

NEW SKILLS AT WORK

JPMORGAN CHASE & CO.

SKILLS IN DEMAND

BUILDING A MIDDLE-SKILL WORKFORCE
TO GROW THE COLUMBUS ECONOMY



WELCOME

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As co-chairs of the JPMorgan Chase Global Workforce Advisory Council, we are pleased to share this skills gap report for Columbus. This is the third in a series that will examine labor market conditions in metropolitan regions across the United States and in France, Germany, Spain and the United Kingdom and provide data-driven solutions to address the mismatch between employer needs and the skills of current job seekers. These reports are a key component of *New Skills at Work*, JPMorgan Chase's five-year \$250 million global workforce readiness and demand-driven training initiative. Communities across the United States are working to rebuild their economies and the good news is that indicators, such as the unemployment rate, tell us we are moving in the right direction. At the same time, we face persistent challenges ensuring that everyone has access to opportunity as economies continue to strengthen and grow.

For JPMorgan Chase, we see an opportunity to reduce the gap between the skilled workforce employers need to be competitive and the training opportunities available to job seekers. This is especially critical for middle-skill jobs – those that require a high school diploma and some postsecondary education and training, but not necessarily a four-year college degree. Aligning workforce training with the skills employers need will benefit job seekers and employers, and contribute to more broadly shared economic prosperity.

One obstacle that policymakers, civic leaders and employers face in solving this problem is the lack of actionable data. Everyone involved – from mayors to educators to employers – needs to understand what skills and competencies jobs require so that community colleges, training providers and high school career and technical education programs can align curriculum and credentials to actual industry needs. Good data can help everyone better target their efforts on key sectors and occupations where jobs – particularly those that pay good wages and offer opportunities for advancement – are going unfilled.

By focusing on the jobs that have a clear career pathway, we can help give workers opportunities for advancement and businesses the steady pipeline of skilled talent that they need. We also need to learn from best practice models of career pathway development that are already demonstrating success across communities and industries in the United States and overseas.

This report has been designed with these requirements in mind, and we hope the data presented here will support the work underway in the Columbus region's healthcare and insurance industries, and encourage additional efforts to build a pipeline of skilled workers for career-building jobs.



JAMIE DIMON



MELODY BARNES

ACKNOWLEDGEMENTS

JPMorgan Chase & Co. is investing \$250 million over five years in a global initiative to help markets build a demand-driven workforce development system, and to prepare youth and adults for careers in high-demand, middle-skill occupations. To advance this work, we are supporting data analysis in domestic and international markets: Chicago, Columbus, Dallas, Detroit, Houston, Los Angeles, Miami, New York City, San Francisco, France, Germany, Spain and the United Kingdom.



JOBS FOR THE FUTURE

JPMorgan Chase deeply appreciates the work of partners in producing this report. **Jobs for the Future** (www.jff.org), which is a national partner in the *New Skills at Work* initiative, is serving as the lead intermediary for the U.S. reports. Founded in 1983, Jobs for the Future works to ensure that all underprepared young people and workers have the skills and credentials needed to succeed in our economy by creating solutions that catalyze change in our education and workforce delivery systems. We are especially thankful for the work of the writer of this report: David Altstadt, Principal of David Altstadt Consulting, LLC; as well as for data collection and analysis by Myriam Milfort Sullivan. The report has been strengthened by insightful feedback from Lucretia Murphy, Maria Flynn and Steven Baker, and by editing from Carol Gerwin, Sophie Besl and Sara Lamback.

Two national organizations, **Economic Modeling Specialists International** and **Burning Glass Technologies**, provided the data and analysis for the U.S. reports. Economic Modeling Specialists International, a CareerBuilder company, turns labor market data into useful information that helps organizations understand the connection between economies, people and work (www.economicmodeling.com). Burning Glass Technologies develops leading technologies for matching people with jobs through pioneering solutions, and leverages a deep understanding of people and their careers in order to deliver superior workforce and marketplace insight (www.burning-glass.com).

Each report also relies on the insights and feedback of local stakeholders. We would like to express our appreciation to the employers, industry partnerships, researchers and practitioners in Columbus who informed report findings: Stacia Edwards, Associate Vice President, Stephen Dackin, Superintendent of School and Community Partnerships, Tom Habegger, Dean of Health and Human Services Division, Jeff Spain, Community Education and Workforce Development Operations Supervisor, and Lisa Cerrato, Coordinator of Health Information Management Technology, for Columbus State Community College; Cheryl Hay, Deputy Chancellor for Higher Education and Workforce Alignment, and Nithya Govindasamy, Interim Assistant Deputy Chancellor, for the Ohio Board of Regents; Jung Kim, Director of Research, and Patty Huddle, Vice President of Existing Business Services, for Columbus 2020; Lisa Courtice, Executive Vice President for The Columbus Foundation; Marcey McDonald, Director of Employment Services for Nationwide Children's Hospital; Karen Bryer, Director of Medical Center Employment for The Ohio State University Wexner Medical Center; Rocky Parker, Vice President of Talent Acquisition for Nationwide Insurance; Brian Ponchak, Senior Human Resources Business Partner for Grange Insurance; Mitch Wilson, Vice President of Public Information and Education for the Ohio Insurance Institute; Brent Maurer, Vice President for Paul Werth Associates; Coretta Pettway, Labor Market Information Bureau Chief for the Ohio Department of Job and Family Services; Joshua Hawley, Director of the Ohio Education Research Center; and Jose Feliciano, Training Services Administrator for Central Ohio Workforce Investment Corporation; and Courtney Heppner, Director of Innovation for Reynoldsburg City Schools. We would also like to thank Melody Barnes, former Assistant to the President and Director of the White House Domestic Policy Council and Co-chair of the Global Workforce Advisory Council, for her insights, time and unwavering support throughout this process.

EXECUTIVE SUMMARY

THE COLUMBUS ECONOMY IS REBOUNDED

The Columbus region has recovered from the recession and is enjoying strong gains in jobs, incomes, population and employment. One reason is the growth of middle-skill jobs and continuing demand to fill these positions.

Gross regional product rose

11.6%

from 2010 to 2013, exceeding 6.1% growth for the U.S. economy

The region added

84,000

new jobs from January 2010 to September 2014

Per capita income is up

14.2%

from 2010 to 2013

The region's unemployment rate of

4.3%

for September 2014 is well below national and state averages

Population is increasing at an annual rate of

1.3%

making Columbus the second fastest-growing metro area in the Midwest

(Sources: EMSI and Columbus Chamber of Commerce)

MIDDLE-SKILL JOBS PLAY IMPORTANT ROLE IN COLUMBUS ECONOMY

Currently there are

270,000

middle-skill jobs in Columbus.

These occupations represent

27%

of all positions and are growing at a faster rate than the regional average

Middle-skill jobs pay a median hourly wage of

\$22.30

significantly higher than the region's living wage of \$16.37

Nearly

10,000

middle-skill job openings are projected every year through 2018

(Sources: EMSI and MIT Living Wage Calculator)

GROWING CHALLENGES IN FILLING MIDDLE-SKILL JOBS

As in many regional economies, some employers in Columbus are having difficulty filling certain middle-skill positions, despite the region's economic strengths. The challenges are expected to grow, with more projected openings over the next 10 years. Meanwhile, there are thousands of unemployed and underemployed Columbus residents who need good jobs but who don't have the right skills for the available positions.

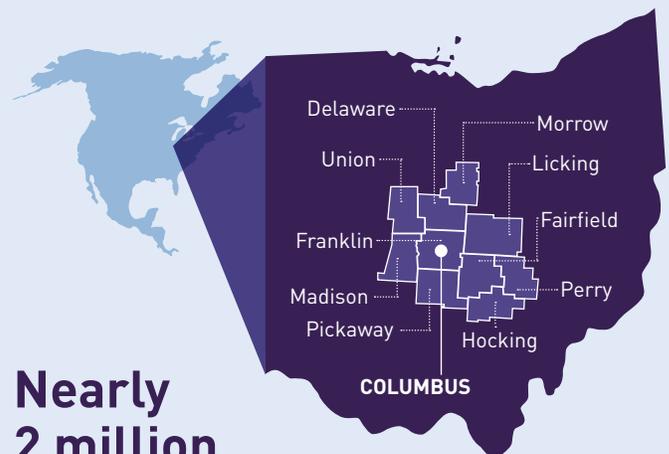
If not addressed, this mismatch between job seeker skills and business needs (the skills gap) could hurt the region's competitiveness and limit the financial well-being of hundreds of thousands of people in Central Ohio.

Fortunately, Columbus area employers, education institutions and other leaders are coming together to develop a set of strategies to address workforce challenges. This report is intended to support the efforts underway by offering a framework for developing a demand-driven career pathways system leading to occupational credentials with high value in the labor market.

PREPARING MORE PEOPLE FOR MIDDLE-SKILL WORK WILL SUSTAIN ECONOMIC GROWTH AND INCREASE OPPORTUNITIES FOR COLUMBUS FAMILIES

Preparing more Central Ohioans for middle-skill occupations will benefit the entire region. Businesses will access the steady stream of qualified applicants they need to continue growing, and families will attain the stable income they need to join the middle class.

THE COLUMBUS REGION



**Nearly
2 million**
people live in the
Columbus metro area

(Source: U.S. Census Bureau, Population Division; Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2013)

EXECUTIVE SUMMARY

HEALTHCARE AND INSURANCE LEAD MIDDLE-SKILL DEMAND

COLUMBUS

High demand for middle-skill talent

HEALTHCARE

14%

job growth projected through 2018¹

INSURANCE

50%

of workforce statewide projected to retire by 2025²

A diverse array of industries is contributing to the Columbus region's rebound. The area hosts several robust service-based sectors, as well as traditional and high-tech fields.

Nearly 4,700 middle-skill job openings are projected every year in these two sectors through 2018



HEALTHCARE

2,051

annual healthcare job openings



INSURANCE

2,617

annual insurance job openings

High wages for in-demand middle-skill occupations

\$19.30

median hourly wage for surgical technologists

\$22.41

median hourly wage for claims representatives

(Source: EMSI)

In addition to healthcare and insurance, the leading economic drivers with middle-skill workforce needs are:



TRANSPORTATION, EQUIPMENT & MACHINERY MANUFACTURING



COMPUTER AND DATA CENTERS



CORPORATE HEADQUARTERS



RESEARCH & DEVELOPMENT

¹ EMSI 2013-2018 projections.

² Lafayette, Bill. 2011. *Workforce Characteristics and Development in Ohio's Insurance Industry*. Commissioned by Columbus State Community College Center for Workforce Development. Regionomics. Accessed 12/18/14 at: <http://business.uc.edu/content/dam/business/centers/insurance-center/insurance-workforce-study-2013.pdf>.

WHERE NEW MIDDLE-SKILL WORKERS WILL COME FROM

Columbus has several potential sources of talent to fill middle-skill jobs.

Overall unemployment is low...

3.4%

unemployed adults with at least a Bachelor's degree

6.5%

unemployed adults with some postsecondary education

But, there were...

42,100

unemployed adults as of September 2014 and many more who were not counted as unemployed because they stopped looking for work.³ Among them are workers whose skills are no longer in demand, making them prime targets for retraining and reemployment strategies.

Other Central Ohioans lack basic academic and job readiness skills, and are not prepared even for the first rungs of a middle-skill career ladder.

More than 145,000

Central Ohioans do not have a high school credential.⁴



2 out of 5

recent high school graduates enter college with inadequate math or English skills.⁵

Even more disconcerting...

nearly 30,000

youth across Central Ohio are neither in school nor working.⁶

For Columbus to address its workforce challenges, low-skill individuals will need help to get on track.

BUILDING ON REGIONAL EFFORTS TO DEVELOP A SKILLED, JOB-READY WORKFORCE

Driven by increasing demand for workers with postsecondary credentials, area colleges, universities, public school districts, and private and nonprofit partners have formed the **Central Ohio Compact** to work together to improve college and career success of area students and working-age adults. As the convener, Columbus State Community College is collaborating on several major strategies that fall under, or align with, these goals.

JPMorgan Chase has contributed \$2.5 million as part of its *New Skills at Work* workforce readiness initiative to support expansion of the Central Ohio Compact. This financial commitment will enable the Compact to expand regional capacity and bring successful initiatives to scale.

³ Bureau of Labor Statistics, U.S. Department of Labor. Local Area Unemployment Statistics. Accessed 11/29/14 at www.bls.gov/opub/gp/laugp.htm.

⁴ EMSI.

⁵ Ohio Board of Regents. Accessed 12/18/14 at www.ohiohighered.org/data-reports/college-readiness.

⁶ Calculated based on county totals reported on www.opportunityindex.org.

EXECUTIVE SUMMARY

OPPORTUNITIES TO EARN HIGHER INCOMES WITH MORE EDUCATION AND TRAINING



HEALTH INFORMATION PATHWAY

	Occupation	Columbus MSA Wage (median hourly wage)
High-Skill	Coding Manager	\$19.14 (75% of median)
	Health Information Technician or Manager	\$15.99 (median wage)
Middle-Skill	Medical Coder	\$15.99 (median wage)
	Medical Biller (aka Billing Clerk)	\$13.31 (25% of median)
Entry-Level	Health Information Clerk (aka EHR Technician, Medical Records Clerk)	\$12.37 (entry-level wage)



INSURANCE PATHWAY

	Occupation	Columbus MSA Wage (median hourly wage)
High-Skill	Underwriter	\$30.81
	Insurance Claims Specialist	\$29.15 (75% of median for claims adjusters)
Middle-Skill	Insurance Sales Agent	\$26.30
	Auto Damage Appraiser	\$23.54
	Claims Representative	\$22.41
Entry-Level	Underwriting Assistant	\$14.34
	Insurance Claims Clerk	\$17.81
	Customer Service Representative	\$15.29

Sources: Adapted from HICareers.com, with information drawn from Bureau of Labor Statistics, Burning Glass and EMSI

Sources: Adapted from Insurancecareers.org, with data drawn from Burning Glass and EMSI. Median wage for Columbus MSA is from Bureau of Labor Statistics, Occupational Employment Statistics for Columbus MSA, May 2013

EXECUTIVE SUMMARY

OUR RECOMMENDATIONS

Columbus can build on existing efforts to strengthen the region's talent pipeline in order to help meet the growing demand for qualified workers. Expanding their work together, employers, educational institutions and workforce training providers can create a comprehensive career pathways system to prepare Central Ohioans for middle-skill jobs in the healthcare and insurance sectors, and, ultimately, in all high-growth industries.

CREATE A SYSTEMS APPROACH TO SECTOR-FOCUSED WORKFORCE DEVELOPMENT STRATEGIES

Through the Central Ohio Compact and industry groups, the region can find ways to scale and sustain sector strategies to ensure continuous partnerships and evolving solutions to address changing skills needs.

Recommendation

1. Support and build the capacity of substantive, ongoing partnerships with industry to co-lead sector strategies and pathways development

Engaging employers as "high-impact," strategic partners means looking beyond the immediate needs of a program or college and seeking ways to make local employers or industries competitive. It requires building ongoing opportunities for problem solving and program development. In doing so, employers should collaborate on the design of new curriculum and pathways.

Recommendation

2. Base sector strategies on labor market intelligence drawn from diverse data sources and employer input

Use traditional and real-time sources of labor market information and rely on continuous engagement with employers in order to be responsive to sectors' evolving skill and credential requirements.

Recommendation

3. Expand access to career pathways that align with middle-skill demand in healthcare, insurance and other key sectors

Education and training providers, in partnership with community-based organizations and other groups, should develop customized career pathways that target particular challenges faced by the long-term unemployed, dislocated workers and disconnected youth.

Recommendation

4. Develop ongoing funding strategies that can sustain and scale a sector-focused approach to career pathways

The Columbus region should look for ways to align and braid public, philanthropic and industry resources to bring to scale and sustain pathway programs and work-based learning opportunities.

Recommendation

5. Use public policy to encourage a systemic approach to sector-focused career pathway development

Leverage local, state and federal policies and the state's workforce transformation plans to break down programmatic and funding silos and support sector-based career pathways and industry partnerships.

Recommendation

6. Help ensure Central Ohioans are aware of in-demand middle-skill careers and skill-building pathways

Columbus should market these opportunities as a pathway to economic opportunity for area residents and help parents, youth, job seekers, career changers and veterans navigate their career-building options.

Through the *New Skills at Work* initiative, JPMorgan Chase will contribute resources and expertise to accelerate this work to transform lives and strengthen economies.

INTRODUCTION

Columbus is rebounding strongly from the recent recession but needs to continue to grow its skilled workforce in order to sustain its competitive edge and to improve the financial well-being of thousands of Central Ohioans who have yet to benefit from the economic recovery.⁷ Although interest in Bachelor's degrees remains strong, several key sectors of the Columbus economy are flush with job openings that provide middle-class wages and career advancement opportunities for workers with **middle skills** **1**. It is imperative that businesses, schools and community partners work together to promote and expand pathways to these high-demand middle-skill careers.

This report details emerging mismatches in employer demand and workforce supply of middle skills in two of the region's key sectors - healthcare and insurance - by drawing on real-time and traditional labor market information and input from local businesses. It highlights strategies for preparing Central Ohioans for middle-skill jobs and showcases ways that they can continue to advance their careers and earnings potential. The report concludes with detailed recommendations for scaling up and sustaining strategies that can help local businesses resolve their existing and future middle-skill shortages while helping Central Ohioans enter and proceed along **career pathways** **2**.

1 Defining Middle Skills

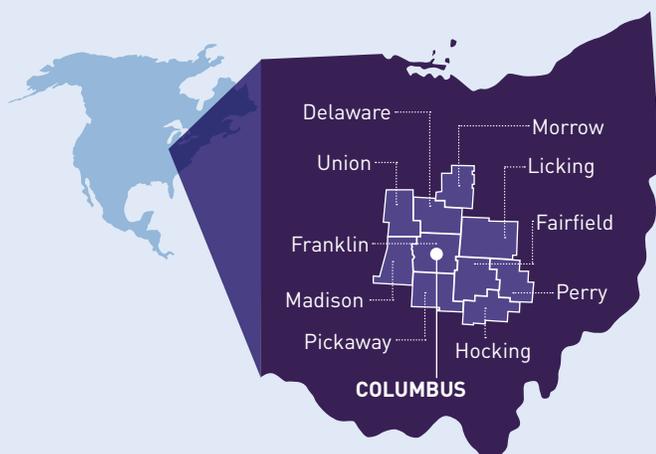
Middle-skill occupations do not require a Bachelor's degree, but they are skilled positions that require some education or training beyond high school.

2 Career Pathways

"Career pathways," as used in this report, describes education and training programs that offer a well-articulated sequence of courses and work experiences that align with employer skill demands and lead to the completion of industry-valued "stackable credentials." Stackable credentials allow students to have multiple clear entry and exit points for education and training as they progress toward an Associate's degree or the highest industry credential required. Stackable credentials enable people to find jobs with increasing responsibility, knowing they can access additional short-term training as needed to move ahead. Career pathways can be particularly effective for launching young people and low-skilled adults into good jobs because they can be designed to serve a range of populations and skill levels.

A **career pathways system** aligns employers, agencies, educational providers and funders to identify shared goals that drive changes in programs, institutions and policies to address employer demand through multiple career pathways in the targeted industry sectors.

THE COLUMBUS REGION



**Nearly
2 million**
people live in the
Columbus metro area

(Source: U.S. Census Bureau, Population Division; Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2013)

⁷ This report focuses on the Columbus region, as defined by the Columbus Metropolitan Statistical Area in Central Ohio.

THE OPPORTUNITIES

A REGION ON THE REBOUND

Despite suffering more severe job losses than the national average during the recent economic downturn, the Columbus region has bounced back and is now enjoying gains in jobs, incomes and population and declining unemployment.



11.6%

increase in gross regional product from 2010 through 2013, far exceeding the 6.1% growth for the overall U.S. economy

84,000

net new jobs from January 2010 to September 2014

4.3%

unemployment rate for September 2014, well below national and state averages

14.2%

increase in per capita income from 2010 to 2013

1.3%

annual rate of population increase; second fastest-growing metro area in the Midwest

(Sources: Columbus Chamber of Commerce and Bureau of Labor Statistics)

SKILLED, JOB-READY WORKFORCE KEY TO CONTINUED GROWTH AND OPPORTUNITY

Middle-skill jobs are at the forefront of the region's recent economic growth yet emerging workforce shortages could impact future competitiveness.

- Key sectors of the local economy rely heavily on middle- and high-skill workers, including healthcare; finance and insurance services; corporate headquarters; transportation, equipment and machinery manufacturing; computer and data centers; and research and development.⁸
- In many of these sectors, employers are having difficulty filling middle-skill jobs due to various **mismatches in the talent supply chain** **3**.⁹
- These mismatches could hurt the region's competitiveness and limit the financial well-being of hundreds of thousands of people in Central Ohio.

3 Contributing to the Middle-Skill Mismatch in Columbus

Supply side

Decreased access to talent – due to retirements and career changers.

Skills gap – deficiencies in job-related experience, skills and/or credentials required in today's skills-based economy; academic deficiencies to enter and succeed in college and lack of job readiness.¹⁰

Untapped potential – working-age residents out of the labor force or employed in low-skilled professions.

Insufficient production of new talent – insufficient quantity and, in some instances, quality of graduates to fill open jobs.

Demand side

Difficulty recruiting talent – contributing factors include negative perceptions of the industry, lack of career awareness, undesirable work conditions and hours, and wage and benefit levels.

Hiring practices that weaken talent supply chain – outsourcing entry-level jobs.

Weak internal development of talent – inadequate career pathways, lack of talent succession plans, minimal or unknown training options and resources and unsupportive workplace cultures.

Disconnection from external talent development – unwilling to commit necessary time, effort and/or resources to improve education and training options of value to industry, to market career opportunities, and to provide quality internship opportunities for students.¹¹

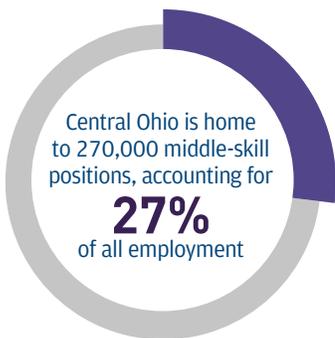
⁸ Based on 2013 employment, 49.6% of workers are employed in middle-skill or high-skill occupations. Source: EMSI.

⁹ Author interviews with Marcey McDonald, Director of Employment Services for Nationwide Children's Hospital; and Karen Bryer, Director of Medical Center Employment for The Ohio State University Wexner Medical Center; November 2014.

¹⁰ For more on the common employability skills, see *Common Employability Skills: A Foundation for Success in the Workplace: The Skills All Employees Need No Matter Where They Work*. National Network of Business and Industry Associations. Accessed 12/12/14 at http://businessroundtable.org/sites/default/files/Common%20Employability_asingle_fm.pdf.

¹¹ For more on the need for employers to participate in talent development solutions, see Tyszko, Jason, Robert Sheets and Joseph Fuller. 2014. *Managing the Talent Pipeline: A New Approach to Closing the Skills Gap*. U.S. Chamber of Commerce Foundation. www.uschamberfoundation.org/sites/default/files/media-uploads/Managing%20the%20Talent%20Pipeline_0.pdf. Accessed 12/12/14.

- Columbus employers should expect the applicant pool to narrow further as more baby boomers retire, unless concerted efforts are undertaken to attract workers to the area and encourage more residents to prepare for entry into high-demand fields.
- As highlighted throughout this report, business, education and civic leaders have recognized the economic imperative of a skilled workforce and are forging new **partnerships to address mismatches in supply and demand** **4**.
- Although there are critical **workforce needs in other sectors** **5**, this report focuses on the healthcare and insurance sectors, given their economic importance to Columbus, critical workforce shortages and range of career opportunities that produce strong value to business and middle-skill workers.¹² Healthcare and insurance sectors account for nearly half of all middle-skill job openings for the Columbus region. From 2013 to 2018, the two sectors are projected to have nearly 4,700 openings, while all other sectors combined will have 5,300 openings.



Top occupational areas include production, office and administrative support, healthcare practitioners, and technical and installation maintenance and repair



Middle-skill jobs produce nearly **10,000** openings per year and, are growing at a faster rate (0.8%) than the overall regional average (0.4%).

Middle-skill jobs pay a median hourly wage of **\$22.30** exceeding the region's living wage of \$16.37

(Sources: EMSI and MIT Living Wage Calculator¹³)

4 Regional Focus on Building a Skilled, Job-Ready Workforce

In recognition that a talented workforce and strong educational assets help businesses and communities succeed, **Columbus 2020** has established as one of its top economic development priorities the need to address workforce challenges.¹⁴ Its strategic plan calls for strengthening partnerships among employers, education institutions, workforce programs and economic development activities in order to help retain and attract talent to the area and fill in-demand jobs.

Meanwhile, driven by increasing demand for college-credentialed workers, area colleges, universities, public school districts and private and nonprofit partners have formed the **Central Ohio Compact** to develop collaborative strategies for improving college and career success of area students and working adults. JPMorgan Chase has contributed \$2.5 million as part of our *New Skills at Work* workforce readiness initiative to support expansion of the Central Ohio Compact. This financial commitment will enable the Compact to expand regional capacity and bring successful initiatives to scale.

5 Rebuilding the Talent Pipeline for Manufacturing

In response to an aging manufacturing workforce, Columbus State Community College is teaming up with area employers and school districts to reignite interest in manufacturing careers and college degree offerings that can prepare students for in-demand middle-skill jobs. Working closely with industry partners, Columbus State has developed an efficient pathway from high school to college to careers in electro-mechanical engineering technology. The hallmark of the program is a two-semester, paid work-study assignment during which students split their time between class and working at a manufacturing facility. Columbus State provides a four-day summer bridge program for incoming students and offers up to 18 credits for completing the STEM-focused Project Lead the Way curriculum while in high school. Columbus State initially developed and piloted the work-study initiative in partnership with Honda and Worthington High School. In 2014, the college received a National Science Foundation grant to expand the program to four additional manufacturers and five additional high schools.

¹²For more information on which middle-skill occupations have the greatest impact on U.S. competitiveness, see *Bridging the Gap: Rebuilding America's Middle Skills*. Harvard Business School, Accenture and Burning Glass. Also see Fuller, Joseph and Dan Restuccia. 2014. "U.S. Competitiveness: Building America's Middle Skills." Presentation at Pathways to Prosperity Network Institute. Accessed 12/12/14 at www.jff.org/sites/default/files/US%20Comp%20Project_Middle%20Skills_Fuller%20and%20Restuccia_Pathways%20Network%20Event_100214.pdf.

¹³Based on the living wage for a family of three (with two adults and one child), living in Columbus, Franklin County, as defined by the MIT Living Wage Calculator. For more information, see: <http://livingwage.mit.edu/>.

¹⁴Columbus 2020 is a private nonprofit economic development organization that seeks to accelerate job creation and capital investment, and increase per capita income and awareness of the Columbus region as a business location, and strengthen the economic base of an 11-county area comprising Delaware, Fairfield, Franklin, Knox, Licking, Logan, Madison, Marion, Morrow, Pickaway and Union. Additional information can be found at: <http://columbusregion.com/Home.aspx>.



OPPORTUNITIES IN THE HEALTHCARE SECTOR

46%

of 104,000 jobs in healthcare sector are middle skill

(Source: EMSI and Burning Glass)

\$27.60

is the median hourly wage for middle-skill healthcare jobs

14%

middle-skill job growth projected through 2018

2,000–2,800¹⁵

middle-skill job openings per year

HIGH DEMAND FOR MIDDLE-SKILL TALENT

The local healthcare delivery system relies heavily on talented middle-skill workers, but there is not enough supply for several allied health professions.

- Demand for middle-skill talent is particularly strong for surgical technologists, medical and clinical laboratory positions, physical and occupational therapy assistants, medical records and health information technicians, and medical assistants (also see Appendix B).

- Hospital systems in the Columbus region are having difficulty filling job openings in these fields – illustrated by the long duration that job advertisements appear online (see Appendix B Table 2) and the relatively small applicant pool for some occupations in the local area.¹⁶ For instance, for every opening for a medical records and health information technician that is posted online, the Columbus region only has **an average of three area residents trained in the field who could apply** **6**.

6 Potential Applicants for Middle-Skill Healthcare Jobs

Occupation	Projected Growth 2010–2020	Number of Applicants per Projected Annual Opening	Number of Applicants per Job Ad
Medical Assistants*	21%	21	19
Surgical Technologists	14%	26	13
Medical and Clinical Laboratory Technologists	19%	25	9
Physical Therapist Assistants	38%	18	8
Medical and Clinical Laboratory Technicians	31%	18	6
Occupational Therapy Assistants	46%	19	4
Medical Records and Health Information Technicians	14%	22	3

Sources: Bureau of Labor Statistics, U.S. Department of Education, EMSI and Burning Glass

This chart is based upon an algorithm that includes job projections, completions and other data. Additional detail on the methodology can be found in Appendix A.

* Completers from not for profit institutions.

¹⁵According to EMSI 2013–2018 projections, there will be 2,051 job openings per year (due to job creation and replacement) in targeted middle-skill healthcare technical, practitioner and support occupations. According to Burning Glass, Columbus area employers advertised a total of 2,797 jobs online between July 2013 and June 2014 related to targeted middle-skill technical, practitioner and support occupations in healthcare.

¹⁶Longer fill times can demonstrate a skills gap. Rothwell, Jonathan. 2014. *Still Searching: Job Vacancies and STEM Skills*. The Brookings Institution. Accessed 12/17/14 at www.brookings.edu/research/interactives/2014/job-vacancies-and-stem-skills#/M10420.

- Case in point, area healthcare employers¹⁷ are struggling to find medical assistants qualified to take on the greater patient care demands of the profession.¹⁸ Despite earning relatively low entry-level wages (a median hourly wage of \$14.32),¹⁹ medical assisting could be a good choice for Central Ohioans looking to enter the healthcare sector quickly, build practical work experience, and return to school later **to achieve their goal to become a nurse** **7**. According to local hospital officials, however, some training providers do better at preparing students than others – a concern echoed by industry observers.²⁰
- Healthcare employers also are having difficulty finding medical coders who can handle the increasing complexity of the job. Hospital officials worry that new federal rules on coding medical procedures for reimbursement purposes will drive away coders and make inexperienced new graduates unemployable. Meanwhile, college officials say any effort to increase the number and quality of medical coding graduates is dependent on employers increasing the number of clinical internships available to students. In the face of these challenges, **Columbus State Community College has developed an innovative approach** **8** for building up the talent pipeline for medical coding and pathways to other in-demand health information management and technology positions.²²

7 Shrinking Career Options for Nurses with a Two-Year Degree

Credential requirements for the nursing profession are changing. In line with national trends,²¹ several Columbus area hospital systems intend only to hire new nurses who have at least a Bachelor of Science in Nursing (BSN) degree. Although hospitals are not the only source of employment for nurses, strikingly only one-quarter of nursing job advertisements posted online in 2013 and 2014 requested an Associate's degree – well below the national average of 40%. And, at a time when local two-year nursing programs in Columbus are still running long waitlists for admission, Central Ohio produces more graduates of two-year and four-year nursing programs than there are available job openings.

8 Using Stackable Certificates to Build Health Information Talent Pipeline

Columbus State offers a seamless pathway to in-demand health information management (HIM) and technology careers through a sequence of certification programs that align to entry-level and middle-skill jobs and that articulate as credit – or “stack” – toward two-year and four-year degrees. The pathway enables students to earn the HIM Technician Certificate for entry-level jobs, the Medical Coding Certificate to advance to the coding field, and the HIM Technology degree, which prepares students to sit for the Registered Health Information Technician (RHIT) certification exam and counts as credit toward four-year HIM degree programs at The Ohio State University, University of Cincinnati, University of Toledo and Franklin University.

17 Author interviews with McDonald and Bryer; November 2014.

18 Goldberg, Melissa and Julian Alssid. 2013. *Rise of the Medical Assistant: And Five Other Frontline and Nonclinical Healthcare Jobs that are Growing in Number, Complexity, and Importance*. College for America. Also see: Goldberg, Melissa and Julian Alssid. 2014. *Nonclinical and Frontline Healthcare Roles Continue to Rise*. College for America. Accessed 12/9/14 at <http://collegeforamerica.org/healthcarejobsreport> and <http://go.collegeforamerica.org/healthcare-workforce-report>.

19 Bureau of Labor Statistics, Occupational Employment Statistics for Columbus MSA, May 2013.

20 McCarthy, Mary Alice. *Beyond the Skills Gap: Making Education Work for Students, Employers, and Communities*. New America. Accessed 12/9/14 at www.newamerica.org/education-policy/beyond-the-skills-gap/.

21 Institute of Medicine. 2010. *The Future of Nursing: Leading Changing, Advancing Health*. Accessed 12/9/14 at www.iom.edu/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health.aspx.

22 More information on health information careers, including detailed health information career map, is available at www.hicareers.com.

CAREER PATHWAYS



HEALTH INFORMATION PATHWAY

	Occupation	Columbus MSA Wage (median hourly wage)	Education	Industry Valued Certification Skills and Competencies
High-Skill	Coding Manager	\$19.14 (75% of median)	Bachelor's degree	CPC or RHIA/RHIT, or CCS/ CCS-P Research; problem solving; 10-key; medical terminology; ICD10; CPT; HCPCS; Medicare and various other payer coding, billing, and reimbursement guidelines; leadership and communication
	Health Information Technician or Manager	\$15.99 (median wage)	Postsecondary vocational award for technician; Associate's degree for manager	RHIT: RHIA, CCS, CCS-P Medical record forms, content, and legal requirements; computer, communication, customer service, multi-tasking
Middle-Skill	Medical Coder	\$15.99 (median wage)	Postsecondary vocational award	CCS: CCS-P, RHIT, RHIA ICD10, medical terminology, computer, communication, auditing, coding
	Medical Biller (aka Billing Clerk)	\$13.31 (25% of median)	High school diploma, some college-level business courses	Medical terminology, computer, ICD10 and CPT codes, excel, math, bookkeeping, accounts payable and receivable, billing procedures
Entry-Level	Health Information Clerk (aka EHR Technician, Medical Records Clerk)	\$12.37 (entry-level wage)	High school diploma	Medical records

Sources: Adapted from HICareers.com, with information drawn from Bureau of Labor Statistics, Burning Glass and EMSI

CCA = Certificated Coding Associate
 CCS = Certified Coding Specialist
 CCS-P = Certified Coding Specialist - Physician-based
 CPC = Certified Professional Coder
 CPT = Current Procedural Terminology
 HCPCS = Healthcare Common Procedure Coding System
 ICD = International Statistical Classification of Diseases and Related Health Problems
 ICD10 = The tenth revision of the ICD
 RHIA = Registered Health Information Administrator
 RHIT = Registered Health Information Technician



OPPORTUNITIES IN THE INSURANCE SECTOR

RETIREMENTS AND RECRUITMENT CHALLENGES PROMPTING INTEREST IN MIDDLE SKILLS

- Home to at least 30,000 insurance jobs – one-third of the state total – the Columbus region enjoys a strong competitive edge in the insurance sector.
- Columbus is projected to have 2,600 middle-skill job openings in the insurance sector each year from 2013 to 2018.

- Moreover, Columbus is expecting to grow even more insurance-related jobs through 2020, including in bill and account collectors (18% projected growth rate), insurance sales agents (17%) and customer service representatives (12%), as well as in claims and underwriting positions.²³
- Yet, Columbus is running low on qualified workers to fill available positions. For every opening for a customer service representative that is posted online, the Columbus region only has an average of **five area residents trained in the field who could apply** **9**.

9 Potential Applicants for Middle-Skill Insurance Jobs

	Projected Growth 2010–2020		Applicant Pool per Projected Annual Opening	Applicant Pool per Projected Job Ad
Insurance Claims and Policy Processing Clerks	4%		30	22
Customer Service Representatives	12%		27	5
Insurance Sales Agents	17%		13	16
Insurance Underwriters	3%		32	8
Insurance Appraisers Auto Damage	3% ²⁴		46	26
Claims Adjusters, Examiners and Investigators	2%		32	25

Sources: Bureau of Labor Statistics, U.S. Department of Education, EMSI and Burning Glass
 This chart is based upon an algorithm that includes job projections, completions and other data. Additional detail on the methodology can be found in Appendix A.

²³Bureau of Labor Statistics, Occupational Employment Statistics for Columbus MSA, 2010–2020 projections.

²⁴Based on 2012–2022 projections.

- An aging insurance workforce, coupled with difficulty attracting new talent, will shrink the applicant pool even more in the coming years.
- Across Ohio, half of all insurance professionals will reach retirement age by 2025. All told, insurance companies are projected to need to fill 26,000 job openings statewide by 2020.²⁵ Meanwhile, in Columbus, the number of **young adults employed in the sector is declining 10**.
- In face of looming workforce shortages, Ohio insurance employers now recognize a need to expand the talent pipeline. Historically, insurance employers have preferred to recruit new hires with a Bachelor's degree regardless of their undergraduate program of study – even though many positions require only a high school diploma or Associate's degree, according to the state's industry association.²⁶ (Until recently, colleges in Ohio did not offer any degree program specifically focused on the insurance sector. Still, Columbus-area employers explicitly requested a Bachelor's degree in 60% of online advertisements for claims representative and specialist jobs; 40% of job advertisements for sales agents, appraisers, and underwriting assistants; and in 20% of entry-level claims clerk positions, even though the jobs require middle skills.)
- But, in recent years, they have launched a statewide career awareness campaign and have teamed up with postsecondary institutions to develop new industry-recognized programs, including a state-funded **middle-skill training initiative at Columbus State 11**.

10 Aging Insurance Workforce in Columbus MSA

Over the past four years, the proportion of insurance workers nearing retirement has increased, while employment of young workers in the industry has decreased. The proportion of workers employed in the industry who are under the age of 35 has dropped by five percentage points.



Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics, Quarterly Workforce Indicators

11 Strengthening Customer Service and Talent Pipeline in Insurance through a Middle-Skill Sector Strategy

The **Insurance Industry Resource Council**, formed in 2012 to spearhead the sector's career awareness and workforce development efforts, has recently won state funding to jump-start efforts to recruit and develop a middle-skill workforce for Columbus area insurance employers. The industry group is partnering with Columbus State to launch a two-semester certificate program in customer service in hopes of drawing new middle-skill talent to the sector capable of bolstering customer experience, which is of growing importance to the sector.²⁷ Moreover, customer service jobs provide a good foot in the door to build industry work experience and skills that can prepare workers for advancement to middle- and high-skill careers. During the pilot phase, Columbus State will work with the public workforce system and other community-based organizations to recruit dislocated workers²⁸ and veterans looking to switch careers to the training course offered at the downtown and Delaware (OH) campuses. Area insurance employers have committed to interview program graduates. If the demonstration project proves successful, the insurance council hopes to expand the certificate program to other community colleges in Ohio and to support the development of a claims-related degree or certificate.

²⁵Lafayette, Bill. 2011. *Workforce Characteristics and Development in Ohio's Insurance Industry*. Commissioned by Columbus State Community College Center for Workforce Development. Regionomics. Accessed 12/18/14 at: <http://business.uc.edu/content/dam/business/centers/insurance-center/insurance-workforce-study-2013.pdf>.

²⁶For more insurance sector education requirements, see: <http://insurancecareers.org/selecting-a-career/featured-careers>.

²⁷Goldberg, Melissa and Julian Alssid. 2014. *Six Insurance Jobs Affected by Growing Customer Centricity and New Technology*. College for America. Accessed 12/10/14 at <http://go.collegeforamerica.org/insurance-trend-report>.

²⁸According to EMSI's analysis of transferable skills, laid-off auto mechanics, carpenters and construction workers could possess skills needed to be an auto or property claims adjuster.

CAREER PATHWAYS



INSURANCE PATHWAY

	Occupation	Columbus MSA Wage (median hourly wage)	Industry Valued Certification	Skills and Competencies ²⁹
High-Skill	Underwriter	\$30.81	Bachelor's degree, Chartered Property Casualty Underwriter, Associate in Underwriting, Chartered Life Underwriter, Registered Professional Liability Underwriter	
	Insurance Claims Specialist	\$29.15 (75% of median for claims adjusters)	Associate's degree, Bachelor's degree for advancement; No license or certification required in Ohio	Customer service; legal/compliance rules for claims, underwriting, liability and compensation assessment, workers compensation; negotiation, medical coding; operations monitoring
Middle-Skill	Insurance Sales Agent	\$26.30	Associate's degree for agent, Bachelor's degree for manager, Accredited Adviser in Insurance, Certified Professional Insurance Agent, Chartered Property Casualty Underwriter, Certified Risk Manager	Sales: Operation and administrative management, business development, telemarketing, product demonstration; insurance underwriting rules and insurance products
	Auto Damage Appraiser	\$23.54		Legal and compliance rules for claims adjustments; inspection and estimating automotive repair; negotiation
	Claims Representative	\$22.41	Associate's degree, Bachelor's degree for advancement; no license or certification required in Ohio	Customer Service: Sales, negotiation
Entry-Level	Underwriting Assistant	\$14.34		Administrative Support: Underwriting rules, document management, claims processes, scheduling, billing inquiries and systems
	Insurance Claims Clerk	\$17.81	No license or certification required in Ohio	Administrative Support: Underwriting rules, document management, claims processes, scheduling, billing inquiries and systems
	Customer Service Representative	\$15.29	Professional certification ³⁰ for advancement	

Sources: Adapted from [Insurancecareers.org](http://insurancecareers.org), with data drawn from Burning Glass and EMSI. Median wage for Columbus MSA is from Bureau of Labor Statistics, Occupational Employment Statistics for Columbus MSA, May 2013.

²⁹According to Burning Glass, common skills across the sector include customer service, communication, writing, organization, problem solving, computer/typing, active listening, attention to detail, multi-tasking and time management, teamwork, math and quality control.

³⁰See <http://files.insurancecareers.org/selecting-a-career/customer-service-representative/Customer-Service-Representative-Insurance-Career.pdf> for additional information on customer service careers. Accessed 12/10/14.

EXPANDING OPPORTUNITY

In the face of abundant job openings, healthy business growth and impending retirements, it is more important than ever that the Columbus region brings struggling residents into the middle-skill talent pipeline.

MANY CENTRAL OHIOANS ARE NOT BENEFITING FROM THE ECONOMIC RECOVERY

- Although Columbus' unemployment rate (4.3%) is substantially lower than the national rate (5.9%),³¹ more than half of unemployed workers have been jobless for 26 or more weeks.³² Some laid-off **workers will need retraining to re-enter their field or change careers** **12**.
- Low-skilled workers are far more likely to be unemployed. In 2013, the jobless rate for Columbus area residents without a high school diploma (19.2%) was three times higher than individuals with some college experience or an Associate's degree (6.5%).
- Meanwhile, an increasing share of working-age residents of Columbus is no longer seeking employment – labor force participation has declined by nearly 10 percentage points between 2007 and 2013.
- These labor market mismatches have fed into rising poverty across the Columbus region; the poverty rate has grown from 11.7% in 2009 to 12.7% in 2013. In Franklin and Perry Counties, poverty now tops 18%.³³

12 Job Losses by Occupational Sector 2008–2013

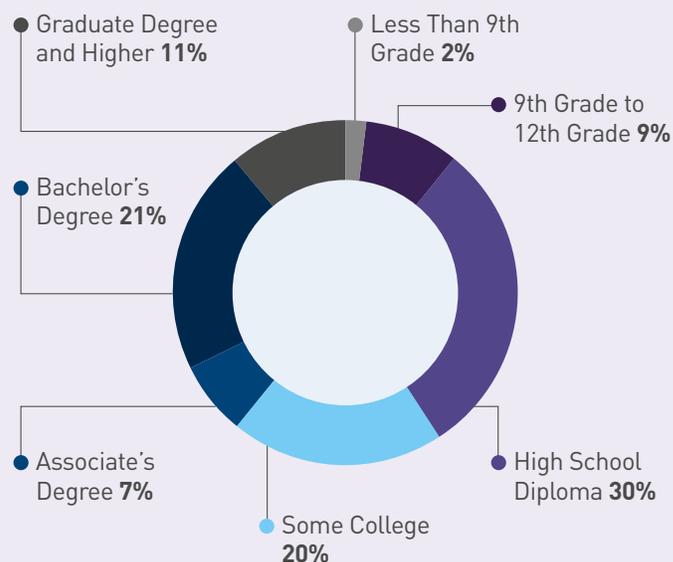
Construction and Extraction	(4,957)
Production	(4,070)
Office and Administrative Support	(3,739)
Sales and Related	(2,931)
Transportation and Material Moving	(1,918)
Management	(1,436)
Installation, Maintenance and Repair	(1,260)
Architecture and Engineering	(1,175)
Protective Service	(939)
Computer and Mathematical	(938)

Source: EMSI

MANY CENTRAL OHIOANS ARE NOT READY FOR MIDDLE-SKILL JOB OPPORTUNITIES

- Overall, **the Columbus region is better educated than the state of Ohio, but some groups lag behind** **13**. More than 145,000 Central Ohioans do not have a high school credential and will need new skills in order to increase their employability and to move beyond entry-level work.

13 Educational Attainment for Adult Population Ages 25 and Older



Source: EMSI

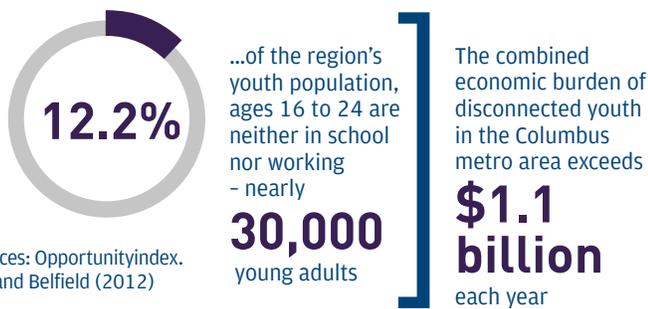
³¹ Bureau of Labor Statistics, U.S. Department of Labor. Rates are for the month of September 2014. Accessed 12/18/14 at: www.bls.gov/bls/unemployment.htm.

³² U.S. Census Bureau, Current Population Survey. Accessed 12/18/14 at: <http://dataferrett.census.gov>.

³³ Ohio Development Services Agency. 2014. *The Ohio Poverty Report*. U.S. Census Bureau, 2011–2013 American Community Survey.

- Even a high school diploma may not adequately prepare graduates for middle-skill pathways. In 2012, 40% of seniors graduating from high schools across the Columbus region were deemed unprepared for the academic rigor of college-level math or English courses and were referred to developmental education when they enrolled in college the following fall – thereby, wasting precious tuition dollars and time in delaying their college and career goals.³⁴
- Meanwhile, nearly 30,000 young adults ages 16 to 24 are neither in school nor working – representing 12.2% of the region's youth population.³⁵ Their disconnection is costly. For each year youth are off track, they produce a substantial fiscal and social burden, to the tune of \$37,450 per individual in lost productivity and tax revenue and higher expenditures on criminal justice, public assistance and healthcare.³⁶ The combined economic burden of disconnected youth in the Columbus metro area exceeds \$1.1 billion each year.

- Despite significant progress in building **pathways from high school to college** **15**, more must be done to ensure all students can pursue and complete postsecondary credentials in high-demand fields and have ample opportunities to explore careers and develop skills through internships.
- Despite collaborative efforts on Fast Path and the Insurance Industry Workforce Alliance, more must be done to build bridges across workforce development, human services, adult education and postsecondary systems so that more low-skilled and unemployed individuals are ready and able to participate in middle-skill education and training programs.³⁷



14 Getting onto a Fast Path to Healthcare

With grant money from the City of Columbus, Columbus State has launched a short-term training program to prepare low-income and unemployed Columbus residents for entry-level healthcare jobs in food services, building services and patient care. The goal is to build a new pipeline of talent for area healthcare employers and to help disadvantaged adults get a foot in the door, build job skills and work experience, and eventually go back to school to advance to middle- and high-skilled healthcare careers. Nationwide Children's Hospital has committed to interview program graduates, while area human service agencies have offered to recruit, screen and refer potential students to Columbus State.

15 Building Pathways to Prosperity for all High School Students

Backed by a \$14.4 million grant from the State of Ohio's Straight A Fund, a consortium of 15 school districts across Central Ohio have teamed up with Columbus State to develop educational and career pathways in advanced manufacturing and robotics, healthcare, networking and digital technology, health information management technology, and business and logistics. Branded as *Innovation Generation*, schools are developing course sequences from middle school to high school to align students' schoolwork with industry skill needs and to provide college credits toward related degrees. At the eSTEM Academy in Reynoldsburg City Schools, students are now able to select pathways in robotics, IT design, logistics, and energy; practice skills on stationary and mobile fab labs³⁸ and complete an internship during senior year. Eighteen percent of Reynoldsburg high school students have entered various pathways, with the ultimate goal of engaging the entire student body.

EDUCATION AND TRAINING PROGRAMS ARE FRAGMENTED ACROSS THE REGION AND LACK SUFFICIENT CAPACITY TO MEET THE DEMAND AND SUPPLY CHALLENGES

- Some providers have strong relationships with employers who actively engage in designing and implementing training, and hire program graduates, but more must be done to formalize and sustain these partnerships **beyond customized or grant-funded projects** **14**.
- High schools, colleges and other training providers typically do not have the resources or staff capacity to provide individualized career counseling or to prioritize staff time on other unrelated duties. Some counselors may provide career advice based on outdated labor market information or with biases against certain industries.
- Moreover, while some programs use traditional sources of labor market information, few use real-time labor market information to identify demand and skill requirements for specified occupations.

³⁴Ohio Board of Regents reports college readiness by school district at www.ohiohighered.org/data-reports/college-readiness.

³⁵For a lengthier examination of the opportunities and challenges of reengaging Franklin County young adults in school and work, see Altstadt, David. *Opportunity Awaits: Reconnecting Franklin County Young Adults to School and Work*. Jobs for the Future, for The Columbus Foundation.

³⁶Belfield, Clive et al. 2012. *The Economic Value of Opportunity Youth*. Civic Enterprises. Accessed 10/15/14 at www.civicerprises.net/MediaLibrary/Docs/econ_value_opportunity_youth.pdf.

³⁷According to the Ohio Office of Workforce Transformation metrics for the Central Ohio region for 2010–2011 (see <http://tinyurl.com/ly6bk83>) very few participants in adult education (4%) and workforce development (8% of youth, 6% of adults, and 6% of dislocated workers) enrolled in college in one quarter after exiting their program. Columbus State is pursuing ways to offer free adult education courses to incoming students who test into the lowest level of development education; through the short-lived Cougar Edge initiative, Columbus State hosted adult education courses on campus run by local literacy providers; now, backed by funding from the City of Columbus, Columbus State has formed Cougar Bridge to run the adult education course itself.

³⁸Fab labs (fabrication laboratories) are small-scale workshops offering personal digital fabrication. Additional information on fab labs can be found at: http://en.wikipedia.org/wiki/Fab_lab.

RECOMMENDATIONS

It is clear that Columbus has a range of middle-skill occupations in healthcare, insurance and other vital sectors that offer well-paying jobs with the opportunity for career mobility. Based on the findings in this report, below are some recommendations for stakeholders trying to build the talent pipeline, clarify opportunities and expectations for middle-skill occupations, ensure pathways align with these expectations and integrate these strategies into the larger policy and systemic efforts in the Columbus region.

CREATE A SYSTEMS APPROACH TO SECTOR-FOCUSED WORKFORCE DEVELOPMENT STRATEGIES

In the Columbus region, employers have partnered with education and workforce development providers to address critical workforce needs in information technology, manufacturing, logistics, insurance and healthcare. However, more often than not, these collaborations dissolve or dissipate once grant money disappears or when one-off projects are completed. Through the leadership of the Central Ohio Compact, Columbus 2020 and industry groups,³⁹ the region should find ways to scale and sustain sector strategies to ensure continuous partnerships and evolving solutions to address changing skill needs.

Recommendation

1. Support and build the capacity of substantive, ongoing partnerships with industry to co-lead sector strategies and pathways development⁴⁰

Engaging employers as “high-impact” strategic partners means looking beyond the immediate needs of a program or college and seeking ways to make local employers or industries competitive. It requires building ongoing opportunities for problem solving and program development. In doing so, employers should collaborate on the design of new curriculum and pathways. At an even more intensive level, colleges, employers and other stakeholders should build partnerships that transform local or regional workforce systems and enhance the growth of targeted industries or sectors. Some of the most effective and long-lasting regional partnerships are those that are led by industry representatives.

Recommendation

2. Base sector strategies on labor market intelligence drawn from diverse data sources and employer input

The sector-focused workforce development system should be guided by traditional and real-time sources of labor market information (including in-demand job reports generated by www.OhioMeansJobs.com). As exemplified in this report, utilizing diverse data sources enriches an understanding of which middle-skill occupations, skills and credentials are in demand and which are not. Employer partners should vet labor market information on a regular basis to clarify skills and credential requirements for middle-skill occupations, assess gaps in workforce supply and quality, identify shifting labor market trends and prioritize solutions.

Recommendation

3. Expand access to career pathways that align with middle-skill demand in key sectors

- Industry partnerships should translate labor market information and disseminate employer expectations and requirements to education and training providers that are crafting pathway programs.
- Education and training providers, in partnership with community-based organizations and other groups, should develop customized career pathways that target particular challenges faced by the long-term unemployed, dislocated workers and disconnected youth to improve retention and credential attainment. For example, training programs that target the first rungs of the career ladder should include basic skill-building and comprehensive supports to help these populations get a strong start on the pathway.
- Providers, in partnership with employers, should create structured pathways that lead to higher education and higher-skill, higher-wage occupations. Strategies should be identified and implemented that enable individuals to balance work and learning so that they can maintain progress along the pathway and not “drop off” because they accept a job.

³⁹Among industry groups active in Central Ohio are the Columbus Region Logistics Council, the Insurance Industry Resource Council, Tech Columbus and BioOhio.

⁴⁰Wilson, Randall. January 2015. *A Resource Guide for Engaging Employers*. Jobs for the Future. Accessed 2/2/15 at www.jff.org/sites/default/files/publications/materials/A-Resource-Guide-to-Employer-Engagement-011315.pdf.

Recommendation

4. Develop funding strategies that can sustain and scale a sector-focused approach to career pathways

The Columbus region should look for ways to align and braid public, philanthropic and industry resources to bring to scale and sustain pathway programs and work-based learning opportunities.

Recommendation

5. Use public policy to encourage a systemic approach to sector-focused career pathway development

- The Columbus region should look for ways to leverage local, state and federal policies, such as the recently reauthorized Workforce Innovation and Opportunity Act and the state's workforce transformation plans, to break down programmatic and funding silos and support sector-based career pathways and industry partnerships.
- The workforce system should develop criteria for program investments, including factors like living wage salary and opportunity for career mobility, to ensure that both the system's and job seekers' investments will have a payoff in the labor market.
- Future pathway development should seek to align to the state-level definition, mission, vision and metrics for career pathways,⁴¹ to maximize statewide recognition and alignment to future funding decisions.

Recommendation

6. Help ensure Central Ohioans are aware of in-demand middle-skill careers and skill-building pathways

Columbus should market middle-skill jobs as a pathway to economic opportunity for area residents and help parents, youth, job seekers, career changers and veterans navigate the most appropriate options to prepare for these jobs.

- Employers should come together to build a career awareness campaign, support new education programming and articulate career pathways.
- Program providers and partners should develop strategic counseling strategies and tools that job seekers can use to evaluate the best opportunities for their needs and navigate the career pathway system to select the right career pathway program. www.OhioMeansJobs.com provides a good starting point for career exploration and job searches.

CONCLUSION

Columbus faces an economic paradox that threatens its future prosperity. Although unemployment is low, employers in high-growth industries are having difficulty finding qualified workers, especially in middle-skill occupations. With a wave of retirements looming, the demand for middle-skill workers will only increase. At the same time, too many Central Ohioans are shut out of the middle class because they lack the skills that employers value. The good news is that significant efforts are already underway to increase education and skill levels and align postsecondary and workforce development programs with industry needs.

Through the *New Skills at Work* initiative, JPMorgan Chase proposes to help advance these efforts by offering guidance on how to develop a demand-driven career pathways system to launch young people and low-skill adults into good jobs with advancement potential. Starting with the middle-skill occupations open in healthcare and insurance sectors JPMorgan Chase has helped to provide targeted recommendations to implement this strategy in Columbus, fortify the region's economy for the future, and realize the vision that all Central Ohioans have the opportunity for good jobs that enable them to support themselves and their families.

⁴⁸Ohio is among several states participating in the Moving Pathways Forward initiative. See <https://lincs.ed.gov/programs/movingpathways>

APPENDIX A – Methodology

All data in this report are provided for the Central Ohio region, defined as the Columbus Metropolitan Statistical Area, unless otherwise noted. The Columbus MSA includes the following counties: Delaware, Fairfield, Franklin, Hocking, Licking, Madison, Morrow, Perry, Pickaway and Union.

Methodology to Identify “Middle-Skill” Occupations

Four criteria were used to identify middle-skill occupations, as follows:

1. Selected occupations must pass a minimum requirement for the percentage of their workforce that possesses a high school diploma and less than a four-year degree.
2. 25% or more of the workforce for each target occupation must surpass the living wage for families with two adults and one child.
3. Each occupation must surpass a minimum growth rate over the past three years.
4. Occupations with limited annual openings are filtered out. The term “middle skill” typically refers to the level of education required by a job. This study expands the common definition by adding three additional criteria (wage, growth rate and number of annual openings). This expanded approach will make sure selected occupations are not only middle skilled but also provide a living wage and are growing.

Methodology to Identify Applicant Pool for In-demand Middle-skill Jobs

Jobs for the Future used the following two formulas to calculate the potential pool of applicants:

Option #1

$$\frac{2013 \text{ OES Workforce Supply} + 2011 \text{ Completers from IPEDS}}{\text{EMSI projected yearly job openings}}$$

Option #2

$$\frac{2013 \text{ OES Workforce Supply} + 2011 \text{ Completers from IPEDS}}{2013\text{--}2014 \text{ Burning Glass online job ads}}$$

For *current workforce supply*, JFF used federal Occupational Employment Statistics to report 2013 data on the number of full-time and part-time workers who were employed in the Columbus MSA in the specified occupations. OES does not take into account the growing trend of individuals working as independent contractors. OES counts neither self-employed individuals nor individuals who take job assignments through “employee leasing companies.”

For *future workforce supply*, JFF used the Integrated Postsecondary Education Data System to report 2011 data on the number of graduates of Central Ohio postsecondary education institutions who completed a program of study corresponding to one of the specified occupations.

For *workforce demand*, JFF used two options. In **option #1**, JFF used EMSI’s 2013–2018 employment projections to derive the estimated yearly number of job openings in a specified occupation due to new job creation or staff turnover (also known as replacement). In **option #2**, JFF used Burning Glass technology to derive an unduplicated count of job advertisements posted online from July 1, 2013 to June 30, 2014 related to specified occupations in the region.

JFF makes several assumptions in its calculation of workforce shortages:

- First, it assumes that individuals who are currently employed in the region, along with students who have recently graduated from regional colleges and universities, will fill the job openings. It does not account for employer efforts to recruit outside of the Central Ohio region, for residents employed outside the region to apply for a job closer to home, or for college students who may have no intention to apply for regional job openings because they have moved out of the geographic area.
- In addition, the primary methodology does not take into account how the retirement of the Baby Boomers will affect workforce supply. Wherever possible, JFF cites empirical and anecdotal information on workforce demographics to assess whether occupations are in relatively better or worse shape to endure retirements.
- Finally, this methodology does not assess the quality of the applicant pool. Instead, JFF draws on informant interviews to discuss whether or not employers are struggling to find candidates with required skill sets, degrees and work experiences.

APPENDIX B – Charts Referred to in the Text

Additional information about the high-demand industries and middle-skill occupations discussed in this report, including data on wages, required credentials and the total number of middle-skill job postings, is at www.jpmorganchase.com/skillsatwork.

Table 1. Target Industry Sector Employment

Category	2013 Jobs	2013–2018 % Change	% Middle-Skilled	Location Quotient 2013
Healthcare	103,938	14%	46%	1.05
Research and Development	7,360	9%	16%	1.28
Finance and Insurance	39,124	2%	16%	1.73
Transportation, Equipment and Machinery Manufacturing	38,383	(2%)	19%	1.55
Corporate Headquarters	35,741	17%	19%	1.96
Computers and Data Centers	18,435	17%	5%	1.28
Total	242,981	10%	29%	1.32

Source: EMSI

Table 2. Target Occupation Demand, 2013–2018

Occupation	Employed (2013)	Median Wages	Average Openings (2013–2018)	Ads 2013–2014	Ad Duration (Days)
General and Operations Managers	10,493	\$47.08	357	1,029	27.63
Administrative Services Managers	1,915	\$39.73	58	229	23.57
Financial Managers	3,677	\$52.39	114	734	31.29
Industrial Production Managers	1,132	\$40.84	27	324	24.44
Purchasing Managers	373	\$48.36	15	94	43.76
Transportation, Storage and Distribution Managers	1,122	\$38.08	38	228	23.19
Human Resources Managers	999	\$51.71	47	259	25.87
Food Service Managers	2,149	\$19.54	62	363	36.85
Medical and Health Services Managers	2,480	\$39.21	117	1,117	32.47
Social and Community Service Managers	930	\$34.34	42	56	37.30
Wholesale and Retail Buyers, Except Farm Products	848	\$26.89	36	47	44.50
Purchasing Agents, Except Wholesale, Retail and Farm Products	2,354	\$29.90	60	223	25.63
Cost Estimators	1,657	\$27.21	79	106	17.44
Human Resources Specialists	3,813	\$27.46	113	1,158	28.17
Logisticians	1,186	\$32.02	41	333	24.28
Meeting, Convention and Event Planners	540	\$22.12	23	188	26.28
Compensation, Benefits and Job Analysis Specialists	718	\$26.19	21	163	25.96
Training and Development Specialists	2,181	\$28.03	74	249	30.41
Credit Analysts	971	\$24.06	33	76	32.87
Personal Financial Advisors	3,149	\$27.62	89	329	47.91
Loan Officers	3,095	\$26.63	88	320	38.33
Financial Specialists, All Other	1,343	\$32.07	23	258	38.73
Engineering Technicians, Except Drafters, All Other	597	\$24.94	16	94	30.56
Biological Technicians	797	\$15.90	30	13	39.38
Chemical Technicians	409	\$22.00	13	20	47.40
Health Educators	432	\$24.60	19	78	26.19
Self-Enrichment Education Teachers	2,112	\$17.63	76	63	81.50

Table 2. Target Occupation Demand, 2013–2018 *Continued*

Occupation	Employed (2013)	Median Wages	Average Openings (2013–2018)	Ads 2013–2014	Ad Duration (Days)
Teachers and Instructors, All Other	1,620	\$21.04	62	160	48.50
Library Technicians	966	\$13.77	64	5	n/a
Teacher Assistants	7,365	\$13.39	308	136	25.78
Commercial and Industrial Designers	288	\$28.89	14	91	33.67
Fashion Designers	412	\$36.77	17	21	24.60
Coaches and Scouts	1,906	\$14.74	83	217	26.00
Interpreters and Translators	1,050	\$26.70	56	65	34.17
Audio and Video Equipment Technicians	359	\$17.51	16	18	n/a
Photographers	742	\$18.15	33	51	12.50
Respiratory Therapists	810	\$25.06	31	34	33.60
Registered Nurses	20,158	\$29.21	882	1,643	34.03
Medical and Clinical Laboratory Technologists	1,223	\$25.27	52	42	52.40
Medical and Clinical Laboratory Technicians	1,014	\$18.31	56	218	51.33
Dental Hygienists	1,789	\$34.06	104	43	45.00
Cardiovascular Technologists and Technicians	182	\$24.89	11	34	42.17
Diagnostic Medical Sonographers	290	\$28.62	18	36	35.67
Radiologic Technologists	1,390	\$24.99	50	49	40.90
Surgical Technologists	502	\$19.30	23	44	33.33
Veterinary Technologists and Technicians	1,105	\$15.17	41	18	33.71
Licensed Practical and Licensed Vocational Nurses	6,512	\$20.56	320	384	27.94
Medical Records and Health Information Technicians	1,077	\$15.69	58	289	35.81
Health Technologists and Technicians, All Other	781	\$18.06	23	243	30.60
Occupational Health and Safety Specialists	420	\$34.28	15	100	32.86
Occupational Therapy Assistants	231	\$25.20	12	64	22.82
Physical Therapist Assistants	582	\$25.16	31	120	31.19
Massage Therapists	715	\$19.21	24	39	25.00
Dental Assistants	1,623	\$17.20	87	114	21.33
Medical Assistants	3,628	\$14.16	164	190	23.91
Medical Equipment Preparers	289	\$14.99	13	25	19.75
Phlebotomists	921	\$13.87	36	61	21.98
First-Line Supervisors of Protective Service Workers, All Other	353	\$18.03	12	21	33.60
Chefs and Head Cooks	557	\$18.32	18	94	32.96
First-Line Supervisors of Food Preparation and Serving Workers	5,987	\$14.82	310	1,074	40.00
First-Line Supervisors of Housekeeping and Janitorial Workers	1,342	\$15.39	47	70	24.64
First-Line Supervisors of Landscaping, Lawn Service and Groundskeeping Workers	868	\$17.75	26	38	28.50
Pest Control Workers	274	\$16.08	13	45	25.86
Tree Trimmers and Pruners	1,295	\$15.88	65	6	54.00
Fitness Trainers and Aerobics Instructors	1,874	\$14.18	39	170	47.88
Parts Salespersons	1,503	\$15.69	68	51	27.63
Insurance Sales Agents	5,744	\$24.73	212	456	32.42
First-Line Supervisors of Office and Administrative Support Workers	8,903	\$23.40	314	662	22.71
Billing and Posting Clerks	5,086	\$15.79	171	94	37.19
Bookkeeping, Accounting and Auditing Clerks	13,873	\$19.05	272	747	22.53

Table 2. Target Occupation Demand, 2013–2018 *Continued*

Occupation	Employed (2013)	Median Wages	Average Openings (2013–2018)	Ads 2013–2014	Ad Duration (Days)
Payroll and Timekeeping Clerks	1,283	\$17.38	51	166	15.18
Procurement Clerks	525	\$19.45	24	83	32.00
Brokerage Clerks	420	\$19.10	16	18	21.50
Credit Authorizers, Checkers and Clerks	3,028	\$14.16	48	16	22.43
Loan Interviewers and Clerks	2,620	\$18.58	38	45	16.70
Human Resources Assistants, Except Payroll and Timekeeping	1,208	\$19.29	40	120	23.38
Dispatchers, Except Police, Fire and Ambulance	1,245	\$18.11	53	68	26.86
Production, Planning and Expediting Clerks	2,706	\$18.65	86	389	25.54
Shipping, Receiving and Traffic Clerks	5,476	\$13.99	180	299	29.48
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	356	\$14.50	12	63	22.50
Medical Secretaries	6,767	\$15.15	269	230	20.82
Office and Administrative Support Workers, All Other	1,994	\$14.78	83	26	29.00
Cement Masons and Concrete Finishers	674	\$17.65	24	32	26.67
Construction Laborers	6,560	\$16.38	275	161	35.50
Paving, Surfacing and Tamping Equipment Operators	304	\$18.50	15	2	50.33
Operating Engineers and Other Construction Equipment Operators	2,202	\$24.96	103	46	20.29
Electricians	3,728	\$20.82	188	170	30.71
Pipelayers	348	\$18.19	16	3	n/a
Plumbers, Pipefitters and Steamfitters	2,412	\$23.97	103	81	24.54
Sheet Metal Workers	794	\$20.30	26	16	28.50
First-Line Supervisors of Mechanics, Installers and Repairers	2,918	\$26.82	104	285	28.31
Security and Fire Alarm Systems Installers	270	\$20.94	11	46	14.86
Automotive Body and Related Repairers	1,326	\$16.95	45	87	40.31
Automotive Service Technicians and Mechanics	3,398	\$16.34	147	492	36.18
Bus and Truck Mechanics and Diesel Engine Specialists	1,863	\$19.88	59	125	29.43
Mobile Heavy Equipment Mechanics, Except Engines	481	\$19.88	22	26	38.14
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	2,041	\$19.69	115	214	31.17
Industrial Machinery Mechanics	1,870	\$23.48	73	25	37.67
Maintenance Workers, Machinery	518	\$21.07	10	28	47.00
Millwrights	367	\$18.20	10	6	56.50
Medical Equipment Repairers	234	\$24.29	11	15	25.50
Maintenance and Repair Workers, General	8,444	\$16.74	236	1,269	30.10
Helpers – Installation, Maintenance and Repair Workers	405	\$14.10	23	43	n/a
First-Line Supervisors of Production and Operating Workers	3,342	\$24.36	57	354	30.51
Electrical and Electronic Equipment Assemblers	993	\$16.47	21	18	17.60
Structural Metal Fabricators and Fitters	401	\$17.45	20	17	13.00
Computer-Controlled Machine Tool Operators, Metal and Plastic	522	\$17.63	25	250	31.55
Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	568	\$15.87	10	8	n/a
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal/Plastic	465	\$16.48	11	7	n/a
Machinists	1,948	\$16.44	65	29	21.44
Tool and Die Makers	487	\$20.26	10	17	14.67
Welders, Cutters, Solderers and Brazers	1,377	\$17.62	48	149	22.67
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	575	\$16.23	24	13	35.75

Table 2. Target Occupation Demand, 2013–2018 *Continued*

Occupation	Employed (2013)	Median Wages	Average Openings (2013–2018)	Ads 2013–2014	Ad Duration (Days)
Mixing and Blending Machine Setters, Operators, and Tenders	1,248	\$19.34	37	9	13.80
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	571	\$15.42	15	13	n/a
Inspectors, Testers, Sorters, Samplers and Weighers	3,014	\$14.40	85	347	24.69
Dental Laboratory Technicians	228	\$20.11	12	14	26.00
Packaging and Filling Machine Operators and Tenders	2,573	\$13.19	75	45	22.60
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	581	\$15.78	12	11	30.50
First-Line Supervisors of Helpers, Laborers and Material Movers, Hand	1,636	\$21.09	66	27	21.38
First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	1,664	\$24.54	66	96	45.58
Bus Drivers, Transit and Intercity	582	\$14.47	14	20	27.50
Heavy and Tractor-Trailer Truck Drivers	12,542	\$18.10	415	3,877	29.53
Motor Vehicle Operators, All Other	254	\$11.59	12	6	12.20
Conveyor Operators and Tenders	294	\$14.04	11	1	n/a
Crane and Tower Operators	210	\$18.84	10	35	13.67
Industrial Truck and Tractor Operators	5,703	\$13.73	172	339	22.68
Refuse and Recyclable Material Collectors	984	\$17.37	32	1	n/a

Sources: EMSI and Burning Glass

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