Research Brief #3

Addressing a Triple Threat in Workforce
December 2021

This is the third in a series of research briefs produced by Goodwill of Western New York, in partnership with the University at Buffalo Regional Institute (UBRI). The research is intended to drive data-driven decision-making in workforce development that benefits underrepresented, underserved populations in the Buffalo Niagara region. This brief is part of a collaborative effort to expand access into higher-paying careers for all individuals, as part of Goodwill's Goodskills Career Builder program. This brief highlights a triple threat facing some workers in the region and opportunities for skills-based training such as that offered by Goodskills Career Builder.

Automation's impact on lower-wage, lower-skill workers

As businesses look at options to maintain productivity while reducing transmission of COVID-19, more work activities are being automated. Even today, robots fill online orders from the warehouse at a leading grocery store across the nation.[1] At a national fast-food chain with a local presence, a machine manages drive-through orders.[2] Although automation is a foundation for productivity and economic competitiveness, it might also be seen as an "economic time bomb."[3]

Some jobs and workers are more likely than others to be impacted. Risk of automation falls more heavily on workers in lower-skill, lower-paying jobs who face financial and other barriers to retraining and upskilling. The burden falls disproportionately on individuals of color, and younger adults who were also disproportionately impacted by the pandemic. Workers whose jobs require creativity and skills such as communication, management and sales will be less likely to see their jobs disappear. In industries such as manufacturing, increasing automation heightens demand for workers with skills that complement the use of technologies such as digital fluency and technical troubleshooting.

This brief unpacks what we describe as a triple threat of workers in jobs with lower wages, lower skills and relatively high automation potential.[4] This brief examines the jobs and the workers in Buffalo Niagara who are most vulnerable, and the opportunities offered by training programs like Goodskills Career Builder with a focus on manufacturing, one of three sectors for Goodskills Career Builder training.

A triple threat facing workers is addressed through Goodskills Career Builder.

	Triple threat facing some workers in Buffalo Niagara	Addressing threats through Goodskills Career Builder
1	**Lower pay** *(less than $40,000/year)*	**Partnerships with employers that are hiring for higher-paying jobs**
2	**Lower skill** *(no postsecondary education and limited training)*	**Work readiness training and experiential learning**
3	**Automation Risk** *(15% or more higher than average)*	**Support for upward career mobility**

Source: UBRI defined triple threat in this way to understand the workers and the jobs affected by automation and the benefits of workforce interventions.

A look at the most vulnerable jobs and workers

Across Buffalo Niagara, 76,200 workers across 89 occupations are in lower-wage, lower-skill jobs at high risk of automation.[5] These jobs represent close to one in seven jobs in the two-county region.[6] These jobs are filled by workers who spend a relatively high percentage of their time on repetitive tasks in predictable, routine settings that can be more easily automated. Those who fill these jobs spend a relatively low percentage of their time on work that involves decision-making, creativity, flexibility, problem-solving or more complex interactions between people.

Some sectors of the economy are more likely than others to employ workers facing this triple threat. Automation could affect close to 15,000 fast food workers in the Buffalo Niagara region, potentially hastened by the "great resignation" of workers dropping out of the labor force. This made jobs harder to fill and increased starting wages.[7] Automation could affect close to 9,000 laborers in manufacturing and other sectors of the economy. Compared to all occupations in the regional economy, males, people of color and younger adults between ages 19 and 34 will be disproportionately susceptible to automation.

Triple-threat jobs in Buffalo Niagara are concentrated in industries such as Hospitality where workers often move from one job to another but less frequently move up a career pathway within the industry.[8] They often get trapped in lower-wage work because of variable work schedules, limited access to flexible transportation and limited employee training and skills development—some of the same factors that leave these workers more vulnerable to automation. While industries such as Manufacturing offer better prospects for upward mobility, career pathways can be narrow for traditionally underrepresented workers. While people of color represent 25% of all workers in Buffalo Niagara, they comprise only 16% of workers in Manufacturing.[9]

Half of the 10 most common job titles facing a triple threat involve food services.

Job Title	# Jobs	Risk of Automation *(above the average)*
Fast Food Workers	14,815	+ 31%
Laborers and Material Movers	9,163	+ 17%
Janitors and Cleaners	7,979	+ 23%
Waiters and Waitresses	5,949	+ 30%
Construction Laborers	3,476	+ 32%
Cooks, Restaurant	3,452	+ 25%
Landscaping and Groundskeeping Workers	3,343	+ 29%
Maids and Housekeeping Cleaners	3,151	+ 25%
Bartenders	2,924	+ 21%
Food Preparation Workers	2,201	+ 29%

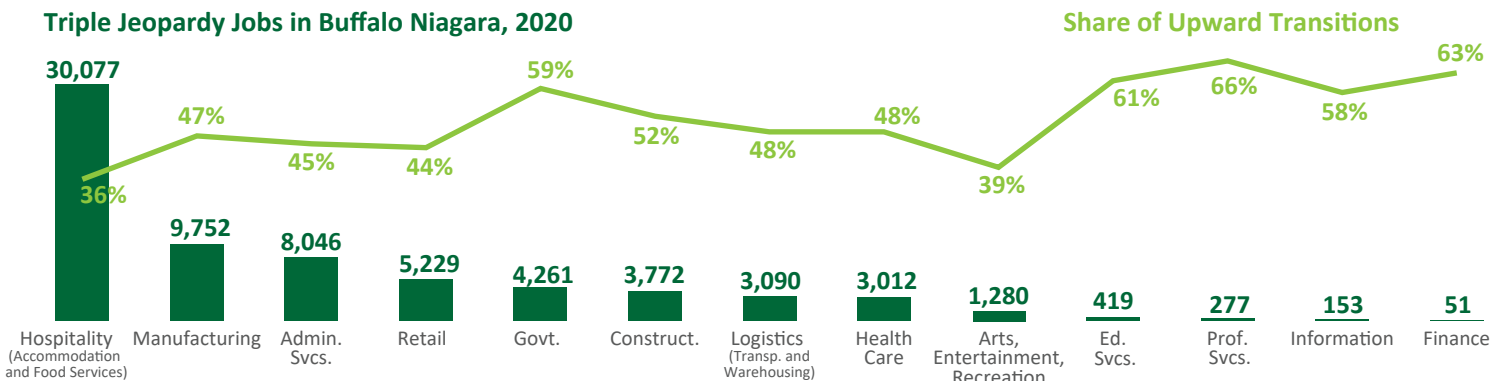Source: UBRI analysis of occupational data from Emsi, Buffalo Niagara, 2020.

Persons of color, males, and younger adults are more likely to work in a job where they face a triple threat.

	Triple Threat Jobs	All Jobs
Ages 19 to 35	42%	33%
Male	59%	50%
Female	41%	50%
Persons of Color	30%	25%

Source: UBRI analysis of occupational demographic data from Emsi, Buffalo Niagara, 2020.

Triple-threat jobs are concentrated in industries like Hospitality where upward mobility is limited.

Triple Jeopardy Jobs in Buffalo Niagara, 2020 — Share of Upward Transitions

Industry	Jobs	Share of Upward Transitions
Hospitality (Accommodation and Food Services)	30,077	36%
Manufacturing	9,752	47%
Admin. Svcs.	8,046	45%
Retail	5,229	44%
Govt.	4,261	59%
Construct.	3,772	52%
Logistics (Transp. and Warehousing)	3,090	48%
Health Care	3,012	48%
Arts, Entertainment, Recreation	1,280	39%
Ed. Svcs.	419	61%
Prof. Svcs.	277	66%
Information	153	58%
Finance	51	63%

Source: Emsi, Occupational data for Buffalo Niagara region, 2020. Brookings, Moving Up: Promoting workers' upward mobility using network analysis, 2021. The share of upward transitions refers to job moves within a sector that result in higher wages.

The Opportunity

As automation threatens jobs over future years and has already transformed jobs in the economy, technical training and work readiness skills are becoming even more important in the labor market.

Across industries and occupations, education and training opens doors to jobs that are less vulnerable to automation. Those in a job requiring at least some postsecondary training face a 4% lower-than-average risk of automation, compared to all jobs in the economy.[10] Labor experts describe increasing demand for new collar workers – neither blue nor white – with a combination of soft skills and technical training through nontraditional pathways. By comparison, workers in jobs requiring no education or training beyond high school are 10% more likely to perform roles that could be automated.

Training for growing occupations and industries that are aligned with regional economic development strategies for target industries such as manufacturing and high growth cross-cutting occupational sectors such as tech will offer future stability to vulnerable workers facing a triple jeopardy. Jobs with the lowest automation potential are expected to grow by 6% through 2030, while jobs that are most vulnerable to automation will continue to decline in number. Many jobs that are at higher risk of automation have already been shed as a result of COVID-19.[11]

Increasing diversity along career pathways could narrow existing equity gaps that automation may widen without strategic intervention. This is especially true in industries such as manufacturing where upward mobility is more common but where career pipelines would benefit from greater diversity that cultivates talent among individuals who are currently underrepresented.

Jobs requiring at least some post-secondary education are at lower risk of automation.

Typical Entry Level Education	Comparative Risk of Automation
High school or Less	+10%
Some postsecondary/2-yr degree	-4%
Bachelor's+	-15%

Source: UBRI analysis of occupational data from Emsi, Buffalo Niagara, 2020. The comparative risk of automation is relative to all occupations in the economy.

Workers of color are underrepresented in higher-wage, higher-growth jobs at low risk of automation.

Automation Potential	Low	Average	High
Jobs in Buffalo Niagara, 2020	**78,526**	**350,634**	**98,986**
Average Wage	$75,619	$48,193	$34,427
Projected Growth through 2030	6%	0%	-6%
% Requiring Postsecondary Education	95%	35%	1%
% Workers of Color	22%	25%	28%
Jobs Projected through 2030	**83,440**	**350,164**	**93,081**

Source: UBRI analysis of occupational data from Emsi, Buffalo Niagara, 2020.

Goodskills Career Builder: Addressing a Triple Threat in Workforce
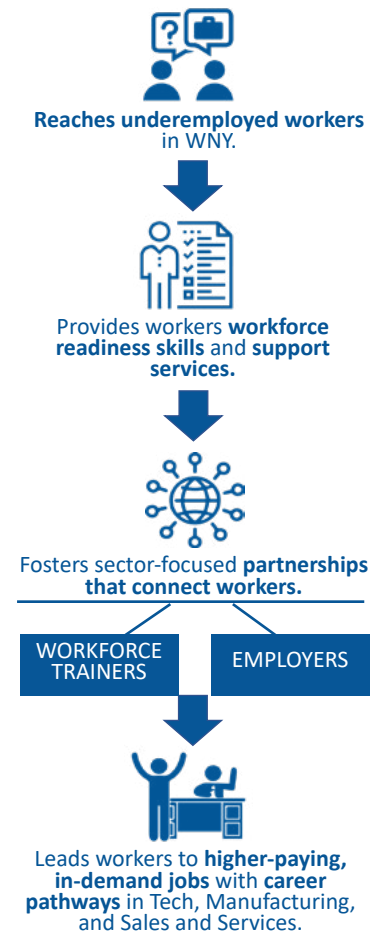
Goodskills Career Builder is a training program that launched in September for adults who are unemployed because of COVID-19 or underemployed and vulnerable to the effects of automation because they are in jobs that are lower paying and lower skilled. Through training, supportive services and partnerships with companies that are hiring in Buffalo Niagara, this program prepares individuals for jobs that are more resilient to automation and offer upward career mobility in Manufacturing, Tech, and Sales and Services.[11]

While jobs at risk of automation declined in number over the past few years and are forecasted to continue to decline over the next 5-10 years, Goodskills Career Builder prepares individuals for jobs where employer demand is high. These are jobs that are more difficult for employers to fill because candidates lack the skills that these companies seek. Goodskills Career Builder focuses on training diverse individuals, particularly individuals of color, who are overrepresented in jobs that are at higher risk of automation.

Goodskills Career Builder is research grounded and outcomes focused. The program prepares individuals for a job with a career pathway and upward economic mobility. Graduates of Goodskills Career Builder have access to a career coach for up to three years. Career coaches can help workers acclimate to more advanced jobs, access support services in the community, and support future-oriented decisions that lead to continued employment and job promotion.

Finally, Goodskills Career Builder is unique in its approach. Through classroom and experiential learning, Goodskills Career Builder offers work readiness and technical training – a foundation for skills that machines cannot replace. Goodskills Career Builder cultivates human capabilities such as communication, teamwork, initiative, and problem solving to make workers adaptable across industries and occupations and more resilient to automation.

Why Goodskills Career Builder?

Reaches underemployed workers in WNY.

Provides workers **workforce readiness skills** and **support services.**

Fosters sector-focused **partnerships that connect workers.**

| WORKFORCE TRAINERS | EMPLOYERS |

Leads workers to **higher-paying, in-demand jobs** with **career pathways** in Tech, Manufacturing, and Sales and Services.

Data Sources and Notes

The analysis for this brief was inspired by research conducted by Accenture to help adults with limited education and working in roles with high automation potential transition into sustainable careers. This research is part of their Inclusive Future of Work initiative. [1]*Kroger debuts first Ocado automated fulfillment center*, in Supermarket News, April 4, 2021. *Restaurant Roundup: Robots Take Over Major Casual Dining Chains*, PYMNTS, October 22, 2021.[2]Casselman, Ben, *Pandemic Wave of Automation May Be Bad News for Workers,* in The New York Times, September 25, 2021.[3]Zremski, Jerry: The Briefings: *The economic time bomb called automation*, The Buffalo News, June 14, 2018.[4]Jobs facing a triple threat are defined here as those with 1) an automation index of 115 or more, representing 15% or more higher than average), (2) Median earnings less than $40,000, which is $30,000 per year less than the average earnings per job of $68,968 in Buffalo Niagara and less than a living wage for 1 working adult and 1 child, based on MIT's Living Wage Calculator for Buffalo Niagara Metro, and 3) lower skill requiring no training beyond high school and moderate on-the-job training at most. [5]Emsi, Occupational data, Buffalo Niagara, 2020. [6]Emsi, Occupational data, Buffalo Niagara, 2020. Employment across all occupations in Buffalo Niagara was 528,146 in 2020. [7]NYS Division of the Budget, *Report on New York's Minimum Wage Increases Scheduled for 2022*, September 21, 2021 [8]Emsi, Inverse Staffing Buffalo Niagara, 2020. Emsi's crosswalk between occupations and industries was applied to the 89 triple threat occupations to determine numbers by industry. The percentage of moves within an industry that are upward in nature comes from analysis of national data completed by Brookings Institution. Brookings Institution, *Moving Up: Promoting workers; upward mobility using network analysis*, June 14, 2021, page 13. [9]Emsi, Occupational data, Buffalo Niagara, 2020.[10]Emsi. Occupations Table, Buffalo Niagara, 2020. Potential for automation is relative to the average job in the regional economy and represents a weighted average based on job numbers in Buffalo Niagara. For the comparison by jobs by automation potential, jobs with an automation index of 115 or more are considered "high," 85.01-114.99 is considered "average," and 85 or less is considered "low." [11]Urban Institute, Where Low-Income Jobs Are Being Lost to COVID-19, Aug. 6, 2021. [12]Goodwill of Western New York and University at Buffalo Regional Institute, Goodskills Career Builder, Connecting People with Careers (PowerPoint), February 2021.