

Buffalo Niagara Talent Initiative

Prepared by the UB Regional Institute

December 2019

 **University at Buffalo**
Regional Institute
School of Architecture and Planning

Buffalo Niagara Talent Initiative

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The Buffalo-Niagara Falls MSA, defined as Erie and Niagara counties, is the focus of this report. All numbers presented refer to the MSA, excluding the number of recent graduates and alumni of local colleges and universities which represent the five-county Western New York region, which includes the MSA, along with Chautauqua, Cattaraugus, and Allegany counties.

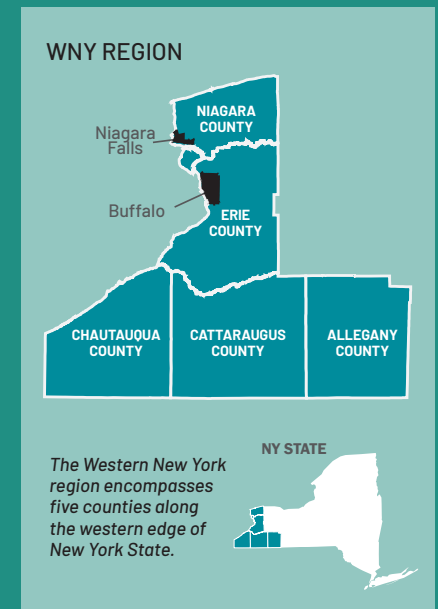
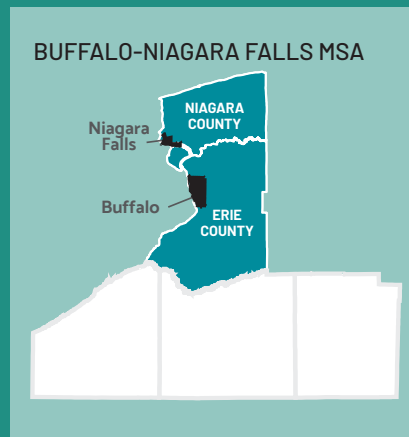


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Introduction

Buffalo Niagara's economy needs a significant, ongoing influx of talent.

Buffalo Niagara's labor market is tightening. The number of people looking for work is near an all-time low, and the workforce is aging, with extensive looming retirements. Meanwhile, local employers are looking to hire, with growing market demands and new needs across sectors. To meet these demands and keep the regional economy growing, Buffalo Niagara needs to strategically build its labor pool. Upskilling existing workers is critical, but can only address part of the need. The region needs to grow its labor pool by retaining college graduates, recruiting expats and new residents, and increasing overall in-migration.

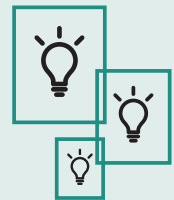
Since 2011, with the inception of Governor Andrew M. Cuomo's Regional Economic Development Councils and Buffalo Billion Investment Development Plan, Western New York has been targeting investment in four core regional economic development strategies—placemaking, workforce, innovation and tradable sectors. These targeted investments all play a role in attracting and retaining talent. For example, we know vibrant, high-density walkable neighborhoods, affordable housing, multi-modal transportation options, and technology infrastructure help us compete for new talent and increase in-migration. We also know that educating and training our region's current workforce across core industry sectors works hand-in-hand with attracting new talent to build a strong pipeline of workers for local employers. Strategies that foster entrepreneurship and innovation through increased R&D and commercialization give our region a needed competitive edge when attracting talent. Likewise, building stronger ecosystems around tradable sectors

Strategies for a New Buffalo



like health and life sciences and advanced manufacturing provide a mass of high-paying jobs that attract a dynamic workforce from elsewhere. Our region will continue to support initiatives specific to placemaking, workforce, innovation and tradable sectors to strategically build its labor pool, but **it's time to take talent attraction and retention to the next level.**

The region has demonstrated the power to think and act collectively by learning, problem solving, investing, and evaluating impact together. A collaborative, unified effort for talent attraction and retention that focuses on improving the image of the region, reducing the barriers to in-migration, and building and promoting the region's emerging sector-based ecosystems will provide an increased, positive economic impact on the region.



What went into the report

UBRI conducted a topline assessment of the "state of talent attraction" in the Buffalo Niagara region. The UBRI Project Team took a 30,000-foot view of regional labor and talent attraction programs which included an overview of the labor market context, current programs, relevant demographic data, and an analysis of where the "lowest hanging fruit" resides. UBRI, in partnership with Invest Buffalo Niagara, also sent out a survey to 3,000 expats, including UB alumni, who relocated to other parts of the country to foster an understanding of why they left and what might bring them back.

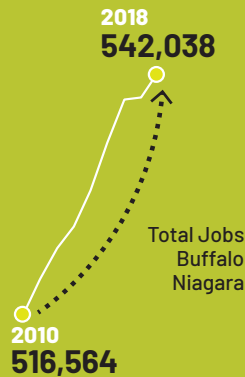
Within a condensed, six-week time period, UBRI convened 27 key stakeholders who are representative of our region and actively engaged in or interested in talent attraction to serve as focus groups. Participants were asked to provide ideas that could address our region's talent attraction needs or fill gaps in its ecosystem. They were also encouraged to reach out to colleagues and other entities for recommendations on ways to attract and retain talent in order to grow the regional economy.



Why is talent attraction important?

Buffalo Niagara has experienced...

Eight straight years of job growth.



A record low # of unemployed workers to fill jobs.

24,771
unemployed workers in Buffalo Niagara in 2018

An aging workforce with looming retirements.


125,784 workers will reach retirement age in the next 10 years (age 55+)

More people are moving out than moving in.

30,878
people moved out of Buffalo Niagara, 2016

Fewer young college-educated adults than other metros.

of Young Adults (25-34) with Bachelor's Degree or more, 2010-2017

Buffalo Niagara	Other Top 50 US Metros (Avg.)
28,124	100,954

Less than half of local college grads stay in the region.

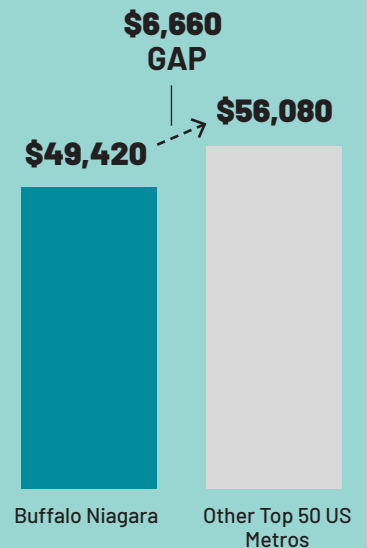
At least 123,000 local alumni with a Bachelor's or more live outside the region

Source: See Data Sources and Notes

What's holding us back?

Lower wages make it harder to attract talent.

Average Annual Wages, 2018



Other regions have more job opportunities and major companies.

Annual Job Postings per 10,000 residents, 2018-2019

366 Buffalo Niagara **456** Other Top 50 US Metros

Fortune 1,000 Companies

2  Buffalo Niagara **17**  Other Top 50 US Metros (Avg.)

Buffalo is a great place to live, but many other major cities have a lot to offer.

#49 America's Best Large Cities, *Resonance*, 2019

#52 125 Best Places to Live in the USA, *U.S. News & World Report*, 2019

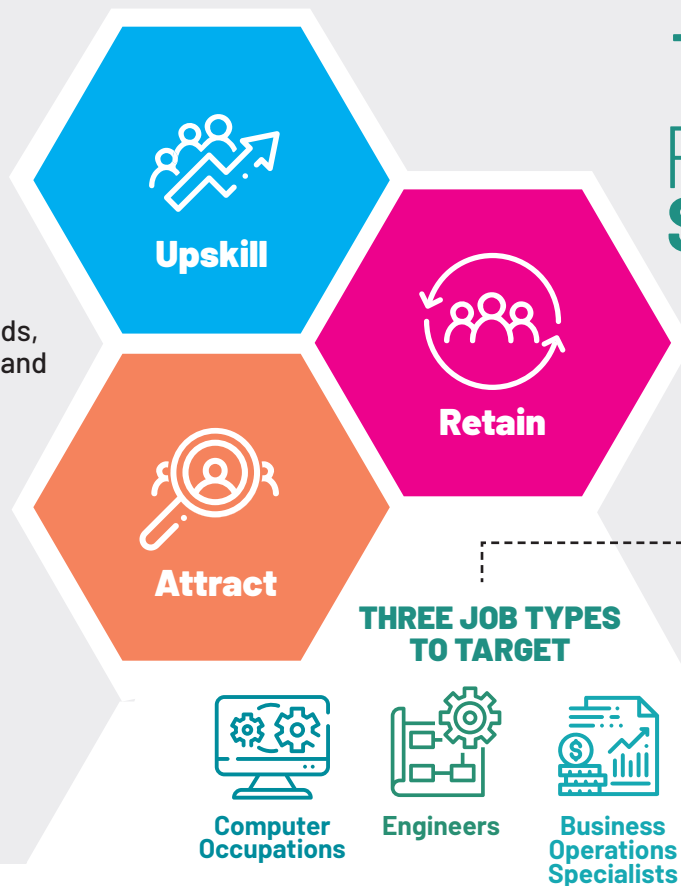
#70 2019 Top 100 Best Places to Live, *Livability.com*

Source: See Data Sources and Notes

What's our strategy to grow tech talent?

Tech drives the 21st century economy. Jobs in tech span every sector of the economy and these jobs are growing faster and pay more than non-tech jobs.

To meet employers' hiring needs, accelerate economic growth, and stay competitive in today's economy, the region needs to find ways to better meet the growing talent demands for tech jobs.



THREE-PRONGED STRATEGY FOCUSED ON TECH

Who Should We Upskill, Retain and Attract?



UPSKILL

Train unemployed and underemployed individuals for entry-level jobs in tech, as well as upskill mid-level tech professionals and recent college graduates for more senior positions.



RETAIN

Increase opportunities for tech job internships, create more robust career services departments at local colleges and universities that are better connected to each other and industry, and improve networking and "education on opportunity" events for students.



ATTRACT

Provide large scale marketing, online tools and online job portal, direct focused concierge programs, and residencies.



How We'll Make it Happen

TECH SCHOOL

TECH INTERNSHIPS

TALENT MARKETING INITIATIVE TALENT RECRUITMENT INITIATIVE TECH RESIDENCIES

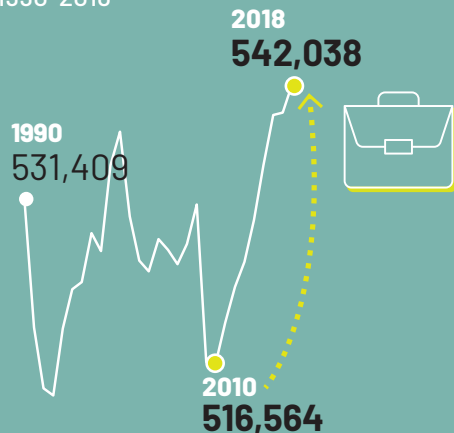
PROJECT IMPLEMENTATION

across Initiatives

Buffalo Niagara needs to grow the talent pool.

The shrinking, aging labor pool holds the economy back. The region needs to get more people to stay and attract new residents to keep the economy growing.

Total Jobs, Buffalo Niagara, 1990-2018



Unemployment Rate, 2018

Buffalo Niagara US

4.6% **3.9%**

Eight years of job growth and record low unemployment.

The longest streak of job growth in decades is tightening the labor market. The region now has fewer people looking for work than any time since at least 1990.

2018

24,771
unemployed,
looking for work.

2018

31,567
people are
employed, but still
live in poverty.

Thousands of workers in the region could benefit from upskilling.

Retraining existing workers can help fill in-demand, higher-paying jobs.

In 2016,

26,067
residents
moved in
to Buffalo
Niagara
while

30,878
residents left
Buffalo Niagara.



4,811

more residents
moved out than in.

More moving out than moving in.

US residents are less likely to move than ever. In the region, thousands more moved out than in.

Sources: **Job Growth:** US Bureau of Labor Statistics (BLS), Quarterly Census of Employment and Wages, 1990-2018; **Unemployment:** US BLS, Local Area Unemployment Statistics, 2018; **Employed in poverty:** US Census, American Community Survey (ACS), 1-year estimates, 2018; **Migration:** US Census, ACS, 2012-2016; **Retirement Cliffs:** US Census, Quarterly Workforce Indicators, 2018; **Young Adults:** US Census, ACS, 1-year estimates, 2010 and 2017; **Local Alumni:** EMSI analysis of LinkedIn profiles, 2019. Includes college graduates of the 5-county WNY region. See [Data Sources and Notes](#).

Buffalo Niagara's labor market is tightening. Fewer people are looking for work now than in decades. The workforce isn't just shrinking, it's aging—25% of workers are age 55 or older. This shrinking and aging workforce is limiting job growth—employers are having a tough time filling jobs. While thousands of existing workers could be retrained to fill in-demand jobs, to sustainably grow the economy, Buffalo Niagara needs to grow its labor force by bringing more skilled workers to the region. But attracting talent is hard work. Nationally, people are less likely to move than ever before, and in the region, thousands more are moving out than moving in. The number of young educated adults is growing, but not as much as other top metros. Thousands graduate from local colleges each year, but less than half of these alumni still live in the region. To continue recent economic growth, Buffalo Niagara needs a robust approach to retain and attract talent.

Share of Workers Age 55+, 2018



1 out of 4 workers will reach retirement age in the next 10 years (age 55+)

Retirement cliffs are looming.

An aging labor force increases demand for younger workers. That's nearly 126,000 workers who will need to be replaced.

% Change in Young Adults (25-34) with a Bachelor's Degree or more, 2010-2017



+16% Buffalo Niagara **+33%** US

Fewer college-educated young adults than other top metros.

The number of young, college-educated adults increased since 2010, but only about half as much as other major US metros.

% of Local Alumni with a Bachelor's Degree or more



42% still live in Buffalo Niagara.

Not enough young college-educated adults stay.

Only 42% of local alumni with a Bachelor's or more still live in the region. At least 123,000 local alumni live outside the region.

WHAT EXPATS ARE SAYING ABOUT WHY THEY MOVED OUT, AND WHAT COULD BRING THEM BACK

The top reason Buffalo Niagara has to focus on attracting talent might be summed up in one word: *jobs*.

Based on a recent survey of 95 expats, a lack of abundant, high-paying job opportunities is the top reason expats moved away, and the top factor that could bring them back. While other factors, like climate, family, and culture, certainly play a part, limited job opportunities are the main reason most people leave the region.



I didn't want to leave Buffalo Niagara...couldn't find a job in the region."



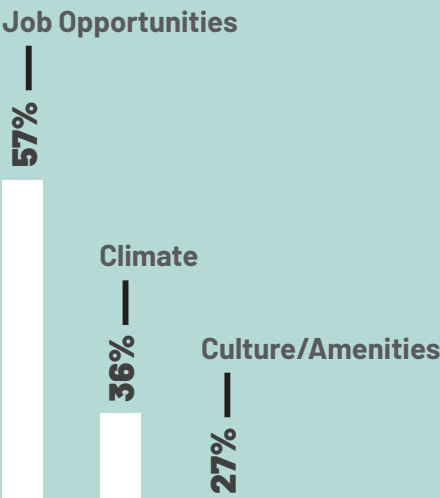
More jobs, better climate."

Why do people leave the region?



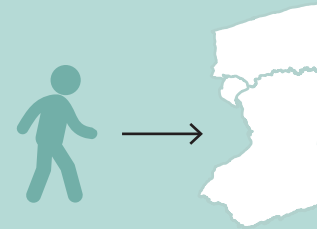
What does their new location offer?

Top Three Responses



Overall, slightly more than half would consider moving back.

Younger respondents, and people who moved out within the past 10 years are more likely to move back, suggesting that the perception of the region is improving. The handful of respondents who work for nonprofits, startups, or private tech firms are slightly less likely to consider moving back, underscoring the need for concerted, robust efforts to attract talent in key sectors.



54% of respondents said they'd consider moving back to Buffalo Niagara.

**Younger respondents, and those who moved out more recently are more likely to consider moving back.*

**Respondents working at nonprofits, startups, or tech firms are less likely to consider moving back.*

“I love Buffalo. If I can find a job, I will move back.”

“... I love Buffalo. I just need to convince my spouse.”

What keeps people from moving back?

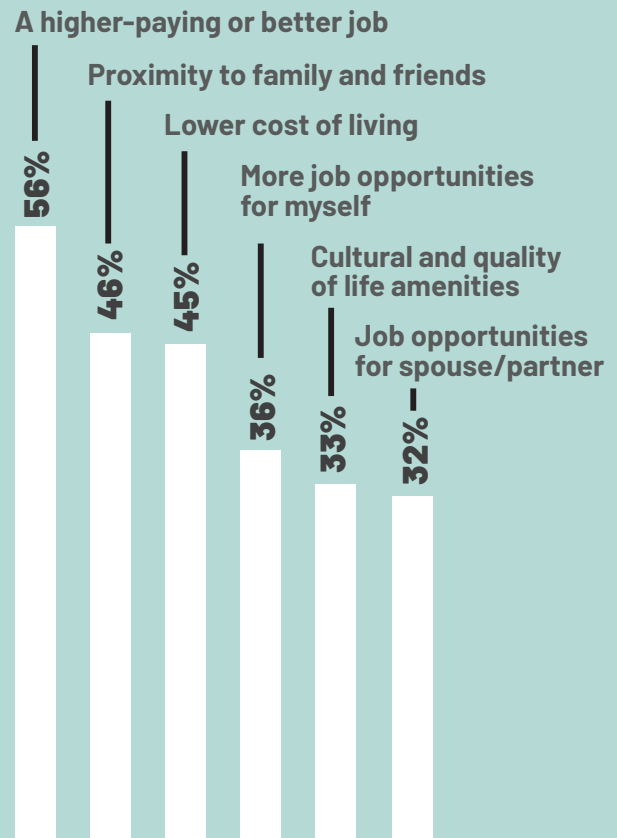
“Probably could not make same money, partner not interested.”

“I really love the region but the winters and lack of high-paying employment opportunities... keep us from returning.”

“Family, jobs, weather.”

“Lack of high-paying STEM jobs.”

What would bring people back?





#1 Buffalo Niagara Metro

WHERE IS LOCALLY GROWN TALENT MOVING TO AND WHAT CAN WE LEARN FROM THESE PLACES?

Local alumni are often attracted to large cities like New York, Boston, and Washington D.C., as well as other Upstate NY cities. But alumni also move to cities outside NYS with more comparable economies to Buffalo—Milwaukee, WI; Cleveland, OH; and Charlotte, NC are all in the top 10 cities with alumni from Buffalo Niagara colleges, and account for 14,474 of the region's total alumni.

Compared to these regions, Buffalo Niagara has a few competitive advantages. Housing and transportation are slightly more affordable, commute times are shorter, the city is more walkable, and the region's high schools perform better than most.

However, Buffalo Niagara lags behind these peers in crucial ways. The region's biggest drawback is limited job opportunities. Job postings per capita are lower in Buffalo Niagara than other metros, and the workforce is smaller. While Buffalo Niagara only has two Fortune 1,000 companies, peer regions all have more than ten. Buffalo Niagara is also less racially diverse than these peers, and scores lower in quality of life rankings.

To compete with other metros, Buffalo Niagara should continue investing to make the region a more attractive, dynamic place to work. More importantly, the region must create and promote local job opportunities, and grow the workforce by attracting talent. But when it comes to attracting talent, the Buffalo Niagara region faces a catch-22: a lack of job opportunities keeps talent from moving in, but a lack of local talent can hold employers back from creating more job opportunities.

Top 10 Cities with Buffalo Niagara College Alumni

		# of Alumni living here
#1	Buffalo, NY	98,386
#2	New York, NY	32,387
#3	Rochester, NY	24,509
#4	Syracuse, NY	7,569
#5	Washington, DC	5,891
#6	Cleveland, OH	5,028
#7	Boston, MA	4,854
#8	Milwaukee, WI	4,745
#9	Charlotte, NC	4,701
#10	Albany, NY	4,569

What's holding us back?

Labor Force 541,657

Annual job postings requiring Bachelor's+ per 10,000 residents 366

of Fortune 1,000 Companies 2

% of Residents Who Are Non-White 21%

Ranking among Top 100 Large Cities for Quality of Life #49

Where are we competitive with other peer metros?

% of High Schools ranked Top 25% Nationally 37%

Median Household Income \$53,534

% of Household Income Spent on Housing and Transportation 50%

Avg. Commute Time (mins.) 22

WalkScore 68

0 LESS WALKABLE 100 MORE WALKABLE

Sources: **Labor Force:** US BLS, March, 2019; **Job Postings:** UBRI analysis of online job postings using EMSI, 2018-2019; ACS, 1-yr estimates, 2017; **Fortune 1,000 Companies:** EMSI, 2018; **Non-white Residents:** ACS, 1-yr estimates, 2017; **Quality of Life:** Resonance Consultancy, "America's Best Cities: A Ranking of U.S. Place Equity," 2019; **High Schools:** US News and World Report, "2019 Best High Schools Rankings"; **Median Income:** ACS, 5-yr estimates, 2017; **% Income Spent on H&T:** Center for Neighborhood Technology's Housing and Transportation (H+T®) Affordability Index, 2017; **Commute Time:** ACS, 1-yr estimates; **WalkScore:** walkscore.com, August, 2019.

Where 14,474 of Buffalo Niagara region's alumni are located



#6 Cleveland Metro



#8 Milwaukee Metro



#9 Charlotte Metro

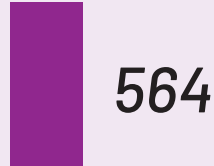
1,035,755



27%

#47

827,160



28%

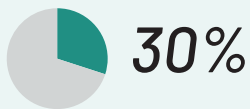
#45

1,376,908



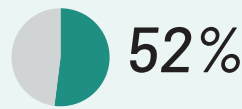
33%

#22



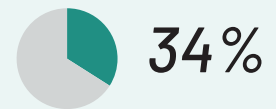
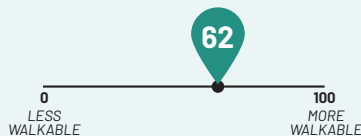
53%

25



51%

23



52%

27



THREE- PRONGED STRATEGY

Upskill
Prepare existing residents for higher-paying, in-demand jobs.



Upskill



Retain

Retain
Limit outmigration and get talent that is already here, to stay.

Attract
Look nationally for talent that brings a new knowledge base and can fill unmet industry needs.



Attract

FOCUSED ON TECH



Why Do We Need Tech Talent to Stay Competitive?

Tech drives the 21st century economy. Jobs in tech span every sector of the economy and these jobs are growing faster and pay more than non-tech jobs.



Which Jobs Should We Target in the Tech Sector?

Three types of jobs make up nearly 80% of all tech job openings: Computer Occupations, Engineers, and Business Operations Specialists.



Where and Who Could We Upskill, Retain and Attract?

Buffalo Niagara residents and graduates from regional universities provide a local talent pool ready to upskill and retain. Across the nation, alumni, expats and grads with tech degrees are all candidates that could be attracted to relocate to Buffalo Niagara.





Why Do We Need Tech to Stay Competitive?

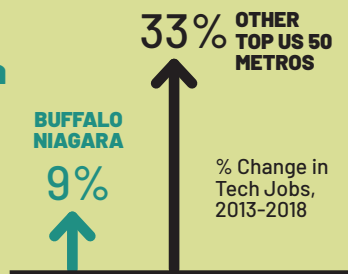
Technology drives the 21st century economy.

Jobs in tech are growing faster, and pay more, than non-tech jobs. But compared to the other top metros in the US, **tech jobs in Buffalo Niagara pay lower wages**, and are **growing at a fraction of the pace**. The **limited number of tech job opportunities in the region** makes it more difficult to attract and retain talent. Although **the region produces a lot of college grads in tech fields**—about two for every one job opening in the region—**many leave to find higher-paying jobs** in more dynamic tech markets. To accelerate economic growth, stay competitive, and sustain success in today's economy, the region needs to find ways to better meet the growing talent demands for tech jobs.

The region's **tech job market is starting to heat up**. Tech job growth from 2017 to 2018 was on par with the US, and **tech job postings take longer to fill** in the region than the nation, suggesting that local firms have a harder time filling tech jobs than elsewhere across the country. Three types of jobs make up the majority of tech job postings in the region and the US—computer occupations, engineers, and business operations.

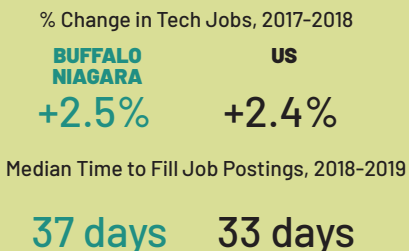
Tech job growth in Buffalo Niagara lags behind other major metros.

Source: US BLS, STEM Employment, 2013 and 2018. "tech" jobs are defined by US BLS' list of occupations in science, technology, engineering, and mathematics.

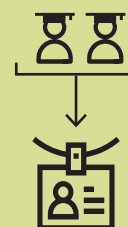


The demand for tech jobs is heating up and positions are harder to fill.

Source: US BLS, 2017-2018; EMSI analysis of online job postings 2018-2019. See Data Sources and Notes.



The region produces two college graduates for every tech job opening.



Tech College Grads, 2017

6,349

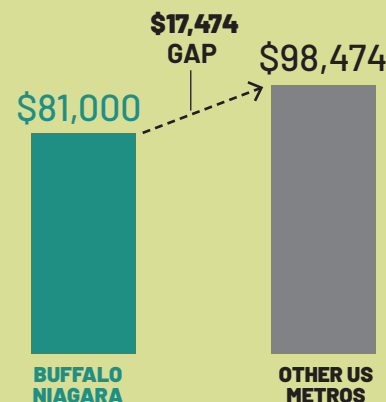
Tech Job Openings, 2017

3,117

Source: EMSI analysis of job postings; IPEDS, 2017.

Tech jobs are high-paying, but wages are lower in the region than other major metros.

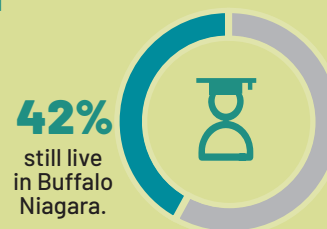
Avg. Annual Wages for Tech Jobs, 2018



Source: US BLS, STEM Employment, 2018. Tech jobs are defined by US BLS' list of occupations in science, technology, engineering, and mathematics.

Only 42% of Buffalo Niagara tech alumni stay in the region.

% of Local Alumni with a Bachelor's Degree or More in Tech Fields



Source: EMSI analysis of LinkedIn® online profiles, 2019.

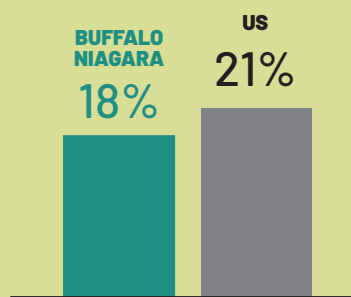
Startups fuel tech job growth, and hold the potential to propel the region's economy to new heights.

New firms account for about one-fifth of job creation, even though they employ a relatively small share of workers overall. **The region invests resources** to build an entrepreneurial ecosystem, but still **lags in innovation**. Buffalo Niagara's per capita spending on research and development is nearly on par with the US, but the region falls **behind the nation in the creation of patents and new entrepreneurs**.

Buffalo Niagara's **startup scene has grown more vibrant** in recent years, especially in the tech sector. However, a **lack of local talent can still be a challenge for local tech startups**. Some local startups relocated to other regions, in part because of the difficulty in finding enough qualified workers to fill tech jobs. Keeping local startups in the region is crucial to building the entrepreneurial ecosystem needed to fuel tech job growth. This is another reason why it is critical for **Buffalo Niagara to attract more of the talent that fuels startups**, especially the most in-demand tech jobs.

New firms create about one out of five new jobs.

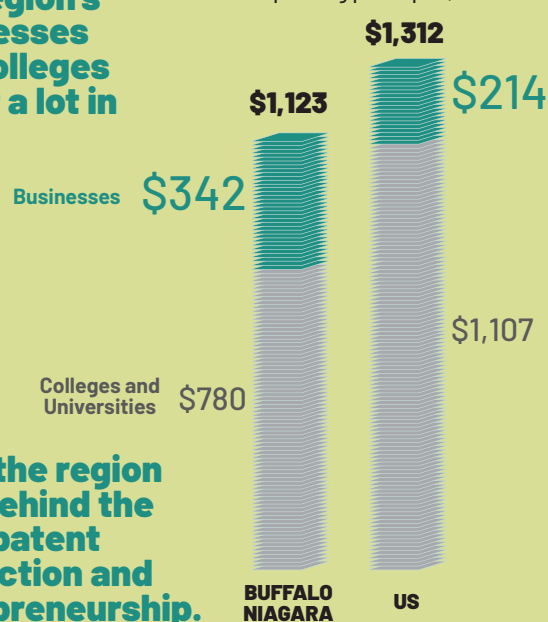
% of New Jobs Created by New Firms, 2017



Source: US Census, Quarterly Workforce Indicators, 2017. Includes private sector employment only. New firms are 0-5 years in age. National figures based on first three quarters of 2017.

The region's businesses and colleges invest a lot in R&D...

R&D Spending per Capita, 2015



...but the region lags behind the US in patent production and entrepreneurship.

Patents per 10,000 Workers, 2015



New Entrepreneurs per 1,000 Residents, 2017

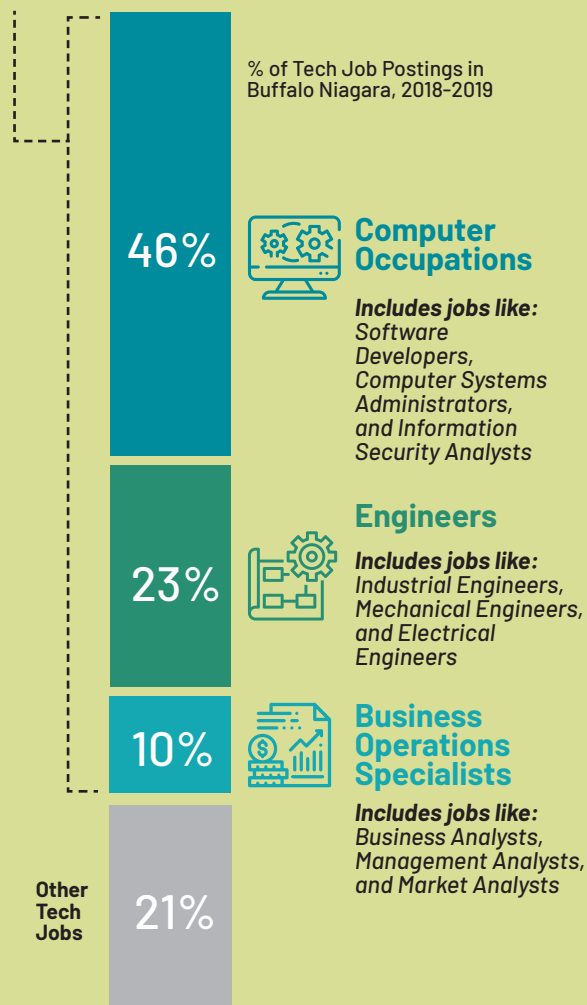


Sources: **R&D**: National Science Foundation, 2015; U.S. Census, 2015; **Patents**: U.S. Patent and Trademark Office, 2015; U.S. Bureau of Labor Statistics, 2015; NYS Department of Labor, 2015. **Entrepreneurs**: UBRI analysis of data from IPUMS-CPS (Current Population Survey), University of Minnesota, 2017 and 2018. Based on methodology from Ewing Marion Kauffman Foundation. See [Data Sources and Notes](#).



Which Jobs Should We Target in the Tech Sector?

Three types of jobs make up nearly 80% of all job openings in tech.



Based on online job postings for tech jobs, or STEM (science, technology, engineering, and math) occupations, in Buffalo Niagara from April 2018 to June 2019.

Source: EMSI analysis of Online Job Postings for STEM Occupations, April 2018 to June 2019. See Data Sources and Notes.

THREE JOB TYPES to target in the Tech Sector



These three types of jobs make up nearly 80% of job demands in tech. Cultivating and targeting talent for jobs in computers, engineering, and business operations can drive growth in the tech sector and strengthen the regional economy.

THREE WAYS to get the talent we need



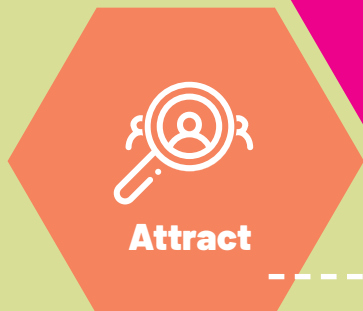
Upskill

Local residents who are unemployed and underemployed, and local high school graduates.



Retain

Local college graduates with relevant degrees.



Attract

Alumni and expats; and recent graduates living in metros with fewer tech job openings and lower pay than in Buffalo Niagara after adjusting for cost of living.



Who could we upskill to fill tech jobs?

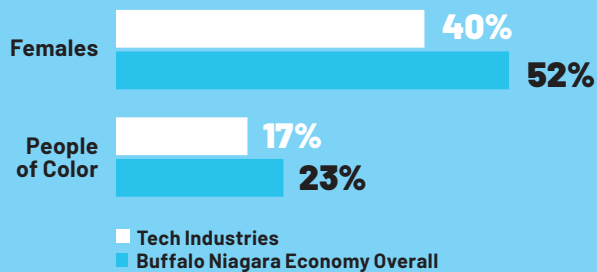


Upskill

Thousands of current workers could be trained to fill in-demand tech jobs. This includes those who are unemployed and looking for work, entry-level tech workers, and the underemployed, like workers who still live in poverty. Upskilling women and people of color—groups traditionally underrepresented in tech—could also help fill tech jobs. Cultivating the current workforce for tech jobs can extend economic opportunities to all residents, enhance our labor pool, and fuel regional growth.

Bringing more women and people of color into the Tech sector can help drive industry growth.

Women and People of Color as % of Total Population and as % of Workers in Tech Industries, Buffalo Niagara, 2018



Source: US Census, Quarterly Workforce Indicators, Quarter 3, 2018; American Community Survey, 1-year estimates, 2018.

Thousands of tech workers could upskill to fill higher paying tech jobs.

2017

20,671
tech sector workers that earn less than \$40,000 a year

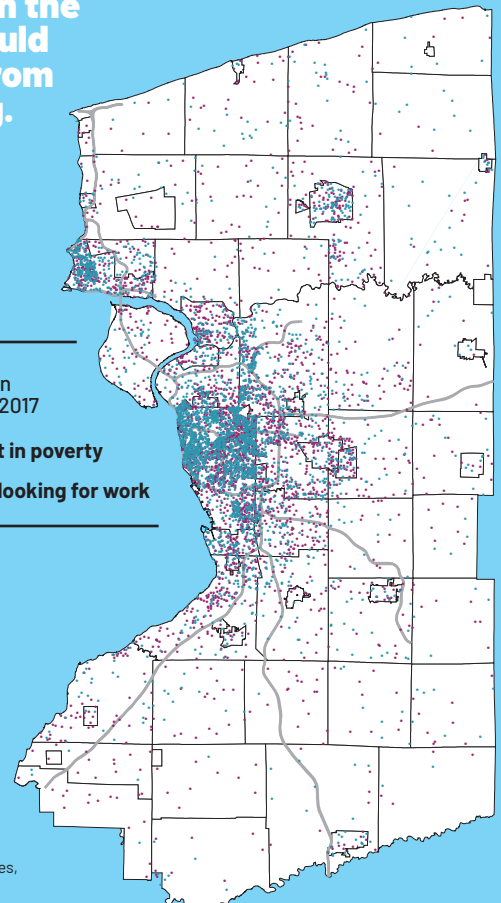
Source: US Census, LEHD Origin-Destination Employment Statistics, 2017.

Unemployed and underemployed workers in the region could benefit from upskilling.

Unemployed and Underemployed in Buffalo Niagara, 2017

- Employed, but in poverty
- Unemployed, looking for work

1 dot = 10 people



Source: US Census, American Community Survey, 5-year estimates, 2017.



Who could we **retain** to fill tech jobs?



Three broad types of jobs make up most tech job postings— computer occupations, engineers, and business operations. There are many talent pools the region can draw from to fill these jobs. The easiest talent to capture are recent grads from local colleges, since they already live here. In 2017, there were over 5,000 grads with degrees fit for these jobs.

Retain recent local grads graduating with relevant degrees.



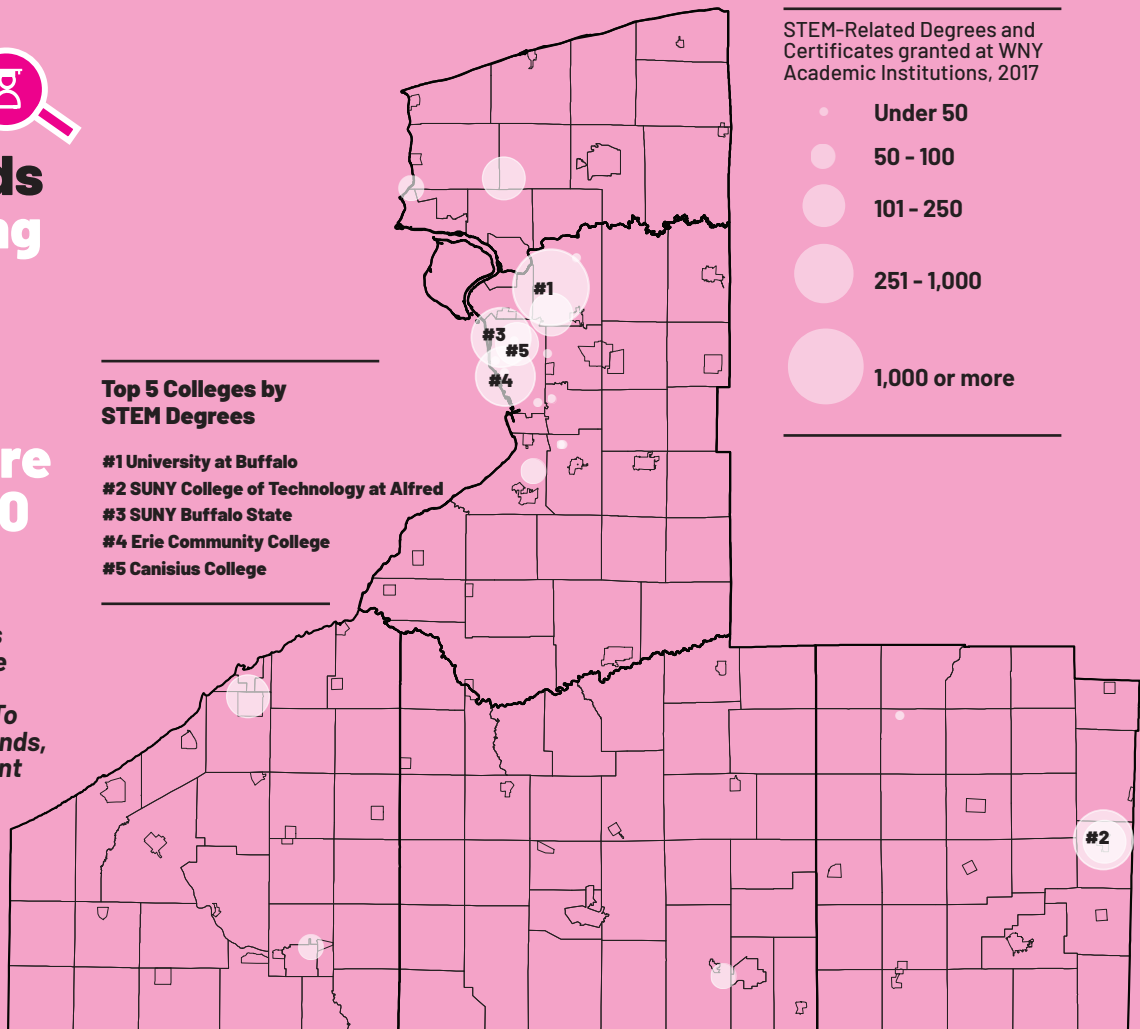
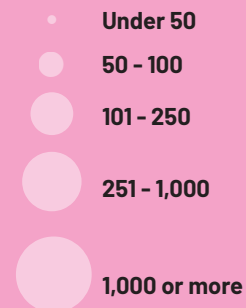
There were over 5,000 in 2017.

The region produces thousands of college grads with relevant degrees each year. To meet local job demands, retaining these recent grads is the easiest place to start.

Top 5 Colleges by STEM Degrees

- #1 University at Buffalo
- #2 SUNY College of Technology at Alfred
- #3 SUNY Buffalo State
- #4 Erie Community College
- #5 Canisius College

STEM-Related Degrees and Certificates granted at WNY Academic Institutions, 2017



Source: National Center for Education Statistics, Integrated Postsecondary Education Data System, 2017.



Who could we **attract** to fill tech jobs?



Attract



**Computer
Occupations**



Engineers



**Business
Operations
Specialists**

**We could target
local alumni
with relevant
degrees who live
elsewhere.**

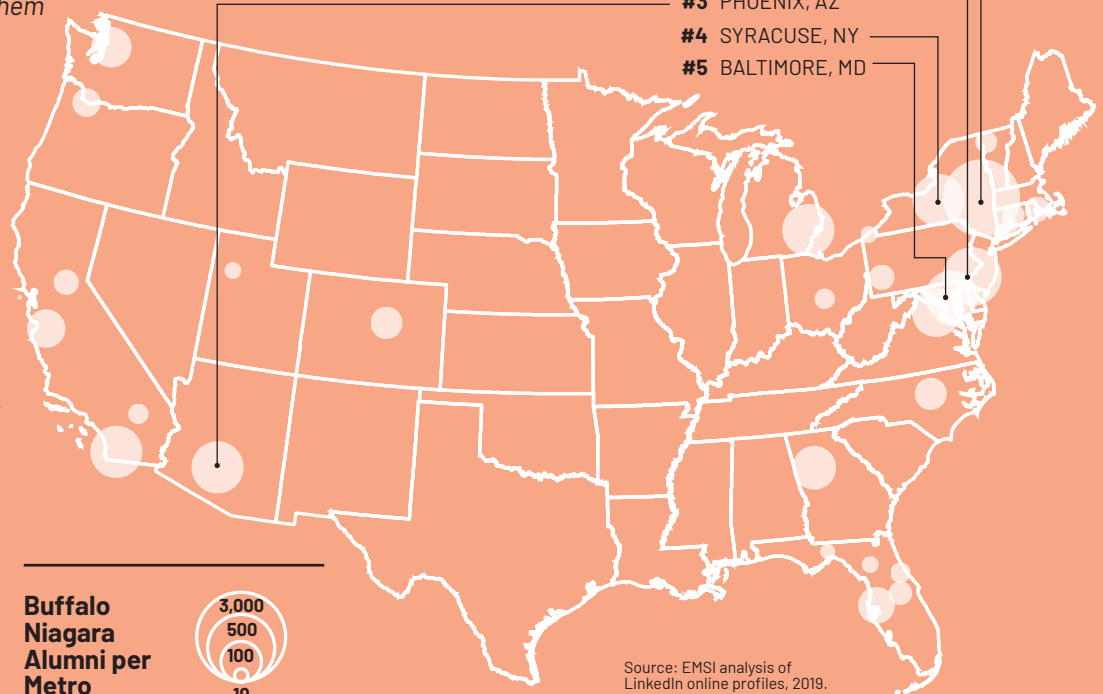
**There are
17,780+ living
across the US.**



*Since alumni of local colleges
already have a connection to the
region, it'd be easier to bring them
back, than those who don't.*

**The top 5 metros where these
Buffalo Niagara alumni with degrees
for computer, engineering, and
business operations jobs live**

- #1 ALBANY, NY**
- #2 PHILADELPHIA, PA**
- #3 PHOENIX, AZ**
- #4 SYRACUSE, NY**
- #5 BALTIMORE, MD**



Based on an analysis of active LinkedIn profiles of
alumni from regional colleges

Attracting tech workers from outside Buffalo Niagara is a tall task. But getting those who used to live here to move back is easier than attracting brand new residents. There are at least 17,780 local college alumni with degrees for computer, engineering, and business operations jobs who moved out but could be lured back. The toughest talent to attract are unconnected to the region. But the region has a competitive advantage over other metros. There are at least 30,000 recent grads with these relevant degrees from metros with more grads than job openings and lower wages for these jobs than Buffalo Niagara*. Each of these pools of talent can help fill Buffalo Niagara's tech jobs.

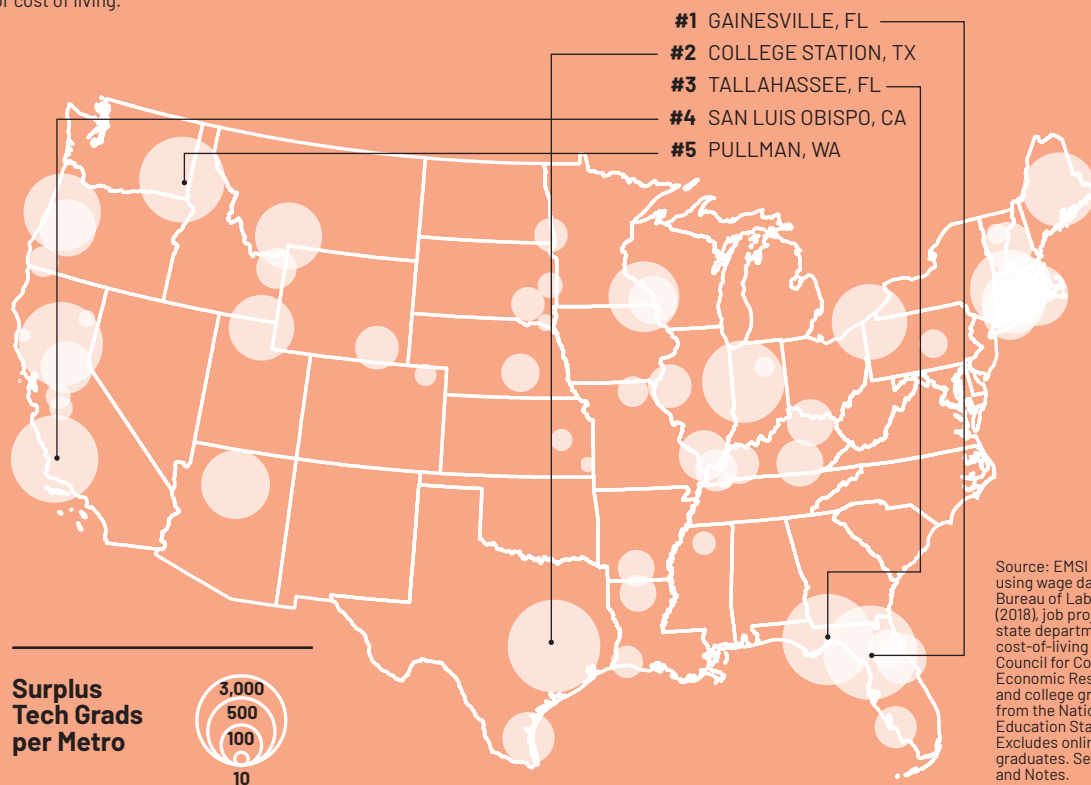
We could target out-of-town grads living in metros with more grads than job openings AND where the pay for these jobs is lower than Buffalo Niagara*.

There are 30,000+ living across the US.

Those without any connection to the region are the toughest talent to attract, but related grads in these metros could have an easier time finding a job, and more money in their pocket, in Buffalo Niagara.

*after adjusting for cost of living.

The top 5 metros where these out-of-town grads with degrees for computer, engineering, and business operations jobs live



INVESTMENTS TO MAKE IT HAPPEN

How We Got Here

Over six weeks in summer of 2019, UBRI convened 10 sessions with 27 stakeholders actively engaged in talent attraction in the three target sectors.

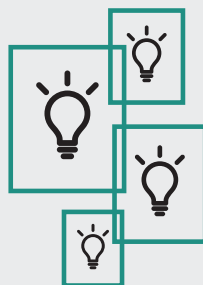
27 

STAKEHOLDERS
WORKING TO ATTRACT TALENT IN
THREE TARGET SECTORS



Stakeholders were invited to submit ideas and concepts to be considered as opportunities for investment.

12 **CONCEPTS
SUBMITTED**



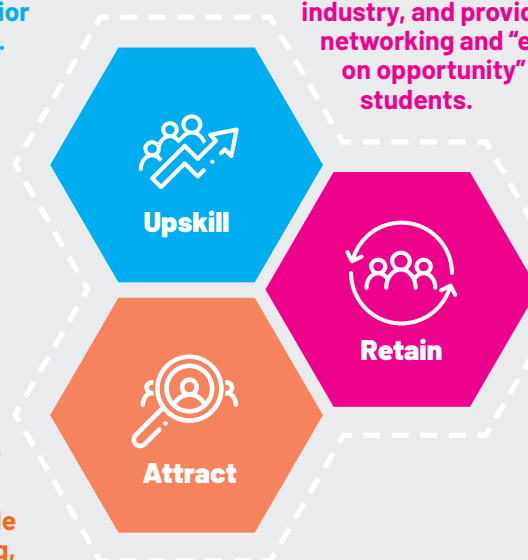
A Strategy for Growing Tech Talent

UPSKILL

Train unemployed and underemployed individuals for entry-level jobs in tech, as well as upskill mid-level tech professionals and recent college graduates for more senior positions.

RETAIN

Increase tech internships for local students, boost career services departments at local colleges and universities so that are better connected to each other and responsive industry, and provide networking and “education on opportunity” events for students.



ATTRACT

Provide large scale marketing, online tools and an online job portal, direct focused concierge programs, and internships directed at a national audience.

Based on data analysis and stakeholder engagement, the investment portfolio is a collaborative and coordinated effort to strategically build Buffalo-Niagara's tech labor pool.

UPSKILL



TECH SCHOOL

Working in close partnership with industry, train unemployed and underemployed individuals for entry-level jobs in tech with opportunity for advancement, as well as upskill junior-level tech professionals for more senior positions.

RETAIN



TECH INTERNSHIPS

Local colleges and universities will partner with industry to build a pipeline for hiring through tech-focused experiential learning in the form of internships and networking opportunities.

ATTRACT



TALENT MARKETING INITIATIVE

Through a dynamic brand, exciting messaging that focuses on career opportunities and sense of community, and strategic and personalized outreach, the Talent Marketing Initiative seeks to identify and recruit quality talent to the region.

TALENT RECRUITMENT INITIATIVE

Create a central portal for job seekers and job openings in tech; and build awareness around this tool and populate the site with strong talent by combining personal outreach and digital advertising.

TECH RESIDENCIES

Create a program that recruits high-caliber tech-skilled college students from across the nation for summer residencies at local companies that includes housing, professional networking, skills development and community engagement.

UPSKILL, RETAIN AND ATTRACT



PROJECT IMPLEMENTATION

Implement tech-specific programs and provide coordination across all initiatives to strengthen partner connections, avoid duplicative efforts and increase collaboration with the goal of producing 5,000 new tech professionals for Buffalo Niagara.



TECH SCHOOL

Project Description

Based on the Per Scholas model and working in close partnership with industry, the region will develop a technology training program (Tech School) for adults that includes hands-on technical skills training, job skills instruction, individualized support for job placement, and personal and career advancement. Tech School will be used to train unemployed and underemployed individuals for entry-level jobs in tech with opportunity for advancement, as well as upskill junior-level tech professionals for more senior positions. Participants will be taught first-rate skills to fill technical jobs ranging from entry-level help desk, software testing and quality assurance, to mid-level networking. Instruction involves hands-on learning based on real-world scenarios required for desired jobs. Graduates will earn credentials from recognized certification providers. In addition to in-demand technical skills, students also learn essential workplace skills with heavy focus on topics like customer service, team work and communication. Through partnerships with tech employers who have a lifetime achievement-based outlook, curricula, student services and methodology for credentialing will be industry-driven. Tech School may even be able to develop custom trainings to meet the tech talent needs of specific companies. Tech School also aims to build a more diverse technical workforce by creating on-ramps for women and people of color—groups staggeringly underrepresented in tech employment today.



Why It Matters

A comprehensive tech school is essential to building a robust workforce pipeline to fill job demands and grow the economy. We heard that more local tech training and education programs are needed to turn out graduates with employable skills who don't require months of on-the-job training. Business acumen training is also needed. "Techies" need to know how to communicate with others, manage people, and be high-performing employees. Likewise, employers need to understand the value that tech brings to a company.

This pipeline is needed to serve the needs of large corporate entities, small companies and startups. Corporate entities need to be confident they can grow locally. In Buffalo Niagara, this is key since the tech labor market is still relatively affordable (compared to larger cities), which makes Buffalo Niagara a more reasonable option when grappling with the lure of less expensive off-shore tech labor. If the region can make local, cost-effective talent available to companies here, they will want to grow in Buffalo Niagara. Smaller companies, even those that don't use technology in their core offerings, use technology professionals to help run their businesses—everything from inventory to manufacturing systems to logistics. A tech school could assist smaller companies which are challenged to replace employees looking for upward mobility. The startup community needs labor that is willing to take a risk and support an emerging product to change an existing market or create a new one. A tech school is key to establishing the lower-cost pool of tech talent that startups need. In all of these instances, a tech school not only teaches in-demand skills, but can serve as a key piece of the ecosystem that helps match people with opportunities.

Lead Organization

TBD

What we heard from leaders and key stakeholders in the region

Buffalo Niagara will soon have more tech jobs than technologists.

If you can get cost effective talent into companies, they will want to grow in Buffalo.





TECH INTERNSHIPS

Project Description

Local colleges and universities will build technical knowledge and talent in Buffalo Niagara by creating a pipeline for hiring through tech-focused experiential learning. Bringing together established companies, the startup community, nonprofits and higher education, the program helps retain talent from local colleges and universities to ultimately strengthen the tech workforce while enhancing and energizing the tech community through greater collaboration. A key component of the project includes the opportunity for companies to offer fully-funded paid internships with flexible hours based on the nature of the internship. Internships will be available across tech-driven organizations in Buffalo Niagara, including large to mid-sized companies, small businesses, start-ups and non-profit organizations. Internships will be marketed to area undergraduate and graduate students and awarded through a competitive application process to students with appropriate skills and career interests. Participating students are encouraged to explore technical careers and potential entrepreneurial endeavors, while gaining exposure to professional culture, developing tangible skill sets, and building connections with mentors who can serve as life-long resources. To ensure internship success and potential development into full-time employment, employers will have access to supports such as onsite and online seminars and trainings. Student interns will be exposed to and connected with the region's tech community through knowledge and experience sharing opportunities, particularly among host companies and participating interns; and broader community building, networking, and topic-focused forums and events.



Why It Matters

Tech-driven companies are supported with a robust university talent pipeline, but in Buffalo Niagara exposure to the employment opportunities that the region has to offer, especially in tech jobs, is lacking. An overwhelming number of students from outside the area never actually experience "the real" Buffalo, choosing instead to stay mainly on-or-near campus. Area undergraduate students need to be exposed to our vibrant downtown where thriving private sector and entrepreneurial activities exist. In addition, students historically want to stay in the region, but they lack awareness of opportunities and do not have the professional networks to learn about them. There is a need for increased opportunities for internships in tech jobs and matching funding opportunities to help underwrite costs for longer-term, more embedded experiences that would increase retention. If student interns are hired into full time positions, they may be more likely to lay down professional roots in Buffalo Niagara, leading to growth in tech companies and increased entrepreneurial activity. There also needs to be better connections between employers and area faculty to positively impact tech curriculum and fuel collaborative research; as well as more robust career services departments at local colleges and universities that are better connected to each other and industry. There is also value in networking and "education on opportunity" events for areas students, early in their education, to expose them to the viability of Buffalo as a place to live after graduation.

Lead Organization

TBD

What we heard from leaders and key stakeholders in the region

“ **Mentorships have been a very successful tool for retaining talent.** ”

“ Students are a huge untapped potential market for talent needs. We need to introduce them to the City and engage them in the community in order to retain them. ”





TALENT MARKETING INITIATIVE

Project Description

The Talent Marketing Initiative seeks to identify and recruit quality talent to the region and retain existing talent by relationship building, authentic storytelling, and data-driven marketing. With a dynamic brand, exciting messaging and strategic outreach, the Talent Marketing Initiative will 1.) target high-skilled talent in key occupations and geographies through an ambassador network for new recruits and digital tools to help employers attract new talent to the region; 2.) target messaging to ex-patriates that encourages the target audience to come back home, be a part of Buffalo's renaissance, and continue their careers while making a positive impact on the region; 3.) retain local graduating students by creating a strong sense of home and community integration through direct exposure, in the form of tours, events and networking, to the breadth and depth of available career opportunities; and 4.) increase the diversity of high-skilled talent in the region through storytelling, engaging minority leader advocates, and targeting industry professional publications.



Why It Matters

Buffalo Niagara needs to continue to improve the brand image of the region as a great place to live and work, and a tech-friendly, tech-focused region. Many people don't see the region as high tech, but rather as a decaying rust belt city with few opportunities. We must reduce the barriers to in-migration by promoting the region's developing sector-based ecosystem so that potential talent is aware that opportunities in Buffalo Niagara are supported by larger networks. In other words, marketing should focus on the array of opportunities offered in Buffalo Niagara—if people are going to make the move to this city for a new job, they want to know there are additional opportunities available if they want a job change or upward mobility. A marketing effort that focuses specifically on talent attraction, needs to be inclusive of business chambers, visitor bureaus and economic development organizations and more focused, cohesive, and concerted to result in a unified, amplified voice of the "new Buffalo." These marketing efforts should be inclusive focusing on underrepresented talent pools that benefit companies and the broader region and lead to the enhancement of diversity in the startup and tech ecosystems.

Lead Organization

Invest Buffalo Niagara

What we heard from leaders and key stakeholders in the region

“Buffalo still has an image problem. We have to repaint peoples' picture of the region.”

“WNY is now a land of opportunity for innovators. We just need to get the word out.”





TALENT RECRUITMENT INITIATIVE

Project Description

Until now, there has been no central database of talent who would be interested in working for Buffalo Niagara-based startups and tech companies. 43North recently established a partnership with Viaduct (a division of Buffalo-based Aleron) to launch a talent portal that would allow Buffalo Niagara startups and tech companies to post job openings and search profiles of job seekers who are: currently within the region; currently outside of the region but have ties to WNY; and outside the region, but have expressed interest in working in WNY or have applied for past positions with WNY startups. 43North has already begun accumulating this information from hundreds of job seekers. To boost this effort and populate the site with strong talent they propose a plan that combines personal outreach and digital advertising. 43North will hire a recruiter to provide one-to-one contact and utilize LinkedIn Recruiter which would provide tens of thousands more contacts—empowering the recruiter to reach exponentially more job seekers. They will also employ digital advertising through Google ads and paid social media to reach target audiences. And, they will continue to implement JobCade, a job fair aimed at helping Buffalo Niagara startups and small businesses find talent to grow their companies.



Why It Matters

A digital portal for sourcing tech and startup talent and jobs is critical to recruiting new workers to the region. There were previous iterations and early efforts to develop such types of portals that were extremely effective in reaching both local and out-of-town talent, but were terminated due to lack of funding. There is a need for a central portal for job seekers and job openings in tech and to build awareness around this tool. In addition, since top tech workers are generally passive job seekers, attracting them often requires direct, one-to-one contact. We learned that when talent is recruited with direct focused attention, there is a very high success rate in getting people to move to Buffalo Niagara, even when the candidate had no prior relationship to the region. A digital talent/job portal and scaled up concierge approach are recruitment tools essential to attracting new talent to the region.

Lead Organization

43North (in partnership with Viaduct)

What we heard from leaders and key stakeholders in the region



Buffalo needs to portray itself as a tech-friendly place.



A one-on-one approach has been successful for bringing talent to Buffalo, even those with no connection to the region.

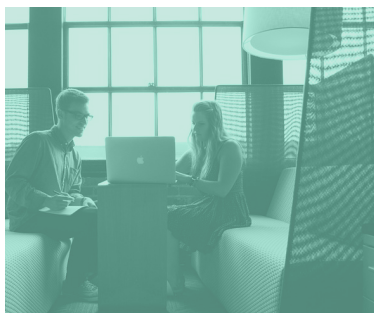




TECH RESIDENCIES

Project Description

Based on Indianapolis's Techpoint Xternship model, college students spend a summer living and working in Buffalo Niagara gaining invaluable experience at local tech companies. After a rigorous recruitment, application and interview process, students are matched and placed in paid positions for ten weeks at local companies. Their experience in Buffalo Niagara is enhanced by social activities and city immersion, professional networking, free downtown housing at local colleges, and exposure to community service and mentorships. For local companies, they gain access to highly-skilled tech talent that have the potential to become future employees. As students return to school and share their experiences, they become informal ambassadors helping, by word-of-mouth, to attract future talent to Buffalo Niagara.



Why It Matters

There are at least 30,000 recent graduates with relevant degrees living in metros with fewer tech job openings and lower pay than in Buffalo Niagara (after adjusting for cost of living). These graduates, who may not have any connection to the region, are the toughest talent to attract; but they could be open to starting a career in Buffalo Niagara if they were introduced to the tech community, and knew they might have an easier time finding a job and could ultimately have more money in their pockets. There is a need to expose these graduates to Buffalo Niagara's career opportunities and desirable quality of life while they are still in school—exploring opportunities after college. Students from all over the country could be enticed to move to Buffalo Niagara and launch their careers in one of the country's burgeoning tech communities if they were connected to the tech community early on and supported in finding a job post-graduation.

Lead Organization

TBD

What we heard from leaders and key stakeholders in the region

“ We have to do more than just attract talent – we also need to welcome and connect newcomers and engage them in the community.

“ Experiential learning opportunities really help build the pipeline of future talent and link students to the business/startup world.





PROJECT IMPLEMENTATION

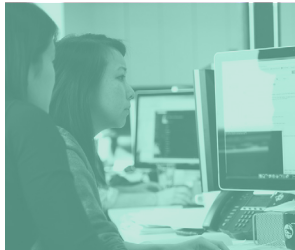
Project Description

TechBuffalo (currently known as IT Buffalo) will partner with lead organizations to coordinate activities across the investment portfolio and implement a tech-specific talent attraction and retention agenda that cuts across all three strategies. The mission of TechBuffalo is to produce 5,000 new technology professionals for Buffalo Niagara using the goals and directives that have been refined for nearly two years with the help of an enthusiastic and engaged Board of Directors, made up of regional technology leaders. TechBuffalo will be ramped up to implement their own tech-specific programs with regional partners while providing coordination across all initiatives. This will create one organization to connect all programs, avoid duplicative efforts and increase collaboration across all talent attraction initiatives. A new TechBuffalo website will connect and support all initiatives.

In coordination with colleges and universities, TechBuffalo will implement a formal, tech-specific internship and apprenticeship program open to all area schools and companies. To support tech companies, TechBuffalo will lead talent attraction training, coaching, and education. Small-group support and engagement such as tech-community events, administration, and marketing support will assist local tech small groups with building micro-communities.

In coordination with Invest Buffalo Niagara, Tech Buffalo will attract technology talent by linking the TechBuffalo website to the Invest Buffalo Niagara Talent Attraction Website, to serve as a talent attraction tool for tech recruiting departments at area companies. In coordination with 43North, TechBuffalo will develop a Director Resource Program where the TechBuffalo Executive Director serves as a tech-ecosystem tour guide for companies recruiting talent to Buffalo. Tech Buffalo will also serve as a small-group connector—connecting potential transplant tech workers to area tech groups and other regional opportunities before they relocate to Buffalo.

TechBuffalo will upskill talent (in coordination with Tech School, colleges and universities and other training providers) by assembling a regional tech-education and certification taxonomy; facilitating and promoting Tech School; serving as the community connectivity arm and host/facilitator for Tech School; using the TechBuffalo administrator for Tech School information/registration support; introducing and integrating students into small, local tech groups; and integrating Tech School with internship/apprenticeship programs. They will also support programming options depending on the schools' and students' needs—providing 101 training for entry-level students and upskilling/soft skills training for current tech professionals and tech students.



Lead Organization

TechBuffalo

What we heard from leaders and key stakeholders in the region



There's a great energy here. If we work together as a community, we can align ourselves with Buffalo's resurgence and attract top talent.



APPENDIX

Appendix A - Interviewee List

Appendix B - Interview Topics and Questions

Appendix C - Invest Buffalo Niagara ExPat/Alumni Survey Questions

Appendix D - Data Sources and Notes

Appendix A

INTERVIEWEE LIST

Hadar Borden
University at Buffalo

Thomas Murdock
University at Buffalo

Peter Burakowski
43North

Ginny Oehler
VC Consulting

Glenda Cadwallader
Cadwallader & Associates Consulting Services

Christina Orsi
University at Buffalo

Jenna Cavanaugh
Invest Buffalo Niagara

Franchelle Parker
Open Buffalo

Duane Connors
IT Buffalo

Katie Pieri
WNY Nonprofit Support Group

Andrea Czopp
Destination Niagara USA

Eric Reich
Campus Labs

Karen Fashana
Visit Buffalo Niagara

Sharon Randaccio
Performance Partners

Dottie Gallagher
Buffalo Niagara Partnership

Jennifer Reed
43North

Beth Gosch
WNY Foundation

Karen Spaulding
The John R. Oishei Foundation

Alex Gress
43North

Thomas Ulbrich
University at Buffalo

Randy Harris
IT Buffalo

Susan Weinrich
NYCON

Patrick Kaler
Visit Buffalo Niagara

Arlene Kaukus
University at Buffalo

Thomas Kucharski
Invest Buffalo Niagara

Marnie Lavigne
Launch NY

Blythe Merrill
The John R. Oishei Foundation

Appendix B

INTERVIEWEE TOPICS AND QUESTIONS

Talent Attraction Initiative Information Session Questions Not-For-Profit Sector

Current Efforts

What programs do you currently have in place for talent attraction?
What future projects are you considering?

What have you found most successful for attracting talent? What key lessons were learned from past efforts?

What sectors are you focusing on most?

Are you partnering with other groups on marketing efforts?

If so, who?

If not, are there any groups you feel would be effective partners for maximizing impact and leveraging spending?

What critical pieces do you feel are missing in the local talent attraction ecosystem? Are there existing programs that could help fill the gaps? If not, what do you believe could help fill the gaps?

Do you know of any recent best practices that could be successfully replicated in our market?

What do you believe are the biggest challenges to recruiting/building talent?

Fellowships

Do you feel that fellowships can be an effective approach to filling the high demand job pipeline?

Do you believe that building a cohort of incoming fellows across sectors and supported by peer learning would be beneficial?

Sector Promotion

We can't be all things to all people in our efforts. If you had to choose one, would you focus on promotion existing or soon-to-emerge job opportunities? How would you prioritize sectors of the market?

Concierge services

Do you believe a concierge approach would be effective? If so, is this something you would consider supporting? Who do feel would best manage this type of approach?

Students

Do you know of any programs in place to engage and retain students graduating from local colleges and universities?

Talent Attraction Initiative Information Session Questions Private Sector/Big Picture Partners

Current Efforts

What programs do you currently have in place for talent attraction?
What future projects are you considering?

What have you found most successful for attracting talent? What key lessons were learned from past efforts?

What sectors are you focusing on most?

Are you partnering with other groups on marketing efforts?

If so, who?

If not, are there any groups you feel would be effective partners for maximizing impact and leveraging spending?

What critical pieces do you feel are missing in the local talent attraction ecosystem? Are there existing programs that could help fill the gaps? If not, what do you believe could help fill the gaps?

Do you know of any recent best practices that could be successfully replicated in our market?

What do you believe are the biggest challenges to recruiting/building talent?

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Do you feel that fellowships can be an effective approach to filling the high demand job pipeline?

Do you believe that building a cohort of incoming fellows across sectors and supported by peer learning would be beneficial?

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We can't be all things to all people in our efforts. If you had to choose one, would you focus on promotion existing or soon-to-emerge job opportunities? How would you prioritize sectors of the market?

Concierge services

Do you believe a concierge approach would be effective? If so, is this something you would consider supporting? Who do feel would best manage this type of approach?

Students

Do you know of any programs in place to engage and retain students graduating from local colleges and universities?

Talent Attraction Initiative Information Session Questions Entrepreneurship/Start-Ups

Current Efforts

What current programs are you aware of for talent attraction? Are you aware of any future projects?

What have you seen that's been most successful for attracting talent? What has failed?

Are you or any of the organizations that you work with partnering with other groups on talent attraction marketing efforts?

If so, who?

If not, are there any groups you feel would be effective partners for maximizing impact and leveraging spending?

What critical pieces do you feel are missing in the local talent attraction ecosystem? Are there existing programs that could help fill the gaps? If not, what do you believe could help fill the gaps?

Do you know of any recent best practices that could be successfully replicated in our market?

What do you believe are the biggest challenges to recruiting/building talent?

Fellowships

Do you feel that fellowships can be an effective approach to filling the high demand job pipeline?

Do you believe that building a cohort of incoming fellows across sectors and supported by peer learning would be beneficial?

Sector Promotion

We can't be all things to all people in our efforts. If you had to choose one, would you focus on promotion of existing OR soon-to-emerge job opportunities? In general, how would you prioritize sectors of the market?

Concierge services

Have you ever seen or tried a concierge approach by sector?

If so, what were the results?

If not, would you be willing to pursue and manage this approach?

If not, who would be successful at managing this type of approach?

Students

What programs do you know of or have in place to engage and retain students graduating from local colleges and universities?

Appendix C

INVEST BUFFALO NIAGARA EXPAT/ ALUMNI SURVEY QUESTIONS

1. How are you connected to the Buffalo Niagara region? [Select all that apply] *

- ☐ I was born and raised in Buffalo Niagara
- ☐ I attended college in Buffalo Niagara
- ☐ I used to work in Buffalo Niagara
- ☐ I have family in Buffalo Niagara
- ☐ Other

2. What factors influenced your decision to leave Buffalo Niagara? [Select all that apply] *

- ☐ A higher paying or better job
- ☐ Lower cost of living
- ☐ Housing availability
- ☐ More, alternative job opportunities for myself
- ☐ Job opportunities for my spouse or partner
- ☐ Climate
- ☐ Proximity to family and friends
- ☐ Quality of K-12 public schools
- ☐ Higher education opportunities
- ☐ Cultural and quality of life amenities
- ☐ Other

3. What does your new location offer that Buffalo Niagara does not? *

4. Have you ever considered moving back to Buffalo Niagara? *

- ☐ No
- ☐ Yes

5. Why/why not?

6. What factors would make you move back to Buffalo Niagara? [Select all that apply] *

- ☐ A higher paying or better job
- ☐ Lower cost of living
- ☐ Housing availability
- ☐ More alternative job opportunities for myself
- ☐ Job opportunities for my spouse or partner
- ☐ Climate
- ☐ Proximity to family and friends
- ☐ Quality of K-12 public schools
- ☐ Higher education opportunities
- ☐ Cultural and quality of life amenities
- ☐ None
- ☐ Other

7. Is there anything else you'd like to say about Buffalo Niagara as a place to live and work?

8. How old are you? *

- ☐ Under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65+

9. What is your current job title?

10. When did you last live in the Buffalo Niagara region? *

- ☐ Less than 5 years ago
- ☐ 5-10 years ago
- ☐ Over 10 years ago

Appendix C - Invest Buffalo Niagara ExPat/Alumni Survey Questions

11. What ZIP code do you currently live in? *

12. Do you work in any of these types of employers?

- ☐ Non-profit organization
- ☐ Start-up company
- ☐ Private sector tech company

13. If you would like to be contacted to further discuss your thoughts on Buffalo Niagara as a place to live and work, please enter your email address.

14. To enter to win a "Best of Buffalo" basket, please provide your email address.

* Required

Appendix D

DATA SOURCES AND NOTES

Executive Summary

Job Growth: US Bureau of Labor Statistics, Quarterly Census of Wages, 1990-2018. Figures are annual averages of total jobs.

Unemployed Workers: US Bureau of Labor Statistics, Local Area Unemployment Statistics, 1990-2018.

Aging Workforce: US Census, Quarterly Workforce Indicators, Quarter 2, 2018.

Migration: County-to-County Migration Flows, American Community Survey, 2012-2016. US Census, American Community Survey, County-to-County Migration Patterns, 2012-2016.

Young college-educated adults: US Census, American Community Survey, 1-year estimates, 2010 and 2017.

Local college grads stay: EMSI, 2019. Based on an analysis of LinkedIn profiles of local college alumni updated since 2016. EMSI reports the number of the region's alumni living in the fifty US cities with the most local alumni from colleges and universities in the five-county WNY region. Based on this sample, 77,569 of 184,924 alumni (42%) live in WNY. EMSI also reports the number of the region's alumni living in other states; at least 123,371 local alumni (42%) live outside New York State.

Lower wages: US Bureau of Labor Statistics, Occupational Employment Statistics, 2018. Top 50 metros based on population found from American Community Survey, 1-year estimates, 2017.

Annual job postings: UBRI analysis of online job postings using EMSI, 2018-2019 and total population from the US Census, American Community Survey, 1-year estimates, 2017.

Fortune 1,000 Companies: UBRI analysis of Fortune 1,000 Company locations from Caitlin Dempsey, "Geography of Fortune 1000 Companies in 2018," Geography Realm, 2018, www.geographyrealm.com/geography-of-fortune-1000-companies-in-2018/

Quality of Life Rankings: Resonance Consultancy, "America's Best Large Cities," 2019. Accessed August, 2019 at media.resonanceco.com/uploads/2019/05/Resonance-2019-Americas-Best-Cities-Report.pdf; U.S. News & World Report, "125 Best Places to Live in the USA," 2019. Accessed August, 2019 at realestate.usnews.com/places/rankings/best-places-to-live; Livability.com, "2019 Top 100 best Places to Live." Accessed August, 2019 at livability.com/list/top-100-best-places-to-live/2019/10

Buffalo Niagara needs to grow the talent pool

Job Growth: US Bureau of Labor Statistics, Quarterly Census of Wages, 1990-2018. Figures are annual averages of total jobs.

Unemployment: US Bureau of Labor Statistics, Local Area Unemployment Statistics, 2018.

Employed people in poverty: US Census, American Community Survey, 1-year estimates, 2018.

Migration: US Census, Current Population Survey, 1980-2018; Ten percent of US residents moved in 2017-2018, less than any year since the census began tracking migration (1947); County-to-County Migration Flows, American Community Survey, 2012-2016. US Census, ACS, County-to-County Migration Patterns, 2012-2016.

Aging Workforce: US Census, Quarterly Workforce Indicators, Quarter 2, 2018.

Young college-educated adults: US Census, American Community Survey, 1-year estimates, 2010 and 2017.

Local college grads stay: EMSI, 2019. Based on an analysis of LinkedIn profiles of local college alumni updated since 2016. EMSI reports the number of the region's alumni living in the fifty US cities with the most local alumni from colleges and universities in the five-county WNY region. Based on this sample, 77,569 of 184,924 alumni (42%) live in WNY. EMSI also reports the number of the region's alumni living in other states; at least 123,371 local alumni (42%) live outside New York State.

Where is locally-grown talent moving to?

Labor Force: US Bureau of Labor Statistics, Local Area Unemployment Statistics, March, 2019.

Job Postings: UBRI analysis of online job postings using EMSI, 2018-2019 and total population from the US Census, American Community Survey, 1-year estimates, 2017.

Fortune 1,000 Companies: EMSI analysis of rankings from Fortune Magazine, 2018.

Non-white Residents: US Census, American Community Survey, 1-year estimates, 2017. Reflects share of total population that are not non-Hispanic whites.

Quality of Life: Resonance Consultancy, "America's Best Large Cities," 2019. Retrieved August, 2019 from <http://media.resonanceco.com/uploads/2019/05/Resonance-2019-Americas-Best-Cities-Report.pdf>

High Schools: US News and World Report, "2019 Best High Schools Rankings." An online listing of school rankings by metro area is used to calculate the share of all high schools in each region that fall within the top 25% of national rankings.

Median income: US Census, American Community Survey, 5-year estimates, 2013-2017.

% Income Spent on H&T: Center for Neighborhood Technology's Housing and Transportation (H+T) Affordability Index, 2017.

Commute Time: US Census, American Community Survey, 1-year estimates, 2013-2017.

WalkScore: Retrieved August, 2019 from walkscore.com. Figures reflect WalkScores for the principal city of each metro.

Tech

Tech Job Growth: US Bureau of Labor Statistics, Occupational Employment Statistics Program, STEM Employment, 2013 and 2018. "Tech" jobs are defined by US BLS' list of occupations in science, technology, engineering, and mathematics, available at https://www.bls.gov/oes/stem_list.xlsx

% Change in Jobs, 2017-2018: US Bureau of Labor Statistics, Occupational Employment Statistics Program, STEM Employment, 2017 and 2018. "Tech" jobs defined by US BLS' list of occupations in science, technology, engineering, and math, available at https://www.bls.gov/oes/stem_list.xlsx

Median Time to Fill Job Postings, 2018-2019: EMSI analysis of online job postings for STEM occupations, April 2018 through June 2019. "Tech" jobs are defined by US BLS' list of occupations in science, technology, engineering, and mathematics, available at https://www.bls.gov/oes/stem_list.xlsx

Two college grads for every job opening: EMSI analysis of online job postings, 2017, and college degrees from National Center for Education Statistics, Integrated Postsecondary Data System, 2017.

Tech Wages: US Bureau of Labor Statistics, Occupational Employment Statistics Program, STEM Employment, 2013 and 2018. "Tech" jobs are defined by US BLS' list of occupations in science, technology, engineering, and mathematics, available at https://www.bls.gov/oes/stem_list.xlsx

Local tech college grads stay: EMSI, 2019. Based on an analysis of LinkedIn profiles of local college alumni updated since 2016. EMSI found a total of 52,963 total tech alumni from colleges and universities in the five-county WNY region. EMSI also reports the number of the region's alumni living in fifty US cities with the largest alumni populations. Based on this sample, 14,044 of 33,730 tech alumni (42%) live in the region.

Jobs Created by New Firms: US Census, Quarterly Workforce Indicators, 2017. Includes private sector employment only. New firms are 0-5 years in age. National figures based on the first three quarters of 2017.

R&D: National Science Foundation, 2015; U.S. Census, 2015.

Patents: U.S. Patent and Trademark Office, 2015; U.S. Bureau of Labor Statistics, 2015; NYS Department of Labor, 2015.

New Entrepreneurs: UBRI analysis of data from IPUMS-CPS (Current Population Survey), University of Minnesota, 2017 and 2018. Based on methodology from Ewing Marion Kauffman Foundation. Individual level, microdata of the CPS were used to link monthly survey responses of surveyed individuals over time. This longitudinal dataset was used to estimate the number of individuals who reported owning a business, after reporting *not* owning a business in the previous month, from January 2017 through January 2018.

Three Types of Jobs in Buffalo Niagara Tech Job Postings:

EMSI analysis of online job postings for STEM occupations, April 2018 through June 2019. "Tech" jobs are defined by US BLS' list of occupations in science, technology, engineering, and mathematics, available at https://www.bls.gov/oes/stem_list.xlsx

Recent Local College Grads: EMSI analysis of National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS), 2017. Includes graduates from colleges in the five-county WNY region.

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Upskill

Women and People of Color as % of Population and % of Tech

Workers: US Census, American Community Survey, 1-year estimates, 2018; US Census, Quarterly Workforce Indicators, Quarter 3, 2018. Tech industries are defined using 4-digit NAICS codes listed in the National Science Foundation's "North American Industrial Classification System (NAICS) codes that constitute high-SET (science, engineering, and technology) employment industries" (2018).

Women and People of Color as % of Population and % of Tech

Workers: US Census, Longitudinal Employer-Household Dynamics [LEHD] Origin-Destination Employment Statistics, 2017. Tech industries are defined using the National Science Foundation's list of "North American Industrial Classification System (NAICS) codes that constitute high-SET (science, engineering, and technology) employment industries" (2018). These include "Information", "Finance and Insurance", and "Professional, Scientific and Technical Services". As LEHD data is only available for 2-digit NAICS codes, UBRI determined Tech industries at the 2-digit NAICS level using NSF's list of Tech industries at the 4-digit NAICS level.

Underemployed and unemployed: US Census Bureau, American Community Survey, 5-year estimates, 2013-2017.

Retain

Recent Local College Grads: UBRI analysis of National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS), 2017. Includes graduates from colleges in the five-county WNY region.

Attract

Local Alumni Who Moved Out: EMSI, 2019. Based on an analysis of LinkedIn profiles of tech alumni from colleges and universities in the five-county WNY region. Only includes profiles that have been updated since 2016.

Out-of-Town Grads: EMSI analysis using wage data from the US Bureau of Labor Statistics (2018), job projections from state labor departments, cost-of-living from the Council for Community and Economic Research (C2ER, 2018), and college graduation from the NCES, IPEDS (2017). Excludes online degree graduates. To find metros with a surplus of related graduates, EMSI estimates the number of workers (per year) in a selected occupation who

graduate from a school in the region but can't find jobs locally by subtracting the number of projected job openings from the total number of related graduates in each region. To exclude degrees earned through online programs, UBRI calculated the total number of online degrees awarded at institutions in each MSA in 2017 using data from NCES, IPEDS (2017), and subtracted that from EMSI's estimate of surplus graduates in each MSA. To find metros that pay lower wages than Buffalo Niagara, after adjusting for cost-of-living, EMSI calculates the difference between the cost-of-living-adjusted median wage for your selected occupation in your region, and the same occupation in Buffalo Niagara. Occupation wages are derived from the most recent published year of the Occupational Employment Statistics (OES) dataset, benchmarked to EMSI industry data. Cost of living data comes from the C2ER cost of living index

Buffalo Niagara Talent Initiative

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