

INDUSTRY & INCLUSION

MANUFACTURING

WORKFORCE

STRATEGIES

BUILDING AN

INCLUSIVE FUTURE

How community-embedded
workforce organizations center
racial equity, credentialing,
and training to create stronger
neighborhoods



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INTRODUCTION

Overview

In 2020, The Century Foundation (TCF) and the Urban Manufacturing Alliance (UMA) collaborated to create a national program to examine educational strategies and community-driven workforce models that connect diverse communities to opportunities in manufacturing, and to identify the policy change needed to scale those efforts. The Inclusion and Industry 4.0 (I&I) Project brought together leading practitioner organizations to understand and lift up best practices and challenges, and extract lessons for policymakers to expand support for community-based manufacturing training. I&I represents a critical component of TCF and UMA's goal to promote the development of effective workforce and education strategies targeting an inclusive future in manufacturing.

The I&I program builds on an earlier collaboration starting in 2017 when UMA joined TCF on their [High Wage America campaign](#), which published nine policy research reports and held conversations with hundreds of stakeholders across the industrial Midwest. The initiative, one of a new generation of high impact TCF policy research efforts to address inequality, attracted multiple 2020 presidential contenders (Senators Sherrod Brown and Kirsten Gillibrand, and now-President Joe Biden) to its events, and national media attention for its recommendations. High Wage America research concluded that tackling inclusion, alongside a move to more advanced production, would determine the fate of American manufacturing.

Manufacturing has one of the most aged workforces in the economy and currently faces a recruitment and skill-building challenge. These come on top of the fourth industrial revolution as manufacturers are redesigning production and products to take advantage of automation, artificial intelligence, and the internet

of things — demanding new skills at every level of production. To address these challenges, manufacturing companies and workforce development partners are developing new approaches to adult skill development that takes into account barriers to accessing, committing to, and completing long-term training programs. These same organizations are also going through their own learning and growing in order to better support Generation Z talent — individuals born between 1997 and 2012 — who as students experienced drastic economic, cultural, and technological shifts which have impacted K-12 learning, personal values, and ideas about meaningful, sustainable work.

Luckily, an exciting generation of workforce intermediaries is providing diverse workers new opportunities to attain skills in advanced manufacturing. These intermediaries served as our I&I cohort members, and focus on serving adults and adolescents, primarily those of color. Despite the loss of manufacturing in all of our cohort cities, these communities have long counted on the many remaining manufacturing jobs as a source



of middle-class income, especially for those workers who don't have a college degree. But a generation of

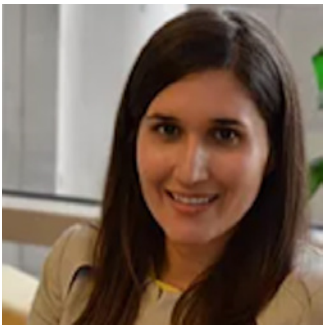
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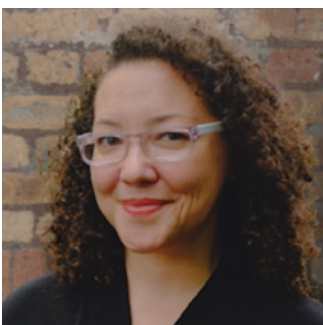
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parents who experienced job loss from that industrial decline — particularly in urban communities of color — have served as a cautionary tale for current youth and young adults. As a result, many younger workers and their families today do not view manufacturing jobs as a viable pathway, and thus have not encouraged them to develop the skills needed to enter and advance in manufacturing careers. However, the rebound in manufacturing over the past eight years, means that good-paying jobs in manufacturing could once again make a big difference for urban communities of color, and others who need well-paying work — but only if comprehensive programs are in place to make the connections between communities, training programs, and these good jobs.

The innovative leaders of the eight I&I cohort members prove that with the right program models in place, a variety of un- and under-employed adults of all ages are able obtain the necessary skills to gain employment into a rewarding career in manufacturing, with further opportunities for skills advancement and wage progression. Through 2020, cohort members, TCF, and UMA worked collaboratively through virtual roundtable discussions, seminars, and interviews to explore policies and programs, questions of scale and sustainability, and promising practices. From this work many takeaway

lessons about education, training models, employer engagement, and supportive service strategies were organized, documented, and shared.¹ Moreover, this collective research will position these organizations as national leaders who can spark replication in other communities, and provide policymakers with a road map of how to make such replication and expansion possible.

How to use the research

TCF and UMA have packaged lessons learned from the Industry and Inclusion 4.0 Project into two publications: *Industry & Inclusion: Manufacturing workforce strategies building an inclusive future*, and *Industry & Inclusion: A Blueprint for Action*, this research report and blueprint for action. This report is a journalistic set of profiles of our cohort organizations and the people who power them. *Industry & Inclusion: A Blueprint for Action* is a set of conclusions and insights based on the common themes of: Learning, Racial Equity, Economic Justice, Pathways to Ownership, Relational Innovations, and Creating Strong Partnerships. These publications highlight barriers and opportunities at the intersection of workforce and economic development, place a spotlight on leading members of the cohort, document learnings from the cohort's interactions, and organize research and public policy recommendations.

The scaling of successful workforce programs like those highlighted in these publications will be aided by complementary public policies. TCF, UMA, and the I&I cohort are promoting a greater priority on inclusion throughout federal manufacturing programs, such as Manufacturing USA and the Manufacturing Extension Partnership, and national workforce development programs, such as the Workforce Innovation and Opportunity Act (WIOA). TCF's *Industry & Inclusion: A Blueprint for Action* includes an analysis of ways in which federal workforce and higher education policies can be reformed to facilitate the scaling of I&I cohort members and similar program models. In addition,



¹ See Appendices.

Industry & Inclusion: A Blueprint for Action includes state and regional action areas, including how to invest federal and state dollars and how to structure higher education involvement in non-degree credential programs in manufacturing.

This report includes a summary of the interactions and discussions between cohort members, UMA, and TCF; reflections on connections within those discussions; and a collection of technical descriptions and personal profiles that share the stories and backgrounds of program leaders and stakeholders with whom they work. *Industry & Inclusion: Manufacturing workforce strategies building an inclusive future* will help similar workforce development organizations gain insights to improve upon existing practices and provide guidance and connections to help make the leap to new beneficial practices. Together, *Industry & Inclusion: Manufacturing workforce strategies building an inclusive future* and *Industry & Inclusion: A Blueprint for Action* are meant to be used by many different stakeholders who are advocating for new, continued, or expanded support for community-embedded, innovative workforce development organizations that are training current and future manufacturing talent.



SUMMARY OF METHODOLOGY

The goal of the I&I program was to create an opportunity for program leaders to tell the story of their work from their perspective, create a space to discuss what is and isn't working in current strategies, and identify challenges and discuss solutions to increase impact. To achieve this, TCF and UMA organized a new cohort of urban, community-based organizations that have built workforce development programs to help create new education and career pathways for women, communities of color, people with conviction histories, veterans, and other marginalized communities. TCF and UMA's original research plan for the cohort included in-person discussions, facility visits, and national gatherings. Due to the COVID-19 pandemic all activities shifted to virtual gatherings and discussions. The pandemic provided an unexpected backdrop that amplified the importance of the project. Yet, the economic shutdown due to social distancing guidelines, combined with a spike in demand for personal protection equipment and the shutdown of global supply chains, increased awareness of the importance of local factories as places where both essential products are made and where frontline workers work. Also during the I&I cohort, police officers in three different cities murdered George Floyd, Breonna Taylor, and Rayshard Brooks — three Black people, three among far too many before and after them — further amplifying the importance of taking action to include racial equity and inclusion in economic development and workforce strategies. While it is hard to fully grasp how collective learning may have been impacted by these historic moments, it is important to acknowledge they created an immediate shared learning experience that brought participants together in unanticipated ways.

How the project was done

TCF and UMA reorganized our original learning program into all online interactions between cohort members, project conveners, an advisory board, and other



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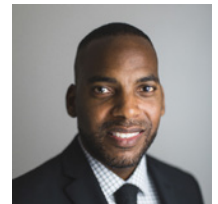
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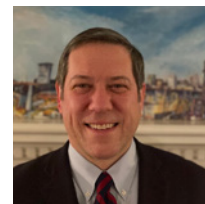
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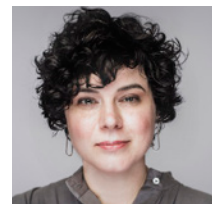
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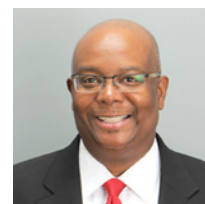
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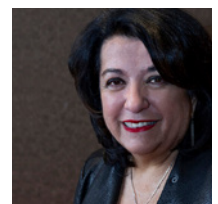
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national experts. The research team used contemporary approaches to knowledge transfer to identify the impactful ways these eight models have been able to seed and scale programs in their own communities while strengthening local manufacturing ecosystems.

The research methods implemented over the course of the 12-month program include: roundtable discussions between all cohort organization stakeholders (industry leaders, trainees, education partners); webinars featuring cohort members, advisors, and subject matter experts; and one-on-one interviews with program leaders and stakeholders from their region. Qualitative analysis was done of these discussions to connect themes across conversations, cities, and programs. Through analysis of the findings, we extracted lessons from the field and identified barriers to success. We designed research questions in each of the structured discussions to capture the strategy behind how cohort members work



with communities and businesses to create career pathways for workers, particularly in communities of color and low-income populations, who currently are not well-connected to the manufacturing sector.

Within the larger conversation about workforce development and ecosystem engagement, we asked questions dedicated to more focused elements, such as the effects of different credentialing models — such as apprenticeships, higher education programs, or competency-based credentials — and relationships with educational institutions on program design and outcomes. We included other questions to better understand the continuing impact of Industry 4.0 technologies, such as automation, cybersecurity, and the internet of things, on the requirements in the manufacturing workforce, and how these are changing the skills required for manufacturing jobs. Within each discussion we intentionally left time and space open to allow more organic sharing and reflection.

While we based observations on qualitative research, we made conclusions in the context of the data these programs provided on job placement, wages, and credential attainment. TCF and UMA developed a standard data request for each organization participating in the cohort to organize data on demographics of participants, data on training completion and credential attainment, and job placement and retention, among other topics like funding sources and key partnerships. .

To help guide and ground the research, TCF and UMA organized an advisory board to provide a deeper knowledge of workforce development models. Our advisory board was made up of national workforce development thought leaders from academia, the private sector, nonprofits, and government. The advisory board provided a much-needed national framework to the local conversations with the eight cohort members.

REFLECTIONS

Given that each cohort organization participated in a three-hour roundtable group discussion, a series of one-on-one interviews, and monthly gatherings, it is impossible to fully share all the stories and moments of learning that informed TCF and UMA's insights and reflections. This process yielded shared experiences and pain-points across multiple organizations, despite working in different cities, with different stakeholders, and within different regional histories.

Many discrete discussions ran through the collection of stories and backgrounds of the cohort members. Individual organizations talked about the process and difficulty of finding skilled trainers to provide technical instruction who also have the social awareness to work with BIPOC communities, individuals who have little to no work experience, and those who live in neighborhoods that have experienced high amounts of trauma.

Each cohort organization approaches this process in their own way. Some have been able to successfully recruit diverse teachers from industry to work full time within their companies, such as Jane Addams Resource Corporation (JARC). Other organizations have built relationships with education partners that have developed train-the-trainer style programs to help teachers better understand their students' experiences, which is a strategy Northland Workforce Training Center (NWTC) and Manufacturing Renaissance (MR) have created. Finding capable teachers echoes part of another ongoing conversation: it is important to find the right people for the right position. This goes for many different roles within the education-to-career pathway support network: roles which include technical trainers, mentors, career coaches, employer recruitment and support, program marketing, and program advocates. These conversations also touch on the idea that the whole ecosystem needs to fill these roles rather than one individual organization having all of them under one roof.



Having many partnerships within a regional ecosystem — that contribute to the well-being and support of current and future employees *and* manufacturing businesses — was talked about by all cohort members. There is no one way to build these relationships, nor is there just one perfect combination of partners. For example, Lightweight Innovations For Tomorrow (LIFT) and Manufacturing x Digital (MxD) have built connections to technology developers through their non-workforce development work as Manufacturing USA Institutes. They have been able to turn those connections into partnerships which have opened new possibilities for teaching high school students about cutting-edge technologies. Many organizations discussed working on ways to strengthen their regional connections to the education and workforce development networks. Even though both networks are on the education continuum, they tend to operate very differently, leading cohort members to develop separate ways to build partnerships with individual groups.

The most consistent relationships that all organizations have are with networks of manufacturers and of social service providers. Yet again, there are unique ways

to manage these network relationships. Some have created fee-for-service incumbent training programs to bring manufacturers to the table — for example, JARC and Wisconsin Regional Training Partnership / Building Industry Group & Skilled Trades Employment Program (WRTP | BIG STEP) — and others rely on placing newly skilled workers in manufacturing businesses to build interest for ongoing programs, as is the case with MR. Creating relationships with social service providers often depends on building trust with individuals at each organization and providing education and insights about why the communities they serve should be pursuing careers in manufacturing.

Investing in relationships with social services, employers, and the larger ecosystem illustrates another key point: organizations often have to do a lot of work beyond skills training. One instance includes coaching employers to learn new practices and implement policies that correct for discrimination against BIPOC and women, one of the most often cited extra tasks. Some of this coaching is done one-on-one, in subtle ways, like Manufacturing Advocacy and Growth Network's (MAGNET) intern coach who helps employers understand and communicate expectations with their trainees. Whereas Menomonee Valley Partners (MVP) works with external partners to develop race and gender equity training programs for employers. JARC is launching a group discussion forum for many business leaders to come together to discuss race, equity, and inclusion barriers and strategies for change. This work outside of training illustrates gaps within the ecosystem. Many organizations have developed an informal process of taking on extra work, uncovering why it is needed, then finding new organizations to bring into the ecosystem to fill the gap. When this is not possible the next step is often to communicate the importance of doing the “new work” and then seek funding to cover the costs associated with it.

The day-to-day operations, program offerings, and service networks of each organization illustrate the effort it takes for a trainee to transition from no employment, or underemployment, to full time employment. Sometimes the effort is about planning new strategies

for childcare, overcoming family and peer pressure, or covering rent and transportation costs. In other cases the effort is fighting against racist and inequitable employer practices. Each cohort leader shared, in their own way, their empathy and awareness of what it takes to commit to, what for many, is a very new and life-changing experience of learning skills needed to work in manufacturing. This awareness translates into many different strategies, all of which help make this big transition easier. As mentioned previously, all organizations have built social service networks in part to help with easing this major life transition and reducing the effort needed to solve problems associated with creating new childcare options, transportation, and even clothing. Organizations have implemented strategies internally as well. MR and MAGNET, for example, have created mentor programs to connect a trainee with someone who has shared life experiences to help guide them through the process and acknowledge their effort. NWTC and JARC offer career coaching to help individuals ease the transition into employment, preparing them before they start their career for how to navigate on-the-job conflicts and how to advocate for themselves. And, MVP created a women in manufacturing program to connect young women to professionals in careers in manufacturing to help build bridges that previous generations did not benefit from.

The following Profile Library section provides more information on these individual organizations for further study and to help uncover more connections and relationships across the I&I cohort members. *Industry & Inclusion: Manufacturing workforce strategies building an inclusive future* provides both deeper explanations as to how these themes were discussed and provides recommendations to change policies in response.

NWTC PROFILE

Introduction

As part of the Industry & Inclusion 4.0 Project, UMA interviewed cohort members and their partners to gather background information and details about how they create and deliver programs. From these discussions UMA generated Organizational Profiles for each of the eight cohort members. These Organizational Profiles are divided into two parts:

Technical Descriptions: snapshots of each workforce development organization which include a brief description of their history, an overview of how their signature programs operate, self-identified keys to success, recent outcomes, and their future plans for scaling the impact of their programs.

Personal Profiles: stakeholder interviews to gain a deeper understanding of the relationships that exist between the workforce development organization and the communities and employers they serve. These include trainees, industry employers, and partners in education.

Each Organizational Profile is meant to shed light on how each cohort member successfully navigated the process of designing and implementing an innovative workforce development solution for their region and for people they support. As a collection, these eight Organizational Profiles highlight the importance of: building partnerships and ecosystems, navigating stakeholder engagement, remaining open to ongoing improvements and learning, and understanding both employers' needs and the needs of the current and future workforce.

In the Personal Profiles you will find individual meaningful experiences of: how people's lives were changed by the training programs, how after graduating trainees return to give back to the next generation, and mentorships

between intergenerational workers that share a culture and background. And like the Technical Descriptions, the collection of Personal Profiles highlight important themes. For example, the need for: committing to ongoing dialogue with the community to understand their needs, cultural awareness within manufacturing companies, and a broader definition and understanding of impact and outcomes.

The Organizational Profiles provide a glimpse into the inherent complexity of preparing a new workforce for an ever-changing industry. What UMA found compelling through these discussions is that each cohort member has become an expert in discrete topics like recruiting the right people, building an ecosystem, and supporting the transition of workers. Even though no two organizations operate in the same way, they have all come to understand key important principles: leverage what makes one's region unique; bring partners of all kinds to the table to develop ideas and get feedback; create a culture of learning and education as a lifelong process, within their own organizations and within the manufacturing businesses they work with; and new programs require social innovation — a change in behavior — on the part of trainers, trainees, employers, and funders.

Please visit urbanmfg.org/project/industry-and-inclusion-national-cohort to read our research, commentary, and the seven other cohort member profiles.

NORTHLAND WORKFORCE TRAINING CENTER [NWTC]

Train for What's Next.

Buffalo, NY

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“When people think of manufacturing, they usually think of global firms mass producing products when in reality, most manufacturing businesses are family-owned small enterprises with fewer than 50 employees. Many don’t have well-developed processes for workforce development and are dependent on others preparing a trained workforce. And the workforce is always sighted as the number one issue by these businesses.”

-Peter Coleman, President & CEO, Buffalo Niagara Manufacturing Alliance

an aging workforce and pending retirements. In addition, average salaries for production workers within the advanced manufacturing sector could support families and offer pathways to the middle class. The industry was also starting to experience new innovations due to Industry 4.0 advancements.

Brief Introduction, History, & Background

In 2018, Northland Workforce Training Center (NWTC) opened its doors in Buffalo, New York, offering students new opportunities to access State University of New York (SUNY) certificates and degrees in advanced manufacturing and related programs.

NWTC was seven years in the making. In 2011, Governor Andrew Cuomo established ten regional councils to develop long-term strategic plans for economic growth in every region in the state. Councils were charged with developing strategic plans at the local level that would direct economic development investments. The council studying the Buffalo region identified three strategies for direct economic development investments: placemaking, innovation, and workforce development. This meant projects and programs had to leverage existing assets in a given location, foster a culture of entrepreneurship to support small businesses to create jobs, and prepare a workforce for the next generation of jobs that were being created in the region.

The plan also identified eight industry sectors that offered high growth and future economic opportunity — advanced manufacturing was one of those sectors. Advanced manufacturing stood out because of a projected 20,000 job openings in the region over the next ten years due to

Led by Howard Zemsky, with assistance from the University at Buffalo Research Institute, the Western New York Regional Economic Development Council released its strategic plan which included a recommendation to create a training center focused on preparing Western New Yorkers for high-paying careers in advanced manufacturing and energy. The vision for a 21st century training center in Western New York was born. Mayor Byron Brown and other elected officials including New York State Assembly Majority Leader Crystal Peoples-Stokes and New York State Senator Tim Kennedy advocated for this new facility to be located within Buffalo’s East Side.

The East Side of Buffalo is 91 percent Black and has a median household income \$8,000 lower than the rest



of Western New York. This area was chosen as the home of NWTC because it is part of Buffalo's manufacturing history and is suffering from job loss, high poverty rates, and a lack of public and private financial resources.

With the capital project financed, the state needed an organization to operate the new facility. That's when four local nonprofits stepped up and accepted the challenge. The Buffalo Niagara Manufacturing Alliance, Buffalo Urban League, Catholic Charities, and Goodwill Industries came together to revive a dormant nonprofit called the Economic Development Group (EDG). The group soon hired Stephen Tucker as President and CEO, and he established the mission, vision, and culture of NWTC. EDG is now the operator of NWTC.

Today, NWTC offers four technical programs with 255 students enrolled from the neighborhood and surrounding communities. NWTC is seen by neighbors, who were at first skeptical that an investment would actually be made, as an opportunity for new possibilities. In its few years of operation, community members have invested more time and energy in their neighborhood: the streets have gotten cleaner, new restaurants and businesses have opened, and several community groups utilize the space at NWTC to host meetings.

"Access means a few different things. For the students it means we are in their community and neighborhood, and they can get here. It means accessible because of financial aid and our support services. For industry it means access to a new talent pool that exists but hasn't been kindled."

-Adiam Tsegai, Ph.D. Associate Vice President of Academic Affairs, SUNY Erie Community College



About Northland, NWTC's Curriculum, & Supportive Services

As Governor Cuomo's signature workforce initiative under the Buffalo Billion, NWTC is an industry-driven, public-private partnership between employers, educational institutions, community and faith-based organizations, and state and local government, focused on closing the skills gap of the local labor pool and creating economic on-ramps to training, co-ops, internships, apprenticeships, and permanent employment for Western New Yorkers seeking high-paying advanced manufacturing and energy careers. NWTC offers a state-of-the-art training center and provides for-credit, certificate, and degree programs as core offerings through its educational partners, Alfred State College and SUNY Erie Community College. It incorporates evidence-based placement strategies, such

as co-ops, apprenticeships, and internships, with an emphasis on permanent employment with family-sustaining wages and benefits.

The vision of NWTC is to be the premiere model of a public-private partnership providing education,



where they are and focuses on delivering a tailored educational experience that drives success.

NWTC's target enrollment populations include the unemployed or underemployed; displaced employees, especially those in COVID-affected sectors (retail, hospitality, food service); those who are economically disadvantaged (as defined by at or below 185 percent of the Federal Poverty Guideline); and historically underrepresented populations including women, people of color, the justice-involved, veterans, refugees, and first-

training, and workforce development services that are industry-driven and employment-focused. NWTC's mission is to advance the economic well-being of Western New York by developing and maintaining a skilled and diverse workforce to meet the needs of the advanced manufacturing and energy sectors, while providing job seekers with pathways to gainful employment, career advancement, and economic sustainability. NWTC is uniquely designed for individuals 18 years or older to reduce all the major barriers that prohibit students from enrolling and completing post-secondary education, such as transportation, childcare, academic readiness, and affordability.

NWTC's training approach combines evidence-based best practices regarding awareness, recruitment, assessment, career planning, education and training, job placement, and retention services, with intensive wraparound support to ensure student suitability, preparedness, persistence, placement, and career advancement. NWTC offers certificate and degree programs at little to no out-of-pocket expense to students based on need. NWTC is committed to the success of every individual who makes up its diverse student body. It provides students with tools and resources to address challenges, so they can achieve their advanced manufacturing or energy training and career goals. Its students-first culture meets individuals

generation college students. NWTC provides all students with a support team consisting of an admissions and financial aid coordinator, a success coach, and a placement specialist. The team works in tandem with students to raise awareness regarding technical careers and associated programs as well as assistance with college applications, financial aid, barrier mitigation, soft skills training, academics, and job placement. Success coaches also work with students and prospective students to access supportive services and provide followup services for up to three years post graduation.

NWTC is an extension campus for SUNY Alfred State College and SUNY Erie Community College offering the four programs:

Mechatronics 1 Year Certificate Program offered by SUNY Erie Community College.

Electrical Construction and Maintenance Electrician 2 Year Associate of Occupational Studies degree offered by SUNY Alfred State College.

Machine Tool Technology 2 Year Associate of Occupational Studies degree offered by SUNY Alfred State College.

Welding Technology 2 Year Associate of Occupational Studies degree offered by SUNY Alfred State College.

As part of the NWTC enrollment process, all students are guided by an Admissions Coordinator in applying for federal aid (Pell), state aid (TAP and the Excelsior scholarship), external scholarships, and for those eligible, the Say Yes and Educational Opportunity Program.

Even with the assistance of NWTC staff in completing required applications and paperwork, 27 percent of students attending NWTC are in need of at least partial, if not full, assistance with tuition. To address this issue, NWTC provides tuition assistance to eligible low-income students in the form of the Northland Grant. In addition to tuition, the cost of books, required laptops, software, tools and consumables, all present an additional financial burden for low-income students. NWTC supports students in the form of the Northland Grant, NWTC Tool Chest, Laptop Loan Programs, and Lending Library.

NWTC's Northland Grant is a resource available to NWTC students on a case-by-case basis to assist exclusively with tuition and fees. The income limit is an adjusted gross income of \$80,000 for students with dependents and \$40,000 for students without dependents. NWTC's Tool Chest, Laptop Loan Program, and Lending Library are also resources available to students that have exhausted all available financial aid funding and do not have the financial means to purchase the required books, laptop, or tools. Students can now borrow books, tools, and a laptop to support their education and training at NWTC.

In addition to the wraparound and student success services previously mentioned, NWTC also supports students with cash assistance in the case of an emergency via the Student Emergency Support Fund.

NWTC's Student Emergency Support Fund is available to NWTC students on a case-by-case basis to mitigate unexpected expenses that may affect program completion. The Student Emergency Support Fund provides students with a one-time grant and students are not required to reimburse the organization for this support.

Upon successful completion, NWTC assists graduates with obtaining employment that offers family-sustaining wages and benefits. NWTC graduates also receive success coaching support for up to three years after being hired full-time to ensure they are on track for advancement and upward mobility. In addition, all graduates are also offered career advancement classes designed to educate and assist individuals who are currently employed with career planning and advancement.

"We wanted to create a student-first culture where students feel welcome, where they feel valued, and where we can hold them accountable. We provide them with resources to make them successful, but also teach them how to become advocates for what they need. We've been able to retain a high number of students just because of our culture. And now this is starting to permeate through the professors and the colleges as well. We're all in this thing together. That's why we call ourselves a team."

-Stephen Tucker, President & CEO, NWTC

Keys to Success

During its third year, NWTC continues to progress through the continuous improvement philosophy of assess, interpret, develop, implement, and change. NWTC continues to develop and implement data-driven, innovative strategies and processes that, although based on best practices, are responsive to the very specific needs of its unique student populations. This student-focused approach and philosophy of continuous improvement is the key to the successful launch of NWTC. Continuous and incremental improvement based upon empirical quantitative and qualitative

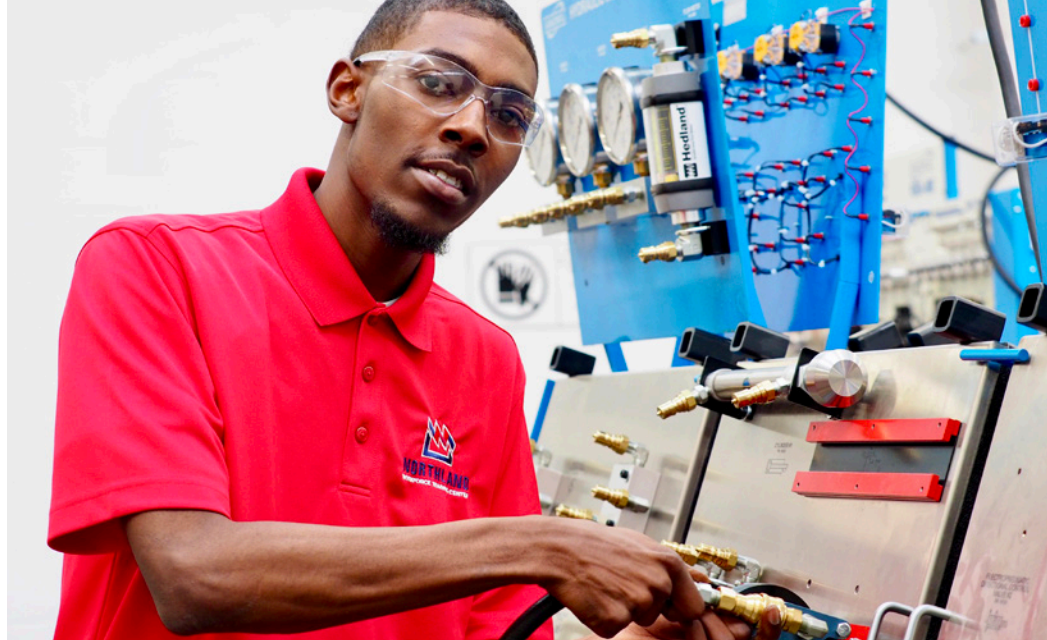
assessment, combined with the knowledge gained from its students' lived experiences, have not only increased NWTC's internal efficiency and efficacy, but has directly and positively impacted the recruitment, retention, completion, and placement of their students.

NWTC has evolved from a theoretical model to a vibrant and diverse organization embodying inclusivity and access to equitable resources and opportunity, regardless of race, gender, or socioeconomic status. NWTC provides students with a real opportunity to overcome personal and societal obstacles by facilitating training for in-demand professions in advanced manufacturing that provide family-sustaining wages with benefits and pathways out of generational poverty.

Outcomes

In its three years of existence, NWTC has enrolled more than 500 students, and the results from student surveys demonstrate that its unique model is holistically supporting students academically, financially, and personally. Currently, NWTC's student body has 52 percent minority representation and 8 percent female/non-binary representation. Over half (52.5 percent) of the student population lives within the city of Buffalo and a third of the students (32.2 percent) reside in Buffalo's East Side.

NWTC currently has an 81 percent semester to semester retention rate, and 81 percent of NWTC graduates have been placed in employment. These placements have a combined economic impact of more than \$2.5 million in wages added back into the local economy. In addition to wages and benefits, NWTC graduates now have a career pathway that leads to the middle class and economic stability.



While evaluating NWTC's programmatic outcomes during FY 2019/2020, it was impossible to conduct such an analysis without considering the dramatic ramifications of the pandemic on the Spring 2020 semester. Following the stay-at-home order issued by Governor Cuomo in March 2020, SUNY institutions were required to transition all educational activities, both lecture and labs, to a remote format. This had a major impact on students attending classes at NWTC, who primarily selected their program because of its hands-on pedagogy. As such, the total effects of the coronavirus pandemic are still forthcoming. Still, NWTC's program completion rate of 60 percent is more than double the national average. Moving forward, NWTC plans to build on these results with an even larger student body next year, achieving even more placements of students into full-time jobs.

The Future [scaling]

NWTC was created by critical partners and stakeholders including business and industry, government, economic development, post-secondary education, the workforce investment system, and other community stakeholders. Replicating NWTC's model in different parts of the state and country has always been the long-term goal for scaling.

John Somers

President/CEO

Harmac Medical Products

When John Somers heard that a new training program funded by the State of New York was going to be set up in Buffalo, he was skeptical. Then he spoke with Stephen Tucker, shortly after Tucker was named President and CEO of the Northland Workforce Training Center (NWTC) in late 2017. After that conversation, Somers decided to give NWTC a chance.

Both men shared an interest in seeing Buffalo improve, especially on its East Side where both NWTC and Harmac are based, just two miles from each other.

“Programs like that need leaders like Steve Tucker, who is an approachable, smart, hands-on leader with a lot of energy,” said Somers. “For me, seeing that in Steve was a very positive step.”

Somers saw Tucker as a natural partner because Harmac is always looking for skilled and talented team members. They have since hired three employees from the program.

“Northland does a lot more than just teach people the technical skills,” Somers said. “They give them standard work skills. They teach them how to show up for work on time, look people in the eye, shake their hand, and build relationships. That’s why we’ve continued to evolve our partnership. It provides employment for East Side residents and it fits a need for us.”

Harmac is also a strong supporter of Buffalo’s immigrant community. With over 20 nationalities at its Buffalo headquarters, Somers wants his team to understand one another’s backgrounds, traditions, and values. He fosters a culture of honesty, integrity, and respect. He

teaches his leaders the importance of building employee relationships so that their company can build bridges and leverage that diversity.

“If you don’t understand someone’s culture, just ask them about it and they’ll tell you,” Somers explained. “Those straightforward, simple questions really help to break down barriers and encourage people to share their unique perspectives.”

Harmac values its employees so much that it stayed in the neighborhood instead of moving to the suburbs like many companies in the area have over the years. Buffalo’s East Side is a disadvantaged community, though things are slowly improving. Somers is proud of the decision his team made 12 years ago to keep Harmac on Bailey Avenue.

“We realized that 25 percent of our employees live in our zip code,” recalled Somers. “If we moved, it would have been devastating to them. We just couldn’t abandon them or their families. Instead, we chose to stay and help lead this community in its revitalization.”

They called it “The Bailey Green Initiative,” and began by focusing on the “green.”



They purchased a row of condemned houses across from their facility. Then they removed them and built a park on that land – the first green space on all of Bailey Avenue between the University at Buffalo’s South Campus and South Buffalo.

Next, they partnered with the University at Buffalo’s School of Architecture and Planning, and engaged an international landscape architect, Dean Gowen, who had worked with Buffalo’s Olmsted Parks.

“We wanted to create a visual change to the neighborhood by creating a promenade similar to other parts of the city where they have these great rows of maple trees on both sides of the street,” Somers explained. “So we planted about 150 trees.” Harmac then convinced Habitat for Humanity to build new houses in this low-income neighborhood, something the not-for-profit had not done before, thinking it would not attract any families. Remarkably, of the first five new houses built, three of them became owned by Harmac employees.

“Every employee at our company has a direct impact on the lives of patients who use the devices we manufacture,” Somers said. “Some of these devices are life-changing, and some are life-sustaining. Whether an employee is assembling a product, designing a piece of automation, interfacing with a customer, or cutting the grass, all of them are critical to our ecosystem and in achieving our vision of changing the lives of patients, employees, and the communities in which we work.”

Somers sees the improvements occurring, both within and outside the walls of Harmac. He understands as well that his role as an industry leader is not just to build a profitable company, but to build a healthy community. Though he acknowledges the neighborhood will not completely improve with one grand gesture, he sees value in making many smaller gestures.

“I’m a white guy, working for an international company. We’re in this inner city, but I’ve gotten to know a lot of people in the neighborhood, one person at a time,” explained Somers. “One older gentleman in the

community needed his garage door replaced, and we said, ‘We’ll do that.’”

They shook hands, and a month later Harmac had gradually replaced the garage doors, front steps, and porches of some other residents as well.

“We all need to reach out and build bridges with others,” Somers said. “That’s what we try to do across our whole company.”

Julia Culkin-Jacobia

Vice President of Human Resources

PCB Piezotronics

Julia Culkin's connection to Northland Workforce Training Center (NWTC) is a story of chance and fortune. As Vice President of Human Resources for PCP Piezotronics, she looked for talent all over Buffalo. She found kids right out of high school and some from the streets, but it was hard finding qualified recruits on a consistent basis. As pipeline after pipeline that she was aware of shutdown, she kept searching until one day, she happened upon NWTC.

"A friend of mine who knew that I was looking for machinists told me about Northland. When I went there, I liked every one of their students," she recalled. She was so impressed with what NWTC had to offer that she took photos of their advanced equipment to compare it with what PCP Piezotronics had. It took a little convincing, but the company started to see the promise in NWTC that she saw.

"Northland invited us to have some of our manufacturing managers come down and see their facility. I think that was the kicker — our managers came down to see them and were impressed," described Culkin. That's how she convinced the company to become an industry partner. The excitement of finding NWTC reminds her of why she got into human resources in the first place.

"The more I learned about business, the more I felt like people are the core," she explained. "If you don't have great people, if your people aren't happy, if they're not motivated and driven, then your business is not going to be successful." As an HR professional who is fascinated by organizational behavior, Culkin is on the executive committee at PCP Piezotronics. Whenever sales,

operations, or engineering is discussed, she's mindful of the human impact of their decisions.



Other than being an industry partner, she is fortunate to view NWTC from the perspective of a parent. Her son is a student there, but like PCP Piezotronics, it took a while for her to convince him too. "When my son graduated high school, he really did not know what he wanted to do in life. He didn't want to learn a trade, but I brought him to Northland. The career counselors gave him a tour, and they talked about all the programs. And he just had this passion that developed and now he just loves it." With both the company that she works for and her son seeing NWTC the way she does, Culkin has become a fierce advocate of the program.

One challenge NWTC faces is getting their students to where the jobs are. The program produces great talent, but distance is an issue (an issue many companies face since they are not always located close to where current and potential employees live). Culkin admits that if transportation wasn't such an issue, that she would hire more graduates of the program. "A lot of companies don't know about Northland," she said. "Identifying those companies in the same areas and asking them if they would like graduates with the skills that they're looking for would help." Culkin would like to

see companies in the area get a private bus to shuttle students from NWTC to a central point where they can make it to work and back.

“When we started hiring, people were declining job offers. They wanted the job, but they didn’t have transportation,” Culkin explained. “Then it got me thinking maybe we should really figure that out. I feel like it’s something we can do to support the program and the people it serves.”

Vanessa Hall

Trainee

Northland Workforce Training Center & Harmac
Employee

Vanessa Hall was destined to go into manufacturing and she didn't even know it. The opportunities kept pursuing her until she finally decided to give in. Now, she's one of NWTC's most popular ambassadors, spreading the word about the program throughout her community.

Right out of high school, she became a bill collector for a bank where she worked for ten years. Although she loved it, there was something that she began to notice. "I realized that computers were taking over my job, and that's what changed everything for me," Hall said. "I wasn't leaving voicemails anymore. I was pushing a button."

As someone who loves talking with people, and not seeing a future in an industry that was becoming automated, she transitioned to caregiving. "I started working for people with disabilities. I liked it, but I got attached. I'm a hugger, and I'm a crier," she said, "so I took a lot of emotional baggage home."

Then one morning at the end of her overnight shift caring for someone, she heard an interview with a career coach on a radio station that she never listens to. It was someone from NWTC talking about the opportunity of manufacturing jobs in Buffalo. Hall listened closely, remembered the interview, but didn't think much of it because she was focused on her caregiving.

Then a few days later, after a discouraging day at work, she heard another commercial for NWTC on a station that she frequently listens to while driving home. She thought the coincidence was interesting, but didn't think more about it.

A few days after that, laying in her bed scrolling through Facebook on her phone, she came upon an ad for NWTC. This time, she felt like this was a sign to learn more about the

program. "I have always suspected that my cell phone could read my mind, but this was very odd," recalled Hall. "The signs could not have been any clearer, so I decided to fill out an application." NWTC invited her to come to an information session the next day, but Hall couldn't make it because her best friend passed.

Soon after the funeral, she took a trip to Southern California, for the comfort and support of her family. There the fellowship with them was inspirational and spiritual, but another family tradition seemed timed just right. "We have mentoring sessions, where we get together as a family, talk about goals, and things that we want," explained Hall. "After that mentoring session, I went to Venice Beach, sat on the beach, and said to myself: I cannot go back to Buffalo and be the same Vanessa that I was. Something has to give."

Upon returning to Buffalo, she called NWTC to see if it was too late to join the program. It wasn't. "I went down there, and I think that's what changed everything for me." Hall took a bunch of brochures home to figure out which specialty worked for her. Her love of puzzles and numbers inspired her to choose mechatronics,



understanding that all she needed to do was show up and want to learn. NWTC helped her apply for financial aid and scholarships too. She was set.

“I’m a visual learner. That’s how I’ve always been,” explained Hall. “You can give me a book to read, but if you can show me in 30 seconds what to do, I will retain that information, understand it, and be able to break it down.” When NWTC exposed Hall to Buffalo’s manufacturing industry through various career fairs, she began to appreciate the job security that she was working on for herself. Many of the companies were looking for talented women and people of color just like her.

Before graduating from NWTC, Hall interned at the Niagara Frontier Transportation Authority (NFTA). Although she enjoyed it, she had to give it up because she was also working full-time for Harmac as a mechanical set-up technician. She was interning from 7 AM to 2 PM, and then she would catch the bus down the street to work at Harmac, every day, Monday through Friday.

While employed at the NFTA, Hall had surgery on her stomach. The physical toll of her internship with the transit authority made her recovery difficult. Suddenly, laying on her stomach in various positions, bending in the back of the bus, and habitual heavy lifting wasn’t a good fit for her.

“I couldn’t see myself rolling 150-pound bus tires when I’m 60,” quipped Hall. “That’s why I chose Harmac, because it’s a clean environment.”

And she is a vocal advocate for NWTC. Whether people are recently out of prison, chatting after church, or eating at a community event, Hall shares her testimony of changing careers at 32: “I spent nine months of my life in the program to set me up for a lifetime of success.”

Wade Smith

Career Coach

Northland Workforce Training Center

Anyone who is in the process of changing from one way of life to another needs someone like Wade Smith in their corner. As the senior career coach at NWTC, Smith helps students find their footing in manufacturing. From the 18-year-old getting their first taste of the workforce, to the middle-aged professional upskilling for a new career, Smith is there for them.

Teaching others to foster the good habits that lead to success comes from his high school sports background. Playing football, baseball, and basketball gave him a mental toughness that has served him well in his over 25-year career in social work case management. From helping disadvantaged youth in group homes, to counseling households who were in danger of losing their children to public services, to helping felons as they transition from incarceration to freedom – Smith has been at the right place at the right time for those in need. In life, just as in sports, timing is everything.

“With that background, working as a career coach was a smooth transition, just from the standpoint of my experience of helping individuals improve their daily lives,” said Smith. “Even though I never worked in an educational setting, it still comes down to customer service, case management, assisting students and individuals with their barriers, and just teaching them better ways of doing things that they might not know.”

Smith is someone who understands the students at NWTC and is willing to help them overcome their issues. Like a good coach, he is persistent in teaching his lessons, because he knows that is the only way they will succeed. His approach to career coaching is to ask himself what he can do to assist an individual to better

themselves every day.

Just like he did on the playing field, practicing every day meant continuous improvement with more playing time as a reward. Practicing once or twice a week meant mediocrity, resulting in someone else getting the playing time while he sat on the bench. Smith wants the students at NWTC to see their careers the same way.

“I’m trying to plant the seed that they shouldn’t take any day for granted. Come in each day, have an open mind, and be ready to learn,” said Smith. “Whether you’re a welder, an electrician, or a machinist, try to get better each day. I encourage my students to have the same mindset.”

He doesn’t only manage his caseload of students, but feels it is his duty to be helpful. Some people might just see this as a job, and not care to help when they can. But he looks at his coaching from the human perspective. “I feel this is my purpose,” said Smith. “Another person might look at this as only a job. If somebody comes to me for help, and I look at this as only a job, then I might rush through the process and give them some stuff just to keep them moving. But I don’t look at this as a job.”

With students starting from different levels, coming from disparate backgrounds, varying experiences, and



distinct issues, Smith helps them get the best out of themselves. Even when someone doesn't listen to his recommendations and fails, Smith does not abandon them. He works with them to learn about their issues and how they plan to keep a job. "We don't give up on them. Hopefully, they can learn from the experience. We bring them back in, we discuss what went wrong, and I tell them the things they need to do to be better next time. But if they don't apply them, then the same thing is going to happen again," explained Smith. "Buffalo's not a big community. If they aren't serious about changing their attitude, we don't want to send them out there again and burn bridges."

"I'm a Career Coach. I can give you the game plan. But if you're not willing to execute it and do your part, it's not going to work." Smith's fair, firm, and helpful approach is appreciated by the students at NWTC who speak glowingly about his assistance. He helps so many of them, that he can't remember exactly what he did most of the time, but they remember. When a person is expecting a disruptive or profound change in their life, Smith is that person they want on their side.

ABOUT THE ORGANIZERS



The Urban Manufacturing Alliance (UMA) advances place-based strategies

that create more equitable communities by building community wealth through employment, ownership, and entrepreneurship through manufacturing. We connect and convene hundreds of partners across more than 200 cities, helping them learn from one another, and act as a collaborative ecosystem builder that supports local manufacturing communities and leads a national movement. UMA then partners with the practitioners in those ecosystems to create local, regional, and national research. By documenting the voices, trends, and data emerging from manufacturing communities, we provide practitioners, policymakers, and leaders with the references they need to develop new, equitable models of economic development. From that research, we tell stories, taking the trends we observe and crafting them into rich narratives that capture how our members spark change.



The Century Foundation (TCF) is a progressive, independent think tank that conducts research, develops solutions, and drives policy change

to make people's lives better. We pursue economic, racial, and gender equity in education, health care, and work. In this pivotal moment in America, we stand with a strong and firm commitment to developing policy solutions that will help this country truly realize racial justice. Founded in 1919 by the progressive business leader Edward Filene, TCF is one of the oldest public policy research institutes in the country. TCF pursues its mission by conducting timely, nonpartisan research and policy analysis that informs citizens, guides policymakers, and reshapes what government does for the better. We are distinguished by our commitment to a thoughtful and targeted strategy to bring our work to those who can contribute to making practical affirmative change. Our experts come from academia, journalism, and public service—all with a shared commitment to advancing progressive ideas that benefit the public good.

ACKNOWLEDGEMENTS

Industry & Inclusion: Manufacturing workforce strategies building an inclusive future and the Technical Descriptions were authored by Andrew Dahlgren, UMA's Research and Content Partner. Phil Roberts, UMA Storyteller, authored the Personal Profiles. This report would not have been possible without the participation of our Industry & Inclusion Cohort: Manufacturing Renaissance, Chicago, IL; Manufacturing x Digital, Chicago, IL; Menomonee Valley Partners, Milwaukee, WI; Manufacturing Advocacy and Growth Network, Cleveland, OH; Northland Workforce Training Center, Buffalo, NY; Lightweight Innovations For Tomorrow, Detroit, MI; Jane Addams Resource Corporation, Chicago, IL and Baltimore, MD; and Wisconsin Regional

Training Partnership | Building Industry Group & Skilled Trades Employment Program, Milwaukee, WI. The Urban Manufacturing Alliance team, Katy Stanton, Lee Wellington, and Eva Pinkley, and The Century Foundation team, Andy Stettner and Amanda Novello, provided guidance throughout the development of the thought-piece. A special thanks to Dr. Ron Williams, this project's Academic Advisor and UMA's Board President-Elect, and Elmer Moore, Jr., who facilitated many virtual sessions, bringing the cohort close together even in this distant time. We also want to thank our funding partner, the Lumina Foundation, for their support. It is this collective's forward-looking strategies and ingenuity that the Industry & Inclusion 4.0 Project was fully realized.

APPENDICES

For further learning, please consider:

Industry & Inclusion Opening Commentary

- ↳ [Racial Equity and Advancing the Future of Manufacturing](#)

Industry & Inclusion Project Webinar Takeaways & Event Recordings:

- ↳ [Pursuing Equity, Inclusion, and Industrial Rebirth in the Age of Covid 19](#)
- ↳ [Advancing Equity and Inclusion in Manufacturing Credentialing and Technology](#)
- ↳ [Creating the Future Manufacturing Workforce by Enhancing Diversity and Addressing the Skills Shortage](#)
- ↳ [Partnership and Relationship Innovation To Build Race-Conscious Advanced Manufacturing Training Programs](#)

