and high-skill workers who have at least a Bachelor's degree, the state does not provide enough that are good and promising. Therefore, the next decade brings increased opportunity for Indiana leaders and employers to consider long-term talent strategies that include the creation of good and promising jobs that provide career opportunities for Hoosier talent.

Incentivize development in good and promising jobs

Central Indiana alone requires approximately 118 thousand "good" or "promising" jobs over the next ten years to reduce the number of workers who struggle to make ends meet from 20% of current workers to 5.6% of workers. To advance economic opportunity, state leaders, like the Indiana Economic Development Corporation (IEDC), are uniquely positioned to support and advance these efforts. IEDC currently supports employers by incentivizing those who are committed to improving job quality through incentives like the Skills Enhancement Fund and the Economic Development for a Growing Economy Tax Credit.[26]

Similar to strong efforts by IEDC, Indianapolis Mayor Joe Hogsett is partnering with the Indianapolis Chamber and EmployIndy to prioritize an inclusive growth strategy to remove barriers that prohibit meaningful employment for residents and advance opportunities through local business growth. Inclusive growth enables the continued growth of good and promising jobs by building on traditional models of economic growth like access to health and childcare, transportation, affordable housing, education, and skill development.

"Working in partnership with the public sector, Indiana's businesses, universities, and philanthropic institutions can make intentional investments in strategies that will lessen risks associated with the future economy and increase the likelihood of continued and more broadly shared prosperity." (David Johnson, CEO of CICP).

NextLevel Jobs INDIANA

Next Level Jobs provides Hoosiers with free statewide training in high-paying, in-demand industries. Next Level Jobs also provides Indiana employers with reimbursements up to $50,000 to train their employees in these high-growth fields.

Build early career talent strategies that result in good and promising jobs

In addition to increasing the number of available good and promising jobs, employers must also create strategies that guide talent, especially early career talent, into the good jobs over time. For example, employers can develop internships and other work-based learning

26 Indiana Economic Development Corporation. Retrieved from https://www.iedc.in.gov/
Skills Enhancement Fund (SEF) provides a grant to businesses to support them in training and upskilling employees to support new capital investment. Employees are able to obtain a postsecondary credential, a nationally-recognized industry credential, or specialized company training for both new hires and existing workers, and an increase in wages for existing employees. The Economic Development for a Growing Economy (EDGE) Tax Credit is provided to businesses to support job creation, capital investment, and improvements to the standard of living for Hoosiers.

opportunities for students that prepare them for promising jobs, and with additional training and development, place these individuals on an accelerated pathway to a good job. This enables employers to hire and retain talent to fuel growth and continued competitiveness.

Talent strategies are imperative for employers to develop, especially considering that Indiana graduates highly educated and competitive students who are eager for robust early career opportunities. Employers are challenged to evaluate and plan for their talent needs in the coming decade, as the state is only projected to add 40 thousand career jobs, but our universities are seeing more graduates than jobs (124 thousand degrees were awarded during the 2017-2018 school year). It is important that employers consider talent strategies that advance opportunity for all workers across all roles. Specifically, talent strategies should be considered in two areas: growing good and promising jobs and developing early career entry points. Employers should elevate roles to either the good or promising threshold by restructuring role definitions and wages. In addition, employers must also develop good and promising early career roles for Indiana-educated talent that provide long-term trajectory within companies through defined career pathways. Together, these efforts work in tandem to promote the trend of increased postsecondary educational attainment, while increasing retention and attrition of workers.

ONEAMERICA®

OneAmerica launched its new Pathway to Sustainable Income program, which will allow employees not considered in the "good job" category to move up their level of pay through tenure and good performance. This has prompted company leaders to make a $7 million investment to lift those wages. Similarly, companies like IU Health and Roche Diagnostics are currently reviewing their jobs that do not meet the "good" and "promising" threshold.

Advanced sectors are critical employers that can leverage the above talent strategies as they require workers with technical skill sets to innovate around and expand STEM-related growth. Workers in advanced sectors tend to generate greater amounts of annual value added than other industries, and as a result, see wages that well meet the threshold of good and promising. Additionally, more than half of the sector's workers possess less than a Bachelor's degree, making these occupations accessible for Hoosiers. To strengthen the overall opportunity and advancement of the sector, employers can ensure that all roles meet the good and promising threshold and define clear career pathways for both early career talent and incumbent workers. These efforts will promote continued postsecondary attainment as a result of career advancement, while also providing good and promising wages.

2. Collaborate on solutions for a comprehensive and robust Work-Based Learning Continuum

Indiana is uniquely positioned to think strategically around its Work-Based Learning (WBL) Continuum solutions to better align the tightening labor market through degree attainment and completion. The WBL Continuum aligns the state's future workforce by providing students with robust experiences across career awareness, exploration, preparation, and training.

- **Awareness:** Students are exposed to a variety of career opportunities, including a basic understanding of the education and skill requirements needed for those jobs
- **Exploration:** Students are able to explore career interests with employers or mentors to better inform future career decisions

EmployIndy

Efforts have already started across Indiana to develop a cohesive Work-Based Learning Continuum. **EmployIndy** has launched a regional initiative called Talent Bound that provides students with three phases of work-based learning – career exposure, engagement and experience – that continually enhance students' education and prepare them for careers.

- **Preparation:** Students engage in practical experience within a field of interest to further understand and begin to develop knowledge, skills, and abilities for a role
- **Training:** Students are immersed in a training program or educational pathway to hone the education and skill requirements for a chosen field

As jobs that require postsecondary education as an entry requirement continue to grow, the WBL Continuum is even more critical to align the ecosystem. As an example, trends over the next decade indicate that jobs will require higher rates of Graduate or Professional degrees and Associate degrees; however there is misalignment between the education pursued by students and the education required by employers.

The WBL Continuum enhances a student's understanding and planning around career pathways and makes visible the appropriate level of knowledge, skills, and abilities required for entry. Thereby, K-12 and higher education should align their capacity and funding to support students' academic and career journeys, equipping them with the tools to secure work-and-learn experiences, and ultimately jobs. By providing experiences to develop the student's competencies, the WBL Continuum is a comprehensive solution to combat the misalignment of degrees needed by employers and postsecondary attainment.

Ascend + EmployIndy

As a response to the growing need for a cohesive Work-Based Learning Continuum, **Ascend Indiana** has partnered with **EmployIndy** to launch a youth apprenticeship pilot that creates employer-led, postsecondary pathways starting in high school. This pilot leverages the Talent Bound initiative to align directly with career exposure and exploration. The youth apprenticeship opportunity combines employment, on-the-job learning, and related high school and postsecondary instruction.

3. *Develop intentional partnerships between postsecondary providers and employers to ensure talent produced meets demand*

Indiana hosts a wealth of world class public and private postsecondary education institutions that serve as a pipeline of talent for Indiana employers. There is a need for more aligned educational training programs and enhanced connective tissue among employers, higher education, and students. Specifically, this entails stronger efforts to connect local employers with Indiana educated talent and ensuring that skills and competencies developed in degree programs align with in-demand occupations.

Connect graduates with Indiana opportunities

It is the role of employers to signal to higher education the skills and competencies they need within their workforce. Higher education is positioned to complement these efforts by evolving their degree programs in alignment with employer demands. Additionally, the onus is on higher education to ensure that graduates are made aware of and connected to jobs that align with their degree field, retaining Indiana talent within the state. Finally, students must engage with employers around work-based learning opportunities and articulate the knowledge and competencies learned during their education. Together, employers, higher education, and students will have stronger alignment within the labor market and can increase the number of students finding employment in Indiana.

Ascend

The Ascend Network connects early career job seekers to Indiana work-based learning and full-time opportunities. Ascend matches candidates based on skills, the type of opportunity the student is seeking, and character traits required for each role. By working closely with an Ascend recruiter, students are provided a personal conversation that is designed to ensure fit, evaluate skills, and assess experience to make more intelligent connections to Indiana opportunities.

Efforts are currently ongoing that support higher education's alignment to employer talent needs. As an example, the distribution of Bachelor's degree awards in Computer and Information Sciences increased by 178% from 2010-2017 as a result of higher education's alignment with labor market demand. One contributor to this increase was Indiana University, who launched a new school and department focused within computer and information sciences. Higher education can continue to work with hiring managers and key stakeholders to develop degree solutions that directly meet employer needs and provide graduates with in-demand career opportunities upon graduation.

TMAP, an Indianapolis-based recruiting company, leverages technology and targeted marketing to identify a talent pool that meets an employers' needs. TMAP is unique in that the organization also works to identify Indiana-educated individuals working out-of-state, and market in-state opportunities to recoup and retain talent.

Match talent requirements of employers with talent and skill characteristics of Indiana graduates

While it is an important effort to provide employers with Indiana-educated talent, many ongoing efforts to close the gap between labor market demand and talent supply focus on a quantitative gap in numbers, ultimately seeing the number of graduates as being able to fill the number of available jobs. This quantitative approach is unlikely to be successful if graduates are not adequately paired with employers based on the skills and characteristics they possess and that employers are looking for. Currently, many efforts encourage employers and human resource leaders to advance opportunities to match requirements of a job and expected job performance with the skills, capabilities, and competencies of candidates.

Skillful Indiana works with employers to help them transition employment practices to include a skills-based approach. By implementing skills-based practices across the workforce ecosystem, this enables Indiana to meet economic need and places more Hoosiers on better career pathways.

Matching graduates' skills and competencies to the requirements of a role has allowed for a stronger ability to ensure employers are receiving the talent they need. To coordinate competency identification in a consistent manner, employers can continue to work with higher education to define clusters of competencies, which include technical skills, common skills, and attributes.[27] Additionally, understanding employer demanded competencies is important for educational institutions as they identify outcomes of the programs offered and allow institutions to move away from the reliance on credential awards as a measure of a students' skills and readiness for employment. Through a structured partnership, educators can work with students to better articulate the competencies they possess, and employers can develop formal strategies for assessing competencies through techniques such as structured situational interviews.

CONCLUSION

Many stakeholders are working to address Indiana's workforce and economic development concerns. To combat the state's growing misalignment between the supply of talent and the demand of workers, the ecosystem must collaboratively work together to advance opportunities that provide long-term workforce solutions. This includes growing good and promising jobs, providing students work-based learning experiences, and developing robust partnerships between postsecondary providers and employers to ensure Indiana-educated graduates are connected to jobs and have the competencies demanded by employers. By expanding and improving the quality of the workforce and better aligning jobs and talent, the state is making positive strides to ensuring jobs added are good and promising and that Hoosiers are provided economic prosperity as a result of rewarding careers.

27 Technical skills are occupational or job-specific skills. Common skills are skills needed to carry out tasks and function well at work. Attributes are characteristics that enable people in a work environment to be successful in their jobs; they may be behavioral, like energetic or perseverant, or qualities, like honesty and integrity.

APPENDIX A: METHODOLOGIES AND REFERENCES

Employment and Projection Data

Industry and Occupational Employment. These are jobs as reported by businesses and collected through national employment statistics programs. The primary source of industry and occupational employment data in this report is Emsi's collection and aggregation of the Bureau of Labor Statistics national employment statistics program called Quarterly Census of Employment and Wages (QCEW). QCEW is the standard governmental program that reports employment data for regions and states across the country. Emsi supplements the QCEW data with self-employed estimates derived from the US Census Bureau Non-employer Statistics and County Business Patterns. The data for this report is from Emsi's 2019 data set.

Employment Projections: Projections in employment are based on national industry projections (BLS national employment projections) as well as state and regional projections provided by state labor market organizations. Emsi also benchmarks these projections based on short-, mid-, and long-term trend lines for every industry and county based on historical data.

Job Openings: Job openings are defined by the Bureau of Labor Statistics as openings due to (1) new jobs created by expanding companies, (2) workers exiting the workforce (retirements, discouraged workers, or parents halting their participation in the labor force to be with their children, etc.), and (3) workers permanently leaving an occupation, but staying in the workforce. Job openings do not include workers simply switching jobs within an occupation.

Job Postings: Job postings denote the total and unduplicated number of online job advertisements listed by different companies on career sites and job boards. The total number of postings can be used to define occupational demand as well as demand for specific skill sets.

Job Postings v. Job Openings: Job postings can represent the ceiling of demand for a job in the state, but only if employers are actively advertising online. Job openings take a more conservative approach to demand, accounting for job growth and estimating replacement needs for workers who change careers or retire. It's likely that the true demand for a job is somewhere between job postings and openings.

Postsecondary Institutional Credential Completions

The Universe of Institutions: Our methodology calculates the supply of credential completions for postsecondary granting educational institutions in the state of Indiana. Excluded from the analysis are smaller or single purpose schools such as bible institutes or cosmetology schools.

Credential Completions: We use the credential completions reported and organized by the program of study by each private and public institution of higher education in Indiana through the National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS). We include the credentials or certificates of less than one year's academic credit, certificates between one and two years of academic credit, associate degrees, Bachelor's degrees, Master's degrees, and PhDs (professional practice) codified in the U.S. Department of Education's Classifications of Instructional Programs (CIP).

Credential Projections: We project the supply of credentials using a straight-line projection based on past credential completion for each institution, award category, and program of study. We recognize that projected credential completion, like the occupational projections, are not fixed - future credential completion will change based on enrollment, completion rates, and other institutional and exogenous factors in the labor market.

Crosswalk from Postsecondary Credentials to Occupational Projections: We use a crosswalk to build connections between the projected demand for the key occupational groups with program completions from public and private higher education institutions in the universe. We use the nationally generated SOC to CIP crosswalk – or Standard Occupational Classification (SOC) to the Classification of

Instructional Programs (CIP) crosswalk – to complete this analysis. The SOC to CIP crosswalk links the skills and competencies needed for an occupation to the content delivered in an academic program of study. Labor market and education experts from the National Center for Education Statistics (NCES) and U.S. Bureau of Labor Statistics (BLS) generate the crosswalk.

Limitations

- Projections are not based on a pre-destined outcome. The future is ever changing, and economic, demographic and policy changes can have an impact on what happens to demand jobs and supply of educated talent in an economy. For example, most forecasts made prior to the Great Recession did not come to fruition as the sudden downturn in the economy had major impacts across many economic and social dimensions.

- Demand projections are based on the trends and forecast that researchers from the Bureau of Labor Statistics consider will likely happen to the labor force, aggregate economy, final demand (GDP) by consuming sector and product, industry output, industry employment, and employment and openings by occupation.

- Supply projections are based on current state of production among public and private institutions of higher education in Indiana from the National Center for Education Statistics and do not account for changes in enrollment or completion rates that may or may not occur across institutions or in programs.

APPENDIX B: LIST OF INDIANA COLLEGES USED IN SUPPLY AND DEMAND

Ancilla College

Anderson University

Aviation Institute of Maintenance-Indianapolis

Ball State University

Bethany Theological Seminary

Bethel College-Indiana

Brightwood College-Hammond

Brightwood College-Indianapolis

Brown Mackie College-Fort Wayne

Brown Mackie College-Indianapolis

Brown Mackie College-Merrillville

Brown Mackie College-South Bend

Butler University

Calumet College of Saint Joseph

Chamberlain College of Nursing-Indiana

Christian Theological Seminary

Concordia Theological Seminary

DePauw University

DeVry University-Indiana

Earlham College

Fortis College-Indianapolis

Franklin College

Goshen College

Grace College and Theological Seminary

Hanover College

Harrison College-Indianapolis

Holy Cross College

Huntington University

Indiana Institute of Technology

Indiana State University

Indiana University-Bloomington

Indiana University-East

Indiana University-Kokomo

Indiana University-Northwest

Indiana University-Purdue University-Fort Wayne

Indiana University-Purdue University-Indianapolis

Indiana University-South Bend

Indiana University-Southeast

Indiana Wesleyan University-Marion

International Business College-Fort Wayne

International Business College-Indianapolis

ITT Technical Institute-Fort Wayne

ITT Technical Institute-Indianapolis

ITT Technical Institute-Indianapolis East

ITT Technical Institute-Merrillville

ITT Technical Institute-Newburgh

ITT Technical Institute-South Bend

Ivy Tech Community College

Lincoln College of Technology-Indianapolis

Manchester University

Marian University

Martin University

MedTech College

MedTech College-Ft Wayne Campus

MedTech College-Greenwood Campus

National American University-Indianapolis

Oakland City University

Ottawa University-Jeffersonville

Purdue University-Calumet Campus

Purdue University-Main Campus

Purdue University-North Central Campus

Rose-Hulman Institute of Technology

Ross Medical Education Center-Fort Wayne

Ross Medical Education Center-Kokomo

Saint Elizabeth School of Nursing

Saint Josephs College

Saint Mary's College

Saint Mary-of-the-Woods College

Saint Meinrad School of Theology

Taylor University

The Art Institute of Indianapolis

Trine University

Trine University-Regional/Non-Traditional Campuses

University of Evansville

University of Indianapolis

University of Notre Dame

University of Phoenix-Indiana

University of Saint Francis-Fort Wayne

University of Southern Indiana

Valparaiso University

Vincennes University

Wabash College